Traffic Analysis Report

For the Elmwood Ave. "Road Diet"
Lane Reduction

(Genesee Street to South Plymouth Avenue)

Scottsville Road – Elmwood Avenue
Improvement Project

(West City Line to Mt. Hope Avenue)

P.C. 17102

Prepared for:

City of Rochester
30 Church Street, Room 300B
Rochester, NY 14614

By:

Lu Engineers
ENVIRONMENTAL • TRANSPORTATION • CIVIL

339 East Avenue, Suite 200
Rochester, New York 14604

September 2018

TABLE OF CONTENTS

A. Project Background 1

B. Traffic Data 2

C. Description of Alternatives 4

D. Level of Service, Delays and Queues Analysis 4

E. Conclusions 9

Appendices

Appendix A - Location Maps, “No Build” & “Road Diet” Alternative Preliminary Plans and Typical Sections

Appendix B – Vehicle Volume Summary Sheets

Appendix C – Current and Projected Traffic Volumes

Appendix D – Peak Hour Traffic Flow Diagrams

Appendix E – Level of Service Analysis (Signalized Intersections – “No Build” Alternative)

Appendix F - Level of Service Analysis (Urban Street – “No Build” Alternative)

Appendix G – Level of Service Analysis (Signalized Intersections – “Road Diet” Alternative)

Appendix H - Level of Service Analysis (Urban Street – “Road Diet” Alternative)

A. Project Background

1. Study Area

The limits for the Scottsville Road / Elmwood Avenue Improvement Project are the West City Line at the southwestern limit and Mt. Hope Avenue at the eastern limit. Refer to the "*Project Location Map"* in Appendix A.

The 1.5 mile project length includes nine signalized intersections (Kingsboro Road, Genesee Street, S. Plymouth Avenue/Genesee Valley Sports Complex, Wilson Boulevard/Moore Road, Kendrick Road, Entrance to Strong Medical School Parking lot, Thomas H. Jackson Drive (Strong Hospital), East Drive and Mt. Hope Avenue) and 3 stop-controlled intersections on Scottsville Road (Vixette Street, Pioneer Street / Mineola Street and Winbourne Road) of the project limits.

Scottsville Road is classified as an urban principal arterial and carries approximately 16,800 vehicles per day. Elmwood Avenue is classified as an urban minor arterial and carries approximately 19,700 vehicles per day. Both streets are posted with the City speed limit of 30 mph.

This traffic analysis report is limited to evaluating a "road diet" or the reduction of travel lanes on Elmwood Avenue between the intersections of Scottsville Road / Elmwood Avenue / Genesee Street to the west and Elmwood Avenue /S. Plymouth Avenue to the east. The purpose of the "road diet" alternative is to provide bicycle lanes in both travel directions and a parking lane in the eastbound direction adjacent to Genesee Valley Park to the south. The existing travel lane configuration is two travel lanes eastbound and three travel lanes westbound. The road diet in this section of Elmwood Avenue would reduce the five travel lanes to three travel lanes within the existing curb to curb width while adding the bicycle lanes and parking lane. The "road diet" is a strategy to implement the City Complete Streets Policy with one of the primary objectives to create more walkable and bikeable streets. It should also be noted that a Bicycle Boulevard is proposed within the City of Rochester that would utilize Pioneer Street, Mineola Street and Genesee Street to access the Genesee River Trail that traverses Genesee Valley Park along the Genesee River. This route is primarily for cyclists choosing to access a route with fewer interactions with motorists and to gain access to Genesee Valley Park.

This report will analyze the level of service at the following intersections along Elmwood Avenue between Genesee Street and S. Plymouth Avenue that will be impacted by the proposed "road diet":

- Scottsville Road / Elmwood Avenue / Genesee Street
- Genesee Street / Genesee Park Boulevard
- Elmwood Avenue / S. Plymouth Avenue

The first two intersections listed have signals coupled together by a single controller based

on their close proximity to each other. The intersections in the study area will be analyzed based on current and projected traffic volumes.

2. Design Year

The following design years were selected for the Traffic Analysis:

- Count Year (2018)
- Estimated Time of Completion (ETC) (2019)
- ETC + 15 years (2034)

3. Growth Rates

A growth rate of 1.5% annually was applied to all traffic volumes in the study area. This rate was obtained from the *Monroe County Traffic Volume Trends* memorandum issued 6/20/2018. Refer to Appendix C for current and projected peak hour traffic volumes throughout the study area.

4. Truck Traffic

Heavy vehicle (truck) traffic percentages used in the traffic analysis in the study area are shown below. The percentages were obtained from the *2014 Classification Count Average Weekday Data Reports* provided by the NYSDOT Data Services Bureau.

- Scottsville Road, NB direction: 3.2%
- Scottsville Road, SB direction: 3.7%
- Elmwood Avenue, EB direction: 3.6%
- Elmwood Avenue, WB direction: 2.9%

B. Traffic Data

1. Traffic Operating Speeds

The current operating speeds for the eastbound and westbound travel lanes for Elmwood Avenue in the location of the proposed "Road Diet" are shown below:

- Elmwood Avenue, eastbound: 38 mph
- Elmwood Avenue, eastbound: 37 mph

These speeds are the 85th percentile speeds that were obtained from analyzing data in the *Speed Count Average Weekday Data Reports* provided by the NYSDOT Data Services Bureau.

2. Travel Times and Delays

The current travel times and delays for vehicles traveling along Elmwood Avenue between Genesee Street and S. Plymouth Avenue are shown in the Table B-1. This data was obtained in the field by recording the travel times, travel speeds, and delays for each when riding in a vehicle along the corridor. Six trial runs were conducted in each direction along Elmwood Avenue between Genesee Street and S. Plymouth Avenue. The recorded data was analyzed to establish the average data values in the table below. Refer to Appendix F for more detailed tables.

Table B-1 Existing Travel Times, Delays and LOS						
Location	Travel Times (s)		Delays (s)		LOS	
	EB	WB	EB	WB	EB	WB
Elmwood Avenue (AM Peak Hr.)						
Genesee St. to S. Plymouth Ave.	26	24	0	35	A	C
Elmwood Avenue (PM Peak Hr.)						
Genesee St. to S. Plymouth Ave.	25	26	0	10	A	B

Table B-2 Existing and Forecast Traffic Volumes			
Year	AADT	DHV	DDHV
Scottsville Road (West City Line to Genesee Street)			
Count Year (2012)	16,776	1,643	1,071
ETC (2019)	18,537	1,816	1,183
ETC+15 (2034)	24,655	2,415	1,574
Elmwood Avenue (Genesee Street to S. Plymouth Avenue)			
Count Year (2011)	19,016	1,853	1,269
ETC (2019)	21,298	2,075	1,421
ETC+15 (2034)	28,646	2,791	1,912
Elmwood Avenue (S. Plymouth Avenue to Kendrick Road)			
Count Year (2014)	20,663	1,753	1,153
ETC (2019)	22,213	1,884	1,239
ETC+15 (2034)	28,877	2,450	1,611
Elmwood Avenue (Kendrick Road to Mt. Hope Avenue)			
Count Year (2014)	19,386	1,720	986
ETC (2019)	20,840	1,849	1,060
ETC+15 (2034)	27,092	2,404	1,378

3. Traffic Volume Source

Table B-2 represents the existing and forecast traffic volumes within the project limits on the Scottsville Road – Elmwood Avenue Corridor. This data was obtained from data provided by the NYSDOT Data Services Bureau. Combining this data with traffic counts taken in the field provides base traffic volumes for use in traffic simulation and operational analysis. Further traffic volume data can be found in Appendices B and C.

4. Traffic Flow Diagrams

Traffic Flow Diagrams depict peak hour traffic volumes for each vehicle movement (left, thru, right) present at each approach of a given intersection. The diagrams provide a visual representation of peak hour traffic volumes within the study area. The Traffic Flow Diagrams for the Study Area can be found in Appendix D.

C. Description of Alternatives

1. No Build Alternative

This alternative would not implement any traffic control operational changes to the Study Area such as the optimization of existing signal timings and phases or geometric changes of any kind (lane additions, lane reductions, pavement widening or narrowing, etc.).

2. "Road Diet Scenario" Alternative

The "Road Diet Scenario" Alternative would implement the reduction of travel lanes on Elmwood Avenue between the intersection of Genesee Street to the west and S. Plymouth Avenue to the east. The existing curb to curb street width would remain unchanged, but the existing 5 travel lanes would be reduced to three lanes with a single lane travelling eastbound and two travel lanes traveling westbound. The space of the two travel lanes eliminated would be used to provide a parking lane along the southern curb line in the eastbound direction and two bicycle lanes, one in each travel direction. Refer to Appendix A for both the "road diet" and "no build" alternatives.

D. Level of Service, Delays and Queues Analysis

The proposed preliminary design includes the following elements:

1. Analysis

Synchro 10 and HCS 2010 computer software were used to analyze the traffic data and provide operational performance measurements (delays, level-of-service, and queue lengths) for the Elmwood Avenue study area. The results from the computer software analysis can be found in Appendices E thru H.

The traffic data used from the computer software printouts can be found later in this section. The key data required for analyzing the study area are stop delays, average travel speeds, queue lengths, and level of service.

Level of service was analyzed in two ways. The first looks at each intersection independently. Both the approach level-of service and the overall intersection level of service were analyzed for future operation. Synchro 10 computer software was used to obtain the levels of service. The second looks at the urban street level of service for Elmwood Avenue between Genesee street and S. Plymouth Avenue. HCS 2010 was used to obtain the level of service by following the urban street methodology found in the Highway Capacity Manual 2010.

2. Calibration

The results obtained from HCS 2010 and Synchro/SimTraffic software appear consistent with the observed results from the collection of traffic data by field observation methods during peak traffic periods

3. Level of Service Criteria

Level of service is a grading system that describes the quality of operations on a given facility type. It is rated on a scale from A to F, with A being the best operational quality (no delays, free-flowing traffic) and F being the worst (major delays, traffic gridlock).

Level of service is defined in terms of a specific measure-of-effectiveness based on the facility type analyzed. This project analyzes two different facility types: signalized intersections and urban streets. The intersection type uses a measure of control delay for determining the level of service, while the urban street facility type uses the average travel speed to determine its level of service. The minimum criteria for each level of service can be found in the table below. The levels of service are taken from the *Monroe County Department of Transportation Level of Service Expectations – Signalized Intersection* and *Section 5.2.2.1 of the NYSDOT Highway Design Manual.*

Table D-1
Level of Service Criteria

Facility Type	Measure-of-Effectiveness	LOS for Design Year
Signalized Intersection	Delay	D*
Urban Street	Average Travel Speed	D

* LOS shall be "D" or better for each individual approach and "E" or better for every individual movement with v/c ratios <1

4. Urban Street Level of Service

Urban street level of service is determined by analyzing the street segment within a facility to obtain the average travel speed. The street segment is defined by boundary intersections (endpoint and/or signalized intersections).

Table D-2 represents the urban street level of service for Elmwood Avenue within the study limits under the "No Build" Alternative. Refer to Appendix F for the detailed results of the Urban Street level of service analysis.

Table D-2 Urban Street Level of Service – "No Build" Alternative			
LOCATION	**YEAR**	**EB**	**WB**
Elmwood Avenue (AM Peak Hr.)			
Genesee Street to S. Plymouth Avenue	Count Yr. (2018) – Peak Hr.	B	C
	ETC (2019) – Peak Hr.	B	C
	ETC+15 (2034) – Peak Hr.	B	C
Elmwood Avenue (PM Peak Hr.)			
Genesee Street to S. Plymouth Avenue	Count Yr. (2018) – Peak Hr.	A	C
	ETC (2019) – Peak Hr.	A	C
	ETC+15 (2034) – Peak Hr.	B	C

Table D-3 represents the urban street level of service for Elmwood Avenue within the study limits under the "Road Diet Scenario" Alternative. Refer to Appendix H for the detailed results of the Urban Street level of service analysis.

Table D-3 Urban Street Level of Service – "Road Diet Scenario" Alternative			
LOCATION	**YEAR**	**EB**	**WB**
Elmwood Avenue (AM Peak Hr.)			
Genesee Street to S. Plymouth Avenue	ETC (2019) – Peak Hr.	B	C
	ETC+15 (2034) – Peak Hr.	B	C
Elmwood Avenue (PM Peak Hr.)			
Genesee Street to S. Plymouth Avenue	ETC (2019) – Peak Hr.	A	C
	ETC+15 (2034) – Peak Hr.	A	D

Tables D-4.1 and D-4.2 represent the signalized intersection level of service for Elmwood Avenue within the study limits under the "No Build" Alternative. Refer to Appendix E for the detailed results of the signalized intersection level of service analysis.

Table D-4.1
Intersection Level of Service – "No Build" Alternative (AM Peak Hr.)

YEAR	EB			WB			NB			SB			Overall
	L	T	R	L	T	R	L	T	R	L	T	R	
Intersection of Scottsville Road / Elmwood Avenue / Genesee Street													
Count Yr. (2018) – Peak Hr.	B	B		-	B	A	-			B	-	A	B
ETC (2019) – Peak Hr.	B	B		-	B	A	-			B	-	A	B
ETC+15 (2034) – Peak Hr.	C	C		-	C	A	-			B	-	A	B
Intersection of Genesee Street / Genesee Park Boulevard													
Count Yr. (2018) – Peak Hr.	D	-	B	-			A			D			B
ETC (2019) – Peak Hr.	D	-	B	-			A			D			B
ETC+15 (2034) – Peak Hr.	D	-	B	-			A			D			B
Intersection of Elmwood Avenue / S. Plymouth Avenue													
Count Yr. (2018) – Peak Hr.	-	A		A			A			D	A		A
ETC (2019) – Peak Hr.	-	A		A			B			D	A		A
ETC+15 (2034) – Peak Hr.	-	A		A			B			D	A		A

Table D-4.2
Intersection Level of Service – "No Build" Alternative (PM Peak Hr.)

YEAR	EB			WB			NB			SB			Overall
	L	T	R	L	T	R	L	T	R	L	T	R	
Intersection of Scottsville Road / Elmwood Avenue / Genesee Street													
Count Yr. (2018) – Peak Hr.	C	B		-	C	A	-			B	-	A	B
ETC (2019) – Peak Hr.	C	B		-	C	A	-			B	-	A	B
ETC+15 (2034) – Peak Hr.	D	B		-	D	B	-			B	-	A	C
Intersection of Genesee Street / Genesee Park Boulevard													
Count Yr. (2018) – Peak Hr.	E	-	B	-			A			E			C
ETC (2019) – Peak Hr.	E	-	B	-			A			E			C
ETC+15 (2034) – Peak Hr.	E	-	B	-			A			E			C
Intersection of Elmwood Avenue / S. Plymouth Avenue													
Count Yr. (2018) – Peak Hr.	A	A		A			C			D	A		A
ETC (2019) – Peak Hr.	A	A		A			C			D	A		A
ETC+15 (2034) – Peak Hr.	A	A		A			C			D	A		A

Tables D-4.3 and D-4.4 represent the signalized intersection level of service for Elmwood Avenue within the study limits under the "Road Diet Scenario" Alternative. Refer to Appendix G for detailed results of the signalized intersection level of service analysis.

Table D-4.3
Intersection Level of Service – "Road Diet Scenario" Alternative (AM Peak Hr.)

YEAR	EB			WB			NB			SB			Overall
	L	T	R	L	T	R	L	T	R	L	T	R	
Intersection of Scottsville Road / Elmwood Avenue / Genesee Street													
ETC (2019) – Peak Hr.	C	D		C	C	A	-			C	A	A	C
ETC+15 (2034) – Peak Hr.	**F**	**F**		C	D	A	-			D	A	A	**E**
Intersection of Genesee Street / Genesee Park Boulevard													
ETC (2019) – Peak Hr.	D	-	A	-			A			D			B
ETC+15 (2034) – Peak Hr.	C	-	A	-			A			D			B
Intersection of Elmwood Avenue / S. Plymouth Avenue													
ETC (2019) – Peak Hr.	-	A		A			B			D	A		A
ETC+15 (2034) – Peak Hr.	-	A		A			B			D	A		A

Table D-4.4
Intersection Level of Service – "Road Diet Scenario" Alternative (PM Peak Hr.)

YEAR	EB			WB			NB			SB			Overall
	L	T	R	L	T	R	L	T	R	L	T	R	
Intersection of Scottsville Road / Elmwood Avenue / Genesee Street													
ETC (2019) – Peak Hr.	D	B		C	**F**	A	-			C	A	A	D
ETC+15 (2034) – Peak Hr.	**F**	C		C	**F**	B	-			E	A	A	**E**
Intersection of Genesee Street / Genesee Park Boulevard													
ETC (2019) – Peak Hr.	E	-	B	-			A			E			C
ETC+15 (2034) – Peak Hr.	E	-	B	-			A			E			C
Intersection of Elmwood Avenue / S. Plymouth Avenue													
ETC (2019) – Peak Hr.	A	A		A			C			D	A		A
ETC+15 (2034) – Peak Hr.	A	A		A			C			D	A		A

E. Conclusions

All conclusions reached in this section are drawn from the combination of the result data from traffic signal intersection level of service analysis, and the urban street segment level of service analysis under peak hour traffic conditions for the target design year, ETC+15 (2034). The minimum design conditions outlined in Section D.3 of this report provide a basis of design criteria comparison for the recommendation of the "Road Diet Scenario" Alternative.

Elmwood Avenue "Road Diet Scenario" Alternative

It is the policy of MCDOT acting as the City of Rochester Traffic Engineer to review the appropriate traffic lane cross section of City corridors and intersection approaches when there is a road maintenance project with an opportunity to change them. This includes looking for opportunities to shift the use of available pavement width from vehicle travel lanes to auxiliary features such as right or left turn lanes, bicycle lanes and parking lanes. The purpose of the road diet is to improve the livability of the community at large as set forth in the ***City Complete Streets Policy***. Some of the potential benefits of a multilane conversion or "road diet" are:

- provides traffic calming by reducing prevailing speeds of through vehicle traffic
- makes the road more multi-model through the creation of safety features such as bicycle lanes
- creation of the on-street parking benefits public access to points of interest and reduces the speed of vehicle traffic

The County acting as the City Traffic Engineer has developed multiple criteria for consideration of a "road diet". All of the following should be met for a location to be a candidate:

1. have more than one travel lane in one or both directions
2. have peak one-way traffic volumes of less than 450 vehicles per hour per travel lane
3. the capacity of the intersections should not be compromised
4. the conversion should minimize the impact to available parking

In addition the potential safety benefits should be considered such as a reduction of accident rates or correctable accident patterns.

As part of this City of Rochester project for the Scottsville Road – Elmwood Avenue from the West City Line to Mt. Hope Avenue the City elected to analyze the impacts to the vehicle traffic operational level of service on Elmwood Avenue between Genesee Street and S. Plymouth Avenue as a potential "road diet" candidate. Refer to Section C for a detailed description of the proposed lane travel lane reduction and reuse of the pavement width for a parking lane and bicycle lanes.

Within this segment of the project on Elmwood Avenue the existing travel lane configuration exceeds one travel lane in both directions. There is currently no on-street parking. The peak one-way traffic volumes exceeds the maximum of 450 vehicles per hour per travel lane criteria stated above as shown in table B-2 of the report. The results of the impacted signalized intersection operational level of service are shown in the report in tables D-4.1 thru D-4.4. The results of the Urban Street operation level of service in the area of the proposed "road diet" are shown in tables D-2 and D-3.

The resulting operational level of service at the intersection of Scottsville Road / Elmwood Avenue / Genesee Street under the proposed road diet scenario shows a reduction of the traffic capacity and would no longer meet the MCDOT signalized intersection minimum level of service for both the approaches and overall signal in the ETC (2019) and ETC+15 (2034) years of analysis. This would not be acceptable and eliminates this candidate from being considered for the proposed road diet.

In an effort to implement the ***City Complete Streets Policy*** the project will consider the use of shared use outside travel lanes to accommodate more bicyclist usage instead of bicycle lanes. This alternative will maintain the existing travel lanes. There are multiple public off-street parking lots serving the Genesee Park access in the area, therefore, adding an on-street parking lane along the southern curb line in the eastbound travel direction on Elmwood Avenue between Genesee Street and S. Plymouth Avenue does not address a critical need to provide more public access to the public park facilities at this location.

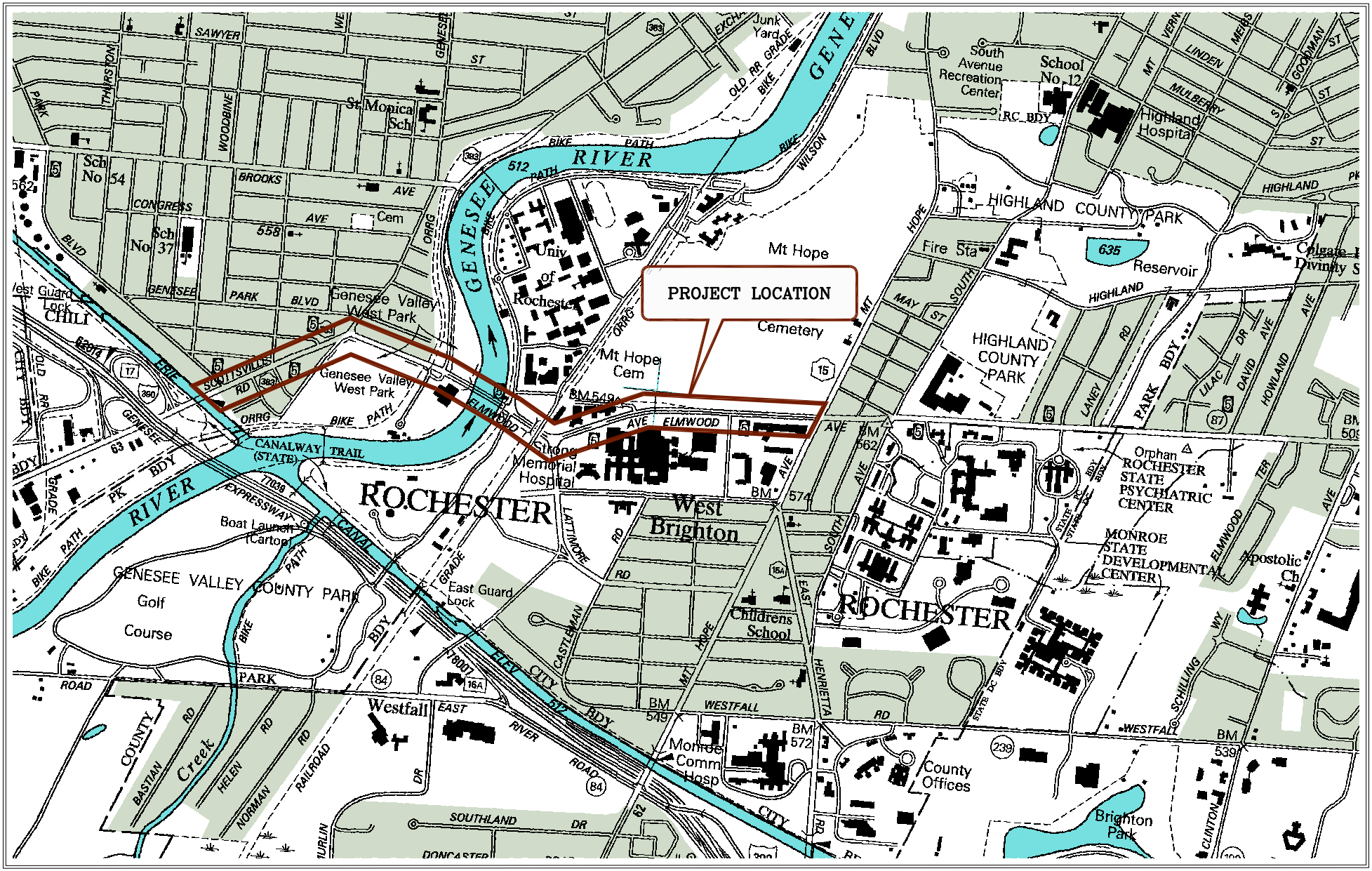
It should also be noted that a Bicycle Boulevard is proposed within the City of Rochester that would utilize Pioneer Street, Mineola Street and Genesee Street to access the Genesee River Trail that traverses Genesee Valley Park along the Genesee River. This route is primarily for cyclists choosing to access a route with fewer interactions with motorists.

Based on the conclusions presented above, the “Road Diet Scenario” build alternative is not recommended due to not meeting the design criteria for the impacted signalized intersections operational level of service as provided by Monroe County Department of Transportation acting as the City of Rochester Traffic Engineer. The Scottsville Road – Elmwood Avenue transportation corridor is a major commuter and access route to the University of Rochester River Campus and Medical Center properties on Elmwood Avenue. The University of Rochester through their Master Plan has continued future planned development of their facilities that will serve to generate growth impacting the surrounding transportation network. Future accessibility to the Medical Center is vital to the community and any considered improvements to the transportation network that cause a reduction to the operational level of service to surrounding transportation network will not be considered by the City Traffic Engineer.

APPENDIX A

Location Maps

“No Build” & “Road Diet” Alternative Preliminary Plans and Typical Sections



N

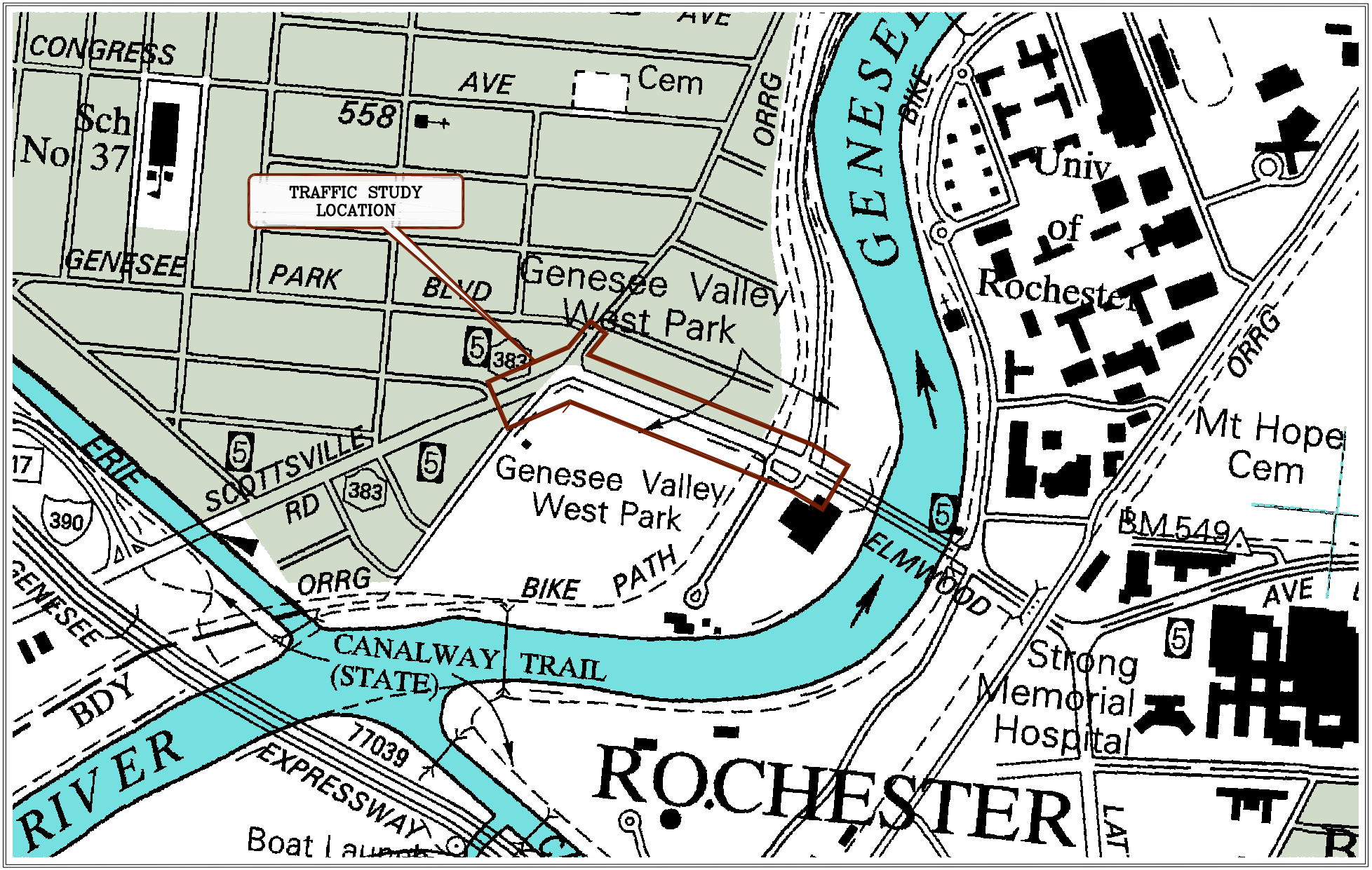
Lu Engineers
ENVIRONMENTAL • TRANSPORTATION • CIVIL
339 East Avenue, Suite 200
Rochester, New York 14604
(585) 385-7417
Fax: (585) 546-1634
luengineers.com

FIGURE 1.
SCOTTSVILLE ROAD – ELMWOOD AVENUE IMPROVEMENT PROJECT
(WEST CITY LINE TO MT. HOPE AVENUE)
PROJECT LOCATION MAP

CITY OF ROCHESTER

DATE:	AUGUST 2018
COR PN:	17102
DRAWN BY:	JRM

MAP SOURCE:
NYSDOT RASTER QUADRANGLES – 1997 DOT EDITION
ROCHESTER WEST, ROCHESTER EAST,
WEST HENRIETTA AND PITTSFORD



N

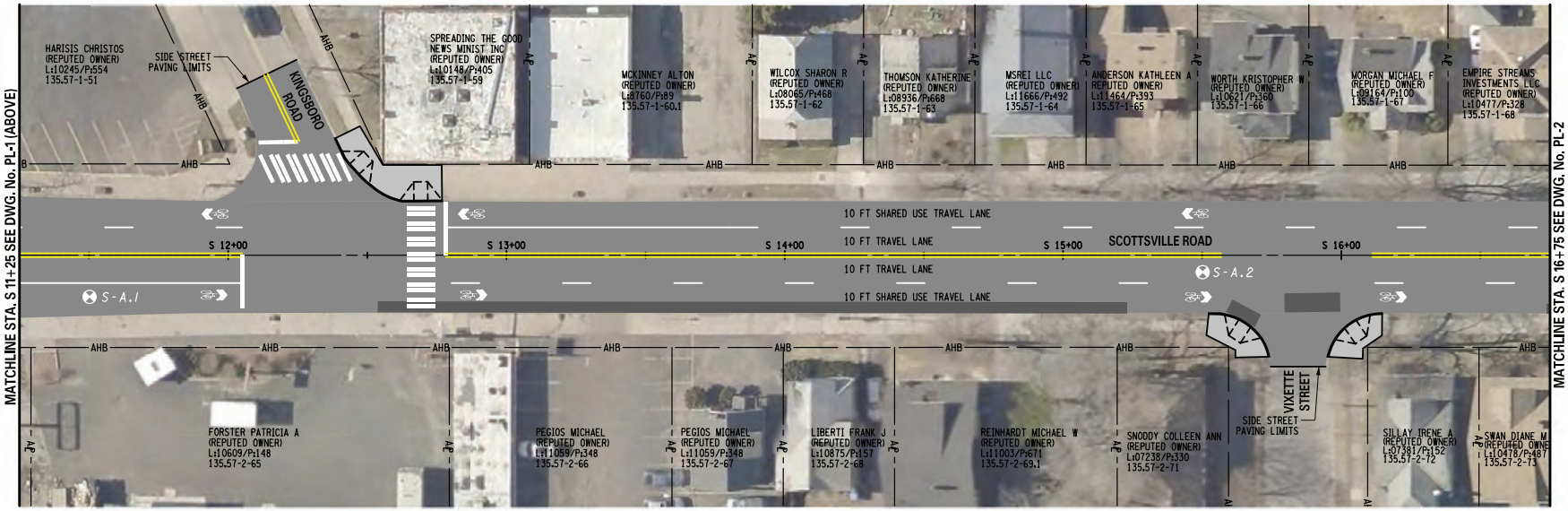
Lu Engineers
ENVIRONMENTAL • TRANSPORTATION • CIVIL
339 East Avenue, Suite 200
Rochester, New York 14604
(585) 385-7417
Fax: (585) 546-1634
luengineers.com

FIGURE 2.
SCOTTSVILLE ROAD – ELMWOOD AVENUE IMPROVEMENT PROJECT
(WEST CITY LINE TO MT. HOPE AVENUE)
TRAFFIC STUDY LOCATION MAP

CITY OF ROCHESTER

DATE:	AUGUST 2018
COR PN:	17102
DRAWN BY:	JRM

MAP SOURCE:
NYSDOT RASTER QUADRANGLES – 1997 DOT EDITION
ROCHESTER WEST, ROCHESTER EAST,
WEST HENRIETTA AND PITTSFORD



0 20 40 60

Department of Environmental Services Architecture and Engineering Services City of Rochester, New York	
ASSISTANT MANAGING ENGINEER	LISA Y. REYES
CITY ENGINEER	KAMAL L. CRUES, P.E.

SEED FILE DATE FEBRUARY 26, 2018

PROJECT TITLE
SCOTTSVILLE ROAD - ELMWOOD AVENUE
IMPROVEMENT PROJECT
(WEST CITY LINE - MT HOPE AVE)

NO.	REVISION	BY	DATE

ISSUED	06/17/2018
CHECKED	JMO
DRAWN	JRM
DESIGN	JRM
SCALE	1" = 20'
PROJECT NUMBER	17102

DRAWING TITLE
ROADWAY PLAN
PL-1

DRAWING NO.
01
OF 15

FILE NAME = Roadway Plans.dgn
DATE/TIME = 06-SEP-2018 14:39
USER = JMessenger

PROJECT TITLE							
SCOTTSVILLE ROAD - ELMWOOD AVENUE IMPROVEMENT PROJECT (WEST CITY LINE - MT HOPE AVE)							

Department of Environmental Services
Architecture and Engineering Services
City of Rochester, New York

ASSISTANT MANAGING ENGINEER LISA Y. REYES
CITY ENGINEER KAMAL L. CRUES, P.E.

SEED FILE DATE FEBRUARY 26, 2018

PROJECT TITLE
SCOTTSVILLE ROAD - ELMWOOD AVENUE
IMPROVEMENT PROJECT
(WEST CITY LINE - MT HOPE AVE)

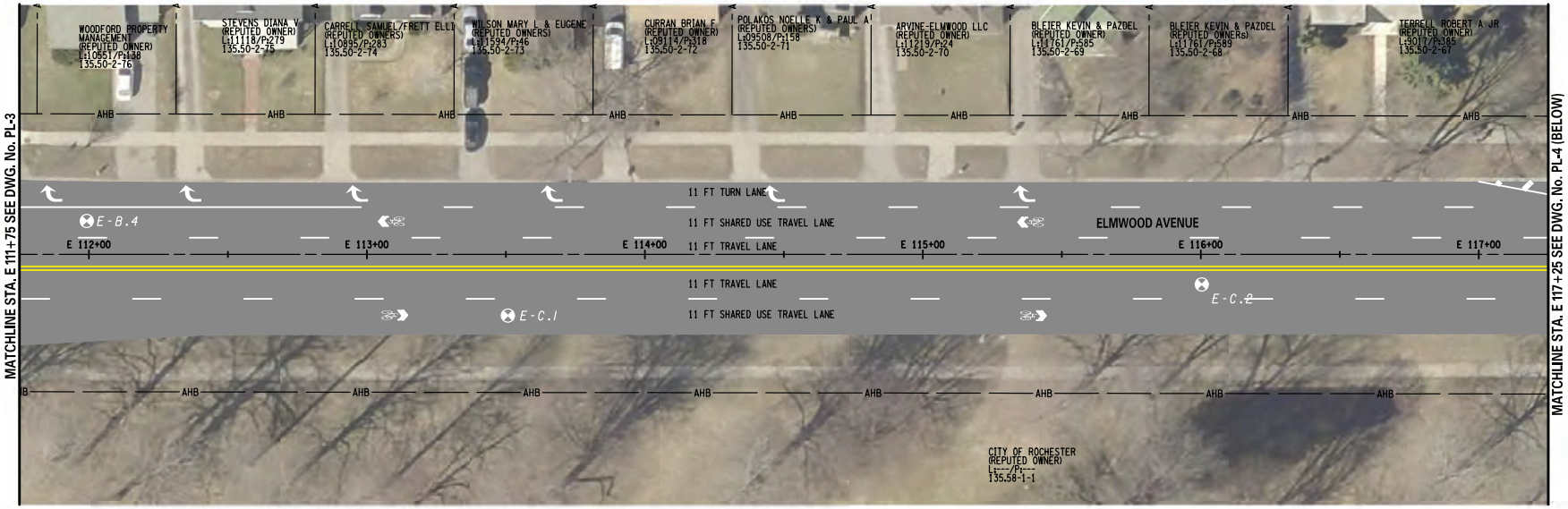
NO.	REVISION	BY	DATE

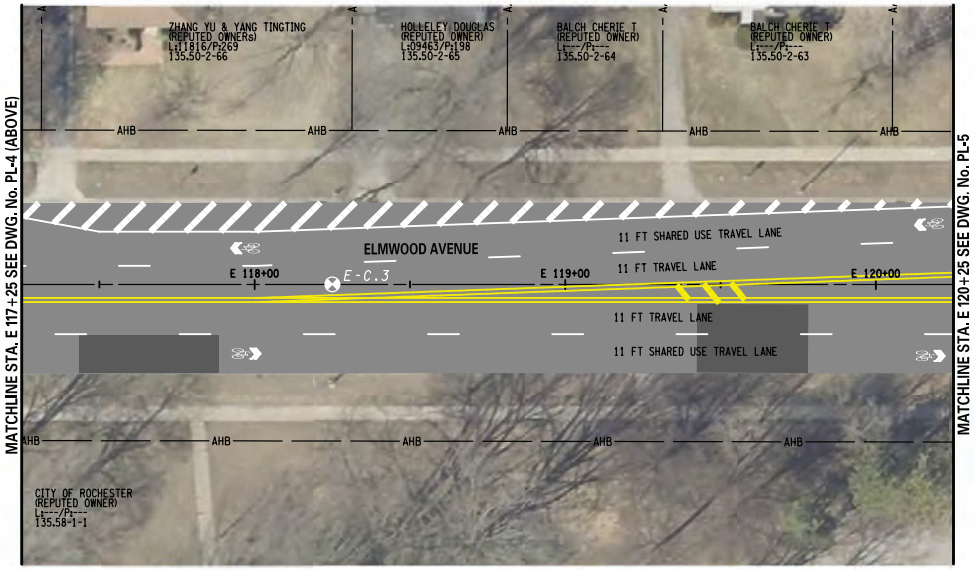
ISSUED 06/17/2018
CHECKED JMO
DRAWN JRM
DESIGN JRM
SCALE 1" = 20'
PROJECT NUMBER 17102

DRAWING TITLE
ROADWAY PLAN
PL-3

DRAWING NO.
03
15

FILE NAME = Roadway Plans.dgn
DATE/TIME = 06-SEP-2018 14:40
USER = JMessenger





0 20 40 60

SEED FILE DATE FEBRUARY 26, 2018

Department of Environmental Services
Architecture and Engineering Services
City of Rochester, New York

ASSISTANT MANAGING ENGINEER LISA Y. REYES
CITY ENGINEER KAMAL L. CRUES, P.E.

