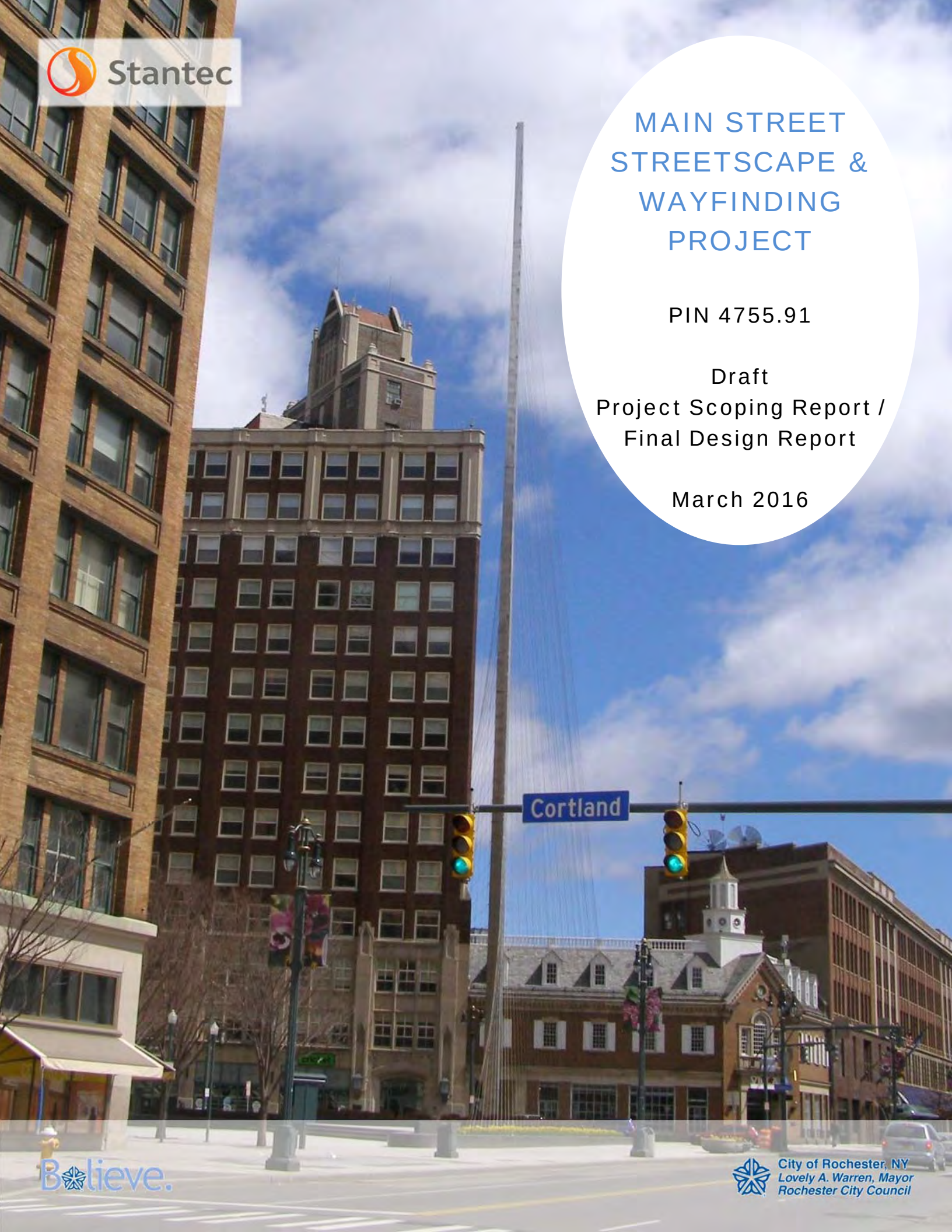

Stantec

MAIN STREET STREETSCAPE & WAYFINDING PROJECT

PIN 4755.91

Draft
Project Scoping Report / Final Design Report

March 2016

Believe.

City of Rochester, NY
Lovely A. Warren, Mayor
Rochester City Council

PROJECT APPROVAL SHEET

(Pursuant to SAFETEA-LU Matrix)

A. IPP Approval:

The project cost and schedule are consistent with the Regional Capital Program.

The IPP was signed by:

Kevin C. Bush 12-9-2014

Regional Director, NYSDOT Region 4

B. Recommendation for Scoping & Design Approval:

The project cost and schedule are consistent with the Regional Capital Program.

The NYSDOT concurs with the classification of the project as a NEPA Class II, Categorical Exclusion (c list) as described within this document.

Chris Reeve,

Acting Regional Planning and Program Manager, NTSDOT Region 4

C. Recommendation for Scoping, Design, & Nonstandard Feature Approval:

All requirements requisite to these actions and approvals have been met, the required independent quality control reviews separate from the functional group reviews have been accomplished, and the work is consistent with established standards, policies, regulations and procedures, except as otherwise noted and explained.

James R Hofmann, PE

Project Manager, Stantec Consulting Services Inc.

D. Nonstandard Feature Approval:

No nonstandard features have been identified, created, or retained.

James R McIntosh, PE

City Engineer, City of Rochester

E. Scoping & Design Approval:

The required environmental determinations have been made and the preferred alternative for this project is ready for final design.

James R McIntosh, PE

City Engineer, City of Rochester

LIST OF PREPARERS

Group Director Responsible for Production of the Design Approval Document:

James R. Hofmann, P.E., Principal, Stantec Consulting Services Inc.

Description of Work Performed by Firm: Directed the preparation of the Design Approval Document in accordance with established standards, policies, regulations and procedures, except as otherwise explained in this document.

PLACE P.E. STAMP

Note: *It is a violation of law for any person, unless they are acting under the direction of a licensed professional engineer, architect, landscape architect, or land surveyor, to alter an item in any way. If an item bearing the stamp of a licensed professional is altered, the altering engineer, architect, landscape architect, or land surveyor shall stamp the document and include the notation "altered by" followed by their signature, the date of such alteration, and a specific description of the alteration.*

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CHAPTER 1 - EXECUTIVE SUMMARY

1.1. Introduction

This base project proposes to rehabilitate the existing pedestrian and bicycle facilities along East Main Street from the Genesee River to Liberty Pole Plaza. The extended project proposes wayfinding signage along the Main Street Corridor from Canal Street to Alexander Street. Also included in the project are enhancements to the Liberty Pole Plaza.

This report will assess existing conditions, identify the overall project objectives, analyze alternative solutions, and discuss the social, economic and environmental effects on the community resulting from the implementation of the feasible alternatives under consideration.

This report is currently being circulated for review and comment to applicable Federal, State, and Local Agencies, as well as officials and other groups and individuals who have special interests, concerns or expertise. A public information meeting will be held to gather input from the community. The information contained in this report, along with comments that are received as a result of the review process, will be evaluated prior to making a final design recommendation.

This report was prepared in accordance with the NYSDOT Project Development Manual, 17 NYCRR (New York Codes, Rules and Regulations) Part 15, and 23 CFR (Code of Federal Regulations) 771. Transportation needs have been identified (section 1.2), objectives established (1.2.3) to address the needs, and cost-effective alternatives developed (1.3). This project is federally funded.

1.2. Purpose and Need

1.2.1. Where is the Project Located?

A. Route name – West Main Street & East Main Street
B. City/Village/Township – City of Rochester
C. County - Monroe
D. Length – Base Corridor - 1700 Feet
Extended Corridor – 7200 Feet
E. Base Corridor - Streetscape Revitalization - From Genesee River to Liberty Pole Plaza
Extended Corridor - Wayfinding Signs - Canal Street to Alexander Street

East Main Street Streetscape Improvements
Project Area Map
Graphic Scale (feet)
0
500
1000
1500
Limits of Proposed Streetscape Renovation
Limits of Proposed Pedestrian Wayfinding System
Stantec
N
Union St. N.
Scio St.
North St.
Central Ave.
Inner Loop
University Ave.
East Ave.
Meigs St.
Alexander St.
Union St. S.
Monroe Ave.
Interstate 490
E. Main St.
Gibbs St.
N. Chestnut St.
Franklin St.
N. Clinton Ave.
St. Paul St.
Andrews St.
State St.
Plymouth Ave. N.
Genessee River
St. Paul St.
State St.
Plymouth Ave. N.
Oak St.
Broad St.
Canal St.
W. Main St.
Jefferson Ave.
Troup St.
Ford St.
Plymouth Ave. S.
Exchange Blvd.
South Ave.
Court St.
Chestnut St.
S. Clinton Ave.
E. Broad St.
W. Broad St.

1.2.2. Why is the Project Needed?

The corridor has undergone significant changes in both purpose and functionality since its original construction. The area was designed to serve as an on street transfer station for the local transit bus patrons. This required significant space to accommodate the large volumes of transit bus patrons and downtown pedestrian users. Recently a new bus terminal has been constructed off site to accommodate their operations. This change has resulted in the corridor having oversized bus shelters, pay phones, garbage cans, benches and other amenities that are no longer necessary. In addition, the existing facilities have deteriorated and at many locations are no longer ADA compliant. These changes and age of the existing facilities have resulted in the need to revitalize the space to make the corridor not only ADA compliant but also enhance the pedestrian experience through the downtown area.

Existing walking surface is uneven with spot repairs

The existing bicycle facilities within the area are also insufficient for today's demands. The city has experienced an increase in bicycle use on many of its city streets. This corridor due to the bridge crossing over the Genesee River is particularly important to regional network operations. The corridor lacks or has minimal accommodations for today's cyclists. The revitalization and enhancements proposed under this project provide the opportunity to correct many of these deficiencies.

1.2.3. What are the Objectives/Purposes of the Project?

(1) Increase the effectiveness of the transportation corridor for pedestrian and other non-motorized forms of travel by providing safe and universally accessible facilities.

(2) Improve system connectivity for bicyclists by providing improvements to link the corridor to other existing or planned network facilities.

(3) Improve system connectivity for pedestrians by providing users guidance on how to reach destinations within the downtown area.

(4) Improve the visual built environment by providing context sensitive improvements that contribute to the ambiance and enhance community character of the project area.

1.3 What Alternative is Being Considered?

The following alternatives, representing possible engineering solutions, are presented in this report:

- No Build Alternative
- Alternative 1 – Streetscape Rehabilitation

No-Build Alternative

Under this alternative, the existing infrastructure would be retained and routine maintenance efforts would be performed by City of Rochester forces. Routine maintenance work would be temporary in nature and would not address the long term safety, accessibility or system network deficiencies resulting in a continuation or worsening of the identified issues within the project area.

This alternative is not considered feasible, but will be retained to compare against other feasible alternatives.

Alternative 1 – Streetscape Rehabilitation

Under this alternative, the existing infrastructure would be replaced or rehabilitated to meet the goals and objectives of the project. Improvements to sidewalks, landscaping, street lighting, pedestrian oriented signage and other streetscape amenities would be incorporated to provide a safe and accessible system network for all users. Improvements to bicycle facilities would incorporate system network upgrades to meet the growing demands of area cyclists. Other aesthetic and destination oriented improvements would be incorporated to enhance the community cohesion and activity within the project corridor. This alternative would also remove a travel lane in the westbound direction of East Main Street and add a parking lane along both sides of East Main Street where feasible.

This alternative would fully meet the project needs and objectives and is considered the only feasible and prudent alternative.

For a more in-depth discussion of the design criteria see Section 2 of this report.

1.4. Environmental Review

NEPA (National Environmental Policy Act):

It has been determined that this project meets the requirements of a NEPA Class II Action (Categorical Exclusion) (c List). Refer to Section 3.1 of this report for additional NEPA information.

SEQRA (State Environmental Quality Review Act):

It has been determined that this project meets the requirements of a SEQR, Unlisted Action. Refer to Section 3.1 of this report for additional SEQR information.

Refer to Chapter 3 and Appendix B for additional environmental information.

1.5. How will the Alternatives Affect the Environment?

Exhibit 1.1 Comparison of Alternatives		
Category	**Alternatives**	
	No Build	**1 Streetscape Rehabilitation**
ADA Compliant	No	Yes
Complete Street Compliant	No *Lacks Adequate Bicycle facilities*	Yes
Archeological Sites Impacted	None	None
Section 106 / Section 4(f) impacts	No Effect	No Effect
Noise impacts	None	Temporary *Construction Activities Only*
Property impacts	None	None
Section 7 Endangered Species	No Effect	No Effect

Proposed Mitigation:

No proposed mitigation measures are required. Refer to Chapter 3 for further information.

Anticipated Permits/Certifications/Coordination:

Permits

None Anticipated

Coordination

- Coordination with Federal Highway Administration
- Coordination with New York State Department of Transportation
- Coordination with New York State Historic Preservation Officer (SHPO)
- Coordination with the US Fish and Wildlife Service
- Coordination with the New York Natural Heritage Program
- Coordination with Monroe County Department of Transportation
- Coordination with Monroe County Division of Pure Waters

Others

- City of Rochester Site Plan Review
- Local permits (as Required)

1.6. What are the Costs & Schedules?

The estimated construction cost for the feasible alternative is $3.3 million.

Exhibit 1.2 - Project Schedule	
Activity	**Date Occurred/Tentative**
Scope Approval	12-9-2014
Design Approval	April 2016
ROW Acquisition	None Required
Construction Authorization	September 2016
Construction Complete	August 2017

Exhibit 1.3 Comparison of Alternatives' Project Costs		
Activities	No Build Alternative	Alternative 1 Streetscape Rehabilitation
Construction Cost	$0	$3.3 mil
ROW Costs	$0	$0
Total Alternative Costs	$0	$3.3 mil

1.7. Which Alternative is Preferred?

Only one feasible build alternative has been identified that meets the project objectives. A decision to enter final design will not be made until after the environmental determination and evaluation of the comments on the draft design approval document and comments are received from the public informational meeting.

1.8. What are the Opportunities for Public Involvement?

Exhibit 1.4 Public Involvement Plan Schedule of Milestone Dates	
Activity	**Date Occurred/Tentative**
Public Informational Meeting #1	April 2016
Design Approval	April 2016
Public Informational Meeting #2	July 2016
Current Project Letting date	Fall 2016 / Winter 2017

- Comments and questions regarding this project can be directed to the following individual at any time:

Jeffery J. Mroczek, Project Manager
Project Identification Number (PIN) 4755.91

City of Rochester
City Hall Room 300B
30 Church Street
Rochester, New York 14614
mroczekj@cityofrochester.gov
(585) 428-7124

- You may also visit the Project's website: http://www.cityofrochester.gov/projects/

The remainder of this report is a detailed technical evaluation of the existing conditions, the proposed alternatives, the impacts of the alternatives, copies of technical reports and plans and other supporting information.

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CHAPTER 2 – PROJECT INFORMATION

2.1. Local Plans for the Project Area

This project is on the approved Transportation Improvement Program (TIP) as project No.N14-06-MN1.

This project is consistent with the City of Rochester's Center City Master Plan.

Several developments are planned along the project corridor as described below:

- D&C Headquarter Building – Location – East Main Street between Clinton Square and Cortland Street – 3 story building accommodating 60,000 square feet of office space.
- Midtown Block Development – Location – East Main Street between Cortland Street and Euclid Street – Currently under development

There are no approved developments planned within the project area that will impact traffic operations.

2.2. Abutting Highway Segments and Future Plans for Abutting Highway Segments

The abutting highway section to the east consists of a 54 foot wide pavement section with adjacent sidewalks. The abutting section to the east consists of a 44 foot wide pavement section with adjacent sidewalks. The abutting highway segments have a posted area speed limit of 30 MPH.

The City of Rochester has a preventative maintenance project that will be abutting the eastern end of the project. The City also has a two-way conversion project on Clinton Street South from East Main Street to Broad Street. Both projects are scheduled to be completed in 2016 Coordination between the two projects will be required.

2.3. Transportation Conditions, Deficiencies and Engineering Considerations

2.3.1. Traffic and Safety and Maintenance Operations

2.3.1.1. Functional Classification and National Highway System (NHS) –

Exhibit 2.1 Classification Data	
Route(s)	East Main Street
Functional Classification	Urban Minor Arterial (16)
National Highway System (NHS)	Yes
Designated Truck Access Route	No
Qualifying Highway	No
Within 1 mile (1.6 km) of a Qualifying Highway	Yes
Within the 16 ft (4.9 m) vertical clearance network	**No**

2.3.1.2 Control of Access –

East Main Street has uncontrolled access throughout the project corridor. No control of access will be proposed as part of this project.

2.3.1.3 Traffic Control Devices –

The project limits contain 5 signalized and 1 unsignalized intersections. The unsignalized intersection at Euclid Street is restricted to right turns in only from East Main Street from the eastbound direction only.

Alterations to the existing traffic signals will be required to accommodate the proposed lane reconfigurations and street widening.

Existing traffic signs will be evaluated for conformance with current MUTCD guidelines during Final Design and replaced as part of the project.

2.3.1.4 Traffic Volumes –

Traffic count data was collected via manual counts in July of 2015. Traffic turning movement counts were obtained during the weekday morning and evening peak travel hours for the signalized intersections along the project corridor. Heavy vehicle (truck and bus) and pedestrian data was also obtained at each of the intersections.

Exhibit 2.2 shows the adjusted Annual Average Daily Traffic (AADT) and Design Hour Volumes (DHV). The DHV values represent the combined (two-way) direction volumes on East Main Street.

The Design Year for this project was obtained from Appendix 5 of the NYSDOT Project Development Manual. The project is classified as a 3R – Resurfacing, Restoration, and Rehabilitation project with Minor Intersection Reconstruction Components. Per NYSDOT's Project Development Manual (PDM), Appendix 5, Table 5-1, the recommended project design year is ETC+10. Due to the proposed lane reconfigurations and potential impacts to major intersections within the project corridor, the design year forecasts will be analyzed using ETC+20.

The 2011 Two-Way Conversion Study prepared by the LaBerge Group established a 0.20% growth rate based on historic data and forecasted growth projections obtained from the Genesee Transportation Council (GTC) for this study area. Traffic counts performed in 2015 showed no growth or a reduction in volumes from the 2010 and 2011 traffic counts. Based on this information a 0.2% growth rate has been used in the analysis.

Exhibit 2.2
Existing and Future Traffic Volumes

Year	East Main Street	
	AADT	DHV
Existing (2015)	10200	920
ETC (2017)	10240	922
ETC+20 (2037)	10659	960

Traffic volumes within the project corridor will be affected by two future projects. Clinton Avenue and St. Paul Street north of East Main Street have been recently converted from one-way streets to two-way streets in 2014. These two-way conversions are planned to continue south of East Main Street in the future. The projected traffic volumes under the ETC+20 (2037) design year included in this study incorporate these future projects by redistributing traffic volumes and accounting for other site development within the project corridor.

Additional information and flow diagrams can be found in Appendix C – Traffic Information.

2.3.1.5 Speeds

Floating car runs were conducted outside of the peak hours to establish average corridor running speed. The average running speed between East/Franklin and St. Paul/South was generally 25-30 mph and decreased during the peak hours.

2.3.1.6 Level of Service

Alternative 1 proposes to remove a travel lane in the westbound direction along East Main Street. This alternative also proposes to add left turn phasing to the East Main Street approaches to address queuing issues associated with the high volume of turning transit busses and short left turn storage lengths due to the close proximity of adjoining intersections.

Additional information and a full summary of operational changes can be found in Appendix C – Traffic Information.

Left turning buses frequently require 2 traffic signal cycles to make left turns

The peak hour volumes were entered into the MCDOT AM and PM system Synchro model and intersection splits optimized. The existing Level of Service (LOS) for each movement was calculated and summarized in the following table.

Exhibit 2.3
Level of Service Table

Intersection	Approach & Movement	2017 (ETC)		2037 (ETC + 20)	
		No Build		Alternative 1	
		AM LOS	PM LOS	AM LOS	PM LOS
St. Paul & South Ave	EB LT	B (13.2s)	B (15.6s)	B (19.9s)	B (14.3s)
	EB THRU/RT	B (15.7s)	B (18.9s)	D (44.4s)	D (48.8s)
	WB LEFT	C (20.7s)	C (28.4s)	B (13.2s)	B (16.5s)
	WB THRU/RT	B (16.5s)	C (26.4s)	D (54.4s)	E (65.0s)
	NB LT	-	-	F (104.5s)	C (20.9s)
	NB THRU/RT	-	-	C (25.0s)	C (28.8s)
	SB THRU/LT/RT	C (24.7s)	B (15.3s)	-	-
	SB LT	-	-	B (16.9s)	B (13.7s)
	SB THRU/RT	-	-	D (61.3s)	D (52.6s)
	OVERALL	**B (19.5s)**	**B (19.9s)**	**D (49.7s)**	**D (46.9s)**

Exhibit 2.3 Level of Service Table					
Intersection	Approach & Movement	2017 (ETC)		2037 (ETC + 20)	
		No Build		Alternative 1	
		AM LOS	PM LOS	AM LOS	PM LOS
Stone St	EB THRU/RT	C (20.8s)	A (1.7s)	A (2.5s)	A (3.6s)
	WB LT	A (3.8s)	A (5.9s)	A (3.1s)	A (4.3s)
	WB THRU	A (5.2s)	A (6.6s)	A (5.4s)	A (7.6s)
	NB LT/RT	B (19.2s)	A (5.9s)	D (36.7s)	C (22.3s)
	OVERALL	**B (11.8s)**	**A (4.7s)**	**A (7.0s)**	**A (8.2s)**
Clinton Ave	EB LT	B (19.1s)	B (17.4s)	A (9.5s)	B (10.5s)
	EB THRU	C (23.1s)	D (35.3s)	B (16.2s)	D (42.8s)
	WB LT	-	-	A (6.4s)	A (6.8s)
	WB THRU/RT	B (13.7s)	B (15.4s)	C (24.2s)	C (23.5s)
	NB LT	A (7.0s)	A (7.2s)	C (27.5s)	D (47.4s)
	NB THRU/RT	A (9.2s)	B (14.1s)	C (29.4s)	D (46.8s)
	SB LT	C (21.2s)	C (34.7s)	D (38.9s)	E (79.2s)
	SB RT	A (2.0s)	A (2.1s)	-	-
	SB THRU/RT	-	-	C (31.3s)	D (49.0s)
	OVERALL	**B (13.4s)**	**B (19.1s)**	**C (25.9s)**	**D (41.8s)**
Cortland St	EB THRU/RT	A (1.3s)	A (1.1s)	A (2.7s)	A (3.6s)
	WB LT	-	-	A (2.9s)	A (2.8s)
	WB THRU	-	-	A (2.6s)	A (3.1s)
	WB THRU/LT	A (1.4s)	A (0.6s)	-	-
	NB LT/RT	C (25.2s)	A (0.4s)	D (42.3s)	D (44.8s)
	OVERALL	**A (1.5s)**	**A (0.9s)**	**A (3.8s)**	**A (4.7s)**
Franklin St & East Ave	EB THRU	A (4.6s)	A (7.0s)	A (6.9s)	B (11.0s)
	EB THRU/RT	-	-	-	-
	EB RT	A (0.8s)	A (1.2s)	-	-
	WB THRU	A (5.9s)	A (4.5s)	A (2.5s)	A (2.8s)
	WB THRU/RT	-	-	-	-
	WB RT	A (0.5s)	A (0.0s)	-	-
	NB THRU/LT/RT	C (30.2s)	D (39.2s)	C (22.9s)	C (33.8s)
	SB THRU/LT/RT	A (6.0s)	A (5.6s)	A (5.8s)	A (5.6s)
	OVERALL	**A (7.5s)**	**A (8.1s)**	**A (6.8s)**	**A (9.9s)**

2.3.1.7 Work Zone Safety & Mobility

A. Work Zone Traffic Control (WZTC) Plan

Two-way traffic will be maintained at all times via lane shifts within the existing pavement. No off site detours will be required. Routes for emergency vehicles will be maintained and open during

construction. The details for the work zone traffic control will be prepared and evaluated during final design.

B. Special Provisions

No special provisions are anticipated for this project.

C. Significant Projects (per 23 CFR 630.1010)

The Region has determined that the subject project is not significant per 23 CFR 630.1010.

A Transportation Management Plan (TMP) will be prepared for the project consistent with 23 CFR 630.1012. The TMP will consist of a Temporary Traffic Control (TTC) plan. Transportation Operations (TO) and Public Information (PI) components of a TMP will be considered during final design.

2.3.1.8 Safety Considerations, Accident History and Analysis

An accident analysis was performed in accordance with NYS Highway Design Manual Chapter 5 in 2016. The analysis represents a 36-month period between 6/7/2012 and 7/10/2015 and includes both pre and post 2-way conversion conditions. The 2-way conversion of Clinton Ave and Saint Paul north of East Main Street occurred on/after October 17, 2014 as a result of the opening of the new Transit Center located just north of the project corridor. The accident history within the project limits identified a total of eighty-eight (88) accidents occurred with seventy (70) accidents occurring pre 2-way and eighteen (18) occurring post 2-way. All of the accidents on East Main Street were reportable accidents with five (5) non-fatal injury accidents and the rest property damage. The following list summarizes the types and number of non-reportable and reportable accidents.

Exhibit 2.4
Accident Type Summary

Accident Type	Number (%) of Accidents		
	Pre 2-Way	Post 2-Way	Total
Rear End	27 (38.6%)	5 (27.7%)	32 (36.4%)
Right Angle	3 (4.3%)	1 (5.6%)	4 (4.5%)
Right Turn	4 (5.7%)	1 (5.6%)	5 (5.7%)
Driveway	0 (0%)	0 (0%)	0 (0%)
Sideswipe	15 (21.4%)	5 (27.7%)	20 (22.7%)
Left Turn	4 (5.7%)	3 (16.6%)	7 (8.0%)
Overtaking	0 (0%)	1 (5.6%)	1 (1.1%)
Backing	2 (2.9%)	0 (0%)	2 (2.3%)
Head On	0 (0%)	0 (0%)	0 (0%)
Fixed Object	3 (4.3%)	1 (5.6%)	4 (4.5%)
Pedestrian	11 (15.7%)	0 (0%)	11 (12.5%)
Bicycle	1 (1.4%)	0 (0%)	1 (1.1%)
Unknown	0(0%)	1 (5.6%)	1 (1.1%)
Total	70 (100%)	18 (100%)	88 (100%)

Exhibit 2.5 Accident Rate Summary			
Pre 2-Way Accident Rates (non-reportable and reportable)			
Intersection	**Number of Accidents**	**County Rate**	**Actual Rate**
Intersection Rate (excludes midblock accidents)			
Saint Paul Street/South Ave	18	0.68	1.22 ACC/MEV
Stone Street	3	0.39	0.29 ACC/MEV
Clinton Avenue	10	0.68	0.61 ACC/MEV
East Avenue/Franklin Street	13	0.68	1.23 ACC/MEV
Link Rate (includes midblock and intersection accidents)			
Genesee River to Stillson St	70	4.19	7.47 ACC/MVM
Post 2-Way Accident Rates (non-reportable and reportable)			
Intersection	**Number of Accidents**	**County Rate**	**Actual Rate**
Intersection Rate (excludes midblock accidents)			
Saint Paul Street/South Ave	5	0.68	0.95 ACC/MEV
Stone Street	0	0.39	0.00 ACC/MEV
Clinton Avenue	5	0.68	0.85 ACC/MEV
East Avenue/Franklin Street	2	0.68	0.53 ACC/MEV
Link Rate (includes midblock and intersection accidents)			
Genesee River to Stillson St	18	4.19	5.39 ACC/MVM

Note: Locations exceeding county wide accident rates are highlighted in red.

The accident analysis concluded that no mitigation measures are recommended at this time.

An accident analysis including an accident summary, collision diagrams, and recommendations for improvements are in Appendix C – Traffic information.

2.3.1.9 Ownership and Maintenance Jurisdiction

The City of Rochester owns and maintains the pavement, sidewalk, lighting, and water systems within the project limits. Monroe County Pure Waters owns and maintains the storm and sanitary systems within the project limits. Monroe County Department of Transportation is responsible for the traffic signals within the project limits.

2.3.2 Multimodal

2.3.2.1 Pedestrians

Pedestrians are accommodated within the project corridor via sidewalks along both sides of the roadway. These facilities have deteriorated and in many locations no longer meet ADA compliance. Existing wayfinding signs are also present within the study area; however the 2012 Center City Pedestrian Circulation and Wayfinding Study provided recommendations to improve the systems functionality and effectiveness.

Reconstructing the existing facilities and supplementing the existing infrastructure will enhance the users experience and will improve the safety and mobility for all non-motorized users correcting the identified deficiencies that exist today.

2.3.2.2 Bicyclists

Bicyclists are accommodated within the study area via using the existing roadway travel lanes. These travel lanes are narrow (10' wide) and provide the minimal accommodations for cyclists within the corridor.

The project will improve bicycle safety by introducing new 5' wide bike lanes in both directions along East Main Street within the base project limits. The project will also will also incorporate bicycle pavement markings to provide a higher awareness to motorist of the presence of bicycle use through the corridor.

The introduction of these new facilities will enhance the users experience and will improve the safety and mobility for all non-motorized users correcting the identified deficiencies that exist today.

2.3.3 Infrastructure

2.3.3.1 Design Standards

Design criteria for the project are based on the following publications:

- NYSDOT Highway Design Manual (HDM) Chapter 2 *Design Criteria*
- NYSDOT Highway Design Manual (HDM) Chapter 17 *Bicycle Facility Design &* Chapter 18 *Pedestrian Facility Design*
- AASHTO Policy on Geometric Design of Highways and Streets, 2011
- AASHTO Guide for the Development of Bicycle Facilities, 2012
- ADA Standards for Accessible Design, 2010

2.3.3.2 Critical Design Elements

Exhibit 2.6
Critical Design Elements for East Main Street

PIN:	4755.51	NHS (Y/N):	Yes
Route No. & Name:	East Main Street	Functional Classification:	Urban Minor Arterial (16)
Project Type:	3R	Design Classification:	Arterial – Urban *(HDM 2.7.2.2)*
% Trucks:	7	Terrain:	Level
ADT:	10659	Truck Access/Qualifying Hwy.	Access-No; Qualifying-No

	Element	Standard	Existing Condition	Proposed Condition
1	Design Speed	30 mph[1] HDM Section 2.7.2.2 A	30 mph posted	30 mph posted
2	Lane Width	HDM Section 2.7.2.2 B, Table 2-4		
	Travel Lane	11’ Minimum Low Speed (< 50 mph)	10 ft	11’
	Wide Travel Lane	12’ Minimum, 14’ Desirable Wide travel lane adjacent to curb for bicyclists	-	-
	Turning Lane	11’ Minimum , 12’ Desirable (Truck Volume > 2%)	10 ft	11’
	Parking Lane	8’ Minimum, 12’ Desirable No future provisions for turn lanes	-	8’
3	Shoulder Width	HDM Section 2.7.2.2 C, Table 2-4		
	Curbed - Left	0’ Minimum, 1’ to 2’ Desirable	-	-
	Curbed - Right	5’ Minimum No Bicycle Provisions	0’	-
	Curbed - Right	0’ to 4’ Minimum With Bicycle Provisions (Wide Curb Lane or Separate Facility)	-	0’
4	Bridge Roadway Width	BM Sections 2.3.1 and Table 2-1	NA	NA
5	Maximum Grade	8% HDM Section 2.7.2.2 E, Table 2-4	Less than 2%	Less than 2%
6	Horizontal Curvature	250’ min. (at e_{max}=4%) HDM Section 2.7.2.2 F, Table 2-4	None Present	None Present
7	Superelevation Rate	4% Maximum HDM Section 2.7.2.2 G, Exhibit 2-11	NA	NA
8	Stopping Sight Distance	200’ (130 m) Minimum HDM Section 2.7.2.2 H, Table 2-4	625’	625’
9	Horizontal Clearance	0’ with barrier 1.5’without barrier 3’ at intersections HDM Section 2.7.2.2 I	1’	1.5’
10	Vertical Clearance (above traveled way)	14’ Minimum BM Section 2.4	15’-6”	15’-6”
11	Travel Lane Cross Slope	1.5% Min. to 2% Max. HDM Section 2.7.2.2 K	2%	2%
12	Rollover	4% between travel lanes; 8% at edge of traveled way; HDM Section 2.7.2.2 L	4%	4%

Exhibit 2.6 Critical Design Elements for East Main Street					
PIN:	4755.51		NHS (Y/N):	Yes	
Route No. & Name:	East Main Street		Functional Classification:	Urban Minor Arterial (16)	
Project Type:	3R		Design Classification:	Arterial – Urban *(HDM 2.7.2.2)*	
% Trucks:	7		Terrain:	Level	
ADT:	10659		Truck Access/Qualifying Hwy.	Access-No; Qualifying-No	
Element		**Standard**		**Existing Condition**	**Proposed Condition**
13	Structural Capacity	Buried Structures (Box Culverts, 3-sided Frames and Pipes) NYSDOT LRFD Specifications AASHTO HL-93 Live Load and NYSDOT Design Permit Vehicle BM Section 2.6, HDM 19.5.3		NA	NA
14	Pedestrian Accommodation	Complies with HDM Chapter 18		Non-Compliant	ADA Compliant
(1) The City Engineer has concurred that the use of a Design Speed of 30 mph is consistent with the anticipated off-peak 85th percentile speed within the range of functional class speeds for the terrain and volume. **Denotes non-standard feature.					

2.3.3.3. Other Design Parameters

Exhibit 2.7 Other Design Parameters		
Element	**Standard**	**Proposed Condition**
Drainage Design Storm	10 Year Storm Event	10 Year Storm Event
Street lighting	Average Maintained – 2 fc Uniformity – 3:1 Avg. / Min.	Average Maintained – 2 fc Uniformity – 3:1 Avg. / Min.

Exhibit 2.8 Other Design Parameter: Design Vehicle		
Location	**Design Vehicle**	**Vehicle Accommodated**
Arterial / Arterial	CITY BUS & A-BUS	CITY BUS & A-BUS
Arterial / Collector	SU-30	SU-30

2.3.3.4 Existing and Proposed Highway/Bridge Plan and Section

The proposed alternative will widen the existing roadway from 44 foot to 59 foot. The new roadway section reduces the number of vehicular lanes from 4 to 3 but adds a bike lane and parking lane along each side of the roadway throughout the corridor.

The existing and proposed roadway sections are presented in Appendix A of this report.

2.3.3.5 Non Standard/Non Conforming

There are no nonstandard or nonconforming features within the project limits.

2.3.3.6 Pavement and Shoulder Conditions

The existing roadway within the study area consists of a flexible asphalt pavement section (11" thick) in good condition.

Project improvements will consist of the milling and resurfacing of the existing pavement with full depth asphalt pavement in areas to be widened. The project will also include will also include new granite curb, and a new underdrain system to improve the design life of the pavement and subbase material.

2.3.3.7 Drainage Systems

The project will require modifications to the existing closed drainage system to accommodate the relocated curb improvements. Modifications are anticipated to consist of new catch basins utilizing existing laterals or new connections to the existing mainline sewer. Coordination with Monroe County Pure Waters will occur during final design

2.3.3.8 Geotechnical

There are no special geotechnical concerns with the soils or rock slopes within the project area.

2.3.3.9 Structures

No work is proposed on the existing East Main Street Bridge over the Genesee River and no new bridges are proposed.

2.3.3.10 Hydraulics of Bridges and Culverts

This project will not address the existing East Main Street Bridge over the Genesee River.

2.3.3.11 Constructability Review

The City of Rochester's Department of Environmental Services, Construction division, in conjunction with NYSDOT, will review the final plans for constructability related issues.

2.3.3.12 Utilities

Various public and private utilities are present throughout the study area. Utilities present are all underground and consist of electric, gas, telephone, cable tv, communications, steam, water and traffic signal interconnect systems.

The project will require spot relocations to accommodate the proposed improvements. Coordination with all public and private utilities within the project sites will occur during final design.

2.3.3.13 Right of Way

All of the proposed improvements will be within the public Right-of-Way or within City owned parcels. Grading releases for building entrances may be required.

2.3.3.14 Landscaping/Environmental Enhancement

Significant opportunity exists with the preferred alternative to enhance and increase the landscaping as a part of the overall enhancement and aesthetic improvement efforts for this project. Improvements being considered consist of new street trees, street light poles, planters and accent lighting for the Liberty pole Plaza.

Detailed landscaping/streetscape plan will be developed during detailed design.

2.4 Miscellaneous

2.4.1 NYS Smart Growth Public Infrastructure Policy Act (SGPIPA)

Pursuant to ECL Article 6, this project is compliant with the New York State Smart Growth Public Infrastructure Policy Act (SGPIPA).

To the extent practicable this project has met the relevant criteria as described in ECL § 6-0107 The Smart Growth Screening Tool was used to assess the project's consistency and alignment with relevant Smart Growth criteria; the tool was completed by the City of Rochester for inclusion in the design approval document and reflects the current project scope. A copy of the Smart Growth form has been included in Appendix M.

2.4.2 Other Miscellaneous Information

Areaways – Several areaways are present within the project corridor. Coordination between the City of Rochester and owners will be required during final design.

Bus Operations – The corridor has significant bus activity due to the close proximity of the new transit center. The two-way conversion of Clinton Avenue and St. Paul Avenue have facilitated bus circulation within the area, however existing curb radii along the Main Street corridor are not adequate to accommodate the new turning movements. The City of Rochester has taken temporary measures to accommodate the turning movements in anticipation that this project addresses the issues with long term solution. These turning movements concerns will be addressed during final design.

Buses have to ride over the existing sidewalk to make turning movements within the corridor

Bus transfers areas have been removed from the project corridor

Parking – The study area at one time accommodated on-street parking along both sides of East Main Street. This parking was removed within the project corridor to create bus transfer locations for the local transit authority. Recently with the construction of a new transit center, these transfer locations are no longer required within the project area. Public input has resulted in the desire to restore this lost parking to revitalize and restore access to the local businesses and Liberty Pole Plaza. The project proposes to install 8' wide recessed parking along both sides of East Main Street where feasible.

CHAPTER 3 – SOCIAL, ECONOMIC AND ENVIRONMENTAL CONSIDERATIONS

Refer to the Environmental Checklist included in Appendix B for information on all environmental issues for which the project was screened.

3.1 National Environmental Policy Act (NEPA)

This project is being progressed as a NEPA Class II action (Categorical Exclusion) because it does not individually or cumulatively have a significant environmental impact and is excluded from the requirement to prepare an Environmental Impact Statement (EIS) or an Environmental Assessment (EA) as documented in the Federal Environmental Approvals Worksheet (FEAW) and the following discussion in this chapter.

Specifically, in accordance with the Federal Highway Administration's regulations in 23 CFR 771.117(c) this project is one of the project types described in the 'C' list as primarily: *(3) Construction of bicycle and pedestrian lanes, paths, and facilities;* and *(8) Installation of fencing, signs, pavement markings, small passenger shelters, traffic signals, and railroad warning devices where no substantial land acquisition or traffic disruption will occur,* and does not significantly impact the environment. Refer to Appendix B for the FEAW.

3.2 State Environmental Quality Review Act (SEQRA)

New York State Department of Transportation is the SEQRA lead agency as per 17 NYCRR Part 15 "Procedures for Implementation of State Environmental Quality Review Act", Section 15.5.

The Department has determined that this project is a SEQRA Type II Action in accordance with 17 NYCRR, Part 15. No further SEQRA processing is required. The project has been identified as a Type II action, per 17 NYCRR Section 15.14, Subdivision (e), Item 37, Paragraphs ii, iv and ix. This permits the project to be classified as Type II since the project does not violate any of the criteria contained in subdivision (d) of Section 15.14, and is of a scale and scope illustrated by the following:

> (ii) installation on existing highways of traffic control devices, surveillance systems, pavement marking, lighting, signs, and other similar operational improvements;
>
> (iv) replacement, reconstruction or rehabilitation, at present site or immediately adjacent thereto, of existing bridges, culverts or other transportation structures, including railroad crossing structures, not involving substantial expansion of the structure;
>
> (ix) construction of bus shelters and bays, construction of bicycle or pedestrian facilities within the existing right-of-way;

Specifically, the project does not include or result in:

1. The acquisition of an occupied dwelling or business structure;
2. Significant changes in passenger or vehicle traffic volumes, vehicle mix, local travel patterns or access;
3. More than minor social, economic or environmental effects upon occupied dwelling units, businesses, abutting properties or other established human activities;

4. Significant inconsistency with current plans or goals that have been adopted by local government bodies;
5. Physical alteration of more than 2.5 ac of publicly owned or operated park land, recreational area or designated open space;
6. An effect on a district, building, structure or site eligible for, or listed on, the National Register of Historic Places;
7. More than minor alteration of, or adverse effect upon, any property, protected area, or natural or man-made resource of national, State or local significance, including but not limited to:
   (i) Wetlands and associated areas;
   (ii) Floodplains;
   (iii) Prime or unique agricultural land;
   (iv) Agricultural districts, when more than one acre may be affected;
   (v) Water resources, including lakes, reservoirs, rivers and streams;
   (vi) Water supply sources;
   (vii) Designated wild, scenic and recreational rivers;
   (viii) Unique ecological, natural wooded or scenic areas;
   (ix) Rare, threatened or endangered species;
   (x) Any area designated as a critical environmental area;
8. Requirement for an indirect air source quality permit.

3.3 Additional Environmental Information

3.3.1 Wetlands

A review of the New York State Department of Environmental Conservation's (NYSDEC) Freshwater Wetlands Mapping and the U.S. Fish and Wildlife Service's (USFWS) National Wetland Inventory (NWI) mapping of the project corridor indicated that no mapped NWI wetlands are located near the project site. No state regulated (NYSDEC) freshwater wetlands were mapped immediately adjacent to or within 100-feet of the project site.

3.3.2 Surface Waterbodies and Watercourses

The only surface water body located within the project limits is the Genesee River. The Main Street Bridge is located over the Genesee River at the west end of the project area. The proposed streetscape improvement project and installation of wayfinding signage does not include bridge work, and will not impact the Genesee River.

3.3.3 Wild, Scenic, and Recreational Rivers

According to the NYSDEC (http://www.dec.ny.gov/permits/32739.html), no Wild, Scenic, and Recreational Rivers are located within the project boundaries.

3.3.4 Navigable Waters

The only navigable water body located within the project limits is the Genesee River. The Main Street Bridge is located over the Genesee River at the west end of the project area. The proposed streetscape improvement project and installation of wayfinding signage does not include bridge work, and will not impact the Genesee River.

3.3.5 Floodplains

According to the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Maps (FIRM), the only portion of the project limits within the boundaries of the 100-year flood zone is the Genesee River itself. No work is proposed within the river. Additionally, no bridge work, excavation or grading within the floodplain is proposed as part of the project.

3.3.6 Coastal Resources

According to the Coastal Zone Area Map from the NYS Department of State's Coastal Zone Management Unit, the proposed project is not located in a State Coastal Zone Management (CZM) area.

3.3.7 Aquifers, Wells, and Reservoirs

Not applicable. The project will not impact aquifers, wells, and reservoirs.

3.3.8 Stormwater Management

Not applicable. The project will not impact more than one acre of soil.

3.3.9 General Ecology and Wildlife Resources

Minimal potential wildlife habitat is available within the project limits, which primarily includes asphalt roadways, and paved sidewalks, with limited planted urban street trees.

In accordance with Section 7 of the Endangered Species Act (ESA) and the FHWA New York Division Section 7 ESA Process Summary, the project was evaluated for potential impacts to Threatened and Endangered Species.

Under this process, the initial step was a determination whether ESA species are mapped in the project area. According to the United States Fish and Wildlife Service (USFWS) IPaC Trust Resource Report, one listed species has been identified in the project area:

- Northern Long-eared Bat (*Myotis septentriolis*) - Threatened

  A habitat assessment for the Northern Long-eared Bat (NLEB) was performed, including completion of a Suitable Habitat Assessment Form (Trees), and completion of a Programmatic "No Effect" (PNE) Checklist.

  Suitable tree habitat for the NLEB consists of a wide variety of forested and wooded habitats. NLEBs prefer to roost in live trees and/or snags of at least three-inches diameter breast height (dbh) that have exfoliating bark, cracks, crevices, and/or cavities. As noted in the Suitable Habitat Assessment Form (Trees), 28 trees will be removed from the sidewalks along East Main Street, including 23 trees of at least three-inches dbh. These trees were all noted to be urban street trees (trees found in highly-developed urban areas). According to the FHWA New York Section 7 ESA Process guidelines, urban street trees are considered "not suitable habitat" for the NLEB. The NLEB has also been observed roosting in human-made structures such as buildings, barns, bridges, and bat houses. The proposed project includes work along East Main Street, with a bridge spanning the Genesee River. No bridge work will be performed as part of the project.

The ESA Programmatic "No Effect" Determination Project Eligibility Checklist concluded that based on the absence of suitable habitat, the project meets the criteria for a PNE for the NLEB. No suitable habitat for the NLEB is present, nor visible sign of activities by the NLEB within the project action area. Therefore, the project will result in no effect to the species or species habitat.

- The USFWS IPaC Trust Report also indicates that migratory birds protected under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act may be located in the project area, including the Bald eagle.

  Any take, possession, or selling of protected migratory birds is prohibited under the MBTA. The Project is located in a fully developed urban area, and suitable natural habitat for protected migratory bird species is not present. In addition, no visible signs of nesting activities were noted within the project action area. Therefore, the project will result in no effect to these species or species habitat.

  The Bald eagle was delisted on August 8, 2007. While there are no Endangered Species Act requirements for Bald Eagles after this date, the eagles continue to receive protection under the Bald and Golden Eagle Protection Act (BGEPA). A habitat assessment for the Bald eagle revealed that there is neither suitable habitat present nor visible signs of nesting activities within the project action area. Therefore, the project will result in no effect to the species or species habitat.

A request was also submitted to the New York Natural Heritage Program (NHP) to identify endangered and threatened wildlife, significant habitats, and/or rare plant species documented by the New York State Department of Environmental Conservation (NYSDEC) in the project area. According to the NYSDEC, one state-listed Endangered species has been identified in the project area:

- Peregrine Falcon (*Falco peregrinus*) - Peregrine falcons nest on buildings and bridges in several urban areas of New York, including Rochester. A pair of Peregrines has been documented at the top of the Times Square Building in Rochester since 1998.

  A habitat assessment for the Peregrine falcon revealed that there is neither suitable habitat present, nor visible sign of activities by the Peregrine falcon within the project action area. Therefore, the project will result in no effect to the species or species habitat.

Additional information can be found in Appendix B - Environmental Information and Appendix E – Project Correspondence.

3.3.10 Critical Environmental Areas

No Critical Environmental Areas are located within the project boundaries.

3.3.11 Historic and Cultural Resources

The New York State Office of Parks, Recreation and Historic Preservation (NYSOPRHP) Cultural Resources Information System (CRIS) website was reviewed to determine the location of any properties listed on the National Register of Historic Places (NRHP) adjacent to the proposed project. Seven resources listed on the NRHP are located within or immediately adjacent to the proposed East Main Street Streetscape Improvements:

- The Sibley Triangle Building (90NR01501) is located at 20 East Avenue at the southeast end of the project area for the East Main Street Streetscape Improvements. It is a five-story triangular

flatiron building constructed in 1897 of brick walls with Indiana limestone and marble trim, for prominent realtor, banker and philanthropist Hiram W. Sibley.