PROJECT TITLE
SCOTTSVILLE ROAD - ELMWOOD AVENUE
IMPROVEMENT PROJECT
(WEST CITY LINE - MT HOPE AVE)

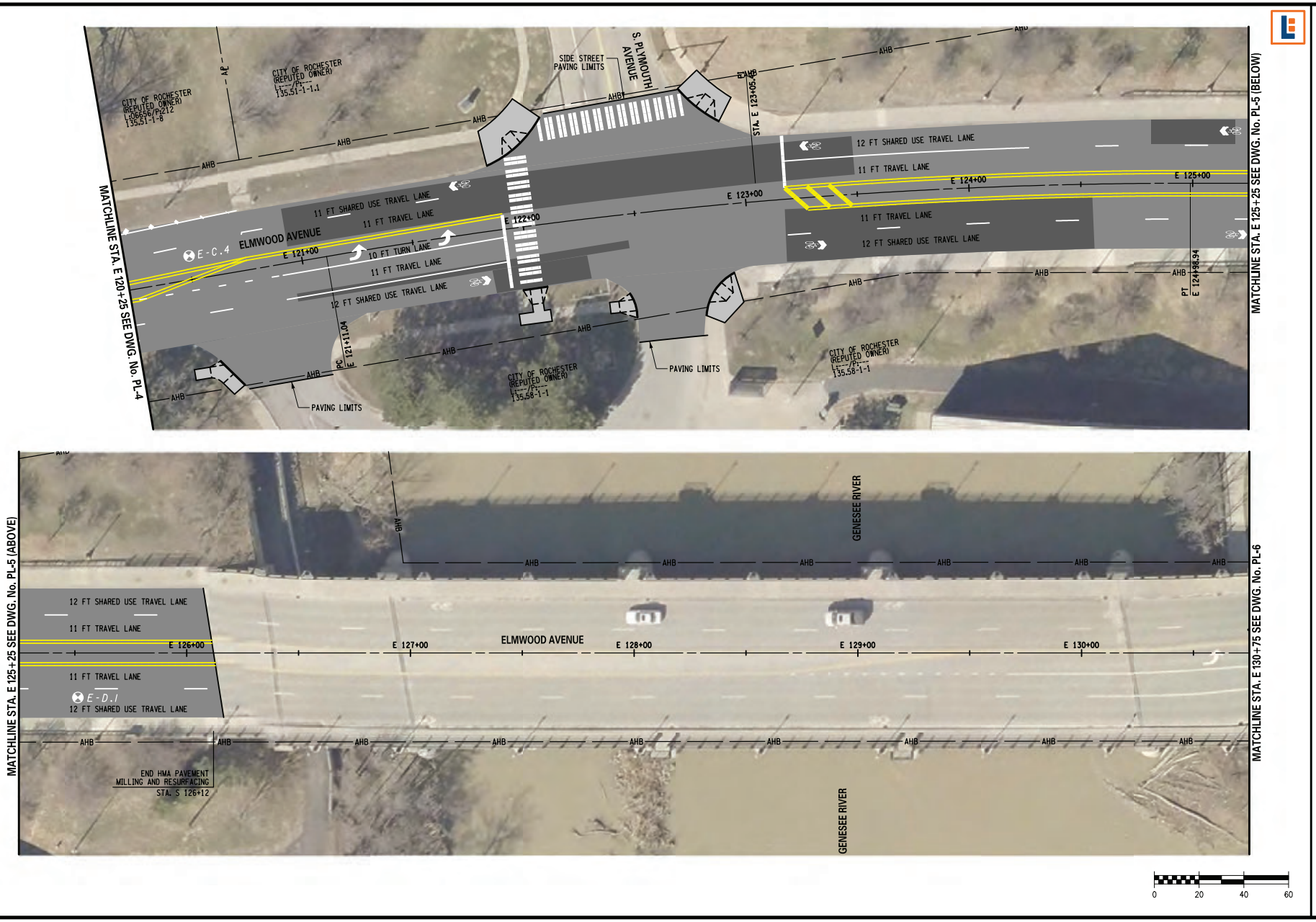
NO.	REVISION	BY	DATE

ISSUED 08/17/2018
CHECKED JMO
DRAWN JRM
DESIGN JRM
SCALE 1" = 20'
PROJECT NUMBER 17102

DRAWING TITLE
ROADWAY PLAN
PL-4

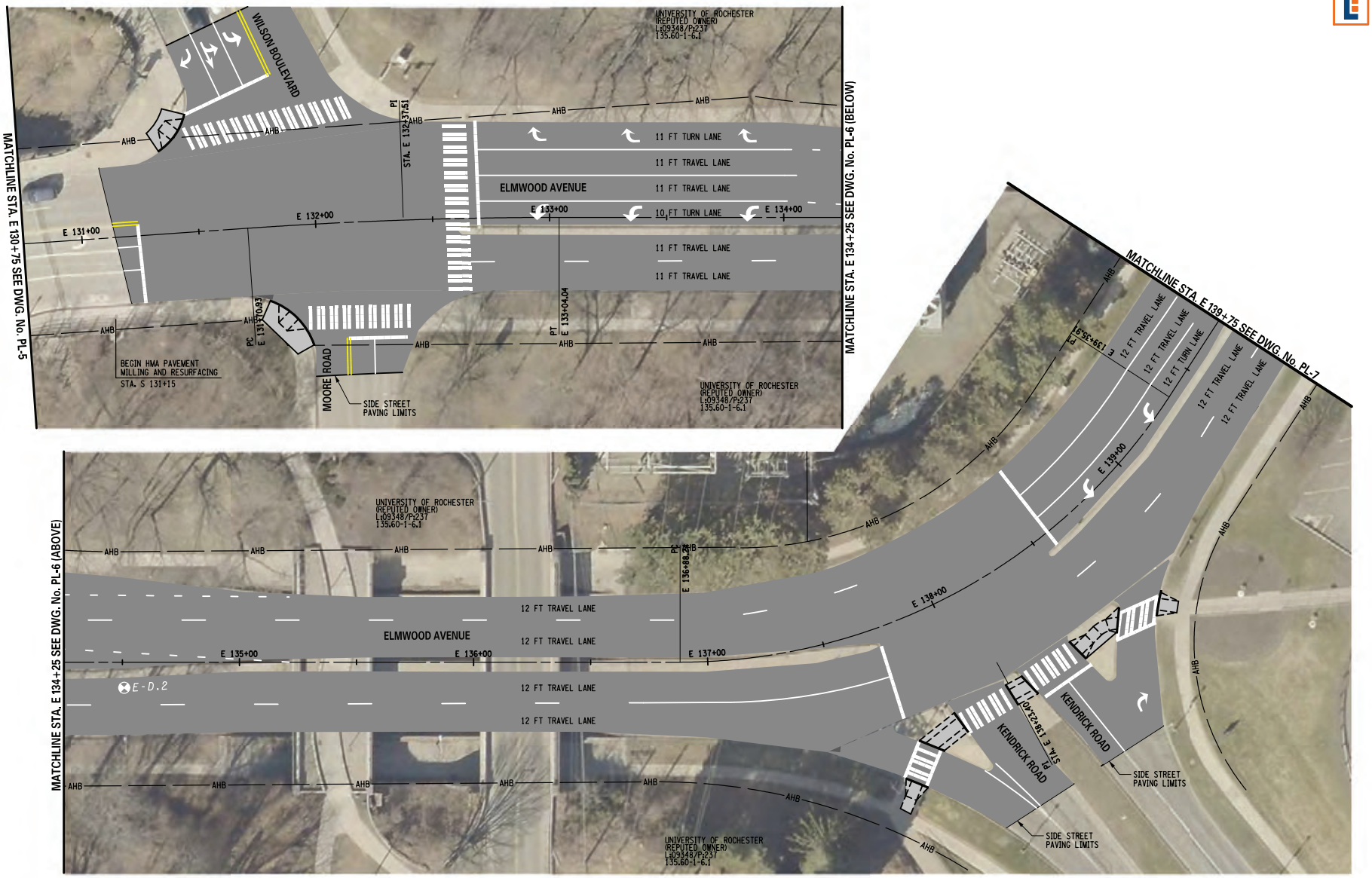
DRAWING NO.
04
OF 15

FILE NAME = Roadway Plans.dgn
PLOT TIME = 08-SEP-2018 14:41
USER = JMessenger



DRAWING TITLE	ROADWAY PLAN PL-5
ISSUED	06/17/2018
CHECKED	JWO
DRAWN	JRM
DESIGN	JRM
SCALE	1" = 20'
PROJECT NUMBER	171102
NO.	REVISION BY DATE
PROJECT TITLE	SCOTTSVILLE ROAD - ELMWOOD AVENUE IMPROVEMENT PROJECT (WEST CITY LINE - MT HOPE AVE)
Department of Environmental Services Architecture and Engineering Services City of Rochester, New York	
ASSISTANT MANAGING ENGINEER	LISA Y. REYES
CITY ENGINEER	KAMAL L. CRUES, P.E.
SEED FILE DATE	FEBRUARY 26, 2018
DRAWING NO.	05 / 15

FILE NAME = Roadway Plans.dgn
PLOTTING = 06-SEP-2018 14:42
USER = JMessenger



Department of Environmental Services
Architecture and Engineering Services
City of Rochester, New York

ASSISTANT MANAGING ENGINEER LISA Y. REYES
CITY ENGINEER KAMAL L. CRUES, P.E.

SEED FILE DATE FEBRUARY 26, 2018

PROJECT TITLE
SCOTTSVILLE ROAD - ELMWOOD AVENUE
IMPROVEMENT PROJECT
(WEST CITY LINE - MT HOPE AVE)

NO.	REVISION	BY	DATE

ISSUED 06/17/2018
CHECKED JMO
DRAWN JRM
DESIGN JRM
SCALE 1" = 20'
PROJECT NUMBER 17102

DRAWING TITLE
ROADWAY PLAN
PL-6

DRAWING NO.
06
15

FILE NAME = Roadway Plans.dgn
DATE/TIME = 06-12-2018 14:43
USER = JMessenger

DRAWING TITLE	DRAWING NO.
ROADWAY PLAN **PL-7**	07 / 15

ISSUED	08/17/2018
CHECKED	JWO
DRAWN	JRM
DESIGN	JRM
SCALE	1" = 20'
PROJECT NUMBER	11102

NO.	REVISION	BY	DATE

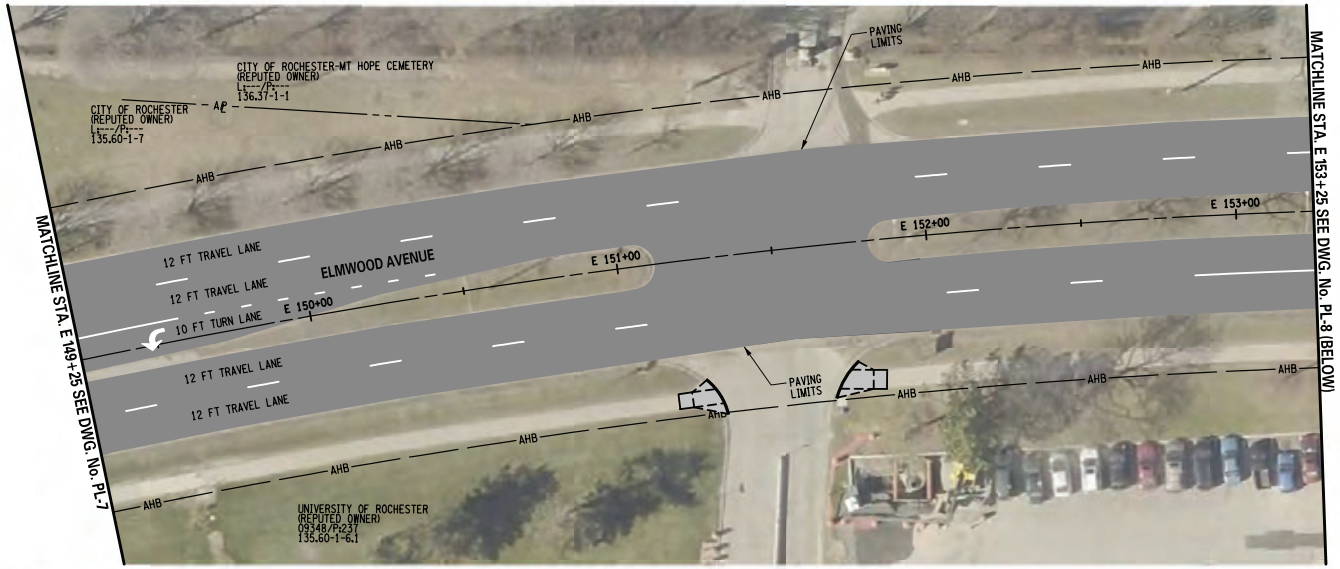
PROJECT TITLE
SCOTTSVILLE ROAD - ELMWOOD AVENUE IMPROVEMENT PROJECT (WEST CITY LINE - MT HOPE AVE)

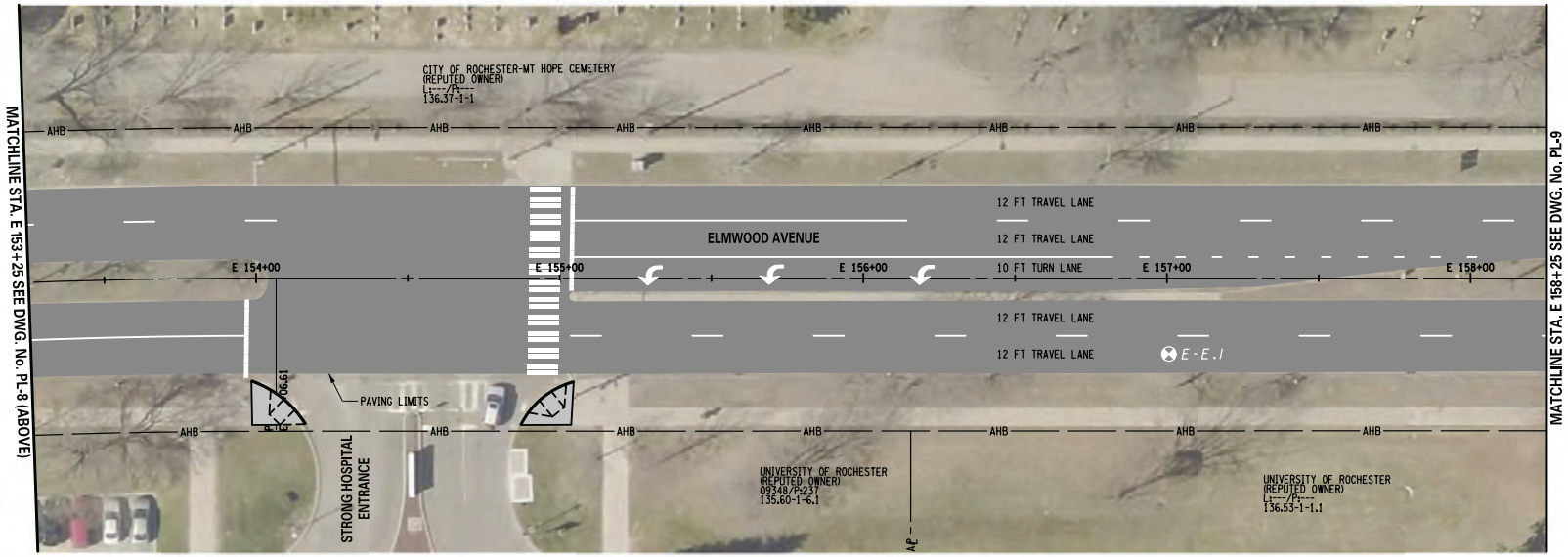
Department of Environmental Services
Architecture and Engineering Services
City of Rochester, New York

ASSISTANT MANAGING ENGINEER LISA V. REYES
CITY ENGINEER KAMAL L. GHLES, P.E.

SEED FILE DATE FEBRUARY 26, 2018

FILE NAME = Roadway Plans.dgn
DATE/TIME = 06-SEP-2018 14:44
USER = JMessenger





0 20 40 60

PAVING LIMITS

SEED FILE DATE FEBRUARY 26, 2018

Department of Environmental Services
Architecture and Engineering Services
City of Rochester, New York

ASSISTANT MANAGING ENGINEER LISA Y. REYES
CITY ENGINEER KAMAL L. CRUES, P.E.

PROJECT TITLE
SCOTTSVILLE ROAD - ELMWOOD AVENUE
IMPROVEMENT PROJECT
(WEST CITY LINE - MT HOPE AVE)

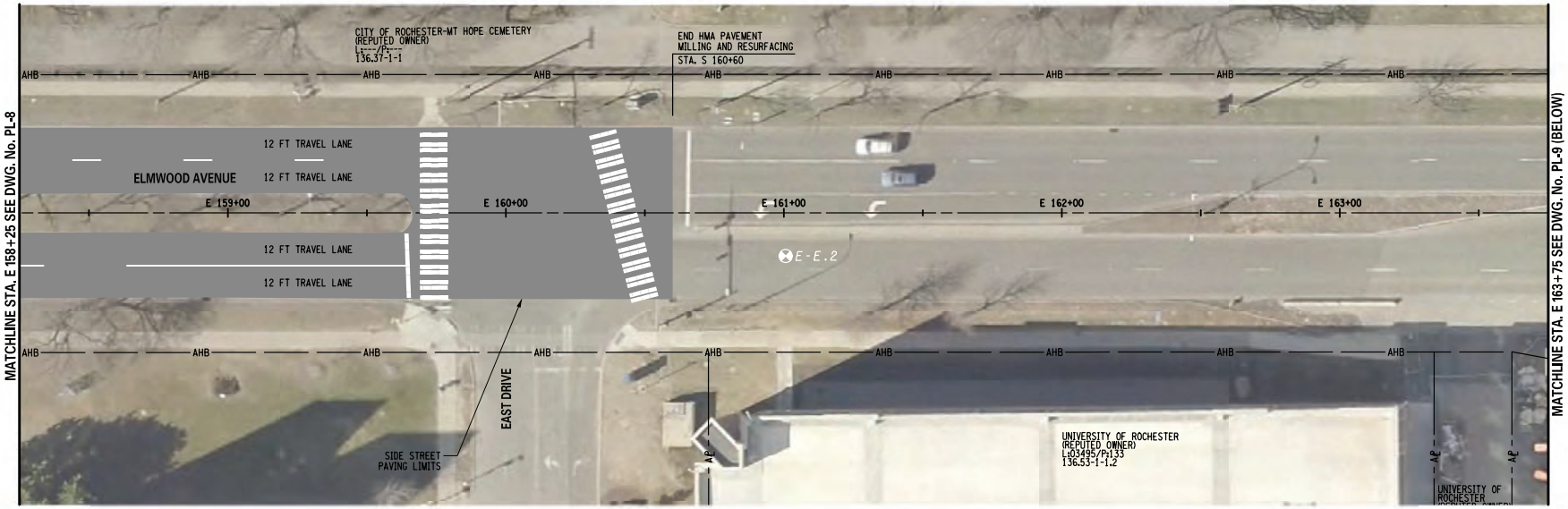
NO.	REVISION	BY	DATE

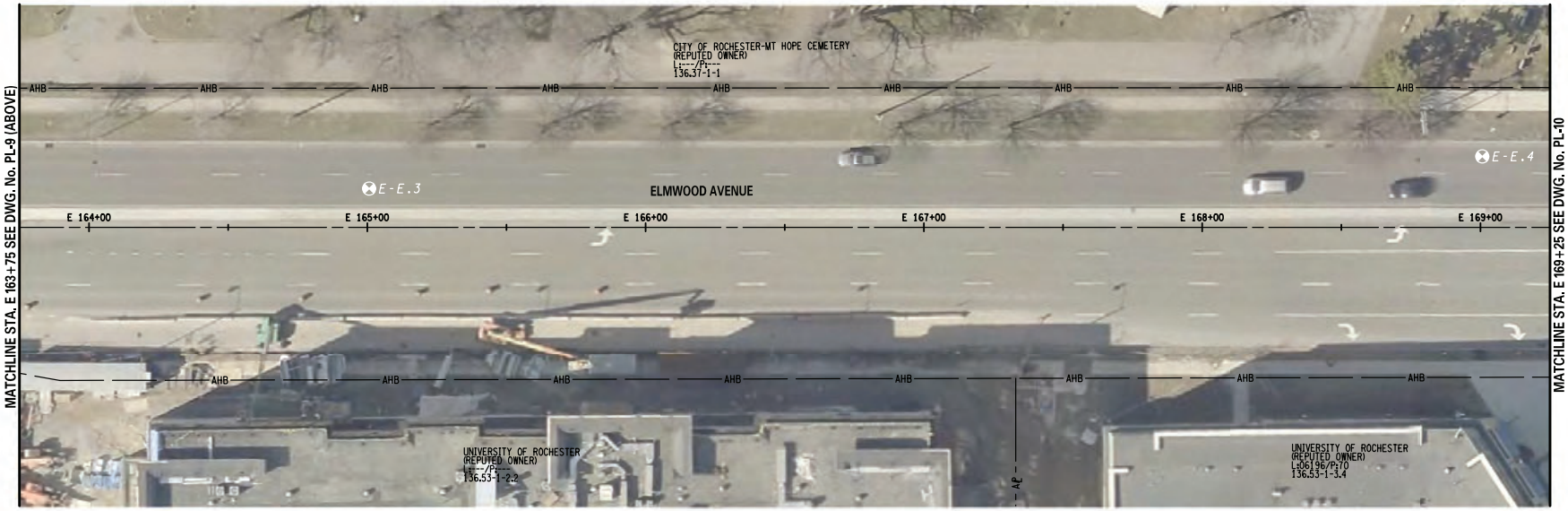
ISSUED 08/17/2018
CHECKED JMO
DRAWN JRM
DESIGN JRM
SCALE 1" = 20'
PROJECT NUMBER 171102

DRAWING TITLE
ROADWAY PLAN
PL-8

DRAWING NO.
08
OF 15

FILE NAME = Roadway Plans.dgn
DATE/TIME = 08-17-2018 14:45
USER = JMessenger





0 20 40 60

Department of Environmental Services
Architecture and Engineering Services
City of Rochester, New York

ASSISTANT MANAGING ENGINEER LISA Y. REYES
CITY ENGINEER KAMAL L. CRUES, P.E.

SEED FILE DATE FEBRUARY 26, 2018

PROJECT TITLE
SCOTTSVILLE ROAD - ELMWOOD AVENUE
IMPROVEMENT PROJECT
(WEST CITY LINE - MT HOPE AVE)

NO.	REVISION	BY	DATE

ISSUED 06/17/2018
CHECKED JMO
DRAWN JRM
DESIGN JRM
SCALE 1" = 20'
PROJECT NUMBER 171102

DRAWING TITLE
ROADWAY PLAN
PL-9

DRAWING NO.
09
OF 15

FILE NAME = Roadway Plans.dgn
PLOT TIME = 09-SEP-2018 14:45
USER = JMessenger

0 20 40 60

ISSUED	06/17/2018
CHECKED	JMO
DRAWN	JRM
DESIGN	JRM
SCALE	1" = 20'
PROJECT NUMBER	171102

NO.	REVISION	BY	DATE

PROJECT TITLE

SCOTTSVILLE ROAD - ELMWOOD AVENUE
IMPROVEMENT PROJECT
(WEST CITY LINE - MT HOPE AVE)

Department of Environmental Services
Architecture and Engineering Services
City of Rochester, New York

ASSISTANT MANAGING ENGINEER LISA Y. REYES
CITY ENGINEER KAMAL L. CRUES, P.E.

SEED FILE DATE FEBRUARY 26, 2018

DRAWING TITLE

ROADWAY PLAN
PL-10

DRAWING NO.
10
OF 15

FILE NAME = Roadway Plans.dgn
PLOT TIME = 06-SEP-2018 14:47
USER = JMessenger

DRAWING TITLE	DRAWING NO.
ROADWAY PLAN "ROAD DIET" - ALT. 1A PL-2A	11 / 15

ISSUED	08/17/2018
CHECKED	JWO
DRAWN	JRM
DESIGN	JRM
SCALE	1" = 20'
PROJECT NUMBER	17102

NO.	REVISION	BY	DATE

PROJECT TITLE
SCOTTSVILLE ROAD - ELMWOOD AVENUE IMPROVEMENT PROJECT (WEST CITY LINE - MT HOPE AVE)

Department of Environmental Services
Architecture and Engineering Services
City of Rochester, New York

ASSISTANT MANAGING ENGINEER LISA V. REYES
CITY ENGINEER KAMAL L. GHLES, P.E.

SEED FILE DATE FEBRUARY 26, 2018

FILE NAME = Roadway Plans.dgn
DATE/TIME = 20-AUG-2018 12:50
USER = JMessenger

DRAWING TITLE	DRAWING NO.
ROADWAY PLAN "ROAD DIET" - ALT. 1A PL-3A	12 / 15

ISSUED	08/17/2018
CHECKED	JWO
DRAWN	JRM
DESIGN	JRM
SCALE	1" = 20'
PROJECT NUMBER	17102

NO.	REVISION	BY	DATE

PROJECT TITLE
SCOTTSVILLE ROAD - ELMWOOD AVENUE IMPROVEMENT PROJECT (WEST CITY LINE - MT HOPE AVE)

Department of Environmental Services
Architecture and Engineering Services
City of Rochester, New York

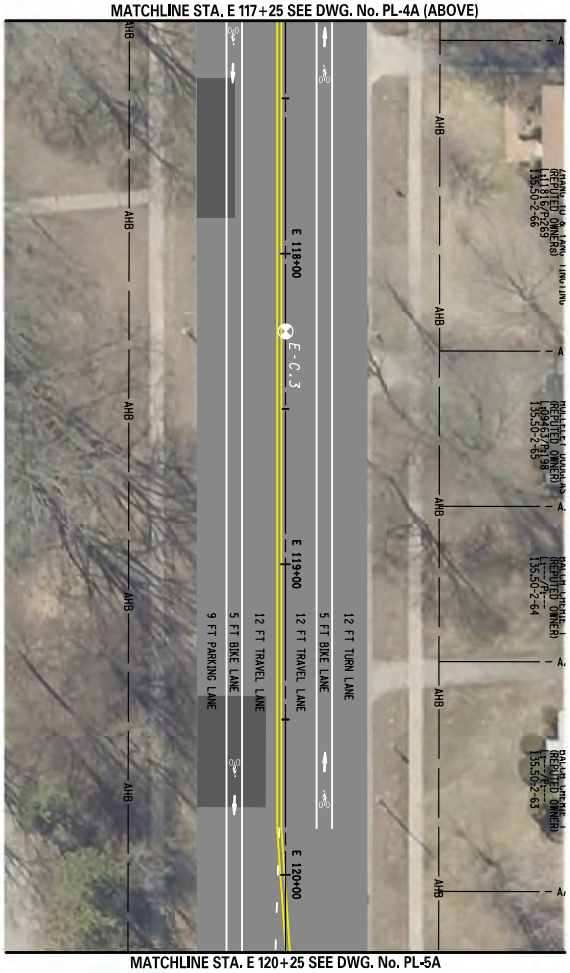
ASSISTANT MANAGING ENGINEER LISA V. REYES
CITY ENGINEER KAMAL L. GHUES, P.E.

SEED FILE DATE FEBRUARY 26, 2018

FILE NAME = Roadway Plans.dgn
DATE/TIME = 20-AUG-2018 12:50
USER = JMessenger

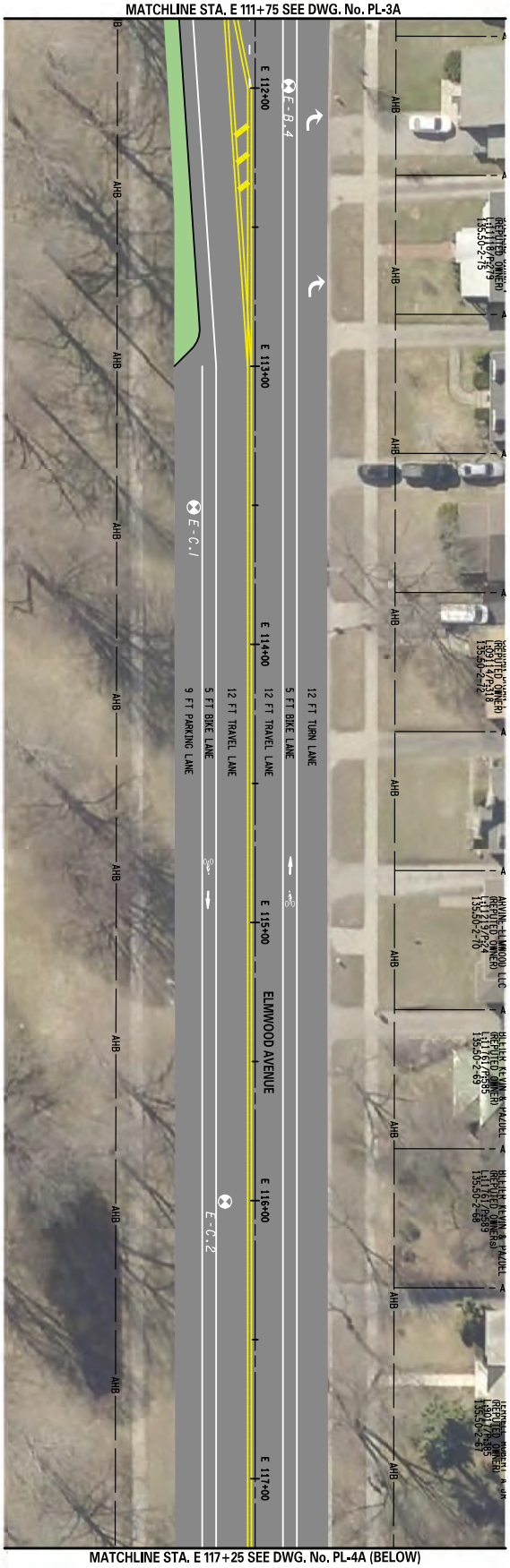
FILE NAME = Roadway Plans.dgn
DATE/TIME = 20-AUG-2018 12:51
USER = JMessenger

MATCHLINE STA. E 117+25 SEE DWG. No. PL-4A (ABOVE)



MATCHLINE STA. E 120+25 SEE DWG. No. PL-5A

MATCHLINE STA. E 111+75 SEE DWG. No. PL-3A



MATCHLINE STA. E 117+25 SEE DWG. No. PL-4A (BELOW)

0 20 40 60

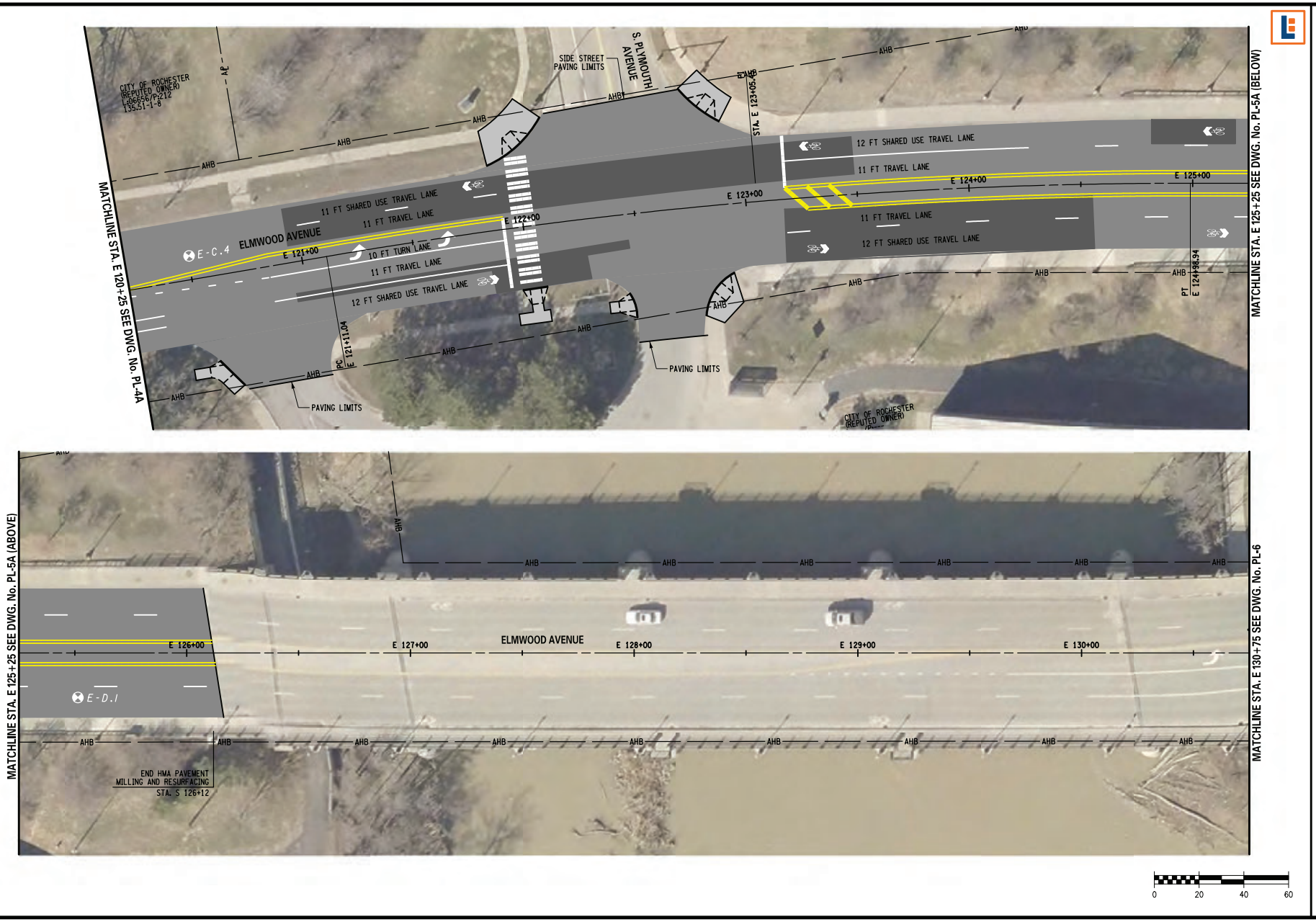
DRAWING NO. 13 / 15	DRAWING TITLE: ROADWAY PLAN "ROAD DIET" - ALT. 1A PL-4A	ISSUED 08/17/2018			
		CHECKED JWO			
		DRAWN JRM			
		DESIGN JRM			
		SCALE 1" = 20'			
		PROJECT NUMBER 17102	NO.	REVISION	BY / DATE

PROJECT TITLE
SCOTTSVILLE ROAD - ELMWOOD AVENUE IMPROVEMENT PROJECT (WEST CITY LINE - MT HOPE AVE)

Department of Environmental Services
Architecture and Engineering Services
City of Rochester, New York

ASSISTANT MANAGING ENGINEER LISA Y. REYES
CITY ENGINEER KAMAL L. CRUES, P.E.

SEED FILE DATE FEBRUARY 26, 2018



Department of Environmental Services
Architecture and Engineering Services
City of Rochester, New York

ASSISTANT MANAGING ENGINEER LISA Y. REYES
CITY ENGINEER KAMAL L. CRUES, P.E.

SEED FILE DATE FEBRUARY 26, 2018

PROJECT TITLE
SCOTTSVILLE ROAD - ELMWOOD AVENUE
IMPROVEMENT PROJECT
(WEST CITY LINE - MT HOPE AVE)

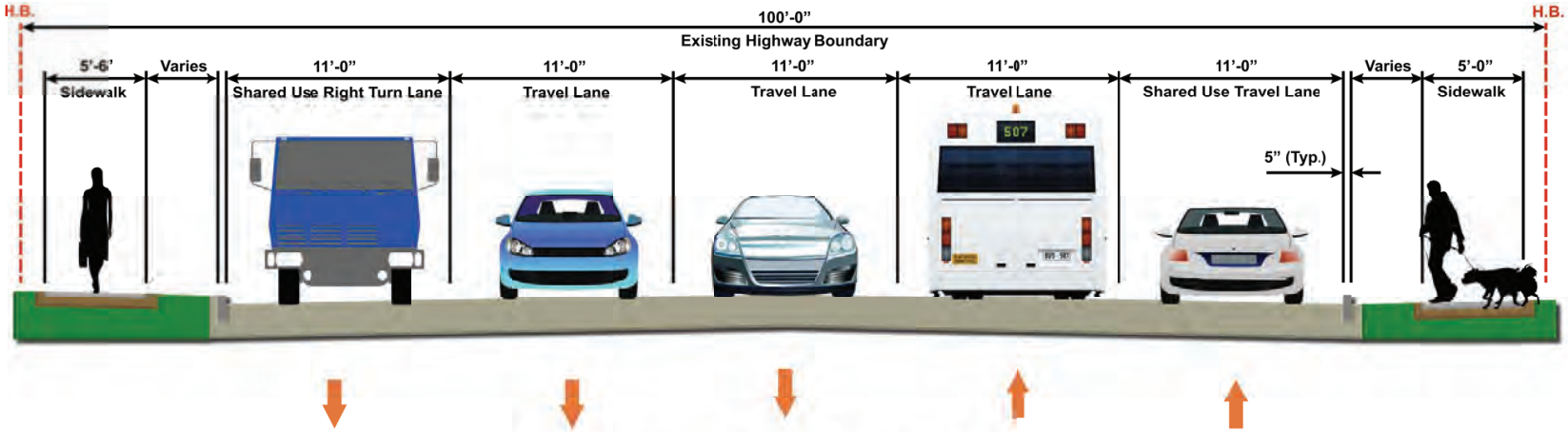
NO.	REVISION	BY	DATE

ISSUED 06/17/2018
CHECKED JWO
DRAWN JRM
DESIGN JRM
SCALE 1" = 20'
PROJECT NUMBER 171102

DRAWING TITLE
ROADWAY PLAN
"ROAD DIET" - ALT. 1A
PL-5A

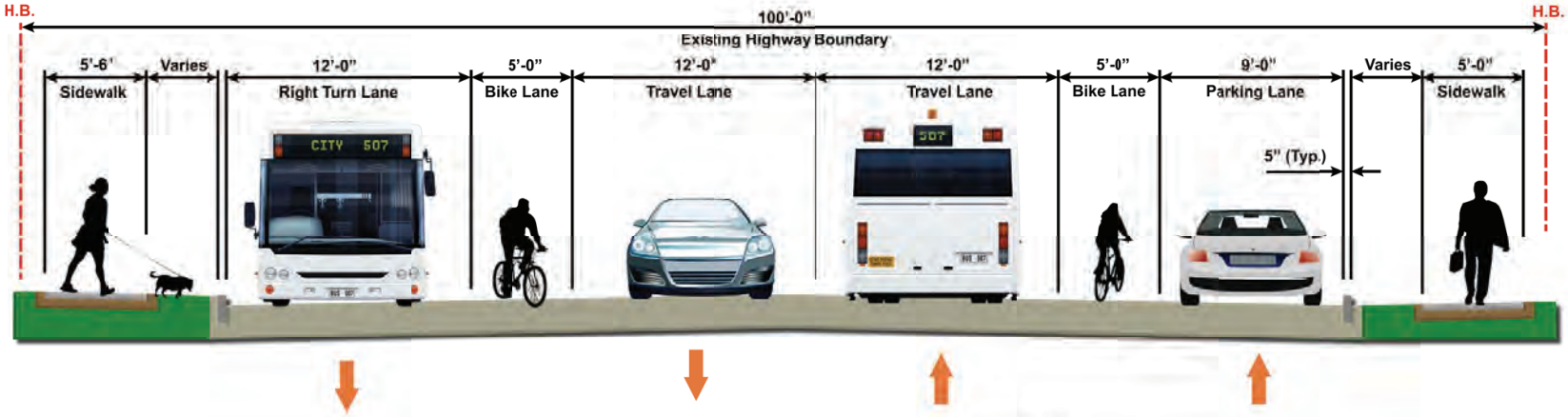
DRAWING NO.
14
OF
15

FILE NAME = Roadway Plans.dgn
DATE/TIME = 2018-06-20 12:31
USER = JMessenger



Elmwood Avenue - No Build Alternative

Sta. E 110+00+/- to Sta. E 122+25+/-



Elmwood Avenue - "Road Diet" Alternative

Sta. E 110+00+/- to Sta. E 122+25+/-

ISSUED	08/17/2018
CHECKED	JWO
DRAWN	JRM
DESIGN	JRM
SCALE	3/8" = 1'-0"
PROJECT NUMBER	17302

NO.	REVISION	BY	DATE

PROJECT TITLE
SCOTTSVILLE ROAD - ELMWOOD AVENUE
IMPROVEMENT PROJECT
(WEST CITY LINE - MT HOPE AVE)

Department of Environmental Services
Architecture and Engineering Services
City of Rochester, New York

CITY ENGINEER
ASSTANT MANAGING ENGINEER LISA Y. REYES
KAMAL L. CRUES, P.E.