- The Baptist Temple Building (93NR00460) is located at 14 Franklin Avenue at the northeast end of the project area for the East Main Street Streetscape Improvements. It was constructed in 1924 as a fourteen-story "skyscraper church" for the Second Baptist Church, and currently houses residential and commercial tenants.
- The Rochester Savings Bank (90NR01462) is located at 40 Franklin Avenue at the northeast end of the project area for the East Main Street Streetscape Improvements. It was constructed in 1927 of Minnesota Kato stone and designed by famed New York City architects McKim, Mead and White. The Rochester Savings Bank is also a designated City of Rochester historic landmark.
- The Sibley, Lindsay & Curr Building (00NR01608) is located at 228 East Main Street between Franklin Street and Clinton Avenue. The building was the first and largest department store in Rochester, constructed in stages between 1904-1924 in the Chicago commercial style, and occupying an entire city block.
- The National Company Building (90NR01515) is located at 155 East Main Street on the south side of the block between Clinton and South Avenues. The building was designed by prominent local architect J. Foster Warner, constructed in 1924 and includes a mix of Beaux Arts and Neoclassical details.
- The Granite Building (90NR01512) is located at 124-130 East Main Street at the northeast corner of South Avenue. The 12-story building was constructed in 1893 as the first skeletal steel skyscraper in the City of Rochester, and includes a variety of ornate details on its Second Renaissance-style façade as well as four-story granite columns supporting recessed arches. The Granite Building was included in a thematic group of six architecturally and historically significant department store buildings located within the Inner Loop of Rochester that also includes the National Building and Sibley, Lindsay & Curr Building.
- The Main Street Bridge (90NR01514) is located over the Genesee River at the west end of the project area for the East Main Street Streetscape Improvements. The Main Street Bridge was constructed in 1857 and is the oldest of three stone arch bridges that traverse the Genesee River within the Inner Loop area of the city.

In addition, two NRHP-eligible resources are located with the project limits of the East Main Street Streetscape Improvements:

- The building at 300-310 Main Street (USN 05540.007525) is a three-story Colonial Revival-style building, constructed in the second quarter of the twentieth century. The south and west facades are symmetrical, with five bays on each side meeting at a corner entry topped with a vented tower. Exterior walls are brick, and the roof is clad in slate and punctuated by five dormers on the south and west facades. The building appears to be in excellent condition and appears to meet NRHP-eligibility criteria.
- The Lincoln Alliance Building at 183 East Main Street (USN 05540.00880) is a fourteen-story office building constructed in the first quarter of the twentieth century. Exterior walls include a mix of limestone and brick with marble pilasters dividing three bays of tall, steel-framed windows topped by a dentillated cornice located above the third story. Despite some alteration to its windows and other historic materials the building appears to be in excellent condition and appears to meet NRHP-eligibility criteria.

All proposed project improvements will take place in previously disturbed areas where existing pavement, sidewalks, signage and utilities are located. The proposed project is not anticipated to adversely affect any historic resources listed on or eligible for the NRHP. The proposed East Main Street Streetscape Improvements will only improve the appearance, condition, and public use and appreciation of the built environment along East Main Street, and will not compromise the integrity of the NRHP-listed or NRHP-eligible resources located along the project route.

Coordination with SHPO regarding assessment of obligations for compliance under Section 106 of the National Historic Preservation Act is ongoing. A memorandum from the Regional DOT office stating that the project will have no adverse effects on historic properties will be included in the final Report.

Additional information can be found in Appendix B - Environmental Information and Appendix E – Project Correspondence.

3.3.12 Parks and Recreational Resources

The proposed project includes the rehabilitation of the existing hardscape surface around the Liberty Pole Plaza, located at the northwest intersection of East Main and Franklin Streets. Proposed changes within Liberty Pole Plaza include the replacement of the existing sidewalk and accent lighting around the Liberty Pole. The Liberty Pole, surrounding seat wall and planter, memorial plaque and drinking fountain, and the row of trees immediately adjacent to the Sibley Building will be preserved. Liberty Pole Plaza is a significant publicly owned recreational resource and is therefore considered to be a 4(f) resource.

The rehabilitation of the existing pavers around Liberty Pole Plaza will require the occupancy of the plaza during construction, which might be considered a 4(f) use. However, the duration of the activity involving the plaza will be limited, the scope of the work is minor, there will be no permanent adverse impacts on the resource, and the project will not cause interference with the activities at the plaza. In addition, the project will have an overall beneficial effect on the resource. Concurrence has been received from the City of Rochester regarding these items.

Liberty Pole Plaza

The project therefore qualifies for an exception to the Section 4(f) regulations, specifically: “Temporary occupancies of land that are so minimal as to not constitute a use within the meaning of Section 4(f).”

Additional information can be found in Appendix B - Environmental Information and Appendix E – Project Correspondence.

3.3.13 Visual Resources

This project will not have an adverse impact on visual resources.

3.3.14 Farmlands

Not applicable. No farmlands are present in the project vicinity.

3.3.15 Air Quality Analysis

Not applicable. Due to the proposed scope of the project, an air quality analysis is not necessary. This project will not result in an increase in vehicular traffic or idle times. The project will enhance an existing corridor to allow for non-motorized, recreational travel.

3.3.16 Energy Analysis

Not applicable. The project will not create a new demand for energy.

3.3.17 Noise Analysis

Not applicable. The project will not create new noise impacts beyond the construction phase.

3.3.18 Asbestos

Not applicable. No building demolition or bridge work is proposed.

3.3.19 Contaminated and Hazardous Materials

The scope of this project does not include excavation in a new right of way or building demolition, and is not likely to lead to contaminated media being encountered and/or new environmental liabilities for the project.

A review of the NYSDEC Spill Incidents database was completed. Spills were reviewed for the last 10 years for the East Main Street Corridor east to Alexander Street, and for the West Main Street Corridor west to Canal Street. The findings are included in the table below.

NYSDEC Spills Summary Table

Date Spill Reported	Spill Name	Address	Material Spilled	Amount	Resource Affected	Closed	Concern
9/7/2006	Delta Sonic Car Wash	718 East Main Street	Gasoline	6 gallons	Soil	9/7/2006	No
4/13/2007	Delta Sonic Car Wash	718 East Main Street	Gasoline	4 gallons	Sewer	4/16/2007	No
9/24/2007	Delta Sonic Car Wash	718 East Main Street	Gasoline	1 gallon	Soil	10/15/2007	No
6/16/2008	Parking Lot	420 East Main Street	Gasoline	Unknown	Soil, Groundwater	6/15/2009	No
6/21/2008	Main Street Bridge	120 East Main Street	Unknown petroleum; Power steering fluid	Unknown; 4.5 gallons	Surface Water; Sewer, impervious surface	6/23/2008	No
7/9/2008	Triangle Building	335 East Main Street	Unknown material	Unknown	Air	7/9/2008	No
7/22/2008	400-420 East Main Street	400-420 East Main Street	Unknown petroleum	1 gallon	Soil	7/22/2008	No
5/30/2010	FASTRAC #291	672 East Main Street	Gasoline	Unknown	Unknown	6/1/2010	No
1/18/2011	FASTRAC #291	672 East Main Stret	Gasoline	8 gallons	Impervious surface	1/18/2011	No

Date Spill Reported	Spill Name	Address	Material Spilled	Amount	Resource Affected	Closed	Concern
6/3/2013	Former Sibley Bldg	228-280 East Main Street	Waste oil/used oil; Hydraulic oil	Unknown	Soil, Groundwater	7/16/2013	No
8/29/2014	Eastman Dental Dispensory	800 East Main Street	Mercury	Unknown	Soil	1/15/2015	No
12/23/2014	Delta Sonic Car Wash	718 East Main Street	Gasoline	Unknown	Soil	2/5/2015	No
11/9/2007	Broad & Plymouth LLC	99 West Main Street	Gasoline	Unknown	Soil	3/31/2010	No
1/12/2010	Parking Lot	179-191 West Main Street	Lube oil; Kerosene	Unknown	Soil	6/10/2010	No
11/25/2011	Superior Plus Energy	210 West Main Street	#2 Fuel oil	1 gallon	Impervious surface	11/25/2011	No
2/25/2013	Martini Construction	116 West Main Street	Diesel	1 gallon	Impervious surface	2/26/2013	No

The NYSDEC web site indicates that all spills identified above have a status of “closed”. If a spill has a date listed for the spill being closed, this means the spill case was closed by the case manager in the NYSDEC. The spill case was closed because either; a) the records and data submitted indicate that the necessary cleanup and removal actions have been completed and no further remedial activities are necessary, or b) the case was closed for administrative reasons (e.g., multiple reports of a single spill consolidated into a single spill number). The Department however reserves the right to require additional remedial work in relation to the spill, if in the future it determines that further action is necessary.

Appendix A

Project Plans

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CITY OF ROCHESTER, NEW YORK

DEPARTMENT OF ENVIRONMENTAL SERVICES

MAIN STREET STREETSCAPE & WAYFINDING PROJECT

P.I.N. 4755.91 DXXXXXX PC XXXXX

CANAL STREET TO ALEXANDER STREET

LENGTH - 7,200 FEET

PRELIMINARY (35%) PLANS

US DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

NEW YORK STATE OF OPPORTUNITY. Department of Transportation

LOCATION MAP

CITY OF ROCHESTER

APPROVED BY: ______________ DATE: ______

NORMAN H. JONES
COMMISSIONER
DEPARTMENT OF ENVIRONMENTAL SERVICES

APPROVED BY: ______________ DATE: ______

JAMES R. MCINTOSH, P.E.
CITY ENGINEER
BUREAU OF ARCHITECTURE & ENGINEERING

RECOMMENDED BY: ______________ DATE: ______

STANTEC CONSULTING SERVICES, INC.
Stantec
61 Commercial Street, Suite 100
Rochester, N.Y. 14614
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DATE ISSUED : 03-07-2016 DRAWING NO. : COVER SHEET NO. : 1 OF 17

Design File: U:\192500343\Transportation\Preliminary\Drawing\Plan Set\CS-01.dgn
Date/Time: 3/4/2016 2:37:05 PM
Plotted By: kstettner

ORIGINAL SHEET - ANSI D HORIZ

ALIGNMENT

ABBR.	DESCRIPTION
AH	AHEAD
AZ	AZIMUTH
BK	BACK
ℬ	BASELINE
BRG	BEARING
℄	CENTERLINE
CS	CURVE TO SPIRAL
e	SUPERELEVATION RATE (CROSS SLOPE)
EQ	EQUALITY
EXT	EXTERNAL
HCL	HORIZONTAL CONTROL LINE
HSD	HEADLIGHT SIGHT DISTANCE
L	LENGTH OF CIRCULAR CURVE
LS	LENGTH OF SPIRAL
LVC	LENGTH OF VERTICAL CURVE
E	CENTER CORRECTION OF VERTICAL CURVE
f	MAIN LINE
PC	POINT OF CURVATURE
PI	POINT OF INTERSECTION
POL	POINT ON LINE
PSD	PASSING SIGHT DISTANCE
PT	POINT OF TANGENT
PVC	POINT OF VERTICAL CURVE
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENT
R	RADIUS
SC	SPIRAL TO CURVE
SSD	STOPPING SIGHT DISTANCE
ST	SPIRAL TO TANGENT
STA	STATION
T	TANGENT LENGTH
TGL	THEORETICAL GRADE LINE
TS	TANGENT TO SPIRAL
VC	VERTICAL CURVE

TOPOGRAPHY (DRAINAGE)

ABBR.	DESCRIPTION
BB	BOTTOM OF BANK (STREAM)
BC	BOTTOM OF CURB
BO	BOTTOM OF OPENING
CAP	CORRUGATED ALUMINUM PIPE
CB	CATCH BASIN
CIP	CAST IRON PIPE
℄ STRM	CENTERLINE OF STREAM
CMP	CORRUGATED METAL PIPE
CORR	CORRUGATED
CP	CONCRETE PIPE
CSP	CORRUGATED STEEL PIPE
CULV	CULVERT
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
DMH	DRAINAGE MANHOLE
DS	DRAINAGE STRUCTURE PIPE
D'XING	DITCH CROSSING
EHW	EXTREME HIGH WATER
EL	ELEVATION
ELEV	ELEVATION
ELW	EXTREME LOW WATER
ES	END SECTION
HW	HEADWALL
ID	INSIDE DIAMETER
INV	INVERT
MH	MANHOLE
MHW	MEAN HIGH WATER
NOM	NOMINAL
OD	OUTSIDE DIAMETER
OHW	ORDINARY HIGH WATER
OLW	ORDINARY LOW WATER
PCP	PLAIN CONCRETE PIPE
RCP	REINFORCED CONCRETE PIPE
SICPP	SMOOTH INTERIOR CORRUGATED POLYETHYLENE PIPE
TB	TOP OF BANK (STREAM)
TC	TOP OF CURB
TG	TOP OF GRATE
VCP	VITRIFIED CLAY PIPE
VTP	VITRIFIED TILE PIPE
XVCP	EXTRA STRENGTH VITRIFIED CLAY PIPE

TOPOGRAPHY (MISCELLANEOUS)

ABBR.	DESCRIPTION
@	AT
AAT	ABANDON AT TAP
ABUT	ABUTMENT
ADBE	AS DIRECTED BY ENGINEER
ADJ	ADJUST
AOBE	AS ORDERED BY ENGINEER
AOBPM	AS ORDERED BY PROJECT MANAGER
APPROX	APPROXIMATE
AR	AREA WAY
ASPH	ASPHALT
BDY	BOUNDARY
BLDG	BUILDING
BM	BENCH MARK
BR	BRICK
CAL	CALIPER
CC	CENTER TO CENTER
CIR.BR.	CIRCULAR BRICK
CL	CLASS
CLF	CHAIN LINK FENCE
CONC	CONCRETE
CONST	CONSTRUCTION
C.O.R.	CITY OF ROCHESTER
COR	CORNER
COV	COVERED
CR	COUNTY ROAD
D	DEED DISTANCE
DA	DOUBLE ARROW
DM	DIRECT MEASUREMENT
DRWY	DOORWAY
DWY	DRIVEWAY
ENT	ENTRANCE
EP	EDGE OF PAVEMENT
ES	EDGE OF SHOULDER
EXIST	EXISTING
FEE	FEE ACQUISITION
FEE WO/A	FEE ACQUISITION WITHOUT ACCESS
FD	FOUNDATION
FL	FENCE LINE
FP	FENCE POST
GA	GUAGE
GLAV	GALVANIZED
GAR	GARAGE
GR	GRAVEL
GRAN	GRANITE
HO	HOUSE
HSE	HOUSE
HTC	HERE TO CORNER
HWY	HIGHWAY
IP	IRON PIN OR IRON PIPE
LT	LEFT
MAX	MAXIMUM
MB	MAILBOX
MC	MONROE COUNTY
MED	MEDINA
MIN	MINIMUM
MO	MID-ORDINATE
MON	MONUMENT
NE	NORTHEAST
NEC	NECESSARY
N/F	NOW OR FORMERLY
NO /#	NUMBER
NTS	NOT TO SCALE
NW	NORTHWEST
N&W	NAIL AND WASHER
NYS	NEW YORK STATE
OG	ORIGINAL GROUND
O/H	OVERHEAD
P	PARCEL
PAV'T	PAVEMENT
PE	PERMANENT EASEMENT
PED POLE	PEDESTRIAN POLE
ℙ	PROPERTY LINE

TOPOGRAPHY (MISCELLANEOUS) CONT.

ABBR.	DESCRIPTION
PM	PARKING METER
POR	PORCH
(R)	RECORD MAP INFORMATION
RCS	ROCHESTER CITY SURVEY
ROW	RIGHT OF WAY
RR	RAILROAD
RT	RIGHT
RTE	ROUTE
RTS	ROCHESTER TOPOGRAPHIC SURVEY
RW	RETAINING WALL
SE	SOUTHEAST
SH	STATE HIGHWAY
SHLDR	SHOULDER
SP	STAND PIPE
SPK	SPIKE
ST	STREET
ST. BOX	STONE BOX
STK	STAKE
STY	STORY
SW	SOUTHWEST
SW	SIDEWALK
TE	TEMPORARY EASEMENT
TGL	THEORETICAL GRADE LINE
TO	TEMPORARY OCCUPANCY
TYP	TYPICAL
U/G	UNDERGROUND
USC&GS	UNITED STATES COAST & GEODETIC SURVEY
WD	WOOD
WIN	WINDOW
WIF	WROUGHT IRON FENCE
WRST	WRAPPED STEEL
WW	WING WALL
WW	WINDOW WELL

SUBSURFACE EXPLORATION

ABBR.	DESCRIPTION
	REPLACE ABBREVIATION "AB" WITH:
AH	HAND AUGER
CP	CONE PENTROMETER
DA	2¼ INCHES CASED DRILL HOLE
DM	DRILLING MUD
DN	4 INCHES CASED DRILL HOLE
FH	HOLLOW FLIGHT AUGER
PA	POWER AUGER
PH	PROBE
PT	PERCOLATION TEST HOLE
RP	1 INCH SAMPLER (RETRACTABLE PLUG) TO BE DEFINED AT THE TIME OF EXPLORATION
SP	SEISMIC POINT
TP	TEST PIT
	ABBREVIATION "C" IN CATEGORIES: DA, DM, DN, AND FH WITH:
AH	HAND AUGER
CP	CONE PENTROMETER
DA	2¼ INCHES CASED DRILL HOLE
DM	DRILLING MUD
DN	4 INCHES CASED DRILL HOLE
FH	HOLLOW FLIGHT AUGER
PA	POWER AUGER
PH	PROBE
PT	PERCOLATION TEST HOLE
RP	1 INCH SAMPLER (RETRACTABLE PLUG) TO BE DEFINED AT THE TIME OF EXPLORATION
SP	SEISMIC POINT
TP	TEST PIT

UTILITIES

ABBR.	DESCRIPTION
CO	CLEAN OUT
COMB	COMBINED
CRHH	CITY OF ROCHESTER HANDHOLE
CRLP	CITY OF ROCHESTER LIGHT POLE
CRPB	CITY OF ROCHESTER PULLBOX
CTV	CABLE TELEVISION
DOM	DOMESTIC
E	ELECTRIC
EMH	ELECTRIC MANHOLE
FA	FIRE ALARM
G	GAS
GP	GUY POLE
GS	GAS SERVICE
GSB	GAS SERVICE BOX (HOUSE LINE)
GV	GAS VALVE (MAIN LINE)
HYD	HYDRANT
LP	LIGHT POLE
LPG	LOW PRESSURE GAS
POLY	POLYETHLENE
PP	POWER POLE
PVCP	POLYVINYL CHLORIDE PIPE
RGE	ROCHESTER GAS AND ELECTRIC
RTC	ROCHESTER TELEPHONE CORP.
RWW	ROCHESTER WATER WORKS
SA	SANITARY SEWER
SAN	SANITARY
SMH	SANITARY MANHOLE
ST	STORM SEWER
T	TELEPHONE
TCB	TRAFFIC CONTROL BOX
TCC	TRAFFIC CONTROLLER CABINET
TELBOX	TELEPHONE BOX
TEL P	TELEPHONE POLE
TMH	TELEPHONE MANHOLE
TSV&B	TAPPING SLEEVE, VALVE & BOX
W	WATER
WM	WATER METER
WS	WATER SERVICE
WSB	WATER SERVICE BOX (HOUSE LINE)
WV	WATER VALVE (MAIN LINE)

INDEX

SHEET NUMBER	DESCRIPTION	DRAWING NUMBER
1	COVER SHEET	COVER
2	ABBREVIATIONS AND INDEX	ABB-1
3	LEGEND	LEG-1
4	TYPICAL SECTIONS	TYP-1
5 - 7	GENERAL ROADWAY PLANS	GNP-1 THRU GNP-3
8 - 17	WAYFINDING SIGN PLANS	SP-1 THU SP-10

STANDARD SYMBOL (PLANS)	ITEM PAYMENT UNIT: ESTIMATE OF QUANTITIES SHEET	EQUIVALENT NOMENCLATURE: (SPECS/PROPOSAL)
"	-	INCHES
'	LF	LINEAR FEET
mi	MI	MILES
in^2	SQIN	SQUARE INCHES
ft^2	SF	SQUARE FEET
YD^2	SY	SQUARE YARD
AC	AC	ACRES
YD^3	CY	CUBIC YARD
GAL	GAL	GALLON
lb	LB	POUND
TON	TON	TON
EA	EA	EACH
INTMO	INTMO	INTERSECTION MONTH
LS	LS	LUMP SUM

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Revision	By	Appd.	YY.MM.DD

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Client/Project
CITY OF ROCHESTER

MAIN STREET STREETSCAPE AND PEDESTRIAN WAYFINDING ENHANCEMENTS
P.I.N. 4755.91 D XXXXXX PC XXXXX

ROCHESTER, NEW YORK

File Name: ABB-01.DGN	SAR	SWM	KRS	16.03.07
	Dwn.	Chkd.	Dsgn.	YY.MM.DD

Title
ABBREVIATIONS & INDEX

Project No.	Scale	
192500343	NONE	
Drawing No.	Sheet	Revision
ABB-1	2 of 17	0

Design File: \\us1275-f02\shared_projects\192500343\Transportation\Preliminary\Drawing\Plan Set\ABB-01.dgn
Date/Time: 3/4/2016 10:34:28 AM
Plotted By: kstefner

ORIGINAL SHEET - ANSI D HORIZ

FEATURE	SYMBOL EXISTING	SYMBOL PROPOSED
SURVEY DATA		
COORDINATE GRID	E 1,000,000 / N 1,000,000	
SURVEY BASELINE		
BASELINE POINT		
BENCH MARK	B.M. 12	
PERMANENT SURVEY MARKER	USGS	
ROCHESTER TOPOGRAPHIC SURVEY MONUMENT	RTS	RTS
CENTERLINE & STATIONING		P 12+00
NORTH ARROW		
BOUNDARY		
CITY BOUNDARY	CITY OF ROCHESTER / TOWN OF BRIGHTON	
TOWN BOUNDARY	TOWN OF BRIGHTON / TOWN OF HENRIETTA	
COUNTY BOUNDARY	MONROE / ONTARIO	
STATE BOUNDARY	NEW YORK / PENNSYVANIA	
NATIONAL BOUNDARY	CANADA / U.S.A.	
PUBLIC LANDS BDY. (STATE PARK., INDIAN & FED. LAND)		
HIGHWAY BOUNDARY	HB	
EASEMENT LINE	PE	
PROPERTY LINE	P	
ROCHESTER CITY SURVEY MONUMENT	RCS	RCS
HIGHWAY BOUNDARY MONUMENT		
FOUND PROPERTY PIN	FND. PIN	
CONTOURS & ELEVATIONS		
SPOT ELEVATION	500.2	500.2
WATER ELEVATION	WE 350.0	
MAJOR ELEVATION CONTOUR	490.0	490.0
MINOR ELEVATION CONTOUR	490.0	490.0
GEOTECHNICAL		
AUGER HOLE	A-1	
TEST PIT	T-1	
BORE HOLE	B-1	
PAVEMENT CORE	C-1	
MONITORING WELL	MW	
SHEET PILING		

FEATURE	SYMBOL EXISTING	SYMBOL PROPOSED
TRANSPORTATION		
CURB		
CURB CUT		
PAVED & CONCRETE GUTTERS	GUTTER	
PAVED RD., SHOULDER,, DRIVEWAY OR PARK LOT		
UNPAVED RD., SHOULDER, OR PARKING LOT		
CHANGE IN PAVEMENT		
FLUSH MEDIAN		
GRAVEL DRIVEWAY	GRAVEL	
ASPHALT DRIVEWAY	ASPH.	
CONCRETE DRIVEWAY	CONC.	
ASPHALT SIDEWALK	ASPH.	
CONCRETE SIDEWALK	CONC.	
SIDEWALK RAMP		
TRAILS UNPAVED	TRAIL	
TRAILS PAVED	TRAIL	
PARKING BUMPER RAIL		
PARKING BUMPERS	PARKING	
BOLLARD	BOL.	BOL.
GUIDE POST	GP	
CABLE GUIDE RAIL		
BOX BEAM OR 'W' BEAM GUIDE RAIL		
BOX BEAM OR 'W' BEAM MEDIAN BARRIER		
PERMANENT CONCRETE BARRIER		
GUIDE RAIL ANCHOR BLOCK		
TRAFFIC IMPACT ATTENUATOR		
RETAINING WALL	R.W.	R.W.
RAILROADS		
RAILROAD LARGE SCALE		
RAILROAD 20 SCALE		
ABANDONED RAILROAD		
RAILROAD W/CATENARY		
RAILROAD GRADE CROSSING GATE		
RAILROAD SWITCH	RR SWITCH	
RR SIGNAL, RR CROSSING SIGNAL	RR SIGNAL / RR XG	RR SIGNAL / RR XG

FEATURE	SYMBOL EXISTING	SYMBOL PROPOSED
STRUCTURES		
BUILDING & OVERHANG		
BUILDING TO BE DEMOLISHED		
BUILDING UNDER CONSTRUCTION	UC	
BUILDING RUINS		
GARAGE		
BUS SHELTER	BUS	BUS
MISCELLANEOUS FEATURES		
STAIRS		
HAND RAIL		
MAILBOX	MB	
PAPER BOX	PB	
FLAGPOLE	FP	
POLE WITH LIGHT NON-UTILITY	LP	
POST	POST	
BENCH	BENCH	BENCH
PICNIC TABLE	PICNIC TABLE	
FIREPLACE & GRILL	GRILL	
PARKING METER	PM	PM
FIRE ALARM BOX	FA	
POSTAL BOX	PB	
FENCE AND TYPE	5' CLF	
STONE FENCE, ROCK WALL	3' STONE	
NOISE WALL	NOISE WALL	NOISE WALL
TRAFFIC CONTROL		
BILLBOARD - 2 POST SIGN	BB	
SINGLE POST & DOUBLE POST SIGN		
OVERHEAD SIGN		
REFERENCE MARKER/ DELINEATOR	RM	RM
SIGNAL POLE		
TRAFFIC SIGNAL HEAD		
TRAFFIC SIGNAL SIGN		
PEDESTRIAN POLE/SIGNALS		
TRAFFIC CONTROL BOX POLE MOUNTED	C	C
TRAFFIC CONTROL BOX GROUND MOUNTED	C	C
TRAFFIC PULL BOX	M	M
TRAFFIC SIGNAL CONDUIT	MC	
LOOP DETECTOR		
RED LIGHT CAMERA		

FEATURE	SYMBOL EXISTING	SYMBOL PROPOSED
NATURAL		
WATERFALLS AND RAPIDS		
WATERWAYS	FLOW	
SHORELINE, CANAL AND RIVER EDGE		
STREAMS & CREEKS		
SWAMP OR MARSH		
WETLAND BOUNDARY, SWAMP & MARSH OUTLINE		
FEDERAL WETLAND	FW	FW
STATE WETLAND	SW	SW
FEDERAL/STATE WETLAND	FW SW	FW SW
ADJACENT AREA	AA	AA
WOODED AREA OUTLINE		
BRUSH LINE		
HEDGE ROW		
DECIDUOUS TREE ROW		
CONIFEROUS TREE ROW		
FOUNDATION PLANTING		
DECIDUOUS SHRUB		
DECIDUOUS TREE		
CONIFEROUS SHRUB		
CONIFEROUS TREE		
STUMP		
TREE REMOVAL, DECIDUOUS & CONIFEROUS		
RIP RAP		
BOULDER		
DRAINAGE		
OPEN DITCHES FLAT BOTTOM		
OPEN DITCHES V SHAPED		
CATCHBASIN		
STORM SEWER MANHOLE		
ADJUST STORM SEWER MANHOLE FRAME AND COBER		
END SECTION		
FIELD INLETS	FI	FI
HEADWALL	H.W.	H.W.
GRATE	GRATE	
DWY. & FIELD PIPE, STORM SEWER & PIPE CULVERT	12" ST	
DRAINAGE, PIPE OR SUMP INVERT	INV.0.0	

FEATURE	SYMBOL EXISTING	SYMBOL PROPOSED
SOIL EROSION CONTROL		
CONSTRUCTION FENCE		
SILT FENCE		
VEGETATION FENCE		V
SILT/VEGETATION FENCE		V
HAYBALE/STRAWBALE EROS. CONTROL		H/S
CHECK DAM (SILT FENCE)		
CHECK DAM (HAYBALE/STRAWBALE)		H/S
CHECK DAM (STONE)		
MAINTENANCE & PROTECTION OF TRAFFIC		
TEMPORARY CONCRETE BARRIER		
TEMPORARY CONCRETE BARRIER (LIGHTED)		
CONSTRUCTION BARRICADE		
CONSTRUCTION BARRICADE (LIGHTED)		
PLASTIC DRUM		
PLASTIC DRUM (LIGHTED)		
FLASHING ARROW BOARD		
CONE		
FLAGGER		
UTILITIES		
GUY WIRE		
UTILITY POLE		
UTILITY POLE W/LIGHT		
DAVIT LIGHT POLE		
POST TOP LIGHT POLE		
ELECTRIC METER	EM	
ELECTRIC PULLBOX	E	
ELECTRIC MANHOLE	E	
UNDERGROUND ELECTRIC	2 E	
TRANSFORMER LINES & TOWER		
STREET LIGHTING PULLBOX	L	L
STREET LIGHTING HANDHOLE	L	L
UNDERGROUND STREET LIGHTING	L	

FEATURE	SYMBOL EXISTING	SYMBOL PROPOSED
UTILITIES - CONTINUED		
GAS FILL CAP	FILL	
GAS VENT	VENT	
GAS SERVICE	GS	
GAS VALVE		
GAS METER	GM	
GAS MANHOLE	G	
UNDERGROUND GAS LINE	4" G	
TELEPHONE JUNCTION BOX	T	
TELEPHONE PULLBOX	T	
TELEPHONE MANHOLE	T	
UNDERGROUND TELEPHONE	6 T	
CABLE TV JUNCTION BOX	CTV	
CABLE TV PULLBOX	C	
UNDERGROUND CABLE TV	CATV	
WATER CURB STOP	WS	
WATER VALVE		
PITOMETER TAP	P	P
DISINFECTION AND SAMPLING TAP		
WATER METER	WM	
FIRE HYDRANT		
REDUCER		
WATER MANHOLE	W	W
UNDERGROUND WATER SERVICE	3/4" GALV. WS	
UNDERGROUND WATER MAIN	8" DOM W	
WATER MAIN ANODE		A
WATER MAIN TRACER WIRE BOX		T
WATER MAIN CATHODIC PROTECTION TEST STATION		CP
SANITARY SEWER CLEANOUT	CO	
SANITARY SEWER MANHOLE	S	S
ADJUST SANITARY SEWER MANHOLE FRAME AND COVER	S	S
UNDERGROUND SANITARY SEWER	8" VCP SAN	
UTILITY MARKER		

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Revision	By	Appd.	YY.MM.DD

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Client/Project
CITY OF ROCHESTER

GOODMAN ST. AND CLINTON AVE.
PREVENTATIVE MAINTENANCE
P.I.N. 4760.49 D 034955 PC 16106

ROCHESTER, NEW YORK

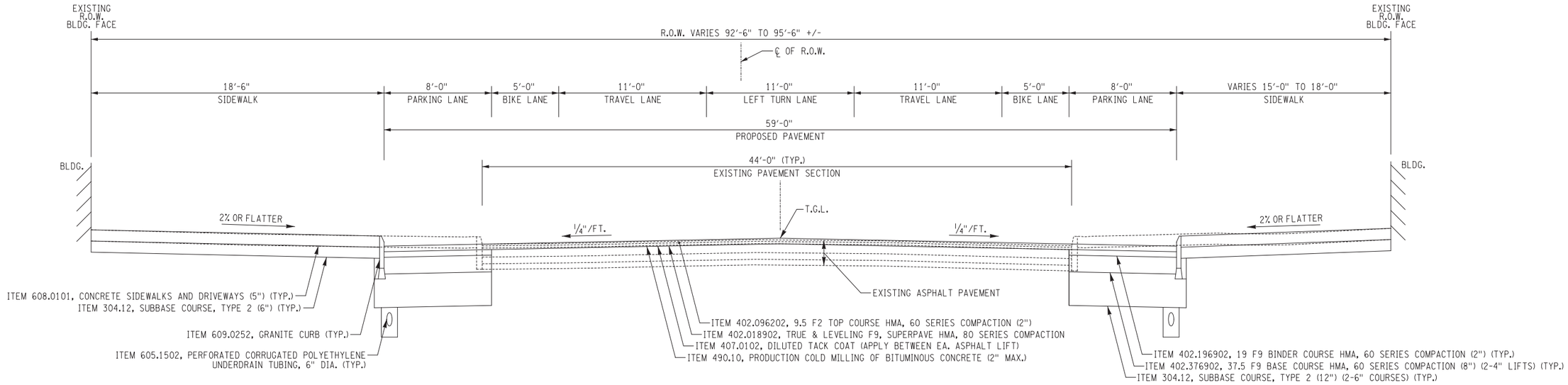
File Name: LEG-1.DGN	SAR	SWM	KRS	16.03.07
	Dwn.	Chkd.	Dsgn.	YY.MM.DD

Title
LEGEND

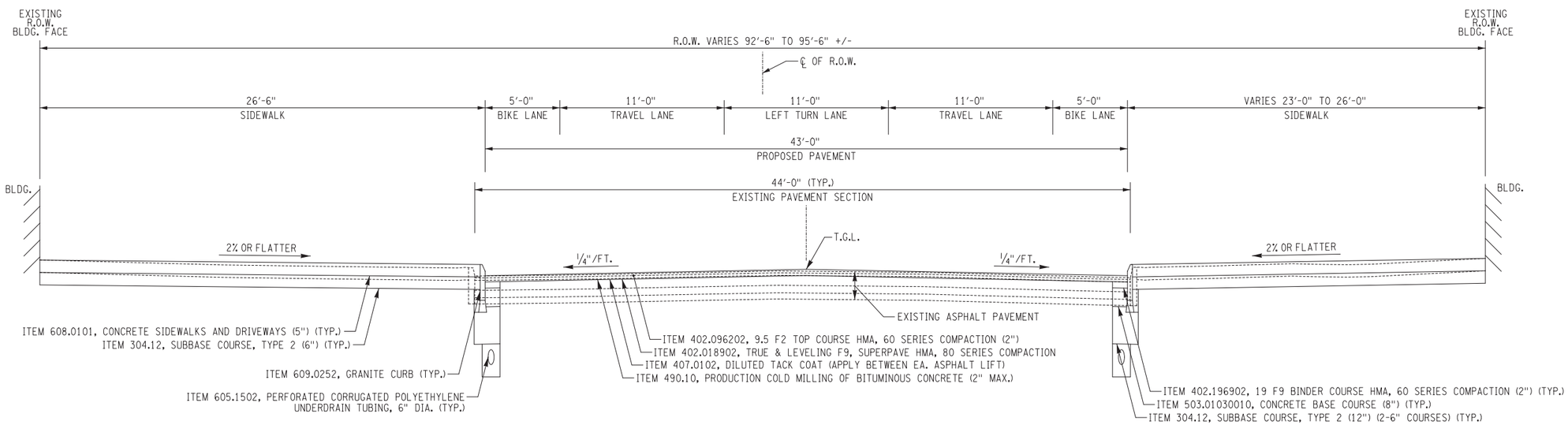
Project No.	Scale	
192500326	NTS	
Drawing No.	**Sheet**	**Revision**
LEG-1	3 of 70	0

Design File: \\us1275-f02\shared_projects\192500343\Transportation\Preliminary\Drawing\Plan Set\LEG-01.dgn
Date/Time: 3/4/2016 10:34:29 AM
Plotted By: kstefiner

ORIGINAL SHEET - ANSI D HORIZ



EAST MAIN STREET
PAVEMENT WIDENING AREAS
LOOKING EAST



EAST MAIN STREET
PAVEMENT MILLING & RESURFACING
LOOKING EAST

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P.I.N. 4755.91 D XXXXXX PC XXXXX

ROCHESTER, NEW YORK

File Name: TYP-01.DGN	SAR	KRS	DTC	16.03.07
	Dwn.	Chkd.	Dsgn.	YY.MM.DD

Title
TYPICAL SECTION
MAIN STREET

Project No.	Scale	
192500343	N.T.S.	
Drawing No.	**Sheet**	**Revision**
TYP-1	4 of 17	0

Design File: \\us1275-f02\shared_projects\192500343\Transportation\Preliminary\Drawing\Plan Set\TYP\TYP-01.dgn
Date/Time: 3/4/2016 10:34:30 AM
Plotted By: kstettner

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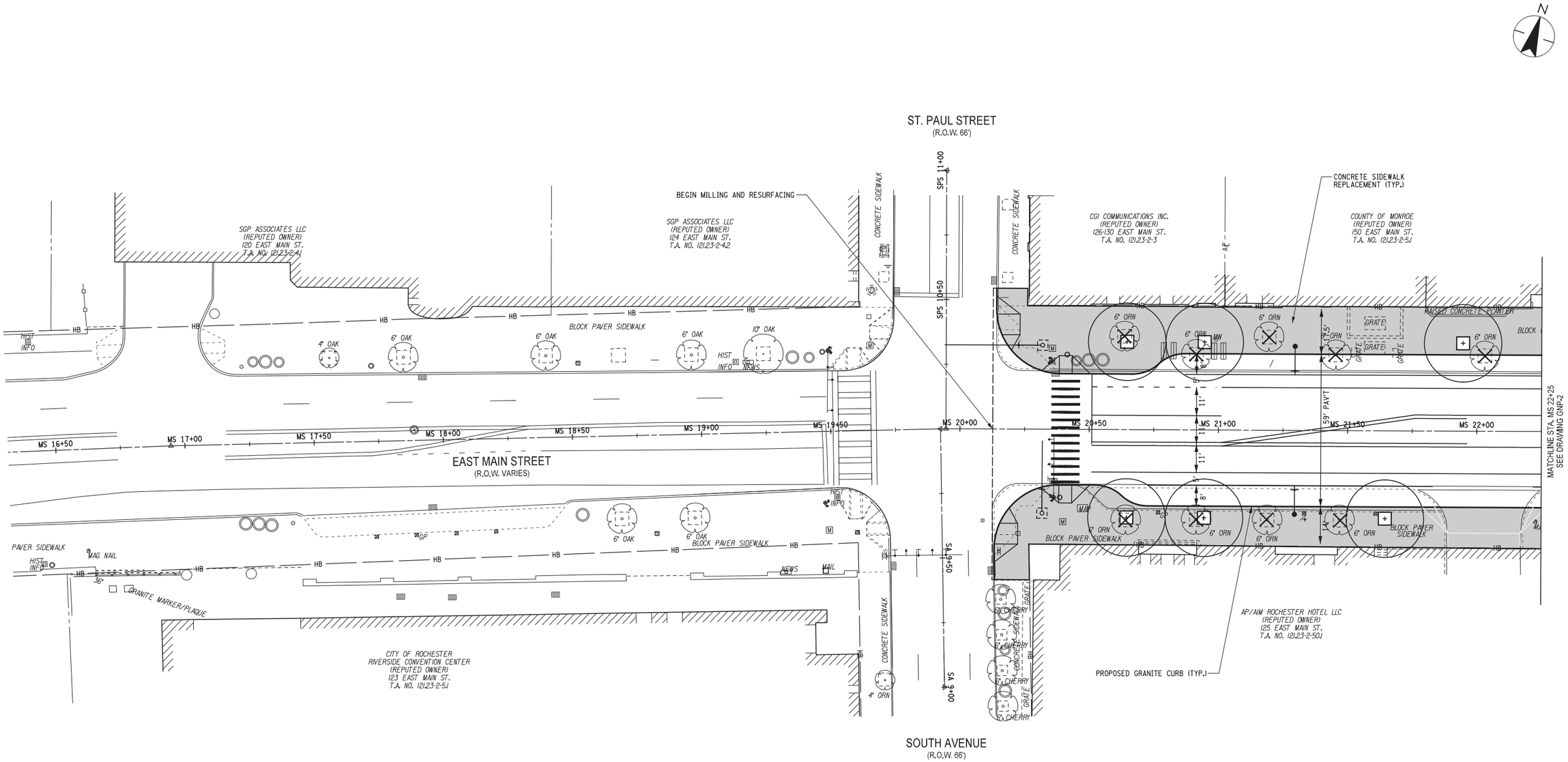

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ROCHESTER, NEW YORK

File Name: GNP-01.DGN	SAR	SWM	KRS	16.03.07
	Dwn.	Chkd.	Dsgn.	YY.MM.DD

Title
GENERAL PLAN
MAIN STREET

Project No.	Scale	
192500343	1' = 20'	
Drawing No.	Sheet	Revision
GNP-1	5 of 17	0

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Plotted By: ksteffner

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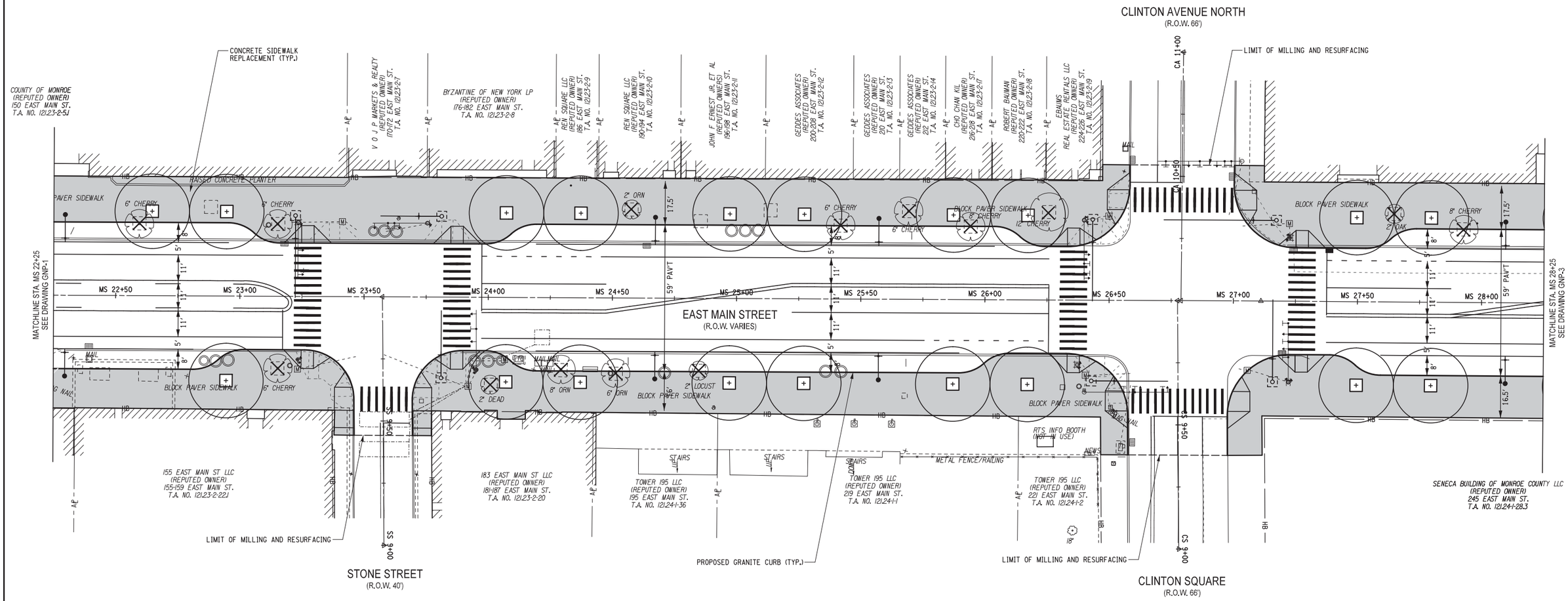

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ROCHESTER, NEW YORK

File Name: GNP-02.DGN | SAR Dwn. | SWM Chkd. | KRS Dsgn. | 16.03.07 YY.MM.DD

Title
GENERAL PLAN
MAIN STREET

Project No. 192500343
Scale 1' = 20'
Drawing No. GNP-2
Sheet 6 of 17
Revision 0

Design File: \\us1275-f02\shared_projects\192500343\Transportation\Preliminary\Drawing\Plan Set\GNP\GNP-02.dgn
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Plotted By: kstellmer

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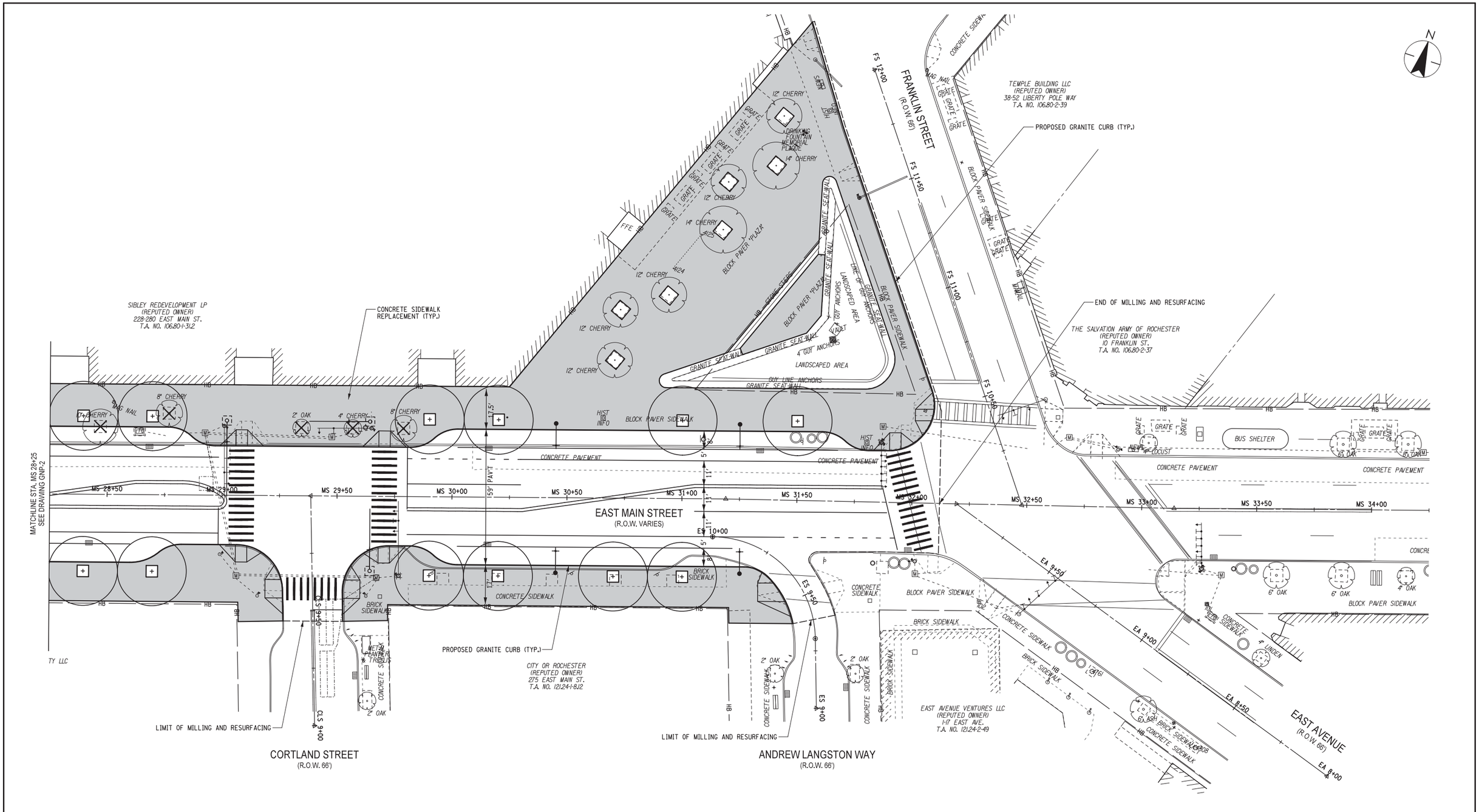

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P.I.N. 4755.91 D XXXXXX PC XXXXX

ROCHESTER, NEW YORK

File Name: GNP-03.DGN	SAR	SWM	KRS	16.03.07
	Dwn.	Chkd.	Dsgn.	YY.MM.DD

Title
GENERAL PLAN
MAIN STREET

Project No.	Scale	
192500343	1' = 20'	
Drawing No.	**Sheet**	**Revision**
GNP-3	7 of 17	0

Design file: \\us1275-f02\shared_projects\192500343\Transportation\Preliminary\Drawing\Plan Set\GNP\GNP-03.dgn
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Plotted By: kstettner

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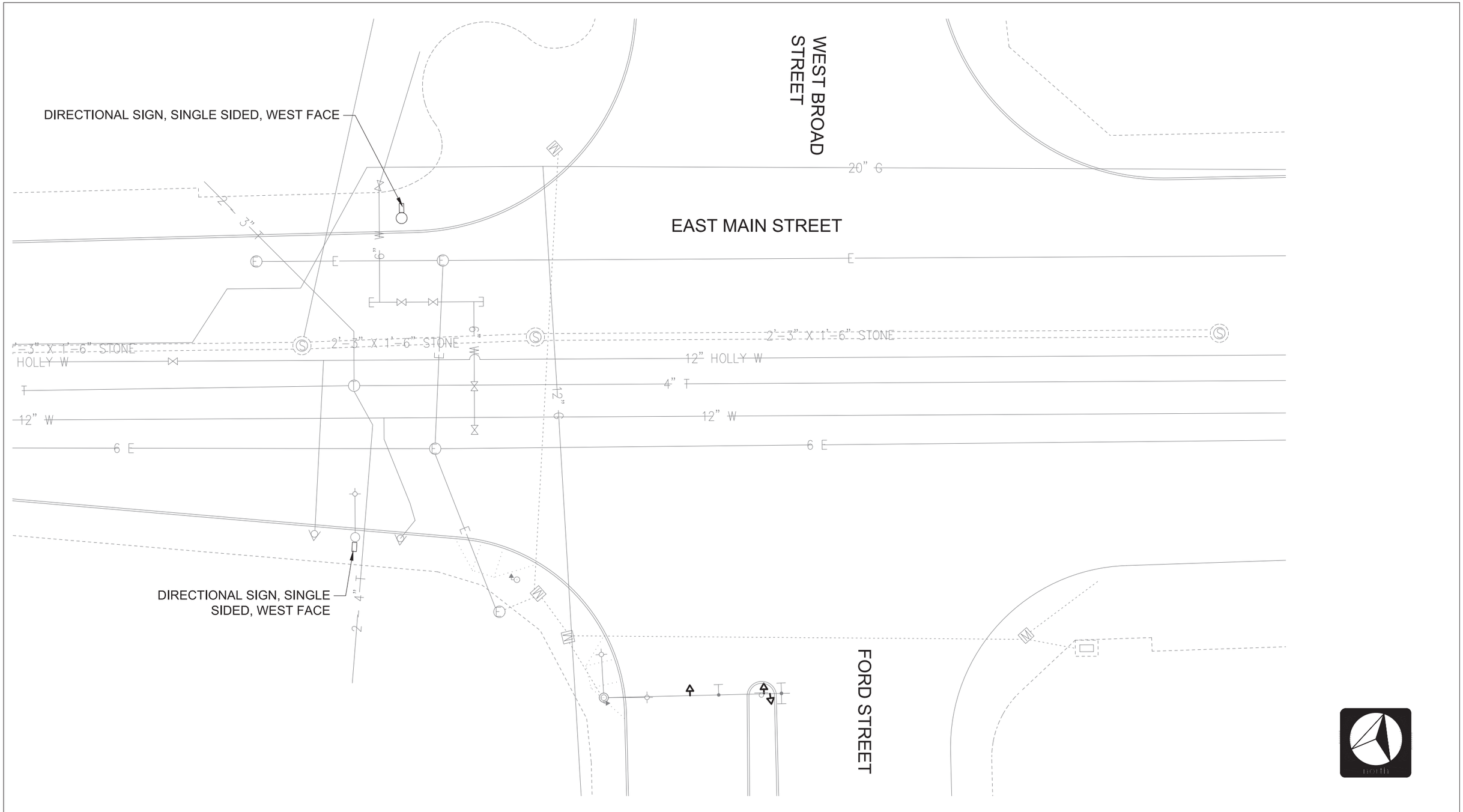

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File Name: SP-01.DWG	DGP	AEB	AEB	16.03.07
	Dwn.	Chkd.	Dsgn.	YY.MM.DD

Title
SIGN PLAN
FORD STREET

Project No.	Scale	
192500343	1' = 10'	
Drawing No.	**Sheet**	**Revision**
SP- 1	8 of 17	0

Design File: $dgnfile$
Date/Time: $date$
Plotted By: $caduser$ $time$

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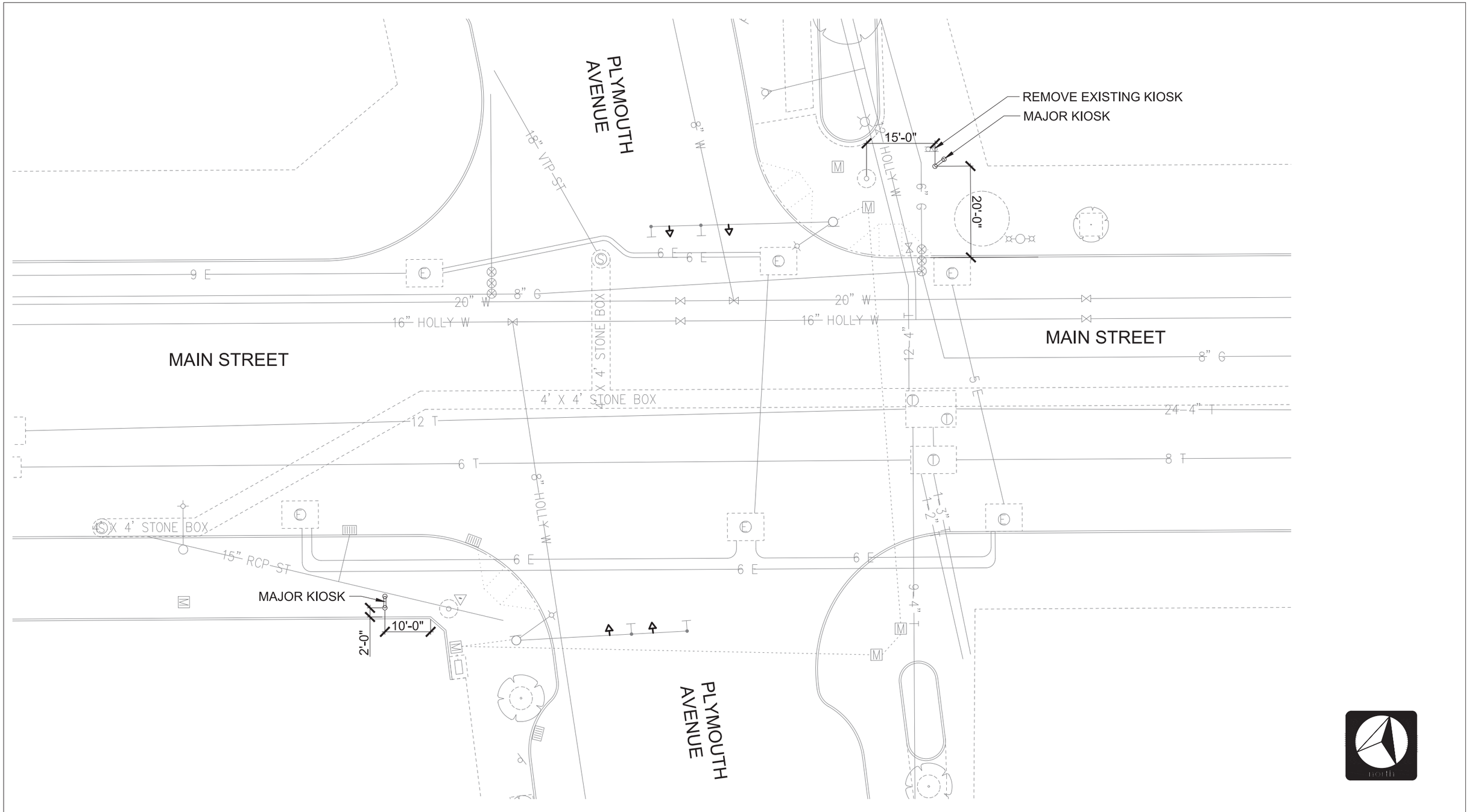

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File Name: SP-01.DWG	DGP	AEB	AEB	16.03.07
	Dwn.	Chkd.	Dsgn.	YY.MM.DD

Title
SIGN PLAN
PLYMOUTH AVENUE

Project No.	Scale	
192500343	1' = 10'	
Drawing No.	Sheet	Revision
SP-2	9 of 17	0

Design File: $dgnfile$
Date/Time: $date$ $time$
Plotted By: $caduser$

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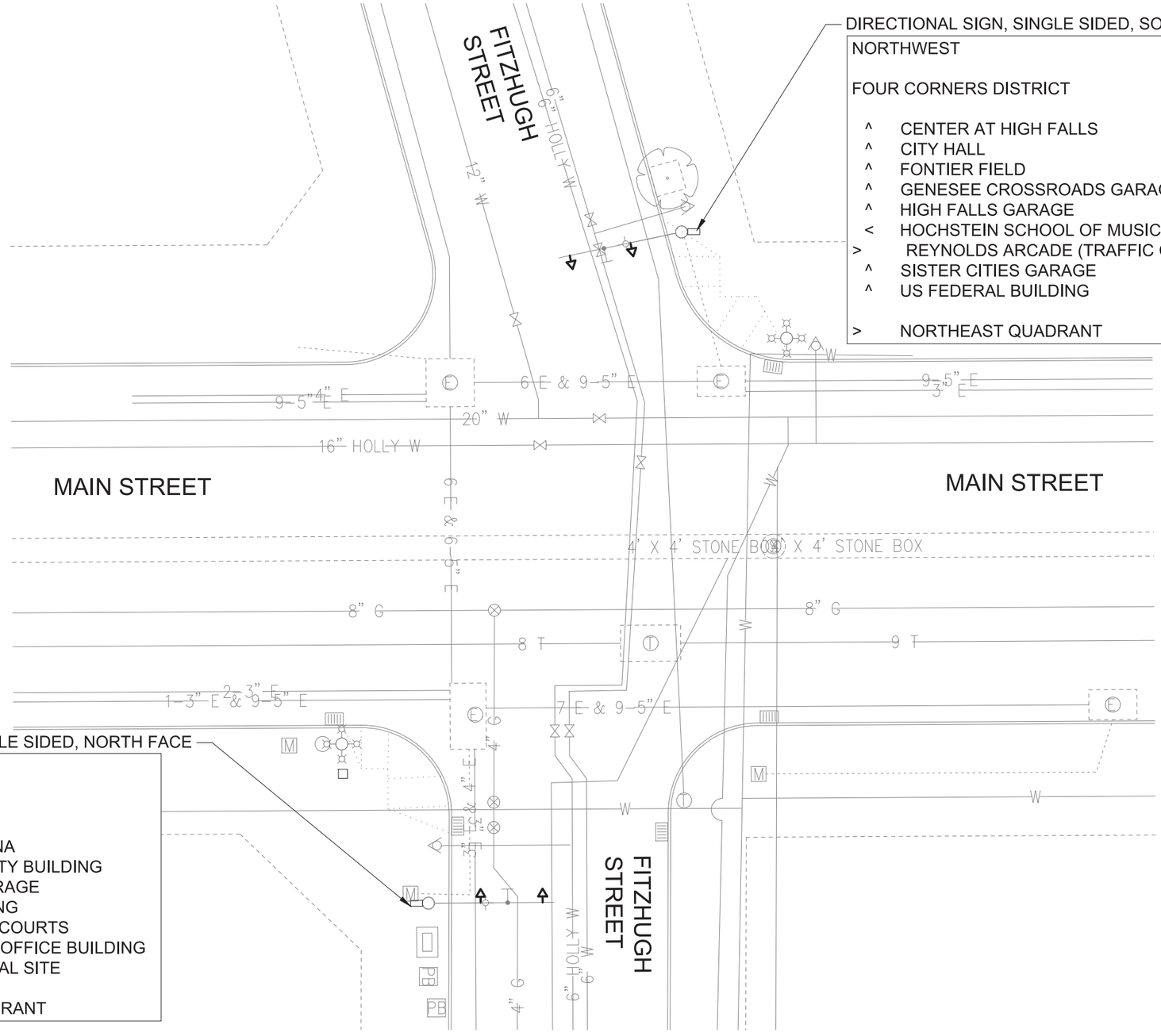

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NORTHWEST

FOUR CORNERS DISTRICT

- ^ CENTER AT HIGH FALLS
- ^ CITY HALL
- ^ FONTIER FIELD
- ^ GENESEE CROSSROADS GARAGE
- ^ HIGH FALLS GARAGE
- < HOCHSTEIN SCHOOL OF MUSIC
- > REYNOLDS ARCADE (TRAFFIC COURT)
- ^ SISTER CITIES GARAGE
- ^ US FEDERAL BUILDING

> NORTHEAST QUADRANT

DIRECTIONAL SIGN, SINGLE SIDED, NORTH FACE

SOUTHWEST

CANAL DISTRICT

- < BLUE CROSS ARENA
- < CITY PUBLIC SAFETY BUILDING
- ^ CIVIC CENTER GARAGE
- ^ CORN H ILL LANDING
- ^ HALL OF JUSTICE/ COURTS
- < MONROE COUNTY OFFICE BUILDING
- < RIVERSIDE FESTIVAL SITE

< SOUTHEAST QUADRANT

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MAIN STREET STREETSCAPE AND PEDESTRIAN WAYFINDING ENHANCEMENTS
P.I.N. 4755.91 D XXXXXX PC XXXXX

ROCHESTER, NEW YORK

File Name: SP-01.DWG	DGP	AEB	AEB	16.03.07
	Dwn.	Chkd.	Dsgn.	YY.MM.DD

Title
SIGN PLAN
FITZUGH STREET

Project No.	Scale	
192500343	1' = 10'	
Drawing No.	Sheet	Revision
SP-3	10 of 17	0

Design File: $dgnfile$
Date/Time: $date$ $time$
Plotted By: $caduser$

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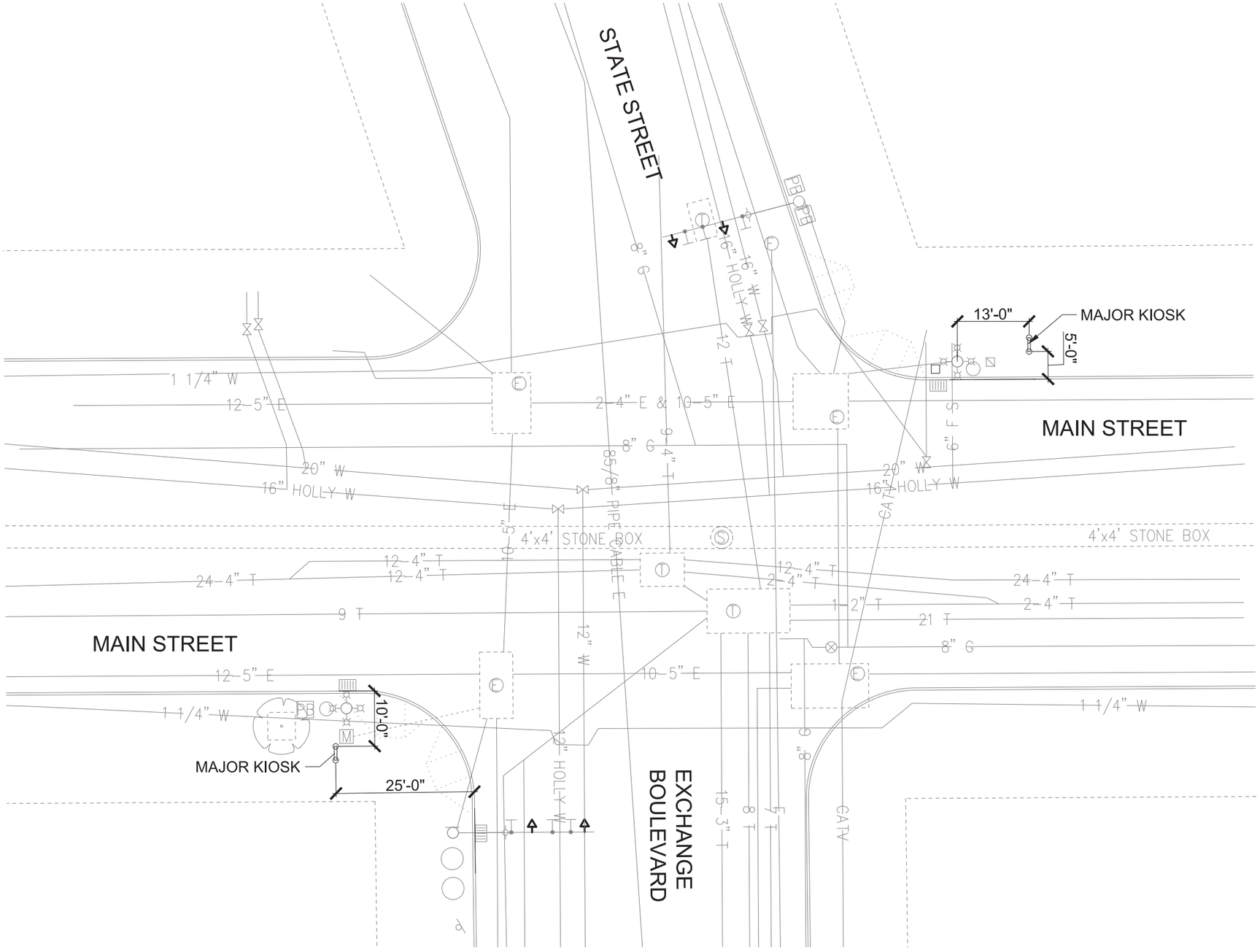

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ROCHESTER, NEW YORK

File Name: SP-01.DWG	DGP	AEB	AEB	16.03.07
	Dwn.	Chkd.	Dsgn.	YY.MM.DD

Title
SIGN PLAN
STATE STREET

Project No.	Scale	
192500343	1' = 10'	
Drawing No.	Sheet	Revision
SP-4	11 of 17	0

Design File: $dgnfile$
Date/Time: $date$ $time$
Plotted By: $caduser$

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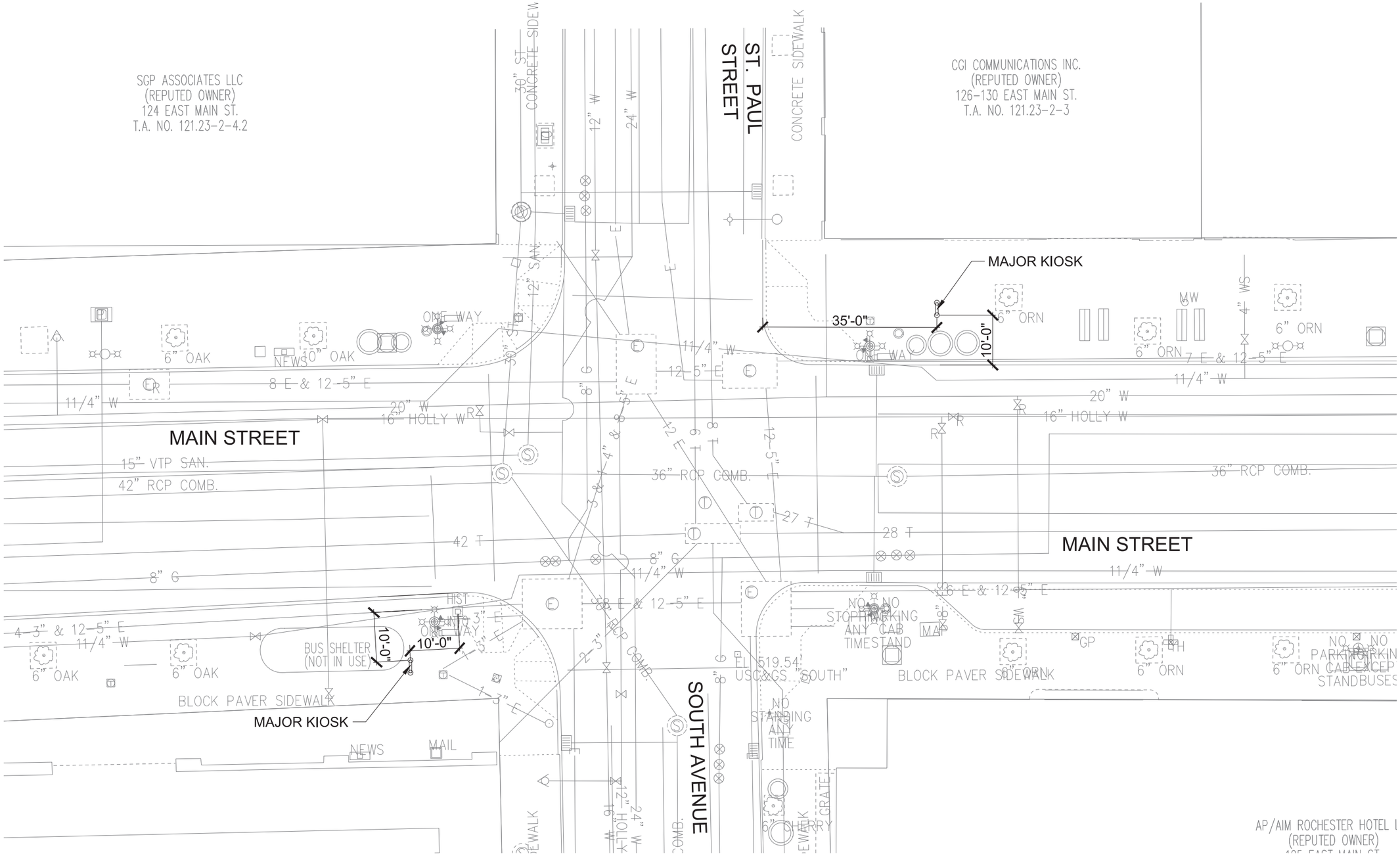

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ROCHESTER, NEW YORK

File Name: SP-01.DWG	DGP	AEB	AEB	16.03.07
	Dwn.	Chkd.	Dsgn.	YY.MM.DD

Title
SIGN PLAN
ST. PAUL STREET

Project No.	Scale	
192500343	1' = 10'	
Drawing No.	**Sheet**	**Revision**
SP-5	12 of 17	0

Design File: $dgnfile$
Date/Time: $date$
Plotted By: $caduser$
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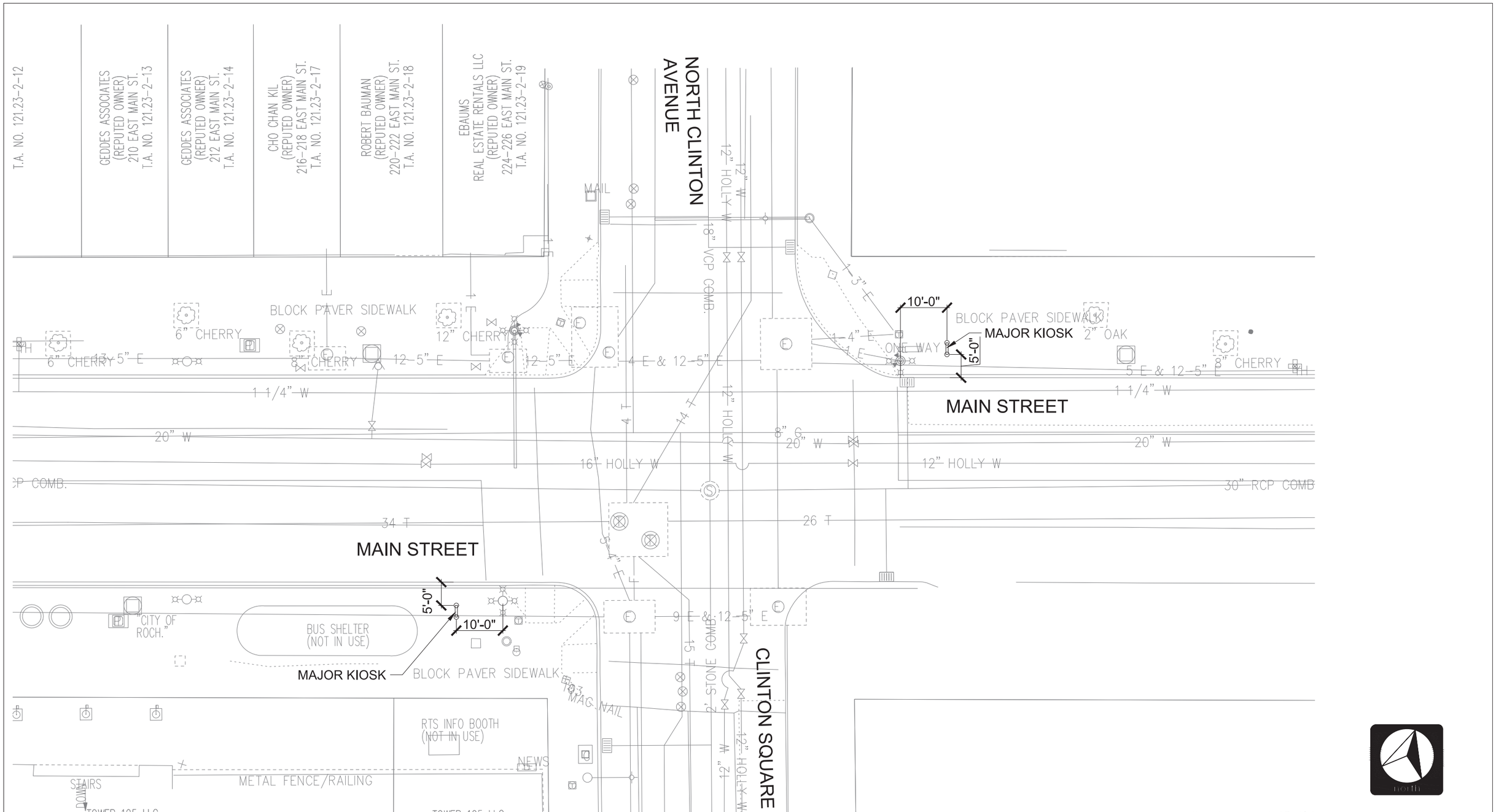

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ROCHESTER, NEW YORK

File Name: SP-01.DWG	DGP	AEB	AEB	16.03.07
	Dwn.	Chkd.	Dsgn.	YY.MM.DD

Title
SIGN PLAN
NORTH CLINTON AVENUE

Project No.	Scale	
192500343	1' = 10'	
Drawing No.	**Sheet**	**Revision**
SP- 6	13 of 17	0

Design File: $dgnfile$
Date/Time: $date$ $time$
Plotted By: $caduser$

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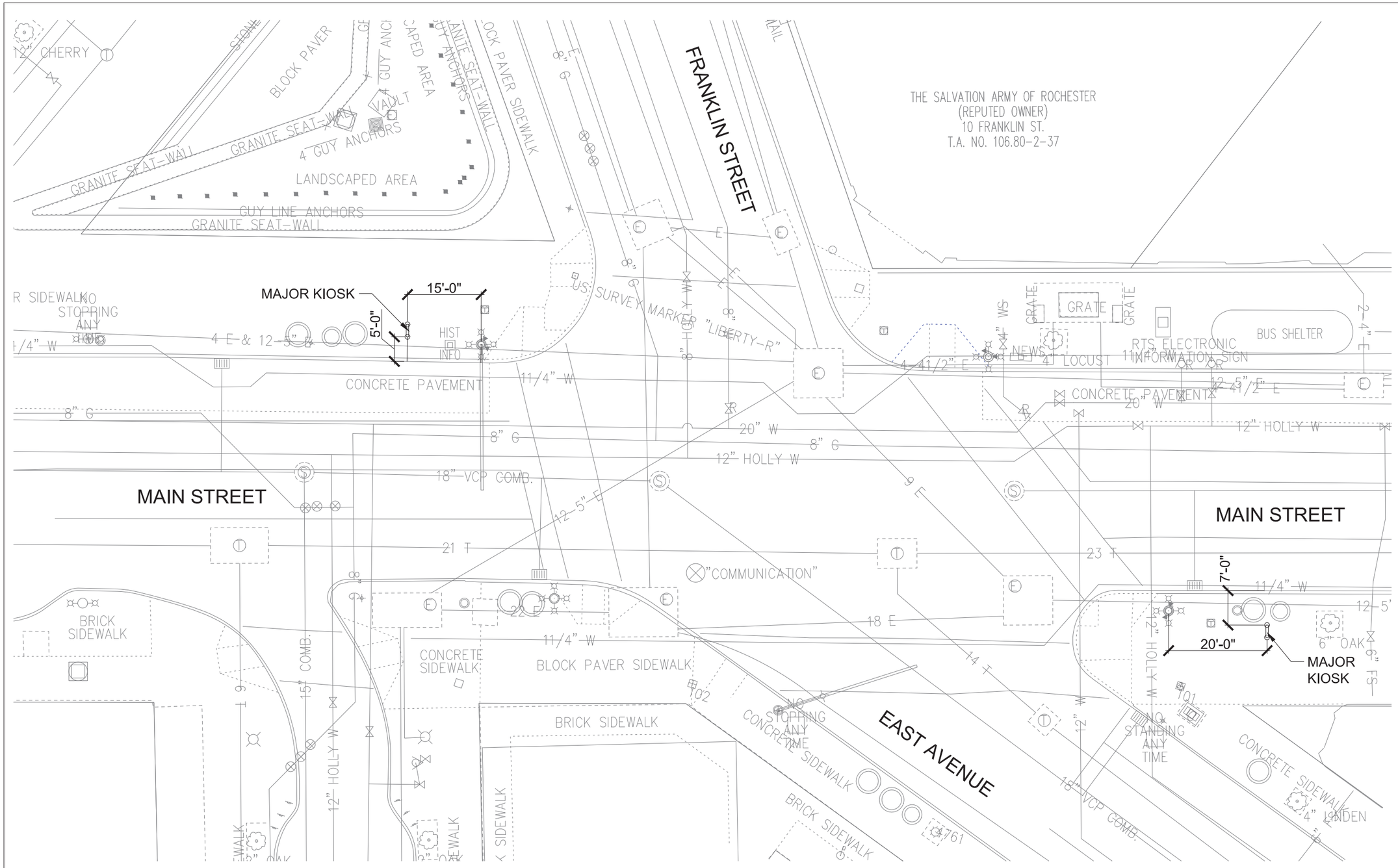

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ROCHESTER, NEW YORK

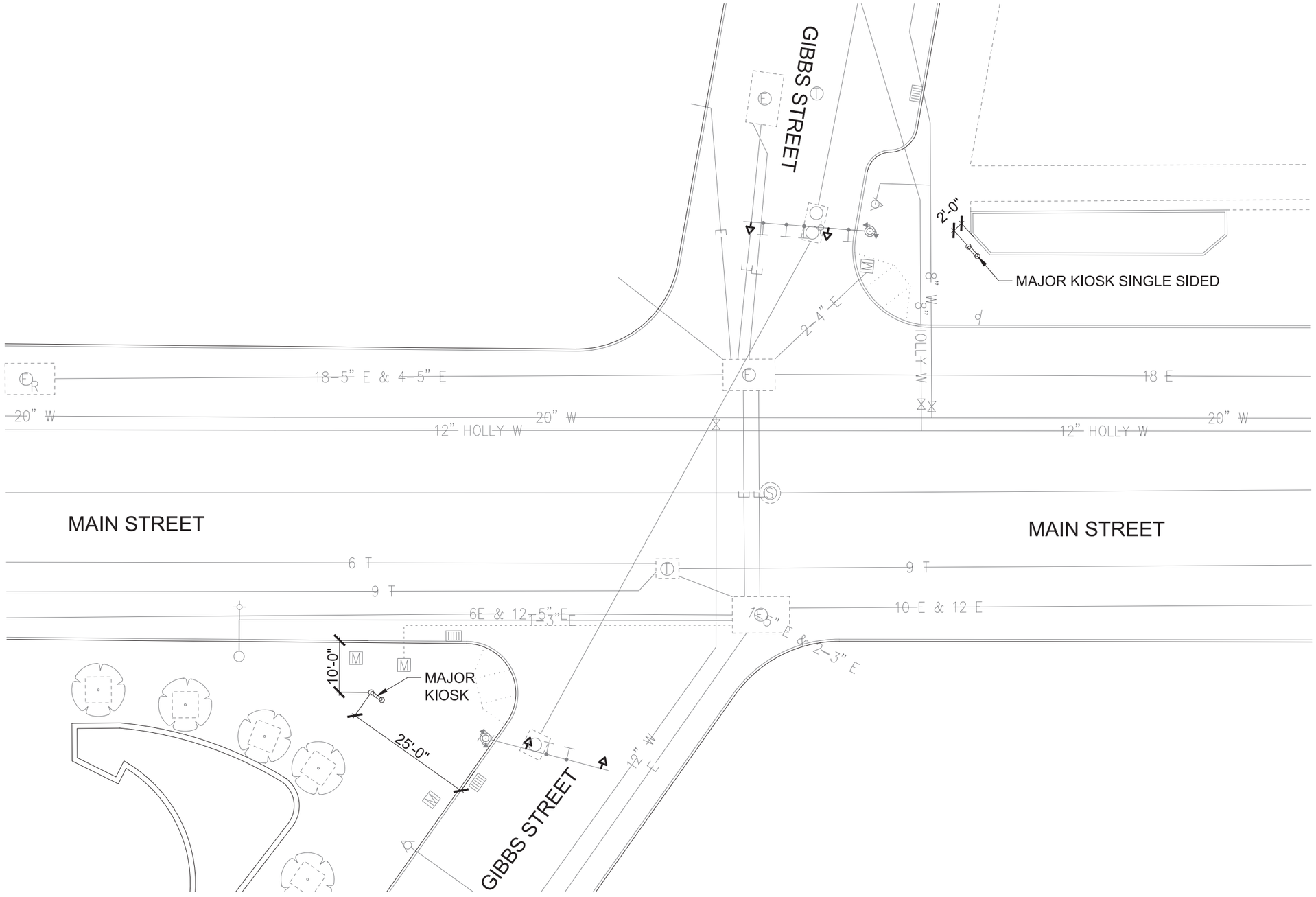
File Name: SP-01.DWG	DGP	AEB	AEB	16.03.07
	Dwn.	Chkd.	Dsgn.	YY.MM.DD

Title
SIGN PLAN
FRANKLIN STREET

Project No.	Scale	
192500343	1' = 10'	
Drawing No.	**Sheet**	**Revision**
SP-7	14 of 17	0

Design File: $dgnfile$
Date/Time: $date$
Plotted By: $caduser$
$time$

ORIGINAL SHEET - ANSI D HORIZ



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Revision	By	Appd.	YY.MM.DD

Issued	By	Appd.	YY.MM.DD

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Consultants

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Environmental Design & Research, Landscape Architecture, Engineering & Environmental Services, D.P.C.
574 North Goodman Street
Rochester, New York 14609
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Stantec
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Client/Project
CITY OF ROCHESTER

MAIN STREET STREETSCAPE AND PEDESTRIAN WAYFINDING ENHANCEMENTS
P.I.N. 4755.91

ROCHESTER, NEW YORK

File Name: SP-01.DWG	DGP	AEB	AEB	16.03.07
	Dwn.	Chkd.	Dsgn.	YY.MM.DD

Title
SIGN PLAN
GIBBS STREET

Project No.	Scale	
192500343	1' = 10'	
Drawing No.	**Sheet**	**Revision**
SP-8	15 of 17	0

Design File: $dgnfile$
Date/Time: $date$ $time$
Plotted By: $caduser$

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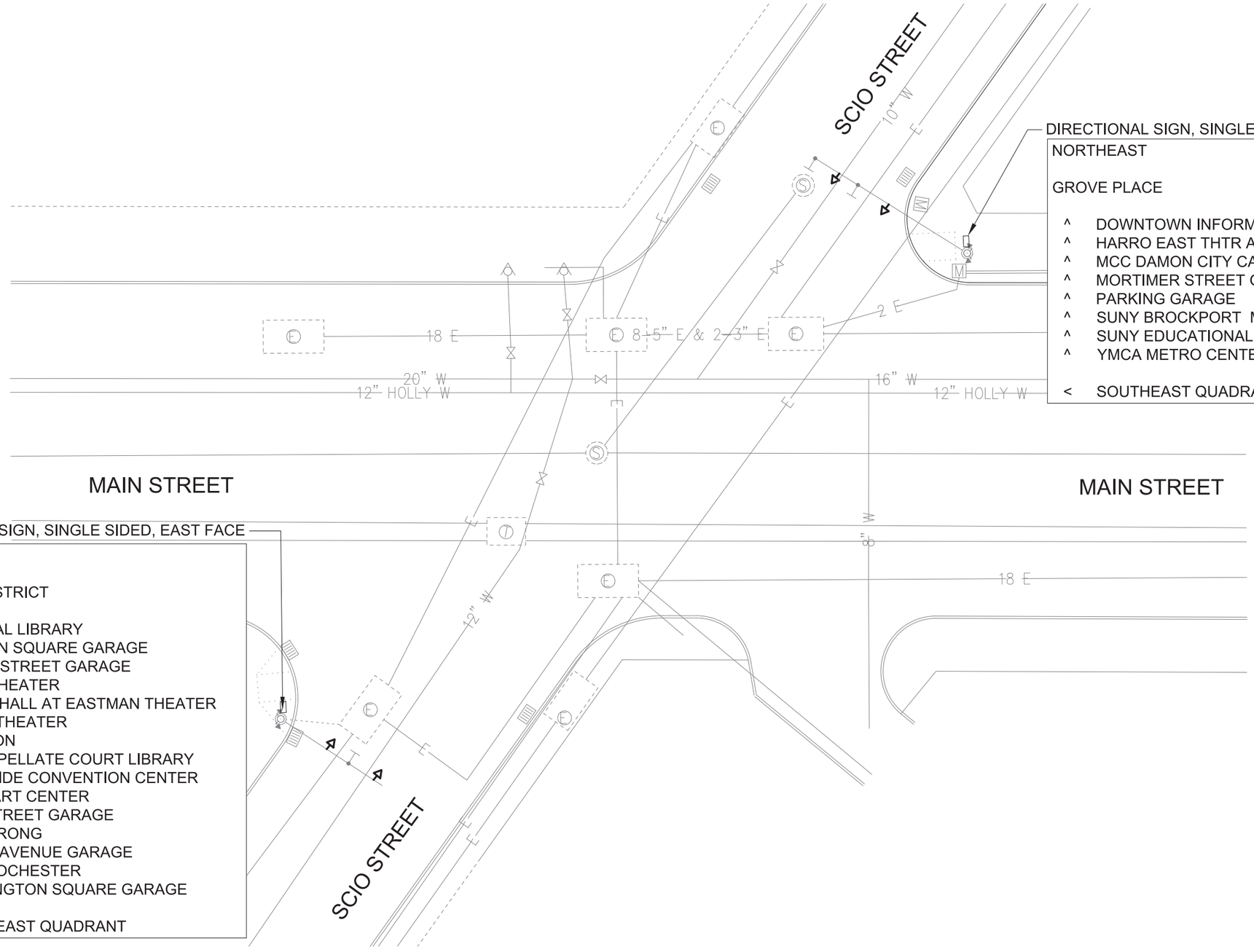
ORIGINAL SHEET - ANSI D HORIZ



DIRECTIONAL SIGN, SINGLE SIDED, EAST FACE

NORTHEAST

GROVE PLACE

^ DOWNTOWN INFORMATION CENTER
^ HARRO EAST THTR AND BALLROOM
^ MCC DAMON CITY CAMPUS
^ MORTIMER STREET GARAGE
^ PARKING GARAGE
^ SUNY BROCKPORT METRO CAMPUS
^ SUNY EDUCATIONAL OPP CENTER
^ YMCA METRO CENTER

< SOUTHEAST QUADRANT

DIRECTIONAL SIGN, SINGLE SIDED, EAST FACE

SOUTHEAST

EAST END DISTRICT

^ CENTRAL LIBRARY
^ CLINTON SQUARE GARAGE
^ COURT STREET GARAGE
< GEVA THEATER
^ KODAK HALL AT EASTMAN THEATER
< LITTLE THEATER
^ MIDTWON
^ NYS APPELLATE COURT LIBRARY
^ RIVERSIDE CONVENTION CENTER
< ROCO ART CENTER
< SCIO STREET GARAGE
< THE STRONG
^ SOUTH AVENUE GARAGE
^ VISIT ROCHESTER
< WASHINGTON SQUARE GARAGE

> NORTHEAST QUADRANT

north

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Revision	By	Appd.	YY.MM.DD

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Client/Project
CITY OF ROCHESTER

MAIN STREET STREETSCAPE AND PEDESTRIAN WAYFINDING ENHANCEMENTS
P.I.N. 4755.91

ROCHESTER, NEW YORK

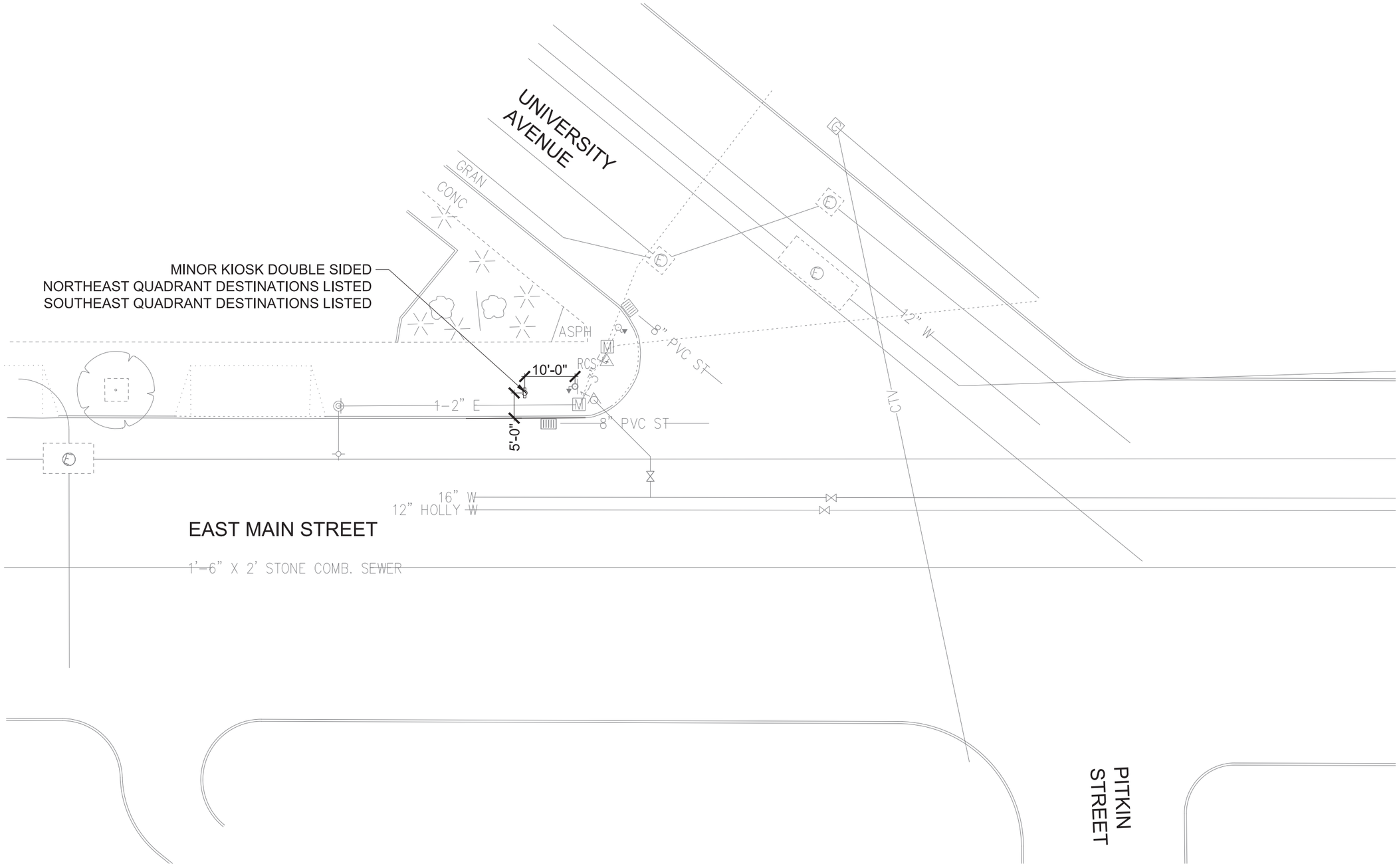
File Name: SP-01.DWG	DGP	AEB	AEB	16.03.07
	Dwn.	Chkd.	Dsgn.	YY.MM.DD

Title
SIGN PLAN
SCIO STREET

Project No.	Scale	
192500343	1' = 10'	
Drawing No.	**Sheet**	**Revision**
SP- 9	16 of 17	0

Design File: $dgnfile$
Date/Time: $date$
Plotted By: $caduser$
$time$

ORIGINAL SHEET - ANSI D HORIZ



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Revision	By	Appd.	YY.MM.DD

Issued	By	Appd.	YY.MM.DD

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Client/Project
CITY OF ROCHESTER

MAIN STREET STREETSCAPE AND PEDESTRIAN WAYFINDING ENHANCEMENTS
P.I.N. 4755.91

ROCHESTER, NEW YORK

File Name: SP-01..DWG	DGP	AEB	AEB	16.03.07
	Dwn.	Chkd.	Dsgn.	YY.MM.DD

Title
SIGN PLAN
UNIVERSITY AVENUE

Project No.	Scale	
192500343	1' = 10'	
Drawing No.	Sheet	Revision
SP- 10	17 of 17	0

Design File: $dgnfile$
Date/Time: $date$
Plotted By: $caduser$
$time$

ORIGINAL SHEET - ANSI D HORIZ

Appendix B

Environmental Information

- **Federal Environmental Approvals Worksheet**
- **Environmental Scoping Checklist**
- **SEQR Determination Documentation**
- **Section 106 Project Submittal Package**
- **Section 106 Findings Documentation**
- **ESA Programmatic Determination**

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Federal Environmental Approval Worksheet

PIN: 4755.91	Comp. by: EDR	Date Comp.: 1/26/16	*FUNDING TYPE:* *Federal / Local*
DESCRIPTION: Main Street Streetscape Improvement and Pedestrian Wayfinding System Project			*NEPA CLASS:* II *SEQR TYPE:* II
LOCALITY (Village, Town, City): City of Rochester			COUNTY: Monroe

Purpose of this Worksheet:

- Communicate project National Environmental Policy Act (NEPA) classification to Federal Highway Administration (FHWA).
- Identify additional required FHWA environmental determinations, approvals and/or concurrences required before the Categorical Exclusion (CE) determination can be made.
- Reflect the documentation in the Design Approval Document (DAD) and enable the approving authority (per PDM Exhibit 4-2) to make the CE determination.

Categorical Exclusion (CE) - a category of actions which do not individually or cumulatively have a significant effect on the human environment and which have been found to have no such effect in procedures adopted by a Federal agency (40 CFR 1508.4). Actions that do not individually or cumulatively have a significant environmental effect are excluded from the requirement to prepare an Environmental Assessment (EA) or Environmental Impact Statement (EIS) (23 CFR 71.115(b)).

Instructions (*see also "FEAW_Instructions.doc"*):

Complete the worksheet prior to the end of Design Phase I. If project parameters or site condition changes result in potential resource impacts, re-do worksheet prior to Design Approval to confirm NEPA determination and recertify (on page 4).

Step 1: Unusual Circumstances Threshold Determination – 23 CFR 771.117(b)

Any action which normally would be classified as a CE but could involve unusual circumstances (or even uncertainty) will require consultation with FHWA to determine if the CE classification is proper or whether an EA or EIS is required.