SEED FILE DATE FEBRUARY 26, 2018

DRAWING TITLE
TRAFFIC STUDY
TYPICAL SECTIONS

DRAWING NO.
15
OF
15

FILE NAME=DGN$SPECIFICATIONS$ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789012345678901234567890123456789012345
DATE/TIME=DATE$&TIME$
USER=DGN$USERNAME

APPENDIX B

Vehicle Volume Summary Sheets

Vehicle Volume
Summary Sheet

Project No.: 4230	Project Description : Scottsville Rd and	City / Village / Town:	County:	Intersection: Genesee St /	Cycle (s): 120
Traffic Counters: Video	Elmwood Ave Improvements (COR ID: 17102)	Rochester	Monroe	Scottsville Rd / Elmwood Ave	Area Type: CBD
Weather: Refer to Notes		Road Surface Condition: Refer to Notes		Signal: Y, 7-Phase, Actuated	Date: See Notes

	TIME PERIOD	EASTBOUND Scottsville Road						WESTBOUND Elmwood Avenue						NORTHBOUND						SOUTHBOUND Genesee Street					
Signal	Actuated/Pretimed (P/A)	A	A					A												A					
	Ped. Button (Y/N)	Y	Y					Y												Y					
	Min. Ped. Green, G_p(s)	12	12					12												12					
	Green Time, G(s)	10.0	39.0					24.0												57.0					
	Yellow+All Red, Y(s)	5.0	6.0					6.0												6.0					
Traffic	Arrival Type	6	6					6												6					
	Heavy Vehicles, HV(%)	3%	3%					3%												2%					
	Approach Speed, S_A	30±	30±					30±												30±					
	Ped. Flow Rate, V_{ped}	NA	NA					NA												NA					
	% Veh Arrival @ Green, P	NA	NA					NA												NA					
	Parking Activity, N_m	NA	NA					NA												NA					
	Bus Stop, N_b	NA	NA					NA												NA					
Geometric	Grade, G (%)	1%±	1%±					1%±												1%±					
	Parking	NA	NA					NA												NA					
	Storage Bay Length (L_s)	75						NA												NA					
	Lane Width (W)	11	11					11	11											11		11			
	# Lanes (N)	1	2	0				0	2	1										2	0	1			
	Lane Group	L	T	R	PED	ROR	HV	L	T	R	PED	ROR	HV	L	T	R	PED	ROR	HV	L	T	R	PED	ROR	HV
	7:30 AM	0	0	0	0			0	0	0	0									0	0	0	0		
	7:45 AM	56	136	1	0			0	57	61	0									151	2	43	1		
	8:00 AM	104	288	3	0			1	111	121	0									332	5	75	1		
	8:15 AM	161	433	5	0			1	166	209	0									484	6	102	2		
	8:30 AM	190	548	10	0			2	200	277	0									626	11	146	2		
	PHF	0.83	0.90	0.50				0.50	0.88	0.79										0.86	0.55	0.83			

Lane Group	Σ TOT	T(h) TOT	T(h) PHF
7:30 AM			
7:45 AM	507	507	
8:00 AM	1040	533	0.94
8:15 AM	1567	527	
8:30 AM	2010	443	

Notes: *Traffic recorded via MCDOT video cameras on July 25-26, 2018 under varied weather and road surface conditions. Counts are cumulative thru time period and counts for vehicle right on reds (ROR) or heavy vehicles (HV) were not taken.*

Vehicle Volume
Summary Sheet

Project No.: 4230	Project Description : Scottsville Rd and	City / Village / Town:	County:	Intersection: Genesee St /	Cycle (s): 150
Traffic Counters: Video	Elmwood Ave Improvements (COR ID: 17102)	Rochester	Monroe	Scottsville Rd / Elmwood Ave	Area Type: CBD
Weather: Refer to Notes		Road Surface Condition: Refer to Notes		Signal: Y, 7-Phase, Actuated	Date: See Notes

	TIME PERIOD	EASTBOUND Scottsville Road						WESTBOUND Elmwood Avenue						NORTHBOUND						SOUTHBOUND Genesee Street								
Signal	Actuated/Pretimed (P/A)	A	A					A												A								
	Ped. Button (Y/N)	Y	Y					Y												Y								
	Min. Ped. Green, G_p(s)	12	12					12												12								
	Green Time, G(s)	15.0	74.0					54.0												52.0								
	Yellow+All Red, Y(s)	5.0	6.0					6.0												6.0								
Traffic	Arrival Type	6	6					6												6								
	Heavy Vehicles, HV(%)	3%	3%					3%												2%								
	Approach Speed, S_A	30±	30±					30±												30±								
	Ped. Flow Rate, V_{ped}	NA	NA					NA												NA								
	% Veh Arrival @ Green, P	NA	NA					NA												NA								
	Parking Activity, N_m	NA	NA					NA												NA								
	Bus Stop, N_b	NA	NA					NA												NA								
Geometric	Grade, G (%)	1%±	1%±					1%±												1%±								
	Parking	NA	NA					NA												NA								
	Storage Bay Length (L_s)	75						NA												NA								
	Lane Width (W)	11	11					11	11											11		11						
	# Lanes (N)	1	2	0				0	2	1										2	0	1				Σ TOT	T(h) TOT	T(h) PHF
	Lane Group	L	T	R	PED	ROR	HV	L	T	R	PED	ROR	HV	L	T	R	PED	ROR	HV	L	T	R	PED	ROR	HV			
	4:30 PM	0	0	0	0			0	0	0	0									0	0	0	0					
	4:45 PM	56	80	3	1			0	144	186	0									95	0	34	0			598	598	
	5:00 PM	111	170	8	1			1	304	367	0									195	6	66	0			1228	630	
	5:15 PM	175	263	11	1			1	469	567	0									310	8	119	0			1923	695	0.93
	5:30 PM	221	345	20	1			2	645	748	0									412	17	169	0			2579	656	
	PHF	0.86	0.93	0.56				0.50	0.92	0.94										0.90	0.47	0.80						

Notes: *Traffic recorded via MCDOT video cameras on July 25-26, 2018 under varied weather and road surface conditions. Counts are cumulative thru time period and counts for vehicle right on reds (ROR) or heavy vehicles (HV) were not taken.*

Vehicle Volume
Summary Sheet

Project No.: 4230	Project Description : Scottsville Rd and	City / Village / Town:	County:	Intersection:	Cycle (s): 120
Traffic Counters: Video	Elmwood Ave Improvements (COR ID: 17102)	Rochester	Monroe	Genesee Street / Genesee Park Blvd	Area Type: CBD
Weather: Refer to Notes		Road Surface Condition: Refer to Notes		Signal: Y, 7-Phase, Actuated	Date: See Notes

	TIME PERIOD	EASTBOUND Genesee Parkway						WESTBOUND						NORTHBOUND Gensee Street						SOUTHBOUND Gensee Street								
Signal	Actuated/Pretimed (P/A)		A												A						A							
	Ped. Button (Y/N)		Y												N						N							
	Min. Ped. Green, G_p(s)		12.0												NA						NA							
	Green Time, G(s)		29.0												39.0						34.5							
	Yellow+All Red, Y(s)		6.0												6.0						5.5							
Traffic	Arrival Type		3												6						3							
	Heavy Vehicles, HV(%)		2%												2%						2%							
	Approach Speed, S_A		30±												30±						30±							
	Ped. Flow Rate, V_{ped}		NA												NA						NA							
	% Veh Arrival @ Green, P		NA												NA						NA							
	Parking Activity, N_m		NA												NA						NA							
	Bus Stop, N_b		NA												NA						NA							
Geometric	Grade, G (%)		1%±												1%±						1%±							
	Parking		NA												NA						NA							
	Storage Bay Length (L_s)			125											NA						NA							
	Lane Width (W)	11		11											11						11							
	# Lanes (N)	1	0	1										0	2	0				0	2	0				Σ TOT	T(h) TOT	T(h) PHF
	Lane Group	L	T	R	PED	ROR	HV	L	T	R	PED	ROR	HV	L	T	R	PED	ROR	HV	L	T	R	PED	ROR	HV			
	7:30 AM	0		0	0									0	0		0				0	0	0					
	7:45 AM	2		111	1									32	68		0				102	1	1			316	316	
	8:00 AM	9		212	3									50	151		0				222	3	3			647	331	0.97
	8:15 AM	15		278	3									80	263		1				327	6	6			969	322	
	8:30 AM	20		351	3									96	357		1				453	11	7			1288	319	
	PHF	0.71		0.79										0.75	0.80						0.90	0.55						

Notes: *Traffic recorded via MCDOT video cameras on July 25-26, 2018 under varied weather and road surface conditions. Counts are cumulative thru time period and counts for vehicle right on reds (ROR) or heavy vehicles (HV) were not taken.*

Vehicle Volume
Summary Sheet

Project No.: 4230	Project Description : Scottsville Rd and	City / Village / Town:	County:	Intersection:	Cycle (s): 150
Traffic Counters: Video	Elmwood Ave Improvements (COR ID: 17102)	Rochester	Monroe	Genesee Street / Genesee Park Blvd	Area Type: CBD
Weather: Refer to Notes		Road Surface Condition: Refer to Notes		Signal: Y, 7-Phase, Actuated	Date: See Notes

	TIME PERIOD	EASTBOUND Genesee Parkway						WESTBOUND						NORTHBOUND Gensee Street						SOUTHBOUND Gensee Street								
Signal	Actuated/Pretimed (P/A)		A												A						A							
	Ped. Button (Y/N)		Y												N						N							
	Min. Ped. Green, G_p(s)		12.0												NA						NA							
	Green Time, G(s)		24.0												74.0						34.5							
	Yellow+All Red, Y(s)		6.0												6.0						5.5							
Traffic	Arrival Type		3												6						3							
	Heavy Vehicles, HV(%)		2%												2%						2%							
	Approach Speed, S_A		30±												30±						30±							
	Ped. Flow Rate, V_{ped}		NA												NA						NA							
	% Veh Arrival @ Green, P		NA												NA						NA							
	Parking Activity, N_m		NA												NA						NA							
	Bus Stop, N_b		NA												NA						NA							
Geometric	Grade, G (%)		1%±												1%±						1%±							
	Parking		NA												NA						NA							
	Storage Bay Length (L_s)			125											NA						NA							
	Lane Width (W)	11		11											11						11							
	# Lanes (N)	0	1	0										0	2	0				0	2	0				Σ TOT	T(h) TOT	T(h) PHF
	Lane Group	L	T	R	PED	ROR	HV	L	T	R	PED	ROR	HV	L	T	R	PED	ROR	HV	L	T	R	PED	ROR	HV			
	4:45 PM	0		0	0									0	0		0				0	0	0					
	5:00 PM	4		45	0									81	167		0				104	4	0			405	405	
	5:15 PM	10		87	0									161	364		0				232	8	0			862	457	0.94
	5:30 PM	15		137	0									244	544		0				353	13	0			1306	444	
	5:45 PM	23		172	0									327	705		0				465	19	3			1711	405	
	PHF	0.72		0.86										0.98	0.89						0.91	0.79						

Notes: *Traffic recorded via MCDOT video cameras on July 25-26, 2018 under varied weather and road surface conditions. Counts are cumulative thru time period and counts for vehicle right on reds (ROR) or heavy vehicles (HV) were not taken.*

APPENDIX C

Current and Projected Traffic Volumes

Lu Engineers
ENVIRONMENTAL • TRANSPORTATION • CIVIL

Scottsville Rd and Elmwood Ave Improvements
City of Rochester
Monroe County
COR PJ: 17102

Date: 8/16/2018
Design: DDD
Chk: JWO

EXISTING AND FORECASTING TRAFFIC VOLUMES			
Forcasted Annual Traffic Growth Rate :			1.5%
	AADT	**1-WAY DHV**	**2-WAY DHV**
Scottsville Road (West City Line to Genesee Street)			
Count Year (2012)	16,776	1,071	1,643
ETC (2019)	18,537	1,183	1,816
ETC+15 (2034)	24,655	1,574	2,415
Elmwood Avenue (Genesee Street to S. Plymouth Avenue)			
Count Year (2011)	19,016	1,269	1,853
ETC (2019)	21,298	1,421	2,075
ETC+15 (2034)	28,646	1,912	2,791
Elmwood Avenue (S. Plymouth Avenue to Kendrick Road)			
Count Year (2014)	20,663	1,153	1,753
ETC (2019)	22,213	1,239	1,884
ETC+15 (2034)	28,877	1,611	2,450
Elmwood Avenue (Kendrick Road to Mt. Hope Avenue)			
Count Year (2014)	19,386	986	1,720
ETC (2019)	20,840	1,060	1,849
ETC+15 (2034)	27,092	1,378	2,404

Lu Engineers
ENVIRONMENTAL • TRANSPORTATION • CIVIL

Scottsville Rd and Elmwood Ave Improvements
City of Rochester
Monroe County
COR PJ: 17102

Date: 8/16/2018
Design: DDD
Checked: JWO

COR PJ:17102 - Scottsville Rd and Elmwood Ave Improvements (Current and Projected Intersection Traffic Volumes)

Intersection: Scottsville Rd / Elmwood Ave / Genesee St — **Forcasted Annual Traffic Growth Rate : 1.5%**

Traffic Direction: Genesee Street (SB) / Scottsville Road (EB) / Elmwood Avenue (WB)

Traffic Count Period: (7:30 - 8:30 AM) peak weekday morning commuter period, July 2018

	Intersection Approach	EASTBOUND					WESTBOUND					NORTHBOUND					SOUTHBOUND				
	Approach Movement	L	T	R	ROR	PED	L	T	R	ROR	PED	L	T	R	ROR	PED	L	T	R	ROR	PED
Volume (vph)	Existing Year (2018)	190	548	10		0	2	200	277		0						*644*	11	*149*		2
	ETC (2019)	193	556	10		0	2	203	281		0						654	11	151		2
	ETC+15 (2034)	236	680	12		0	2	248	343		0						799	14	185		2

Intersection: Genesee Street / Genesee Park Blvd — **Forcasted Annual Traffic Growth Rate : 1.5%**

Traffic Direction: Genesee Street (NB & SB) / Genesee Park Blvd (EB)

Traffic Count Period: (7:30 - 8:30 AM) peak weekday morning commuter period, July 2018

	Intersection Approach	EASTBOUND					WESTBOUND					NORTHBOUND					SOUTHBOUND				
	Approach Movement	L	T	R	ROR	PED	L	T	R	ROR	PED	L	T	R	ROR	PED	L	T	R	ROR	PED
Volume (vph)	Existing Year (2018)	20		351		3						*98*	*369*			1		453	11		7
	ETC (2019)	20		356		3						99	375			1		460	11		7
	ETC+15 (2034)	25		435		4						122	458			1		562	14		9

Intersection: Elmwood Avenue / S. Plymouth Avenue — **Forcasted Annual Traffic Growth Rate : 1.5%**

Traffic Direction: Elmwood Avenue (EB & WB) / S. Plymouth Avenue (SB) / Bus Loop (NB)

Traffic Count Period: peak weekday morning commuter period, December 2014

	Intersection Approach	EASTBOUND					WESTBOUND					NORTHBOUND					SOUTHBOUND				
	Approach Movement	L	T	R	ROR	PED	L	T	R	ROR	PED	L	T	R	ROR	PED	L	T	R	ROR	PED
Volume (vph)	Existing Year (2018)	0	*1192*	0			0	483	24			1	0	7			15	0	4		
	ETC (2019)	0	1209	0			0	490	25			1	0	8			15	0	4		
	ETC+15 (2034)	0	1462	0			0	593	30			1	0	9			18	0	5		

Note: Traffic Movement Counts (TMC) that have been italized are balance with counts from adjacent intersections.

Lu Engineers
ENVIRONMENTAL • TRANSPORTATION • CIVIL

Scottsville Rd and Elmwood Ave Improvements
City of Rochester
Monroe County
COR PJ: 17102

Date: 8/16/2018
Design: DDD
Checked: JWO

COR PJ:17102 - Scottsville Rd and Elmwood Ave Improvements (Current and Projected Intersection Traffic Volumes)

Intersection: Scottsville Rd / Elmwood Ave / Genesee St — **Forcasted Annual Traffic Growth Rate : 1.5%**

Traffic Direction: Genesee Street (SB) / Scottsville Road (EB) / Elmwood Avenue (WB)

Traffic Count Period: (4:30 - 5:30 PM) peak weekday evening commuter period, July 2018

	Intersection Approach	EASTBOUND					WESTBOUND					NORTHBOUND					SOUTHBOUND				
	Approach Movement	L	T	R	ROR	PED	L	T	R	ROR	PED	L	T	R	ROR	PED	L	T	R	ROR	PED
Volume (vph)	Existing Year (2018)	221	345	20		1	2	645	748		0						*442*	17	*178*		0
	ETC (2019)	224	350	20		1	2	655	759		0						449	17	181		0
	ETC+15 (2034)	274	428	25		1	2	800	928		0						548	21	221		0

Intersection: Genesee Street / Genesee Park Blvd — **Forcasted Annual Traffic Growth Rate : 1.5%**

Traffic Direction: Genesee Street (NB & SB) / Genesee Park Blvd (EB)

Traffic Count Period: (4:45 - 5:45 PM) peak weekday evening commuter period, July 2018

	Intersection Approach	EASTBOUND					WESTBOUND					NORTHBOUND					SOUTHBOUND				
	Approach Movement	L	T	R	ROR	PED	L	T	R	ROR	PED	L	T	R	ROR	PED	L	T	R	ROR	PED
Volume (vph)	Existing Year (2018)	23		172		0						*307*	*662*			0		465	19		3
	ETC (2019)	23		175		0						312	672			0		472	19		3
	ETC+15 (2034)	29		213		0						381	821			0		577	24		4

Intersection: Elmwood Avenue / S. Plymouth Avenue — **Forcasted Annual Traffic Growth Rate : 1.5%**

Traffic Direction: Elmwood Avenue (EB & WB) / S. Plymouth Avenue (SB) / Bus Loop (NB)

Traffic Count Period: peak weekday evening commuter period, December 2014

	Intersection Approach	EASTBOUND					WESTBOUND					NORTHBOUND					SOUTHBOUND				
	Approach Movement	L	T	R	ROR	PED	L	T	R	ROR	PED	L	T	R	ROR	PED	L	T	R	ROR	PED
Volume (vph)	Existing Year (2018)	2	*787*	0			0	*1408*	66			8	2	10			21	0	5		
	ETC (2019)	2	798	0			0	1428	67			9	2	10			22	0	5		
	ETC+15 (2034)	3	965	0			0	1726	81			10	3	12			26	0	7		

Note: Traffic Movement Counts (TMC) that have been italized are balance with counts from adjacent intersections.

Department of Transportation

Monroe County, New York

Cheryl Dinolfo
County Executive

Timothy P. Frelier, P.E.
Director

MEMORANDUM

TO: Timothy P. Frelier, P.E., Director of Transportation

FROM: James R. Pond, P.E., Chief of Traffic Signal Engineering & Operations JRP

DATE: June 20, 2018

RE: **MONROE COUNTY TRAFFIC VOLUME TRENDS**

To help us in identifying appropriate traffic volume growth rates for traffic studies on County roads and City streets, we have evaluated historical traffic volume trends based on the Monroe County Traffic Summary Average Daily Traffic (ADT) counts taken 2010 through 2017. The calculated traffic volume trends for each Town and the City of Rochester over this time period are listed in Table 1.

The percent per year trend shown in Table 1 was calculated based on a linear regression through the ADT counts taken at each of our program count stations through 2017. The regression used the oldest available count during the 2010 to 2017 time period as the base. These growth rates are straight rates and are not intended to be compounded. The table has been sorted in ascending order of recommended growth rate by town, with the overall City/County values at the bottom. The recommended growth rate for each town is assigned based on the town-wide average of individual count locations weighted by ADT as well as the unweighted average.

In general, the data in the previous traffic volume trends memo (dated April 2, 2013 based on 2001 through 2012) reflected a County-wide decline in traffic volume on County roads and City streets in every location except the Town of Pittsford. The decline was first observed in the 2009 count cycle and was found again in 2012. The latest trends show traffic growth in the majority of towns although the City of Rochester still shows a decline of about one percent. Reasons for the increase in traffic volume trends likely include improved economic activity and lower gas prices.

Because the longer term trend has been one of vehicular travel consistently increasing over time, decreasing volume trends in some towns may not extend into the future. This has been demonstrated by trends in several towns rebounding from declines in the previous analysis. Therefore, even in towns still showing a decline, we used the information as a way to predict potential future

50 West Main Street • Suite 6100 City Place Building • Rochester, New York 14614-1231
(585) 753-7720 • *fax:* (585) 753-7730 • *www.monroecounty.gov* • email: *mcdot@monroecounty.gov*

growth by location. That explains the recommended growth rate of 0.5% in towns that continue to show declines.

Table 1

Town	Avg Growth Rate Weighted by ADT (% per Yr)	Avg Growth Rate Unweighted Avg (% per Yr)	Recommended Annual Growth Rate (% per Yr)
Hamlin	-8.5	-6.9	0.5
Clarkson	-3.3	-6.6	0.5
Riga	-1.5	-2.0	0.5
Mendon	-0.8	-1.4	0.5
Rochester*	-0.8	-0.5	0.5
Penfield	-0.3	-0.1	0.5
Pittsford	-0.2	-0.6	0.5
Perinton	0.5	0.7	0.5
Parma	0.6	-0.3	0.5
Wheatland	-0.2	1.8	1.0
Henrietta	0.6	1.0	1.0
Irondequoit	1.1	1.3	1.0
Webster	1.6	0.1	1.0
Greece	1.7	1.0	1.5
Brighton	2.1	2.7	2.0
Chili	3.0	2.1	2.0
Sweden	3.4	2.0	2.0
Gates	2.3	3.4	2.5
Ogden	5.0	4.9	3.0
Rush	5.4	4.5	3.0
City Only*	-0.8	-0.5	0.5
County Only	1.2	0.8	1.0
City+County	0.2	0.3	0.5

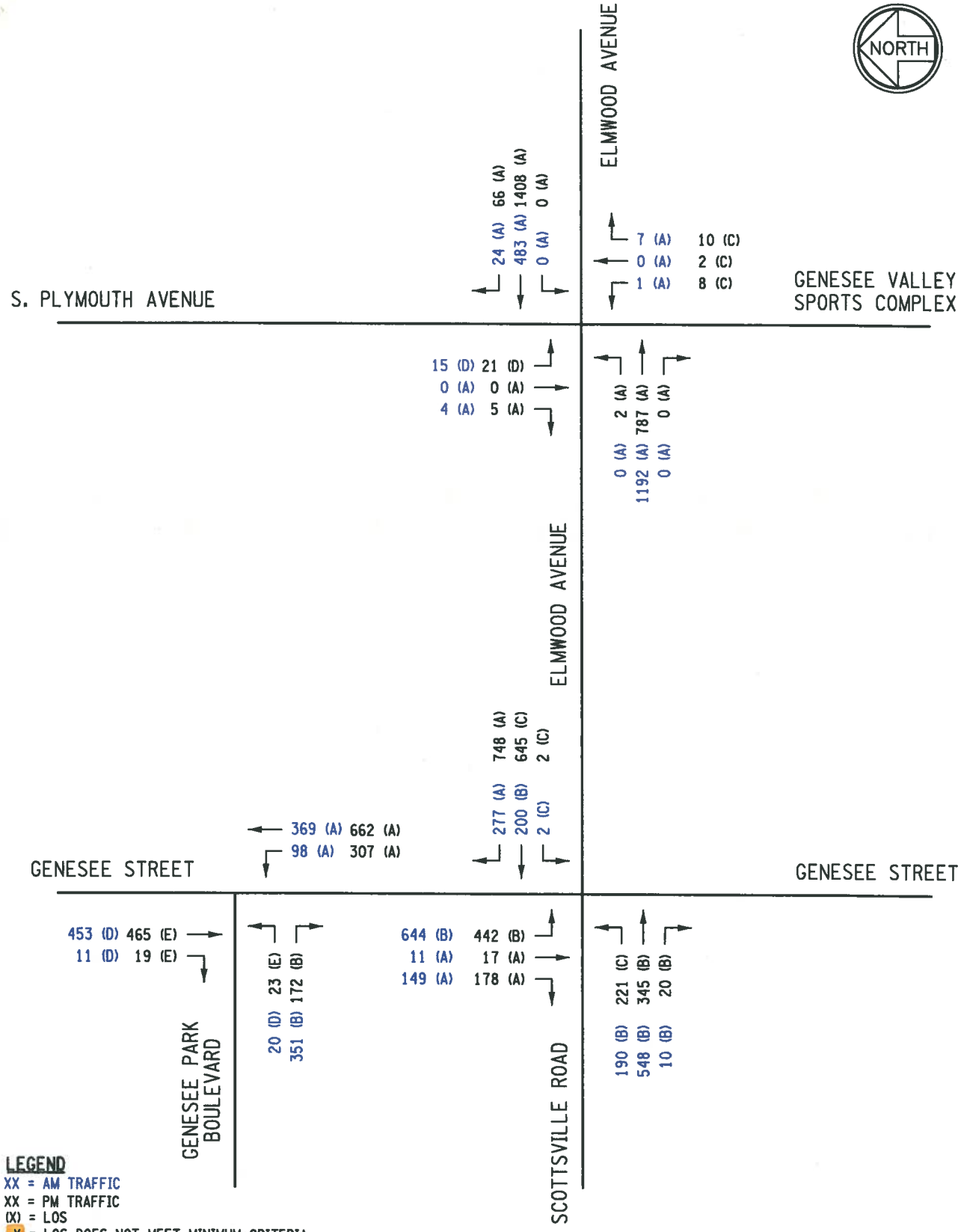
* Judgment is needed when selecting an annual growth rate for City streets within the City of Rochester. Instead of using a uniform 0.5% per year rate throughout the City, the growth rate of the nearest adjacent suburb may be more appropriate. For areas on the west side, Gates' 2.5% per year may be too high. We do recommend 1.5% per year growth around the University of Rochester area. For areas on the northeast side, Irondequoit's 1.0% per year may be appropriate. 1.0% per year is suitable for the other areas within the City, including the CBD.

The recommended annual growth rates shown in Table 1 are appropriate for projecting future traffic volumes on County roads and City streets when more specific growth data is not available. As noted in the discussion above, they should be applied as straight annual growth rates and not compounded.

JRP/dph
H:\Sub\T\TRAFFIC VOLUME TRENDS\County Volume Trends 2018 Summary jrp memo.doc

APPENDIX D

Peak Hour Traffic Flow Diagrams



Lu Engineers
ENVIRONMENTAL • TRANSPORTATION • CIVIL

CITY OF ROCHESTER
Department of Environmental Services
Architecture and Engineering Services

SCOTTSVILLE ROAD - ELMWOOD AVENUE IMPROVEMENT PROJECT
PROJECT NUMBER: 17102

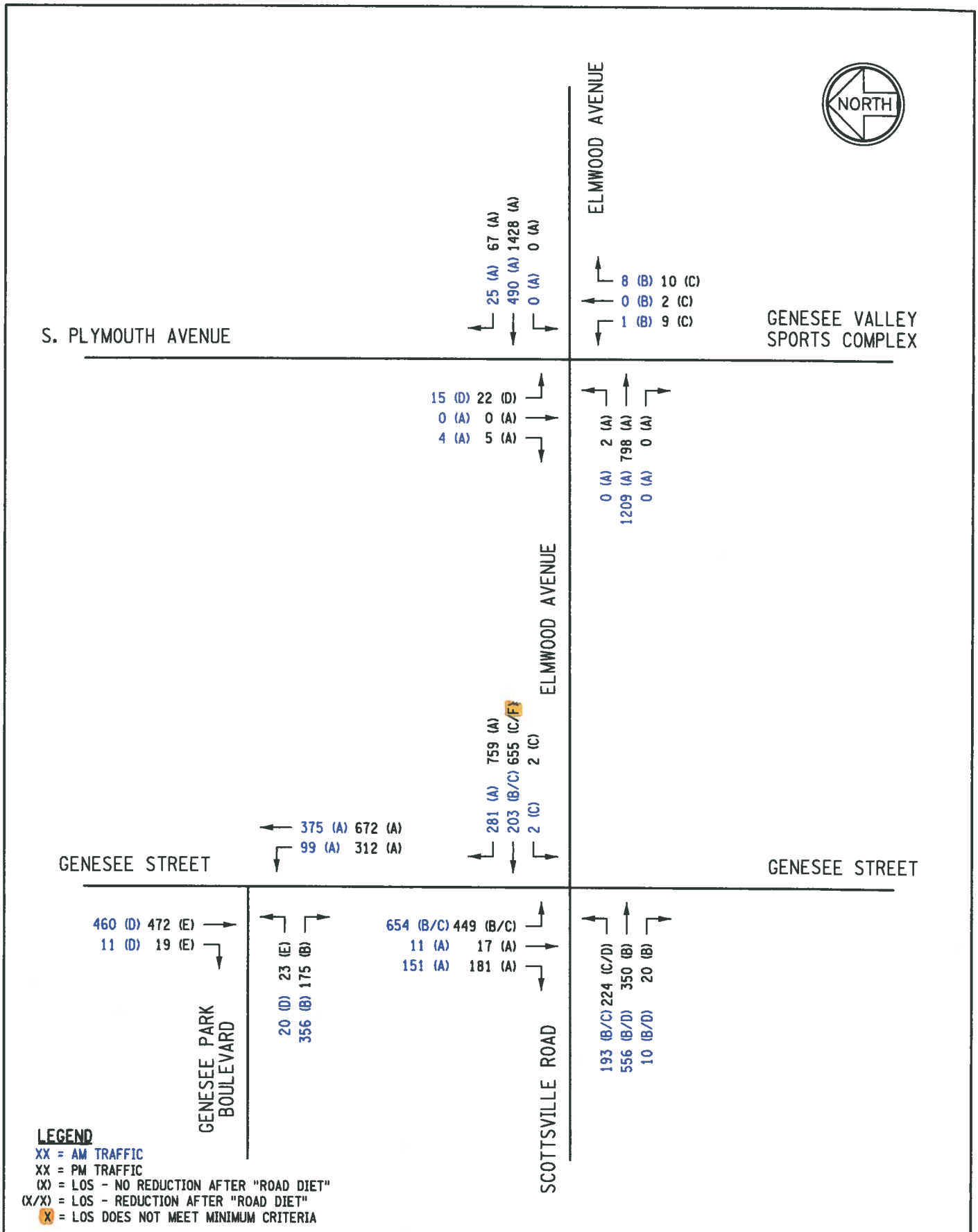
PEAK HOUR TRAFFIC FLOW DIAGRAM

ANALYSIS YR. : 2018 (CURRENT YEAR)
CONFIGURATION : NO BUILD SCENERIO

SCALE: N.T.S.

FIGURE: 1 OF 3

FILE NAME = GOR 17102 PeakHrTraffic.dgn
DATE/TIME = 16-AUG-2018 04:53
USER = JOtman



Lu Engineers
ENVIRONMENTAL • TRANSPORTATION • CIVIL

CITY OF ROCHESTER
Department of Environmental Services
Architecture and Engineering Services

SCOTTSVILLE ROAD - ELMWOOD AVENUE IMPROVEMENT PROJECT
PROJECT NUMBER: 17102

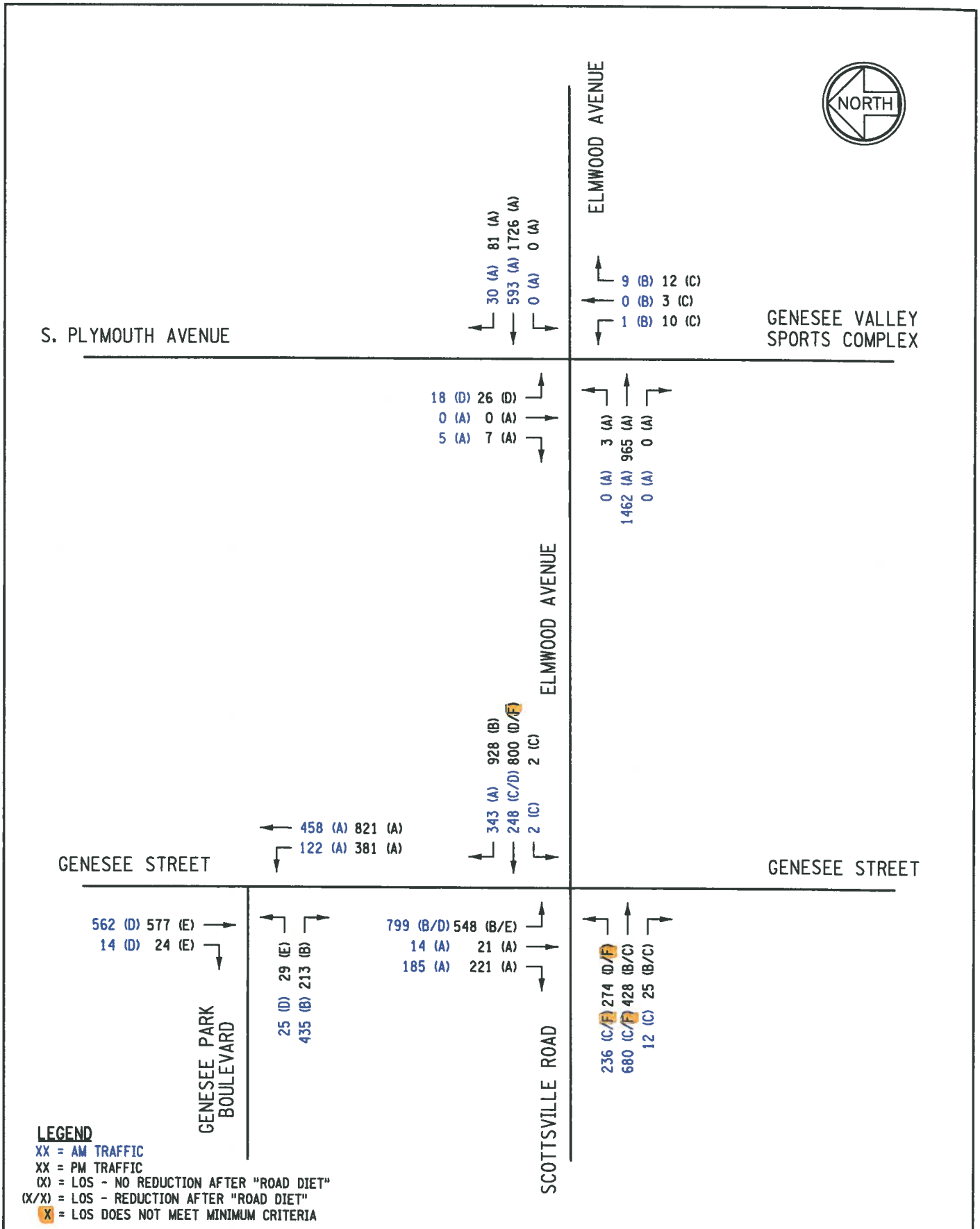
PEAK HOUR TRAFFIC FLOW DIAGRAM

ANALYSIS YR. : 2019 (ETC)
CONFIGURATION : NO BUILD & "ROAD DIET" SCENERIOS

SCALE: N.T.S.

FIGURE: 2 OF 3

FILE NAME = COR 17102 PeakHrTraffic.dgn
DATE/TIME = 13-AUG-2018 11:59
USER = JOltman



Lu Engineers
ENVIRONMENTAL • TRANSPORTATION • CIVIL

CITY OF ROCHESTER
Department of Environmental Services
Architecture and Engineering Services

SCOTTSVILLE ROAD - ELMWOOD AVENUE IMPROVEMENT PROJECT
PROJECT NUMBER: 17102

PEAK HOUR TRAFFIC FLOW DIAGRAM

ANALYSIS YR. : 2034 (ETC+15)
CONFIGURATION : NO BUILD & "ROAD DIET" SCENERIOS

SCALE: N.T.S.