Do any, or the potential for any, unusual circumstances exist?

1. Significant environmental impacts; YES☐ NO☒
2. Substantial controversy on environmental grounds; YES☐ NO☒
3. Significant impact on properties protected by Section 4(f) of the DOT Act or Section 106 of the National Historic Preservation Act; or YES☐ NO☒
4. Inconsistencies with any Federal, State, or local law, requirement or administrative determination relating to the environmental aspects of the action. YES☐ NO☒

- **If yes to any** of the above, contact the Main Office Project Liaison (MOPL) (see PDM Exhibit 4-1). If after consultation with FHWA it is determined that the project cannot be progressed as a CE, **skip to step 4** and see PDM Chapter 4 for NEPA Class I (EIS) or Class III (EA) processing.
- **If no to all**, then this project qualifies as a Categorical Exclusion (CE); **proceed to step 2**.

Step 2: Other FHWA environmental actions required prior to CE Determination

Classification as a CE does not exempt the project from further environmental review. Compliance with Federal Statutes, Regulations and Executive Orders (EO's) must be documented. Refer to the Department's Project Development Manual (PDM) and Environmental Manual (TEM) to determine the requirements.

Federal Environmental Approval Worksheet

Project ID Number: 4755.91

2.1	Other required FHWA environmental independent determinations	FHWA Independent Determination and/or Concurrence Required & Received[1]	Date FHWA determination issued	FHWA Independent Determination and/or Concurrence not required or resource not present[1]
		A	B	C
EO 11990 Protection of Wetlands Individual Finding		☐		☒
ESA Section 7 Threatened and Endangered Species		☐	Pending	☐
Section 106 (National Historic Preservation Act)		☐	Pending	☐
4(f) (Park, Wildlife Refuge Historic Sites and National Wild and Scenic Rivers)		☒	2-16-16	☐
2.2	**Other FHWA environmental compliance and/or approvals/concurrence required**	**Resource present and threshold[1] exceeded**		**Resource not present, or present but threshold[1] not exceeded**
EO 11988 Floodplains		☐		☒
EO 13112 Invasive Species		☐		☒
EO 12898 Environmental Justice		☐		☒
Safe Drinking Water Act Section 1424(e)		☐		☒
U.S. Army Corps of Engineers, Section 404/10 NW 23		☐		☒
Section 6(f) (Land and Water Conservation Funds)		☐		☒
Migratory Bird Treaty Act		☐		☒
23CFR772 Type I Noise abatement		☐		☒
2.3	**Other Environmental Issues requiring FHWA notification**	**Resource present and threshold[1] exceeded**		**Resource not present, or present but threshold[1] not exceeded**
U.S. Army Corps of Engineers, Section 404/10 Individual Permit		☐		☒
National Wild and Scenic Rivers		☐		☒
U.S. Coast Guard Bridge Permit		☐		☒
Known hazardous waste site (only EPA National Priority list)		☐		☒
Project on or affecting Native American Lands		☐		☒

For all categories above, refer to the **Table Thresholds** document.

After completion of Tables 2.1, 2.2, and 2.3, proceed to step 3.

Federal Environmental Approval Worksheet

Project ID Number: 4755.91

Step 3: Who makes the NEPA CE Determination?
FHWA Regulations describe two types of CEs; CEs listed in 23 CFR 771.117(c) [aka the C list], and CEs such as those listed in 23 CFR 771.117 (d) [aka the D list]. NYSDOT can make the CE determination for C list projects once all required approvals and concurrences have been secured. FHWA retains the NEPA determination for D list projects. FHWA makes the CE determination programmatically through NYSDOT for D list projects that meet the July 15, 1996 FHWA NY Division NEPA Programmatic Categorical Exclusion memo criteria. To determine by whom, FHWA or NYSDOT, and how the CE determination is made, follow the instructions beginning in section 3.1 of the following table.

	CONDITION	ACTION
3	**Determine whether FHWA or NYSDOT makes the CE determination.**	
3.1	If the project is an action that would normally be a CE in 23 CFR 771.117(c) (see the drop down list), check the "Yes" box. If not, check the "No" box.	If yes, NYSDOT can make the CE determination once all the approvals and coordinations required are complete. 1. Is the project an action that would normally be a CE in 23 CFR 771.117(c)? **YES**☒ **NO**☐ "Construction of bicycle and pedestrian lanes, paths and facilities." **If no, proceed to step 3.2.** **If yes,** and the action falls under (c)(26), (c)(27), or (c)(28), **proceed to step 3.1.1.** Otherwise, **proceed to step 3.1.2.**
3.1.1	Determine if any additional constraints apply to the CE.	Do ANY of the conditions described in the **Table Thresholds** 3.1.1 (land acquisition, major traffic disruptions, changes in access control, floodplain encroachment, National Wild & Scenic Rivers) apply to the action? **YES**☐ **NO**☐ **If yes,** the (c)(26), (c)(27) and (c)(28) constraints have not been met – **proceed to step 3.2.** **If no**, do ANY of the following apply: • A check in Column A in Table 2.1 for Section 106, **and** a finding of Adverse Effect? • A check in Column A in Table 2.1 for 4(f), **and** impacts are not de minimis? • A check in Column A in Table 2.3 for Section 404/10? • A check in Column A in Table 2.3 for USCG Bridge Permit? Do ANY of the above apply to the action? **YES**☐ **NO**☐ **If yes,** the (c)(26), (c)(27) and (c)(28) constraints have not been met – **proceed to step 3.2.** **If no,** the (c)(26), (c)(27) and (c)(28) constraints have been met – **proceed to step 3.1.2.**

Federal Environmental Approval Worksheet

Project ID Number: PIN 4755.91

3.1.2	Determine if **any** of the required environmental determinations, compliance and/or approvals/ concurrences are outstanding.	If there are: • outstanding environmental determinations (Table 2.1:checks in column A without dates in column B) • **and/or** circumstances requiring demonstration of applicable EO compliance or issues requiring FHWA environmental review (checks in column A in Table 2.2) **The project will use Memo Shell 2** (FHWA needs to review this project). **Proceed to step 4.** *If the project does not meet the conditions above proceed to step 3.1.3.*
3.1.3	Determine if **any** issues are present that require FHWA notification.	If there are: • any issues requiring FHWA environmental notification (checks in column A in Table 2.3); then **The project will use Memo Shell 3 (**FHWA must be notified of this project). **Proceed to step 4.** *If the project does not meet the conditions above proceed to step 3.1.4.*
3.1.4	No Determinations, Approvals, Concurrences or Notifications required.	**The project will use Memo Shell 1** (memo to file). **Proceed to step 4.**
3.2	The project is a D list CE as per 23 CFR 771.117(d). Choose appropriate entry from drop down list. If "other" or (d)(13) provide an explanation.	Certain actions eligible for categorical exclusion require NYSDOT to transmit documentation and a determination that a CE applies. Examples of activities that may proceed as a CE are listed in 23 CFR 771.117(d) (D list). Activities not directly listed on the D List also have the potential to proceed as a CE with submitted documentation (Other). Activities that may normally be classified as a C-list CE under 23 CFR 771.117(c)(26), (c)(27), or (c)(28) must meet the constraints at 23 CFR 771.117(e), or they revert to the D-list as (d)(13). The project is an action that would normally be a CE in 23 CFR 771.117(d). **Choose an item..** Other or (d)(13): provide explanation here **Proceed to step 3.2.1.**
3.2.1	Determine if **any** of the required environmental determinations, compliance and/or approvals/ concurrences are outstanding **and/or** notification is required.	If there are: • **any** outstanding environmental determinations (any checks in column A without dates in column B in Table 2.1); • **and/or** any circumstances requiring demonstration of applicable EO compliance (any checks in column A in Table 2.2); • **and/or** issues requiring FHWA environmental notification (any checks in column A in Table 2.3); then **The project will use Memo Shell 4** (MOPL and FHWA need to review this project). **Proceed to Step 4.**
3.2.2	Design Approval Document sent to FHWA	If the project: • does not meet the conditions above (3.2.1), then the project has met the criteria established as per the programmatic agreement dated July 15, 1996. **The project will use Memo Shell 5** (memo to file). **Proceed to Step 4.**

Federal Environmental Approval Worksheet

Project ID Number: PIN 4755.91

-
- **Step 4: Summary and Recommendation**
- This project does qualify to be progressed as a Categorical Exclusion.
- The NEPA Determination is being made by NYSDOT
- All outstanding FHWA environmental approvals will be obtained and are listed here:
    - Threatened & Endangered Species Concurrence.
    - Section 106 Concurrence.

All other environmental, social and economic factors that affect the project's NEPA classification, of Title 23 CFR 771.117 Environmental Impact and Related Procedures and the July 1996 FHWA NY Division NEPA Programmatic Categorical Exclusion memo must still be addressed, for example, the project:

- does not change the functional class;
- does not add mainline capacity;
- is not on new location;
- will not change travel patterns;
- acquires only minor amounts of ROW (temporary or permanent);
- does not cause displacements; does not change access control;
- is air quality exempt;
- is consistent with the NYS Coastal Management Program; **and**
- the analysis satisfies the requirements of the Farmland Protection Policy Act.

I certify that the information provided above is true and accurate and recommend the project be processed as described above.

Project Manager/Designer _____ Date _____
(or Responsible Local Official)

Print Name and Title: Kayle Stettner, Project Engineer, Stantec Consulting Services, Inc.

Regional Environmental Unit Supervisor _____ Date _____

Print Name and Title: _____

Regional Local Project Liaison _____ Date _____
(Locally Administered Projects Only)

Print Name and Title: _____

Changes that may have occurred since the preparation of the worksheet which would **create the need to go through the Worksheet again** include but are not limited to: a change in the scope of the proposed project; a change in the social, economic or environmental circumstances or the setting of the project study area (i.e. the affected environment); a change in the federal statutory environmental standards: discovering new information not considered in the original process; and a significant amount of time has passed (equal or greater than three years).

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Environmental Scoping Checklist

PIN: 4755.91	TYPE FUNDING: Federal / Local
DESCRIPTION: Main Street Streetscape and Wayfinding Project	TOWN: City of Rochester
	COUNTY: Monroe

SOCIAL, ECONOMIC AND ENVIRONMENTAL CONSIDERATIONS		RESOURCE PRESENT			RESOURCE IMPACTED		
	N/A	YES	NO	TBD	YES	NO	TBD
Social							
Land Use	☐				☐	☒	☐
Neighborhoods and Community Cohesion	☐	☒	☐	☐	☐	☒	☐
General Social Groups Benefited or Harmed	☐	☒	☐	☐	☐	☒	☐
School Districts, Rec. Areas and Places of Worship	☐	☒	☐	☐	☐	☒	☐
Economic							
Regional and Local Economies	☐				☐	☒	☐
Business Districts	☐	☒	☐	☐	☐	☒	☐
Specific Business Impacts	☐	☒	☐	☐	☐	☒	☐
Environment							
Wetlands	☐	☐	☒	☐	☐	☐	☐
Surface Waterbodies and Watercourses	☐	☐	☒	☐	☐	☐	☐
Wild, Scenic, and Recreational Rivers	☐	☐	☒	☐	☐	☐	☐
Navigable Waters	☐	☐	☒	☐	☐	☐	☐
Floodplains	☐	☐	☒	☐	☐	☐	☐
Coastal Resources	☐	☐	☒	☐	☐	☐	☐
Aquifers, Wells, and Reservoirs	☐	☐	☒	☐	☐	☐	☐
Stormwater Management	☒				☐	☐	☐
General Ecology and Wildlife Resources	☐	☒	☐	☐	☐	☒	☐
Critical Environmental Areas	☐	☐	☒	☐	☐	☐	☐
Historic and Cultural Resources	☐	☒	☐	☐	☐	☒	☐
Parks and Recreational Resources	☐	☒	☐	☐	☐	☒	☐
Visual Resources	☐				☐	☒	☐
Farmlands	☐	☐	☒	☐	☐	☐	☐
Air Quality	☒				☐	☐	☐
Energy	☒				☐	☐	☐
Noise	☒				☐	☐	☐
Asbestos	☐	☐	☒	☐	☐	☒	☐
Contaminated and Hazardous Materials	☐	☐	☒	☐	☐	☒	☐
Construction Effects	☒				☐	☐	☐
Indirect (Secondary) Effects	☒				☐	☐	☐
Environmental Cumulative Effects	☒				☐	☐	☐

Environmental Scoping Checklist

PERMITS	APP.	N/A	TBD
NYSDEC:			
State Pollutant Discharge Elimination System (SPDES) General Permit	☐	☒	☐
New York State Department of Environmental Conservation, Article 24-Freshwater Wetlands Permit	☐	☒	☐
Mined Land Permit	☐	☒	☐
Floodplain Variance	☐	☒	☐
Wild, Scenic, Recreational Rivers Permit	☐	☒	☐
Water Quality Certification (Blanket Sec 401)	☐	☒	☐
Water Quality Certification (Individual Sec 401)	☐	☒	☐
USCG:			
U.S. Coast Guard Section 9 Permit	☐	☒	☐
USACOE:			
U.S. Army Corps of Engineers, Section 404 &10 Nationwide Permit – PCN ☐	☐	☒	☐
U.S. Army Corps of Engineers, Section 404 Individual Permit	☐	☒	☐
U.S. Army Corps of Engineers, Section 10 Permit	☐	☒	☐
NYSDOS:			
Coastal Zone Consistency Certification Statement	☐	☒	☐
EPA:			
NPDES General Permit	☐	☒	☐

EXECUTIVE ORDERS (Federal Aid)	APP.	N/A	TBD
EO 11990 Protection of Wetlands	☐	☒	☐
EO 11988 Floodplains	☐	☒	☐
EO 12372 Groundwater Assessment	☐	☒	☐
EO 13112 Invasive Species	☐	☒	☐
EO 12898 Environmental Justice	☐	☒	☐

OTHER APPROVALS / AUTHORIZATIONS	APP.	N/A	TBD
Section 106 (National Historic Preservation Act) – SHPO, FHWA	☒	☐	☐
Section 4(f) (Park, Wildlife Refuge and Historic Sites) - Resource Agency, FHWA	☒	☐	☐
Section 6(f) (Land and Water Conservation Funds)- Resource Agency, FHWA	☐	☒	☐
Local Waterfront Revitalization Prog. Consistency Rev. – Municipality, NYSDOS	☐	☒	☐
Endangered Species Act – NYSDEC, USFWS, USACE, FHWA	☒	☐	☐
Migratory Bird Act - USFWS	☐	☒	☐

Responsible Local Official Signature _____ **Date** 3 - 2016

STATE ENVIRONMENTAL QUALITY REVIEW RECORD
TYPE II ACTIONS AND PREVIOUSLY REVIEWED ACTIONS

Project: Main Street Streetscape and Pedestrian Wayfinding Enhancement Project
Project Boundaries/Address:
Main Street – Canal Street to Alexander Street
PC# Number:
Project Description: The project will rehabilitate the existing pavement and replace existing streetscape amenities from the Genesee River to Franklin Street (including Liberty Pole Plaza). The project will also install pedestrian wayfinding signs throughout the project corridor.

Prepared by: Kayle Stettner, Stantec Date: 2-21-2016
Reviewer: Jeff Mroczek, City of Rochester Date: 3-1-2016

The project is not subject to SEQR requirements because:

__X_Option 1:
The project is a Type II action according to Section 617.5(c)___2____ and/or Section 48.5B._____.

____Option 2:
The project was previously reviewed as file number_____.

____Option 3:
The project was reviewed as part of a larger project entitled, _____, file number_____.

No further SEQR compliance is required.

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11/00

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Section 106 Project Submittal Package

East Main Street Streetscape Improvements

City of Rochester, Monroe County, New York

PIN 4755.91

Prepared for:

Stantec Consulting Services, Inc.
61 Commercial Street
Rochester, New York 14614
www.stantec.com

Prepared by:

Environmental Design & Research,
Landscape Architecture, Engineering, & Environmental Services, D.P.C.
217 Montgomery Street, Suite 1000
Syracuse, New York 13202
www.edrdpc.com

December 2015

NEW YORK STATE DEPARTMENT OF TRANSPORTATION PROJECT SUBMITTAL PACKAGE

Section 106 of the National Historic Preservation Act

For Locally-Administered Federal-Aid Projects

DATE : December 28, 2015 PIN: 4755.91 BIN(s) (include original construction date(s)): N/A

IDENTIFICATION

Project Name (if any): East Main Street Streetscape Improvements

Project Area Boundaries: See attached mapping for limits of project

(Indicate State or County Route # and/or local street name, and clearly defined endpoints)

County: Monroe Town/City: Rochester Village/Hamlet: N/A

Have you consulted the NYSHPO website at http://nysparks.state.ny.us to determine the preliminary presence or absence of previously identified cultural resources within or adjacent to the project area? ☒ **Yes** ☐ **No**

If yes:

- ≠ Was the project site wholly or partially included within an identified archaeologically sensitive area? ☒ **Yes** ☐ **No**
- ≠ Does the project site involve or is it substantially contiguous to a previously evaluated National Register of Historic Places listed property? ☒ **Yes** ☐ **No**

ALL PROJECTS SUBMITTED FOR REVIEW SHOULD INCLUDE THE FOLLOWING INFORMATION

☒ **Project Description –** Attach a full description of the nature and extent of the work to be undertaken as part of this project. This should include, but not limited to, potential activities that might involve drainage, cutting, excavation, grading, filling, on-site detours, new sidewalks, right-of-way acquisition. Relevant portions of the project applications or environmental statements may be submitted. This could be from sections of the Draft Design Report/ Draft Scoping Document.

☒ **Location Maps -** Provide USGS Quad or DOT Planimetric map showing project area location. The map must clearly show street and road names surrounding the project area as well as all portions of the project.

☒ **Photos -** Provide clear, original color photographs of the entire project area keyed to a site plan. These photos should indicate:

- ≠ Buildings/structures more than 50 years old that are located along the property or on adjoining property
- ≠ Areas of prior ground disturbance (removal of original topsoil; filling and plowing are not considered disturbance)

LOCAL SPONSOR CONTACT

Firm/Agency: City of Rochester

Name: James McIntosh, P.E. Title: City Engineer

Address: City Hall – 30 Church Street, Room 300B City: Rochester State: NY Zip: 14614

Phone: (585) 428-6828 E-Mail: jim.mcintosh@cityofrochester.gov

Consultant Name: Environmental Design & Research, Landscape Architecture, Engineering & Environmental Services, D.P.C.

Contact Information: 217 Montgomery Street, Suite 1000, Syracuse, NY 13202, (315) 471-0688

1.0 Project Information

This Section 106 Project Submittal Package for the proposed East Main Street Streetscape Improvements Project (PIN 4755.91), located in the City of Rochester in Monroe County, New York, was prepared by Environmental Design & Research, Landscape Architecture, Engineering, & Environmental Services, D.P.C. (EDR) on behalf of Stantec Consulting Services, Inc. (Stantec) and the City of Rochester. This submittal was prepared by EDR cultural resources staff who meet the qualifications specified by the Secretary of the Interior's Standards for Historic Preservation and Archaeology per 36 CFR Part 61.

1.1 Project Description

The proposed East Main Street Streetscape Improvements project primarily proposes to rehabilitate the existing pedestrian and bicycle facilities along East Main Street from the Main Street Bridge over the Genesee River on the southwest to Liberty Pole Plaza on the northeast. The extended project includes the proposed installation of wayfinding signage along the Main Street Corridor from Canal Street on the southwest to Alexander Street on the northeast. Also included in the project are proposed enhancements to the Liberty Pole Plaza. A map of the proposed project is included as Attachment A. Proposed work as part of the project includes:

- East Main Street Streetscape Improvements – The new streetscape shall be designed to improve the conditions for pedestrians and enhance the aesthetic nature of the corridor. The existing sidewalks, street lights, wayfinding signs and streetscape amenities will be replaced. In addition the project will evaluate the current roadway travel lanes and potential for adding parking throughout the project base corridor.
- Liberty Pole Plaza – Proposed changes within Liberty Pole Plaza, located at the northwest intersection of East Main and Franklin Streets include: the replacement of the existing sidewalk and accent lighting around the Liberty Pole. The Liberty Pole, surrounding seat wall and planter, memorial plaque and drinking fountain, and row of trees immediately adjacent to the Sibley Building will be preserved.
- Pedestrian Wayfinding – Existing wayfinding kiosks installed in the 1980s will be replaced by a new system of pedestrian wayfinding signage that will implement the recommendations of the 2012 Center City Pedestrian Circulation and Wayfinding Study.[1]

All work proposed as part of the proposed East Main Street Streetscape Improvements will occur within previously disturbed areas within or immediately adjacent to existing pedestrian and vehicular rights-of-way along East Main Street. No changes are proposed to any buildings located along the project route of the East Main Street Streetscape

[1] Bergmann Associates and Cloud Gehshan Associates. 2012. *Center City Pedestrian Circulation and Wayfinding Study, Rochester, New York.* Bergmann Associates, Rochester, NY.

Improvements. Ground disturbance as part of the pedestrian wayfinding portion of the project will be limited to installation of new footings. Proposed project plans for the East Main Street Streetscape Improvements are included as Attachment B.

1.2 Impact on Historic Resources

The New York State Office of Parks, Recreation and Historic Preservation (NYSOPRHP) Cultural Resources Information System (CRIS) website was reviewed to determine the location of any properties listed on the National Register of Historic Places (NRHP) adjacent to the proposed project. Seven resources listed on the NRHP are located within or immediately adjacent to the proposed East Main Street Streetscape Improvements (see Attachment C):

- The Sibley Triangle Building (90NR01501) is located at 20 East Avenue at the southeast end of the project area for the East Main Street Streetscape Improvements. It is a five-story triangular flatiron building constructed in 1897 of brick walls with Indiana limestone and marble trim, for prominent realtor, banker and philanthropist Hiram W. Sibley.
- The Baptist Temple Building (93NR00460) is located at 14 Franklin Avenue at the northeast end of the project area for the East Main Street Streetscape Improvements. It was constructed in 1924 as a fourteen-story "skyscraper church" for the Second Baptist Church, and currently houses residential and commercial tenants.
- The Rochester Savings Bank (90NR01462) is located at 40 Franklin Avenue at the northeast end of the project area for the East Main Street Streetscape Improvements. It was constructed in 1927 of Minnesota Kato stone and designed by famed New York City architects McKim, Mead and White. The Rochester Savings Bank is also a designated City of Rochester historic landmark.
- The Sibley, Lindsay & Curr Building (00NR01608) is located at 228 East Main Street between Franklin Street and Clinton Avenue. The building was the first and largest department store in Rochester, constructed in stages between 1904-1924 in the Chicago commercial style, and occupying an entire city block.
- The National Company Building (90NR01515) is located at 155 East Main Street on the south side of the block between Clinton and South Avenues. The building was designed by prominent local architect J. Foster Warner, constructed in 1924 and includes a mix of Beaux Arts and Neoclassical details.
- The Granite Building (90NR01512) is located at 124-130 East Main Street at the northeast corner of South Avenue. The 12-story building was constructed in 1893 as the first skeletal steel skyscraper in the City of Rochester, and includes a variety of ornate details on its Second Renaissance-style façade as well as four-story granite columns supporting recessed arches. The Granite Building was included in a thematic group of six architecturally and historically significant department store buildings located within the Inner Loop of Rochester that also includes the National Building and Sibley, Lindsay & Curr Building.

- ≠ The Main Street Bridge (90NR01514) is located over the Genesee River at the west end of the project area for the East Main Street Streetscape Improvements. The Main Street Bridge was constructed in 1857 and is the oldest of three stone arch bridges that traverse the Genesee River within the Inner Loop area of the city.

In addition, two NRHP-eligible resources are located with the project limits of the East Main Street Streetscape Improvements:

- ≠ The building at 300-310 Main Street (USN 05540.007525) is a three-story Colonial Revival-style building, constructed in the second quarter of the twentieth century. The south and west facades are symmetrical, with five bays on each side meeting at a corner entry topped with a vented tower. Exterior walls are brick, and the roof is clad in slate and punctuated by five dormers on the south and west facades. The building appears to be in excellent condition and appears to meet NRHP-eligibility criteria.
- ≠ The Lincoln Alliance Building at 183 East Main Street (USN 05540.00880) is a fourteen-story office building constructed in the first quarter of the twentieth century. Exterior walls include a mix of limestone and brick with marble pilasters dividing three bays of tall, steel-framed windows topped by a dentillated cornice located above the third story. Despite some alteration to its windows and other historic materials the building appears to be in excellent condition and appears to meet NRHP-eligibility criteria.

Photographs of all NRHP-listed and NRHP-eligible resources are included as Attachment D.

All proposed project improvements will take place in previously disturbed areas where existing pavement, sidewalks, signage and utilities are located. The proposed project is not anticipated to adversely affect any historic resources listed on or eligible for the NRHP. The proposed East Main Street Streetscape Improvements will only improve the appearance, condition, and public use and appreciation of the built environment along East Main Street, and will not compromise the integrity of the NRHP-listed or NRHP-eligible resources located along the project route.

1.3 Archaeological Sensitivity

A review of the NYSPOPRHP CRIS website determined that although no archaeological sites have been documented directly along the project route, the proposed East Main Street Streetscape Improvements occur entirely within an archaeologically sensitive area, indicating that the Project site lies within one-mile of one or more previously reported archaeological sites (see Attachment C). A review of the CRIS website also determined that one previous cultural resources survey has been conducted within the proposed project area:

- A Phase 1A Cultural Resource Reconnaissance Survey was conducted for the Proposed Midtown Development in 2008[2] to determine the archaeological sensitivity of an approximately 8.8-acre city block bound by East Main Street, South Clinton Avenue, East Broad Street, Chestnut Street, Elm Street, Atlas Street and Euclid Street and comprised of several interconnected buildings, prior to its demolition. Historic map review indicated that the area of potential effect (APE) for the survey area had experienced significant soil disturbance associated with the construction and subsequent demolition of residential and commercial buildings since the mid-nineteenth century. No archaeological resources were identified within the limits of the survey area as part of the evaluation. The Phase 1A noted that the archaeological sensitivity of the survey area was low due to the destruction of soils associated with the construction of the buildings then located on the site. No further cultural resources surveys were recommended.

The proposed project occurs primarily within previously disturbed areas comprised of paved areas in an urban context that has been developed since the mid-to-late nineteenth century. No intact/original soils are present within the project area, and therefore there is little to no likelihood that prehistoric historic or historic artifacts would be impacted by construction of the project. The project route has experienced significant previous disturbance and therefore there is little to no likelihood that prehistoric or historic archaeological artifacts or sites would be impacted by construction of the project.

1.4 Photographs

Photographs documenting existing conditions within the project area, including existing land use, visual character, and previous ground disturbance along the project route are included as Attachment D. Photograph locations are noted on maps included as Attachment E.

LIST OF ATTACHMENTS

Attachment A. Project Location Map
Attachment B. Project Plans
Attachment C. Previously Identified Cultural Resources
Attachment D. Photographs
Attachment E. Photograph Locations

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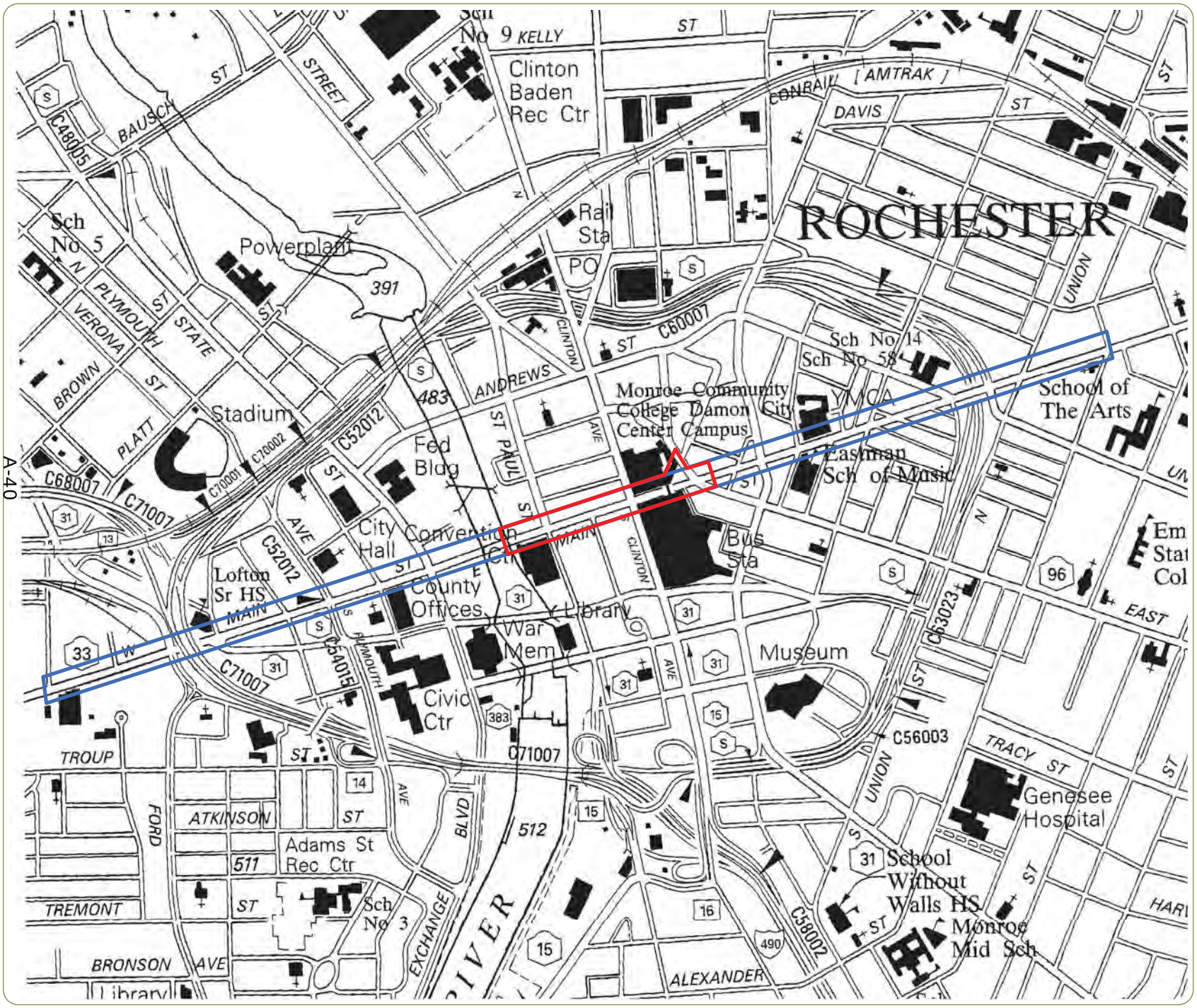
[2] Rochester Museum & Science Center. 2008. *Phase 1A Cultural Resource Reconnaissance Survey for the Proposed Midtown Development Bounded by East Main Street, South Clinton Avenue, East Broad Street, Chestnut Street, Elm Street, Atlas Street, and Euclid Street.* Rochester Museum & Science Center Regional Heritage Preservation Program, Rochester, NY.

Attachment A:

Project Location Map



East Main Street Streetscape Improvements

City of Rochester -
Monroe County, New York

Project Location

December 2015

Limits of Proposed Streetscape Improvements

Limits of Proposed Pedestrian Wayfinding System

Notes:
1. Basemap: NYSDOT Rochester East 7.5-minute planimetric quadrangle.
2. This is a color graphic. Reproduction in grayscale may misrepresent the data.

0 250 500 1,000 Feet

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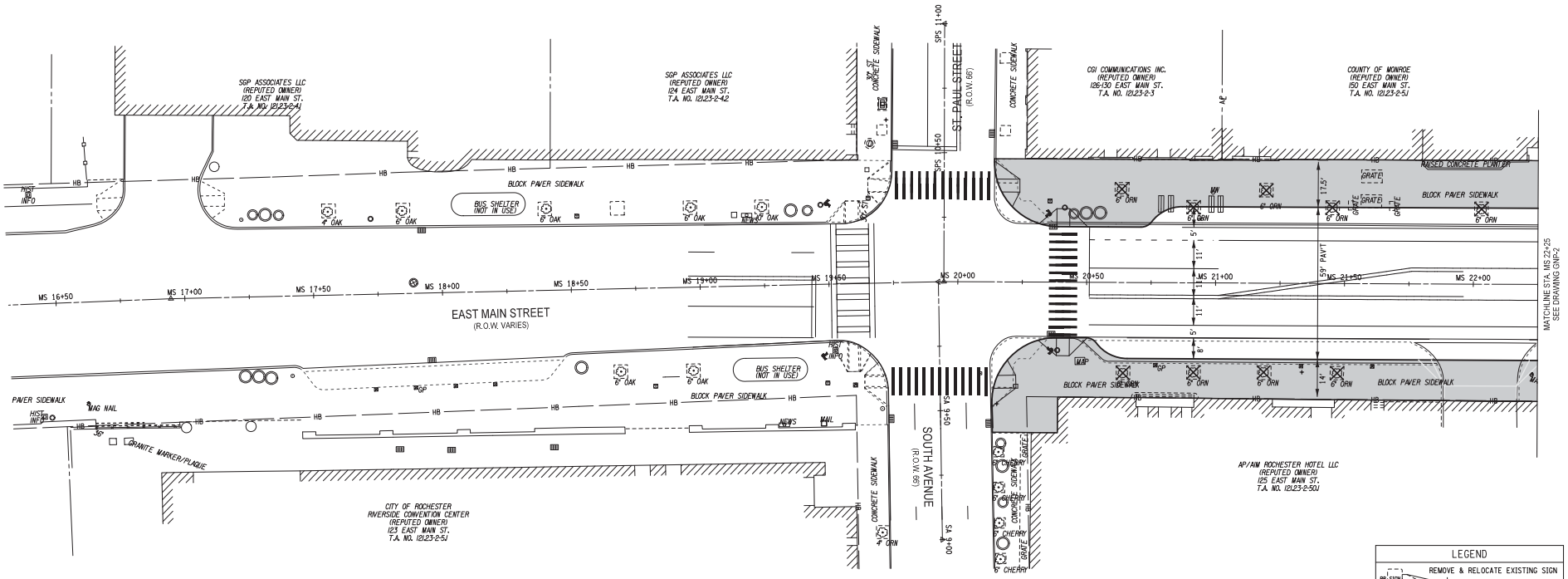
Attachment B:

Project Plans



LEGEND

RR SIGN	REMOVE & RELOCATE EXISTING SIGN
	NEW LOCATION
	EXISTING LOCATION
R SIGN	EXISTING SIGN TO BE REMOVED (PAID FOR UNDER ITEM 647.15 OR ITEM 647.61)
SIGN	EXISTING SIGN TO REMAIN
SIGN MUTCD NO.	PROPOSED NEW SIGN (PAID FOR UNDER ITEM 645.5XXX) PROPOSED SIGN POST PAID FOR UNDER ITEM 645.81 OR AS INDICATED ON PLAN
	PROPOSED SIGN SLEEVE

A-42

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

Revision	By	Appd.	YY.MM.DD	Issued	By	Appd.	YY.MM.DD

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Consultants

Stantec
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Rochester, NY 14614
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Client/Project
CITY OF ROCHESTER

MAIN STREET STREETSCAPE AND PEDESTRIAN WAYFINDING ENHANCEMENTS
P.I.N. 4755.91 D XXXXXX PC XXXXX

ROCHESTER, NEW YORK

File Name: GNP-01.DGN

SAR	SWM	KRS	15.11.13
Dwn.	Chkd.	Dsgn.	YY.MM.DD

Title
GENERAL PLAN
MAIN STREET

Project No.	Scale
192500343	1" = 20'

Drawing No.	Sheet	Revision
GNP-1	X of XX	0

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Plotted By: bsetmer

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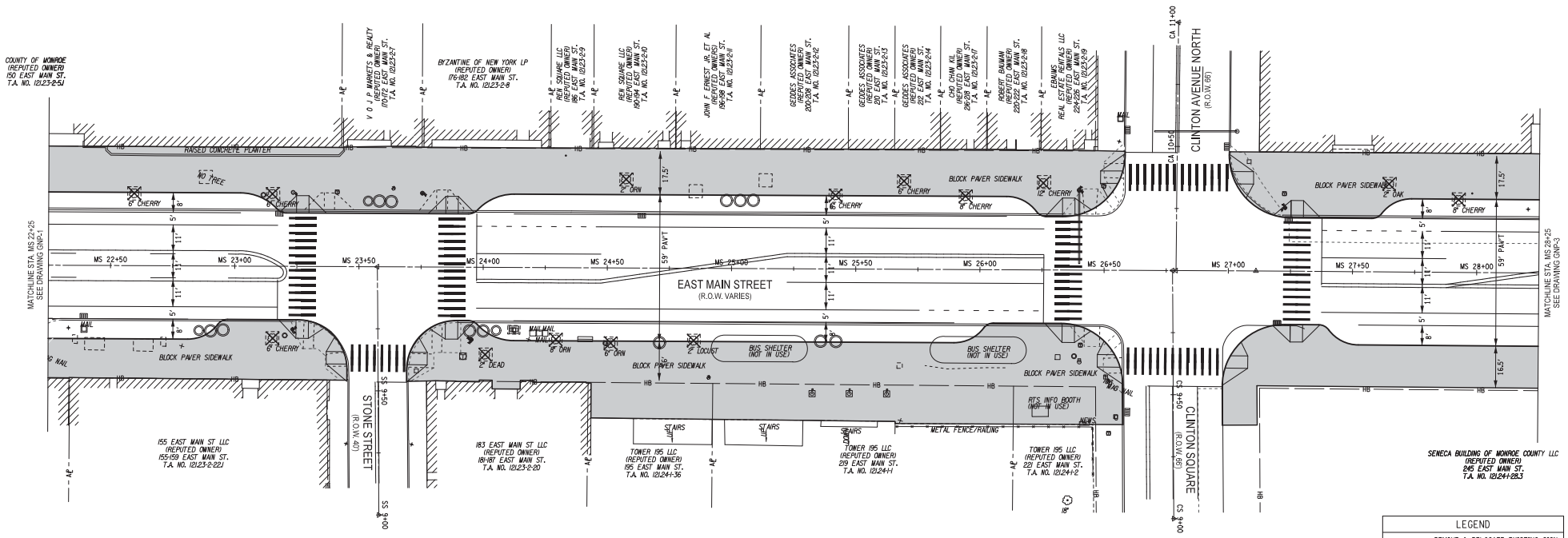

LEGEND

RR SIGN	REMOVE & RELOCATE EXISTING SIGN
	NEW LOCATION
	EXISTING LOCATION
R SIGN	EXISTING SIGN TO BE REMOVED (PAID FOR UNDER ITEM 647.15 OR ITEM 647.61)
SIGN	EXISTING SIGN TO REMAIN
SIGN MUTCD NO.	PROPOSED NEW SIGN (PAID FOR UNDER ITEM 645.5XXX) PROPOSED SIGN POST PAID FOR UNDER ITEM 645.81 OR AS INDICATED ON PLAN
	PROPOSED SIGN SLEEVE

A-43

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Client/Project
CITY OF ROCHESTER

MAIN STREET STREETSCAPE AND PEDESTRIAN WAYFINDING ENHANCEMENTS
P.I.N. 4755.91 D XXXXXX PC XXXXX

ROCHESTER, NEW YORK

File Name: GNP-2.DGN

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Dwn.	Chkd.	Dsgn.	YY.MM.DD

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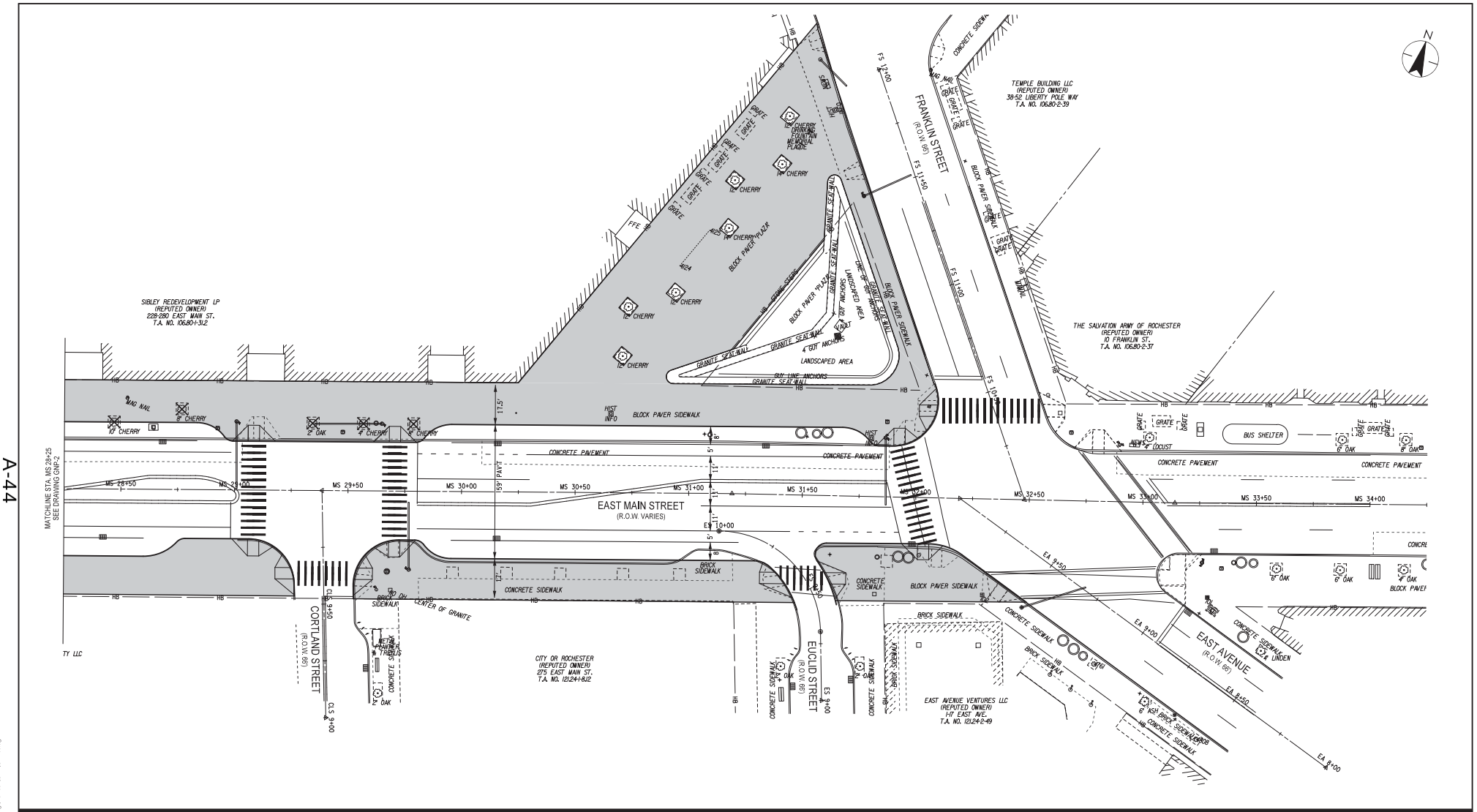

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Revision	By	Appd.	YY.MM.DD	Issued	By	Appd.	YY.MM.DD

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Client/Project
CITY OF ROCHESTER

MAIN STREET STREETSCAPE AND
PEDESTRIAN WAYFINDING ENHANCEMENTS
P.I.N. 4755.91 D XXXXXX PC XXXXX

ROCHESTER, NEW YORK

File Name: GNP-03.DGN

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Dwn.	Chkd.	Dsgn.	YY.MM.DD

Title
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MAIN STREET

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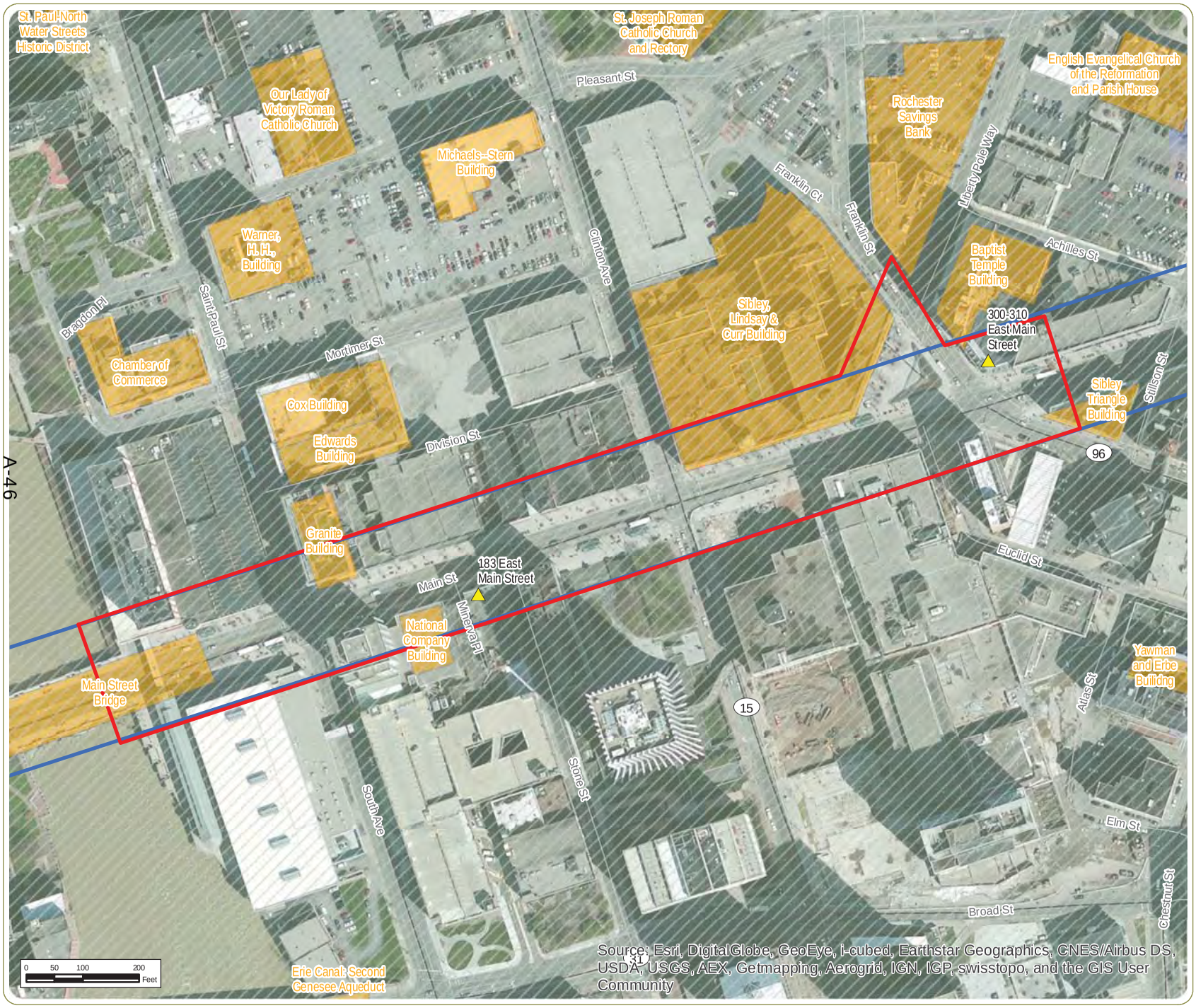
Plotted By: bsetmer

ORIGINAL SHEET - ANSI D HORIZ

Attachment C:

Previously Identified Cultural Resources



East Main Street Streetscape Improvements

City of Rochester - Monroe County, New York

Previously Identified Cultural Resources

December 2015

- NRHP-Eligible Resource
- NRHP-Listed Site
- Archaeologically Sensitive Area
- Limits of Proposed Streetscape Improvements
- Limits of Proposed Pedestrian Wayfinding System

Notes:
1. Basemap: ESRI Online "World Imagery" Map Service.
2. This is a color graphic. Reproduction in grayscale may misrepresent the data.

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Attachment D:

Photographs

Photograph 01:

View along East Main Street from eastern end of proposed streetscape improvements, view to the west-southwest.

Photograph 02:

View toward eastern end of area of proposed streetscape improvements at intersection of East Main Street and Franklin Street, view to the east-northeast.

Photograph 03:

Sidewalk at intersection of East Main Street and East Avenue, view towards NRHP-listed Sibley Triangle Building (90NR01501), view to the southeast.

Photograph 04:

Intersection of East Main and Franklin Streets, view to the north-northwest.

Photograph 05:

View toward NRHP-listed Baptist Temple building (left, 93NR00460) and NRHP-eligible former bank building at 300-310 East Main Street (right, USN05540.07525), view to the northeast.

Photograph 06:

View along Franklin Street toward the NRHP-listed Rochester Savings Bank (90NR01462) at northern end of proposed streetscape improvements, view to the north.

Photograph 07:

NRHP-listed Sibley, Lindsay and Curr Building (00NR01608) and Liberty Pole Plaza, view to the northwest.

Photograph 08:

View of Liberty Pole Plaza west of Franklin Street, view to the east.

Photograph 09:

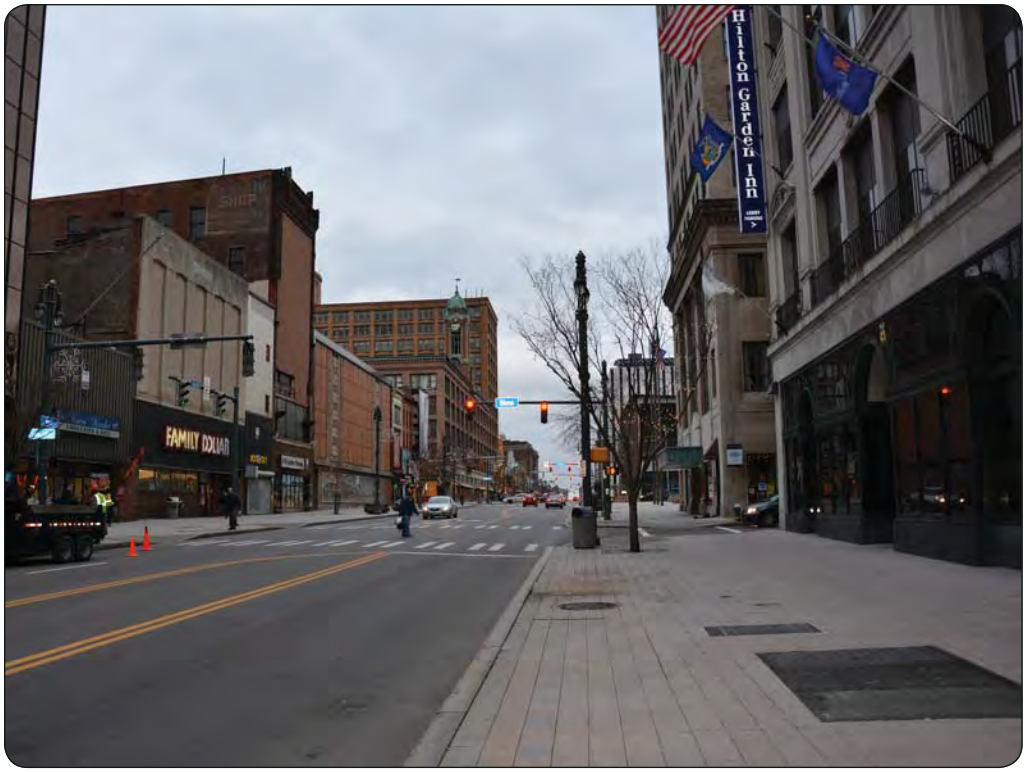
North side of East Main Street, west of Liberty Pole Plaza. view to the west-southwest.

Photograph 10:

Existing sidewalk along north side of East Main Street, view to the east-northeast.

Photograph 11:

Intersection of Clinton Avenue and East Main Street, view to the west-southwest.



Photograph 12:

Existing sidewalk along south side of East Main Street, view to the east-northeast.

Photograph 13:

NRHP-eligible Lincoln Alliance Building (USN 05540.008800) view to the southwest.

Photograph 14:

NRHP-listed National Company building (90NR01515), view to the southwest.

Photograph 15:

Existing sidewalk along south side of East Main Street west of the intersection with South Avenue, view to the west-southwest.

Photograph 16:

Existing sidewalk along south side of East Main Street west of the intersection with South Avenue, view to the east-southeast.

Photograph 17:

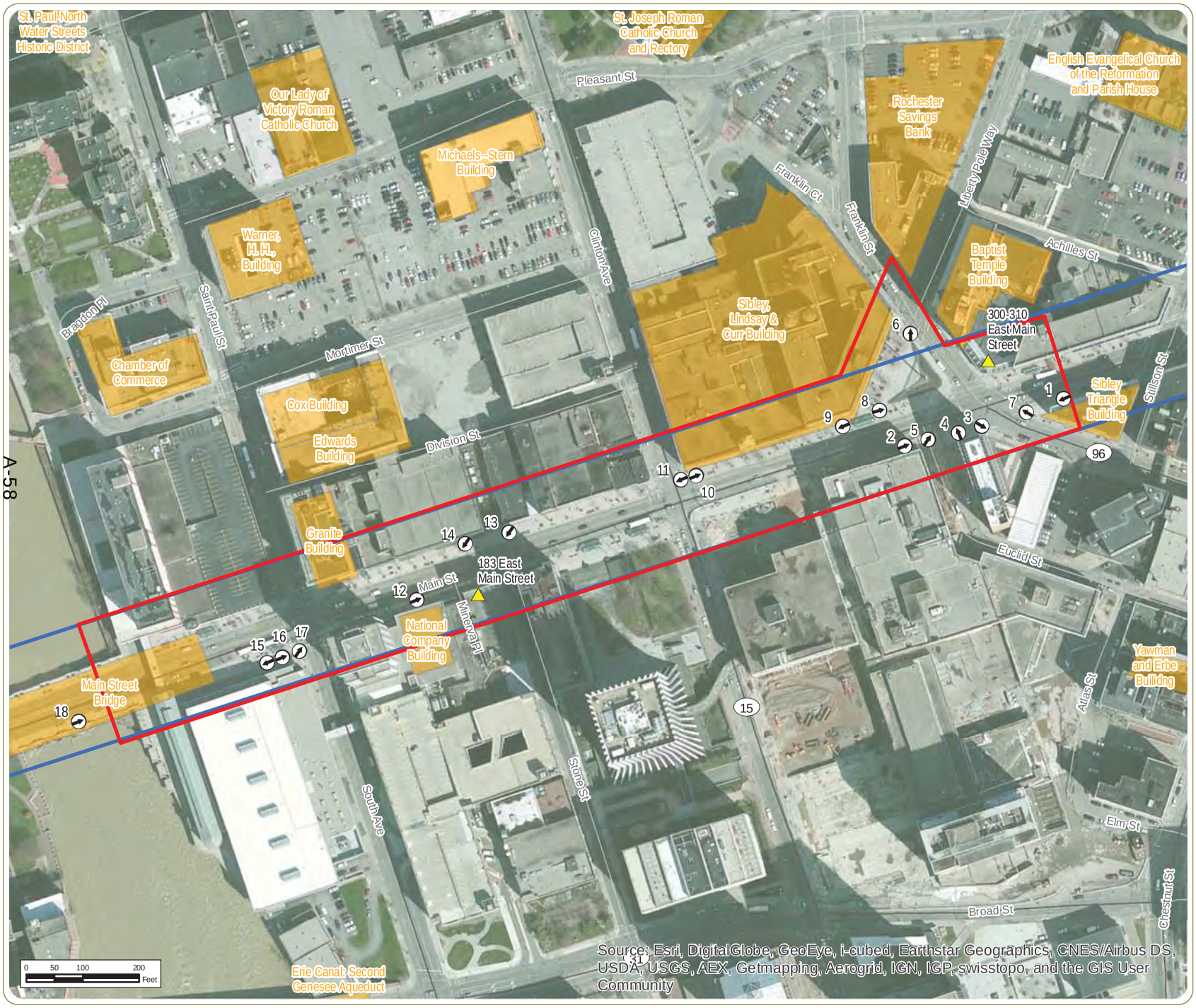
NRHP-listed Granite Building (90NR01512) at northeast corner of East Main Street and South Avenue, view to the northeast.

Photograph 18:

Western end of proposed streetscape improvements along south side of East Main Street at NRHP-listed Main Street Bridge (90NR01514), view to the east-northeast.

Attachment E:

Photograph Locations Map



East Main Street Streetscape Improvements

City of Rochester -
Monroe County, New York

Photograph Locations

December 2015

- Photograph Location
- NRHP-Eligible Resource
- NRHP-Listed Site
- Limits of Proposed Streetscape Improvements
- Limits of Proposed Pedestrian Wayfinding System

Notes:
1. Basemap: ESRI Online "World Imagery" Map Service.
2. This is a color graphic. Reproduction in grayscale may misrepresent the data.

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FINDING DOCUMENTATION

P.I.N. 4755.91
OPRHP PR Number: 16PR00102
East Main Street Streetscape Improvements Project
City of Rochester, Monroe County

1. Project Description

This proposed Local and Federal Funded project primarily proposes to rehabilitate the existing pedestrian and bicycle facilities along East Main Street (in the City of Rochester, Monroe County), from the Main Street Bridge over the Genesee River on the southwest to Liberty Pole Plaza on the northeast. The extended project includes the proposed installation of wayfinding signage along the Main Street Corridor from Canal Street on the southwest to Alexander Street on the northeast. Also included in the project are proposed enhancements to the Liberty Pole Plaza. A map of the proposed project is included as Attachment A.

Proposed work as part of the project includes:

- East Main Street Streetscape Improvements – The new streetscape shall be designed to improve the conditions for pedestrians and enhance the aesthetic nature of the corridor. The existing sidewalks, street lights, wayfinding signs and streetscape amenities will be replaced. In addition, the project will evaluate the current roadway travel lanes and potential for adding parking throughout the project base corridor.
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- Pedestrian Wayfinding – Existing wayfinding kiosks installed in the 1980s will be replaced by a new system of pedestrian wayfinding signage that will implement the recommendations of the 2012 Center City Pedestrian Circulation and Wayfinding Study.[1]

All work proposed as part of the proposed East Main Street Streetscape Improvements will occur within previously disturbed areas within or immediately adjacent to existing pedestrian and vehicular rights-of-way along East Main Street. No changes are proposed to any buildings located along the project route of the East Main Street Streetscape Improvements. Ground disturbance as part of the pedestrian wayfinding portion of the project will be limited to installation of new footings. Proposed project plans for the East Main Street Streetscape Improvements are included as Attachment B.

2. Steps Taken to Identify Historic Properties

The New York State Office of Parks, Recreation and Historic Preservation (NYSOPRHP) Cultural Resources Information System (CRIS) website was reviewed to determine the location of any properties listed or eligible for listing on the National Register of Historic Places (NRHP) adjacent to the proposed project, as well as whether the project is in close proximity to any documented archaeological sites. Findings of this review indicated:

- Seven resources listed on the NRHP are located within or immediately adjacent to the proposed East Main Street Streetscape Improvements.

[1] Bergmann Associates and Cloud Gehshan Associates. 2012. *Center City Pedestrian Circulation and Wayfinding Study, Rochester, New York.* Bergmann Associates, Rochester, NY.

- Two NRHP-eligible resources are located with the project limits of the East Main Street Streetscape Improvements.
- A review of the NYSPOPRHP CRIS website determined that although no archaeological sites have been documented directly along the project route, the proposed East Main Street Streetscape Improvements occur entirely within an archaeologically sensitive area, indicating that the Project site lies within one-mile of one or more previously reported archaeological sites. A review of the CRIS website also determined that one previous cultural resources survey has been conducted within the proposed project area.

According to February 5, 2016 correspondence from the NYSPOPRHP, a Phase I Cultural Resource Survey Report is not required for this project.

3. Evaluation of Project Impact on Identified Historic Properties

According to the CRIS website, seven resources listed on the NRHP are located within or immediately adjacent to the proposed Project (see Attachment C):

- The Sibley Triangle Building (90NR01501) is located at 20 East Avenue at the southeast end of the project area for the East Main Street Streetscape Improvements. It is a five-story triangular flatiron building constructed in 1897 of brick walls with Indiana limestone and marble trim, for prominent realtor, banker and philanthropist Hiram W. Sibley.
- The Baptist Temple Building (93NR00460) is located at 14 Franklin Avenue at the northeast end of the project area for the East Main Street Streetscape Improvements. It was constructed in 1924 as a fourteen-story "skyscraper church" for the Second Baptist Church, and currently houses residential and commercial tenants.
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- The Granite Building (90NR01512) is located at 124-130 East Main Street at the northeast corner of South Avenue. The 12-story building was constructed in 1893 as the first skeletal steel skyscraper in the City of Rochester, and includes a variety of ornate details on its Second Renaissance-style façade as well as four-story granite columns supporting recessed arches. The Granite Building was included in a thematic group of six architecturally and historically significant department store buildings located within the Inner Loop of Rochester that also includes the National Building and Sibley, Lindsay & Curr Building.
- The Main Street Bridge (90NR01514) is located over the Genesee River at the west end of the project area for the East Main Street Streetscape Improvements. The Main Street Bridge was constructed in 1857 and is the oldest of three stone arch bridges that traverse the Genesee River within the Inner Loop area of the city.

According to the CRIS website, two NRHP-eligible resources are located with the project limits of the East Main Street Streetscape Improvements:

- The building at 300-310 Main Street (USN 05540.007525) is a three-story Colonial Revival-style building, constructed in the second quarter of the twentieth century. The south and west facades are symmetrical, with five bays on each side meeting at a corner entry topped with a vented tower. Exterior walls are brick, and the roof is clad in slate and punctuated by five dormers on the south and west facades. The building appears to be in excellent condition and appears to meet NRHP-eligibility criteria.
- The Lincoln Alliance Building at 183 East Main Street (USN 05540.00880) is a fourteen-story office building constructed in the first quarter of the twentieth century. Exterior walls include a mix of limestone and brick with marble pilasters dividing three bays of tall, steel-framed windows topped by a dentillated cornice located above the third story. Despite some alteration to its windows and other historic materials the building appears to be in excellent condition and appears to meet NRHP-eligibility criteria.

Photographs of all NRHP-listed and NRHP-eligible resources are included as Attachment D.

The proposed project is not anticipated to adversely affect any historic resources listed on or eligible for the NRHP. The proposed East Main Street Streetscape Improvements will only improve the appearance, condition, and public use and appreciation of the built environment along East Main Street, and will not compromise the integrity of the NRHP-listed or NRHP-eligible resources located along the project route.

A review of the NYSPOPRHP CRIS website determined that although no archaeological sites have been documented directly along the project route, the proposed East Main Street Streetscape Improvements occur entirely within an archaeologically sensitive area, indicating that the Project site lies within one-mile of one or more previously reported archaeological sites. A review of the CRIS website also determined that one previous cultural resources survey has been conducted within the proposed project area:

- A Phase 1A Cultural Resource Reconnaissance Survey was conducted for the Proposed Midtown Development in 2008[2] to determine the archaeological sensitivity of an approximately 8.8-acre city block bound by East Main Street, South Clinton Avenue, East Broad Street, Chestnut Street, Elm Street, Atlas Street and Euclid Street and comprised of several interconnected buildings, prior to its demolition. Historic map review indicated that the area of potential effect (APE) for the survey area had experienced significant soil disturbance associated with the construction and subsequent demolition of residential and commercial buildings since the mid-nineteenth century. No archaeological resources were identified within the limits of the survey area as part of the evaluation. The Phase 1A noted that the archaeological sensitivity of the survey area was low due to the destruction of soils associated with the construction of the buildings then located on the site. No further cultural resources surveys were recommended

The proposed project occurs primarily within previously disturbed areas comprised of paved areas in an urban context that has been developed since the mid-to-late nineteenth century. No intact/original soils are present within the project area, and therefore there is little to no likelihood that prehistoric historic or historic artifacts would be impacted by construction of the project. The project route has experienced significant previous disturbance and therefore there is little to no likelihood that prehistoric or historic archaeological artifacts or sites would be impacted by construction of the project.

---

[2] Rochester Museum & Science Center. 2008. *Phase 1A Cultural Resource Reconnaissance Survey for the Proposed Midtown Development Bounded by East Main Street, South Clinton Avenue, East Broad Street, Chestnut Street, Elm Street, Atlas Street, and Euclid Street.* Rochester Museum & Science Center Regional Heritage Preservation Program, Rochester, NY.

4. Basis for Recommended Project Filing

The project will not impact any Nation Register listed or eligible property.

The criteria of effect has been applied in accordance 800.5(b) of the National Historic Preservation Act and we find that this undertaking will have *No Adverse Effect* on properties eligible for or listed on the National Register of Historic Places.

5. Public Involvement

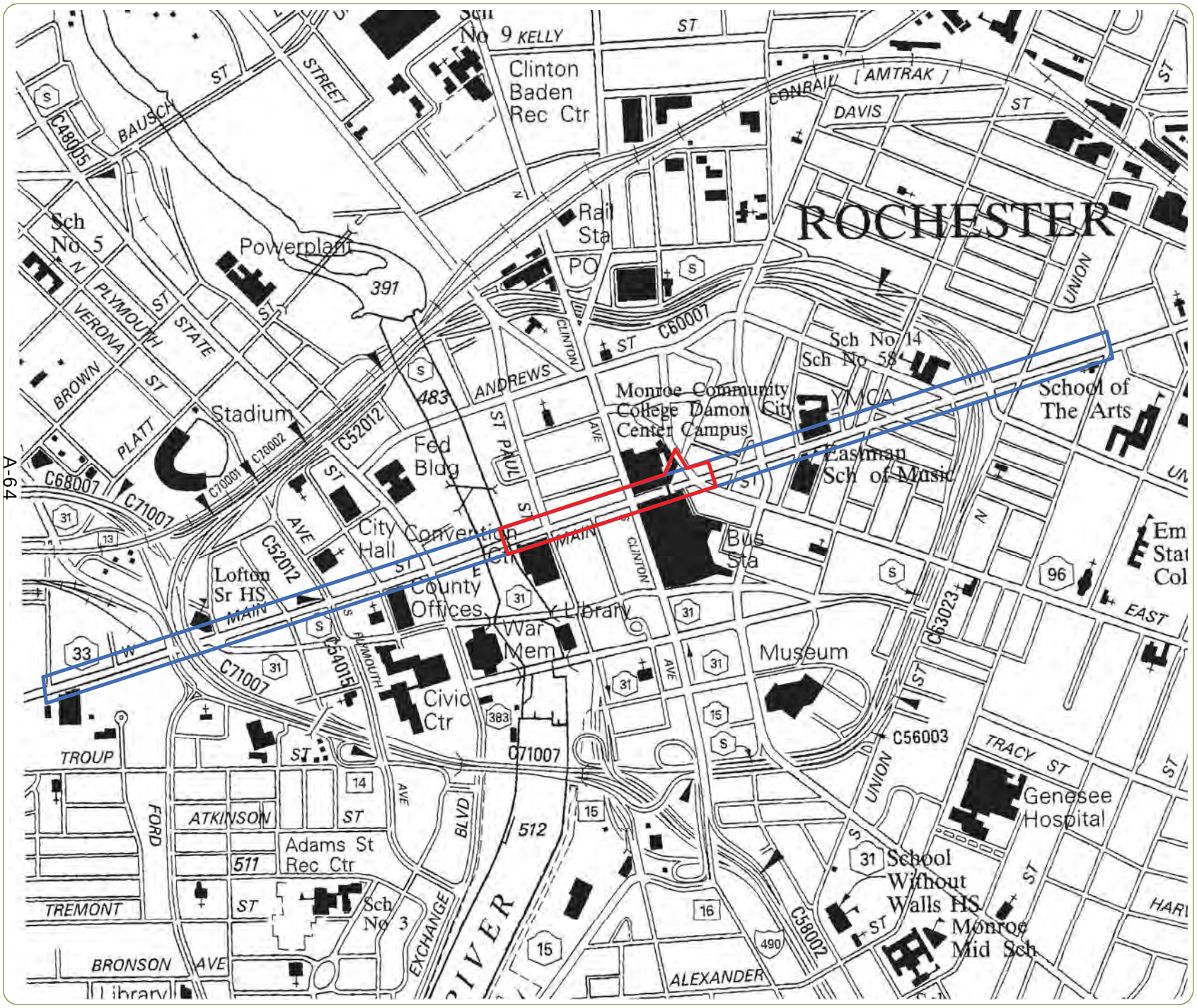
A public information meeting is anticipated to be held in April 2016 as part of the preliminary design process. Neighborhood and business groups will also be coordinated with throughout the design process. Additional public information meetings will be held during final design and prior to the start of construction.

6. Attachments

Attachment A. Project Location Map
Attachment B. Project Plans
Attachment C. Previously Identified Cultural Resources
Attachment D. Photographs
Attachment E. Photograph Locations

Attachment A:

Project Location Map



East Main Street Streetscape Improvements

City of Rochester -
Monroe County, New York

Project Location

December 2015

Limits of Proposed Streetscape Improvements

Limits of Proposed Pedestrian Wayfinding System

Notes:
1. Basemap: NYSDOT Rochester East 7.5-minute planimetric quadrangle.
2. This is a color graphic. Reproduction in grayscale may misrepresent the data.

0 250 500 1,000 Feet

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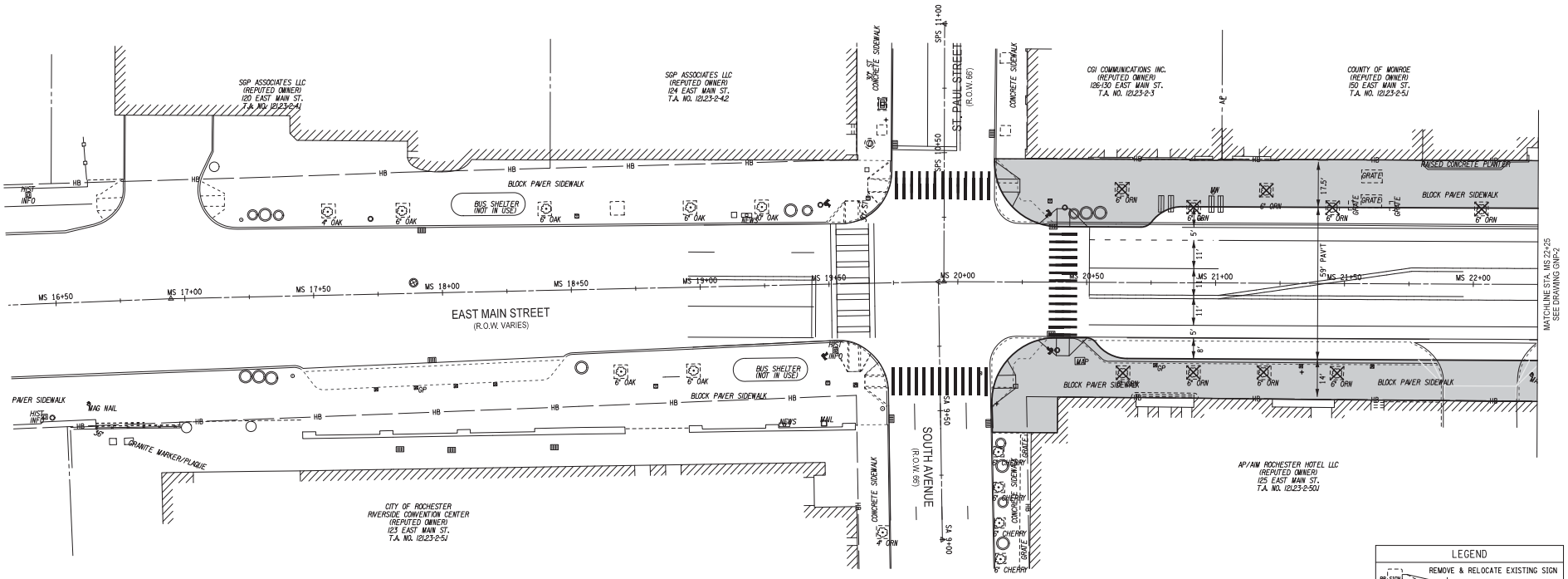
Attachment B:

Project Plans



LEGEND

RR SIGN	REMOVE & RELOCATE EXISTING SIGN
	NEW LOCATION
	EXISTING LOCATION
R SIGN	EXISTING SIGN TO BE REMOVED (PAID FOR UNDER ITEM 647.15 OR ITEM 647.61)
SIGN	EXISTING SIGN TO REMAIN
SIGN MUTCD NO.	PROPOSED NEW SIGN (PAID FOR UNDER ITEM 645.5XXX) PROPOSED SIGN POST PAID FOR UNDER ITEM 645.81 OR AS INDICATED ON PLAN
	PROPOSED SIGN SLEEVE

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Revision	By	Appd.	YY.MM.DD

Issued	By	Appd.	YY.MM.DD

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Client/Project
CITY OF ROCHESTER

MAIN STREET STREETSCAPE AND PEDESTRIAN WAYFINDING ENHANCEMENTS
P.I.N. 4755.91 D XXXXXX PC XXXXX

ROCHESTER, NEW YORK

File Name: GNP-01.DGN

SAR	SWM	KRS	15.11.13
Dwn.	Chkd.	Dsgn.	YY.MM.DD

Title
GENERAL PLAN
MAIN STREET

Project No.	Scale
192500343	1" = 20'

Drawing No.	Sheet	Revision
GNP-1	X of XX	0

A-66

Design File: U:\192500343\Transportation\Preliminary\Drawing\Plan Set\GNP\GNP-01.dgn
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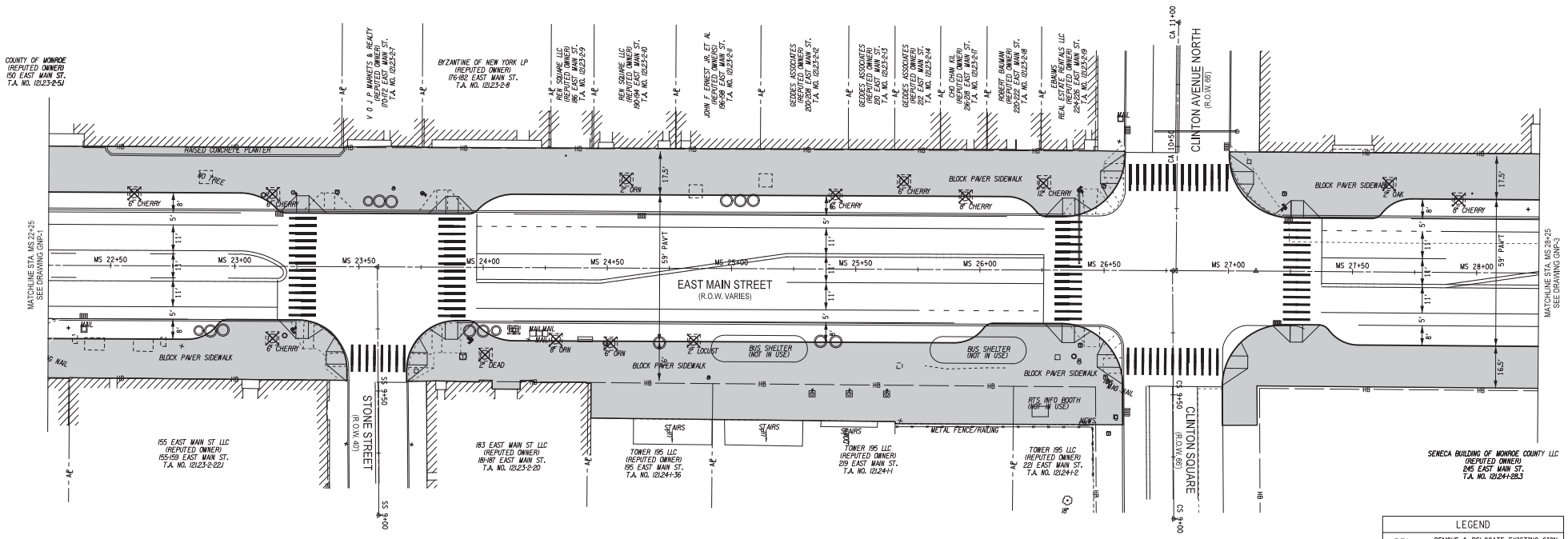

LEGEND

RR SIGN	REMOVE & RELOCATE EXISTING SIGN
	NEW LOCATION
	EXISTING LOCATION
R SIGN	EXISTING SIGN TO BE REMOVED (PAID FOR UNDER ITEM 647.15 OR ITEM 647.61)
SIGN	EXISTING SIGN TO REMAIN
SIGN MUTCD NO.	PROPOSED NEW SIGN (PAID FOR UNDER ITEM 645.5XXX) PROPOSED SIGN POST PAID FOR UNDER ITEM 645.81 OR AS INDICATED ON PLAN
	PROPOSED SIGN SLEEVE

A-67

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Client/Project
CITY OF ROCHESTER

MAIN STREET STREETSCAPE AND PEDESTRIAN WAYFINDING ENHANCEMENTS
P.I.N. 4755.91 D XXXXXX PC XXXXX

ROCHESTER, NEW YORK

File Name: GNP-2.DGN

SAR	SWM	KRS	15.11.13
Dwn.	Chkd.	Dsgn.	YY.MM.DD

Title
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MAIN STREET

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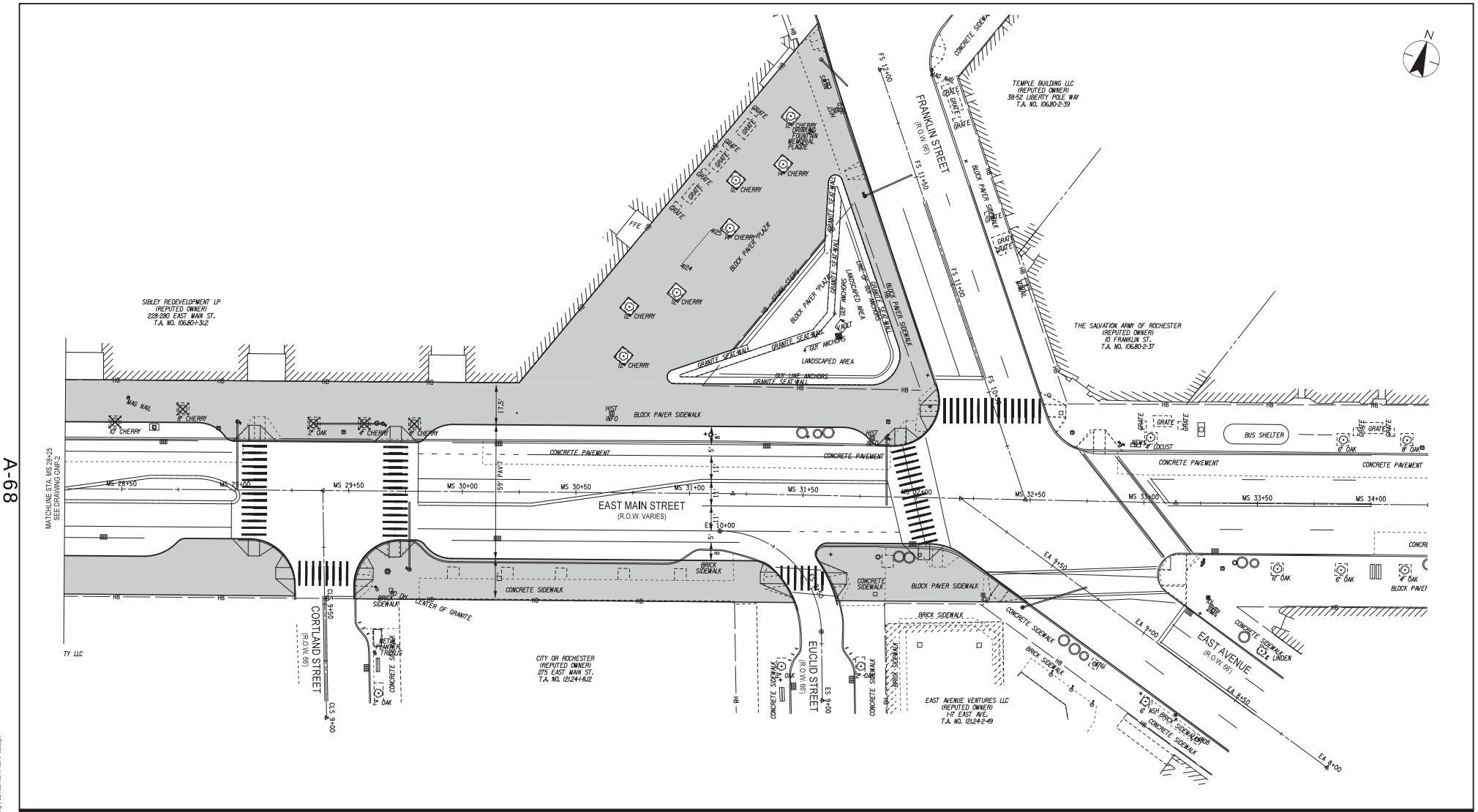

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Client/Project
CITY OF ROCHESTER

MAIN STREET STREETSCAPE AND PEDESTRIAN WAYFINDING ENHANCEMENTS
P.I.N. 4755.91 D XXXXXX PC XXXXX

ROCHESTER, NEW YORK

File Name: GNP-03.DGN

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Dwn.	Chkd.	Dsgn.	YY.MM.DD

Title
GENERAL PLAN
MAIN STREET

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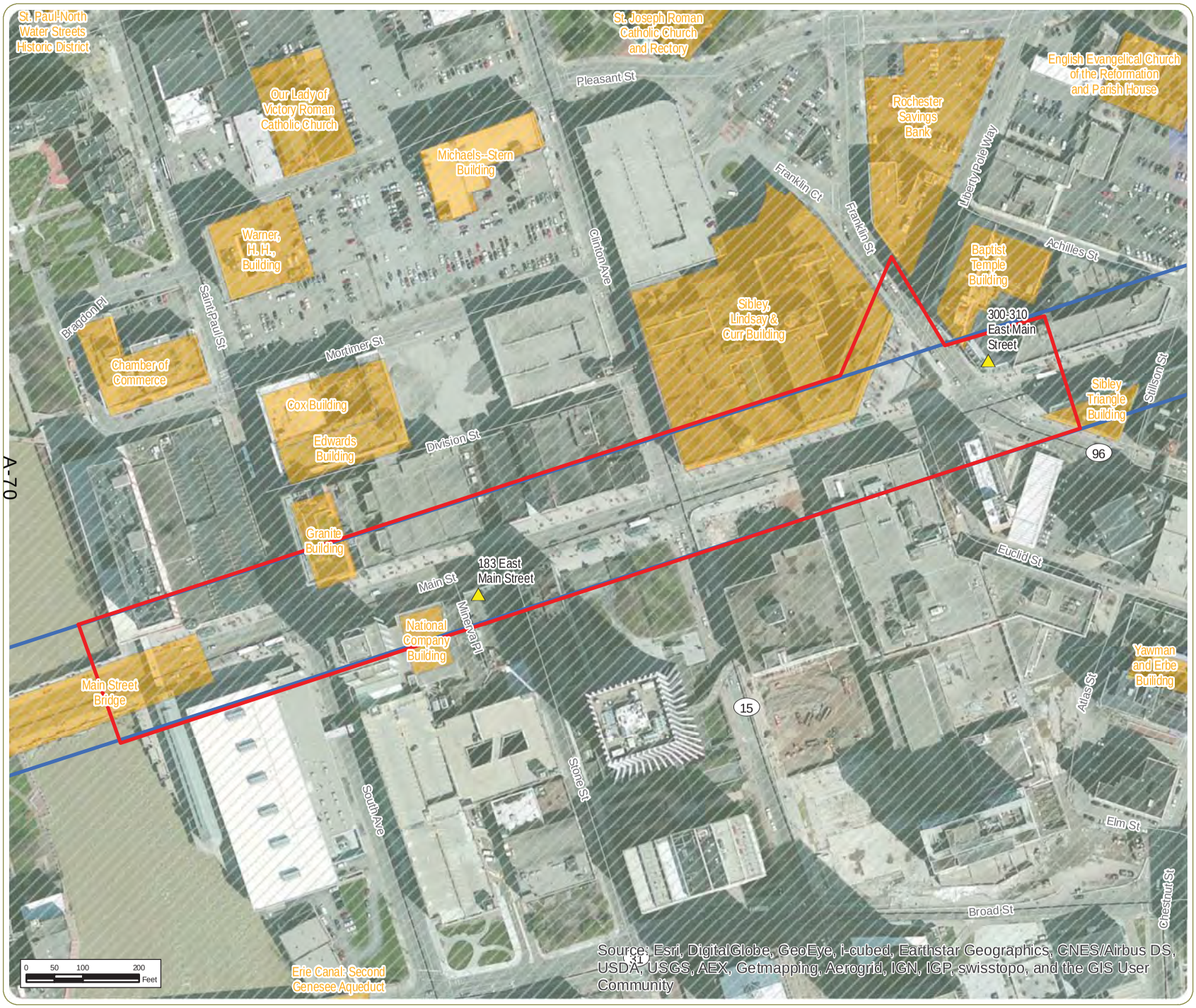
Plotted By: bsetmer

ORIGINAL SHEET - ANSI D HORIZ

Attachment C:

Previously Identified Cultural Resources



East Main Street Streetscape Improvements

City of Rochester - Monroe County, New York

Previously Identified Cultural Resources

December 2015

- NRHP-Eligible Resource
- NRHP-Listed Site
- Archaeologically Sensitive Area
- Limits of Proposed Streetscape Improvements
- Limits of Proposed Pedestrian Wayfinding System

Notes:
1. Basemap: ESRI Online "World Imagery" Map Service.
2. This is a color graphic. Reproduction in grayscale may misrepresent the data.

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Attachment D:

Photographs

Photograph 01:

View along East Main Street from eastern end of proposed streetscape improvements, view to the west-southwest.

Photograph 02:

View toward eastern end of area of proposed streetscape improvements at intersection of East Main Street and Franklin Street, view to the east-northeast.

Photograph 03:

Sidewalk at intersection of East Main Street and East Avenue, view towards NRHP-listed Sibley Triangle Building (90NR01501), view to the southeast.

Photograph 04:

Intersection of East Main and Franklin Streets, view to the north-northwest.

Photograph 05:

View toward NRHP-listed Baptist Temple building (left, 93NR00460) and NRHP-eligible former bank building at 300-310 East Main Street (right, USN05540.07525), view to the northeast.

Photograph 06:

View along Franklin Street toward the NRHP-listed Rochester Savings Bank (90NR01462) at northern end of proposed streetscape improvements, view to the north.

Photograph 07:

NRHP-listed Sibley, Lindsay and Curr Building (00NR01608) and Liberty Pole Plaza, view to the northwest.

Photograph 08:

View of Liberty Pole Plaza west of Franklin Street, view to the east.

Photograph 09:

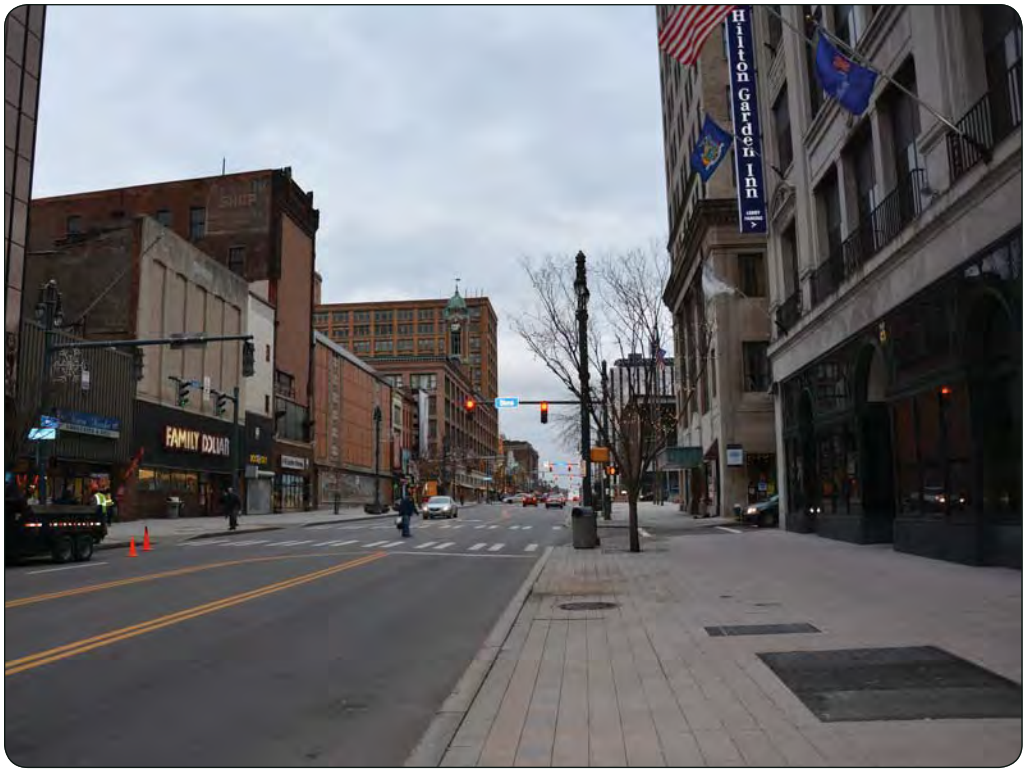
North side of East Main Street, west of Liberty Pole Plaza. view to the west-southwest.

Photograph 10:

Existing sidewalk along north side of East Main Street, view to the east-northeast.

Photograph 11:

Intersection of Clinton Avenue and East Main Street, view to the west-southwest.



Photograph 12:

Existing sidewalk along south side of East Main Street, view to the east-northeast.

Photograph 13:

NRHP-eligible Lincoln Alliance Building (USN 05540.008800) view to the southwest.

Photograph 14:

NRHP-listed National Company building (90NR01515), view to the southwest.

Photograph 15:

Existing sidewalk along south side of East Main Street west of the intersection with South Avenue, view to the west-southwest.

Photograph 16:

Existing sidewalk along south side of East Main Street west of the intersection with South Avenue, view to the east-southeast.

Photograph 17:

NRHP-listed Granite Building (90NR01512) at northeast corner of East Main Street and South Avenue, view to the northeast.

Photograph 18:

Western end of proposed streetscape improvements along south side of East Main Street at NRHP-listed Main Street Bridge (90NR01514), view to the east-northeast.

Attachment E:

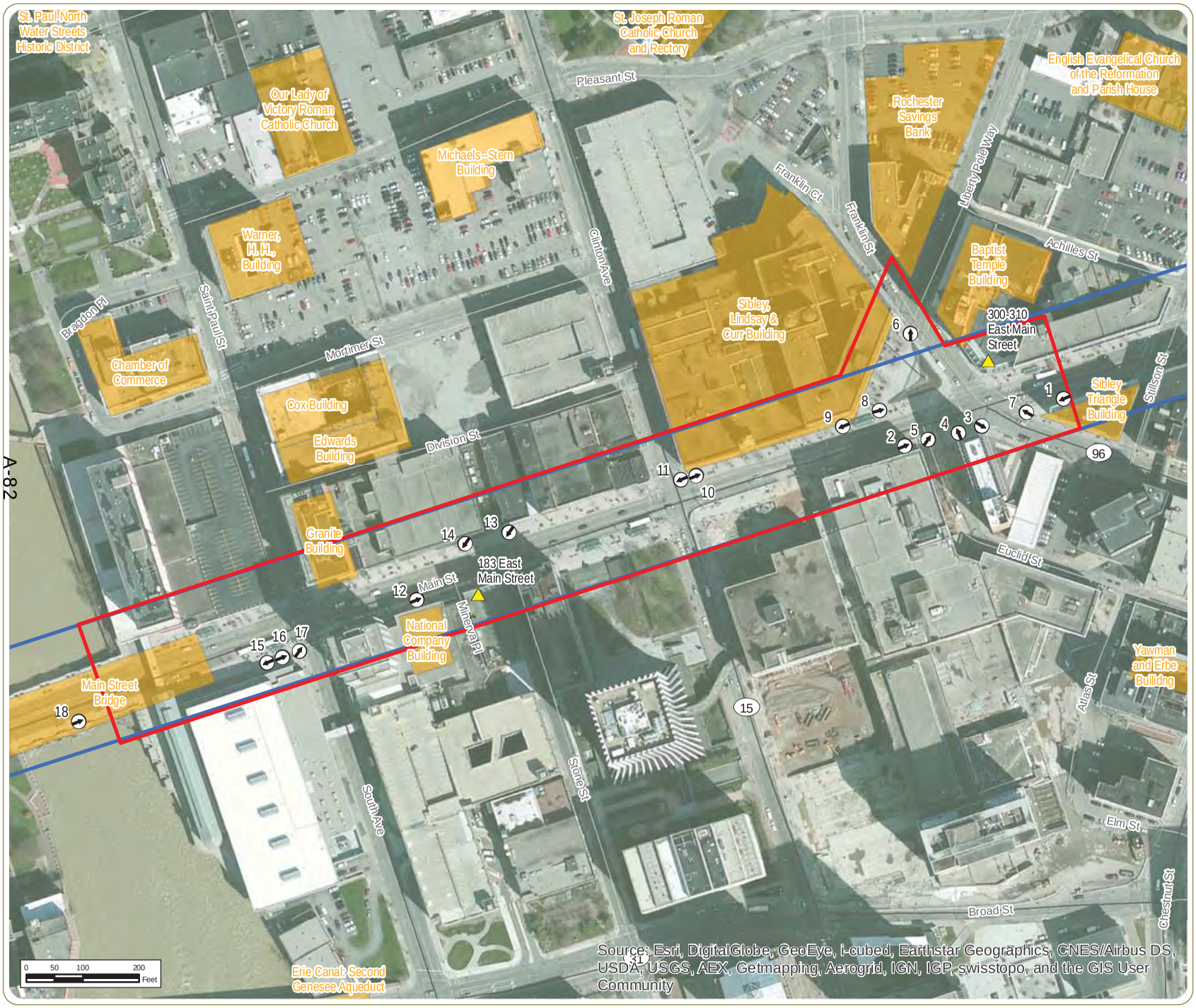
Photograph Locations Map

East Main Street Streetscape Improvements

City of Rochester -
Monroe County, New York

Photograph Locations

December 2015



Photograph Location

NRHP-Eligible Resource

NRHP-Listed Site

Limits of Proposed Streetscape Improvements

Limits of Proposed Pedestrian Wayfinding System

Notes:
1. Basemap: ESRI Online "World Imagery" Map Service.
2. This is a color graphic. Reproduction in grayscale may misrepresent the data.

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ESA Programmatic "No Effect" Determination
Project Eligibility Checklist

PIN: 4755.91 Date Completed: January 2016
Completed by: EDR

If all of the criteria listed below are met (marked YES), the project is **eligible** for coverage under the Programmatic "No Effect" Determination. If any criterion is not met (marked NO), the project is **not eligible** and the standard review procedures for endangered and threatened species apply (see TEM 4.4.9.3). The word "bat" below refers to both Indiana bat and northern long-eared bat.

1. The proposed activity is a NYSDOT or locally administered project using Federal-aid funding and FHWA is the NEPA Lead Agency.