FIGURE: 3 OF 3

FILE NAME = COR 17102 PeakHrTraffic.dgn
DATE/TIME = 13-AUG-2018 12:00
USER = JOttman

APPENDIX E

Level of Service Analysis
(Signalized Intersections – “No Build” Alternative)

Lanes, Volumes, Timings
1701: Genesee & Scottsville/Elmwood

08/16/2018

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	SBR2	NEL	NER	Ø3
Lane Configurations												
Traffic Volume (vph)	190	548	10	2	200	277	644	11	149	0	0	
Future Volume (vph)	190	548	10	2	200	277	644	11	149	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	75		0	0		900	0	0		0	0	
Storage Lanes	1		0	0		1	2	1		0	0	
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	1.00	0.97	0.95	1.00	1.00	1.00	
Ped Bike Factor							0.99		0.99			
Frt		0.995				0.850	0.996		0.850			
Flt Protected	0.950				0.999		0.954					
Satd. Flow (prot)	1770	3522	0	0	3536	1583	3431	0	1583	0	0	
Flt Permitted	0.538				0.946		0.954					
Satd. Flow (perm)	1002	3522	0	0	3348	1583	3414	0	1563	0	0	
Right Turn on Red			Yes			Yes			Yes		Yes	
Satd. Flow (RTOR)		3				351			180			
Link Speed (mph)		30			30		30			30		
Link Distance (ft)		1605			1281		263			397		
Travel Time (s)		36.5			29.1		6.0			9.0		
Confl. Peds. (#/hr)							2	2	2			
Peak Hour Factor	0.83	0.90	0.50	0.50	0.88	0.79	0.86	0.55	0.83	0.95	0.95	
Adj. Flow (vph)	229	609	20	4	227	351	749	20	180	0	0	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	229	629	0	0	231	351	769	0	180	0	0	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Right	Right	Left	Right	
Median Width(ft)		12			0		24			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	
Turning Speed (mph)	15		9	15		9	15	9	9	15	9	
Number of Detectors	1	1		1	1	1	1		1			
Detector Template												
Leading Detector (ft)	50	50		35	35	35	35		35			
Trailing Detector (ft)	0	0		0	0	0	0		0			
Detector 1 Position(ft)	0	0		0	0	0	0		0			
Detector 1 Size(ft)	50	50		35	35	35	35		35			
Detector 1 Type	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			
Detector 1 Queue (s)	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			
Turn Type	pm+pt	NA		Perm	NA	custom	Perm		custom			
Protected Phases	1	6			2	2 3			1 3 4			3
Permitted Phases	6			2		2 3	8		1 3 4			
Detector Phase	1	6		2	2	2 3	8		1 3 4			
Switch Phase												
Minimum Initial (s)	4.0	10.0		10.0	10.0		10.0					9.0

Lane Group	Ø4	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Peak Hour Factor		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Number of Detectors		
Detector Template		
Leading Detector (ft)		
Trailing Detector (ft)		
Detector 1 Position(ft)		
Detector 1 Size(ft)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Turn Type		
Protected Phases	4	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	12.0	4.0

Lanes, Volumes, Timings
1701: Genesee & Scottsville/Elmwood

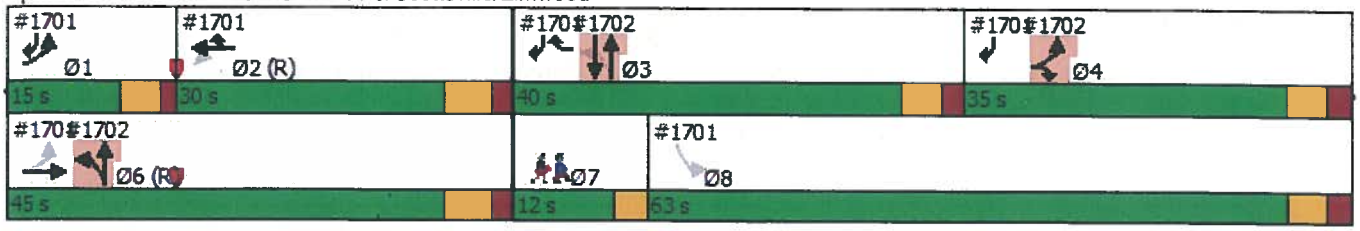
08/16/2018

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	SBR2	NEL	NER	Ø3
Minimum Split (s)	9.0	30.0		30.0	30.0		29.0					29.0
Total Split (s)	15.0	45.0		30.0	30.0		63.0					40.0
Total Split (%)	12.5%	37.5%		25.0%	25.0%		52.5%					33%
Maximum Green (s)	10.0	39.0		24.0	24.0		57.0					34.5
Yellow Time (s)	3.5	4.0		4.0	4.0		3.5					3.5
All-Red Time (s)	1.5	2.0		2.0	2.0		2.5					2.0
Lost Time Adjust (s)	-2.0	-3.0			-3.0		-3.0					
Total Lost Time (s)	3.0	3.0			3.0		3.0					
Lead/Lag	Lead			Lag	Lag		Lag					Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	4.0		4.0	4.0		3.0					3.0
Recall Mode	None	C-Max		C-Max	C-Max		None					None
Walk Time (s)		7.0		7.0	7.0		7.0					7.0
Flash Dont Walk (s)		17.0		17.0	17.0		16.0					16.0
Pedestrian Calls (#/hr)		0		0	0		0					0
Act Effct Green (s)	63.6	63.6			45.3	78.4	50.4		68.7			
Actuated g/C Ratio	0.53	0.53			0.38	0.65	0.42		0.57			
v/c Ratio	0.36	0.34			0.18	0.30	0.54		0.18			
Control Delay	19.2	18.2			16.3	6.9	11.4		0.3			
Queue Delay	0.0	0.0			0.0	0.0	0.3		1.0			
Total Delay	19.2	18.2			16.3	6.9	11.7		1.3			
LOS	B	B			B	A	B		A			
Approach Delay		18.5			10.7		9.7					
Approach LOS		B			B		A					
Queue Length 50th (ft)	89	135			56	102	95		0			
Queue Length 95th (ft)	166	234			107	162	61		0			
Internal Link Dist (ft)		1525			1201		183			317		
Turn Bay Length (ft)	75					900						
Base Capacity (vph)	630	1869			1264	1226	1738		991			
Starvation Cap Reductn	0	0			0	0	383		592			
Spillback Cap Reductn	0	0			0	0	0		0			
Storage Cap Reductn	0	0			0	0	0		0			
Reduced v/c Ratio	0.36	0.34			0.18	0.29	0.57		0.45			

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 57 (48%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.73
Intersection Signal Delay: 13.1 Intersection LOS: B
Intersection Capacity Utilization 52.5% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 1701: Genesee & Scottsville/Elmwood



Lane Group	Ø4	Ø7
Minimum Split (s)	20.0	7.0
Total Split (s)	35.0	12.0
Total Split (%)	29%	10%
Maximum Green (s)	29.0	9.0
Yellow Time (s)	3.5	3.0
All-Red Time (s)	2.5	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lag	Lead
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	3.0
Recall Mode	None	None
Walk Time (s)	7.0	
Flash Dont Walk (s)	7.0	
Pedestrian Calls (#/hr)	0	
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø2	Ø7	Ø8
Lane Configurations										
Traffic Volume (vph)	20	351	98	369	453	11				
Future Volume (vph)	20	351	98	369	453	11				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900				
Storage Length (ft)	0	125	0			0				
Storage Lanes	1	1	0			0				
Taper Length (ft)	25		25							
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95				
Ped Bike Factor	0.99	0.98		1.00	1.00					
Frt		0.850			0.994					
Flt Protected	0.950			0.989						
Satd. Flow (prot)	1770	1583	0	3500	3513	0				
Flt Permitted	0.950			0.666						
Satd. Flow (perm)	1756	1552	0	2357	3513	0				
Right Turn on Red		Yes				Yes				
Satd. Flow (RTOR)		444			3					
Link Speed (mph)	30			30	30					
Link Distance (ft)	403			263	243					
Travel Time (s)	9.2			6.0	5.5					
Confl. Peds. (#/hr)	3	3	1			7				
Peak Hour Factor	0.71	0.79	0.75	0.80	0.90	0.55				
Adj. Flow (vph)	28	444	131	461	503	20				
Shared Lane Traffic (%)										
Lane Group Flow (vph)	28	444	0	592	523	0				
Enter Blocked Intersection	No	No	No	No	No	No				
Lane Alignment	Left	Right	Left	Left	Left	Right				
Median Width(ft)	12			0	0					
Link Offset(ft)	0			0	0					
Crosswalk Width(ft)	16			16	16					
Two way Left Turn Lane										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00				
Turning Speed (mph)	15	9	15			9				
Number of Detectors	1	1	1	1	1					
Detector Template										
Leading Detector (ft)	35	35	35	35	35					
Trailing Detector (ft)	0	0	0	0	0					
Detector 1 Position(ft)	0	0	0	0	0					
Detector 1 Size(ft)	35	35	35	35	35					
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex					
Detector 1 Channel										
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0					
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0					
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0					
Turn Type	Prot	Prot	D.P+P	NA	NA					
Protected Phases	4	4	6	3 6	3		1	2	7	8
Permitted Phases		4	3							
Detector Phase	4	4	6	3 6	3					
Switch Phase										
Minimum Initial (s)	12.0	12.0	10.0		9.0		4.0	10.0	4.0	10.0

Lanes, Volumes, Timings
1702: Genesee & Genesee Pk

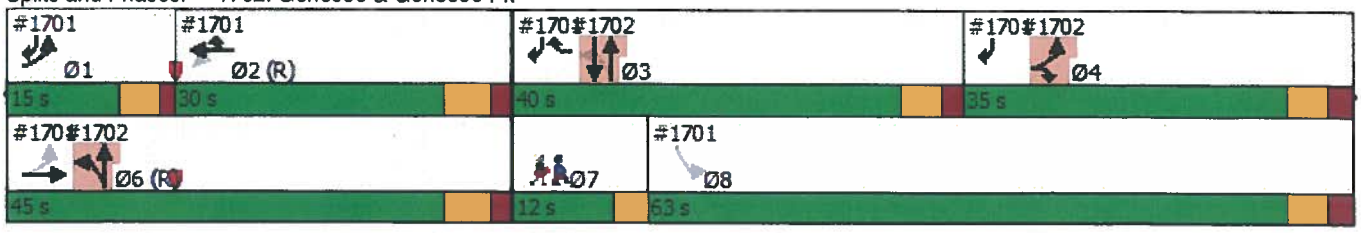
08/16/2018

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø2	Ø7	Ø8
Minimum Split (s)	20.0	20.0	30.0		29.0		9.0	30.0	7.0	29.0
Total Split (s)	35.0	35.0	45.0		40.0		15.0	30.0	12.0	63.0
Total Split (%)	29.2%	29.2%	37.5%		33.3%		13%	25%	10%	53%
Maximum Green (s)	29.0	29.0	39.0		34.5		10.0	24.0	9.0	57.0
Yellow Time (s)	3.5	3.5	4.0		3.5		3.5	4.0	3.0	3.5
All-Red Time (s)	2.5	2.5	2.0		2.0		1.5	2.0	0.0	2.5
Lost Time Adjust (s)	-3.0	-3.0			-2.5					
Total Lost Time (s)	3.0	3.0			3.0					
Lead/Lag	Lag	Lag			Lead		Lead	Lag	Lead	Lag
Lead-Lag Optimize?										
Vehicle Extension (s)	3.0	3.0	4.0		3.0		3.0	4.0	3.0	3.0
Recall Mode	None	None	C-Max		None		None	C-Max	None	None
Walk Time (s)	7.0	7.0	7.0		7.0			7.0		7.0
Flash Dont Walk (s)	7.0	7.0	17.0		16.0			17.0		16.0
Pedestrian Calls (#/hr)	0	0	0		0			0		0
Act Effct Green (s)	17.2	17.2		93.8	30.1					
Actuated g/C Ratio	0.14	0.14		0.78	0.25					
v/c Ratio	0.11	0.73		0.24	0.59					
Control Delay	43.9	11.7		0.7	41.5					
Queue Delay	0.0	0.0		0.1	0.0					
Total Delay	43.9	11.8		0.8	41.5					
LOS	D	B		A	D					
Approach Delay	13.7			0.8	41.5					
Approach LOS	B			A	D					
Queue Length 50th (ft)	20	0		3	186					
Queue Length 95th (ft)	34	36		6	225					
Internal Link Dist (ft)	323			183	163					
Turn Bay Length (ft)		125								
Base Capacity (vph)	472	747		2582	1085					
Starvation Cap Reductn	0	0		842	0					
Spillback Cap Reductn	0	2		0	20					
Storage Cap Reductn	0	0		0	0					
Reduced v/c Ratio	0.06	0.60		0.34	0.49					

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 57 (48%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.73
Intersection Signal Delay: 18.0 Intersection LOS: B
Intersection Capacity Utilization 47.4% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 1702: Genesee & Genesee Pk



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1192	0	0	483	24	1	0	7	15	0	4
Future Volume (vph)	0	1192	0	0	483	24	1	0	7	15	0	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.993			0.882				0.850
Flt Protected								0.994		0.950		
Satd. Flow (prot)	1863	3539	0	0	3514	0	0	1633	0	1770	0	1583
Flt Permitted								0.994		0.752		
Satd. Flow (perm)	1863	3539	0	0	3514	0	0	1633	0	1401	0	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					13			18				18
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1281			946			370			577	
Travel Time (s)		29.1			21.5			8.4			13.1	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1255	0	0	508	25	1	0	7	16	0	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1255	0	0	533	0	0	8	0	16	0	4
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1			1		1	1		1		1
Detector Template												
Leading Detector (ft)	35	50			50		10	10		30		30
Trailing Detector (ft)	-5	50			50		0	0		-10		-10
Detector 1 Position(ft)	-5	50			50		0	0		-10		-10
Detector 1 Size(ft)	40	0			0		10	10		40		40
Detector 1 Type	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
Detector 1 Queue (s)	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
Turn Type	Perm	NA			NA		Perm	NA		D.Pm		Perm
Protected Phases		1			1			4				
Permitted Phases	1						4			4		4
Detector Phase	1	1			1		4	4		4		4
Switch Phase												
Minimum Initial (s)	15.0	15.0			15.0		6.0	6.0		6.0		6.0
Minimum Split (s)	29.0	29.0			29.0		25.0	25.0		25.0		25.0
Total Split (s)	95.0	95.0			95.0		25.0	25.0		25.0		25.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	79.2%	79.2%			79.2%		20.8%	20.8%		20.8%		20.8%
Maximum Green (s)	90.0	90.0			90.0		19.0	19.0		19.0		19.0
Yellow Time (s)	4.0	4.0			4.0		4.0	4.0		4.0		4.0
All-Red Time (s)	1.0	1.0			1.0		2.0	2.0		2.0		2.0
Lost Time Adjust (s)	-2.0	-2.0			-2.0			-2.0		-3.0		-1.0
Total Lost Time (s)	3.0	3.0			3.0			4.0		3.0		5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0			2.0		4.0	4.0		4.0		4.0
Recall Mode	C-Max	C-Max			C-Max		None	None		None		None
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0		7.0
Flash Dont Walk (s)	17.0	17.0			17.0		12.0	12.0		12.0		12.0
Pedestrian Calls (#/hr)	0	0			0		0	0		0		0
Act Effct Green (s)		109.1			109.1			10.2		11.2		9.2
Actuated g/C Ratio		0.91			0.91			0.08		0.09		0.08
v/c Ratio		0.39			0.17			0.05		0.12		0.03
Control Delay		1.4			0.5			10.0		51.3		0.5
Queue Delay		0.0			0.0			0.0		0.0		0.0
Total Delay		1.4			0.5			10.0		51.3		0.5
LOS		A			A			A		D		A
Approach Delay		1.4			0.5			10.0			41.2	
Approach LOS		A			A			A			D	
Queue Length 50th (ft)		26			0			0		12		0
Queue Length 95th (ft)		30			0			9		34		1
Internal Link Dist (ft)		1201			866			290			497	
Turn Bay Length (ft)												
Base Capacity (vph)		3218			3197			300		256		278
Starvation Cap Reductn		0			0			0		0		0
Spillback Cap Reductn		0			0			0		0		0
Storage Cap Reductn		0			0			0		0		0
Reduced v/c Ratio		0.39			0.17			0.03		0.06		0.01

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 8 (7%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.39
Intersection Signal Delay: 1.6 Intersection LOS: A
Intersection Capacity Utilization 44.6% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 171: Bus Loop/Plymouth & Elmwood

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	SBR2	NEL	NER	Ø3
Lane Configurations												
Traffic Volume (vph)	193	556	10	2	203	281	654	11	151	0	0	
Future Volume (vph)	193	556	10	2	203	281	654	11	151	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	75		0	0		900	0	0		0	0	
Storage Lanes	1		0	0		1	2	1		0	0	
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	1.00	0.97	0.95	1.00	1.00	1.00	
Ped Bike Factor							0.99		0.99			
Frt		0.995				0.850	0.996		0.850			
Flt Protected	0.950				0.999		0.954					
Satd. Flow (prot)	1770	3522	0	0	3536	1583	3431	0	1583	0	0	
Flt Permitted	0.533				0.946		0.954					
Satd. Flow (perm)	993	3522	0	0	3348	1583	3414	0	1563	0	0	
Right Turn on Red			Yes			Yes			Yes		Yes	
Satd. Flow (RTOR)		3				356			182			
Link Speed (mph)		30			30		30			30		
Link Distance (ft)		1605			1281		263			397		
Travel Time (s)		36.5			29.1		6.0			9.0		
Confl. Peds. (#/hr)							2	2	2			
Peak Hour Factor	0.83	0.90	0.50	0.50	0.88	0.79	0.86	0.55	0.83	0.95	0.95	
Adj. Flow (vph)	233	618	20	4	231	356	760	20	182	0	0	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	233	638	0	0	235	356	780	0	182	0	0	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Right	Right	Left	Right	
Median Width(ft)		12			0		24			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	
Turning Speed (mph)	15		9	15		9	15	9	9	15	9	
Number of Detectors	1	1		1	1	1	1		1			
Detector Template												
Leading Detector (ft)	50	50		35	35	35	35		35			
Trailing Detector (ft)	0	0		0	0	0	0		0			
Detector 1 Position(ft)	0	0		0	0	0	0		0			
Detector 1 Size(ft)	50	50		35	35	35	35		35			
Detector 1 Type	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			
Detector 1 Queue (s)	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			
Turn Type	pm+pt	NA		Perm	NA	custom	Perm		custom			
Protected Phases	1	6			2	2 3			1 3 4			3
Permitted Phases	6			2		2 3	8		1 3 4			
Detector Phase	1	6		2	2	2 3	8		1 3 4			
Switch Phase												
Minimum Initial (s)	4.0	10.0		10.0	10.0		10.0					9.0

Lane Group	Ø4	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Peak Hour Factor		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Number of Detectors		
Detector Template		
Leading Detector (ft)		
Trailing Detector (ft)		
Detector 1 Position(ft)		
Detector 1 Size(ft)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Turn Type		
Protected Phases	4	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	12.0	4.0

Lanes, Volumes, Timings
1701: Genesee & Scottsville/Elmwood

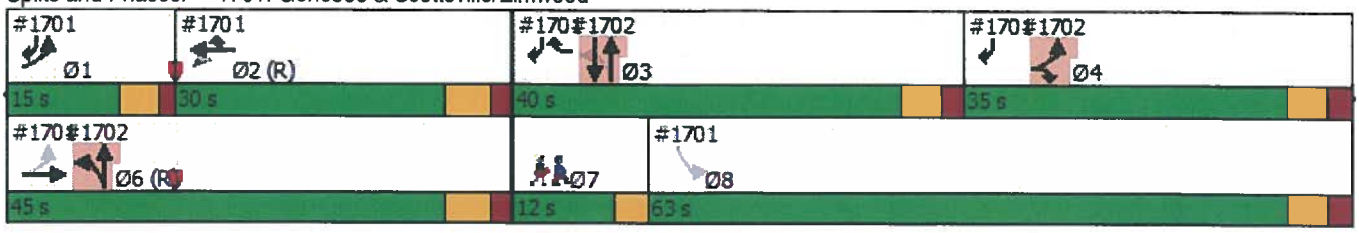
08/16/2018

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	SBR2	NEL	NER	Ø3
Minimum Split (s)	9.0	30.0		30.0	30.0		29.0					29.0
Total Split (s)	15.0	45.0		30.0	30.0		63.0					40.0
Total Split (%)	12.5%	37.5%		25.0%	25.0%		52.5%					33%
Maximum Green (s)	10.0	39.0		24.0	24.0		57.0					34.5
Yellow Time (s)	3.5	4.0		4.0	4.0		3.5					3.5
All-Red Time (s)	1.5	2.0		2.0	2.0		2.5					2.0
Lost Time Adjust (s)	-2.0	-3.0			-3.0		-3.0					
Total Lost Time (s)	3.0	3.0			3.0		3.0					
Lead/Lag	Lead			Lag	Lag		Lag					Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	4.0		4.0	4.0		3.0					3.0
Recall Mode	None	C-Max		C-Max	C-Max		None					None
Walk Time (s)		7.0		7.0	7.0		7.0					7.0
Flash Dont Walk (s)		17.0		17.0	17.0		16.0					16.0
Pedestrian Calls (#/hr)		0		0	0		0					0
Act Effct Green (s)	62.9	62.9			44.4	78.2	51.1		69.6			
Actuated g/C Ratio	0.52	0.52			0.37	0.65	0.43		0.58			
v/c Ratio	0.38	0.35			0.19	0.31	0.54		0.18			
Control Delay	19.7	18.7			17.0	7.0	11.2		0.3			
Queue Delay	0.0	0.0			0.0	0.0	0.3		1.0			
Total Delay	19.7	18.7			17.0	7.0	11.5		1.3			
LOS	B	B			B	A	B		A			
Approach Delay		19.0			11.0		9.6					
Approach LOS		B			B		A					
Queue Length 50th (ft)	91	138			57	102	96		0			
Queue Length 95th (ft)	170	238			108	161	62		0			
Internal Link Dist (ft)		1525			1201		183			317		
Turn Bay Length (ft)	75					900						
Base Capacity (vph)	622	1847			1238	1219	1739		999			
Starvation Cap Reductn	0	0			0	0	380		594			
Spillback Cap Reductn	0	0			0	0	0		0			
Storage Cap Reductn	0	0			0	0	0		0			
Reduced v/c Ratio	0.37	0.35			0.19	0.29	0.57		0.45			

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 57 (48%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.73
Intersection Signal Delay: 13.3 Intersection LOS: B
Intersection Capacity Utilization 53.0% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 1701: Genesee & Scottsville/Elmwood



Lane Group	Ø4	Ø7
Minimum Split (s)	20.0	7.0
Total Split (s)	35.0	12.0
Total Split (%)	29%	10%
Maximum Green (s)	29.0	9.0
Yellow Time (s)	3.5	3.0
All-Red Time (s)	2.5	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lag	Lead
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	3.0
Recall Mode	None	None
Walk Time (s)	7.0	
Flash Dont Walk (s)	7.0	
Pedestrian Calls (#/hr)	0	
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

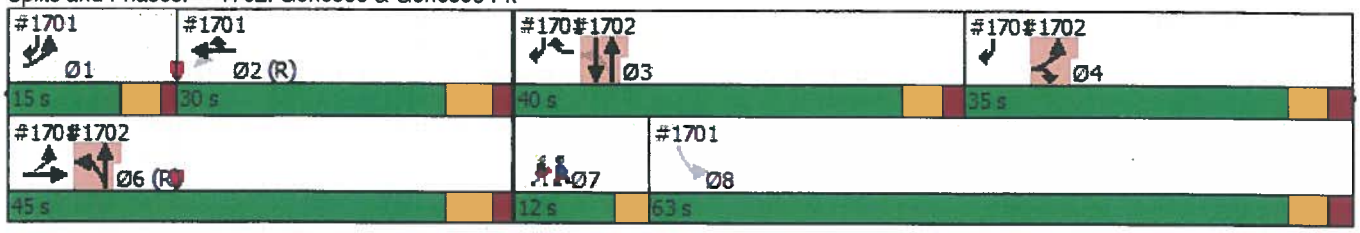
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø2	Ø7	Ø8
Lane Configurations										
Traffic Volume (vph)	20	356	99	375	460	11				
Future Volume (vph)	20	356	99	375	460	11				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900				
Storage Length (ft)	0	125	0			0				
Storage Lanes	1	1	0			0				
Taper Length (ft)	25		25							
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95				
Ped Bike Factor	0.99	0.98		1.00	1.00					
Frt		0.850			0.994					
Flt Protected	0.950			0.989						
Satd. Flow (prot)	1770	1583	0	3500	3513	0				
Flt Permitted	0.950			0.663						
Satd. Flow (perm)	1756	1552	0	2346	3513	0				
Right Turn on Red		Yes				Yes				
Satd. Flow (RTOR)		451			3					
Link Speed (mph)	30			30	30					
Link Distance (ft)	403			263	243					
Travel Time (s)	9.2			6.0	5.5					
Confl. Peds. (#/hr)	3	3	1			7				
Peak Hour Factor	0.71	0.79	0.75	0.80	0.90	0.55				
Adj. Flow (vph)	28	451	132	469	511	20				
Shared Lane Traffic (%)										
Lane Group Flow (vph)	28	451	0	601	531	0				
Enter Blocked Intersection	No	No	No	No	No	No				
Lane Alignment	Left	Right	Left	Left	Left	Right				
Median Width(ft)	12			0	0					
Link Offset(ft)	0			0	0					
Crosswalk Width(ft)	16			16	16					
Two way Left Turn Lane										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00				
Turning Speed (mph)	15	9	15			9				
Number of Detectors	1	1	1	1	1					
Detector Template										
Leading Detector (ft)	35	35	35	35	35					
Trailing Detector (ft)	0	0	0	0	0					
Detector 1 Position(ft)	0	0	0	0	0					
Detector 1 Size(ft)	35	35	35	35	35					
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex					
Detector 1 Channel										
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0					
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0					
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0					
Turn Type	Prot	Prot	D.P+P	NA	NA					
Protected Phases	4	4	6	3 6	3		1	2	7	8
Permitted Phases		4	3							
Detector Phase	4	4	6	3 6	3					
Switch Phase										
Minimum Initial (s)	12.0	12.0	10.0		9.0		4.0	10.0	4.0	10.0

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø2	Ø7	Ø8
Minimum Split (s)	20.0	20.0	30.0		29.0		9.0	30.0	7.0	29.0
Total Split (s)	35.0	35.0	45.0		40.0		15.0	30.0	12.0	63.0
Total Split (%)	29.2%	29.2%	37.5%		33.3%		13%	25%	10%	53%
Maximum Green (s)	29.0	29.0	39.0		34.5		10.0	24.0	9.0	57.0
Yellow Time (s)	3.5	3.5	4.0		3.5		3.5	4.0	3.0	3.5
All-Red Time (s)	2.5	2.5	2.0		2.0		1.5	2.0	0.0	2.5
Lost Time Adjust (s)	-3.0	-3.0			-2.5					
Total Lost Time (s)	3.0	3.0			3.0					
Lead/Lag	Lag	Lag			Lead		Lead	Lag	Lead	Lag
Lead-Lag Optimize?										
Vehicle Extension (s)	3.0	3.0	4.0		3.0		3.0	4.0	3.0	3.0
Recall Mode	None	None	C-Max		None		None	C-Max	None	None
Walk Time (s)	7.0	7.0	7.0		7.0			7.0		7.0
Flash Dont Walk (s)	7.0	7.0	17.0		16.0			17.0		16.0
Pedestrian Calls (#/hr)	0	0	0		0			0		0
Act Effct Green (s)	17.3	17.3		93.7	30.8					
Actuated g/C Ratio	0.14	0.14		0.78	0.26					
v/c Ratio	0.11	0.73		0.25	0.59					
Control Delay	43.9	11.8		0.7	41.0					
Queue Delay	0.0	0.0		0.1	0.0					
Total Delay	43.9	11.8		0.8	41.0					
LOS	D	B		A	D					
Approach Delay	13.6			0.8	41.0					
Approach LOS	B			A	D					
Queue Length 50th (ft)	20	0		4	188					
Queue Length 95th (ft)	34	36		7	229					
Internal Link Dist (ft)	323			183	163					
Turn Bay Length (ft)		125								
Base Capacity (vph)	472	752		2558	1085					
Starvation Cap Reductn	0	0		827	0					
Spillback Cap Reductn	0	2		0	20					
Storage Cap Reductn	0	0		0	0					
Reduced v/c Ratio	0.06	0.60		0.35	0.50					

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 57 (48%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.73
Intersection Signal Delay: 17.9 Intersection LOS: B
Intersection Capacity Utilization 47.7% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 1702: Genesee & Genesee Pk



Lanes, Volumes, Timings
171: Bus Loop/Plymouth & Elmwood

08/16/2018

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1209	0	0	490	25	1	0	8	15	0	4
Future Volume (vph)	0	1209	0	0	490	25	1	0	8	15	0	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.993			0.880				0.850
Flt Protected								0.994		0.950		
Satd. Flow (prot)	1863	3539	0	0	3514	0	0	1629	0	1770	0	1583
Flt Permitted								0.994		0.752		
Satd. Flow (perm)	1863	3539	0	0	3514	0	0	1629	0	1401	0	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					13			18				18
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1281			946			370			577	
Travel Time (s)		29.1			21.5			8.4			13.1	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1273	0	0	516	26	1	0	8	16	0	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1273	0	0	542	0	0	9	0	16	0	4
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1			1		1	1		1		1
Detector Template												
Leading Detector (ft)	35	50			50		10	10		30		30
Trailing Detector (ft)	-5	50			50		0	0		-10		-10
Detector 1 Position(ft)	-5	50			50		0	0		-10		-10
Detector 1 Size(ft)	40	0			0		10	10		40		40
Detector 1 Type	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
Detector 1 Queue (s)	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
Turn Type	Perm	NA			NA		Perm	NA		D.Pm		Perm
Protected Phases		1			1			4				
Permitted Phases	1						4			4		4
Detector Phase	1	1			1		4	4		4		4
Switch Phase												
Minimum Initial (s)	15.0	15.0			15.0		6.0	6.0		6.0		6.0
Minimum Split (s)	29.0	29.0			29.0		25.0	25.0		25.0		25.0
Total Split (s)	95.0	95.0			95.0		25.0	25.0		25.0		25.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	79.2%	79.2%			79.2%		20.8%	20.8%		20.8%		20.8%
Maximum Green (s)	90.0	90.0			90.0		19.0	19.0		19.0		19.0
Yellow Time (s)	4.0	4.0			4.0		4.0	4.0		4.0		4.0
All-Red Time (s)	1.0	1.0			1.0		2.0	2.0		2.0		2.0
Lost Time Adjust (s)	-2.0	-2.0			-2.0			-2.0		-3.0		-1.0
Total Lost Time (s)	3.0	3.0			3.0			4.0		3.0		5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0			2.0		4.0	4.0		4.0		4.0
Recall Mode	C-Max	C-Max			C-Max		None	None		None		None
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0		7.0
Flash Dont Walk (s)	17.0	17.0			17.0		12.0	12.0		12.0		12.0
Pedestrian Calls (#/hr)	0	0			0		0	0		0		0
Act Effct Green (s)		109.1			109.1			10.2		11.2		9.2
Actuated g/C Ratio		0.91			0.91			0.08		0.09		0.08
v/c Ratio		0.40			0.17			0.06		0.12		0.03
Control Delay		1.4			0.5			11.0		51.3		0.5
Queue Delay		0.0			0.0			0.0		0.0		0.0
Total Delay		1.4			0.5			11.0		51.3		0.5
LOS		A			A			B		D		A
Approach Delay		1.4			0.5			11.0			41.2	
Approach LOS		A			A			B			D	
Queue Length 50th (ft)		27			1			0		12		0
Queue Length 95th (ft)		31			1			10		34		1
Internal Link Dist (ft)		1201			866			290			497	
Turn Bay Length (ft)												
Base Capacity (vph)		3218			3197			299		256		278
Starvation Cap Reductn		0			0			0		0		0
Spillback Cap Reductn		0			0			0		0		0
Storage Cap Reductn		0			0			0		0		0
Reduced v/c Ratio		0.40			0.17			0.03		0.06		0.01

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 8 (7%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.40
Intersection Signal Delay: 1.6 Intersection LOS: A
Intersection Capacity Utilization 45.1% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 171: Bus Loop/Plymouth & Elmwood

Lanes, Volumes, Timings
1701: Genesee & Scottsville/Elmwood

08/16/2018

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	SBR2	NEL	NER	Ø3
Lane Configurations												
Traffic Volume (vph)	236	680	12	2	248	343	799	14	185	0	0	
Future Volume (vph)	236	680	12	2	248	343	799	14	185	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	75		0	0		900	0	0		0	0	
Storage Lanes	1		0	0		1	2	1		0	0	
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	1.00	0.97	0.95	1.00	1.00	1.00	
Ped Bike Factor							0.99		0.99			
Frt		0.995				0.850	0.996		0.850			
Flt Protected	0.950				0.999		0.954					
Satd. Flow (prot)	1770	3522	0	0	3536	1583	3431	0	1583	0	0	
Flt Permitted	0.467				0.945		0.954					
Satd. Flow (perm)	870	3522	0	0	3345	1583	3414	0	1563	0	0	
Right Turn on Red			Yes			Yes			Yes		Yes	
Satd. Flow (RTOR)		3				434			212			
Link Speed (mph)		30			30		30			30		
Link Distance (ft)		1605			1281		263			397		
Travel Time (s)		36.5			29.1		6.0			9.0		
Confl. Peds. (#/hr)							2	2	2			
Peak Hour Factor	0.83	0.90	0.50	0.50	0.88	0.79	0.86	0.55	0.83	0.95	0.95	
Adj. Flow (vph)	284	756	24	4	282	434	929	25	223	0	0	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	284	780	0	0	286	434	954	0	223	0	0	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Right	Right	Left	Right	
Median Width(ft)		12			0		24			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	
Turning Speed (mph)	15		9	15		9	15	9	9	15	9	
Number of Detectors	1	1		1	1	1	1		1			
Detector Template												
Leading Detector (ft)	50	50		35	35	35	35		35			
Trailing Detector (ft)	0	0		0	0	0	0		0			
Detector 1 Position(ft)	0	0		0	0	0	0		0			
Detector 1 Size(ft)	50	50		35	35	35	35		35			
Detector 1 Type	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			
Detector 1 Queue (s)	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			
Turn Type	pm+pt	NA		Perm	NA	custom	Perm		custom			
Protected Phases	1	6			2	2 3			1 3 4			3
Permitted Phases	6			2		2 3	8		1 3 4			
Detector Phase	1	6		2	2	2 3	8		1 3 4			
Switch Phase												
Minimum Initial (s)	4.0	10.0		10.0	10.0		10.0					9.0

Lane Group	Ø4	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Peak Hour Factor		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Number of Detectors		
Detector Template		
Leading Detector (ft)		
Trailing Detector (ft)		
Detector 1 Position(ft)		
Detector 1 Size(ft)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Turn Type		
Protected Phases	4	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	12.0	4.0

Lanes, Volumes, Timings
1701: Genesee & Scottsville/Elmwood

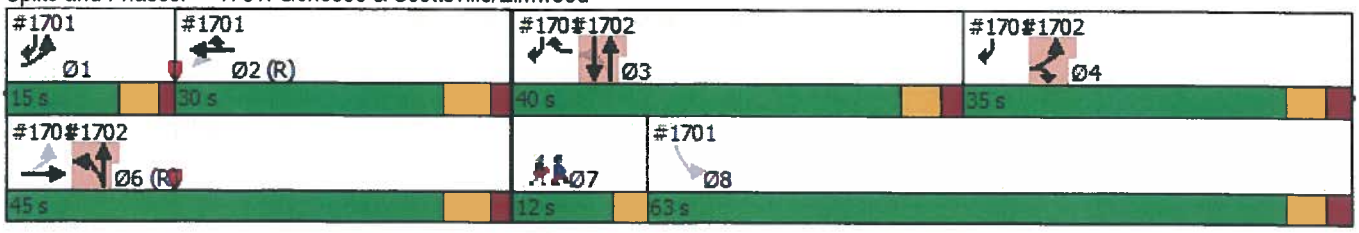
08/16/2018

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	SBR2	NEL	NER	Ø3
Minimum Split (s)	9.0	30.0		30.0	30.0		29.0					29.0
Total Split (s)	15.0	45.0		30.0	30.0		63.0					40.0
Total Split (%)	12.5%	37.5%		25.0%	25.0%		52.5%					33%
Maximum Green (s)	10.0	39.0		24.0	24.0		57.0					34.5
Yellow Time (s)	3.5	4.0		4.0	4.0		3.5					3.5
All-Red Time (s)	1.5	2.0		2.0	2.0		2.5					2.0
Lost Time Adjust (s)	-2.0	-3.0			-3.0		-3.0					
Total Lost Time (s)	3.0	3.0			3.0		3.0					
Lead/Lag	Lead			Lag	Lag		Lag					Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	4.0		4.0	4.0		3.0					3.0
Recall Mode	None	C-Max		C-Max	C-Max		None					None
Walk Time (s)		7.0		7.0	7.0		7.0					7.0
Flash Dont Walk (s)		17.0		17.0	17.0		16.0					16.0
Pedestrian Calls (#/hr)		0		0	0		0					0
Act Effct Green (s)	58.0	58.0			37.5	75.0	56.0		76.5			
Actuated g/C Ratio	0.48	0.48			0.31	0.62	0.47		0.64			
v/c Ratio	0.52	0.46			0.27	0.38	0.60		0.21			
Control Delay	25.4	23.1			23.6	7.9	10.8		0.3			
Queue Delay	0.0	0.0			0.0	0.0	0.5		1.1			
Total Delay	25.4	23.1			23.6	7.9	11.3		1.5			
LOS	C	C			C	A	B		A			
Approach Delay		23.7			14.1		9.5					
Approach LOS		C			B		A					
Queue Length 50th (ft)	129	200			80	113	109		0			
Queue Length 95th (ft)	221	321			130	162	71		0			
Internal Link Dist (ft)		1525			1201		183			317		
Turn Bay Length (ft)	75					900						
Base Capacity (vph)	551	1704			1046	1176	1763		1084			
Starvation Cap Reductn	0	0			0	0	389		645			
Spillback Cap Reductn	0	0			0	0	0		0			
Storage Cap Reductn	0	0			0	0	0		0			
Reduced v/c Ratio	0.52	0.46			0.27	0.37	0.69		0.51			

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 57 (48%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 15.7 Intersection LOS: B
Intersection Capacity Utilization 60.7% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 1701: Genesee & Scottsville/Elmwood



Lane Group	Ø4	Ø7
Minimum Split (s)	20.0	7.0
Total Split (s)	35.0	12.0
Total Split (%)	29%	10%
Maximum Green (s)	29.0	9.0
Yellow Time (s)	3.5	3.0
All-Red Time (s)	2.5	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lag	Lead
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	3.0
Recall Mode	None	None
Walk Time (s)	7.0	
Flash Dont Walk (s)	7.0	
Pedestrian Calls (#/hr)	0	
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