   ☑ YES ☐ NO

2. The proposed activity is located within the operational right-of-way and existing facilities.

   ☑ YES ☐ NO

3. The proposed activity is included on the list of eligible highway/bridge work types (see next page).

   ☑ YES ☐ NO

4. The proposed activity does not include the repair, rehabilitation, replacement, or construction of culverts and open drainage systems, or bridge work within rivers, streams, or wetlands.

   ☑ YES ☐ NO

5. The proposed activity does not involve removal of suitable summer bat habitat (see Attachment 2: Suitable Bat Habitat Determination Protocol). NOTE: Checking "YES" requires the submittal of the Suitable Habitat Assessment Form to the FHWA Area Engineer and FHWA's Environmental Specialist.

   ☑ YES ☐ NO

6. The proposed activity does not occur within 0.5 miles of a known bat hibernaculum or 1.5 miles of a known summer roost location or forage habitat (Use IPaC- Information for Planning and Conservation- and NYNHP- New York Natural Heritage Database Program- for locations).

   ☑ YES ☐ NO

7. If the proposed project involves bridge work: The bridge work (maintenance, alteration, construction, demolition) will occur from October 1 to March 31, and the project does not involve any other type of work not included in the eligible highway/bridge types (see next page).

   ☐ YES ☑ N/A

8. If the proposed project involves bridge work: The bridge work (maintenance, alteration, construction, demolition) will occur from April 1 to September 30 and the project does not involve any other type of work not included in the eligible highway/bridge types (see next page). NOTE: This is a conditional "No Effect". The project is required to have a Bridge/Bat Survey (See Bridge/Bat Survey Protocol) completed within 7 days of anticipated work that concludes that there are no signs of bats for this "No Effect" to be valid. The Bridge/Bat Survey Form must be submitted to the FHWA Environmental Specialist upon completion. If there is a failure to conduct the Bridge/Bat Survey, this "No Effect" is invalidated. If the Bridge/Bat Survey shows signs of bats, this "No Effect" is invalidated and clearance is required from the USFWS before work can begin.

   ☐ YES ☑ N/A

Highway/Bridge Work Types

1. Joint and Crack Sealing
2. Pavement Marking
3. Impact Attenuator Repair or Replacement
4. Repair and Replace Loop Detectors
5. On-call Guide Rail Repair
6. Rigid Pavement Repairs (spall repair, grinding, etc.)
7. Pavement Grooving
8. Microsurfacing and Chip Sealing
9. Shoulder Rumble Strip Installation
10. Delineator and/or Reference Marker Placement or Replacement
11. Graffiti Removal and/or Prevention
12. Shoulder Rehabilitation and/or Repair
13. Traffic Management Systems Maintenance (communications cable, hardware for ITS, RWIS, etc.)
14. Highway Lighting Upgrading (excluding luminaire replacement and installation of high mast lighting)
15. Bicycle Path and Walkway Rehabilitation (e.g. ADA curb ramps)
16. Install, Replace and/or Repair Permanent Traffic Count Detectors
17. Install, Replace and/or Repair Weigh-in-Motion Detectors
18. Recharge Basin Reconditioning
19. Underdrain Installation
20. Guide Rail and/or Median Barrier Upgrading (including placement of new guide railing or median barrier)
21. Upgrading Sign(s) and/or Traffic Signal(s)
22. Install, Replace and/or Repair Right-Of-Way, Pedestrian and Permanent Snow Fencing
23. Park and Ride Lot Rehabilitation
24. 1R Projects that do not involve drainage work or work off of the paved surface/shoulder
25. 2R Projects that do not involve drainage work or work off of the paved surface/shoulder
26. 3R Projects (freeway and non-freeway) that do not involve drainage work, bridge work, or work off of the paved surface/shoulder
27. Highway-Rail Grade Crossing: installation of new and/or replacement of existing automatic warning devices
28. Highway-Rail Grade Crossing: installation of new and/or replacement of existing signage
29. Highway-Rail Grade Crossing: interconnection of grade crossing warning systems with vehicular traffic signal system
30. Highway-Rail Grade Crossing: surface replacement or upgrade
31. Bridge Work: Maintenance, alteration, and demolition of bridges/structures from October 1 to March 31 that does not include alteration of permanent street lighting and does not alter bat roost potential, or involve any work within rivers, streams, or wetlands, OR the same type of work between April 1 and September 30 that has negative Bridge/Bat Survey results.
32. Maintenance and Protection of Traffic (M&PT) activities within the operational right-of-way.

Suitable Habitat Assessment Form (Trees)

Project Name: Rochester Main Street Streetscape PIN: 4755.91

Acres Proposed to be Cut: 28 trees Lat/Long: 43° 9' 25.759"; -77° 36' 22.9998" (Main St. at Clinton Ave)

Project Description: This base project proposes to rehabilitate the existing pedestrian and bicycle facilities along East Main Street from the Genesee River to Liberty Pole Plaza. The extended project proposes wayfinding signage along the Main Street Corridor from Canal Street to Alexander Street. Also included in the project are enhancements to the Liberty Pole Plaza.

Results of Phase 1: Mapped Occurrences:

IPaC Species List	NYNHP Species List
Northern Long-eared Bat	Peregrine Falcon

Results of Phase 2: Field-based Suitable Bat Habitat Assessment:

- Does the Cutting Area contain forested/wooded habitat that is made up of trees greater than 3" dbh, that also exhibit signs of exfoliating bark, cracks crevices, and/or cavities, OR that also is mixed with larger trees? NO
- Does the Cutting Area have individual trees that have exfoliating bark, cracks, crevices, and/or cavities, and are closer than 1000' from other forested/wooded habitat? NO
- Does the Cutting Area contain adjacent and interspersed emergent wetlands and adjacent areas of agricultural fields, old fields, and pastures, and forests and woodlots (range from dense to loose aggregates of trees) that contain live trees and/or snags greater or equal to 3" dbh that have exfoliating bark, cracks, crevices, and/or cavities? NO

If the answer is yes to any of the above questions, the determination is that "Suitable Bat Habitat" exists within the Cutting Area.

Determination: ☐ Suitable Bat Habitat ☒ No Suitable Bat Habitat

Characterization/Description of the Habitat: Project area consist of urban street trees only. All trees are located along a main urban corridor along a fully developed roadway. Area is characterized by buildings, roadways, and sidewalks.

Comments (include specific bat species, if applicable, such as no Indiana bats if project elevation is over 900 ft NGVD, or roost trees for northern long-eared bat specifically were noted by NYNHP): Project area consists of urban street trees (trees found in highly-developed urban area) in downtown Rochester, NY. No suitable habitat for bat species was noted.

Name (individual completing the field assessment): Christy Conley, Caitlin Graff (EDR)

Signature: Date: January 2016

U.S. Fish & Wildlife Service

15076 Rochester Main Street

IPaC Trust Resource Report

Generated December 09, 2015 10:09 AM MST

This report is for informational purposes only and should not be used for planning or analyzing project-level impacts. For projects that require FWS review, please return to this project on the IPaC website and request an official species list from the Regulatory Documents page.

US Fish & Wildlife Service

IPaC Trust Resource Report

Project Description

NAME

15076 Rochester Main Street

PROJECT CODE

6S7RJ-KAB2V-FO7OI-IRLAL-LRVON4

LOCATION

Monroe County, New York

DESCRIPTION

No description provided

U.S. Fish & Wildlife Contact Information

Species in this report are managed by:

New York Ecological Services Field Office
3817 Luker Road
Cortland, NY 13045-9349
(607) 753-9334

Endangered Species

Proposed, candidate, threatened, and endangered species that are managed by the Endangered Species Program and should be considered as part of an effect analysis for this project.

This unofficial species list is for informational purposes only and does not fulfill the requirements under Section 7 of the Endangered Species Act, which states that Federal agencies are required to "request of the Secretary of Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action." This requirement applies to projects which are conducted, permitted or licensed by any Federal agency.

A letter from the local office and a species list which fulfills this requirement can be obtained by returning to this project on the IPaC website and requesting an official species list on the Regulatory Documents page.

Mammals

Northern Long-eared Bat Myotis septentrionalis Threatened

CRITICAL HABITAT
No critical habitat has been designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=A0JE

Critical Habitats

Potential effects to critical habitat(s) within the project area must be analyzed along with the endangered species themselves.

There is no critical habitat within this project area

Migratory Birds

Birds are protected by the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act.

Any activity which results in the take of migratory birds or eagles is prohibited unless authorized by the U.S. Fish and Wildlife Service (1). There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured.

You are responsible for complying with the appropriate regulations for the protection of birds as part of this project. This involves analyzing potential impacts and implementing appropriate conservation measures for all project activities.

American Bittern Botaurus lentiginosus — Bird of conservation concern
Season: Breeding
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0F3

Bald Eagle Haliaeetus leucocephalus — Bird of conservation concern
Year-round
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B008

Black Tern Chlidonias niger — Bird of conservation concern
Season: Breeding
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B09F

Black-billed Cuckoo Coccyzus erythropthalmus — Bird of conservation concern
Season: Breeding
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0HI

Black-crowned Night-heron Nycticorax nycticorax — Bird of conservation concern
Season: Breeding
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0EU

Blue-winged Warbler Vermivora pinus — Bird of conservation concern
Season: Breeding

Canada Warbler Wilsonia canadensis — Bird of conservation concern
Season: Breeding

Cerulean Warbler Dendroica cerulea — Bird of conservation concern
Season: Breeding
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B09I

Common Tern Sterna hirundo — Bird of conservation concern
Season: Breeding
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B09G

Golden-winged Warbler Vermivora chrysoptera — Bird of conservation concern
Season: Breeding
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0G4

Least Bittern Ixobrychus exilis — Bird of conservation concern
Season: Breeding

Olive-sided Flycatcher Contopus cooperi Bird of conservation concern
Season: Breeding
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0AN

Peregrine Falcon Falco peregrinus Bird of conservation concern
Season: Breeding
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0FU

Pied-billed Grebe Podilymbus podiceps Bird of conservation concern
Season: Breeding

Red-headed Woodpecker Melanerpes erythrocephalus Bird of conservation concern
Season: Breeding

Short-eared Owl Asio flammeus Bird of conservation concern
Season: Wintering
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0HD

Upland Sandpiper Bartramia longicauda Bird of conservation concern
Season: Breeding
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0HC

Willow Flycatcher Empidonax traillii Bird of conservation concern
Season: Breeding
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0F6

Wood Thrush Hylocichla mustelina Bird of conservation concern
Season: Breeding

Refuges

Any activity proposed on National Wildlife Refuge lands must undergo a 'Compatibility Determination' conducted by the Refuge. If your project overlaps or otherwise impacts a Refuge, please contact that Refuge to discuss the authorization process.

There are no refuges within this project area

Wetlands

Impacts to NWI wetlands and other aquatic habitats from your project may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal Statutes.

Project proponents should discuss the relationship of these requirements to their project with the Regulatory Program of the appropriate U.S. Army Corps of Engineers District.

DATA LIMITATIONS

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

DATA EXCLUSIONS

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

DATA PRECAUTIONS

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Wetland data is unavailable at this time.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Division of Fish, Wildlife and Marine Resources
New York Natural Heritage Program
625 Broadway, 5th Floor, Albany, New York 12233-4757
Phone: (518) 402-8935 • Fax: (518) 402-8925
Website: www.dec.ny.gov

January 08, 2016

Caitlin Graff
EDR
217 Montgomery Street, Suite 1000
Syracuse, NY 13202

Re: Rochester Main Street Streetscape Improvement Project (EDR Project No. 15076)
Town/City: City Of Rochester. County: Monroe.

Dear Caitlin Graff:

In response to your recent request, we have reviewed the New York Natural Heritage Program database with respect to the above project.

Enclosed is a report of rare or state-listed animals and plants, and significant natural communities that our database indicates occur, or may occur, on your site or in the immediate vicinity of your site.

For most sites, comprehensive field surveys have not been conducted; the enclosed report only includes records from our database. We cannot provide a definitive statement as to the presence or absence of all rare or state-listed species or significant natural communities. Depending on the nature of the project and the conditions at the project site, further information from on-site surveys or other sources may be required to fully assess impacts on biological resources.

Our database is continually growing as records are added and updated. If this proposed project is still under development one year from now, we recommend that you contact us again so that we may update this response with the most current information.

The presence of the plants and animals identified in the enclosed report may result in this project requiring additional review or permit conditions. For further guidance, and for information regarding other permits that may be required under state law for regulated areas or activities (e.g., regulated wetlands), please contact the appropriate NYS DEC Regional Office, Division of Environmental Permits, as listed at www.dec.ny.gov/about/39381.html.

Sincerely,

Andrea Chaloux

Andrea Chaloux
Environmental Review Specialist
New York Natural Heritage Program

1450

The following state-listed animals have been documented in the vicinity of your project site.

The following list includes animals that are listed by NYS as Endangered, Threatened, or Special Concern; and/or that are federally listed or are candidates for federal listing.

For information about any permit considerations for your project, contact the Permits staff at the NYSDEC Region 8 Office. For information about potential impacts of your project on these species, and how to avoid, minimize, or mitigate any impacts, contact the Wildlife Manager.

A listing of Regional Offices is at http://www.dec.ny.gov/about/558.html.

The following species have been documented near the project site, within 0.5 mile. Potential onsite and offsite impacts from the project may need to be addressed.

COMMON NAME	*SCIENTIFIC NAME*	*NY STATE LISTING*	*FEDERAL LISTING*	
Birds				
Peregrine Falcon *Breeding*	*Falco peregrinus*	Endangered		9340

This report only includes records from the NY Natural Heritage database. For most sites, comprehensive field surveys have not been conducted, and we cannot provide a definitive statement as to the presence or absence of all rare or state-listed species. Depending on the nature of the project and the conditions at the project site, further information from on-site surveys or other sources may be required to fully assess impacts on biological resources.

If any rare plants or animals are documented during site visits, we request that information on the observations be provided to the New York Natural Heritage Program so that we may update our database.

Information about many of the listed animals in New York, including habitat, biology, identification, conservation, and management, are available online in Natural Heritage's Conservation Guides at www.guides.nynhp.org, and from NYSDEC at www.dec.ny.gov/animals/7494.html.

Appendix C

Traffic Information

- **Resurfacing Safety Assessment Form**
- **Capital Projects Complete Streets Checklist**
- **Accident Analysis Summary**
- **Level of Service Summary**

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Resurfacing ADA and Safety Assessment Form (Page 1 of 2)

PIN =	4755.91	Date =	February 24, 2016	PIL, PII or HAL?	No
Safety Assessment Team Design = Traffic = Maintenance =		Kayle Stettner, Stantec Consulting Services			
ADT =	10200	Posted Speed =	30 MPH		

✓	Element	Guidance	Comments
The Following Elements Apply to all Single and Multicourse Resurfacing Projects (1R, 2R, and 3R):			
✓	Signing	Regulatory and warning signs should be installed as needed in accordance with the National MUTCD and NYS Supplement. Review signs for condition (obvious fading or graffiti), location, post type (breakaway or rigid), appropriateness (need). Immediately notify the Resident Engineer of any missing regulatory or warning signs. Identify regulatory and warning signs obscured by vegetation for clearing and grubbing.	Traffic signs appear to be in conformance with MUTCD standards. A complete review of the corridor will be conducted during final design.
✓	Pavement Markings	Pavement markings should be installed in accordance with the MUTCD. The adequacy of existing passing zones should be evaluated. Current EI's and specifications must be followed. See EI 13-021 to restripe 9' & 10' lane widths on high-speed highways to 11' where a 4' minimum shoulder can be retained. See EI 13-021 to restripe 12' and greater lane widths on low-speed highways with shoulders less than 4' to widen the shoulder.	Pavement markings appear to be in conformance with MUTCD standards. A complete review of the corridor will be conducted during final design.
✓	Delineation	Install per the National MUTCD and NYS Supplement.	None Present or Required
✓	ADA	Sidewalk curb ramps and crosswalks must be in reasonably close conformance to the requirements in HDM Section 7.3.2.1. Exceptions must be justified per HDM Ch 2, Section 2.8. Sidewalks and pedestrian signal upgrades are not required.	Several locations require cross slope, surface repair and detectable warning units installed.
✓	Rumble Strips	Include CARDs as required by EI 13-021. On rural, high-speed highways with 6' or wider shoulders, consider shoulder rumble strips, particularly where there is a history of run-off-road crashes.	None Present or Required
✓	Sight Distance	Consult HDM Chapters 2 and 5 to identify the standard sight distances for the posted speed. Clear and grub vegetation to improve the following sight distances that are observed to be substantially less than the standard (precise measurements and calculations are not required): • Intersection sight distance for right on red at signalized intersections and for left, through and right turns at unsignalized intersections and major driveways. • Sag vertical curve SSD obscured by overhead trees. • Horizontal SSD. Consider intersection warning signs for segments with sight distances that are observed to be substantially less than the standard and will not be improved.	Isolated sight distance limitations due to close proximity of buildings at intersections.
✓	Fixed Objects	For 1R projects: Address obvious objects that are within the prevailing clear area and within the ROW based on engineering judgment from a field visit (e.g., tree removal on the outside of a curve or installation of traversable driveway culvert end sections within the prevailing clear zone). For 2R/3R projects: Reestablish the clear zone and remove, relocate, modify to make crash worthy, shield by guide rail/crash cushion, or delineate any fixed objects. For guidance on identifying fixed objects, refer to HDM §10.3.1.2 B.	Fixed objects located within the clear zone are located behind existing curb.
✓	Guide Rail	Review the guide rail for: • Nonfunctioning or severely deteriorated rail (HDM §10.3.1.2 B) • Guide rail height (HDM Table 10-7 and current EI's) considering the proposed overlay thickness. • Deflection distance (HDM §10.2.2.3 and Table 10-3). • Point of need if the end section will be replaced (HDM §10.2.2.1). • Barrier Terminals/End Sections (HDM §10.2.5). • Install median barrier per HDM §10.2.4.	None Present or Required
✓	Bridge Rail Transitions	The Regional Structures Group, Regional Design Group, Main Office Structures, and Design Quality Assurance Bureau should be contacted, as needed, to help identify substandard connections to bridge rail and for the recommended treatment.	None Present or Required

Resurfacing ADA and Safety Assessment Form (Page 2 of 2)

✓	Element	Guidance	Comments
✓	Rail Road Crossing	Contact Regional Rail Coordinator. Contact Office of Design if replacing crossing surface as required per HDM Ch 23.	None Present or Required
✓	Shoulder Resurfacing	Unpaved, stabilized shoulders should be paved a minimum of 2' beyond the travelled way in uncurbed sections to reinforce the traveled way, for occasional bicyclists, and to improve safety. Design criteria for 2R/3R may require a wider width. A 1:10 pavement slope may be used to transition between the travel way paving and a paved shoulder that will not be resurfaced. Requires milling a longitudinal rebate and cannot exceed max rollover rate of 10% for ≤ 4' shoulders and 8% for wider shoulders.	Shoulders do not exist within the corridor. The corridor has curbed edge treatments adjacent to a travel lane or parking lane.
✓	Edge Drop-Offs	Edge drop-offs are not permitted between the traveled way and shoulder. Shoulder edge drop offs >2" are to be addressed via the safety edge (EI 10-012) in the §402 items or shoulder backup material. See above for overlays that do not pave the shoulder.	None Present, all streets have curbed edge treatments
✓	Super-elevation	Identify where the advisory speed, ball bank indicator, accelerometer, or record plans reveal superelevation that is less than recommended for the posted speed (using AASHTO Method 2 noted in HDM §5.7.3). Improve superelevation (up to the maximum rate as necessary using AASHTO Superelevation Distribution Method 2) to have the recommended speed equal to the posted speed. Where the maximum rate is insufficient, install advisory speed signs as needed and consider additional treatments (e.g., chevrons, roadside clearing), as needed.	None Present All horizontal curves within the project corridor exceed the minimum radius for superelevation. (HDM Exhibit 2-11)
The Following Additional Elements Are For 2R and 3R Projects:			
	Super-elevation	For Freeway projects, the superelevation is to be improved to meet the values in HDM Ch 2, Exhibits 2-13 or 2-14 (which utilizes AASHTO Superelevation Distribution Method 5).	
	Speed Change Lane	Speed change lanes should meet AASHTO "Green Book" Ch 10 standards. Shoulders for speed change lanes should meet HDM §2.7.5.3	
	Clear Zone(s)	Establish based on HDM §10.3.2.2 A for non-freeway and HDM §10.2.1 for freeways. Check all points of need (HDM §10.2.2.1).	
	Traffic Signals	Signal heads should be upgraded to meet current requirements. Detection systems should be evaluated for actuated signals and considered for fixed-time signals. New traffic signals that meet the signal warrants may be included	
	Shoulder Widening	Shoulders should be widened to 2' min on local rural roads and low speed collectors. 4' min is used for other non-freeway rural facilities for crash avoidance, bicyclists, and pedestrians.	
	Lane Widening	Non-freeway lanes may be widened per HDM Exhibits 7-5 and 7-9. New through travel lanes are not permitted.	
	Design Vehicle	Intersections should accommodate the design vehicle without encroachment into other travel lanes or turning lanes.	
	Driveways	Driveways shall meet the spirit and intent of the most recent "Policy and Standards for the Design of Entrances to State Highways" in Chapter 5, Appendix 5A of this manual.	
	Turn Lanes	Turn lanes should meet the requirements of HDM §5.9.8.2	
	Curbing	Curbing must meet the requirements of HDM §10.2.2.4. For freeways, curbing that cannot be eliminated should be replaced with the 1:3 slope, 4" high traversable curb.	
	Drainage	Closed drainage work may include new closed drainage structures, culverts, and the cleaning and repair of existing systems. Subsurface utility exploration should be considered for closed drainage system modifications.	
	Pedestrian & Bicycle	Sidewalk curb ramps and existing sidewalks must meet HDM Chapter 18 requirements. Consider cross walks and pedestrian push buttons at signals. Install pedestrian countdown timers as needed. Minimum shoulder width of 4' if no curbing.	

PIN:	4755.91	**Project Location:**	City of Rochester
Context:	☑ Urban/Village ☐ Suburban, or ☐ Rural		
Project Title:	Main Street Streetscape and Wayfinding Project		

STEP 1- APPLICABILITY OF CHECKLIST		
1.1	Is the project located entirely on a facility where bicyclists and pedestrians are prohibited by law and the project does not involve a shared use path or pedestrian/bicycle structure? *If **no**, continue to question 1.2. If **yes**, stop here.*	☐ **Yes** ☑ **No**
1.2	a. Is this project a 1R* Maintenance project? *If **no**, continue to question 1.3. If **yes**, go to part b of this question.* b. Are there opportunities on the 1R project to improve safety for bicyclists and pedestrians with the following Complete Street features? • Sidewalk curb ramps and crosswalks • Shoulder condition and width • Pavement markings • Signing *Document opportunities or deficiencies in the IPP and **stop here.*** ** Refer to Highway Design Manual (HDM) Chapter 7, Exhibit 7-1 "Resurfacing ADA and Safety Assessment Form" under ADA, Pavement Markings and Shoulder Resurfacing for guidance.*	☐ **Yes** ☑ **No** ☐ **Yes** ☐ **No**
1.3	Is this project a Cyclical Pavement Marking project? *If **no**, continue to question 1.4. If **yes**, review EI 13-021* and identify opportunities to improve safety for bicyclists and pedestrians with the following Complete Streets features:* • Travel lane width • Shoulder width • Markings for pedestrians and bicyclists *Document opportunities or deficiencies in the IPP and **stop here.*** ** EI 13-021, "Requirements and Guidance for Pavement Marking Operations - Required Installation of CARDS and Travel Lane and Shoulder Width Adjustments".*	☐ **Yes** ☑ **No**
1.4	Is this a Maintenance project *(as described in the "Definitions" section of this checklist)* and different from 1.2 and 1.3 projects? *If **no**, continue to Step 2. If **yes,** the Project Development Team should continue to look for opportunities during the Design Approval process to improve existing bicycle and pedestrian facilities within the scope of project. Identify the project type in the space below and **stop here.*** [ ]	☐ **Yes** ☑ **No**

STEP 1 prepared by: Sean W. Miller Date: 2/27/2016

STEP 2 - IPP LEVEL QUESTIONS (At Initiation)			**Comment/Action**
2.1	Are there public policies or approved known development plans (e.g., community Complete Streets policy, Comprehensive Plan, MPO Long Range and/or Bike/Ped plan, Corridor Study, etc.) that call for consideration of pedestrian, bicycle or transit facilities in, or linking to, the project area? *Contact municipal planning office, Regional Planning Group and Regional Bicycle/Pedestrian Coordinator.*	☑ **Yes** ☐ **No**	[ ]

2.2	Is there an existing or planned sidewalk, shared use path, bicycle facility, pedestrian-crossing facility or transit stop in the project area?	☑ **Yes** ☐ **No**	
2.3	a. Is the highway part of an existing or planned State, regional or local bicycle route? *If **no**, proceed to question 2.4. If **yes**, go to part b of this question.* b. Do the existing bicycle accommodations meet the minimum standard guidelines of HDM Chapter 17 or the AASHTO "Guide for the Development of Bicycle Facilities"? * *Contact Regional Bicycle/Pedestrian Coordinator* ** Per HDM Chapter 17- Section 17.4.3, Minimum Standards and Guidelines.*	☐ **Yes** ☑ **No** ☐ **Yes** ☐ **No**	
2.4	Is the highway considered important to bicycle tourism by the municipality or region?	☑ **Yes** ☐ **No**	
2.5	Is the highway affected by special events (e.g., fairs, triathlons, festivals) that might influence bicycle, pedestrian or transit users? *Contact Regional Traffic and Safety*	☑ **Yes** ☐ **No**	
2.6	Are there existing or proposed generators within the project area (*refer to the "Guidance" section*) that have the potential to generate pedestrian or bicycle traffic or improved transit accommodations? *Contact the municipal planning office, Regional Planning Group, and refer to the CAMCI Viewer, described in the "Definitions" section.*	☑ **Yes** ☐ **No**	
2.7	Is the highway an undivided 4 lane section in an urban or suburban setting, with narrow shoulders, no center turn lanes, and existing Annual Average Daily Traffic (AADT) < 15,000 vehicles per day? *If **yes**, consider a road diet evaluation for the scoping/design phase. Refer to the "Definitions" section for more information on road diets.*	☐ **Yes** ☑ **No**	
2.8	Is there evidence of pedestrian activity (e.g., a worn path) and no or limited pedestrian infrastructure?	☐ **Yes** ☑ **No**	

STEP 2 prepared by: Kayle R. Stettner Date: 2/27/2016

Bicycle/Pedestrian Coordinator has been provided an opportunity to comment: ☐ **Yes** ☑ **No**

ATTACH TO IPP AND INCLUDE RECOMMENDATIONS FOR SCOPING/DESIGN.

STEP 3 - PROJECT DEVELOPMENT LEVEL QUESTIONS (Scoping/Design Stage)			**Comment/Action**
3.1	Is there an identified need for bicycle/pedestrian/ transit or "way finding" signs that could be incorporated into the project?	☑ **Yes** ☐ **No**	
3.2	Is there history of bicycle or pedestrian crashes in the project area for which improvements have not yet been made?	☐ **Yes** ☑ **No**	
3.3	Are there existing curb ramps, crosswalks, pedestrian traffic signal features, or sidewalks that don't meet ADA standards per HDM Chapter 18?	☑ **Yes** ☐ **No**	
3.4	Is the posted speed limit is 40 mph or more and the paved shoulder width less than 4' (1.2 m) (6' in the Adirondack or other State Park)? *Refer to EI 13-021*.	☐ **Yes** ☑ **No**	
3.5	Is there a perceived pedestrian safety or access concern that could be addressed by the use of traffic calming tools (e.g., bulb outs, raised pedestrian refuge medians, corner islands, raised crosswalks, mid-block crossings)?	☐ **Yes** ☑ **No**	
3.6	Are there conflicts among vehicles (moving or parked) and bike, pedestrian or transit users which could be addressed by the project?	☑ **Yes** ☐ **No**	
3.7	Are there opportunities (or has the community expressed a desire) for new/improved pedestrian-level lighting, to create a more inviting or safer environment?	☑ **Yes** ☐ **No**	
3.8	Does the community have an existing street furniture program or a desire for street appurtenances (e.g., bike racks, benches)?	☑ **Yes** ☐ **No**	
3.9	Are there gaps in the bike/pedestrian connections between existing/planned generators? *Consider locations within and in close proximity of the project area. (Within 0.5 mi (800 m) for pedestrian facilities and within 1.0 mi (1600 m) for bicycle facilities.)*	☐ **Yes** ☑ **No**	
3.10	Are existing transit route facilities (bus stops, shelters, pullouts) inadequate or in inconvenient locations? (e.g., not near crosswalks) *Consult with Traffic and Safety and transit operator, as appropriate*	☐ **Yes** ☑ **No**	
3.11	Are there opportunities to improve vehicle parking patterns or to consolidate driveways, (which would benefit transit, pedestrians and bicyclists) as part of this project?	☑ **Yes** ☐ **No**	

3.12	Is the project on a "local delivery" route and/or do area businesses rely upon truck deliveries that need to be considered in design?	☑ **Yes** ☐ **No**	
3.13	Are there opportunities to include green infrastructure which may help reduce stormwater runoff and/or create a more inviting pedestrian environment?	☑ **Yes** ☐ **No**	
3.14	Are there opportunities to improve bicyclist operation through intersections and interchanges such as with the use of bicycle lane width and/or signing?	☑ **Yes** ☐ **No**	

STEP 3 prepared by: Kayle r. Stettner Date: 2/27/2016

Preparer's Supporting Documentation, Comments and Clarifications:

Last Revised 06/22/2015

Introduction

The intent of this checklist is to assist in the identification of needs for Complete Streets design features on Capital projects, including locally-administered projects.

This checklist is one tool that NYSDOT employs in its integrated approach to Complete Streets considerations. It provides a focused project-level evaluation which aids in identifying access and mobility issues and opportunities within a defined project area. For broader geographic considerations (e.g., bicycle route planning, corridor continuity), NYSDOT and other state and local agencies use a system-wide approach to identifying complete streets opportunities.

Use of this checklist is initiated during the earliest phase of a project, when information about existing conditions and needs may be limited; it is therefore likely that the Preparer will only be able to complete Steps 1 and 2 at this time. As the project progresses, and more detailed information becomes available, the Preparer will be able to complete Step 3 and continue to refine earlier answers, to give an increasingly accurate indication of needs and opportunities for Complete Streets features.

Guidance for Steps 1, 2 and 3

Based on the guidance below, the Regions will assign the appropriate staff to complete each step in the Checklist. The Preparer should have expertise in the subject matter and be able to effectively work with and coordinate comments/responses with involved Regional Groups.

- Steps 1 & 2: Preparer is from Planning; review occurs as part of the normal IPP process.
- Step 3: Preparer is Project Designer; review occurs as part of Design Approval Document review/approval process.
- For Local Projects - Local Project Sponsors will be responsible for completing all steps.

a. A check of "yes" indicates a need to further evaluate the project for Complete Streets features. Please identify in the comment box, or append at the end of the checklist, any supporting information or documentation.

b. Answers to the questions should be checked with the local municipality, transit provider, MPO, etc., as appropriate, to ensure accuracy and evaluate needed items versus desirable items (i.e., prioritize needs).

c. Answers to the questions should be coordinated with NYSDOT Regional program areas as appropriate (e.g., Traffic and Safety, Landscape Architecture, Maintenance, etc.)

d. This checklist should be reviewed during the development of the IPP, Scoping Document, and Design Approval Document; and revisited due to a project delay or if site conditions or local planning changes during the project

development process. Continued coordination with the Regional Bicycle and Pedestrian Coordinator is necessary throughout project scoping and design.

e. It will be assumed that the Project Description and Limits will be as described in the IPP for Step I, the Scoping Document for Step 2 and the Design Approval Document for Step 3. Preparers should describe any deviations from this assumption under "Preparer's Supporting Documentation".

f. For the purposes of this checklist, the "project area" is within 0.5 mi (800 m) for pedestrian facilities and 1.0 mi (1600 m) for bicycle facilities. In some circumstances, bicyclists may travel up to 7 miles for a unique generator, attraction or event. These special circumstances may be considered and described as appropriate.

g. For background on Complete Streets features and terminology, please visit the following websites:

http://www.fhwa.dot.gov/environment/bicycle_pedestrian/guidance/design_guidance/design_nonmotor/highway/index.cfm
http://www.fhwa.dot.gov/publications/publicroads/10julaug/03.cfm
http://www.smartgrowthamerica.org/complete-streets/

h. Refer to *Highway Design Manual* Chapter 18, Section 18.5.1 for further information and guidance on the use of this checklist.

i. For projects with multiple sites, Preparers may choose to prepare multiple checklists for each site.

Definitions

- CAMCI (Comprehensive Asset Management/Capital Investment) Viewer - A web-based GIS application used for planning purposes and located at http://gisweb/camci/.
- Generator - A generator, in this document, refers to both origins and destinations for bicycle and/or pedestrian trips (e.g., schools, libraries, shopping areas, bus stops, transit stations, depots/terminals).
- HDM - New York State Department of Transportation's *Highway Design Manual*.
- Maintenance project - For the purposes of this checklist, maintenance projects are listed as the following project types: Rigid pavement repairs, pavement grooving, drainage system restoration, recharge basin reconditioning, SPDES facilities maintenance, underdrain installation, guide rail and/or median barrier upgrading, impact attenuator repair, and/or replacement, reference marker replacement, traffic management systems maintenance, repair and replace loop detectors, highway lighting upgrades, noise wall rehab/replacement, retaining wall rehab/replacement, graffiti removal/prevention, vegetation management, permanent traffic count detectors, weigh-in-motion detectors, slope stabilization, ditch cleaning, bridge washing/cleaning, bridge joint repair, bridge painting and crack sealing.
- MPO (Metropolitan Planning Organization) - A federally mandated and federally funded transportation policy-making organization made up of representatives from local government and governmental transportation authorities.
- Raised Pedestrian Refuge Medians and Corner Islands - Raised elements within the street at an intersection or midblock crossing that provide a clear or safety zone to separate pedestrians, bicyclists, and other non-motorized modes, from motor vehicles . See FHWA's *Safety Effects of Marked vs. Unmarked Crosswalks at Uncontrolled Locations* at http://www.fhwa.dot.gov/publications/research/safety/04100/04100.pdf.
- Road diet - A transportation planning technique used to achieve systemic improvements to safety or provide space for alternate modes of travel. For example, a two-way, four lane road might be reduced to one travel lane in each direction, with more space allocated to pedestrian and cyclist facilities. Also known as a lane reduction or road re-channelization.
- Transit facilities - Includes facilities such as transit shelters, bus turnouts and standing pads.
- 1R project - A road resurfacing project that includes the placement or replacement of the top and/or binder pavement course(s) to extend or renew the existing pavement design life and to improve serviceability while not degrading safety.
- 2R project - A multicourse structural pavement and resurfacing project that may include: milling, super elevation, traffic signals, turn lanes, driveway modifications, roadside work, minor safety work, lane and shoulder widening, shoulder reconstruction, drainage work, sidewalk curb ramps, etc.

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Stantec

Memo

To: Kayle Stettner
Rochester NY Office

From: Jon Hartley
Rochester NY Office

File:

Date: March 1, 2016

Reference: City of Rochester East Main Street
Genesee River to Stillson Street
Accident Analysis

Accident History Overview

The most recent available accident information was provided by the City of Rochester for East Main Street between the Genesee River and Stillson Street. Information available represents a 36-month period between 6/7/2012 and 7/10/2015 and includes both pre and post 2-way conversion conditions. The 2-way conversion of Clinton Ave and Saint Paul north of East Main Street occurred on/after October 17, 2014 as a result of the opening of the new Transit Center located just north of the project corridor. The accident history within the project limits identified a total of eighty-eight (88) accidents occurred with seventy (70) accidents occurring pre 2-way and eighteen (18) occurring post 2-way. All but one (1) of the accidents on East Main Street were reportable accidents with nineteen (19) non-fatal injury accidents and sixty-eight (68) property damage. The following list summarizes the types and number of non-reportable and reportable accidents.

Accident Type Summary			
	Number (%) of Accidents		
Accident Type	Pre 2-Way	Post 2-Way	Total
Rear End	27 (38.6%)	5 (27.7%)	32 (36.4%)
Right Angle	3 (4.3%)	1 (5.6%)	4 (4.5%)
Right Turn	4 (5.7%)	1 (5.6%)	5 (5.7%)
Driveway	0 (0%)	0 (0%)	0 (0%)
Sideswipe	15 (21.4%)	5 (27.7%)	20 (22.7%)
Left Turn	4 (5.7%)	3 (16.6%)	7 (8.0%)
Overtaking	0 (0%)	1 (5.6%)	1 (1.1%)
Backing	2 (2.9%)	0 (0%)	2 (2.3%)
Head On	0 (0%)	0 (0%)	0 (0%)
Fixed Object	3 (4.3%)	1 (5.6%)	4 (4.5%)
Pedestrian	11 (15.7%)	0 (0%)	11 (12.5%)
Bicycle	1 (1.4%)	0 (0%)	1 (1.1%)
Unknown	0(0%)	1 (5.6%)	1 (1.1%)
Total	**70 (100%)**	**18 (100%)**	**88 (100%)**

Accident Rate Summary

Pre 2-Way Accident Rates (non-reportable and reportable)			
Intersection	**Number of Accidents**	**County Rate**	**Actual Rate**
Intersection Rate (excludes midblock accidents)			
Saint Paul Street/South Ave	18	0.68	1.22 ACC/MEV
Stone Street	3	0.39	0.29 ACC/MEV
Clinton Avenue	10	0.68	0.61 ACC/MEV
East Avenue/Franklin Street	13	0.68	1.23 ACC/MEV
Link Rate (includes midblock and intersection accidents)			
Genesee River to Stillson St	70	4.19	7.47 ACC/MVM

Note: Locations exceeding county wide accident rates are highlighted in red.

Post 2-Way Accident Rates (non-reportable and reportable)			
Intersection	**Number of Accidents**	**County Rate**	**Actual Rate**
Intersection Rate (excludes midblock accidents)			
Saint Paul Street/South Ave	5	0.68	0.95 ACC/MEV
Stone Street	0	0.39	0.00 ACC/MEV
Clinton Avenue	5	0.68	0.85 ACC/MEV
East Avenue/Franklin Street	2	0.68	0.53 ACC/MEV
Link Rate (includes midblock and intersection accidents)			
Genesee River to Stillson St	18	4.19	5.39 ACC/MVM

Note: Locations exceeding county wide accident rates are highlighted in red.

East Main Street is a minor arterial corridor within the project limits and provides an important river crossing linking both sides of the Central Business district. Signalized intersections are located at St. Paul/South, Stone Street, Clinton Ave, Cortland Street and East Ave/Franklin Street. Andrew Langston Way (Euclid Street) is the only unsignalized intersection within the project limits and is currently one-way southbound. St. Paul/South, Clinton and East Ave are minor arterial streets with St.Paul/South and Clinton being primary North-South commuter routes within the Central Business District. Stone Street, Cortland Street and Euclid Street are classified as 'Local' City streets. The Convention Center, Raddisson Hotel, Hyatt Regency Hotel and Monroe Community College Damon City Campus are all located within the project limits. In addition, the Rochester Transit Center is located just north of the project and is now the hub of bus operations in the City. The overall corridor characteristics includes a varied mixture of commuters, visitors and buses and reflects the broad range of accident types including rear-ends, sideswipes, ped-bike and left turn.

The accident severity for East Main Street included 17 injuries (24%) and 52 (74%) property damage only for pre 2-way conditions and 2 injuries (11%) and 16 (89%) property damage only for post 2-way conditions. The primary contributing factors were driver inattention, unsafe lane changes, following too closely and failure to yield right-of-way. The biggest shift in accident patterns after the 2-way conversion was a decrease in pedestrian accidents.

Pedestrian / Bicycle Accidents

Of the eleven (11) accidents involving pedestrians five (5) were a result of the vehicle failing to yield right-of-way and six (6) were pedestrian error. The following is a summary of ped accidents which all occurred before the 2-way conversion:

- One (1) just west of St. Paul/South while crossing East Main Street: ped error.
- One (1) at St. Paul/South Ave intersection while crossing East Main Street: driver error.
- Two (2) at St. Paul/South Ave intersection while crossing St. Paul: ped error.
- One (1) occurred while crossing East Main Street at Stone Street: ped error.
- Two (2) between Stone and Clinton while crossing East Main Street: ped error.
- One (1) at Clinton Street while crossing East Main Street: driver error.
- Two (2) at East Ave/Franklin Street while crossing East Main Street: driver error.
- One (1) just east of East Ave involving a medical transport: driver error.

The opening of the Transit Center resulted in the removal of the existing bus shelters and eliminating several bus stops within the project limits. As a result pedestrian activity has decreased which has also been reflected in the reduction in pedestrian accidents.

One (1) bicycle accident occurred at the Hyatt Regency driveway involving a vehicle exiting and was due to driver error from failing to yield right-of-way.

St. Paul/South Ave intersection

This intersection has an accident rate higher than the county wide rate (0.68 acc/mev) for the pre and post 2-way conversion analysis periods. There were a total of eighteen (18) pre 2-way conversion accidents and five (5) post 2-way conversion accidents. The majority of accidents on this approach were The high number of pre 2-way sideswipes on the St. Paul approach may be a result of the multiple lanes at the time.

The 2-way conversion along with a potential road diet on East Main Street should help to reduce driver confusion regarding lane usage. No additional mitigation measures are recommended at this time.

Stone Street Intersection

This intersection has an accident rate was below County wide rate for pre and post 2-way conditions. There were three (3) pre 2-way accidents and no post 2-way accidents with no apparent geometric or intersection related factors. No mitigation measures are recommended.

Clinton Ave Intersection

This intersection experienced accident rates just below County Wide average for the pre 2-way condition and above County Wide average for post 2-way conditions. There were a total of ten (10) pre 2-way conversion accidents and five (5) post 2-way conversion accidents. The predominant number of sideswipes on Clinton Ave northbound may be a result of the multiple narrow lanes (10' wide) on this approach. There were no other apparent geometric or intersection related factors therefore no mitigation measures are recommended.

Cortland Street

There were no reported accidents at Cortland Street therefore no mitigation measures are recommended.

East Ave/Franklin Street

This intersection had an accident rate higher than County Wide average for the pre 2-way conditions. There were a total of thirteen (13) pre 2-way conversion accidents and two (2) post 2-way conversion accidents. Six (6) rear end accidents occurred in the eastbound direction which was the predominant accident pattern however no apparent geometric or intersection related factors were involved. No mitigation measures are recommended.

Summary

Recent changes to the corridor may have helped reduce accident rates by eliminating travel lanes. Removal of the bus shelters and bus stops appears to have had an immediate impact on the prevalent pre 2-way pedestrian accidents. While the introduction of a new traffic pattern may incur short term accident patterns the long term benefit can be seen in the reduction of multi-lane accident patterns including sideswipes and overtaking. The lane reduction in the westbound direction on East Main Street may help to further reduce the potential for sideswipe accidents but may also increase the potential for rear-end accidents due to increases in queue lengths.

Based on the above evaluation no mitigation measures are recommended within the corridor.

Stantec Consulting Services, Inc.