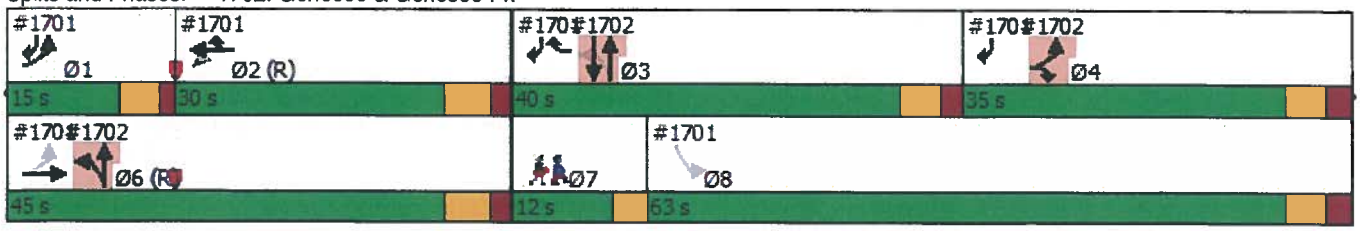
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø2	Ø7	Ø8
Lane Configurations										
Traffic Volume (vph)	25	435	122	458	562	14				
Future Volume (vph)	25	435	122	458	562	14				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900				
Storage Length (ft)	0	125	0			0				
Storage Lanes	1	1	0			0				
Taper Length (ft)	25		25							
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95				
Ped Bike Factor	0.99	0.98		1.00	1.00					
Frt		0.850			0.994					
Flt Protected	0.950			0.989						
Satd. Flow (prot)	1770	1583	0	3500	3512	0				
Flt Permitted	0.950			0.577						
Satd. Flow (perm)	1751	1548	0	2042	3512	0				
Right Turn on Red		Yes				Yes				
Satd. Flow (RTOR)		551			3					
Link Speed (mph)	30			30	30					
Link Distance (ft)	403			263	243					
Travel Time (s)	9.2			6.0	5.5					
Confl. Peds. (#/hr)	4	4	1			9				
Peak Hour Factor	0.71	0.79	0.75	0.80	0.90	0.55				
Adj. Flow (vph)	35	551	163	573	624	25				
Shared Lane Traffic (%)										
Lane Group Flow (vph)	35	551	0	736	649	0				
Enter Blocked Intersection	No	No	No	No	No	No				
Lane Alignment	Left	Right	Left	Left	Left	Right				
Median Width(ft)	12			0	0					
Link Offset(ft)	0			0	0					
Crosswalk Width(ft)	16			16	16					
Two way Left Turn Lane										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00				
Turning Speed (mph)	15	9	15			9				
Number of Detectors	1	1	1	1	1					
Detector Template										
Leading Detector (ft)	35	35	35	35	35					
Trailing Detector (ft)	0	0	0	0	0					
Detector 1 Position(ft)	0	0	0	0	0					
Detector 1 Size(ft)	35	35	35	35	35					
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex					
Detector 1 Channel										
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0					
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0					
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0					
Turn Type	Prot	Prot	D.P+P	NA	NA					
Protected Phases	4	4	6	3 6	3		1	2	7	8
Permitted Phases		4	3							
Detector Phase	4	4	6	3 6	3					
Switch Phase										
Minimum Initial (s)	12.0	12.0	10.0		9.0		4.0	10.0	4.0	10.0

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø2	Ø7	Ø8
Minimum Split (s)	20.0	20.0	30.0		29.0		9.0	30.0	7.0	29.0
Total Split (s)	35.0	35.0	45.0		40.0		15.0	30.0	12.0	63.0
Total Split (%)	29.2%	29.2%	37.5%		33.3%		13%	25%	10%	53%
Maximum Green (s)	29.0	29.0	39.0		34.5		10.0	24.0	9.0	57.0
Yellow Time (s)	3.5	3.5	4.0		3.5		3.5	4.0	3.0	3.5
All-Red Time (s)	2.5	2.5	2.0		2.0		1.5	2.0	0.0	2.5
Lost Time Adjust (s)	-3.0	-3.0			-2.5					
Total Lost Time (s)	3.0	3.0			3.0					
Lead/Lag	Lag	Lag			Lead		Lead	Lag	Lead	Lag
Lead-Lag Optimize?										
Vehicle Extension (s)	3.0	3.0	4.0		3.0		3.0	4.0	3.0	3.0
Recall Mode	None	None	C-Max		None		None	C-Max	None	None
Walk Time (s)	7.0	7.0	7.0		7.0			7.0		7.0
Flash Dont Walk (s)	7.0	7.0	17.0		16.0			17.0		16.0
Pedestrian Calls (#/hr)	0	0	0		0			0		0
Act Effct Green (s)	18.6	18.6		92.4	34.4					
Actuated g/C Ratio	0.16	0.16		0.77	0.29					
v/c Ratio	0.13	0.78		0.32	0.64					
Control Delay	42.3	11.7		1.2	40.2					
Queue Delay	0.0	0.0		0.1	0.1					
Total Delay	42.3	11.7		1.3	40.3					
LOS	D	B		A	D					
Approach Delay	13.5			1.3	40.3					
Approach LOS	B			A	D					
Queue Length 50th (ft)	25	0		7	223					
Queue Length 95th (ft)	38	31		13	286					
Internal Link Dist (ft)	323			183	163					
Turn Bay Length (ft)		125								
Base Capacity (vph)	472	826		2321	1084					
Starvation Cap Reductn	0	0		588	0					
Spillback Cap Reductn	0	5		0	39					
Storage Cap Reductn	0	0		0	0					
Reduced v/c Ratio	0.07	0.67		0.42	0.62					

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 57 (48%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 17.8 Intersection LOS: B
Intersection Capacity Utilization 53.2% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 1702: Genesee & Genesee Pk



Lanes, Volumes, Timings
171: Bus Loop/Plymouth & Elmwood

08/16/2018

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1462	0	0	593	30	1	0	9	18	0	5
Future Volume (vph)	0	1462	0	0	593	30	1	0	9	18	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.993			0.878				0.850
Flt Protected								0.995		0.950		
Satd. Flow (prot)	1863	3539	0	0	3514	0	0	1627	0	1770	0	1583
Flt Permitted								0.995		0.751		
Satd. Flow (perm)	1863	3539	0	0	3514	0	0	1627	0	1399	0	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					13			18				18
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1281			946			370			577	
Travel Time (s)		29.1			21.5			8.4			13.1	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1539	0	0	624	32	1	0	9	19	0	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1539	0	0	656	0	0	10	0	19	0	5
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1			1		1	1		1		1
Detector Template												
Leading Detector (ft)	35	50			50		10	10		30		30
Trailing Detector (ft)	-5	50			50		0	0		-10		-10
Detector 1 Position(ft)	-5	50			50		0	0		-10		-10
Detector 1 Size(ft)	40	0			0		10	10		40		40
Detector 1 Type	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
Detector 1 Queue (s)	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
Turn Type	Perm	NA			NA		Perm	NA		D.Pm		Perm
Protected Phases		1			1			4				
Permitted Phases	1						4			4		4
Detector Phase	1	1			1		4	4		4		4
Switch Phase												
Minimum Initial (s)	15.0	15.0			15.0		6.0	6.0		6.0		6.0
Minimum Split (s)	29.0	29.0			29.0		25.0	25.0		25.0		25.0
Total Split (s)	95.0	95.0			95.0		25.0	25.0		25.0		25.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	79.2%	79.2%			79.2%		20.8%	20.8%		20.8%		20.8%
Maximum Green (s)	90.0	90.0			90.0		19.0	19.0		19.0		19.0
Yellow Time (s)	4.0	4.0			4.0		4.0	4.0		4.0		4.0
All-Red Time (s)	1.0	1.0			1.0		2.0	2.0		2.0		2.0
Lost Time Adjust (s)	-2.0	-2.0			-2.0			-2.0		-3.0		-1.0
Total Lost Time (s)	3.0	3.0			3.0			4.0		3.0		5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0			2.0		4.0	4.0		4.0		4.0
Recall Mode	C-Max	C-Max			C-Max		None	None		None		None
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0		7.0
Flash Dont Walk (s)	17.0	17.0			17.0		12.0	12.0		12.0		12.0
Pedestrian Calls (#/hr)	0	0			0		0	0		0		0
Act Effct Green (s)		108.9			108.9			10.4		11.4		9.4
Actuated g/C Ratio		0.91			0.91			0.09		0.10		0.08
v/c Ratio		0.48			0.21			0.06		0.14		0.04
Control Delay		1.6			0.7			12.5		51.5		4.4
Queue Delay		0.0			0.0			0.0		0.0		0.0
Total Delay		1.6			0.7			12.5		51.5		4.4
LOS		A			A			B		D		A
Approach Delay		1.6			0.7			12.5			41.7	
Approach LOS		A			A			B			D	
Queue Length 50th (ft)		33			5			0		14		0
Queue Length 95th (ft)		64			8			11		38		4
Internal Link Dist (ft)		1201			866			290			497	
Turn Bay Length (ft)												
Base Capacity (vph)		3213			3191			299		256		278
Starvation Cap Reductn		0			0			0		0		0
Spillback Cap Reductn		0			0			0		0		0
Storage Cap Reductn		0			0			0		0		0
Reduced v/c Ratio		0.48			0.21			0.03		0.07		0.02

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 8 (7%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.48
Intersection Signal Delay: 1.9 Intersection LOS: A
Intersection Capacity Utilization 53.1% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 171: Bus Loop/Plymouth & Elmwood

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	SBR2	NEL	NER	Ø3
Lane Configurations												
Traffic Volume (vph)	221	345	20	2	645	748	442	17	178	0	0	
Future Volume (vph)	221	345	20	2	645	748	442	17	178	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	75		0	0		900	0	0		0	0	
Storage Lanes	1		0	0		1	2	1		0	0	
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	1.00	0.97	0.95	1.00	1.00	1.00	
Ped Bike Factor	1.00	1.00										
Frt		0.987				0.850	0.990		0.850			
Flt Protected	0.950						0.955					
Satd. Flow (prot)	1770	3486	0	0	3539	1583	3417	0	1583	0	0	
Flt Permitted	0.266				0.953		0.955					
Satd. Flow (perm)	495	3486	0	0	3373	1583	3417	0	1583	0	0	
Right Turn on Red			Yes			Yes			Yes		Yes	
Satd. Flow (RTOR)		10				757			82			
Link Speed (mph)		30			30		30			30		
Link Distance (ft)		1605			1281		263			397		
Travel Time (s)		36.5			29.1		6.0			9.0		
Confl. Peds. (#/hr)	1		1									
Peak Hour Factor	0.86	0.93	0.56	0.50	0.92	0.94	0.90	0.47	0.80	0.95	0.95	
Adj. Flow (vph)	257	371	36	4	701	796	491	36	223	0	0	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	257	407	0	0	705	796	527	0	223	0	0	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Right	Right	Left	Right	
Median Width(ft)		12			0		24			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	
Turning Speed (mph)	15		9	15		9	15	9	9	15	9	
Number of Detectors	1	1		1	1	1	1		1			
Detector Template												
Leading Detector (ft)	50	50		35	35	35	35		35			
Trailing Detector (ft)	0	0		0	0	0	0		0			
Detector 1 Position(ft)	0	0		0	0	0	0		0			
Detector 1 Size(ft)	50	50		35	35	35	35		35			
Detector 1 Type	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			
Detector 1 Queue (s)	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			
Turn Type	pm+pt	NA		Perm	NA	custom	Perm		custom			
Protected Phases	1	6			2	2 3			1 3 4			3
Permitted Phases	6			2		2 3	8		1 3 4			
Detector Phase	1	6		2	2	2 3	8		1 3 4			
Switch Phase												
Minimum Initial (s)	4.0	10.0		10.0	10.0		10.0					9.0

Lane Group	Ø4	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Peak Hour Factor		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Number of Detectors		
Detector Template		
Leading Detector (ft)		
Trailing Detector (ft)		
Detector 1 Position(ft)		
Detector 1 Size(ft)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Turn Type		
Protected Phases	4	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	12.0	4.0

Lanes, Volumes, Timings
1701: Genesee & Scottsville/Elmwood

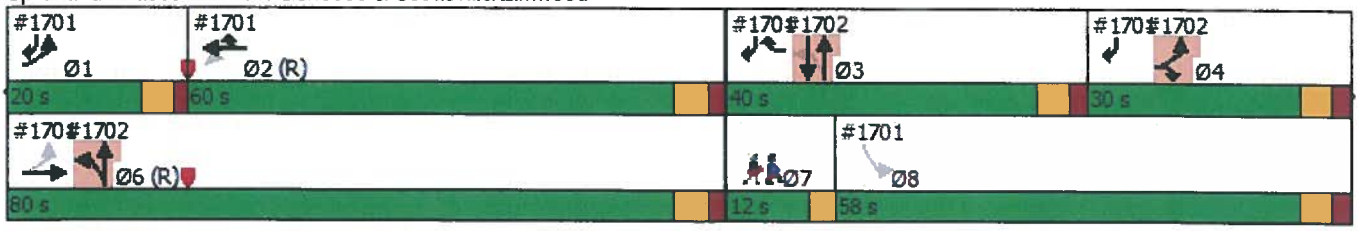
08/16/2018

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	SBR2	NEL	NER	Ø3
Minimum Split (s)	9.0	30.0		30.0	30.0		29.0					29.0
Total Split (s)	20.0	80.0		60.0	60.0		58.0					40.0
Total Split (%)	13.3%	53.3%		40.0%	40.0%		38.7%					27%
Maximum Green (s)	15.0	74.0		54.0	54.0		52.0					34.5
Yellow Time (s)	3.5	4.0		4.0	4.0		3.5					3.5
All-Red Time (s)	1.5	2.0		2.0	2.0		2.5					2.0
Lost Time Adjust (s)	0.0	0.0			0.0		0.0					
Total Lost Time (s)	5.0	6.0			6.0		6.0					
Lead/Lag	Lead			Lag	Lag		Lag					Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	4.0		4.0	4.0		3.0					3.0
Recall Mode	None	C-Max		C-Max	C-Max		None					None
Walk Time (s)		7.0		7.0	7.0		7.0					7.0
Flash Dont Walk (s)		17.0		17.0	17.0		16.0					16.0
Pedestrian Calls (#/hr)		0		0	0		0					0
Act Effct Green (s)	87.0	86.0			64.2	103.4	52.0		74.8			
Actuated g/C Ratio	0.58	0.57			0.43	0.69	0.35		0.50			
v/c Ratio	0.60	0.20			0.49	0.60	0.45		0.27			
Control Delay	22.1	15.6			33.5	3.1	10.9		0.7			
Queue Delay	0.0	0.0			0.0	0.0	0.8		1.3			
Total Delay	22.1	15.6			33.5	3.1	11.7		1.9			
LOS	C	B			C	A	B		A			
Approach Delay		18.2			17.4		8.8					
Approach LOS		B			B		A					
Queue Length 50th (ft)	119	95			258	11	58		0			
Queue Length 95th (ft)	173	133			360	64	51		0			
Internal Link Dist (ft)		1525			1201		183			317		
Turn Bay Length (ft)	75					900						
Base Capacity (vph)	436	2002			1444	1330	1202		836			
Starvation Cap Reductn	0	0			0	0	386		422			
Spillback Cap Reductn	0	0			0	0	0		0			
Storage Cap Reductn	0	0			0	0	0		0			
Reduced v/c Ratio	0.59	0.20			0.49	0.60	0.65		0.54			

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.68
Intersection Signal Delay: 15.4 Intersection LOS: B
Intersection Capacity Utilization 76.3% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 1701: Genesee & Scottsville/Elmwood



Lane Group	Ø4	Ø7
Minimum Split (s)	20.0	7.0
Total Split (s)	30.0	12.0
Total Split (%)	20%	8%
Maximum Green (s)	24.0	9.0
Yellow Time (s)	3.5	3.0
All-Red Time (s)	2.5	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lag	Lead
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	3.0
Recall Mode	None	None
Walk Time (s)	7.0	
Flash Dont Walk (s)	7.0	
Pedestrian Calls (#/hr)	0	
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø2	Ø7	Ø8
Lane Configurations										
Traffic Volume (vph)	23	172	307	662	465	19				
Future Volume (vph)	23	172	307	662	465	19				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900				
Storage Length (ft)	0	125	0			0				
Storage Lanes	1	1	0			0				
Taper Length (ft)	25		25							
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95				
Ped Bike Factor					1.00					
Frt		0.850			0.993					
Flt Protected	0.950			0.985						
Satd. Flow (prot)	1770	1583	0	3486	3510	0				
Flt Permitted	0.950			0.552						
Satd. Flow (perm)	1770	1583	0	1954	3510	0				
Right Turn on Red		Yes				Yes				
Satd. Flow (RTOR)		200			3					
Link Speed (mph)	30			30	30					
Link Distance (ft)	403			263	243					
Travel Time (s)	9.2			6.0	5.5					
Confl. Peds. (#/hr)						3				
Peak Hour Factor	0.72	0.86	0.98	0.89	0.91	0.79				
Adj. Flow (vph)	32	200	313	744	511	24				
Shared Lane Traffic (%)										
Lane Group Flow (vph)	32	200	0	1057	535	0				
Enter Blocked Intersection	No	No	No	No	No	No				
Lane Alignment	Left	Right	Left	Left	Left	Right				
Median Width(ft)	12			0	0					
Link Offset(ft)	0			0	0					
Crosswalk Width(ft)	16			16	16					
Two way Left Turn Lane										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00				
Turning Speed (mph)	15	9	15			9				
Number of Detectors	1	1	1	1	1					
Detector Template										
Leading Detector (ft)	35	35	35	35	35					
Trailing Detector (ft)	0	0	0	0	0					
Detector 1 Position(ft)	0	0	0	0	0					
Detector 1 Size(ft)	35	35	35	35	35					
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex					
Detector 1 Channel										
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0					
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0					
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0					
Turn Type	Prot	Prot	D.P+P	NA	NA					
Protected Phases	4	4	6	3 6	3		1	2	7	8
Permitted Phases		4	3							
Detector Phase	4	4	6	3 6	3					
Switch Phase										
Minimum Initial (s)	12.0	12.0	10.0		9.0		4.0	10.0	4.0	10.0

Lanes, Volumes, Timings
1702: Genesee & Genesee Pk

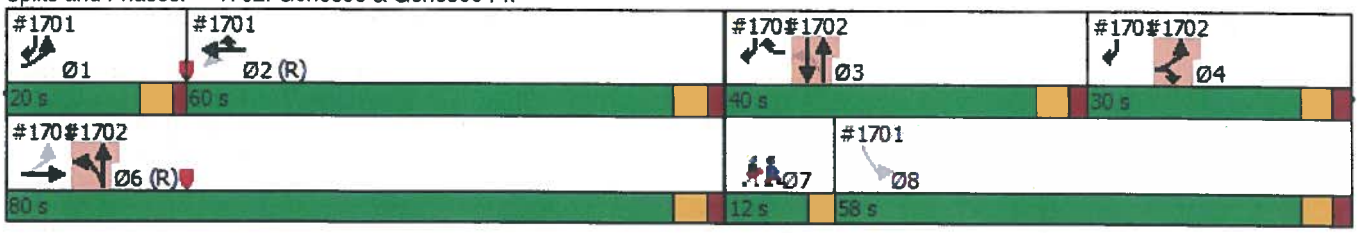
08/16/2018

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø2	Ø7	Ø8
Minimum Split (s)	20.0	20.0	30.0		29.0		9.0	30.0	7.0	29.0
Total Split (s)	30.0	30.0	80.0		40.0		20.0	60.0	12.0	58.0
Total Split (%)	20.0%	20.0%	53.3%		26.7%		13%	40%	8%	39%
Maximum Green (s)	24.0	24.0	74.0		34.5		15.0	54.0	9.0	52.0
Yellow Time (s)	3.5	3.5	4.0		3.5		3.5	4.0	3.0	3.5
All-Red Time (s)	2.5	2.5	2.0		2.0		1.5	2.0	0.0	2.5
Lost Time Adjust (s)	0.0	0.0			0.0					
Total Lost Time (s)	6.0	6.0			5.5					
Lead/Lag	Lag	Lag			Lead		Lead	Lag	Lead	Lag
Lead-Lag Optimize?										
Vehicle Extension (s)	3.0	3.0	4.0		3.0		3.0	4.0	3.0	3.0
Recall Mode	None	None	C-Max		None		None	C-Max	None	None
Walk Time (s)	7.0	7.0	7.0		7.0			7.0		7.0
Flash Dont Walk (s)	7.0	7.0	17.0		16.0			17.0		16.0
Pedestrian Calls (#/hr)	0	0	0		0			0		0
Act Effct Green (s)	12.8	12.8		120.2	33.7					
Actuated g/C Ratio	0.09	0.09		0.80	0.22					
v/c Ratio	0.21	0.63		0.43	0.68					
Control Delay	67.0	17.2		2.5	57.6					
Queue Delay	0.0	0.0		0.3	0.0					
Total Delay	67.0	17.2		2.8	57.6					
LOS	E	B		A	E					
Approach Delay	24.1			2.8	57.6					
Approach LOS	C			A	E					
Queue Length 50th (ft)	30	0		63	251					
Queue Length 95th (ft)	51	65		72	317					
Internal Link Dist (ft)	323			183	163					
Turn Bay Length (ft)		125								
Base Capacity (vph)	283	421		2459	809					
Starvation Cap Reductn	0	0		702	0					
Spillback Cap Reductn	0	0		0	0					
Storage Cap Reductn	0	0		0	0					
Reduced v/c Ratio	0.11	0.48		0.60	0.66					

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.68
Intersection Signal Delay: 21.6 Intersection LOS: C
Intersection Capacity Utilization 65.4% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 1702: Genesee & Genesee Pk



Lanes, Volumes, Timings
171: Bus Loop/Plymouth & Elmwood

08/16/2018

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	787	0	0	1408	66	8	2	10	21	0	5
Future Volume (vph)	2	787	0	0	1408	66	8	2	10	21	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.993			0.929				0.850
Flt Protected	0.950							0.981		0.950		
Satd. Flow (prot)	1770	3539	0	0	3514	0	0	1698	0	1770	0	1583
Flt Permitted	0.139							0.981		0.744		
Satd. Flow (perm)	259	3539	0	0	3514	0	0	1698	0	1386	0	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					11			11				18
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1281			946			370			577	
Travel Time (s)		29.1			21.5			8.4			13.1	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	2	828	0	0	1482	69	8	2	11	22	0	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	2	828	0	0	1551	0	0	21	0	22	0	5
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1			1		1	1		1		1
Detector Template												
Leading Detector (ft)	35	50			50		10	10		30		30
Trailing Detector (ft)	-5	50			50		0	0		-10		-10
Detector 1 Position(ft)	-5	50			50		0	0		-10		-10
Detector 1 Size(ft)	40	0			0		10	10		40		40
Detector 1 Type	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
Detector 1 Queue (s)	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
Turn Type	Perm	NA			NA		Perm	NA		D.Pm		Perm
Protected Phases		1			1			3				
Permitted Phases	1						3			3		3
Detector Phase	1	1			1		3	3		3		3
Switch Phase												
Minimum Initial (s)	15.0	15.0			15.0		6.0	6.0		6.0		6.0
Minimum Split (s)	29.0	29.0			29.0		26.0	26.0		26.0		26.0
Total Split (s)	94.0	94.0			94.0		26.0	26.0		26.0		26.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	78.3%	78.3%			78.3%		21.7%	21.7%		21.7%		21.7%
Maximum Green (s)	89.0	89.0			89.0		20.0	20.0		20.0		20.0
Yellow Time (s)	4.0	4.0			4.0		4.0	4.0		4.0		4.0
All-Red Time (s)	1.0	1.0			1.0		2.0	2.0		2.0		2.0
Lost Time Adjust (s)	0.0	0.0			0.0			0.0		0.0		0.0
Total Lost Time (s)	5.0	5.0			5.0			6.0		6.0		6.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0			2.0		4.0	4.0		4.0		4.0
Recall Mode	C-Max	C-Max			C-Max		None	None		None		None
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0		7.0
Flash Dont Walk (s)	17.0	17.0			17.0		12.0	12.0		12.0		12.0
Pedestrian Calls (#/hr)	4	4			4		23	23		23		23
Act Effct Green (s)	98.3	98.3			98.3			14.2		14.2		14.2
Actuated g/C Ratio	0.82	0.82			0.82			0.12		0.12		0.12
v/c Ratio	0.01	0.29			0.54			0.10		0.13		0.02
Control Delay	4.0	4.0			1.1			28.9		46.2		3.6
Queue Delay	0.0	0.0			0.0			0.0		0.0		0.0
Total Delay	4.0	4.0			1.1			28.9		46.2		3.6
LOS	A	A			A			C		D		A
Approach Delay		4.0			1.1			28.9			38.3	
Approach LOS		A			A			C			D	
Queue Length 50th (ft)	0	94			18			7		15		0
Queue Length 95th (ft)	3	118			36			31		40		3
Internal Link Dist (ft)		1201			866			290			497	
Turn Bay Length (ft)	125											
Base Capacity (vph)	212	2899			2881			292		231		278
Starvation Cap Reductn	0	0			0			0		0		0
Spillback Cap Reductn	0	0			0			0		0		0
Storage Cap Reductn	0	0			0			0		0		0
Reduced v/c Ratio	0.01	0.29			0.54			0.07		0.10		0.02

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 35 (29%), Referenced to phase 1:EBWB, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.54

Intersection Signal Delay: 2.7 Intersection LOS: A

Intersection Capacity Utilization 65.2% ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 171: Bus Loop/Plymouth & Elmwood

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	SBR2	NEL	NER	Ø3
Lane Configurations												
Traffic Volume (vph)	224	350	20	2	655	759	449	17	181	0	0	
Future Volume (vph)	224	350	20	2	655	759	449	17	181	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	75		0	0		900	0	0		0	0	
Storage Lanes	1		0	0		1	2	1		0	0	
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	1.00	0.97	0.95	1.00	1.00	1.00	
Ped Bike Factor		1.00										
Frt		0.987				0.850	0.990		0.850			
Flt Protected	0.950						0.955					
Satd. Flow (prot)	1770	3486	0	0	3539	1583	3417	0	1583	0	0	
Flt Permitted	0.259				0.953		0.955					
Satd. Flow (perm)	482	3486	0	0	3373	1583	3417	0	1583	0	0	
Right Turn on Red			Yes			Yes			Yes		Yes	
Satd. Flow (RTOR)		9				754			78			
Link Speed (mph)		30			30		30			30		
Link Distance (ft)		1605			1281		263			397		
Travel Time (s)		36.5			29.1		6.0			9.0		
Confl. Peds. (#/hr)	1		1									
Peak Hour Factor	0.86	0.93	0.56	0.50	0.92	0.94	0.90	0.47	0.80	0.95	0.95	
Adj. Flow (vph)	260	376	36	4	712	807	499	36	226	0	0	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	260	412	0	0	716	807	535	0	226	0	0	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Right	Right	Left	Right	
Median Width(ft)		12			0		24			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	
Turning Speed (mph)	15		9	15		9	15	9	9	15	9	
Number of Detectors	1	1		1	1	1	1		1			
Detector Template												
Leading Detector (ft)	50	50		35	35	35	35		35			
Trailing Detector (ft)	0	0		0	0	0	0		0			
Detector 1 Position(ft)	0	0		0	0	0	0		0			
Detector 1 Size(ft)	50	50		35	35	35	35		35			
Detector 1 Type	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			
Detector 1 Queue (s)	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			
Turn Type	pm+pt	NA		Perm	NA	custom	Perm		custom			
Protected Phases	1	6			2	2 3			1 3 4			3
Permitted Phases	6			2		2 3	8		1 3 4			
Detector Phase	1	6		2	2	2 3	8		1 3 4			
Switch Phase												
Minimum Initial (s)	4.0	10.0		10.0	10.0		10.0					9.0

Lane Group	Ø4	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Peak Hour Factor		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Number of Detectors		
Detector Template		
Leading Detector (ft)		
Trailing Detector (ft)		
Detector 1 Position(ft)		
Detector 1 Size(ft)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Turn Type		
Protected Phases	4	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	12.0	4.0

Lanes, Volumes, Timings
1701: Genesee & Scottsville/Elmwood

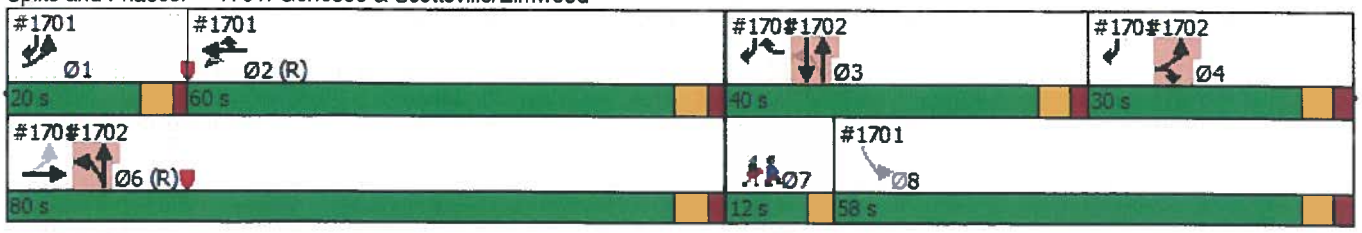
08/16/2018

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	SBR2	NEL	NER	Ø3
Minimum Split (s)	9.0	30.0		30.0	30.0		29.0					29.0
Total Split (s)	20.0	80.0		60.0	60.0		58.0					40.0
Total Split (%)	13.3%	53.3%		40.0%	40.0%		38.7%					27%
Maximum Green (s)	15.0	74.0		54.0	54.0		52.0					34.5
Yellow Time (s)	3.5	4.0		4.0	4.0		3.5					3.5
All-Red Time (s)	1.5	2.0		2.0	2.0		2.5					2.0
Lost Time Adjust (s)	0.0	0.0			0.0		0.0					
Total Lost Time (s)	5.0	6.0			6.0		6.0					
Lead/Lag	Lead			Lag	Lag		Lag					Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	4.0		4.0	4.0		3.0					3.0
Recall Mode	None	C-Max		C-Max	C-Max		None					None
Walk Time (s)		7.0		7.0	7.0		7.0					7.0
Flash Dont Walk (s)		17.0		17.0	17.0		16.0					16.0
Pedestrian Calls (#/hr)		0		0	0		0					0
Act Effct Green (s)	86.9	85.9			63.9	103.2	52.1		75.1			
Actuated g/C Ratio	0.58	0.57			0.43	0.69	0.35		0.50			
v/c Ratio	0.61	0.21			0.50	0.61	0.45		0.27			
Control Delay	22.5	15.7			33.9	3.3	10.9		0.7			
Queue Delay	0.0	0.0			0.0	0.0	0.9		1.3			
Total Delay	22.5	15.7			33.9	3.3	11.8		2.0			
LOS	C	B			C	A	B		A			
Approach Delay		18.4			17.7		8.9					
Approach LOS		B			B		A					
Queue Length 50th (ft)	121	96			265	15	59		0			
Queue Length 95th (ft)	175	135			367	75	52		0			
Internal Link Dist (ft)		1525			1201		183			317		
Turn Bay Length (ft)	75					900						
Base Capacity (vph)	431	2001			1436	1327	1202		835			
Starvation Cap Reductn	0	0			0	0	385		423			
Spillback Cap Reductn	0	0			0	0	0		0			
Storage Cap Reductn	0	0			0	0	0		0			
Reduced v/c Ratio	0.60	0.21			0.50	0.61	0.65		0.55			

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.69
Intersection Signal Delay: 15.6 Intersection LOS: B
Intersection Capacity Utilization 77.0% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 1701: Genesee & Scottsville/Elmwood



Lane Group	Ø4	Ø7
Minimum Split (s)	20.0	7.0
Total Split (s)	30.0	12.0
Total Split (%)	20%	8%
Maximum Green (s)	24.0	9.0
Yellow Time (s)	3.5	3.0
All-Red Time (s)	2.5	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lag	Lead
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	3.0
Recall Mode	None	None
Walk Time (s)	7.0	
Flash Dont Walk (s)	7.0	
Pedestrian Calls (#/hr)	0	
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø2	Ø7	Ø8
Lane Configurations										
Traffic Volume (vph)	23	175	312	672	472	19				
Future Volume (vph)	23	175	312	672	472	19				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900				
Storage Length (ft)	0	125	0			0				
Storage Lanes	1	1	0			0				
Taper Length (ft)	25		25							
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95				
Ped Bike Factor					1.00					
Frt		0.850			0.993					
Flt Protected	0.950			0.985						
Satd. Flow (prot)	1770	1583	0	3486	3510	0				
Flt Permitted	0.950			0.549						
Satd. Flow (perm)	1770	1583	0	1943	3510	0				
Right Turn on Red		Yes				Yes				
Satd. Flow (RTOR)		203			3					
Link Speed (mph)	30			30	30					
Link Distance (ft)	403			263	243					
Travel Time (s)	9.2			6.0	5.5					
Confl. Peds. (#/hr)						3				
Peak Hour Factor	0.72	0.86	0.98	0.89	0.91	0.79				
Adj. Flow (vph)	32	203	318	755	519	24				
Shared Lane Traffic (%)										
Lane Group Flow (vph)	32	203	0	1073	543	0				
Enter Blocked Intersection	No	No	No	No	No	No				
Lane Alignment	Left	Right	Left	Left	Left	Right				
Median Width(ft)	12			0	0					
Link Offset(ft)	0			0	0					
Crosswalk Width(ft)	16			16	16					
Two way Left Turn Lane										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00				
Turning Speed (mph)	15	9	15			9				
Number of Detectors	1	1	1	1	1					
Detector Template										
Leading Detector (ft)	35	35	35	35	35					
Trailing Detector (ft)	0	0	0	0	0					
Detector 1 Position(ft)	0	0	0	0	0					
Detector 1 Size(ft)	35	35	35	35	35					
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex					
Detector 1 Channel										
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0					
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0					
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0					
Turn Type	Prot	Prot	D.P+P	NA	NA					
Protected Phases	4	4	6	3 6	3		1	2	7	8
Permitted Phases		4	3							
Detector Phase	4	4	6	3 6	3					
Switch Phase										
Minimum Initial (s)	12.0	12.0	10.0		9.0		4.0	10.0	4.0	10.0

Lanes, Volumes, Timings
1702: Genesee & Genesee Pk

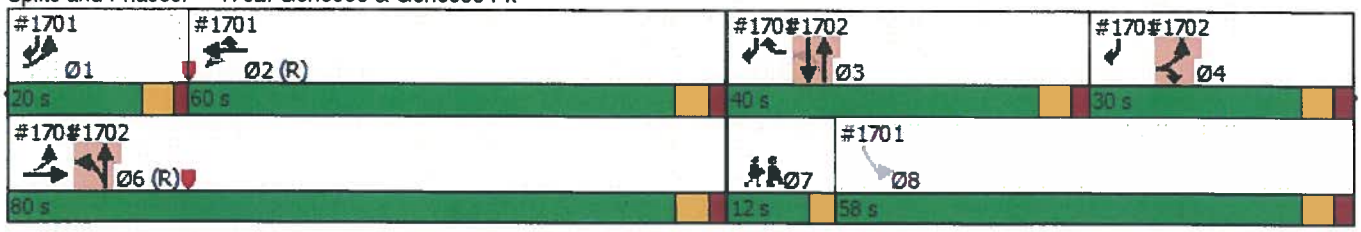
08/16/2018

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø2	Ø7	Ø8
Minimum Split (s)	20.0	20.0	30.0		29.0		9.0	30.0	7.0	29.0
Total Split (s)	30.0	30.0	80.0		40.0		20.0	60.0	12.0	58.0
Total Split (%)	20.0%	20.0%	53.3%		26.7%		13%	40%	8%	39%
Maximum Green (s)	24.0	24.0	74.0		34.5		15.0	54.0	9.0	52.0
Yellow Time (s)	3.5	3.5	4.0		3.5		3.5	4.0	3.0	3.5
All-Red Time (s)	2.5	2.5	2.0		2.0		1.5	2.0	0.0	2.5
Lost Time Adjust (s)	0.0	0.0			0.0					
Total Lost Time (s)	6.0	6.0			5.5					
Lead/Lag	Lag	Lag			Lead		Lead	Lag	Lead	Lag
Lead-Lag Optimize?										
Vehicle Extension (s)	3.0	3.0	4.0		3.0		3.0	4.0	3.0	3.0
Recall Mode	None	None	C-Max		None		None	C-Max	None	None
Walk Time (s)	7.0	7.0	7.0		7.0			7.0		7.0
Flash Dont Walk (s)	7.0	7.0	17.0		16.0			17.0		16.0
Pedestrian Calls (#/hr)	0	0	0		0			0		0
Act Effct Green (s)	12.8	12.8		120.2	33.8					
Actuated g/C Ratio	0.09	0.09		0.80	0.23					
v/c Ratio	0.21	0.63		0.44	0.69					
Control Delay	67.0	17.2		2.5	57.9					
Queue Delay	0.0	0.0		0.3	0.0					
Total Delay	67.0	17.2		2.8	57.9					
LOS	E	B		A	E					
Approach Delay	24.0			2.8	57.9					
Approach LOS	C			A	E					
Queue Length 50th (ft)	30	0		63	255					
Queue Length 95th (ft)	51	65		73	322					
Internal Link Dist (ft)	323			183	163					
Turn Bay Length (ft)		125								
Base Capacity (vph)	283	423		2455	809					
Starvation Cap Reductn	0	0		705	0					
Spillback Cap Reductn	0	0		0	0					
Storage Cap Reductn	0	0		0	0					
Reduced v/c Ratio	0.11	0.48		0.61	0.67					

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.69
Intersection Signal Delay: 21.6 — Intersection LOS: C
Intersection Capacity Utilization 66.0% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 1702: Genesee & Genesee Pk



Lanes, Volumes, Timings
171: Bus Loop/Plymouth & Elmwood

08/16/2018

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	798	0	0	1428	67	9	2	10	22	0	5
Future Volume (vph)	2	798	0	0	1428	67	9	2	10	22	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.993			0.932				0.850
Flt Protected	0.950							0.980		0.950		
Satd. Flow (prot)	1770	3539	0	0	3514	0	0	1701	0	1770	0	1583
Flt Permitted	0.135							0.980		0.743		
Satd. Flow (perm)	251	3539	0	0	3514	0	0	1701	0	1384	0	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					11			11				18
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1281			946			370			577	
Travel Time (s)		29.1			21.5			8.4			13.1	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	2	840	0	0	1503	71	9	2	11	23	0	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	2	840	0	0	1574	0	0	22	0	23	0	5
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1			1		1	1		1		1
Detector Template												
Leading Detector (ft)	35	50			50		10	10		30		30
Trailing Detector (ft)	-5	50			50		0	0		-10		-10
Detector 1 Position(ft)	-5	50			50		0	0		-10		-10
Detector 1 Size(ft)	40	0			0		10	10		40		40
Detector 1 Type	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
Detector 1 Queue (s)	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
Turn Type	Perm	NA			NA		Perm	NA		D.Pm		Perm
Protected Phases		1			1			3				
Permitted Phases	1						3			3		3
Detector Phase	1	1			1		3	3		3		3
Switch Phase												
Minimum Initial (s)	15.0	15.0			15.0		6.0	6.0		6.0		6.0
Minimum Split (s)	29.0	29.0			29.0		26.0	26.0		26.0		26.0
Total Split (s)	94.0	94.0			94.0		26.0	26.0		26.0		26.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	78.3%	78.3%			78.3%		21.7%	21.7%		21.7%		21.7%
Maximum Green (s)	89.0	89.0			89.0		20.0	20.0		20.0		20.0
Yellow Time (s)	4.0	4.0			4.0		4.0	4.0		4.0		4.0
All-Red Time (s)	1.0	1.0			1.0		2.0	2.0		2.0		2.0
Lost Time Adjust (s)	0.0	0.0			0.0			0.0		0.0		0.0
Total Lost Time (s)	5.0	5.0			5.0			6.0		6.0		6.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0			2.0		4.0	4.0		4.0		4.0
Recall Mode	C-Max	C-Max			C-Max		None	None		None		None
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0		7.0
Flash Dont Walk (s)	17.0	17.0			17.0		12.0	12.0		12.0		12.0
Pedestrian Calls (#/hr)	4	4			4		23	23		23		23
Act Effct Green (s)	98.3	98.3			98.3			14.2		14.2		14.2
Actuated g/C Ratio	0.82	0.82			0.82			0.12		0.12		0.12
v/c Ratio	0.01	0.29			0.55			0.10		0.14		0.02
Control Delay	4.0	4.0			1.1			29.3		46.3		3.6
Queue Delay	0.0	0.0			0.0			0.0		0.0		0.0
Total Delay	4.0	4.0			1.1			29.3		46.3		3.6
LOS	A	A			A			C		D		A
Approach Delay		4.0			1.1			29.3			38.7	
Approach LOS		A			A			C			D	
Queue Length 50th (ft)	0	96			19			7		16		0
Queue Length 95th (ft)	3	121			37			32		41		3
Internal Link Dist (ft)		1201			866			290			497	
Turn Bay Length (ft)	125											
Base Capacity (vph)	205	2899			2881			292		230		278
Starvation Cap Reductn	0	0			0			0		0		0
Spillback Cap Reductn	0	0			0			0		0		0
Storage Cap Reductn	0	0			0			0		0		0
Reduced v/c Ratio	0.01	0.29			0.55			0.08		0.10		0.02

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 35 (29%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.55
Intersection Signal Delay: 2.8 Intersection LOS: A
Intersection Capacity Utilization 65.8% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 171: Bus Loop/Plymouth & Elmwood

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	SBR2	NEL	NER	Ø3
Lane Configurations												
Traffic Volume (vph)	274	428	25	2	800	928	548	21	221	0	0	
Future Volume (vph)	274	428	25	2	800	928	548	21	221	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	75		0	0		900	0	0		0	0	
Storage Lanes	1		0	0		1	2	1		0	0	
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	1.00	0.97	0.95	1.00	1.00	1.00	
Ped Bike Factor		1.00										
Frt		0.987				0.850	0.990		0.850			
Flt Protected	0.950						0.956					
Satd. Flow (prot)	1770	3486	0	0	3539	1583	3420	0	1583	0	0	
Flt Permitted	0.149				0.953		0.956					
Satd. Flow (perm)	278	3486	0	0	3373	1583	3420	0	1583	0	0	
Right Turn on Red			Yes			Yes			Yes		Yes	
Satd. Flow (RTOR)		10				702			42			
Link Speed (mph)		30			30		30			30		
Link Distance (ft)		1605			1281		263			397		
Travel Time (s)		36.5			29.1		6.0			9.0		
Confl. Peds. (#/hr)	1		1									
Peak Hour Factor	0.86	0.93	0.56	0.50	0.92	0.94	0.90	0.47	0.80	0.95	0.95	
Adj. Flow (vph)	319	460	45	4	870	987	609	45	276	0	0	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	319	505	0	0	874	987	654	0	276	0	0	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Right	Right	Left	Right	
Median Width(ft)		12			0		24			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	
Turning Speed (mph)	15		9	15		9	15	9	9	15	9	
Number of Detectors	1	1		1	1	1	1		1			
Detector Template												
Leading Detector (ft)	50	50		35	35	35	35		35			
Trailing Detector (ft)	0	0		0	0	0	0		0			
Detector 1 Position(ft)	0	0		0	0	0	0		0			
Detector 1 Size(ft)	50	50		35	35	35	35		35			
Detector 1 Type	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			
Detector 1 Queue (s)	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			
Turn Type	pm+pt	NA		Perm	NA	custom	Perm		custom			
Protected Phases	1	6			2	2 3			1 3 4			3
Permitted Phases	6			2		2 3	8		1 3 4			
Detector Phase	1	6		2	2	2 3	8		1 3 4			
Switch Phase												
Minimum Initial (s)	4.0	10.0		10.0	10.0		10.0					9.0

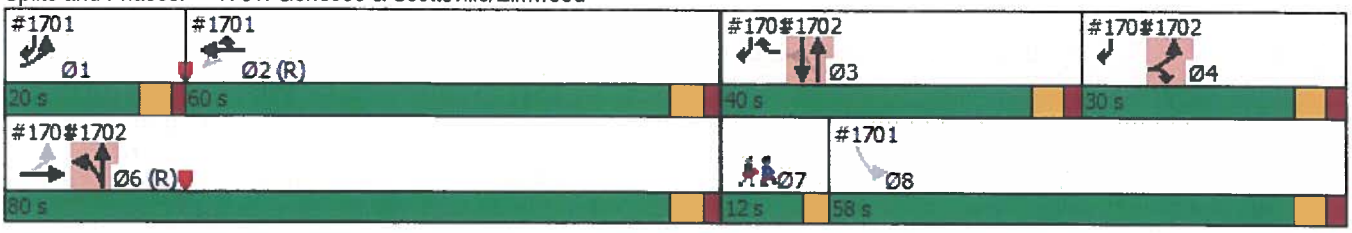
Lane Group	Ø4	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Peak Hour Factor		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Number of Detectors		
Detector Template		
Leading Detector (ft)		
Trailing Detector (ft)		
Detector 1 Position(ft)		
Detector 1 Size(ft)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Turn Type		
Protected Phases	4	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	12.0	4.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	SBR2	NEL	NER	Ø3
Minimum Split (s)	9.0	30.0		30.0	30.0		29.0					29.0
Total Split (s)	20.0	80.0		60.0	60.0		58.0					40.0
Total Split (%)	13.3%	53.3%		40.0%	40.0%		38.7%					27%
Maximum Green (s)	15.0	74.0		54.0	54.0		52.0					34.5
Yellow Time (s)	3.5	4.0		4.0	4.0		3.5					3.5
All-Red Time (s)	1.5	2.0		2.0	2.0		2.5					2.0
Lost Time Adjust (s)	0.0	0.0			0.0		0.0					
Total Lost Time (s)	5.0	6.0			6.0		6.0					
Lead/Lag	Lead			Lag	Lag		Lag					Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	4.0		4.0	4.0		3.0					3.0
Recall Mode	None	C-Max		C-Max	C-Max		None					None
Walk Time (s)		7.0		7.0	7.0		7.0					7.0
Flash Dont Walk (s)		17.0		17.0	17.0		16.0					16.0
Pedestrian Calls (#/hr)		0		0	0		0					0
Act Effct Green (s)	85.9	84.9			54.0	94.0	53.1		85.0			
Actuated g/C Ratio	0.57	0.57			0.36	0.63	0.35		0.57			
v/c Ratio	0.76	0.26			0.72	0.79	0.54		0.30			
Control Delay	37.4	16.8			45.6	10.3	11.1		2.6			
Queue Delay	0.0	0.0			0.0	0.0	1.9		1.9			
Total Delay	37.4	16.8			45.6	10.3	13.0		4.6			
LOS	D	B			D	B	B		A			
Approach Delay		24.7			26.8		10.5					
Approach LOS		C			C		B					
Queue Length 50th (ft)	175	122			387	187	73		20			
Queue Length 95th (ft)	#320	170			468	390	63		16			
Internal Link Dist (ft)		1525			1201		183			317		
Turn Bay Length (ft)	75					900						
Base Capacity (vph)	417	1978			1214	1254	1209		915			
Starvation Cap Reductn	0	0			0	0	386		483			
Spillback Cap Reductn	0	0			0	0	0		0			
Storage Cap Reductn	0	0			0	0	0		0			
Reduced v/c Ratio	0.76	0.26			0.72	0.79	0.79		0.64			

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.82
Intersection Signal Delay: 22.2 Intersection LOS: C
Intersection Capacity Utilization 87.5% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1701: Genesee & Scottsville/Elmwood



Lane Group	Ø4	Ø7
Minimum Split (s)	20.0	7.0
Total Split (s)	30.0	12.0
Total Split (%)	20%	8%
Maximum Green (s)	24.0	9.0
Yellow Time (s)	3.5	3.0
All-Red Time (s)	2.5	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lag	Lead
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	3.0
Recall Mode	None	None
Walk Time (s)	7.0	
Flash Dont Walk (s)	7.0	
Pedestrian Calls (#/hr)	0	
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

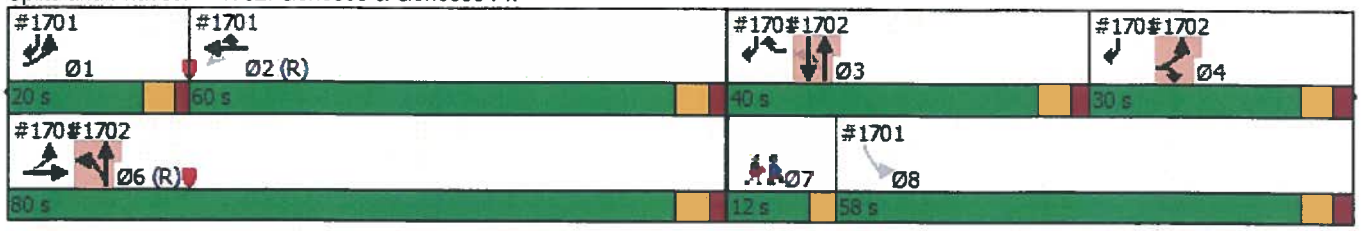
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø2	Ø7	Ø8
Lane Configurations										
Traffic Volume (vph)	29	213	381	821	577	24				
Future Volume (vph)	29	213	381	821	577	24				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900				
Storage Length (ft)	0	125	0			0				
Storage Lanes	1	1	0			0				
Taper Length (ft)	25		25							
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95				
Ped Bike Factor					1.00					
Frt		0.850			0.993					
Flt Protected	0.950			0.985						
Satd. Flow (prot)	1770	1583	0	3486	3509	0				
Flt Permitted	0.950			0.527						
Satd. Flow (perm)	1770	1583	0	1865	3509	0				
Right Turn on Red		Yes				Yes				
Satd. Flow (RTOR)		248			3					
Link Speed (mph)	30			30	30					
Link Distance (ft)	403			263	243					
Travel Time (s)	9.2			6.0	5.5					
Confl. Peds. (#/hr)						4				
Peak Hour Factor	0.72	0.86	0.98	0.89	0.91	0.79				
Adj. Flow (vph)	40	248	389	922	634	30				
Shared Lane Traffic (%)										
Lane Group Flow (vph)	40	248	0	1311	664	0				
Enter Blocked Intersection	No	No	No	No	No	No				
Lane Alignment	Left	Right	Left	Left	Left	Right				
Median Width(ft)	12			0	0					
Link Offset(ft)	0			0	0					
Crosswalk Width(ft)	16			16	16					
Two way Left Turn Lane										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00				
Turning Speed (mph)	15	9	15			9				
Number of Detectors	1	1	1	1	1					
Detector Template										
Leading Detector (ft)	35	35	35	35	35					
Trailing Detector (ft)	0	0	0	0	0					
Detector 1 Position(ft)	0	0	0	0	0					
Detector 1 Size(ft)	35	35	35	35	35					
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex					
Detector 1 Channel										
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0					
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0					
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0					
Turn Type	Prot	Prot	D.P+P	NA	NA					
Protected Phases	4	4	6	3 6	3		1	2	7	8
Permitted Phases		4	3							
Detector Phase	4	4	6	3 6	3					
Switch Phase										
Minimum Initial (s)	12.0	12.0	10.0		9.0		4.0	10.0	4.0	10.0

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø2	Ø7	Ø8
Minimum Split (s)	20.0	20.0	30.0		29.0		9.0	30.0	7.0	29.0
Total Split (s)	30.0	30.0	80.0		40.0		20.0	60.0	12.0	58.0
Total Split (%)	20.0%	20.0%	53.3%		26.7%		13%	40%	8%	39%
Maximum Green (s)	24.0	24.0	74.0		34.5		15.0	54.0	9.0	52.0
Yellow Time (s)	3.5	3.5	4.0		3.5		3.5	4.0	3.0	3.5
All-Red Time (s)	2.5	2.5	2.0		2.0		1.5	2.0	0.0	2.5
Lost Time Adjust (s)	0.0	0.0			0.0					
Total Lost Time (s)	6.0	6.0			5.5					
Lead/Lag	Lag	Lag			Lead		Lead	Lag	Lead	Lag
Lead-Lag Optimize?										
Vehicle Extension (s)	3.0	3.0	4.0		3.0		3.0	4.0	3.0	3.0
Recall Mode	None	None	C-Max		None		None	C-Max	None	None
Walk Time (s)	7.0	7.0	7.0		7.0			7.0		7.0
Flash Dont Walk (s)	7.0	7.0	17.0		16.0			17.0		16.0
Pedestrian Calls (#/hr)	0	0	0		0			0		0
Act Effct Green (s)	13.1	13.1		119.9	34.5					
Actuated g/C Ratio	0.09	0.09		0.80	0.23					
v/c Ratio	0.26	0.68		0.54	0.82					
Control Delay	67.7	17.2		2.5	64.0					
Queue Delay	0.0	0.0		0.9	0.0					
Total Delay	67.7	17.2		3.4	64.0					
LOS	E	B		A	E					
Approach Delay	24.2			3.4	64.0					
Approach LOS	C			A	E					
Queue Length 50th (ft)	38	0		64	326					
Queue Length 95th (ft)	60	70		76	403					
Internal Link Dist (ft)	323			183	163					
Turn Bay Length (ft)		125								
Base Capacity (vph)	283	461		2414	809					
Starvation Cap Reductn	0	0		749	0					
Spillback Cap Reductn	0	0		0	0					
Storage Cap Reductn	0	0		0	0					
Reduced v/c Ratio	0.14	0.54		0.79	0.82					

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.82
Intersection Signal Delay: 23.9 Intersection LOS: C
Intersection Capacity Utilization 75.0% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 1702: Genesee & Genesee Pk



Lanes, Volumes, Timings
171: Bus Loop/Plymouth & Elmwood

08/16/2018

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	965	0	0	1726	81	10	3	12	26	0	7
Future Volume (vph)	3	965	0	0	1726	81	10	3	12	26	0	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.993			0.935				0.850
Flt Protected	0.950							0.980		0.950		
Satd. Flow (prot)	1770	3539	0	0	3514	0	0	1707	0	1770	0	1583
Flt Permitted	0.085							0.980		0.740		
Satd. Flow (perm)	158	3539	0	0	3514	0	0	1707	0	1378	0	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					11			13				18
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1281			946			370			577	
Travel Time (s)		29.1			21.5			8.4			13.1	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	3	1016	0	0	1817	85	11	3	13	27	0	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	3	1016	0	0	1902	0	0	27	0	27	0	7
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1			1		1	1		1		1
Detector Template												
Leading Detector (ft)	35	50			50		10	10		30		30
Trailing Detector (ft)	-5	50			50		0	0		-10		-10
Detector 1 Position(ft)	-5	50			50		0	0		-10		-10
Detector 1 Size(ft)	40	0			0		10	10		40		40
Detector 1 Type	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
Detector 1 Queue (s)	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
Turn Type	Perm	NA			NA		Perm	NA		D.Pm		Perm
Protected Phases		1			1			3				
Permitted Phases	1						3			3		3
Detector Phase	1	1			1		3	3		3		3
Switch Phase												
Minimum Initial (s)	15.0	15.0			15.0		6.0	6.0		6.0		6.0
Minimum Split (s)	29.0	29.0			29.0		26.0	26.0		26.0		26.0
Total Split (s)	94.0	94.0			94.0		26.0	26.0		26.0		26.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	78.3%	78.3%			78.3%		21.7%	21.7%		21.7%		21.7%
Maximum Green (s)	89.0	89.0			89.0		20.0	20.0		20.0		20.0
Yellow Time (s)	4.0	4.0			4.0		4.0	4.0		4.0		4.0
All-Red Time (s)	1.0	1.0			1.0		2.0	2.0		2.0		2.0
Lost Time Adjust (s)	0.0	0.0			0.0			0.0		0.0		0.0
Total Lost Time (s)	5.0	5.0			5.0			6.0		6.0		6.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0			2.0		4.0	4.0		4.0		4.0
Recall Mode	C-Max	C-Max			C-Max		None	None		None		None
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0		7.0
Flash Dont Walk (s)	17.0	17.0			17.0		12.0	12.0		12.0		12.0
Pedestrian Calls (#/hr)	4	4			4		23	23		23		23
Act Effct Green (s)	98.3	98.3			98.3			14.3		14.3		14.3
Actuated g/C Ratio	0.82	0.82			0.82			0.12		0.12		0.12
v/c Ratio	0.02	0.35			0.66			0.13		0.16		0.03
Control Delay	4.3	4.3			3.5			29.3		47.0		7.4
Queue Delay	0.0	0.0			0.0			0.0		0.0		0.0
Total Delay	4.3	4.3			3.5			29.3		47.0		7.4
LOS	A	A			A			C		D		A
Approach Delay		4.3			3.5			29.3			38.8	
Approach LOS		A			A			C			D	
Queue Length 50th (ft)	1	124			62			9		18		0
Queue Length 95th (ft)	3	154			63			37		47		7
Internal Link Dist (ft)		1201			866			290			497	
Turn Bay Length (ft)	125											
Base Capacity (vph)	129	2898			2879			295		229		278
Starvation Cap Reductn	0	0			40			0		0		0
Spillback Cap Reductn	0	0			0			0		0		0
Storage Cap Reductn	0	0			0			0		0		0
Reduced v/c Ratio	0.02	0.35			0.67			0.09		0.12		0.03

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 35 (29%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.66
Intersection Signal Delay: 4.4 Intersection LOS: A
Intersection Capacity Utilization 74.5% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 171: Bus Loop/Plymouth & Elmwood

APPENDIX F

Level of Service Analysis
(Urban Street – “No Build” Alternative)

Lu Engineers
ENVIRONMENTAL • TRANSPORTATION • CIVIL

Scottsville Rd Elmwood Ave Improvements
City of Rochester
Monroe County
COR PJ: 17102

Travel Time Field Work Sheet (HCM Exh. 30-14) - Urban Street LOS Analysis

General Information		Site Information	
Analyst:	SPG/DDD	Street:	Elmwood Avenue
Company:	Lu Engineers	Jurisdiction:	City of Rochester
Date Performed:	8/8/2018	Analysis Year:	2018
Analysis Time Period:	Weds. (7:30 - 8:30 am)	Direction of Travel:	Eastbound

Field Data

Urban Street Segment Location - Boundary Intersection		Urban Street Segment Distance (mi.)	Cumulative Travel Time at Location(s)	Delays - Slow/Stop		Observed FFS (mph)	Running Time (sec)	Delay Time (sec)	Segment Travel Speed (mph)
				Cause	Time (s)				
Run No.: Eastbound #1 7:32 AM									
Genesee Street	Sta. 110+00		0:00:00						
S. Plymouth Avenue	Sta. 122+50	0.24	0:00:27			33	27		31.6
Run No.: Eastbound #2 7:36 AM									
Genesee Street	Sta. 110+00		0:00:00						
S. Plymouth Avenue	Sta. 122+50	0.24	0:00:26			36	26		32.8
Run No.: Eastbound #3 7:44 AM									
Genesee Street	Sta. 110+00		0:00:00						
S. Plymouth Avenue	Sta. 122+50	0.24	0:00:26			35	26		32.8
Run No.: Eastbound #4 7:50 AM									
Genesee Street	Sta. 110+00		0:00:00						
S. Plymouth Avenue	Sta. 122+50	0.24	0:00:25			36	25		34.1
Run No.: Eastbound #5 7:55 AM									
Genesee Street	Sta. 110+00		0:00:00						
S. Plymouth Avenue	Sta. 122+50	0.24	0:00:26			34	26		32.8
Run No.: Eastbound #6 8:01 AM									
Genesee Street	Sta. 110+00		0:00:00						
S. Plymouth Avenue	Sta. 122+50	0.24	0:00:23			40	23		37.1

Cause of Delay: TS - signal; LT - left turn; PD - pedestrian; PK - parking

Urban Street Segment Level of Service Analysis

Urban Street Segment Location - Boundary Intersection		Urban Street Segment Distance (mi.)	Average Running Time (sec)	Average Delay Time (sec)	Average Segment Travel Speed (mph)	Base Free Flow Speed BFFS (mph)	Travel Speed / BFFS (%)	Downstream Boundary Intersection V/C Ratio	Level of Service (LOS)
South Main Street									
Genesee Street	Sta. 110+00								
S. Plymouth Avenue	Sta. 122+50	0.24	26		33.5	35.7	94%	0.71	A

Lu Engineers
ENVIRONMENTAL • TRANSPORTATION • CIVIL

Scottsville Rd Elmwood Ave Improvements
City of Rochester
Monroe County
COR PJ: 17102

Travel Time Field Work Sheet (HCM Exh. 30-14) - Urban Street LOS Analysis

General Information		Site Information	
Analyst:	SPG/DDD	Street:	Elmwood Avenue
Company:	Lu Engineers	Jurisdiction:	City of Rochester
Date Performed:	8/8/2018	Analysis Year:	2018
Analysis Time Period:	Weds. (7:30 - 8:30 am)	Direction of Travel:	Westbound

Field Data

Urban Street Segment Location - Boundary Intersection		Urban Street Segment Distance (mi.)	Cumulative Travel Time at Location(s)	Delays - Slow/Stop		Observed FFS (mph)	Running Time (sec)	Delay Time (sec)	Segment Travel Speed (mph)
				Cause	Time (s)				
Run No.: Westbound #1	**7:34 AM**								
S. Plymouth Avenue	Sta. 122+50		0:00:00						
Genesee Street	Sta. 110+00	0.24	0:00:27			37	27		31.6
Run No.: Westbound #2	**7:40 AM**								
S. Plymouth Avenue	Sta. 122+50		0:00:00						
Genesee Street	Sta. 110+00	0.24	0:00:25	TS	0:00:48	35	25	23	17.8
Run No.: Westbound #3	**7:46 AM**								
S. Plymouth Avenue	Sta. 122+50		0:00:00						
Genesee Street	Sta. 110+00	0.24	0:00:25			36	25		34.1
Run No.: Westbound #4	**7:52 AM**								
S. Plymouth Avenue	Sta. 122+50		0:00:00						
Genesee Street	Sta. 110+00	0.24	0:00:24			39	24		35.5
Run No.: Westbound #5	**7:57 AM**								
S. Plymouth Avenue	Sta. 122+50		0:00:00						
Genesee Street	Sta. 110+00	0.24	0:00:26	TS	0:01:56	35	26	90	7.3
Run No.: Westbound #6	**8:03 AM**								
S. Plymouth Avenue	Sta. 122+50		0:00:00						
Genesee Street	Sta. 110+00	0.24	0:00:27	TS	0:02:01	34	27	94	7.0

Cause of Delay: TS - signal; LT - left turn; PD - pedestrian; PK - parking

Urban Street Segment Level of Service Analysis

Urban Street Segment Location - Boundary Intersection		Urban Street Segment Distance (mi.)	Average Running Time (sec)	Average Delay Time (sec)	Average Segment Travel Speed (mph)	Base Free Flow Speed BFFS (mph)	Travel Speed / BFFS (%)	Downstream Boundary Intersection V/C Ratio	Level of Service (LOS)
S. Plymouth Avenue	**12:00 AM**								
S. Plymouth Avenue	Sta. 122+50								
Genesee Street	Sta. 110+00	0.24	26	35	22.2	36.0	62%	0.67	C

Lu Engineers
ENVIRONMENTAL • TRANSPORTATION • CIVIL

Scottsville Rd Elmwood Ave Improvements
City of Rochester
Monroe County
COR PJ: 17102

Travel Time Field Work Sheet (HCM Exh. 30-14) - Urban Street LOS Analysis

General Information		Site Information	
Analyst:	SPG/DDD	Street:	Elmwood Avenue
Company:	Lu Engineers	Jurisdiction:	City of Rochester
Date Performed:	8/9/2018	Analysis Year:	2018
Analysis Time Period:	Thurs. (4:30 pm - 5:30 pm)	Direction of Travel:	Eastbound

Field Data

Urban Street Segment Location - Boundary Intersection		Urban Street Segment Distance (mi.)	Cumulative Travel Time at Location(s)	Delays - Slow/Stop		Observed FFS (mph)	Running Time (sec)	Delay Time (sec)	Segment Travel Speed (mph)
				Cause	Time (s)				
Run No.: Eastbound #1	**4:42 PM**								
Genesee Street	Sta. 110+00		0:00:00						
S. Plymouth Avenue	Sta. 122+50	0.24	0:00:25			38	25		34.1
Run No.: Eastbound #2	**4:47 PM**								
Genesee Street	Sta. 110+00		0:00:00						
S. Plymouth Avenue	Sta. 122+50	0.24	0:00:26			35	26		32.8
Run No.: Eastbound #3	**4:52 PM**								
Genesee Street	Sta. 110+00		0:00:00						
S. Plymouth Avenue	Sta. 122+50	0.24	0:00:22			39	22		38.7
Run No.: Eastbound #4	**4:57 PM**								
Genesee Street	Sta. 110+00		0:00:00						
S. Plymouth Avenue	Sta. 122+50	0.24	0:00:27			35	27		31.6
Run No.: Eastbound #5	**5:02 PM**								
Genesee Street	Sta. 110+00		0:00:00						
S. Plymouth Avenue	Sta. 122+50	0.24	0:00:23			38	23		37.1
Run No.: Eastbound #6	**5:06 PM**								
Genesee Street	Sta. 110+00		0:00:00						
S. Plymouth Avenue	Sta. 122+50	0.24	0:00:26			36	26		32.8

Cause of Delay: TS - signal; LT - left turn; PD - pedestrian; PK - parking

Urban Street Segment Level of Service Analysis

Urban Street Segment Location - Boundary Intersection		Urban Street Segment Distance (mi.)	Average Running Time (sec)	Average Delay Time (sec)	Average Segment Travel Speed (mph)	Base Free Flow Speed BFFS (mph)	Travel Speed / BFFS (%)	Downstream Boundary Intersection V/C Ratio	Level of Service (LOS)
South Main Street									
Genesee Street	Sta. 110+00								
S. Plymouth Avenue	Sta. 122+50	0.24	25		34.5	36.8	94%	0.71	A

Lu Engineers
ENVIRONMENTAL • TRANSPORTATION • CIVIL

Scottsville Rd Elmwood Ave Improvements
City of Rochester
Monroe County
COR PJ: 17102

Travel Time Field Work Sheet (HCM Exh. 30-14) - Urban Street LOS Analysis

General Information		Site Information	
Analyst:	SPG/DDD	Street:	Elmwood Avenue
Company:	Lu Engineers	Jurisdiction:	City of Rochester
Date Performed:	8/9/2018	Analysis Year:	2018
Analysis Time Period:	Thurs. (4:30 pm - 5:30 pm)	Direction of Travel:	Westbound

Field Data

Urban Street Segment Location - Boundary Intersection		Urban Street Segment Distance (mi.)	Cumulative Travel Time at Location(s)	Delays - Slow/Stop		Observed FFS (mph)	Running Time (sec)	Delay Time (sec)	Segment Travel Speed (mph)
				Cause	Time (s)				
Run No.: Westbound #1	**4:39 PM**								
S. Plymouth Avenue	Sta. 122+50		0:00:00						
Genesee Street	Sta. 110+00	0.24	0:00:26	TS	0:01:05	36	26	39	13.1
Run No.: Westbound #2	**4:44 PM**								
S. Plymouth Avenue	Sta. 122+50		0:00:00						
Genesee Street	Sta. 110+00	0.24	0:00:24	TS	0:00:47	35	24	23	18.1
Run No.: Westbound #3	**4:50 PM**								
S. Plymouth Avenue	Sta. 122+50		0:00:00						
Genesee Street	Sta. 110+00	0.24	0:00:27			35	27		31.6
Run No.: Westbound #4	**4:54 PM**								
S. Plymouth Avenue	Sta. 122+50		0:00:00						
Genesee Street	Sta. 110+00	0.24	0:00:28			33	28		30.4
Run No.: Westbound #5	**5:00 PM**								
S. Plymouth Avenue	Sta. 122+50		0:00:00						
Genesee Street	Sta. 110+00	0.24	0:00:26			35	26		32.8
Run No.: Westbound #6	**5:04 PM**								
S. Plymouth Avenue	Sta. 122+50		0:00:00						
Genesee Street	Sta. 110+00	0.24	0:00:26			35	26		32.8

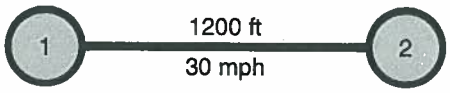
Cause of Delay: TS - signal; LT - left turn; PD - pedestrian; PK - parking

Urban Street Segment Level of Service Analysis

Urban Street Segment Location - Boundary Intersection		Urban Street Segment Distance (mi.)	Average Running Time (sec)	Average Delay Time (sec)	Average Segment Travel Speed (mph)	Base Free Flow Speed BFFS (mph)	Travel Speed / BFFS (%)	Downstream Boundary Intersection V/C Ratio	Level of Service (LOS)
S. Plymouth Avenue	**12:00 AM**								
S. Plymouth Avenue	Sta. 122+50								
Genesee Street	Sta. 110+00	0.24	26	10	26.5	34.8	76%	0.67	B

HCS 2010 Urban Street Segment Report

General Information				Streets Information	
Agency	Lu Engineers			Number of Intersections	2
Analyst	Jonathan Ottman	Analysis Date	8/16/2018	Number of Segments	1
Jurisdiction	City of Rochester	Time Period	7:30 - 8:30 AM PK HR	Number of Iterations	15
File Name	COR 17102 2018 EX CD AM Pk	Analysis Year	2018	System Cycle Length, s	120
Intersections	Genesee Street	S Plymouth Ave		Analysis Period	1> 7:30
Project Description	NO BUILD ALT (2018) AM Pk Hr				



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	30	30	2	2	1200	1200	55	55	0	0	100	100	0.0	0.0

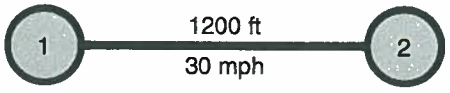
		Eastbound			Westbound		
Segment Output Data		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	1	6	16	5	2	12
1	Bay/Lane Spillback Time, h		never				
1	Shared Lane Spillback Time, h	never					
1	Base Free-Flow Speed, mph	38.65			36.25		
1	Running Time, s	24.42			25.20		
1	Running Speed, mph	33.50			32.47		
1	Through Delay, s/veh	1.12			9.37		
1	Travel Speed, mph	34.50			26.50		
1	Stop Rate, stops/veh	0.04			0.31		
1	Spatial Stop Rate, stops/mi	0.16			1.35		
1	Through vol/cap Ratio	0.41			0.11		
1	Percent of Base FFS	89.27			73.11		
1	Level of Service	A			B		
1	Auto Traveler Perception Score	2.16			2.56		
Multimodal Results (Segment)							
1	Pedestrian Segment LOS Score / LOS						
1	Bicycle Segment LOS Score / LOS						
1	Transit Segment LOS Score / LOS						

Facility Output Data	Eastbound	Westbound
Facility Travel Time, s	25.54	34.57
Facility Travel Speed, mph	32.04	23.67
Facility Base Free Flow Speed, mph	38.65	36.25
Facility Percent of Base FFS	82.90	65.30
Facility Level of Service	B	C
Facility Auto Traveler Perception Score	2.16	2.56
Multimodal Results (Facility)		
Pedestrian Facility LOS Score / LOS		
Bicycle Facility LOS Score / LOS		
Transit Facility LOS Score / LOS		

Copyright © 2018 University of Florida, All Rights Reserved.

HCS 2010 Urban Street Segment Report

General Information				Streets Information	
Agency	Lu Engineers			Number of Intersections	2
Analyst	Jonathan Ottman	Analysis Date	8/16/2018	Number of Segments	1
Jurisdiction	City of Rochester	Time Period	7:30 - 8:30 AM PK HR	Number of Iterations	15
File Name	COR 17102 2019 EX CD AM Pk	Analysis Year	2018	System Cycle Length, s	120
Intersections	Genesee Street	S Plymouth Ave		Analysis Period	1> 7:30
Project Description	NO BUILD ALT (2019 ETC) AM Pk Hr				



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	30	30	2	2	1200	1200	55	55	0	0	100	100	0.0	0.0

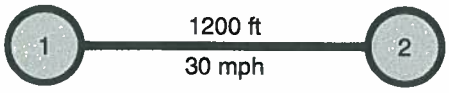
		Eastbound			Westbound		
Segment Output Data		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	1	6	16	5	2	12
1	Bay/Lane Spillback Time, h		never				
1	Shared Lane Spillback Time, h	never					
1	Base Free-Flow Speed, mph	38.65			36.25		
1	Running Time, s	24.44			25.20		
1	Running Speed, mph	33.48			32.47		
1	Through Delay, s/veh	1.14			9.68		
1	Travel Speed, mph	34.50			26.50		
1	Stop Rate, stops/veh	0.04			0.31		
1	Spatial Stop Rate, stops/mi	0.16			1.38		
1	Through vol/cap Ratio	0.42			0.11		
1	Percent of Base FFS	89.27			73.11		
1	Level of Service	A			B		
1	Auto Traveler Perception Score	2.16			2.57		
Multimodal Results (Segment)							
1	Pedestrian Segment LOS Score / LOS						
1	Bicycle Segment LOS Score / LOS						
1	Transit Segment LOS Score / LOS						

Facility Output Data	Eastbound	Westbound
Facility Travel Time, s	25.58	34.88
Facility Travel Speed, mph	31.98	23.46
Facility Base Free Flow Speed, mph	38.65	36.25
Facility Percent of Base FFS	82.76	64.71
Facility Level of Service	B	C
Facility Auto Traveler Perception Score	2.16	2.57
Multimodal Results (Facility)		
Pedestrian Facility LOS Score / LOS		
Bicycle Facility LOS Score / LOS		
Transit Facility LOS Score / LOS		

Copyright © 2018 University of Florida, All Rights Reserved.

HCS 2010 Urban Street Segment Report

General Information				Streets Information	
Agency	Lu Engineers			Number of Intersections	2
Analyst	Jonathan Ottman	Analysis Date	8/16/2018	Number of Segments	1
Jurisdiction	City of Rochester	Time Period	7:30 - 8:30 AM PK HR	Number of Iterations	15
File Name	COR 17102 2034 EX CD AM Pk	Analysis Year	2018	System Cycle Length, s	120
Intersections	Genesee Street	S Plymouth Ave		Analysis Period	1> 7:30
Project Description	NO BUILD ALT (2034 ETC+15) AM Pk Hr				



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	30	30	2	2	1200	1200	55	55	0	0	100	100	0.0	0.0

		Eastbound			Westbound		
Segment Output Data		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	1	6	16	5	2	12
1	Bay/Lane Spillback Time, h		never				
1	Shared Lane Spillback Time, h	never					
1	Base Free-Flow Speed, mph	38.65			36.25		
1	Running Time, s	24.68			25.28		
1	Running Speed, mph	33.15			32.36		
1	Through Delay, s/veh	1.42			12.21		
1	Travel Speed, mph	34.50			26.50		
1	Stop Rate, stops/veh	0.04			0.36		
1	Spatial Stop Rate, stops/mi	0.19			1.60		
1	Through vol/cap Ratio	0.52			0.15		
1	Percent of Base FFS	89.27			73.11		
1	Level of Service	A			B		
1	Auto Traveler Perception Score	2.17			2.61		

Multimodal Results (Segment)					
1	Pedestrian Segment LOS Score / LOS				
1	Bicycle Segment LOS Score / LOS				
1	Transit Segment LOS Score / LOS				

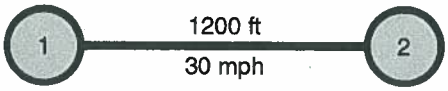
Facility Output Data	Eastbound	Westbound
Facility Travel Time, s	26.10	37.50
Facility Travel Speed, mph	31.35	21.82
Facility Base Free Flow Speed, mph	38.65	36.25
Facility Percent of Base FFS	81.12	60.20
Facility Level of Service	B	C
Facility Auto Traveler Perception Score	2.17	2.61

Multimodal Results (Facility)				
Pedestrian Facility LOS Score / LOS				
Bicycle Facility LOS Score / LOS				
Transit Facility LOS Score / LOS				

Copyright © 2018 University of Florida, All Rights Reserved.

HCS 2010 Urban Street Segment Report

General Information				Streets Information	
Agency	Lu Engineers			Number of Intersections	2
Analyst	Jonathan Ottman	Analysis Date	8/16/2018	Number of Segments	1
Jurisdiction	City of Rochester	Time Period	7:30 - 8:30 AM PK HR	Number of Iterations	15
File Name	COR 17102 2018 EX CD PM Pk	Analysis Year	2018	System Cycle Length, s	150
Intersections	Genesee Street	S Plymouth Ave		Analysis Period	1> 7:30
Project Description	NO BUILD ALT (2018) PM Pk Hr				



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	30	30	2	2	1200	1200	55	55	0	0	100	100	0.0	0.0

		Eastbound			Westbound		
Segment Output Data		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	1	6	16	5	2	12
1	Bay/Lane Spillback Time, h		never				
1	Shared Lane Spillback Time, h	never					
1	Base Free-Flow Speed, mph	38.65			36.25		
1	Running Time, s	24.09			26.05		
1	Running Speed, mph	33.96			31.41		
1	Through Delay, s/veh	0.69			8.22		
1	Travel Speed, mph	34.50			26.50		
1	Stop Rate, stops/veh	0.03			0.25		
1	Spatial Stop Rate, stops/mi	0.12			1.10		
1	Through vol/cap Ratio	0.27			0.31		
1	Percent of Base FFS	89.27			73.11		
1	Level of Service	A			B		
1	Auto Traveler Perception Score	2.16			2.52		

Multimodal Results (Segment)					
1	Pedestrian Segment LOS Score / LOS				
1	Bicycle Segment LOS Score / LOS				
1	Transit Segment LOS Score / LOS				

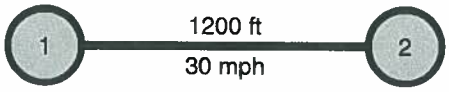
Facility Output Data	Eastbound	Westbound
Facility Travel Time, s	24.79	34.27
Facility Travel Speed, mph	33.01	23.87
Facility Base Free Flow Speed, mph	38.65	36.25
Facility Percent of Base FFS	85.41	65.86
Facility Level of Service	A	C
Facility Auto Traveler Perception Score	2.16	2.52

Multimodal Results (Facility)				
Pedestrian Facility LOS Score / LOS				
Bicycle Facility LOS Score / LOS				
Transit Facility LOS Score / LOS				

Copyright © 2018 University of Florida, All Rights Reserved.