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Transportation Engineer, Transportation Planning
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Fax: (585) 427-9124
jon.hartley@stantec.com

Attachment: Accident Summary Reports and Accident Diagrams

DETAILS OF ACCIDENT HISTORY

Stantec

Diagram: East Main

County of Monroe

Town of City of Rochester

Street Name: East Main Street

Route Number:

Location: East Main St. Pre-10/17/2014

Milepost: Genesee River To: Stillson Street

Date of Report: 3/4/2016

P.I.N. _____

Case No. _____

File _____

By _____

Page Number 1

PERIOD STUDIED

From 6/7/2012

To: 7/10/2015

38 Months

(1) No.	(2) Date	(3) Time	(4) Vehicles	(5) Severity	(6) Light Cond	(7) Road Cond	(8) Surf Cond	(9) Weather	(10) Apparent Contributing Factors	(11) Acc. Type	(12) Description
1	9/29/2014	7:31	2	PDO	1	4	1	1	18	Side	Vehicle 1 turned right from left lane and struck Vehicle 2 who was also truning right from the right lane, Vehicle 1 left the scene (18) Turning Improperly
2	9/28/2014	9:01	3	PDO	1	1	1	1	7	Left	Vehicle 1 turned left in front of oncoming Vehicle 2, Vehicle 1 side swiped Vehicle 2 causing a collision with Vehicle 3 (7) Failure to Yield Right of Way
3	8/20/2014	8:14	2	PDO	1	1	1	1	7,20	Rght	Vehicle 2 turned right from left lane in front of Vehicle 1 who was also making a right turn (7) Failure to Yield Right of Way (20) Unsafe Lane Changing
4	8/1/2014	10:46		PDO	1	1	1	1	9	REnd	Vehicle 2 stopped at traffic light Vehicle 1 could not stop and rear ended Veh. 2 (9) Following Too Closely
5	7/16/2014	18:03		Inj	1	1	1	1	69,14	Pedn	Pedestrain ran across road and was struck by Vehicle 1, Vehicle 1 fled the scene (69) View Obstructed/Limited (14) Pedestrian's Error/Confusion
6	7/5/2014	1:13		PDO	4	1	1	1	3,4	Back	Vehicle 1 unsafely tried to perfom a U-Turn but backed into Vehicle 2 while doing so, Vehicle 1 fled the scene (3) Backing Unsafely (4) Driver Inattention
7	6/27/2014	19:15		Inj	1	1	1	1	14	Pedn	Pedestrian claimed to be hit by Vehicle 1 that was backing up, the driver did not see or know that he had hit the pedestrian (14) Pedestrian's Error/Confusion
8	5/18/2014	10:58		Inj	1	2	1	1	20	RAng	Vehicle 1 struck vehicle 2 while making a right turn into the Radisson, Vehicle 1 had then hit a concrete structure (20) Unsafe Lane Changing
9	4/26/2014	0:29		PDO	4	1	1	2	4	REnd	Vehicle 2 was rear ended by Vehicle 1 while waiting for an uninvolved Vehicle to make a left turn. Vehicle 1 sped off fleeing the scene (4) Driver Inattention
10	4/23/2014	9:40		PDO	1	1	2	3	4	REnd	Vehicle 1,2, and 3 were all stopped by a traffic signal, Vehicle 1 struck Vehicle 2 causing Veh 2. to strike Veh. 3 (4) Driver Inattention
11	3/4/2014	3:40		Inj	4	1	1	1	46	FixO	Vehicle 1 lost control and jumped curb and hit a light pole, driver fled scene (46) Steering Failure

DETAILS OF ACCIDENT HISTORY

Stantec

Diagram: East Main

County of Monroe

Town of City of Rochester

Street Name: East Main Street

Route Number:

Location: East Main St. Pre-10/17/2014

Milepost: Genesee River **To:** Stillson Street

Date of Report: 3/4/2016

P.I.N. _____

Case No. _____

File _____

By _____

Page Number 2

PERIOD STUDIED

From 6/7/2012

To: 7/10/2015

38 Months

(1) No.	(2) Date	(3) Time	(4) Vehicles	(5) Severity	(6) Light Cond	(7) Road Cond	(8) Surf Cond	(9) Weather	(10) Apparent Contributing Factors	(11) Acc. Type	(12) Description
12	2/26/2014	14:34		PDO	1	1	1	1	4,3	Back	Vehicle 1 stopped too close to cross walk and proceeded to back up and hit Vehicle 2 (4) Driver Inattention (3) Backing Unsafely
13	2/23/2014	2:49		Non	4	2	1	1	20	Side	Vehicle 2 traveling in the right hand lane was sideswiped by Vehicle 1 traveling in the left hand lane, Vehicle 1 fled the scene (20) Unsafe Lane Changing
14	2/18/2014	8:55		PDO	1	1	2	4	9	REnd	Vehicle 1 was traveling behind Vehicle 2, when traffic stopped Vehicle 1 rear ended Vehicle 2 (9) Following Too Closely
15	2/18/2014	18:57		PDO	4	1	4	2	9	REnd	Vehicle 1 rear ended Vehicle 2 pulling into the Hyatt Taxi parking area (9) Following Too Closely
16	1/30/2014	16:33		PDO	1	1	1	2	4,60	Side	Vehicle 1 sideswiped Vehicle 2 by attempting to turn left during restricted left turn hours (4) Driver Inattention (60) Other Vehicular
17	1/5/2014	14:39		PDO	1	1	2	2	4	Left	Vehicle 1 struck Vehicle 2 while making a left turn on to East Main St from Euclid St (4) Driver Inattention
18	1/3/2014	11:56		PDO	1	1	4	1	66	REnd	Vehicle 1 applied brakes but could not stop due to slippery conditions and rear ended Vehicle 2 at intersection (66) Pavement Slippery
19	11/22/2013	1:50		PDO	4	1	2	3	2,18	FixO	Vehicle 1 improperly executed a slight turn and struck a traffic pole, Driver 1 was arrested for DWI (2) Alcohol Involvement (18) Turning Improperly
20	11/21/2013	20:09		PDO	4	2	2	3	7,69	Pedn	Vehicle 1 was making a right turn and struck a pedestrian in a motorized wheelchair, Pedestrian was wearing dark clothing (7) Failure to Yield Right of Way (69) View Obstructed/Limited
21	11/16/2013	19:49	2	PDO	4	1	1	1	13	Side	Vehicle 1 changed lanes and struck Vehicle 2 (13) Passing or Lane Usage Improper
22	10/31/2013	23:25		PDO	4	1	2	3	60,40	FixO	Vehicle 1 had to swerve to avoid an a minivan who was turning left from the right lane, vehicle 1 struck a light pole (60) Other Vehicular (40) Other Human

DETAILS OF ACCIDENT HISTORY

Stantec

Diagram: East Main

County of Monroe

Town of City of Rochester

Street Name: East Main Street

Route Number:

Location: East Main St. Pre-10/17/2014

Milepost: Genesee River To: Stillson Street

Date of Report: 3/4/2016

P.I.N. _____

Case No. _____

File _____

By _____

Page Number 3

PERIOD STUDIED

From 6/7/2012

To: 7/10/2015

38 Months

(1) No.	(2) Date	(3) Time	(4) Vehicles	(5) Severity	(6) Light Cond	(7) Road Cond	(8) Surf Cond	(9) Weather	(10) Apparent Contributing Factors	(11) Acc. Type	(12) Description
23	10/20/2013	12:14		Inj	1	1	1	1	4	REnd	Vehicle 1 rear ended Vehicle 2 at intersection (4) Driver Inattention
24	9/21/2013	9:08		PDO	1	1	2	3	17,4	RAng	Vehicle 1 passed through a red light and collided with Vehicle 2 (17) Traffic Control Disregarded (4) Driver Inattention
25	9/12/2013	0:00		Inj	4	1	1	1	4,4	Pedn	Vehicle 1 struck pedestrian crossing NB using crosswalk, Vehicle 1 left the scene (4) Driver Inattention (4) Driver Inattention
26	9/9/2013	18:36		PDO	1	1	1	2	4	REnd	Vehicle 1 rear ended Vehicle 2 (4) Driver Inattention
27	8/27/2013	17:19	2	PDO	1	1	1	1	18	Side	Vehicle 1 sideswiped Vehicle 2 while attempting to make a right turn infront of Vehicle 2 (18) Turning Improperly
28	8/12/2013	17:51		Inj	1	1	1	1	17	Pedn	Vehicle 1 passed through a red light at struck a pedestrian at the crosswalk (17) Traffic Control Disregarded
29	8/10/2013	14:13		Inj	1	1	1	1	11	Pedn	Driver 1 of Veh. 1 lost consciousness and hit a pedestrian who was working behind a medical transport (11) Lost Consciousness
30	8/6/2013	14:06	2	PDO	1	1	1	1	18	Side	Vehicle 1 sideswiped Vehicle 2 while both were making a left turn, Veh. 1 was in the straight only lane and Veh. 2 was in the Left turn lane (18) Turning Improperly
31	8/5/2013	13:20		Inj	1	1	1	1	9	REnd	Vehicle 1 rear ended Vehicle 2 at intersection (9) Following Too Closely
32	7/27/2013	12:09		PDO	1	1	1	2	7,13	Side	Vehicle 1 struck Vehicle 2 while pulling out from a parking space (7) Failure to Yield Right of Way (13) Passing or Lane Usage Improper
33	7/9/2013	17:30		PDO	1	1	1	2	7	Side	The front passenger door of Vehicle 1 struck Vehicle 2 as a passenger was entering the front passenger door. (7) Failure to Yield Right of Way

DETAILS OF ACCIDENT HISTORY

Stantec

Diagram: East Main

County of Monroe

Town of City of Rochester

Street Name: East Main Street

Route Number:

Location: East Main St. Pre-10/17/2014

Milepost: Genesee River To: Stillson Street

Date of Report: 3/4/2016

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Case No. _____

File _____

By _____

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PERIOD STUDIED

From 6/7/2012

To: 7/10/2015

38 Months

(1) No.	(2) Date	(3) Time	(4) Vehicles	(5) Severity	(6) Light Cond	(7) Road Cond	(8) Surf Cond	(9) Weather	(10) Apparent Contributing Factors	(11) Acc. Type	(12) Description
34	7/6/2013	14:58		PDO	1	1	1	1	4	REnd	Vehicle 1 rear ended Vehicle 2 (4) Driver Inattention
35	7/1/2013	10:38		PDO	1	1	1	1	4	REnd	Vehicle 1 rear ended Vehicle 2 (4) Driver Inattention
36	5/29/2013	10:45	2	PDO	1	1	1	2	7,4	Left	Vehicle 1 chnaged lanes and struck Vehicle 2 which was traveling straight (7) Failure to Yield Right of Way (4) Driver Inattention
37	4/26/2013	15:41		PDO	1	1	1	1	9	REnd	Vehicle 1 rear ended Vehicle 2 (9) Following Too Closely
38	4/16/2013	8:21		PDO	1	1	1	1	9,40	REnd	Vehicle 1 rear ended vehicle 2 (9) Following Too Closely (40) Other Human
39	3/21/2013	18:18		Inj	1	1	1	2	17	Pedn	Pedestrian stepped out into road without looking Vehicle 1 struck pedestrian after going through a green light (17) Traffic Control Disregarded
40	3/17/2013	1:55		PDO	4	1	1	1	20	Side	Vehicle 1 attempted a lane change and struck Vehicle 2 (20) Unsafe Lane Changing
41	3/13/2013	12:49		PDO	1	1	2	4	4	REnd	Vehicle 1 rear ended Vehicle 2, Vehicle 2 fled the scene (4) Driver Inattention
42	3/13/2013	7:43	2	PDO	1	1	1	1	18	Rght	Vehicle 2 (Truck) was exectuing a wide right turn and Vehicle 1 tried to sneak around him and struck Vehicle 2 in the tire. (18) Turning Improperly
43	3/12/2013	15:15	2	PDO	1	1	1	2	18	Side	Vehicle 1 and Vehicle 2 collided while both making a right turn out of two adjacent lanes (18) Turning Improperly
44	3/2/2013	14:53		Inj	1	1	1	2	5,3	REnd	Vehicle 2 backed up slighlty and Vehicle 1 had rear ended Vehicle 2 (5) Driver Inexperience (3) Backing Unsafely

DETAILS OF ACCIDENT HISTORY

Stantec

Diagram: East Main

County of Monroe

Town of City of Rochester

Street Name: East Main Street

Route Number:

Location: East Main St. Pre-10/17/2014

Milepost: Genesee River To: Stillson Street

Date of Report: 3/4/2016

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Case No. _____

File _____

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PERIOD STUDIED

From 6/7/2012

To: 7/10/2015

38 Months

(1) No.	(2) Date	(3) Time	(4) Vehicles	(5) Severity	(6) Light Cond	(7) Road Cond	(8) Surf Cond	(9) Weather	(10) Apparent Contributing Factors	(11) Acc. Type	(12) Description
45	2/17/2013	18:01		PDO	4	1	2	4	13	Side	Vehicle 1 changed lanes and sideswiped Vehicle 2 (13) Passing or Lane Usage Improper
46	2/16/2013	1:49		PDO	4	1	1	1	40	REnd	Vehicle 1 had to avoid an uninvolved vehicle and the manuver casued Vehicle 1 to rear end Vehicle 2 (40) Other Human
47	2/3/2013	13:29	2	PDO	1	1	1	1	13,18	Rght	Vehicle 1 made a right turn infront of Vehicle 2 and Vehicle 1 struck the front left corner of Vehicle 2 (13) Passing or Lane Usage Improper (18) Turning Improperly
48	2/3/2013	18:02		PDO	4	1	1	1	4,18	RAng	Vehicle 2 attempted a U-Turn from the WB lane to EB and Vehicle 1 ran into Vehicle 2 (4) Driver Inattention (18) Turning Improperly
49	1/24/2013	9:38		PDO	1	1	4	4	66	REnd	Vehicle 1 rear ended Vehicle 2 (66) Pavement Slippery
50	1/19/2013	13:12		PDO	1	1	1	2	18	Left	Vehicle 1 turned left and collided with Vehicle 2 (18) Turning Improperly
51	1/18/2013	8:04		PDO	1	1	2	1	9	REnd	Vehicle 1 rear ended Vehicle 2 (9) Following Too Closely
52	1/7/2013	12:27		PDO	1	1	1	2	13,18	Side	Vehicle 1 sideswiped Vehicle 2 which was stopped in traffic waitng waitng for the intersection to clear (13) Passing or Lane Usage Improper (18) Turning Improperly
53	12/12/2012	5:18		Inj	4	1	1	2	40	Pedn	Vehcle 1 hit a pedestrian who had jumped back on to the road after walking across the crosswalk (40) Other Human
54	12/7/2012	8:50		PDO	1	1	1	2	20	Side	Vehicle 1 changed lanes and sideswiped Vehicle 2 (20) Unsafe Lane Changing
55	11/17/2012	18:44		PDO	4	1	1	1	19,13	Side	Vehicle 2 was preparing to turn left when is was sideswiped by Vehicle 1 (19) Unsafe Speed (13) Passing or Lane Usage Improper

DETAILS OF ACCIDENT HISTORY

Stantec

Diagram: East Main

County of Monroe

Town of City of Rochester

Street Name: East Main Street

Route Number:

Location: East Main St. Pre-10/17/2014

Milepost: Genesee River To: Stillson Street

Date of Report: 3/4/2016

P.I.N. _____

Case No. _____

File _____

By _____

Page Number 6

PERIOD STUDIED

From 6/7/2012

To: 7/10/2015

38 Months

(1) No.	(2) Date	(3) Time	(4) Vehicles	(5) Severity	(6) Light Cond	(7) Road Cond	(8) Surf Cond	(9) Weather	(10) Apparent Contributing Factors	(11) Acc. Type	(12) Description
56	11/16/2012	18:56		Inj	4	1	1	1	2,7	Pedn	Vehicle 1 rear ended Vehicle 2 and proceeded to continue traveling straight and collided with two pedestrians (2) Alcohol Involvement (7) Failure to Yield Right of Way
57	11/12/2012	14:36		PDO	1	1	1	1	4	REnd	Vehicle 1 rear ended Vehicle 2 (4) Driver Inattention
58	11/9/2012	19:20		Inj	4	1	1	1	14,4	Pedn	Intoxicated pedestrian was hit by Vehicle 1 who had the right of way, Ped was wearng dark clothing (14) Pedestrian's Error/Confusion (4) Driver Inattention
59	11/7/2012	8:12		Inj	1	1	1	1	4	REnd	Vehicle 1 rear ended Vehicle 2 (4) Driver Inattention
60	11/5/2012	10:06		PDO	1	2	2	4	9	REnd	Vehicle 1 rear ended Vehicle 2 (9) Following Too Closely
61	11/3/2012	21:20		PDO	4	1	1	1	60	REnd	Driver in V1 rear ended stopped V2 reacting to uninvolved vehicle. (60) Other Vehicular
62	9/22/2012	20:08		Inj	4	4	1	2	14	Pedn	P1 in crosswalk against light and struck by V1. (14) Pedestrian's Error/Confusion
63	9/12/2012	14:37		PDO	1	1	1	1	4	REnd	V1 rear ended V2 when V2 stopped. (4) Driver Inattention
64	8/21/2012	13:41	2	PDO	1	1	1	1	4,18	Rght	V1 turning right from left lan struck v2 turning right in right lane. (4) Driver Inattention (18) Turning Improperly
65	8/13/2012	14:15	2	PDO	1	2	1	1	45	Side	V1 struck V2 when changing lane. (45) Oversized Vehicle
66	7/21/2012	16:42		Inj	1	1	1	1	4,7	Bike	Bike1 ran into side of car. (4) Driver Inattention (7) Failure to Yield Right of Way

DETAILS OF ACCIDENT HISTORY

Stantec

Diagram: East Main

County of Monroe

Town of City of Rochester

Street Name: East Main Street

Route Number:

Location: East Main St. Pre-10/17/2014

Milepost: Genesee River To: Stillson Street

Date of Report: 3/4/2016

P.I.N. _____

Case No. _____

File _____

By _____

Page Number 7

PERIOD STUDIED

From 6/7/2012

To: 7/10/2015

38 Months

(1) No.	(2) Date	(3) Time	(4) Vehicles	(5) Severity	(6) Light Cond	(7) Road Cond	(8) Surf Cond	(9) Weather	(10) Apparent Contributing Factors	(11) Acc. Type	(12) Description
67	7/10/2012	8:36		PDO	1	1	1	1	9	REnd	V1 rear ended V2. (9) Following Too Closely
68	7/10/2015	20:37		PDO	3	1	1	1	12	REnd	V1 rear ended V2 while stopped at intersection. (12) Passenger Distraction
69	6/17/2012	16:30		PDO	1	1	1	1	9	REnd	V3 waiting to turn left, V2 stopped quickly to aviod hitting V3, V1 rear ended V2 which pushed V2 into V3. (9) Following Too Closely
70	6/7/2012	7:06		PDO	1	1	1	1	3	REnd	V1 was waiting to turn left, light turned red, V1 backed up and hit V2. (3) Backing Unsafely

DETAILS OF ACCIDENT HISTORY

Stantec

Diagram: East Main

County of Monroe

Town of City of Rochester

Street Name: East Main Street

Route Number:

Location: East Main St. Post-10/17/2014

Milepost: Genesee River To: Stillson Street

Date of Report: 3/4/2016

P.I.N. _____

Case No. _____

File _____

By _____

Page Number 1

PERIOD STUDIED

From 11/11/201

To: 7/23/2015

9 Months

(1) No.	(2) Date	(3) Time	(4) Vehicles	(5) Severity	(6) Light Cond	(7) Road Cond	(8) Surf Cond	(9) Weather	(10) Apparent Contributing Factors	(11) Acc. Type	(12) Description
71	7/23/2015	9:55		PDO	1	2	1	1	12	Side	Driver 2 was turning left when V1 sideswiped V2. (12) Passenger Distraction
72	6/23/2015	17:30		PDO	1	1	1	1	4,9	REnd	V2 stopped for traffic, rear ended by V1, Driver 1 was distracted by papers falling on floor. (4) Driver Inattention (9) Following Too Closely
73	6/20/2015	13:28		Inj	1	1	2	3	9,19	REnd	V2 rear ended by speeding V2, V2 left the scene. (9) Following Too Closely (19) Unsafe Speed
74	6/19/2015	17:08	2	PDO	1	2	1	1	60,60	Left	V2 stopped in traffic at crosswalk, V1 (bus) stopped in intersection, light turned red and V1 attempted to turn left striking V2. (60) Other Vehicular (60) Other Vehicular
75	6/8/2015	16:39		PDO	1	1	1	1	5	REnd	V2 stopped due to traffic, V1 rear ended V2. (5) Driver Inexperience
76	5/24/2015	7:53	2	Inj	1	1	1	1	17,4	RAng	V1 failed to stop at the red light, V2 (bus) struck passenger side of V1. (17) Traffic Control Disregarded (4) Driver Inattention
77	5/19/2015	13:48	2	PDO	1	1	1	1	18	Left	Tractor Trailer was attempting to make wide right turn and struck V2 while turning. (18) Turning Improperly
78	4/11/2015	15:36		PDO	1	1	1	1	60,4	Side	Bus was making right turn, bus entered V1 path due to its size, V1 moved out of the way avaioding the bus but into V2's lane sideswiping V2. (60) Other Vehicular (4) Driver Inattention
79	3/29/2015	19:47		PDO	4	3	1	1		Unkn	V1 was struck by object thrown at the vehicle breaking window, Driver 1 opened door while waiting at traffic light, door became wedged into V2.
80	3/9/2015	16:45	2	PDO	1	1	1	1	18	Left	Bus struck V2 while making left turn, driver did not stop as driver did not know of the contact. (18) Turning Improperly
81	2/21/2015	12:52	2	PDO	1	1	1	4	4	Side	V1 was following GPS, realized he could not go strait due to one way street, attempted to turn right striking V2. (4) Driver Inattention

DETAILS OF ACCIDENT HISTORY

Stantec

Diagram: East Main

County of Monroe

Town of City of Rochester

Street Name: East Main Street

Route Number:

Location: East Main St. Post-10/17/2014

Milepost: Genesee River To: Stillson Street

Date of Report: 3/4/2016

P.I.N. _____

Case No. _____

File _____

By _____

Page Number 2

PERIOD STUDIED

From 11/11/201

To: 7/23/2015

9 Months

(1) No.	(2) Date	(3) Time	(4) Vehicles	(5) Severity	(6) Light Cond	(7) Road Cond	(8) Surf Cond	(9) Weather	(10) Apparent Contributing Factors	(11) Acc. Type	(12) Description
82	2/3/2015	11:14		PDO	1	1	2	1	9,9	REnd	V2 struck by V3 causing V2 to hit rear of V1. (9) Following Too Closely (9) Following Too Closely
83	2/3/2015	7:53		PDO	1	1	4	4	9	REnd	V1 slid into V2. Trafic was stopped due to Peds crossing. (9) Following Too Closely
84	1/27/2015	17:08		PDO	4	1	4	4	20	Side	V2 slid into V1 while approching traffic light. (20) Unsafe Lane Changing
85	12/10/2014	14:44		PDO	1	1	4	4	66	FixO	Vehicle infront of V1 was stopping, V1 slid and jumped curb taking down street sign. (66) Pavement Slippery
86	12/10/2014	14:14	2	PDO	1	1	4	4	66,45	Rght	V1 stopped at traffic light, Bus V2 made left turn striking V1. Severe snow storm at the time. (66) Pavement Slippery (45) Oversized Vehicle
87	12/8/2014	10:08	2	PDO	1	1	1	2	7	Side	V1 struck V2 as V2 (bus) merged back into traffic following dropping off a passenger. (7) Failure to Yield Right of Way
88	11/11/2014	18:44		PDO	4	1	1	2	19	Over	V1 (motorcycle) was traveling at speeds near 100 mph, went threw red light, pulled wheelie meneuver and struck another motorcycle. (19) Unsafe Speed

ACCIDENT RATE CALCULATIONS

Project Name: **East Main Street Pre 2-Way Conversion**
Date: 2/9/2016

Intersection Rate

(excludes midblock accidents)

E. Main St @
South Ave/St. Paul St

# Accidents	x	Per Million Entering Vehicles			=		=		
18	x	1,000,000			=	18000000	=	1.22	ACC/MEV
17,300	x	2.33	x	365		14712785			
Vehicles/Day		*# of Years*		*Days/Year*					
								0.68	County Rate

Stone Street

# Accidents	x	Per Million Entering Vehicles			=		=		
3	x	1,000,000			=	3000000	=	0.29	ACC/MEV
12,100	x	2.33	x	365		10290445			
Vehicles/Day		*# of Years*		*Days/Year*					
								0.39	County Rate

Clinton Ave

# Accidents	x	Per Million Entering Vehicles			=		=		
10	x	1,000,000			=	10000000	=	0.61	ACC/MEV
19,400	x	2.33	x	365		16498730			
Vehicles/Day		*# of Years*		*Days/Year*					
								0.68	County Rate

East Avenue

# Accidents	x	Per Million Entering Vehicles			=		=		
13	x	1,000,000			=	13000000	=	1.23	ACC/MEV
12,400	x	2.33	x	365		10545580			
Vehicles/Day		*# of Years*		*Days/Year*					
								0.68	County Rate

Total Link Rate

(All midblock & intersection accidents)

East Main St
River to Stillson St

# Accidents	x	Per Million Entering Vehicles					=		=		
70	x	1,000,000					=	70000000	=	7.47	ACC/MVM
0.36	x	30,600	x	2.33	x	365		9368557			
Length (miles)		*Vehicles/Day*		*# of Years*		*Days/Year*					
										4.19	County Rate

ACCIDENT RATE CALCULATIONS

Project Name: **East Main Street Post 2-Way Conversion**
Date: 2/9/2016

Intersection Rate

(excludes midblock accidents)

E. Main St @

South Ave/St. Paul St

# Accidents	x	Per Million Entering Vehicles			=		=		
5	x	1,000,000			=	5000000	=	**0.95**	**ACC/MEV**
17,300	x	0.83	x	365		5241035			
Vehicles/Day		*# of Years*		*Days/Year*					
								0.68	County Rate

Stone Street

# Accidents	x	Per Million Entering Vehicles			=		=		
0	x	1,000,000			=	0	=	**0.00**	**ACC/MEV**
12,100	x	0.83	x	365		3665695			
Vehicles/Day		*# of Years*		*Days/Year*					
								0.39	County Rate

Clinton Ave

# Accidents	x	Per Million Entering Vehicles			=		=		
5	x	1,000,000			=	5000000	=	**0.85**	**ACC/MEV**
19,400	x	0.83	x	365		5877230			
Vehicles/Day		*# of Years*		*Days/Year*					
								0.68	County Rate

East Avenue

# Accidents	x	Per Million Entering Vehicles			=		=		
2	x	1,000,000			=	2000000	=	0.53	**ACC/MEV**
12,400	x	0.83	x	365		3756580			
Vehicles/Day		*# of Years*		*Days/Year*					
								0.68	County Rate

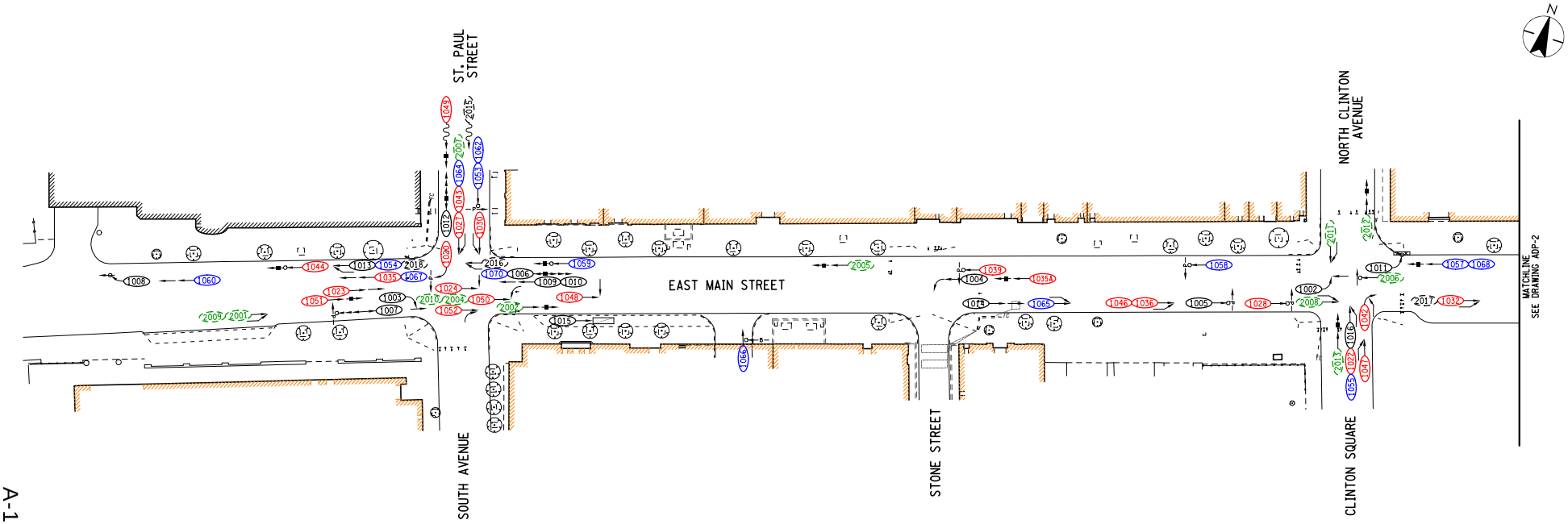
Total Link Rate

(All midblock & intersection accidents)

East Main St

River to Stillson St

# Accidents	x	Per Million Entering Vehicles					=		=		
18	x	1,000,000					=	18000000	=	**5.39**	**ACC/MVM**
0.36	x	30,600	x	0.83	x	365		3337297			
Length (miles)		*Vehicles/Day*		*# of Years*		*Days/Year*					
										4.19	County Rate



A-120

ACCIDENT SYMBOLS LEGEND					
	V	VEHICLE		NFI	NON-FATAL INJURY
	MV	MOVING VEHICLE		P	PEDESTRIAN
	BV	BACKING VEHICLE		B	BICYCLE
	PV	PARKED VEHICLE		M	MOTORCYCLE
	SV	STOPPED VEHICLE		SP	SIGN POST

	RT		LT		LT5		RANG
	RT1		LT1		LT6		SS
	RT2		LT2		OOC		VSP
	RT3		LT3		OT		HOSS
	RT4		LT4		HO		RE

2015 ACCIDENT DATED 2015
2014 ACCIDENT DATED OCT. 17 TO DEC. 31, 2014
2014 ACCIDENT DATED JAN. 01 TO OCT. 17, 2014
2013 ACCIDENT DATED 2013
2012 ACCIDENT DATED 2012

ACCIDENT DETAILS

TYPE OF ACCIDENT (SEE LEGEND)

XXXX

REFERENCE NUMBER OF ACCIDENT

(SEE FORM TE 213)

COMBINED ACCIDENTS FROM 06-07-2012 TO 07-23-2015

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Revision	By	Appd.	YY.MM.DD	Issued	By	Appd.	YY.MM.DD

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Client/Project
CITY OF ROCHESTER

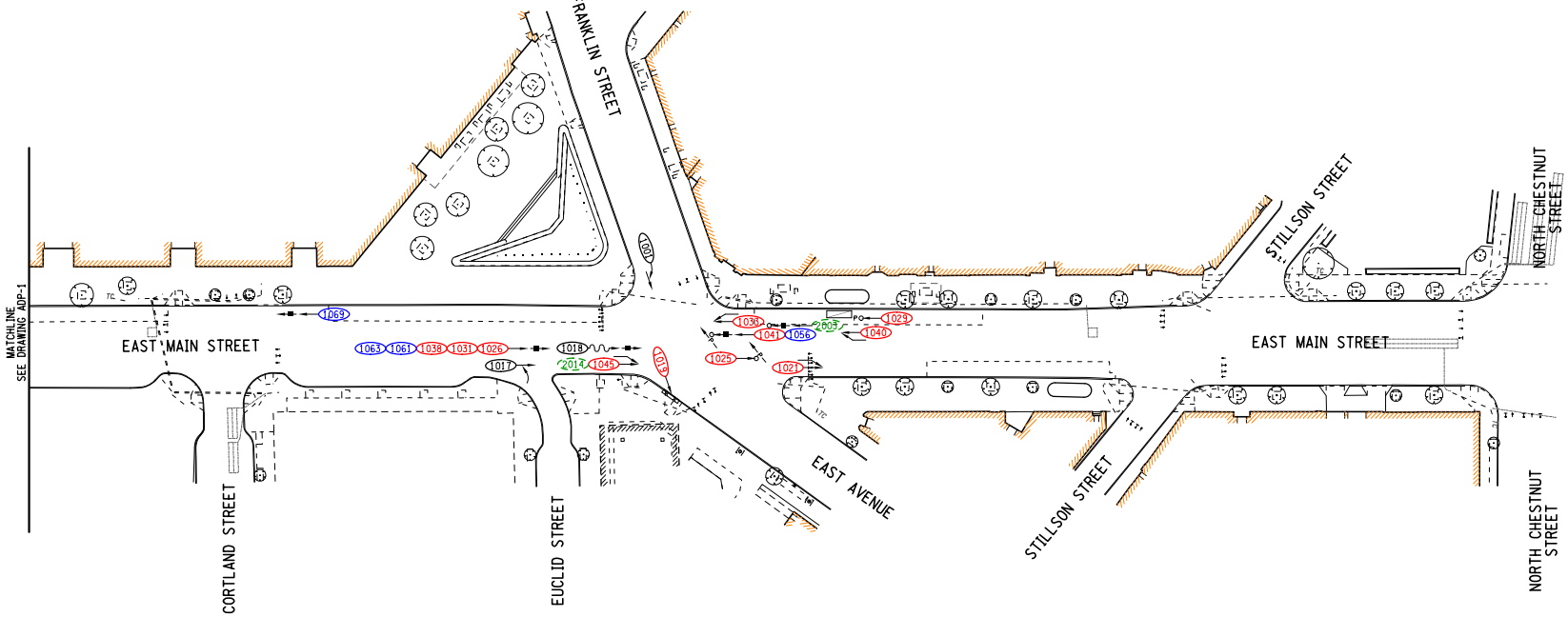
MAIN STREET STREETSCAPE AND PEDESTRIAN WAYFINDING ENHANCEMENT
P.I.N. 4755.91 DXXXXXX PC XXXXX

ROCHESTER, NEW YORK

File Name: ADP-01.DGN	SAR	ERS	JGH	15.12.03
	Dwn.	Chkd.	Dsgn.	YY.MM.DD

Title
ACCIDENT DIAGRAM PLAN
EAST MAIN STREET

Project No.	Scale	
192500343	1" = 40'	
Drawing No.	**Sheet**	**Revision**
ADP-1	1 of 2	0



A-121

ACCIDENT SYMBOLS LEGEND					
	V	VEHICLE		NFI	NON-FATAL INJURY
	MV	MOVING VEHICLE	P	P	PEDESTRIAN
	BV	BACKING VEHICLE	B	B	BICYCLE
	PV	PARKED VEHICLE	M	M	MOTORCYCLE
	SV	STOPPED VEHICLE		SP	SIGN POST

RT	LT	LT5	RANG
RT1	LT1	LT6	SS
RT2	LT2	OOC	VSP
RT3	LT3	OT	HOSS
RT4	LT4	HO	RE

2015 ACCIDENT DATED 2015
2014 ACCIDENT DATED OCT. 17 TO DEC. 31, 2014
2014 ACCIDENT DATED JAN. 01 TO OCT. 17, 2014
2013 ACCIDENT DATED 2013
2012 ACCIDENT DATED 2012

ACCIDENT DETAILS

TYPE OF ACCIDENT (SEE LEGEND)

XXXX

REFERENCE NUMBER OF ACCIDENT

(SEE FORM TE 213)

COMBINED ACCIDENTS FROM 06-07-2012 TO 07-23-2015

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Revision	By	Appd.	YY.MM.DD	Issued	By	Appd.	YY.MM.DD

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Client/Project
CITY OF ROCHESTER

MAIN STREET STREETSCAPE AND PEDESTRIAN WAYFINDING ENHANCEMENT
P.I.N. 4755.91 DXXXXXX PC XXXXX

ROCHESTER, NEW YORK

File Name: ADP-2D.DGN | SAR Dwn. | ERS Chkd. | JGH Dsgn. | 15.12.03 YY.MM.DD

Title
ACCIDENT DIAGRAM PLAN
EAST MAIN STREET

Project No.	Scale	
192500343	1" = 40'	
Drawing No.	Sheet	Revision
ADP-2	2 of 2	0

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Stantec

Memo

To:	Kayle Stettner	From:	Jon Hartley
	Rochester NY Office		Rochester NY Office
File:	East Main_Traffic Summary.doc	Date:	December 8, 2015 *Revised March 4, 2016*

Reference: East Main Street Streetscape and Pedestrian Wayfinding Enhancements Traffic Summary

Existing Conditions

Existing Traffic Counts

Manual turning movement traffic counts including pedestrian, bicycle and heavy vehicles were conducted by EDR during the AM (7AM to 9AM) and PM (4PM to 6PM) peak periods on Tuesday July 28th, Wednesday July 29th, Wednesday August 5th, and Thursday August 6th 2015 at the following intersections:

East Main Street @

- South Avenue and St. Paul Street
- Stone Street
- Clinton Avenue
- Cortland Street
- East Avenue/Franklin Street

Flow diagrams depicting the existing conditions are shown in Figures 1 & 2. (See Attached).

Due to the significant reduction in volumes from 2011 the existing operations at the St. Paul/South and Clinton Ave intersections were re-verified during the PM peak on September 10, 2015 and September 22, 2015 and were found to be consistent with earlier data collection results.

Heavy Vehicles

The percentage of heavy vehicles in the corridor is approximately 7% on East Main Street, 6% on Clinton and St. Paul and is predominately comprised of transit buses. With the opening of the new Transit Center the EB left turns at both St. Paul and Clinton and the SB left turns at Clinton are predominantly buses and have been assigned a 25% heavy vehicle. 2% heavy vehicles was used for all other streets within the project corridor.

Running Speed

Floating car runs were conducted outside of the peak hours to establish average corridor running speed. The average running speed between East/Franklin and St. Paul/South was generally 30-35 mph and decreased during the peak hours.

Reference: East Main Street Streetscape and Pedestrian Wayfinding Enhancements Traffic Summary

Corridor Observations

The following observations were made during various site visits within the project corridor:

South / St. Paul / E Main Intersection

Southbound Approach – No capacity deficiencies were observed, however SB right turning buses were hindered by the existing curb radius on the NW corner. Turning buses frequently had to wait for vehicles in the eastbound left turn lane to back up approximately 10'–15' to provide sufficient room to accommodate the turning bus. Left turning movements were hindering the westbound right turning busses requiring the left turn vehicle to clear or back up approximately 10'–15' to allow for sufficient room for the turning bus.

Eastbound Approach - No capacity deficiencies were observed, No issues with right turning movements were observed. Left turning movements were hindering the southbound right turning busses requiring the left turn vehicle to back up approximately 10'–15' to allow for sufficient room for the turning bus.

Westbound Approach - No capacity deficiencies were observed. No issues with left hand turning movements were observed. The right hand turning Bus movements were hindered by the NE corner radius. The buses were observed to wait for the southbound left turn lane to clear or vehicles within the left turn lane were required to back up approximately 10'-15' to provide sufficient room to accommodate the turning bus.

Pedestrian Accommodations – No pedestrian concerns were observed.

Bicycle Accommodations – Bicycles were observed using both the roadway and sidewalk to traverse the intersection.

Clinton / E Main Intersection

Southbound Approach – No capacity deficiencies were observed, however right turning buses were hindered by the existing curb radius on the NW corner. Turning buses frequently had to wait for vehicles in the eastbound left turn lane to back up approximately 10'–15' to provide sufficient room to accommodate the turning bus.

Northbound Approach – No capacity deficiencies were observed however left turning vehicles were hindered by southbound right turning delays and reducing the gap time available for left hand turning movements.

Eastbound Approach – One capacity deficiency was observed. The left turn lane volume exceeded the left turn lane capacity, resulting in left turning vehicles to block the thru lane causing vehicle queues to extend through the adjoining intersections

(Cortland and St. Paul). The left turn lane volume was predominately transit busses. The existing turn pocket length is approximately 100' and as many as 4 transit buses (approximately 40' in length) were queued per cycle causing the blocking issues. In addition, left hand turning movements were hindering the southbound right turning busses requiring the left turn vehicle to back up approximately 10'–15' to allow for sufficient room for the turning bus.

Westbound Approach - No capacity deficiencies were observed, No issues with right turning movements were observed.

Pedestrian Accommodations – No pedestrian concerns were observed.

Bicycle Accommodations – Bicycles were observed using both the roadway and sidewalk to traverse the intersection.

Background Growth Rate

The 2011 Two-Way Conversion Study prepared by the LaBerge Group established a 0.20% growth rate based on historic data and forecasted growth projections obtained from the Genesee Transportation Council (GTC) for this study area. Traffic counts performed in 2015 showed no growth or a reduction in volumes from the 2010 and 2011 traffic counts. The April 2, 2013 MCDOT Traffic Volume Trends memo recommends using a 1.0% growth rate for the City which can vary between 0.5% and 1.5% based on location. Due to the incorporation of known background development and the current trends the 0.2% growth rate has been used in the analysis.

Traffic Volume Projections

Estimated Time of Completion (ETC)

This project is scheduled to be completed in the year 2017. Traffic projections for ETC will be determined by applying a 0.20% growth rate to the traffic counts obtained in 2015 in order to establish 2017 traffic volumes.

A Flow diagram depicting the ETC volumes are shown in Figure 3. (See Attached).

Design Year (ETC+XX)

The project is classified as a 3R – Resurfacing, Restoration, and Rehabilitation project with Minor Intersection Reconstruction Components. Per NYSDOT's Project Development Manual (PDM), Appendix 5, Table 5-1, the recommended project design year is ETC+10.

Due to the proposed lane reconfigurations and potential impacts to major intersections within the project corridor, the design year forecasts will be analyzed using ETC+20.

Traffic projections for ETC+20 will be determined by applying a 0.20% growth rate to the ETC (2017) volumes in order to establish 2037 volumes.

A Flow diagram depicting the ETC+20 volumes are shown in Figure 4. (See Attached).

Additional Traffic Impacts

The project corridor has two (2) planned projects that will influence traffic projections within the project corridor. The following traffic studies were completed for both projects which included traffic projections that were incorporated into the traffic analysis:

1. The 2010 Midtown Redevelopment study prepared by LaBella Associates.

2. The 2011 Two-Way Conversion Study prepared by the LaBerge Group.

2010 Midtown Redevelopment Study

This study identified traffic projections based on trip generation methods for the Midtown Development Site. This study identified traffic projections for several components within the entire site development area. In 2014 one component, Paetec (Windstream,) was completed and is accounted for within the 2015 traffic counts performed as part of the project. To accommodate the remaining future projections for the Midtown site development site, the calculated projections for the Paetec (Windstream) component were subtracted from the total projected traffic volumes to obtain additional development traffic impacts.

A flow diagram depicting these additional volumes is shown in Figure 5 – Remaining Midtown Development Traffic Forecasts.

2011 Two-Way Conversion Study

This study identified redistribution of traffic within the downtown area to accommodate the two way conversion of both the St. Paul and Clinton Avenue corridors. The study evaluated the conversion of both of these streets from the Inner Loop to the north to Woodbury Boulevard to the south. In 2014 a portion of this study area was converted to two way operations from the Inner loop to East Main Street. The remainder of the study area is assumed to be implemented within the next 20 years and will influence the design year projections for the project.

As a partial conversion has already occurred and is accounted for in the 2015 traffic counts performed for the project, an updated volume redistribution based on the 2011 Two-Way Conversion Study was performed. The completion of the two-way conversion introduces the following new movements.

E Main Street / St. Paul / South Avenue intersection

- NB Approach on South Avenue – New movements - NB Left, NB Thru and NB Right

E Main Street / Clinton Avenue intersection

- SB Approach on Clinton Avenue South – New movement - SB thru
- EB Approach on E Main Street – New movement - EB Right
- WB Approach on E Main Street – New movement - WB Left

The projected traffic volumes from the 2011 Two-Way Conversion Study were used for these new movements.

To account for the introduction of these new movements, the following redistribution adjustments were made based on the patterns identified in the 2011 Two-Way Conversion Study.

E Main Street / St. Paul / South Avenue intersection

- SB Thru movement on St. Paul – The SB thru movement was reduced to account for the new SB thru movement at the E Main / Clinton intersection. The 2011 Two-Way Conversion study included a 50% (AM) and 60% (PM) volume reduction for this movement. For the purposes of this analysis approximately a 30% reduction was used.
- WB Right movement on E Main Street – The WB right movement was reduced to account for the new NB thru movement at the E Main / St. Paul / South Avenue intersection. A reduction of 25% of the existing NB Left turn volume at the E Main / Clinton intersection was used in the analysis.
- WB Left movement on E Main Street – The WB left movement was reduced to account for the new SB thru movement at the E Main / Clinton intersection. A reduction of 25% of the existing SB Right turn volume at the E Main / Clinton intersection was used in the analysis.

E Main Street / Clinton Avenue intersection

- NB Thru movement on Clinton – The NB Thru movement was reduced to account for the new NB thru movement at the E Main / St. Paul / South Avenue intersection. The 2011 Two Way Conversion study included a 30% (AM) and 50% (PM) volume reduction for this movement. For the purposes of this analysis a 17.5% (AM) and 25% (PM) reduction was used.
- NB left movement on Clinton – The NB left movement was reduced to account for the new NB thru movement at the E Main / St. Paul / South Avenue intersection. A reduction of 25% of the existing NB Left turn volume was used in the analysis.
- SB Right movement on Clinton – The SB right movement was reduced to account for the new SB thru movement at the E Main / Clinton intersection. A reduction of 25% of the existing SB Right turn volume was used in the analysis.

A flow diagram depicting the redistribution volumes is shown in Figure 6 – Projected Two-Way Conversion Traffic Forecasts. It should be noted that volume balancing has not been performed as it is assumed that some of the re-distributed traffic will find alternate routes outside the limits of the project area.

Design Year (ETC+20) No-Build Condition

To establish the design year traffic volumes, the design year volumes (Figure 4) were used and then modified to account for both the additional traffic generated as part of the Midtown Site Development (Figure 5) and the redistribution of traffic upon completion of the planned Two-Way Conversion Project (Figure 6). This traffic forecast will represent the future (ETC+20) No-Build condition for the project.

A flow diagram depicting the above identified redistribution volumes is shown in Figure 7 – Projected ETC+20 (2037)No-Build Traffic Forecasts.

Reference: East Main Street Streetscape and Pedestrian Wayfinding Enhancements Traffic Summary

Pedestrian Volumes

The current pedestrian volumes are significantly lower than previous counts (LaBerge Study) and also values used in the Synchro files provided by the County. An overall decrease in pedestrian activity on this stretch of East Main Street can be attributed to the removal of bus stops after the opening of the Transit Center. Pedestrian values in Synchro were updated using the pedestrian counts rounded up to the nearest fifty (50) pedestrians. We also estimated the pedestrian volumes on the south side of East Main Street between Clinton and Cortland due to the closure of sidewalk resulting from the construction of the new Democrat and Chronicle building at Midtown.

Adjacent Parking Lane

In order to account for future parking maneuvers the Synchro files were updated to reflect an adjacent parking lane for the Eastbound and Westbound lanes. Right turn on Red restrictions for the North-South approaches were introduced in order to maximize the parking per block. Based on a maximum of 8 parking spaces/block we estimated 10 parking maneuvers per hour in the analysis.

Proposed Alternatives

The following alternatives are being considered for this project:

1. No build Alternative – This alternative assumes the project will not make any changes to the projected future operations within the project corridor. The projected future operations assume full build out of the Midtown Development site and completion of the Two-Way Conversion project within the project limits.

2. Alternative 1: Main Street Enhancements with Lane Reductions - This alternative will evaluate the reduction in the existing lane configuration along East Main Street corridor to provide a 3-lane typical section. The typical section will be comprised of a single travel lane in each direction, a center left turn lane, 5' bike lanes and recessed parking.

Due to the heavy bus turning movements we also analyzed East-West left turn phasing at the South-St Paul and Clinton Street intersections. In order to accommodate the left turn phasing we eliminated the 4 second Lead Pedestrian Interval (LPI) due to the additional delay this would add. In addition the LPI would follow the lead left turn phasing which may create a safety issue with the normal anticipation of the thru phase. For these reasons the LPI was eliminated.