HCS 2010 Urban Street Segment Report

General Information				Streets Information	
Agency	Lu Engineers			Number of Intersections	2
Analyst	Jonathan Ottman	Analysis Date	8/16/2018	Number of Segments	1
Jurisdiction	City of Rochester	Time Period	7:30 - 8:30 AM PK HR	Number of Iterations	15
File Name	COR 17102 2019 EX CD PM Pk	Analysis Year	2018	System Cycle Length, s	150
Intersections	Genesee Street	S Plymouth Ave		Analysis Period	1> 7:30
Project Description	NO BUILD ALT (2019 ETC) PM Pk Hr				



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	30	30	2	2	1200	1200	55	55	0	0	100	100	0.0	0.0

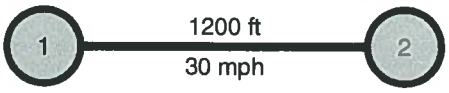
		Eastbound			Westbound		
Segment Output Data		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	1	6	16	5	2	12
1	Bay/Lane Spillback Time, h		never				
1	Shared Lane Spillback Time, h	never					
1	Base Free-Flow Speed, mph	38.65			36.25		
1	Running Time, s	24.10			26.07		
1	Running Speed, mph	33.94			31.38		
1	Through Delay, s/veh	0.70			8.43		
1	Travel Speed, mph	34.50			26.50		
1	Stop Rate, stops/veh	0.03			0.25		
1	Spatial Stop Rate, stops/mi	0.12			1.12		
1	Through vol/cap Ratio	0.27			0.31		
1	Percent of Base FFS	89.27			73.11		
1	Level of Service	A			B		
1	Auto Traveler Perception Score	2.16			2.52		
Multimodal Results (Segment)							
1	Pedestrian Segment LOS Score / LOS						
1	Bicycle Segment LOS Score / LOS						
1	Transit Segment LOS Score / LOS						

Facility Output Data	Eastbound	Westbound
Facility Travel Time, s	24.81	34.50
Facility Travel Speed, mph	32.98	23.71
Facility Base Free Flow Speed, mph	38.65	36.25
Facility Percent of Base FFS	85.35	65.42
Facility Level of Service	A	C
Facility Auto Traveler Perception Score	2.16	2.52
Multimodal Results (Facility)		
Pedestrian Facility LOS Score / LOS		
Bicycle Facility LOS Score / LOS		
Transit Facility LOS Score / LOS		

Copyright © 2018 University of Florida, All Rights Reserved.

HCS 2010 Urban Street Segment Report

General Information				Streets Information	
Agency	Lu Engineers			Number of Intersections	2
Analyst	Jonathan Ottman	Analysis Date	8/16/2018	Number of Segments	1
Jurisdiction	City of Rochester	Time Period	7:30 - 8:30 AM PK HR	Number of Iterations	15
File Name	COR 17102 2034 EX CD PM Pk	Analysis Year	2018	System Cycle Length, s	150
Intersections	Genesee Street	S Plymouth Ave		Analysis Period	1> 7:30
Project Description	NO BUILD ALT (2034 ETC+15) PM Pk Hr				



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	30	30	2	2	1200	1200	55	55	0	0	100	100	0.0	0.0

		Eastbound			Westbound		
Segment Output Data		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	1	6	16	5	2	12
1	Bay/Lane Spillback Time, h		never				
1	Shared Lane Spillback Time, h	never					
1	Base Free-Flow Speed, mph	38.65			36.25		
1	Running Time, s	24.23			26.43		
1	Running Speed, mph	33.77			30.96		
1	Through Delay, s/veh	0.79			10.88		
1	Travel Speed, mph	34.50			26.50		
1	Stop Rate, stops/veh	0.03			0.29		
1	Spatial Stop Rate, stops/mi	0.13			1.29		
1	Through vol/cap Ratio	0.33			0.39		
1	Percent of Base FFS	89.27			73.11		
1	Level of Service	A			B		
1	Auto Traveler Perception Score	2.16			2.55		
Multimodal Results (Segment)							
1	Pedestrian Segment LOS Score / LOS						
1	Bicycle Segment LOS Score / LOS						
1	Transit Segment LOS Score / LOS						

Facility Output Data	Eastbound	Westbound
Facility Travel Time, s	25.02	37.31
Facility Travel Speed, mph	32.70	21.93
Facility Base Free Flow Speed, mph	38.65	36.25
Facility Percent of Base FFS	84.63	60.50
Facility Level of Service	B	C
Facility Auto Traveler Perception Score	2.16	2.55
Multimodal Results (Facility)		
Pedestrian Facility LOS Score / LOS		
Bicycle Facility LOS Score / LOS		
Transit Facility LOS Score / LOS		

Copyright © 2018 University of Florida, All Rights Reserved.

APPENDIX G

Level of Service Analysis
(Signalized Intersections – “Road Diet” Alternative)

Lanes, Volumes, Timings
1701: Genesee & Scottsville

08/16/2018

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	SBR2	NEL	NER	Ø3
Lane Configurations												
Traffic Volume (vph)	193	556	10	2	203	281	654	11	151	0	0	
Future Volume (vph)	193	556	10	2	203	281	654	11	151	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	100		0	0	0		0	0	
Storage Lanes	1		0	1		1	1	2		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	0.88	0.95	1.00	1.00	
Ped Bike Factor							0.99	0.98	0.99			
Frt		0.995				0.850		0.850	0.850			
Flt Protected	0.950			0.950			0.950					
Satd. Flow (prot)	1770	1853	0	1770	1863	1583	1770	1393	1504	0	0	
Flt Permitted	0.409			0.243			0.950					
Satd. Flow (perm)	762	1853	0	453	1863	1583	1760	1368	1485	0	0	
Right Turn on Red			Yes			Yes			Yes		Yes	
Satd. Flow (RTOR)		1				356		100	100			
Link Speed (mph)		30			30		30			30		
Link Distance (ft)		1605			1060		140			397		
Travel Time (s)		36.5			24.1		3.2			9.0		
Confl. Peds. (#/hr)							2	2	2			
Peak Hour Factor	0.83	0.90	0.50	0.50	0.88	0.79	0.86	0.55	0.83	0.95	0.95	
Adj. Flow (vph)	233	618	20	4	231	356	760	20	182	0	0	
Shared Lane Traffic (%)									45%			
Lane Group Flow (vph)	233	638	0	4	231	356	760	102	100	0	0	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Right	Right	Left	Right	
Median Width(ft)		14			12		12			12		
Link Offset(ft)		0			0		0			0		
Crosswalk Width(ft)		16			16		16			16		
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15		9	15		9	15	9	9	15	9	
Number of Detectors	1	1		1	1	1	1	1	1			
Detector Template												
Leading Detector (ft)	50	50		35	35	35	35	35	35			
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)	50	50		35	35	35	35	35	35			
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			
Turn Type	pm+pt	NA		Perm	NA	custom	Perm	Perm	custom			
Protected Phases	1	6			2	2 3			1 3 4			3
Permitted Phases	6			2		2 3	8	8	1 3 4			
Detector Phase	1	6		2	2	2 3	8	8	1 3 4			
Switch Phase												
Minimum Initial (s)	4.0	10.0		10.0	10.0		10.0	10.0				9.0

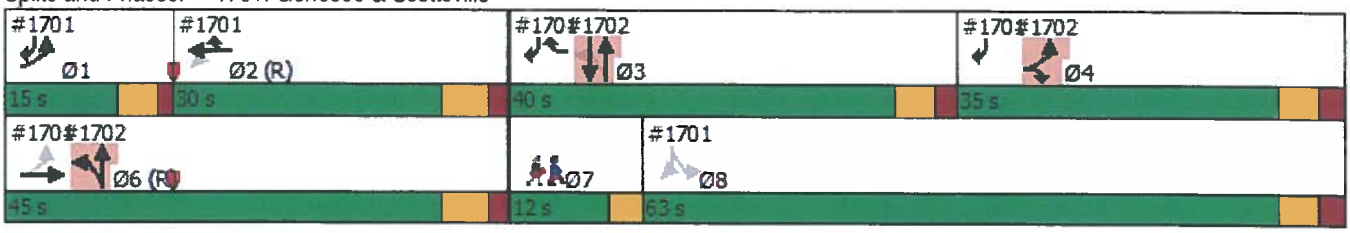
Lane Group	Ø4	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Peak Hour Factor		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Number of Detectors		
Detector Template		
Leading Detector (ft)		
Trailing Detector (ft)		
Detector 1 Position(ft)		
Detector 1 Size(ft)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Turn Type		
Protected Phases	4	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	12.0	4.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	SBR2	NEL	NER	Ø3
Minimum Split (s)	9.0	30.0		30.0	30.0		29.0	29.0				29.0
Total Split (s)	15.0	45.0		30.0	30.0		63.0	63.0				40.0
Total Split (%)	12.5%	37.5%		25.0%	25.0%		52.5%	52.5%				33%
Maximum Green (s)	10.0	39.0		24.0	24.0		57.0	57.0				34.5
Yellow Time (s)	3.5	4.0		4.0	4.0		3.5	3.5				3.5
All-Red Time (s)	1.5	2.0		2.0	2.0		2.5	2.5				2.0
Lost Time Adjust (s)	-2.0	-3.0		-3.0	-3.0		-3.0	-1.0				
Total Lost Time (s)	3.0	3.0		3.0	3.0		3.0	5.0				
Lead/Lag	Lead			Lag	Lag		Lag	Lag				Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	4.0		4.0	4.0		3.0	3.0				3.0
Recall Mode	None	C-Max		C-Max	C-Max		None	None				None
Walk Time (s)		7.0		7.0	7.0		7.0	7.0				7.0
Flash Dont Walk (s)		17.0		17.0	17.0		16.0	16.0				16.0
Pedestrian Calls (#/hr)		0		0	0		0	0				0
Act Effct Green (s)	53.7	53.7		35.3	35.3	68.6	60.3	58.3	78.7			
Actuated g/C Ratio	0.45	0.45		0.29	0.29	0.57	0.50	0.49	0.66			
v/c Ratio	0.50	0.77		0.03	0.42	0.34	0.86	0.14	0.10			
Control Delay	27.5	37.1		23.0	26.0	9.0	25.0	0.4	0.2			
Queue Delay	0.0	0.0		0.0	0.0	0.0	8.0	0.0	0.0			
Total Delay	27.5	37.1		23.0	26.0	9.0	32.9	0.4	0.2			
LOS	C	D		C	C	A	C	A	A			
Approach Delay		34.5			15.8		26.1					
Approach LOS		C			B		C					
Queue Length 50th (ft)	112	407		2	128	102	588	0	0			
Queue Length 95th (ft)	187	#735		6	216	161	566	0	0			
Internal Link Dist (ft)		1525			980		60			317		
Turn Bay Length (ft)				100								
Base Capacity (vph)	470	829		133	547	1125	921	742	1019			
Starvation Cap Reductn	0	0		0	0	0	131	0	0			
Spillback Cap Reductn	0	0		0	0	0	0	0	0			
Storage Cap Reductn	0	0		0	0	0	0	0	0			
Reduced v/c Ratio	0.50	0.77		0.03	0.42	0.32	0.96	0.14	0.10			

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 57 (48%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 26.6 Intersection LOS: C
Intersection Capacity Utilization 84.4% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1701: Genesee & Scottsville



Lane Group	Ø4	Ø7
Minimum Split (s)	20.0	7.0
Total Split (s)	35.0	12.0
Total Split (%)	29%	10%
Maximum Green (s)	29.0	9.0
Yellow Time (s)	3.5	3.0
All-Red Time (s)	2.5	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lag	Lead
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	3.0
Recall Mode	None	None
Walk Time (s)	7.0	
Flash Dont Walk (s)	7.0	
Pedestrian Calls (#/hr)	0	
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø2	Ø7	Ø8
Lane Configurations										
Traffic Volume (vph)	20	356	99	375	460	11				
Future Volume (vph)	20	356	99	375	460	11				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900				
Storage Length (ft)	0	125	100			0				
Storage Lanes	1	1	0			0				
Taper Length (ft)	25		25							
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95				
Ped Bike Factor	0.99	0.98		1.00	1.00					
Frt		0.850			0.994					
Flt Protected	0.950			0.989						
Satd. Flow (prot)	1770	1583	0	3500	3513	0				
Flt Permitted	0.950			0.646						
Satd. Flow (perm)	1756	1552	0	2286	3513	0				
Right Turn on Red		Yes				Yes				
Satd. Flow (RTOR)		451			3					
Link Speed (mph)	30			30	30					
Link Distance (ft)	403			191	243					
Travel Time (s)	9.2			4.3	5.5					
Confl. Peds. (#/hr)	3	3	1			7				
Peak Hour Factor	0.71	0.79	0.75	0.80	0.90	0.55				
Adj. Flow (vph)	28	451	132	469	511	20				
Shared Lane Traffic (%)										
Lane Group Flow (vph)	28	451	0	601	531	0				
Enter Blocked Intersection	No	No	No	No	No	No				
Lane Alignment	Left	Right	Left	Left	Left	Right				
Median Width(ft)	12			0	0					
Link Offset(ft)	0			0	0					
Crosswalk Width(ft)	16			16	16					
Two way Left Turn Lane										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00				
Turning Speed (mph)	15	9	15			9				
Number of Detectors	1	1	1	1	1					
Detector Template										
Leading Detector (ft)	35	35	35	35	35					
Trailing Detector (ft)	0	0	0	0	0					
Detector 1 Position(ft)	0	0	0	0	0					
Detector 1 Size(ft)	35	35	35	35	35					
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex					
Detector 1 Channel										
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0					
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0					
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0					
Turn Type	Prot	Prot	D.P+P	NA	NA					
Protected Phases	4	4	6	3 6	3		1	2	7	8
Permitted Phases		4	3							
Detector Phase	4	4	6	3 6	3					
Switch Phase										
Minimum Initial (s)	12.0	12.0	10.0		9.0		4.0	10.0	4.0	10.0

Lanes, Volumes, Timings
1702: Genesee & Genesee Pk

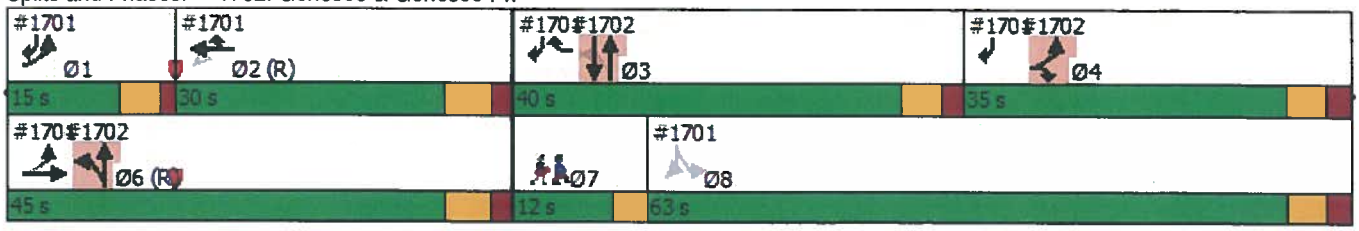
08/16/2018

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø2	Ø7	Ø8
Minimum Split (s)	20.0	20.0	30.0		29.0		9.0	30.0	7.0	29.0
Total Split (s)	35.0	35.0	45.0		40.0		15.0	30.0	12.0	63.0
Total Split (%)	29.2%	29.2%	37.5%		33.3%		13%	25%	10%	53%
Maximum Green (s)	29.0	29.0	39.0		34.5		10.0	24.0	9.0	57.0
Yellow Time (s)	3.5	3.5	4.0		3.5		3.5	4.0	3.0	3.5
All-Red Time (s)	2.5	2.5	2.0		2.0		1.5	2.0	0.0	2.5
Lost Time Adjust (s)	-3.0	-3.0			-2.5					
Total Lost Time (s)	3.0	3.0			3.0					
Lead/Lag	Lag	Lag			Lead		Lead	Lag	Lead	Lag
Lead-Lag Optimize?										
Vehicle Extension (s)	3.0	3.0	4.0		3.0		3.0	4.0	3.0	3.0
Recall Mode	None	None	C-Max		None		None	C-Max	None	None
Walk Time (s)	7.0	7.0	7.0		7.0			7.0		7.0
Flash Dont Walk (s)	7.0	7.0	17.0		16.0			17.0		16.0
Pedestrian Calls (#/hr)	0	0	0		0			0		0
Act Effct Green (s)	27.0	27.0		84.0	30.3					
Actuated g/C Ratio	0.22	0.22		0.70	0.25					
v/c Ratio	0.07	0.64		0.28	0.60					
Control Delay	36.4	8.0		1.2	41.5					
Queue Delay	0.0	0.0		0.1	0.1					
Total Delay	36.4	8.0		1.3	41.6					
LOS	D	A		A	D					
Approach Delay	9.7			1.3	41.6					
Approach LOS	A			A	D					
Queue Length 50th (ft)	17	0		7	188					
Queue Length 95th (ft)	32	33		9	229					
Internal Link Dist (ft)	323			111	163					
Turn Bay Length (ft)		125								
Base Capacity (vph)	472	752		2271	1085					
Starvation Cap Reductn	0	0		567	0					
Spillback Cap Reductn	0	9		0	72					
Storage Cap Reductn	0	0		0	0					
Reduced v/c Ratio	0.06	0.61		0.35	0.52					

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 57 (48%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 17.1 Intersection LOS: B
Intersection Capacity Utilization 47.7% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 1702: Genesee & Genesee Pk



Lanes, Volumes, Timings
171: Bus Loop/Plymouth & Scottsville

08/16/2018

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1209	0	0	490	25	1	0	8	15	0	4
Future Volume (vph)	0	1209	0	0	490	25	1	0	8	15	0	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		125	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.993			0.880				0.850
Flt Protected								0.994		0.950		
Satd. Flow (prot)	1863	3539	0	0	3514	0	0	1629	0	1770	0	1583
Flt Permitted								0.994		0.752		
Satd. Flow (perm)	1863	3539	0	0	3514	0	0	1629	0	1401	0	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					13			18				18
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		221			946			370			577	
Travel Time (s)		5.0			21.5			8.4			13.1	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1273	0	0	516	26	1	0	8	16	0	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1273	0	0	542	0	0	9	0	16	0	4
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1			1		1	1		1		1
Detector Template												
Leading Detector (ft)	35	50			50		10	10		30		30
Trailing Detector (ft)	-5	50			50		0	0		-10		-10
Detector 1 Position(ft)	-5	50			50		0	0		-10		-10
Detector 1 Size(ft)	40	0			0		10	10		40		40
Detector 1 Type	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
Detector 1 Queue (s)	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
Turn Type	Perm	NA			NA		Perm	NA		D.Pm		Perm
Protected Phases		1			1			4				
Permitted Phases	1						4			4		4
Detector Phase	1	1			1		4	4		4		4
Switch Phase												
Minimum Initial (s)	15.0	15.0			15.0		6.0	6.0		6.0		6.0
Minimum Split (s)	29.0	29.0			29.0		25.0	25.0		25.0		25.0
Total Split (s)	95.0	95.0			95.0		25.0	25.0		25.0		25.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	79.2%	79.2%			79.2%		20.8%	20.8%		20.8%		20.8%
Maximum Green (s)	90.0	90.0			90.0		19.0	19.0		19.0		19.0
Yellow Time (s)	4.0	4.0			4.0		4.0	4.0		4.0		4.0
All-Red Time (s)	1.0	1.0			1.0		2.0	2.0		2.0		2.0
Lost Time Adjust (s)	-2.0	-2.0			-2.0			-2.0		-3.0		-1.0
Total Lost Time (s)	3.0	3.0			3.0			4.0		3.0		5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0			2.0		4.0	4.0		4.0		4.0
Recall Mode	C-Max	C-Max			C-Max		None	None		None		None
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0		7.0
Flash Dont Walk (s)	17.0	17.0			17.0		12.0	12.0		12.0		12.0
Pedestrian Calls (#/hr)	0	0			0		0	0		0		0
Act Effct Green (s)		109.1			109.1			10.2		11.2		9.2
Actuated g/C Ratio		0.91			0.91			0.08		0.09		0.08
v/c Ratio		0.40			0.17			0.06		0.12		0.03
Control Delay		1.3			0.5			11.0		51.3		0.5
Queue Delay		0.0			0.0			0.0		0.0		0.0
Total Delay		1.3			0.5			11.0		51.3		0.5
LOS		A			A			B		D		A
Approach Delay		1.3			0.5			11.0			41.2	
Approach LOS		A			A			B			D	
Queue Length 50th (ft)		27			1			0		12		0
Queue Length 95th (ft)		123			1			10		34		1
Internal Link Dist (ft)		141			866			290			497	
Turn Bay Length (ft)												
Base Capacity (vph)		3218			3197			299		256		278
Starvation Cap Reductn		0			0			0		0		0
Spillback Cap Reductn		0			0			0		0		0
Storage Cap Reductn		0			0			0		0		0
Reduced v/c Ratio		0.40			0.17			0.03		0.06		0.01

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 8 (7%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.40
Intersection Signal Delay: 1.6 Intersection LOS: A
Intersection Capacity Utilization 45.1% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 171: Bus Loop/Plymouth & Scottsville

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	SBR2	NEL	NER	Ø3
Lane Configurations												
Traffic Volume (vph)	236	680	12	2	248	343	799	14	185	0	0	
Future Volume (vph)	236	680	12	2	248	343	799	14	185	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	100		0	0	0		0	0	
Storage Lanes	1		0	1		1	1	2		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	0.88	0.95	1.00	1.00	
Ped Bike Factor							0.99	0.98	0.99			
Frt		0.995				0.850		0.850	0.850			
Flt Protected	0.950			0.950			0.950					
Satd. Flow (prot)	1770	1853	0	1770	1863	1583	1770	1393	1504	0	0	
Flt Permitted	0.237			0.148			0.950					
Satd. Flow (perm)	441	1853	0	276	1863	1583	1760	1368	1485	0	0	
Right Turn on Red			Yes			Yes			Yes		Yes	
Satd. Flow (RTOR)		1				434		100	125			
Link Speed (mph)		30			30		30			30		
Link Distance (ft)		1605			1060		140			397		
Travel Time (s)		36.5			24.1		3.2			9.0		
Confl. Peds. (#/hr)							2	2	2			
Peak Hour Factor	0.83	0.90	0.50	0.50	0.88	0.79	0.86	0.55	0.83	0.95	0.95	
Adj. Flow (vph)	284	756	24	4	282	434	929	25	223	0	0	
Shared Lane Traffic (%)									44%			
Lane Group Flow (vph)	284	780	0	4	282	434	929	123	125	0	0	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Right	Right	Left	Right	
Median Width(ft)		14			12		12			12		
Link Offset(ft)		0			0		0			0		
Crosswalk Width(ft)		16			16		16			16		
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15		9	15		9	15	9	9	15	9	
Number of Detectors	1	1		1	1	1	1	1	1			
Detector Template												
Leading Detector (ft)	50	50		35	35	35	35	35	35			
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)	50	50		35	35	35	35	35	35			
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			
Turn Type	pm+pt	NA		Perm	NA	custom	Perm	Perm	custom			
Protected Phases	1	6			2	2 3			1 3 4			3
Permitted Phases	6			2		2 3	8	8	1 3 4			
Detector Phase	1	6		2	2	2 3	8	8	1 3 4			
Switch Phase												
Minimum Initial (s)	4.0	10.0		10.0	10.0		10.0	10.0				9.0

Lane Group	Ø4	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Peak Hour Factor		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Number of Detectors		
Detector Template		
Leading Detector (ft)		
Trailing Detector (ft)		
Detector 1 Position(ft)		
Detector 1 Size(ft)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Turn Type		
Protected Phases	4	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	12.0	4.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	SBR2	NEL	NER	Ø3
Minimum Split (s)	9.0	30.0		30.0	30.0		29.0	29.0				29.0
Total Split (s)	15.0	45.0		30.0	30.0		63.0	63.0				40.0
Total Split (%)	12.5%	37.5%		25.0%	25.0%		52.5%	52.5%				33%
Maximum Green (s)	10.0	39.0		24.0	24.0		57.0	57.0				34.5
Yellow Time (s)	3.5	4.0		4.0	4.0		3.5	3.5				3.5
All-Red Time (s)	1.5	2.0		2.0	2.0		2.5	2.5				2.0
Lost Time Adjust (s)	-2.0	-3.0		-3.0	-3.0		-3.0	-1.0				
Total Lost Time (s)	3.0	3.0		3.0	3.0		3.0	5.0				
Lead/Lag	Lead			Lag	Lag		Lag	Lag				Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	4.0		4.0	4.0		3.0	3.0				3.0
Recall Mode	None	C-Max		C-Max	C-Max		None	None				None
Walk Time (s)		7.0		7.0	7.0		7.0	7.0				7.0
Flash Dont Walk (s)		17.0		17.0	17.0		16.0	16.0				16.0
Pedestrian Calls (#/hr)		0		0	0		0	0				0
Act Effct Green (s)	42.0	42.0		27.0	27.0	64.2	72.0	70.0	87.0			
Actuated g/C Ratio	0.35	0.35		0.22	0.22	0.54	0.60	0.58	0.72			
v/c Ratio	0.99	1.20		0.06	0.67	0.41	0.88	0.15	0.11			
Control Delay	84.7	140.5		29.5	39.4	9.1	24.4	0.3	0.2			
Queue Delay	0.0	0.0		0.0	0.0	0.0	17.7	0.0	0.0			
Total Delay	84.7	140.5		29.5	39.4	9.1	42.1	0.3	0.2			
LOS	F	F		C	D	A	D	A	A			
Approach Delay		125.6			21.0		33.3					
Approach LOS		F			C		C					
Queue Length 50th (ft)	169	~737		3	175	113	716	0	0			
Queue Length 95th (ft)	#260	#981		6	265	162	811	0	0			
Internal Link Dist (ft)		1525			980		60			317		
Turn Bay Length (ft)				100								
Base Capacity (vph)	287	649		62	419	1075	1056	839	1117			
Starvation Cap Reductn	0	0		0	0	0	144	0	0			
Spillback Cap Reductn	0	0		0	0	0	0	0	0			
Storage Cap Reductn	0	0		0	0	0	0	0	0			
Reduced v/c Ratio	0.99	1.20		0.06	0.67	0.40	1.02	0.15	0.11			

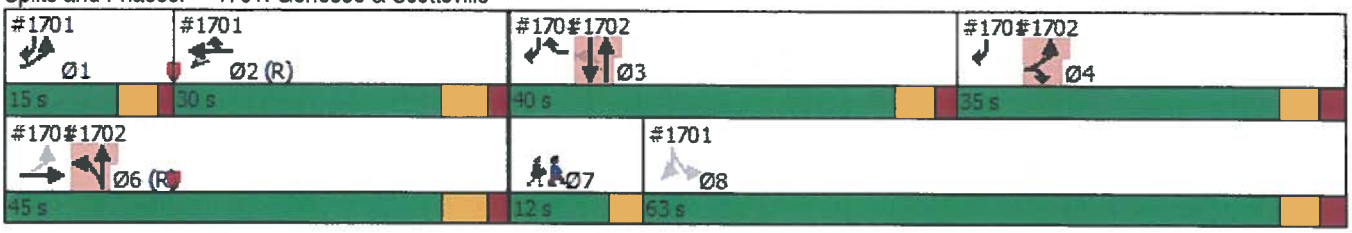
Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 57 (48%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.20
Intersection Signal Delay: 63.5 Intersection LOS: E
Intersection Capacity Utilization 99.1% ICU Level of Service F
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1701: Genesee & Scottsville



Lane Group	Ø4	Ø7
Minimum Split (s)	20.0	7.0
Total Split (s)	35.0	12.0
Total Split (%)	29%	10%
Maximum Green (s)	29.0	9.0
Yellow Time (s)	3.5	3.0
All-Red Time (s)	2.5	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lag	Lead
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	3.0
Recall Mode	None	None
Walk Time (s)	7.0	
Flash Dont Walk (s)	7.0	
Pedestrian Calls (#/hr)	0	
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

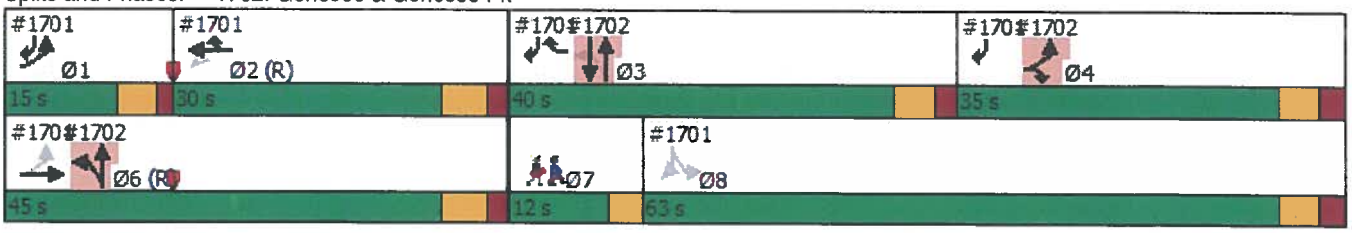
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø2	Ø7	Ø8
Lane Configurations										
Traffic Volume (vph)	25	435	122	458	562	14				
Future Volume (vph)	25	435	122	458	562	14				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900				
Storage Length (ft)	0	125	100			0				
Storage Lanes	1	1	0			0				
Taper Length (ft)	25		25							
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95				
Ped Bike Factor	0.99	0.98		1.00	1.00					
Frt		0.850			0.994					
Flt Protected	0.950			0.989						
Satd. Flow (prot)	1770	1583	0	3500	3512	0				
Flt Permitted	0.950			0.561						
Satd. Flow (perm)	1751	1548	0	1985	3512	0				
Right Turn on Red		Yes				Yes				
Satd. Flow (RTOR)		551			3					
Link Speed (mph)	30			30	30					
Link Distance (ft)	403			191	243					
Travel Time (s)	9.2			4.3	5.5					
Confl. Peds. (#/hr)	4	4	1			9				
Peak Hour Factor	0.71	0.79	0.75	0.80	0.90	0.55				
Adj. Flow (vph)	35	551	163	573	624	25				
Shared Lane Traffic (%)										
Lane Group Flow (vph)	35	551	0	736	649	0				
Enter Blocked Intersection	No	No	No	No	No	No				
Lane Alignment	Left	Right	Left	Left	Left	Right				
Median Width(ft)	12			0	0					
Link Offset(ft)	0			0	0					
Crosswalk Width(ft)	16			16	16					
Two way Left Turn Lane										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00				
Turning Speed (mph)	15	9	15			9				
Number of Detectors	1	1	1	1	1					
Detector Template										
Leading Detector (ft)	35	35	35	35	35					
Trailing Detector (ft)	0	0	0	0	0					
Detector 1 Position(ft)	0	0	0	0	0					
Detector 1 Size(ft)	35	35	35	35	35					
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex					
Detector 1 Channel										
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0					
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0					
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0					
Turn Type	Prot	Prot	D.P+P	NA	NA					
Protected Phases	4	4	6	3 6	3		1	2	7	8
Permitted Phases		4	3							
Detector Phase	4	4	6	3 6	3					
Switch Phase										
Minimum Initial (s)	12.0	12.0	10.0		9.0		4.0	10.0	4.0	10.0

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø2	Ø7	Ø8
Minimum Split (s)	20.0	20.0	30.0		29.0		9.0	30.0	7.0	29.0
Total Split (s)	35.0	35.0	45.0		40.0		15.0	30.0	12.0	63.0
Total Split (%)	29.2%	29.2%	37.5%		33.3%		13%	25%	10%	53%
Maximum Green (s)	29.0	29.0	39.0		34.5		10.0	24.0	9.0	57.0
Yellow Time (s)	3.5	3.5	4.0		3.5		3.5	4.0	3.0	3.5
All-Red Time (s)	2.5	2.5	2.0		2.0		1.5	2.0	0.0	2.5
Lost Time Adjust (s)	-3.0	-3.0			-2.5					
Total Lost Time (s)	3.0	3.0			3.0					
Lead/Lag	Lag	Lag			Lead		Lead	Lag	Lead	Lag
Lead-Lag Optimize?										
Vehicle Extension (s)	3.0	3.0	4.0		3.0		3.0	4.0	3.0	3.0
Recall Mode	None	None	C-Max		None		None	C-Max	None	None
Walk Time (s)	7.0	7.0	7.0		7.0			7.0		7.0
Flash Dont Walk (s)	7.0	7.0	17.0		16.0			17.0		16.0
Pedestrian Calls (#/hr)	0	0	0		0			0		0
Act Effct Green (s)	34.8	34.8		76.2	34.2					
Actuated g/C Ratio	0.29	0.29		0.64	0.28					
v/c Ratio	0.07	0.65		0.41	0.65					
Control Delay	33.3	7.0		3.0	40.4					
Queue Delay	0.0	0.1		0.2	0.2					
Total Delay	33.3	7.0		3.3	40.6					
LOS	C	A		A	D					
Approach Delay	8.6			3.3	40.6					
Approach LOS	A			A	D					
Queue Length 50th (ft)	20	0		21	223					
Queue Length 95th (ft)	37	30		m15	286					
Internal Link Dist (ft)	323			111	163					
Turn Bay Length (ft)		125								
Base Capacity (vph)	512	850		1837	1084					
Starvation Cap Reductn	0	0		445	0					
Spillback Cap Reductn	0	12		0	79					
Storage Cap Reductn	0	0		0	0					
Reduced v/c Ratio	0.07	0.66		0.53	0.65					

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 57 (48%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.20
Intersection Signal Delay: 17.1 Intersection LOS: B
Intersection Capacity Utilization 53.2% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1702: Genesee & Genesee Pk



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1462	0	0	593	30	1	0	9	18	0	5
Future Volume (vph)	0	1462	0	0	593	30	1	0	9	18	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		125	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.993			0.878				0.850
Flt Protected								0.995		0.950		
Satd. Flow (prot)	1863	3539	0	0	3514	0	0	1627	0	1770	0	1583
Flt Permitted								0.995		0.751		
Satd. Flow (perm)	1863	3539	0	0	3514	0	0	1627	0	1399	0	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					13			18				18
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		221			946			370			577	
Travel Time (s)		5.0			21.5			8.4			13.1	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1539	0	0	624	32	1	0	9	19	0	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1539	0	0	656	0	0	10	0	19	0	5
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1			1		1	1		1		1
Detector Template												
Leading Detector (ft)	35	50			50		10	10		30		30
Trailing Detector (ft)	-5	50			50		0	0		-10		-10
Detector 1 Position(ft)	-5	50			50		0	0		-10		-10
Detector 1 Size(ft)	40	0			0		10	10		40		40
Detector 1 Type	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
Detector 1 Queue (s)	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
Turn Type	Perm	NA			NA		Perm	NA		D.Pm		Perm
Protected Phases		1			1			4				
Permitted Phases	1						4			4		4
Detector Phase	1	1			1		4	4		4		4
Switch Phase												
Minimum Initial (s)	15.0	15.0			15.0		6.0	6.0		6.0		6.0
Minimum Split (s)	29.0	29.0			29.0		25.0	25.0		25.0		25.0
Total Split (s)	95.0	95.0			95.0		25.0	25.0		25.0		25.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	79.2%	79.2%			79.2%		20.8%	20.8%		20.8%		20.8%
Maximum Green (s)	90.0	90.0			90.0		19.0	19.0		19.0		19.0
Yellow Time (s)	4.0	4.0			4.0		4.0	4.0		4.0		4.0
All-Red Time (s)	1.0	1.0			1.0		2.0	2.0		2.0		2.0
Lost Time Adjust (s)	-2.0	-2.0			-2.0			-2.0		-3.0		-1.0
Total Lost Time (s)	3.0	3.0			3.0			4.0		3.0		5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0			2.0		4.0	4.0		4.0		4.0
Recall Mode	C-Max	C-Max			C-Max		None	None		None		None
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0		7.0
Flash Dont Walk (s)	17.0	17.0			17.0		12.0	12.0		12.0		12.0
Pedestrian Calls (#/hr)	0	0			0		0	0		0		0
Act Effct Green (s)		108.9			108.9			10.4		11.4		9.4
Actuated g/C Ratio		0.91			0.91			0.09		0.10		0.08
v/c Ratio		0.48			0.21			0.06		0.14		0.04
Control Delay		2.0			0.7			12.5		51.5		4.4
Queue Delay		0.0			0.0			0.0		0.0		0.0
Total Delay		2.0			0.7			12.5		51.5		4.4
LOS		A			A			B		D		A
Approach Delay		2.0			0.7			12.5			41.7	
Approach LOS		A			A			B			D	
Queue Length 50th (ft)		119			5			0		14		0
Queue Length 95th (ft)		m133			8			11		38		4
Internal Link Dist (ft)		141			866			290			497	
Turn Bay Length (ft)												
Base Capacity (vph)		3213			3191			299		256		278
Starvation Cap Reductn		0			0			0		0		0
Spillback Cap Reductn		0			0			0		0		0
Storage Cap Reductn		0			0			0		0		0
Reduced v/c Ratio		0.48			0.21			0.03		0.07		0.02

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 8 (7%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.48
Intersection Signal Delay: 2.1 Intersection LOS: A
Intersection Capacity Utilization 53.1% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 171: Bus Loop/Plymouth & Scottsville

Lanes, Volumes, Timings
1701: Genesee & Scottsville

08/16/2018

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	SBR2	NEL	NER	Ø3
Lane Configurations												
Traffic Volume (vph)	224	350	20	2	655	759	449	17	181	0	0	
Future Volume (vph)	224	350	20	2	655	759	449	17	181	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	100		0	0	0		0	0	
Storage Lanes	1		0	1		1	1	2		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	0.88	0.95	1.00	1.00	
Ped Bike Factor		1.00										
Frt		0.987				0.850		0.850	0.850			
Flt Protected	0.950			0.950			0.950					
Satd. Flow (prot)	1770	1835	0	1770	1863	1583	1770	1393	1504	0	0	
Flt Permitted	0.068			0.521			0.950					
Satd. Flow (perm)	127	1835	0	970	1863	1583	1770	1393	1504	0	0	
Right Turn on Red			Yes			Yes			Yes		Yes	
Satd. Flow (RTOR)		5				699		95	78			
Link Speed (mph)		30			30		30			30		
Link Distance (ft)		1605			1060		140			397		
Travel Time (s)		36.5			24.1		3.2			9.0		
Confl. Peds. (#/hr)	1		1									
Peak Hour Factor	0.86	0.93	0.56	0.50	0.92	0.94	0.90	0.47	0.80	0.95	0.95	
Adj. Flow (vph)	260	376	36	4	712	807	499	36	226	0	0	
Shared Lane Traffic (%)									42%			
Lane Group Flow (vph)	260	412	0	4	712	807	499	131	131	0	0	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Right	Right	Left	Right	
Median Width(ft)		14			12		12			12		
Link Offset(ft)		0			0		0			0		
Crosswalk Width(ft)		16			16		16			16		
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15		9	15		9	15	9	9	15	9	
Number of Detectors	1	1		1	1	1	1	1	1			
Detector Template												
Leading Detector (ft)	50	50		35	35	35	35	35	35			
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)	50	50		35	35	35	35	35	35			
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			
Turn Type	pm+pt	NA		Perm	NA	custom	Perm	Perm	custom			
Protected Phases	1	6			2	2 3			1 3 4			3
Permitted Phases	6			2		2 3	8	8	1 3 4			
Detector Phase	1	6		2	2	2 3	8	8	1 3 4			
Switch Phase												
Minimum Initial (s)	4.0	10.0		10.0	10.0		10.0	10.0				9.0

Lane Group	Ø4	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Peak Hour Factor		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Number of Detectors		
Detector Template		
Leading Detector (ft)		
Trailing Detector (ft)		
Detector 1 Position(ft)		
Detector 1 Size(ft)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Turn Type		
Protected Phases	4	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	12.0	4.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	SBR2	NEL	NER	Ø3
Minimum Split (s)	9.0	30.0		30.0	30.0		29.0	29.0				29.0
Total Split (s)	20.0	80.0		60.0	60.0		58.0	58.0				40.0
Total Split (%)	13.3%	53.3%		40.0%	40.0%		38.7%	38.7%				27%
Maximum Green (s)	15.0	74.0		54.0	54.0		52.0	52.0				34.5
Yellow Time (s)	3.5	4.0		4.0	4.0		3.5	3.5				3.5
All-Red Time (s)	1.5	2.0		2.0	2.0		2.5	2.5				2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0				
Total Lost Time (s)	5.0	6.0		6.0	6.0		6.0	6.0				
Lead/Lag	Lead			Lag	Lag		Lag	Lag				Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	4.0		4.0	4.0		3.0	3.0				3.0
Recall Mode	None	C-Max		C-Max	C-Max		None	None				None
Walk Time (s)		7.0		7.0	7.0		7.0	7.0				7.0
Flash Dont Walk (s)		17.0		17.0	17.0		16.0	16.0				16.0
Pedestrian Calls (#/hr)		0		0	0		0	0				0
Act Effct Green (s)	86.8	85.8		54.0	54.0	93.1	52.2	52.2	85.0			
Actuated g/C Ratio	0.58	0.57		0.36	0.36	0.62	0.35	0.35	0.57			
v/c Ratio	0.71	0.39		0.01	1.06	0.65	0.81	0.24	0.15			
Control Delay	49.5	19.3		31.0	98.1	4.7	23.7	0.8	0.3			
Queue Delay	0.0	0.0		0.0	0.0	0.0	7.7	0.8	0.9			
Total Delay	49.5	19.3		31.0	98.1	4.7	31.4	1.7	1.2			
LOS	D	B		C	F	A	C	A	A			
Approach Delay		31.0			48.4		21.1					
Approach LOS		C			D		C					
Queue Length 50th (ft)	186	211		3	~764	40	480	0	0			
Queue Length 95th (ft)	#311	312		6	#1012	127	568	0	0			
Internal Link Dist (ft)		1525			980		60			317		
Turn Bay Length (ft)				100								
Base Capacity (vph)	366	1051		349	670	1252	626	554	885			
Starvation Cap Reductn	0	0		0	0	0	94	230	542			
Spillback Cap Reductn	0	0		0	0	0	0	0	0			
Storage Cap Reductn	0	0		0	0	0	0	0	0			
Reduced v/c Ratio	0.71	0.39		0.01	1.06	0.64	0.94	0.40	0.38			

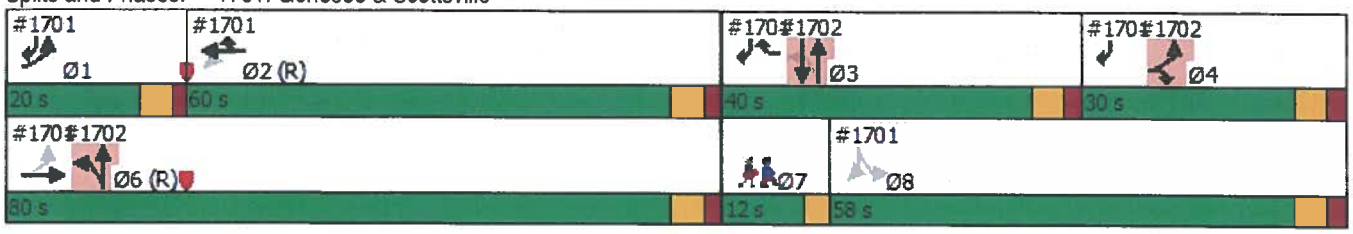
Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.06
Intersection Signal Delay: 37.4 Intersection LOS: D
Intersection Capacity Utilization 85.9% ICU Level of Service E
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1701: Genesee & Scottsville



Lane Group	Ø4	Ø7
Minimum Split (s)	20.0	7.0
Total Split (s)	30.0	12.0
Total Split (%)	20%	8%
Maximum Green (s)	24.0	9.0
Yellow Time (s)	3.5	3.0
All-Red Time (s)	2.5	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lag	Lead
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	3.0
Recall Mode	None	None
Walk Time (s)	7.0	
Flash Dont Walk (s)	7.0	
Pedestrian Calls (#/hr)	0	
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø2	Ø7	Ø8
Lane Configurations										
Traffic Volume (vph)	23	175	312	672	472	19				
Future Volume (vph)	23	175	312	672	472	19				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900				
Storage Length (ft)	0	125	100			0				
Storage Lanes	1	1	0			0				
Taper Length (ft)	25		25							
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95				
Ped Bike Factor					1.00					
Frt		0.850			0.993					
Flt Protected	0.950			0.985						
Satd. Flow (prot)	1770	1583	0	3486	3510	0				
Flt Permitted	0.950			0.548						
Satd. Flow (perm)	1770	1583	0	1939	3510	0				
Right Turn on Red		Yes				Yes				
Satd. Flow (RTOR)		203			3					
Link Speed (mph)	30			30	30					
Link Distance (ft)	403			191	243					
Travel Time (s)	9.2			4.3	5.5					
Confl. Peds. (#/hr)						3				
Peak Hour Factor	0.72	0.86	0.98	0.89	0.91	0.79				
Adj. Flow (vph)	32	203	318	755	519	24				
Shared Lane Traffic (%)										
Lane Group Flow (vph)	32	203	0	1073	543	0				
Enter Blocked Intersection	No	No	No	No	No	No				
Lane Alignment	Left	Right	Left	Left	Left	Right				
Median Width(ft)	12			0	0					
Link Offset(ft)	0			0	0					
Crosswalk Width(ft)	16			16	16					
Two way Left Turn Lane										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00				
Turning Speed (mph)	15	9	15			9				
Number of Detectors	1	1	1	1	1					
Detector Template										
Leading Detector (ft)	35	35	35	35	35					
Trailing Detector (ft)	0	0	0	0	0					
Detector 1 Position(ft)	0	0	0	0	0					
Detector 1 Size(ft)	35	35	35	35	35					
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex					
Detector 1 Channel										
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0					
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0					
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0					
Turn Type	Prot	Prot	D.P+P	NA	NA					
Protected Phases	4	4	6	3 6	3		1	2	7	8
Permitted Phases		4	3							
Detector Phase	4	4	6	3 6	3					
Switch Phase										
Minimum Initial (s)	12.0	12.0	10.0		9.0		4.0	10.0	4.0	10.0

Lanes, Volumes, Timings
1702: Genesee & Genesee Pk

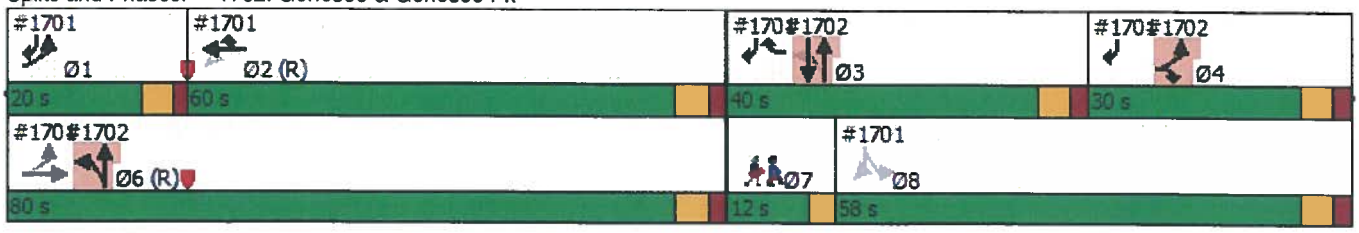
08/16/2018

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø2	Ø7	Ø8
Minimum Split (s)	20.0	20.0	30.0		29.0		9.0	30.0	7.0	29.0
Total Split (s)	30.0	30.0	80.0		40.0		20.0	60.0	12.0	58.0
Total Split (%)	20.0%	20.0%	53.3%		26.7%		13%	40%	8%	39%
Maximum Green (s)	24.0	24.0	74.0		34.5		15.0	54.0	9.0	52.0
Yellow Time (s)	3.5	3.5	4.0		3.5		3.5	4.0	3.0	3.5
All-Red Time (s)	2.5	2.5	2.0		2.0		1.5	2.0	0.0	2.5
Lost Time Adjust (s)	0.0	0.0			0.0					
Total Lost Time (s)	6.0	6.0			5.5					
Lead/Lag	Lag	Lag			Lead		Lead	Lag	Lead	Lag
Lead-Lag Optimize?										
Vehicle Extension (s)	3.0	3.0	4.0		3.0		3.0	4.0	3.0	3.0
Recall Mode	None	None	C-Max		None		None	C-Max	None	None
Walk Time (s)	7.0	7.0	7.0		7.0			7.0		7.0
Flash Dont Walk (s)	7.0	7.0	17.0		16.0			17.0		16.0
Pedestrian Calls (#/hr)	0	0	0		0			0		0
Act Effct Green (s)	13.1	13.1		119.9	33.6					
Actuated g/C Ratio	0.09	0.09		0.80	0.22					
v/c Ratio	0.21	0.63		0.44	0.69					
Control Delay	66.2	16.8		2.4	58.1					
Queue Delay	0.0	0.0		0.4	0.3					
Total Delay	66.2	16.8		2.8	58.4					
LOS	E	B		A	E					
Approach Delay	23.5			2.8	58.4					
Approach LOS	C			A	E					
Queue Length 50th (ft)	30	0		60	255					
Queue Length 95th (ft)	51	65		72	322					
Internal Link Dist (ft)	323			111	163					
Turn Bay Length (ft)		125								
Base Capacity (vph)	283	423		2451	809					
Starvation Cap Reductn	0	0		781	0					
Spillback Cap Reductn	0	1		0	33					
Storage Cap Reductn	0	0		0	0					
Reduced v/c Ratio	0.11	0.48		0.64	0.70					

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.06
Intersection Signal Delay: 21.7 Intersection LOS: C
Intersection Capacity Utilization 66.0% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 1702: Genesee & Genesee Pk



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	798	0	0	1428	67	9	2	10	22	0	5
Future Volume (vph)	2	798	0	0	1428	67	9	2	10	22	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		125	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.993			0.932				0.850
Flt Protected	0.950							0.980		0.950		
Satd. Flow (prot)	1770	3539	0	0	3514	0	0	1701	0	1770	0	1583
Flt Permitted	0.135							0.980		0.743		
Satd. Flow (perm)	251	3539	0	0	3514	0	0	1701	0	1384	0	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					11			11				18
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		221			946			370			577	
Travel Time (s)		5.0			21.5			8.4			13.1	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	2	840	0	0	1503	71	9	2	11	23	0	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	2	840	0	0	1574	0	0	22	0	23	0	5
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1			1		1	1		1		1
Detector Template												
Leading Detector (ft)	35	50			50		10	10		30		30
Trailing Detector (ft)	-5	50			50		0	0		-10		-10
Detector 1 Position(ft)	-5	50			50		0	0		-10		-10
Detector 1 Size(ft)	40	0			0		10	10		40		40
Detector 1 Type	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
Detector 1 Queue (s)	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
Turn Type	Perm	NA			NA		Perm	NA		D.Pm		Perm
Protected Phases		1			1			3				
Permitted Phases	1						3			3		3
Detector Phase	1	1			1		3	3		3		3
Switch Phase												
Minimum Initial (s)	15.0	15.0			15.0		6.0	6.0		6.0		6.0
Minimum Split (s)	29.0	29.0			29.0		26.0	26.0		26.0		26.0
Total Split (s)	94.0	94.0			94.0		26.0	26.0		26.0		26.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	78.3%	78.3%			78.3%		21.7%	21.7%		21.7%		21.7%
Maximum Green (s)	89.0	89.0			89.0		20.0	20.0		20.0		20.0
Yellow Time (s)	4.0	4.0			4.0		4.0	4.0		4.0		4.0
All-Red Time (s)	1.0	1.0			1.0		2.0	2.0		2.0		2.0
Lost Time Adjust (s)	0.0	0.0			0.0			0.0		0.0		0.0
Total Lost Time (s)	5.0	5.0			5.0			6.0		6.0		6.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0			2.0		4.0	4.0		4.0		4.0
Recall Mode	C-Max	C-Max			C-Max		None	None		None		None
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0		7.0
Flash Dont Walk (s)	17.0	17.0			17.0		12.0	12.0		12.0		12.0
Pedestrian Calls (#/hr)	4	4			4		23	23		23		23
Act Effct Green (s)	98.3	98.3			98.3			14.2		14.2		14.2
Actuated g/C Ratio	0.82	0.82			0.82			0.12		0.12		0.12
v/c Ratio	0.01	0.29			0.55			0.10		0.14		0.02
Control Delay	4.0	4.0			1.1			29.3		46.3		3.6
Queue Delay	0.0	0.0			0.0			0.0		0.0		0.0
Total Delay	4.0	4.0			1.1			29.3		46.3		3.6
LOS	A	A			A			C		D		A
Approach Delay		4.0			1.1			29.3			38.7	
Approach LOS		A			A			C			D	
Queue Length 50th (ft)	0	96			19			7		16		0
Queue Length 95th (ft)	3	121			37			32		41		3
Internal Link Dist (ft)		141			866			290			497	
Turn Bay Length (ft)	125											
Base Capacity (vph)	205	2899			2881			292		230		278
Starvation Cap Reductn	0	0			0			0		0		0
Spillback Cap Reductn	0	0			0			0		0		0
Storage Cap Reductn	0	0			0			0		0		0
Reduced v/c Ratio	0.01	0.29			0.55			0.08		0.10		0.02

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 35 (29%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.55
Intersection Signal Delay: 2.8 Intersection LOS: A
Intersection Capacity Utilization 65.8% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 171: Bus Loop/Plymouth & Scottsville

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	SBR2	NEL	NER	Ø3
Lane Configurations												
Traffic Volume (vph)	274	428	25	2	800	928	548	21	221	0	0	
Future Volume (vph)	274	428	25	2	800	928	548	21	221	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	100		0	0	0		0	0	
Storage Lanes	1		0	1		1	1	2		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	0.88	0.95	1.00	1.00	
Ped Bike Factor		1.00										
Frt		0.987				0.850		0.850	0.850			
Flt Protected	0.950			0.950			0.950					
Satd. Flow (prot)	1770	1835	0	1770	1863	1583	1770	1393	1504	0	0	
Flt Permitted	0.068			0.478			0.950					
Satd. Flow (perm)	127	1835	0	890	1863	1583	1770	1393	1504	0	0	
Right Turn on Red			Yes			Yes			Yes		Yes	
Satd. Flow (RTOR)		5				686		95	42			
Link Speed (mph)		30			30		30			30		
Link Distance (ft)		1605			1060		140			397		
Travel Time (s)		36.5			24.1		3.2			9.0		
Confl. Peds. (#/hr)	1		1									
Peak Hour Factor	0.86	0.93	0.56	0.50	0.92	0.94	0.90	0.47	0.80	0.95	0.95	
Adj. Flow (vph)	319	460	45	4	870	987	609	45	276	0	0	
Shared Lane Traffic (%)									42%			
Lane Group Flow (vph)	319	505	0	4	870	987	609	161	160	0	0	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Right	Right	Left	Right	
Median Width(ft)		14			12		12			12		
Link Offset(ft)		0			0		0			0		
Crosswalk Width(ft)		16			16		16			16		
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15		9	15		9	15	9	9	15	9	
Number of Detectors	1	1		1	1	1	1	1	1			
Detector Template												
Leading Detector (ft)	50	50		35	35	35	35	35	35			
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)	50	50		35	35	35	35	35	35			
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			
Turn Type	pm+pt	NA		Perm	NA	custom	Perm	Perm	custom			
Protected Phases	1	6			2	2 3			1 3 4			3
Permitted Phases	6			2		2 3	8	8	1 3 4			
Detector Phase	1	6		2	2	2 3	8	8	1 3 4			
Switch Phase												
Minimum Initial (s)	4.0	10.0		10.0	10.0		10.0	10.0				9.0

Lane Group	Ø4	Ø7
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Peak Hour Factor		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Number of Detectors		
Detector Template		
Leading Detector (ft)		
Trailing Detector (ft)		
Detector 1 Position(ft)		
Detector 1 Size(ft)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Turn Type		
Protected Phases	4	7
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	12.0	4.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	SBR2	NEL	NER	Ø3
Minimum Split (s)	9.0	30.0		30.0	30.0		29.0	29.0				29.0
Total Split (s)	20.0	80.0		60.0	60.0		58.0	58.0				40.0
Total Split (%)	13.3%	53.3%		40.0%	40.0%		38.7%	38.7%				27%
Maximum Green (s)	15.0	74.0		54.0	54.0		52.0	52.0				34.5
Yellow Time (s)	3.5	4.0		4.0	4.0		3.5	3.5				3.5
All-Red Time (s)	1.5	2.0		2.0	2.0		2.5	2.5				2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0				
Total Lost Time (s)	5.0	6.0		6.0	6.0		6.0	6.0				
Lead/Lag	Lead			Lag	Lag		Lag	Lag				Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	4.0		4.0	4.0		3.0	3.0				3.0
Recall Mode	None	C-Max		C-Max	C-Max		None	None				None
Walk Time (s)		7.0		7.0	7.0		7.0	7.0				7.0
Flash Dont Walk (s)		17.0		17.0	17.0		16.0	16.0				16.0
Pedestrian Calls (#/hr)		0		0	0		0	0				0
Act Effct Green (s)	78.4	77.4		54.0	54.0	94.0	60.6	60.6	85.0			
Actuated g/C Ratio	0.52	0.52		0.36	0.36	0.63	0.40	0.40	0.57			
v/c Ratio	1.19	0.53		0.01	1.30	0.79	0.85	0.26	0.18			
Control Delay	156.9	27.2		31.0	184.2	10.8	24.1	0.7	1.0			
Queue Delay	0.6	0.0		0.0	0.0	0.0	31.6	1.2	1.1			
Total Delay	157.4	27.2		31.0	184.2	10.8	55.7	1.9	2.1			
LOS	F	C		C	F	B	E	A	A			
Approach Delay		77.6			91.9		37.2					
Approach LOS		E			F		D					
Queue Length 50th (ft)	~340	325		3	~1085	203	609	0	4			
Queue Length 95th (ft)	#528	448		6	#1342	411	722	0	m3			
Internal Link Dist (ft)		1525			980		60			317		
Turn Bay Length (ft)				100								
Base Capacity (vph)	267	948		320	670	1248	715	619	864			
Starvation Cap Reductn	0	0		0	0	0	136	286	511			
Spillback Cap Reductn	11	0		0	0	3	0	0	0			
Storage Cap Reductn	0	0		0	0	0	0	0	0			
Reduced v/c Ratio	1.25	0.53		0.01	1.30	0.79	1.05	0.48	0.45			

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.30
Intersection Signal Delay: 74.6 Intersection LOS: E
Intersection Capacity Utilization 101.8% ICU Level of Service G
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

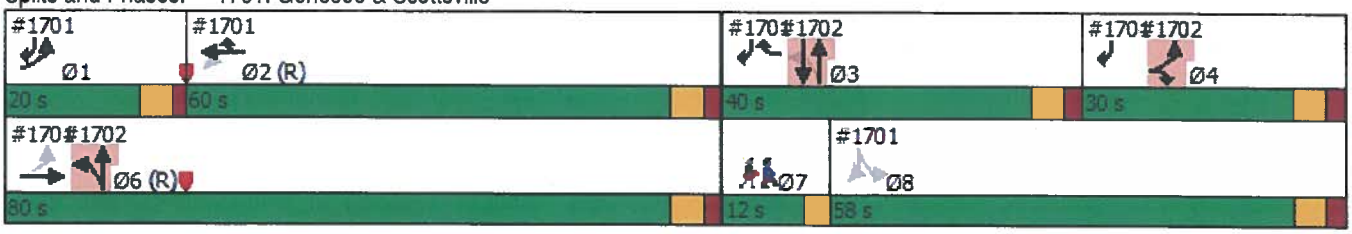
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	Ø4	Ø7
Minimum Split (s)	20.0	7.0
Total Split (s)	30.0	12.0
Total Split (%)	20%	8%
Maximum Green (s)	24.0	9.0
Yellow Time (s)	3.5	3.0
All-Red Time (s)	2.5	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lag	Lead
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	3.0
Recall Mode	None	None
Walk Time (s)	7.0	
Flash Dont Walk (s)	7.0	
Pedestrian Calls (#/hr)	0	
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1701: Genesee & Scottsville



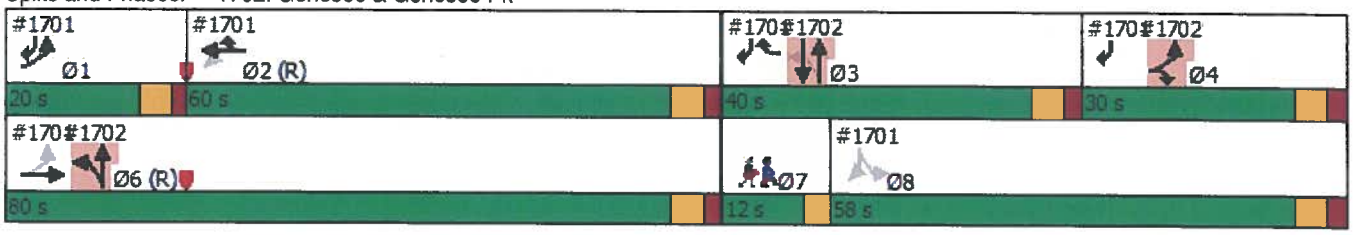
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø2	Ø7	Ø8
Lane Configurations										
Traffic Volume (vph)	29	213	381	821	577	24				
Future Volume (vph)	29	213	381	821	577	24				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900				
Storage Length (ft)	0	125	100			0				
Storage Lanes	1	1	0			0				
Taper Length (ft)	25		25							
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95				
Ped Bike Factor					1.00					
Frt		0.850			0.993					
Flt Protected	0.950			0.985						
Satd. Flow (prot)	1770	1583	0	3486	3509	0				
Flt Permitted	0.950			0.527						
Satd. Flow (perm)	1770	1583	0	1865	3509	0				
Right Turn on Red		Yes				Yes				
Satd. Flow (RTOR)		248			3					
Link Speed (mph)	30			30	30					
Link Distance (ft)	403			191	243					
Travel Time (s)	9.2			4.3	5.5					
Confl. Peds. (#/hr)						4				
Peak Hour Factor	0.72	0.86	0.98	0.89	0.91	0.79				
Adj. Flow (vph)	40	248	389	922	634	30				
Shared Lane Traffic (%)										
Lane Group Flow (vph)	40	248	0	1311	664	0				
Enter Blocked Intersection	No	No	No	No	No	No				
Lane Alignment	Left	Right	Left	Left	Left	Right				
Median Width(ft)	12			0	0					
Link Offset(ft)	0			0	0					
Crosswalk Width(ft)	16			16	16					
Two way Left Turn Lane										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00				
Turning Speed (mph)	15	9	15			9				
Number of Detectors	1	1	1	1	1					
Detector Template										
Leading Detector (ft)	35	35	35	35	35					
Trailing Detector (ft)	0	0	0	0	0					
Detector 1 Position(ft)	0	0	0	0	0					
Detector 1 Size(ft)	35	35	35	35	35					
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex					
Detector 1 Channel										
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0					
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0					
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0					
Turn Type	Prot	Prot	D.P+P	NA	NA					
Protected Phases	4	4	6	3 6	3		1	2	7	8
Permitted Phases		4	3							
Detector Phase	4	4	6	3 6	3					
Switch Phase										
Minimum Initial (s)	12.0	12.0	10.0		9.0		4.0	10.0	4.0	10.0

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø2	Ø7	Ø8
Minimum Split (s)	20.0	20.0	30.0		29.0		9.0	30.0	7.0	29.0
Total Split (s)	30.0	30.0	80.0		40.0		20.0	60.0	12.0	58.0
Total Split (%)	20.0%	20.0%	53.3%		26.7%		13%	40%	8%	39%
Maximum Green (s)	24.0	24.0	74.0		34.5		15.0	54.0	9.0	52.0
Yellow Time (s)	3.5	3.5	4.0		3.5		3.5	4.0	3.0	3.5
All-Red Time (s)	2.5	2.5	2.0		2.0		1.5	2.0	0.0	2.5
Lost Time Adjust (s)	0.0	0.0			0.0					
Total Lost Time (s)	6.0	6.0			5.5					
Lead/Lag	Lag	Lag			Lead		Lead	Lag	Lead	Lag
Lead-Lag Optimize?										
Vehicle Extension (s)	3.0	3.0	4.0		3.0		3.0	4.0	3.0	3.0
Recall Mode	None	None	C-Max		None		None	C-Max	None	None
Walk Time (s)	7.0	7.0	7.0		7.0			7.0		7.0
Flash Dont Walk (s)	7.0	7.0	17.0		16.0			17.0		16.0
Pedestrian Calls (#/hr)	0	0	0		0			0		0
Act Effct Green (s)	20.6	20.6		112.4	34.5					
Actuated g/C Ratio	0.14	0.14		0.75	0.23					
v/c Ratio	0.16	0.58		0.59	0.82					
Control Delay	57.1	11.9		3.8	64.0					
Queue Delay	0.0	0.0		1.8	1.2					
Total Delay	57.1	11.9		5.5	65.2					
LOS	E	B		A	E					
Approach Delay	18.2			5.5	65.2					
Approach LOS	B			A	E					
Queue Length 50th (ft)	35	0		95	326					
Queue Length 95th (ft)	57	66		m88	403					
Internal Link Dist (ft)	323			111	163					
Turn Bay Length (ft)		125								
Base Capacity (vph)	283	461		2238	809					
Starvation Cap Reductn	0	0		713	0					
Spillback Cap Reductn	0	2		0	39					
Storage Cap Reductn	0	0		0	0					
Reduced v/c Ratio	0.14	0.54		0.86	0.86					

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.30
Intersection Signal Delay: 24.6 Intersection LOS: C
Intersection Capacity Utilization 75.0% ICU Level of Service D
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1702: Genesee & Genesee Pk



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	965	0	0	1726	81	10	3	12	26	0	7
Future Volume (vph)	3	965	0	0	1726	81	10	3	12	26	0	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		125	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.993			0.935				0.850
Flt Protected	0.950							0.980		0.950		
Satd. Flow (prot)	1770	3539	0	0	3514	0	0	1707	0	1770	0	1583
Flt Permitted	0.085							0.980		0.740		
Satd. Flow (perm)	158	3539	0	0	3514	0	0	1707	0	1378	0	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					11			13				18
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		221			946			370			577	
Travel Time (s)		5.0			21.5			8.4			13.1	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	3	1016	0	0	1817	85	11	3	13	27	0	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	3	1016	0	0	1902	0	0	27	0	27	0	7
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1			1		1	1		1		1
Detector Template												
Leading Detector (ft)	35	50			50		10	10		30		30
Trailing Detector (ft)	-5	50			50		0	0		-10		-10
Detector 1 Position(ft)	-5	50			50		0	0		-10		-10
Detector 1 Size(ft)	40	0			0		10	10		40		40
Detector 1 Type	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
Detector 1 Queue (s)	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
Turn Type	Perm	NA			NA		Perm	NA		D.Pm		Perm
Protected Phases		1			1			3				
Permitted Phases	1						3			3		3
Detector Phase	1	1			1		3	3		3		3
Switch Phase												
Minimum Initial (s)	15.0	15.0			15.0		6.0	6.0		6.0		6.0
Minimum Split (s)	29.0	29.0			29.0		26.0	26.0		26.0		26.0
Total Split (s)	94.0	94.0			94.0		26.0	26.0		26.0		26.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	78.3%	78.3%			78.3%		21.7%	21.7%		21.7%		21.7%
Maximum Green (s)	89.0	89.0			89.0		20.0	20.0		20.0		20.0
Yellow Time (s)	4.0	4.0			4.0		4.0	4.0		4.0		4.0
All-Red Time (s)	1.0	1.0			1.0		2.0	2.0		2.0		2.0
Lost Time Adjust (s)	0.0	0.0			0.0			0.0		0.0		0.0
Total Lost Time (s)	5.0	5.0			5.0			6.0		6.0		6.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0			2.0		4.0	4.0		4.0		4.0
Recall Mode	C-Max	C-Max			C-Max		None	None		None		None
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0		7.0
Flash Dont Walk (s)	17.0	17.0			17.0		12.0	12.0		12.0		12.0
Pedestrian Calls (#/hr)	4	4			4		23	23		23		23
Act Effct Green (s)	98.3	98.3			98.3			14.3		14.3		14.3
Actuated g/C Ratio	0.82	0.82			0.82			0.12		0.12		0.12
v/c Ratio	0.02	0.35			0.66			0.13		0.16		0.03
Control Delay	4.3	4.3			3.5			29.3		47.0		7.4
Queue Delay	0.0	0.0			0.0			0.0		0.0		0.0
Total Delay	4.3	4.3			3.5			29.3		47.0		7.4
LOS	A	A			A			C		D		A
Approach Delay		4.3			3.5			29.3			38.8	
Approach LOS		A			A			C			D	
Queue Length 50th (ft)	1	124			62			9		18		0
Queue Length 95th (ft)	3	154			63			37		47		7
Internal Link Dist (ft)		141			866			290			497	
Turn Bay Length (ft)	125											
Base Capacity (vph)	129	2898			2879			295		229		278
Starvation Cap Reductn	0	0			40			0		0		0
Spillback Cap Reductn	0	0			0			0		0		0
Storage Cap Reductn	0	0			0			0		0		0
Reduced v/c Ratio	0.02	0.35			0.67			0.09		0.12		0.03

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 35 (29%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.66
Intersection Signal Delay: 4.4 Intersection LOS: A
Intersection Capacity Utilization 74.5% ICU Level of Service D
Analysis Period (min) 15

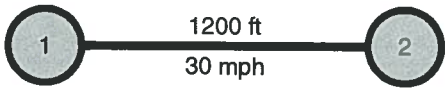
Splits and Phases: 171: Bus Loop/Plymouth & Scottsville

APPENDIX H

Level of Service Analysis
(Urban Street – “Road Diet” Alternative)

HCS 2010 Urban Street Segment Report

General Information				Streets Information	
Agency	Lu Engineers			Number of Intersections	2
Analyst	Jonathan Ottman	Analysis Date	8/16/2018	Number of Segments	1
Jurisdiction	City of Rochester	Time Period	7:30 - 8:30 AM PK HR	Number of Iterations	15
File Name	COR 17102 2019 RD DT AM Pk	Analysis Year	2018	System Cycle Length, s	120
Intersections	Genesee Street	S Plymouth Ave		Analysis Period	1> 7:30
Project Description	ROAD DIET ALT (2019 ETC) AM Pk Hr				



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	30	30	2	1	1200	1200	55	55	0	0	100	100	0.0	0.0

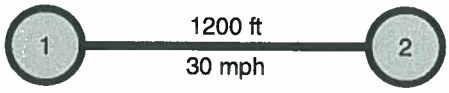
		Eastbound			Westbound		
Segment Output Data		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	1	6	16	5	2	12
1	Bay/Lane Spillback Time, h		never				
1	Shared Lane Spillback Time, h	never					
1	Base Free-Flow Speed, mph	38.65			36.25		
1	Running Time, s	24.23			25.62		
1	Running Speed, mph	33.76			31.94		
1	Through Delay, s/veh	1.08			12.45		
1	Travel Speed, mph	34.50			26.50		
1	Stop Rate, stops/veh	0.04			0.37		
1	Spatial Stop Rate, stops/mi	0.18			1.63		
1	Through vol/cap Ratio	0.34			0.23		
1	Percent of Base FFS	89.27			73.11		
1	Level of Service	A			B		
1	Auto Traveler Perception Score	2.17			2.61		
Multimodal Results (Segment)							
1	Pedestrian Segment LOS Score / LOS						
1	Bicycle Segment LOS Score / LOS						
1	Transit Segment LOS Score / LOS						

Facility Output Data	Eastbound	Westbound
Facility Travel Time, s	25.31	38.06
Facility Travel Speed, mph	32.33	21.49
Facility Base Free Flow Speed, mph	38.65	36.25
Facility Percent of Base FFS	83.65	59.30
Facility Level of Service	B	C
Facility Auto Traveler Perception Score	2.17	2.61
Multimodal Results (Facility)		
Pedestrian Facility LOS Score / LOS		
Bicycle Facility LOS Score / LOS		
Transit Facility LOS Score / LOS		

Copyright © 2018 University of Florida, All Rights Reserved.

HCS 2010 Urban Street Segment Report

General Information				Streets Information	
Agency	Lu Engineers			Number of Intersections	2
Analyst	Jonathan Ottman	Analysis Date	8/16/2018	Number of Segments	1
Jurisdiction	City of Rochester	Time Period	7:30 - 8:30 AM PK HR	Number of Iterations	15
File Name	COR 17102 2034 RD DT AM Pk	Analysis Year	2018	System Cycle Length, s	120
Intersections	Genesee Street	S Plymouth Ave		Analysis Period	1> 7:30
Project Description	ROAD DIET ALT (2034 ETC+15) AM Pk Hr				



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	30	30	2	1	1200	1200	55	55	0	0	100	100	0.0	0.0

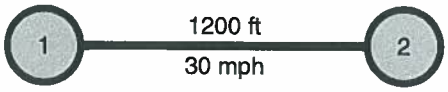
		Eastbound			Westbound		
Segment Output Data		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	1	6	16	5	2	12
1	Bay/Lane Spillback Time, h		never				
1	Shared Lane Spillback Time, h	never					
1	Base Free-Flow Speed, mph	38.65			36.25		
1	Running Time, s	24.34			25.82		
1	Running Speed, mph	33.62			31.69		
1	Through Delay, s/veh	1.28			13.57		
1	Travel Speed, mph	34.50			26.50		
1	Stop Rate, stops/veh	0.05			0.39		
1	Spatial Stop Rate, stops/mi	0.23			1.72		
1	Through vol/cap Ratio	0.38			0.29		
1	Percent of Base FFS	89.27			73.11		
1	Level of Service	A			B		
1	Auto Traveler Perception Score	2.17			2.63		
Multimodal Results (Segment)							
1	Pedestrian Segment LOS Score / LOS						
1	Bicycle Segment LOS Score / LOS						
1	Transit Segment LOS Score / LOS						

Facility Output Data	Eastbound	Westbound
Facility Travel Time, s	25.61	39.38
Facility Travel Speed, mph	31.94	20.77
Facility Base Free Flow Speed, mph	38.65	36.25
Facility Percent of Base FFS	82.66	57.31
Facility Level of Service	B	C
Facility Auto Traveler Perception Score	2.17	2.63
Multimodal Results (Facility)		
Pedestrian Facility LOS Score / LOS		
Bicycle Facility LOS Score / LOS		
Transit Facility LOS Score / LOS		

Copyright © 2018 University of Florida, All Rights Reserved.

HCS 2010 Urban Street Segment Report

General Information				Streets Information	
Agency	Lu Engineers			Number of Intersections	2
Analyst	Jonathan Ottman	Analysis Date	8/16/2018	Number of Segments	1
Jurisdiction	City of Rochester	Time Period	7:30 - 8:30 AM PK HR	Number of Iterations	15
File Name	COR 17102 2019 RD DT PM Pk	Analysis Year	2018	System Cycle Length, s	150
Intersections	Genesee Street	S Plymouth Ave		Analysis Period	1> 7:30
Project Description	ROAD DIET ALT (2019 ETC) PM Pk Hr				



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	30	30	2	1	1200	1200	55	55	0	0	100	100	0.0	0.0

		Eastbound			Westbound		
Segment Output Data		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	1	6	16	5	2	12
1	Bay/Lane Spillback Time, h		never				
1	Shared Lane Spillback Time, h	never					
1	Base Free-Flow Speed, mph	38.65			36.25		
1	Running Time, s	23.98			28.60		
1	Running Speed, mph	34.12			28.60		
1	Through Delay, s/veh	0.70			14.05		
1	Travel Speed, mph	34.50			26.50		
1	Stop Rate, stops/veh	0.03			0.41		
1	Spatial Stop Rate, stops/mi	0.13			1.78		
1	Through vol/cap Ratio	0.21			0.61		
1	Percent of Base FFS	89.27			73.11		
1	Level of Service	A			B		
1	Auto Traveler Perception Score	2.16			2.64		

Multimodal Results (Segment)					
1	Pedestrian Segment LOS Score / LOS				
1	Bicycle Segment LOS Score / LOS				
1	Transit Segment LOS Score / LOS				

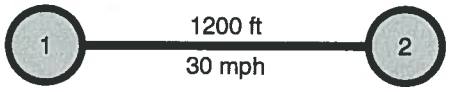
Facility Output Data	Eastbound	Westbound
Facility Travel Time, s	24.68	42.66
Facility Travel Speed, mph	33.16	19.18
Facility Base Free Flow Speed, mph	38.65	36.25
Facility Percent of Base FFS	85.80	52.91
Facility Level of Service	A	C
Facility Auto Traveler Perception Score	2.16	2.64

Multimodal Results (Facility)				
Pedestrian Facility LOS Score / LOS				
Bicycle Facility LOS Score / LOS				
Transit Facility LOS Score / LOS				

Copyright © 2018 University of Florida, All Rights Reserved.

HCS 2010 Urban Street Segment Report

General Information				Streets Information	
Agency	Lu Engineers			Number of Intersections	2
Analyst	Jonathan Ottman	Analysis Date	8/16/2018	Number of Segments	1
Jurisdiction	City of Rochester	Time Period	7:30 - 8:30 AM PK HR	Number of Iterations	15
File Name	COR 17102 2034 RD DT PM Pk	Analysis Year	2018	System Cycle Length, s	150
Intersections	Genesee Street	S Plymouth Ave		Analysis Period	1> 7:30
Project Description	ROAD DIET ALT (2034 ETC+15) PM Pk Hr				



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1	30	30	2	1	1200	1200	55	55	0	0	100	100	0.0	0.0

		Eastbound			Westbound		
Segment Output Data		EBL	EBT	EBR	WBL	WBT	WBR
Segment	Movement	1	6	16	5	2	12
1	Bay/Lane Spillback Time, h		never				
1	Shared Lane Spillback Time, h	never					
1	Base Free-Flow Speed, mph	38.65			36.25		
1	Running Time, s	24.03			31.94		
1	Running Speed, mph	34.04			25.61		
1	Through Delay, s/veh	0.80			19.44		
1	Travel Speed, mph	34.50			26.50		
1	Stop Rate, stops/veh	0.04			0.53		
1	Spatial Stop Rate, stops/mi	0.15			2.32		
1	Through vol/cap Ratio	0.24			0.76		
1	Percent of Base FFS	89.27			73.11		
1	Level of Service	A			B		
1	Auto Traveler Perception Score	2.16			2.73		
Multimodal Results (Segment)							
1	Pedestrian Segment LOS Score / LOS						
1	Bicycle Segment LOS Score / LOS						
1	Transit Segment LOS Score / LOS						

Facility Output Data	Eastbound	Westbound
Facility Travel Time, s	24.83	51.38
Facility Travel Speed, mph	32.95	15.92
Facility Base Free Flow Speed, mph	38.65	36.25
Facility Percent of Base FFS	85.25	43.93
Facility Level of Service	A	D
Facility Auto Traveler Perception Score	2.16	2.73
Multimodal Results (Facility)		
Pedestrian Facility LOS Score / LOS		
Bicycle Facility LOS Score / LOS		
Transit Facility LOS Score / LOS		

Copyright © 2018 University of Florida, All Rights Reserved.