Level of Service Summary

The peak hour volumes for each alternative were entered into the MCDOT AM and PM system Synchro model and intersection splits optimized. The existing Level of Service (LOS) for each movement was calculated. An operations summary at the bottom of the table provides a listing of the settings/conditions used within the analysis of each alternative. Synchro 9 output reports for each intersection are attached. The following table is a summary:

Level of Service (LOS) Summary
East Main Street: Streetscape and Wayfinding Enhancement

Intersection	Approach & Movement	2017 (ETC)		No Build 2037				Alternative 1 2037			
		No Build		No Build - Mid/2Way		No Build - Mid/2Way LT		3 Lane - Mid&2Way		3 Lane - Mid&2Way LT	
		AM LOS	PM LOS	AM LOS	PM LOS	AM LOS	PM LOS	AM LOS	PM LOS	AM LOS	PM LOS
St. Paul & South Ave	EB LT	B (11.9s)	B (13.6s)	C (21.0s)	B (18.1s)	C (21.3s)	A (8.5s)	C (22.0s)	C (27.2s)	C (20.2s)	B (15.2s)
	EB THRU/RT	B (15.7s)	B (18.9s)	D (44.7s)	C (29.0s)	D (49.9s)	D (37.1s)	D (44.8s)	D (40.9s)	D (42.6s)	D (48.6s)
	WB LEFT	C (21.1s)	C (28.1s)	C (27.7s)	B (12.8s)	B (11.1s)	B (16.2s)	B (13.6s)	C (26.0s)	B (15.3s)	A (9.9s)
	WB THRU/RT	B (16.9s)	C (26.1s)	C (21.7s)	B (12.0s)	B (14.8s)	C (20.6s)	D (47.3s)	E (64.1s)	D (48.2s)	D (49.8s)
	NB LT	-	-	D (41.7s)	B (16.5s)	D (47.9s)	B (15.8s)	F (82.8s)	B (19.9s)	F (82.8s)	B (19.9s)
	NB THRU/RT	-	-	C (20.8s)	C (21.9s)	C (21.5s)	C (30.4s)	C (24.1s)	C (27.6s)	C (24.1s)	C (27.6s)
	SB THRU/LT/RT	C (24.7s)	B (15.3s)	-	-	-	-	-	-	-	-
	SB LT	-	-	B (12.6s)	A (7.3s)	B (13.3s)	B (14.3s)	B (15.8s)	A (8.7s)	B (16.2s)	A (6.3s)
	SB THRU/RT	-	-	D (36.7s)	D (39.4s)	D (37.5s)	D (39.0s)	D (54.7s)	D (43.5s)	D (54.6s)	D (42.7s)
	OVERALL	**B (19.6s)**	**B (19.8s)**	**C (31.5s)**	**C (25.2s)**	**C (30.8s)**	**C (30.4s)**	**D (45.1s)**	**D (43.1s)**	**D (44.9s)**	**D (40.3s)**
Stone St	EB THRU/RT	C (20.8s)	A (1.7s)	B (12.8s)	A (4.8s)	A (2.8s)	A (2.6s)	A (3.6s)	A (3.3s)	A (2.5s)	A (3.6s)
	WB LT	A (3.8s)	A (5.9s)	A (3.4s)	A (5.1s)	A (3.8s)	A (5.2s)	A (3.7s)	A (5.9s)	A (3.1s)	A (4.3s)
	WB THRU	A (5.2s)	A (6.6s)	A (4.9s)	A (6.0s)	A (4.1s)	A (6.2s)	A (6.0s)	B (9.2s)	A (5.4s)	A (7.6s)
	NB LT/RT	B (19.2s)	A (5.9s)	C (31.4s)	B (16.8s)	D (36.5s)	B (16.3s)	C (29.8s)	C (22.0s)	D (36.7s)	C (22.3s)
	OVERALL	**B (11.8s)**	**A (4.7s)**	**B (10.1s)**	**A (7.1s)**	**A (6.4s)**	**A (6.3s)**	**A (7.1s)**	**A (8.8s)**	**A (7.0s)**	**A (8.2s)**
Clinton Ave	EB LT	B (18.0s)	B (14.3s)	C (21.8s)	A (8.7s)	A (9.3s)	A (6.90s)	B (17.7s)	B (12.4s)	A (8.2s)	B (11.2s)
	EB THRU	C (22.0s)	C (31.8s)	C (30.2s)	D (36.1s)	B (18.8s)	C (27.4s)	B (19.5s)	D (50.2s)	B (13.5s)	D (36.0s)
	WB LT	-	-	A (9.8s)	A (9.0s)	A (8.4s)	A (7.3s)	A (8.0s)	A (8.4s)	A (6.3s)	A (5.8s)
	WB THRU/RT	B (12.2s)	B (14.6s)	B (11.5s)	A (9.4s)	B (13.7s)	B (12.0s)	C (20.7s)	B (18.9s)	C (21.7s)	B (19.5s)
	NB LT	A (8.3s)	A (8.0s)	C (24.5s)	D (38.4s)	C (20.3s)	C (26.9s)	C (29.2s)	D (52.5s)	C (27.5s)	D (47.4s)
	NB THRU/RT	B (11.5s)	B (16.0s)	C (26.8s)	C (30.2s)	C (34.0s)	D (38.1s)	C (30.8s)	D (35.3s)	C (29.4s)	D (38.0s)
	SB LT	C (22.0s)	C (31.1s)	C (28.5s)	D (45.3s)	B (19.8s)	C (26.0s)	D (36.3s)	E (64.9s)	C (32.4s)	E (57.5s)
	SB RT	A (2.4s)	A (2.2s)	-	-	-	-	-	-	-	-
	SB THRU/RT	-	-	C (29.3s)	C (34.6s)	D (36.2s)	D (47.8s)	C (34.0s)	D (44.9s)	C (31.4s)	D (49.4s)
	OVERALL	**B (13.8s)**	**B (18.9s)**	**C (24.3s)**	**C (28.6s)**	**C (25.7s)**	**C (31.2s)**	**C (26.8s)**	**D (38.0s)**	**C (24.7s)**	**D (36.3s)**
Cortland St	EB THRU/RT	A (1.3s)	A (1.1s)	A (1.1s)	A (1.4s)	A (1.8s)	A (1.6s)	A (2.5s)	A (3.4s)	A (2.7s)	A (3.6s)
	WB LT	-	-	-	-	-	-	A (2.6s)	A (1.6s)	A (2.9s)	A (2.8s)
	WB THRU	-	-	-	-	A (1.5s)	A (2.0s)	A (2.6s)	A (2.1s)	A (2.6s)	A (3.1s)
	WB THRU/LT	A (1.4s)	A (0.6s)	A (1.7s)	A (1.6s)	-	-	-	-	-	-
	NB LT/RT	C (25.2s)	A (0.4s)	D (41.9s)	D (44.2s)	D (41.9s)	D (45.5s)	D (42.3s)	D (44.8s)	D (42.3s)	D (44.8s)
	OVERALL	**A (1.5s)**	**A (0.9s)**	**A (2.5s)**	**A (2.8s)**	**A (2.9s)**	**A (3.1s)**	**A (3.7s)**	**A (4.2s)**	**A (3.8s)**	**A (4.7s)**
Franklin St & East Ave	EB THRU	A (4.6s)	A (7.0s)	A (6.3s)	B (10.6s)	A (7.3s)	A (7.3s)	B (10.5s)	B (11.7s)	A (6.9s)	B (11.0s)
	EB THRU/RT	-	-	-	-	-	-	-	-	-	-
	EB RT	A (0.8s)	A (1.2s)	A (1.1s)	A (2.3s)	A (0.8s)	A (1.2s)	-	-	-	-
	WB THRU	A (5.9s)	A (4.5s)	A (5.7s)	A (4.5s)	A (2.8s)	A (3.1s)	A (4.8s)	A (2.5s)	A (2.5s)	A (2.8s)
	WB THRU/RT	-	-	-	-	-	-	-	-	-	-
	WB RT	A (0.5s)	A (0.0s)	A (0.5s)	A (0.0s)	A (0.1s)	A (0.1s)	-	-	-	-
	NB THRU/LT/RT	C (30.2s)	D (39.2s)	C (32.0s)	D (39.6s)	C (20.1s)	C (29.3s)	C (33.9s)	D (41.7s)	C (22.9s)	C (33.8s)
	SB THRU/LT/RT	A (6.0s)	A (5.6s)	A (5.8s)	A (5.5s)	A (5.8s)	A (5.5s)	A (5.8s)	A (5.6s)	A (5.8s)	A (5.6s)
	OVERALL	**A (7.5s)**	**A (8.1s)**	**A (8.2s)**	**A (9.7s)**	**A (6.2s)**	**A (7.0s)**	**B (10.4s)**	**B (10.8s)**	**A (6.8s)**	**A (9.9s)**
Analysis Summary											
2-Phase Operation at all intersections		✓		✓				✓			
E/W Left Turn Phasing at South-St. Paul & Clinton						✓				✓	
4 Second Advanced Walk at South-St Paul & Clinton		✓		✓				✓			
On-Street Parking				✓		✓		✓		✓	
No RTOR North/South Approaches				✓		✓		✓		✓	
Full 2-Way Conversion				✓		✓		✓		✓	

Recommendations

Null Alternative

The null alternative maintains the existing lane configuration which includes two (2) Westbound travel lanes and one (1) Eastbound travel lane with center turn lane. The 2037 intersection LOS was impacted primarily by the future 2-Way conversion which will reduce the number of approach lanes in the Northbound/Southbound directions in order to accommodate the new movements. Bus turning movements should be reviewed to determine if stop bar and/or curb radii adjustments are warranted.

Alternative 1: 3-Lane Section (Road Diet)

Alternative 1 meets the project objectives by maximizing the available sidewalk width, accommodating bicycles and providing on-street parking. This alternative reduces the number of travel lanes in the Westbound direction. MCDOT guidelines indicate that viable road diet candidates should have a maximum thru volume threshold of 750 to 900 vph/lane. Volumes in this section are at or below this threshold. The LOS at South-St. Paul and Clinton were LOS 'C' or LOS 'D' which is a slight drop from the Null Alternative. The remaining intersections saw very little change in LOS.

The introduction of left turn phasing on the East Main Street approaches in the peak hours may better accommodate bus turning movements and reduce potential blockage of adjacent thru lanes. Field observations during PM peak indicate that a significant number of buses are turning left on red and in some cases using the 4 second lead pedestrian interval to complete their movements. Bus turning movements should also be evaluated in this alternative to determine appropriate stop bar locations and curb radii.

Stantec Consulting Services Inc.

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Transportation Engineer, Transportation Planning
Phone: (585) 413-5287
Fax: (585) 427-9124
jon.hartley@stantec.com

Attachment: Volume diagrams and Synchro 9 reports

Cc List

City of Rochester
City Project ID #: 15323, PIN 4755.91
Streetscape and Pedestrian Wayfinding Enhancement
East Main Street

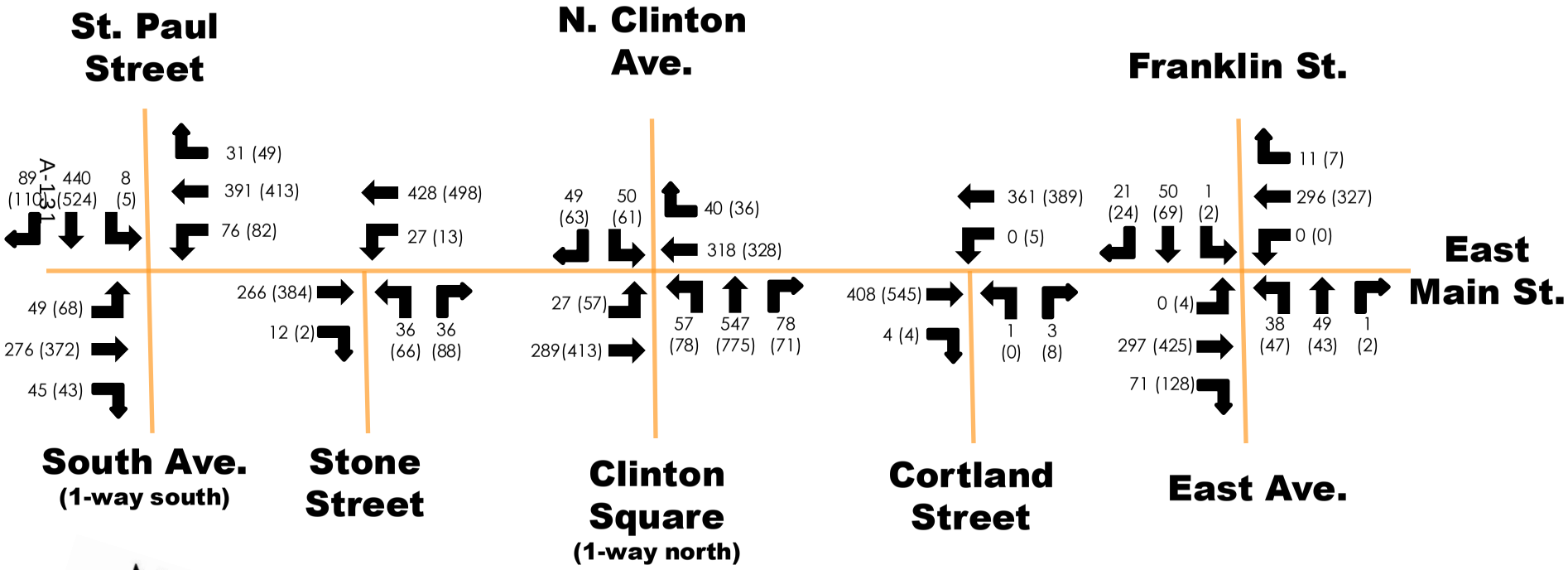
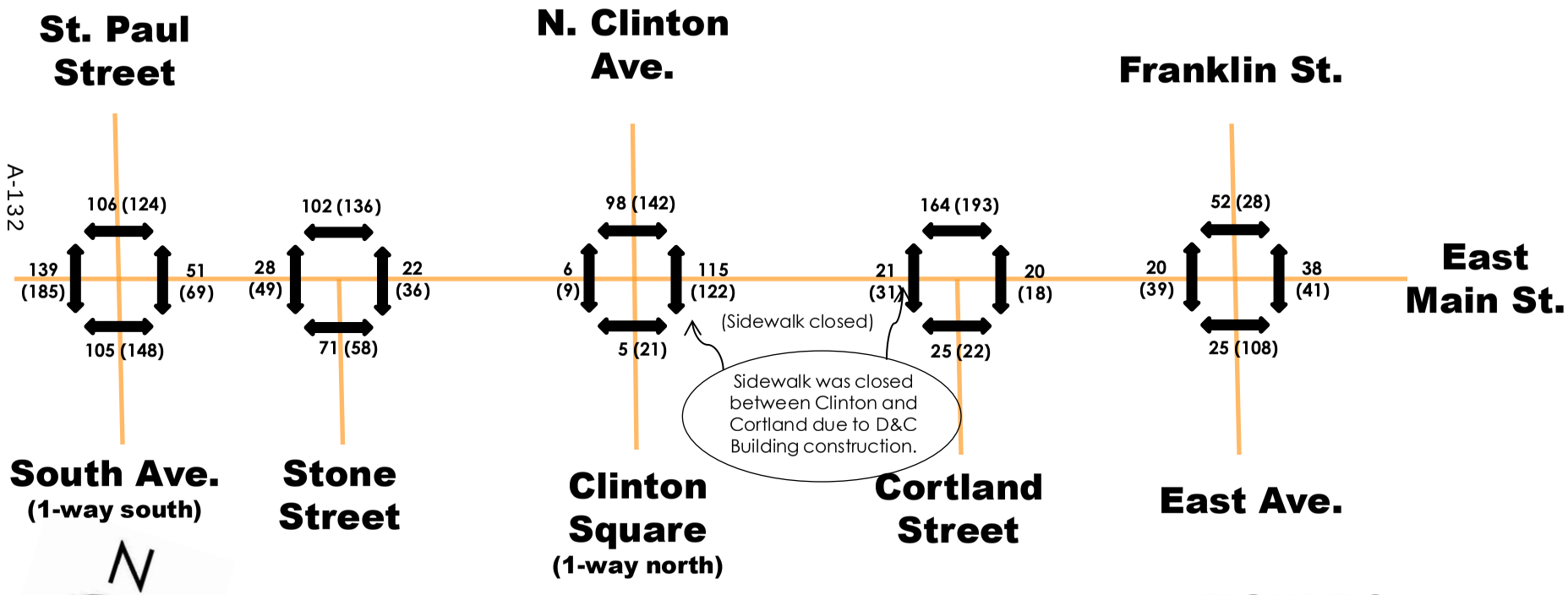


FIGURE 1

Existing (2015) Volumes
East Main St.
AM (PM)

Stantec

City of Rochester
City Project ID #: 15323, PIN 4755.91
Streetscape and Pedestrian Wayfinding Enhancement
East Main Street



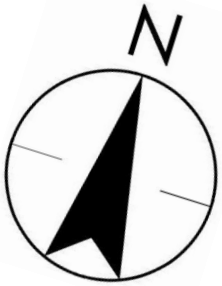


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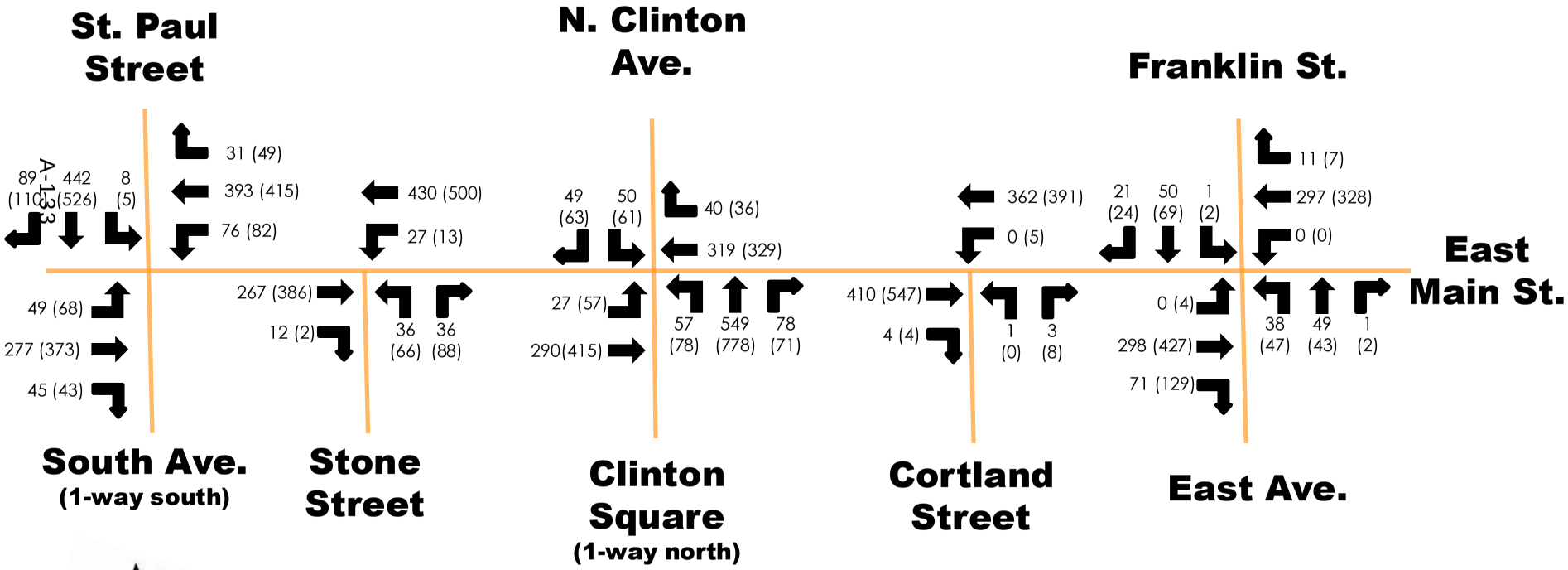
FIGURE 2

2015 PED Volumes
East Main St.
AM (PM)

City of Rochester
City Project ID #: 15323, PIN 4755.91
Streetscape and Pedestrian Wayfinding Enhancement
East Main Street



Stantec

FIGURE 3

ETC (2017) Volumes
East Main St.
AM (PM)

City of Rochester
City Project ID #: 15323, PIN 4755.91
Streetscape and Pedestrian Wayfinding Enhancement
East Main Street

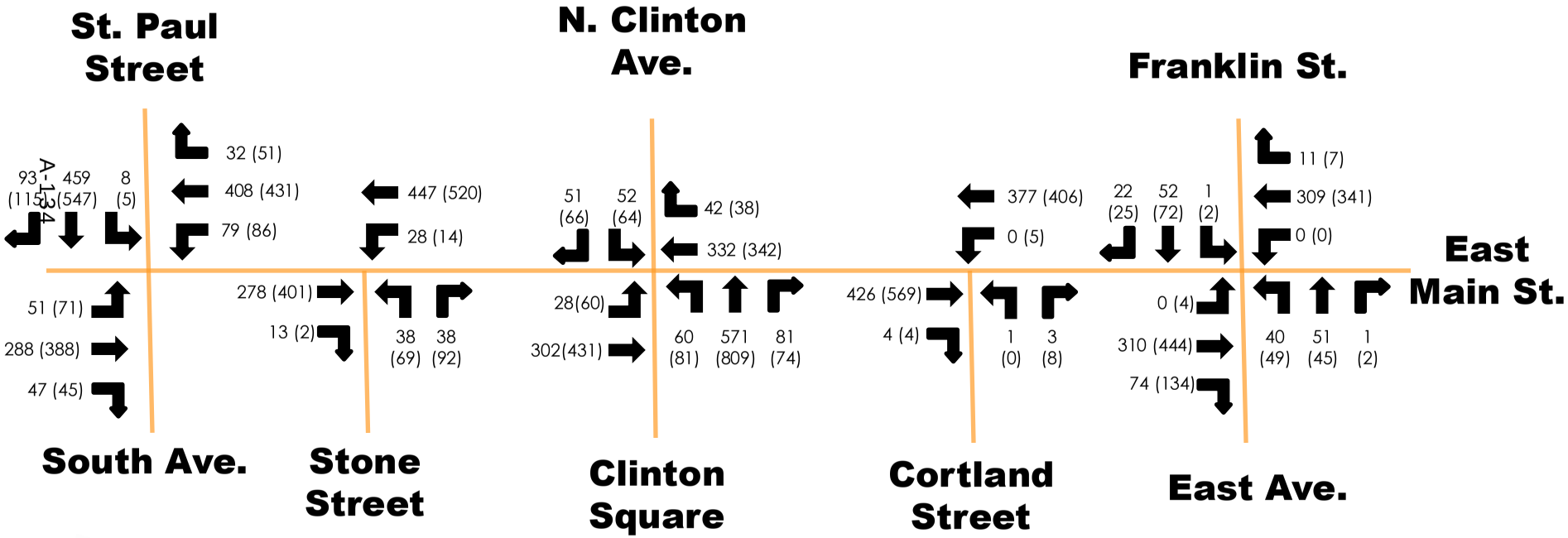


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FIGURE 4

ETC+20 (2037) Volumes
East Main St.
AM (PM)

City of Rochester
City Project ID #: 15323, PIN 4755.91
Streetscape and Pedestrian Wayfinding Enhancement
East Main Street

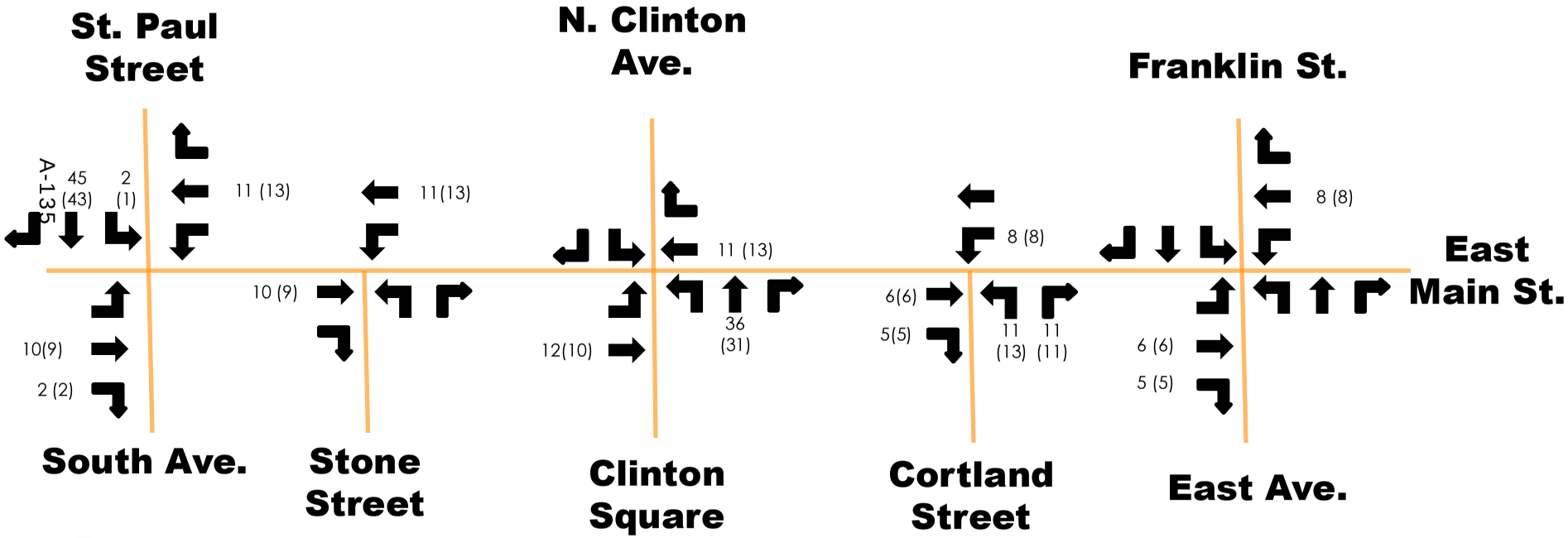

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FIGURE 5

Midtown Traffic
(excludes Windstream)
East Main St.
AM (PM)

City of Rochester
City Project ID #: 15323, PIN 4755.91
Streetscape and Pedestrian Wayfinding Enhancement
East Main Street

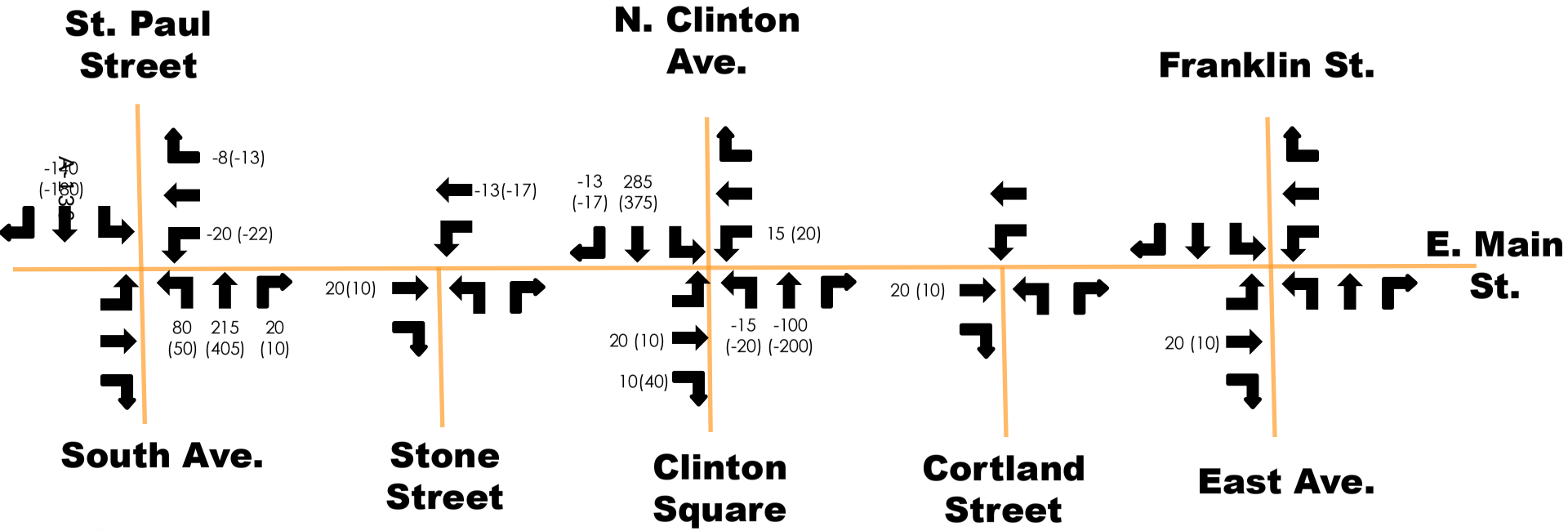

FIGURE 6

2-Way Clinton Ave/South Ave
Traffic Redistribution
East Main St.
AM (PM)

City of Rochester
City Project ID #: 15323, PIN 4755.91
Streetscape and Pedestrian Wayfinding Enhancement
East Main Street

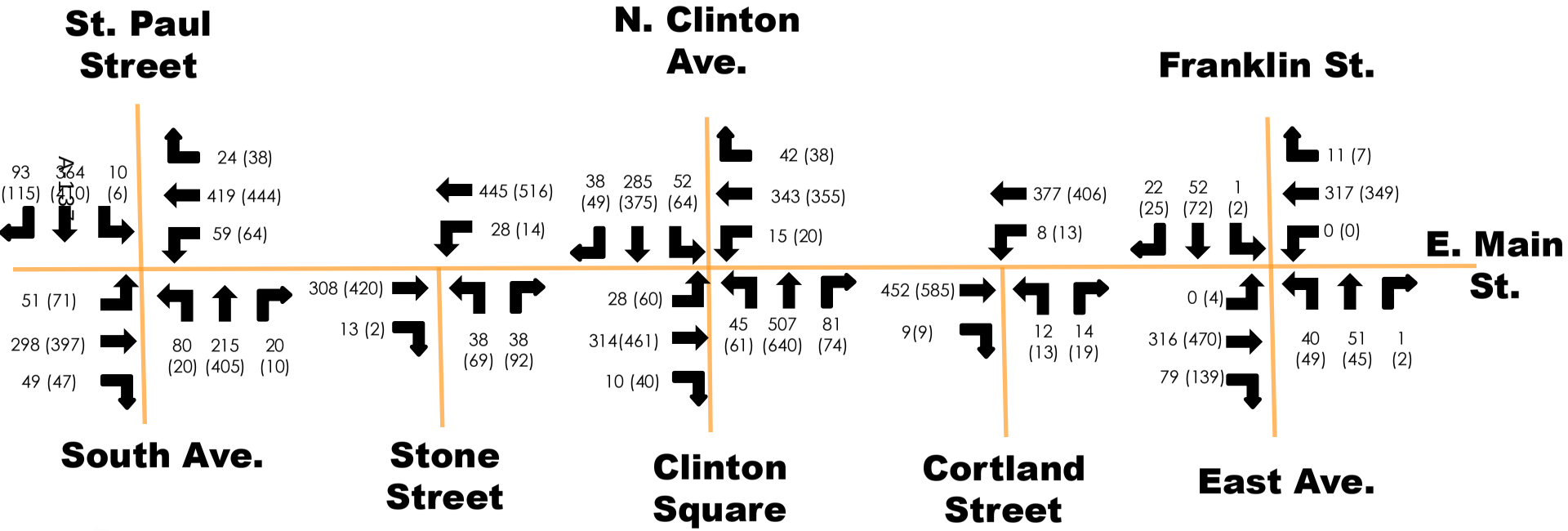

FIGURE 7

ETC+20 Volumes (No-Build)
2-Way and Midtown
East Main St.
AM (PM)

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2017 (ETC) SYNCHRO FILES

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	277	45	76	393	31	0	0	0	8	442	89
Future Volume (vph)	49	277	45	76	393	31	0	0	0	8	442	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	175		0	200		0	75		0	150		0
Storage Lanes	1		0	1		0	0		0	1		0
Taper Length (ft)	25			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor	0.86	0.97		0.91	0.97						0.96	
Frt		0.979			0.989						0.975	
Flt Protected	0.950			0.950							0.999	
Satd. Flow (prot)	1300	1516	0	1518	2922	0	0	0	0	0	2870	0
Flt Permitted	0.385			0.383							0.999	
Satd. Flow (perm)	452	1516	0	560	2922	0	0	0	0	0	2854	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		11			11							
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		693			335			717			429	
Travel Time (s)		15.8			7.6			16.3			9.8	
Confl. Peds. (#/hr)	150		150	150		150	150		150	150		150
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Heavy Vehicles (%)	25%	7%	7%	7%	7%	7%	6%	6%	6%	6%	6%	6%
Parking (#/hr)										0		
Adj. Flow (vph)	62	351	57	96	497	39	0	0	0	10	559	113
Shared Lane Traffic (%)												
Lane Group Flow (vph)	62	408	0	96	536	0	0	0	0	0	682	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	*1.00	*1.00	*1.00	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA					Perm	NA	
Protected Phases		1			1						2	
Permitted Phases	1			1						2		
Minimum Split (s)	26.0	26.0		26.0	26.0					25.0	25.0	
Total Split (s)	50.0	50.0		50.0	50.0					42.0	42.0	
Total Split (%)	50.0%	50.0%		50.0%	50.0%					42.0%	42.0%	
Maximum Green (s)	45.0	45.0		45.0	45.0					37.0	37.0	
Yellow Time (s)	4.0	4.0		4.0	4.0					4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0					1.0	1.0	
Lost Time Adjust (s)	-1.0	-2.0		-2.0	-2.0						-2.0	
Total Lost Time (s)	4.0	3.0		3.0	3.0						3.0	
Lead/Lag	Lag	Lag		Lag	Lag					Lag	Lag	
Lead-Lag Optimize?												
Walk Time (s)	11.0	11.0		11.0	11.0					5.0	5.0	

Lane Group	ø9	ø10
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)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Parking (#/hr)		
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)		
Turn Type		
Protected Phases	9	10
Permitted Phases		
Minimum Split (s)	4.0	4.0
Total Split (s)	4.0	4.0
Total Split (%)	4%	4%
Maximum Green (s)	2.0	2.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?		
Walk Time (s)		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)	10.0	10.0		10.0	10.0					15.0	15.0	
Pedestrian Calls (#/hr)	36	36		36	36					0	0	
Act Effct Green (s)	46.0	47.0		47.0	47.0						39.0	
Actuated g/C Ratio	0.46	0.47		0.47	0.47						0.39	
v/c Ratio	0.30	0.57		0.37	0.39						0.61	
Control Delay	13.2	15.7		20.7	16.2						24.4	
Queue Delay	0.0	0.0		0.0	0.4						0.3	
Total Delay	13.2	15.7		20.7	16.5						24.7	
LOS	B	B		C	B						C	
Approach Delay		15.3			17.2						24.7	
Approach LOS		B			B						C	
Queue Length 50th (ft)	14	92		47	138						184	
Queue Length 95th (ft)	17	69		86	164						208	
Internal Link Dist (ft)		613			255			637			349	
Turn Bay Length (ft)	175			200								
Base Capacity (vph)	207	718		263	1379						1113	
Starvation Cap Reductn	0	0		0	386						83	
Spillback Cap Reductn	0	0		0	0						0	
Storage Cap Reductn	0	0		0	0						0	
Reduced v/c Ratio	0.30	0.57		0.37	0.54						0.66	

Intersection Summary

Area Type: CBD
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 39 (39%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 60
Control Type: Pretimed
Maximum v/c Ratio: 0.61
Intersection Signal Delay: 19.5 Intersection LOS: B
Intersection Capacity Utilization 64.2% ICU Level of Service C
Analysis Period (min) 15
* User Entered Value

Splits and Phases: 295: South/St Paul & Main

Lane Group	ø9	ø10
Flash Dont Walk (s)		
Pedestrian Calls (#/hr)		
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	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	68	373	43	82	415	49	0	0	0	5	526	110
Future Volume (vph)	68	373	43	82	415	49	0	0	0	5	526	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	175		0	200		0	75		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor	0.84	0.98		0.92	0.96						0.94	
Frt		0.985			0.984						0.974	
Flt Protected	0.950			0.950								
Satd. Flow (prot)	1300	1538	0	1518	2869	0	0	0	0	0	2828	0
Flt Permitted	0.433			0.375								
Satd. Flow (perm)	495	1538	0	550	2869	0	0	0	0	0	2817	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		8			17							
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		693			335			717			429	
Travel Time (s)		15.8			7.6			16.3			9.8	
Confl. Peds. (#/hr)	150		150	150		150	200		200	200		200
Confl. Bikes (#/hr)			5			5			5			5
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
Heavy Vehicles (%)	25%	7%	7%	7%	7%	7%	6%	6%	6%	6%	6%	6%
Parking (#/hr)										0		
Adj. Flow (vph)	72	393	45	86	437	52	0	0	0	5	554	116
Shared Lane Traffic (%)												
Lane Group Flow (vph)	72	438	0	86	489	0	0	0	0	0	675	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	*1.00	*1.00	*1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA					Perm	NA	
Protected Phases		1			1						2	
Permitted Phases	1			1						2		
Minimum Split (s)	26.0	26.0		26.0	26.0					26.0	26.0	
Total Split (s)	51.0	51.0		51.0	51.0					41.0	41.0	
Total Split (%)	51.0%	51.0%		51.0%	51.0%					41.0%	41.0%	
Maximum Green (s)	46.0	46.0		46.0	46.0					36.0	36.0	
Yellow Time (s)	4.0	4.0		4.0	4.0					4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0					1.0	1.0	
Lost Time Adjust (s)	-1.0	0.0		-1.0	0.0						0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0						5.0	
Lead/Lag	Lag	Lag		Lag	Lag					Lag	Lag	
Lead-Lag Optimize?												
Walk Time (s)	11.0	11.0		11.0	11.0					5.0	5.0	

Lane Group	ø9	ø10
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)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Parking (#/hr)		
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)		
Turn Type		
Protected Phases	9	10
Permitted Phases		
Minimum Split (s)	4.0	4.0
Total Split (s)	4.0	4.0
Total Split (%)	4%	4%
Maximum Green (s)	2.0	2.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?		
Walk Time (s)		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)	10.0	10.0		10.0	10.0					15.0	15.0	
Pedestrian Calls (#/hr)	36	36		36	36					0	0	
Act Effct Green (s)	47.0	46.0		47.0	46.0						36.0	
Actuated g/C Ratio	0.47	0.46		0.47	0.46						0.36	
v/c Ratio	0.31	0.62		0.33	0.37						0.67	
Control Delay	15.6	18.9		28.4	26.2						15.2	
Queue Delay	0.0	0.0		0.0	0.2						0.2	
Total Delay	15.6	18.9		28.4	26.4						15.3	
LOS	B	B		C	C						B	
Approach Delay		18.4			26.7						15.3	
Approach LOS		B			C						B	
Queue Length 50th (ft)	29	184		27	86						150	
Queue Length 95th (ft)	67	388		92	190						177	
Internal Link Dist (ft)		613			255			637			349	
Turn Bay Length (ft)	175			200								
Base Capacity (vph)	232	711		258	1328						1014	
Starvation Cap Reductn	0	0		0	286						35	
Spillback Cap Reductn	0	0		0	0						0	
Storage Cap Reductn	0	0		0	0						0	
Reduced v/c Ratio	0.31	0.62		0.33	0.47						0.69	

Intersection Summary

Area Type: CBD
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 90 (90%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 60
Control Type: Pretimed
Maximum v/c Ratio: 0.67
Intersection Signal Delay: 19.9 Intersection LOS: B
Intersection Capacity Utilization 74.5% ICU Level of Service D
Analysis Period (min) 15
* User Entered Value

Splits and Phases: 295: South/St Paul & Main

Lane Group	ø9	ø10
Flash Dont Walk (s)		
Pedestrian Calls (#/hr)		
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		

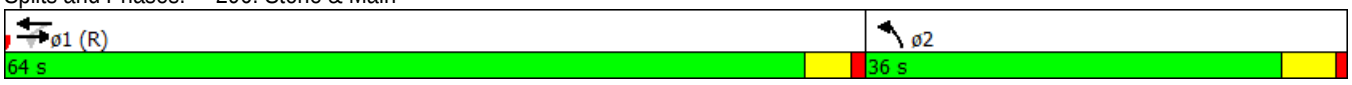
Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	267	12	27	430	36	36
Future Volume (vph)	267	12	27	430	36	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	50		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Ped Bike Factor	0.99		0.88		0.90	
Frt	0.994				0.932	
Flt Protected			0.950		0.976	
Satd. Flow (prot)	1752	0	1770	3374	1583	0
Flt Permitted			0.518		0.976	
Satd. Flow (perm)	1752	0	854	3374	1529	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	4				41	
Link Speed (mph)	30			30	30	
Link Distance (ft)	335			359	728	
Travel Time (s)	7.6			8.2	16.5	
Confl. Peds. (#/hr)		100	100		50	50
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	7%	2%	2%	7%	2%	2%
Adj. Flow (vph)	303	14	31	489	41	41
Shared Lane Traffic (%)						
Lane Group Flow (vph)	317	0	31	489	82	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes			Yes		
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Turn Type	NA		Perm	NA	Prot	
Protected Phases	1			1	2	
Permitted Phases			1			
Minimum Split (s)	31.0		31.0	31.0	29.0	
Total Split (s)	64.0		64.0	64.0	36.0	
Total Split (%)	64.0%		64.0%	64.0%	36.0%	
Maximum Green (s)	59.5		59.5	59.5	31.0	
Yellow Time (s)	3.5		3.5	3.5	4.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	-1.5		-1.0	-1.5	-2.0	
Total Lost Time (s)	3.0		3.5	3.0	3.0	
Lead/Lag	Lead		Lead	Lead	Lag	
Lead-Lag Optimize?						
Walk Time (s)	18.0		18.0	18.0	7.0	
Flash Dont Walk (s)	7.0		7.0	7.0	15.0	
Pedestrian Calls (#/hr)	0		0	0	0	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Act Effct Green (s)	61.0		60.5	61.0	33.0	
Actuated g/C Ratio	0.61		0.60	0.61	0.33	
v/c Ratio	0.30		0.06	0.24	0.15	
Control Delay	20.3		3.8	5.2	19.2	
Queue Delay	0.5		0.0	0.0	0.0	
Total Delay	20.8		3.8	5.2	19.2	
LOS	C		A	A	B	
Approach Delay	20.8			5.2	19.2	
Approach LOS	C			A	B	
Queue Length 50th (ft)	126		2	29	12	
Queue Length 95th (ft)	161		6	48	68	
Internal Link Dist (ft)	255			279	648	
Turn Bay Length (ft)			50			
Base Capacity (vph)	1070		516	2058	549	
Starvation Cap Reductn	388		0	0	0	
Spillback Cap Reductn	6		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.46		0.06	0.24	0.15	

Intersection Summary	
Area Type: Other	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 13 (13%), Referenced to phase 1:EBWB, Start of Green	
Natural Cycle: 60	
Control Type: Pretimed	
Maximum v/c Ratio: 0.30	
Intersection Signal Delay: 11.8	Intersection LOS: B
Intersection Capacity Utilization 47.4%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 296: Stone & Main



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	386	2	13	500	66	88
Future Volume (vph)	386	2	13	500	66	88
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	50		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			50		25	
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Ped Bike Factor	1.00		0.86		0.90	
Frt	0.999				0.922	
Flt Protected			0.950		0.979	
Satd. Flow (prot)	1772	0	1770	3374	1555	0
Flt Permitted			0.454		0.979	
Satd. Flow (perm)	1772	0	724	3374	1509	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)					71	
Link Speed (mph)	30			30	30	
Link Distance (ft)	335			359	728	
Travel Time (s)	7.6			8.2	16.5	
Confl. Peds. (#/hr)		150	150		50	50
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	7%	2%	2%	7%	2%	2%
Adj. Flow (vph)	406	2	14	526	69	93
Shared Lane Traffic (%)						
Lane Group Flow (vph)	408	0	14	526	162	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes			Yes		
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Turn Type	NA		Perm	NA	Prot	
Protected Phases	1			1	2	
Permitted Phases			1			
Minimum Split (s)	29.5		29.5	29.5	27.0	
Total Split (s)	63.0		63.0	63.0	37.0	
Total Split (%)	63.0%		63.0%	63.0%	37.0%	
Maximum Green (s)	58.5		58.5	58.5	32.0	
Yellow Time (s)	3.5		3.5	3.5	4.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	4.5		4.5	4.5	5.0	
Lead/Lag	Lead		Lead	Lead	Lag	
Lead-Lag Optimize?						
Walk Time (s)	18.0		18.0	18.0	7.0	
Flash Dont Walk (s)	7.0		7.0	7.0	15.0	
Pedestrian Calls (#/hr)	0		0	0	0	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Act Effct Green (s)	58.5		58.5	58.5	32.0	
Actuated g/C Ratio	0.58		0.58	0.58	0.32	
v/c Ratio	0.39		0.03	0.27	0.30	
Control Delay	1.5		5.9	6.6	5.9	
Queue Delay	0.2		0.0	0.0	0.0	
Total Delay	1.7		5.9	6.6	5.9	
LOS	A		A	A	A	
Approach Delay	1.7			6.6	5.9	
Approach LOS	A			A	A	
Queue Length 50th (ft)	8		2	47	38	
Queue Length 95th (ft)	8		m7	66	32	
Internal Link Dist (ft)	255			279	648	
Turn Bay Length (ft)			50			
Base Capacity (vph)	1036		423	1973	545	
Starvation Cap Reductn	143		0	0	0	
Spillback Cap Reductn	151		0	0	5	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.46		0.03	0.27	0.30	

Intersection Summary	
Area Type: Other	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 85 (85%), Referenced to phase 1:EBWB, Start of Green	
Natural Cycle: 60	
Control Type: Pretimed	
Maximum v/c Ratio: 0.39	
Intersection Signal Delay: 4.7	Intersection LOS: A
Intersection Capacity Utilization 47.1%	ICU Level of Service A
Analysis Period (min) 15	

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

Splits and Phases: 296: Stone & Main

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	290	0	0	319	40	57	549	78	50	0	49
Future Volume (vph)	27	290	0	0	319	40	57	549	78	50	0	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	100		0	50		0	75		0
Storage Lanes	1		0	0		0	1		0	1		1
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	0.92				0.98		0.76	0.97		0.94		0.75
Frt					0.983			0.981				0.850
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	1300	1598	0	0	2923	0	1533	2769	0	1300	0	1371
Flt Permitted	0.438						0.950			0.286		
Satd. Flow (perm)	549	1598	0	0	2923	0	1170	2769	0	367	0	1034
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					16			21				65
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		359			253			759			440	
Travel Time (s)		8.2			5.8			17.3			10.0	
Confl. Peds. (#/hr)	100		100	100		100	150		150	150		150
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	25%	7%	7%	7%	7%	7%	6%	6%	6%	25%	6%	6%
Parking (#/hr)								0				
Adj. Flow (vph)	31	333	0	0	367	46	66	631	90	57	0	56
Shared Lane Traffic (%)												
Lane Group Flow (vph)	31	333	0	0	413	0	66	721	0	57	0	56
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		Yes										
Headway Factor	*1.00	*1.00	*1.00	1.14	1.14	1.14	1.14	1.22	1.14	1.14	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA			NA		Perm	NA		D.Pm		Perm
Protected Phases		1			1			2				
Permitted Phases	1						2			2		2
Minimum Split (s)	22.0	22.0			22.0		24.0	24.0		24.0		24.0
Total Split (s)	42.0	42.0			42.0		50.0	50.0		50.0		50.0
Total Split (%)	42.0%	42.0%			42.0%		50.0%	50.0%		50.0%		50.0%
Maximum Green (s)	37.0	37.0			37.0		45.0	45.0		45.0		45.0
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		1.0	1.0		1.0		1.0
Lost Time Adjust (s)	-1.0	-2.0			-2.0		-1.0	-2.0		-1.0		-1.0
Total Lost Time (s)	4.0	3.0			3.0		4.0	3.0		4.0		4.0
Lead/Lag	Lag	Lag			Lag		Lag	Lag		Lag		Lag
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0			5.0		3.0	3.0		3.0		3.0

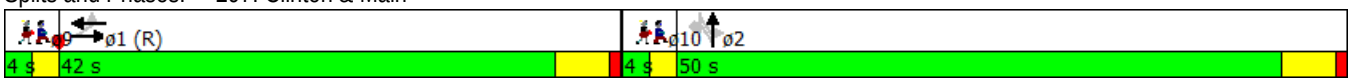
Lane Group	ø9	ø10
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Parking (#/hr)		
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)		
Turn Type		
Protected Phases	9	10
Permitted Phases		
Minimum Split (s)	4.0	4.0
Total Split (s)	4.0	4.0
Total Split (%)	4%	4%
Maximum Green (s)	2.0	2.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?		
Walk Time (s)		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)	12.0	12.0			12.0		16.0	16.0		16.0		16.0
Pedestrian Calls (#/hr)	36	36			36		0	0		0		0
Act Effct Green (s)	38.0	39.0			39.0		46.0	47.0		46.0		46.0
Actuated g/C Ratio	0.38	0.39			0.39		0.46	0.47		0.46		0.46
v/c Ratio	0.15	0.53			0.36		0.12	0.55		0.34		0.11
Control Delay	19.1	22.3			12.7		7.0	9.2		21.2		2.0
Queue Delay	0.0	0.7			1.1		0.0	0.0		0.0		0.0
Total Delay	19.1	23.1			13.7		7.0	9.2		21.2		2.0
LOS	B	C			B		A	A		C		A
Approach Delay		22.7			13.7			9.1				
Approach LOS		C			B			A				
Queue Length 50th (ft)	10	107			63		12	111		24		0
Queue Length 95th (ft)	26	159			80		m15	121		59		5
Internal Link Dist (ft)		279			173			679			360	
Turn Bay Length (ft)	150						50			75		
Base Capacity (vph)	208	623			1149		538	1312		168		510
Starvation Cap Reductn	0	94			484		0	0		0		0
Spillback Cap Reductn	0	0			0		0	0		0		0
Storage Cap Reductn	0	0			0		0	0		0		0
Reduced v/c Ratio	0.15	0.63			0.62		0.12	0.55		0.34		0.11

Intersection Summary

Area Type: CBD
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 55
Control Type: Pretimed
Maximum v/c Ratio: 0.55
Intersection Signal Delay: 13.4 Intersection LOS: B
Intersection Capacity Utilization 58.0% ICU Level of Service B
Analysis Period (min) 15
* User Entered Value
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 297: Clinton & Main



Lane Group	ø9	ø10
Flash Dont Walk (s)		
Pedestrian Calls (#/hr)		
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	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	415	0	0	329	36	78	778	71	61	0	63
Future Volume (vph)	57	415	0	0	329	36	78	778	71	61	0	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	0		0	50		0	75		0
Storage Lanes	1		0	0		0	1		0	0		1
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	0.89				0.98		0.91	0.99		0.98		0.89
Frt					0.985			0.987				0.850
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	1300	1598	0	0	2925	0	1533	2849	0	1300	0	1371
Flt Permitted	0.465						0.950			0.191		
Satd. Flow (perm)	565	1598	0	0	2925	0	1389	2849	0	256	0	1226
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					13			13				70
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		359			253			759			440	
Travel Time (s)		8.2			5.8			17.3			10.0	
Confl. Peds. (#/hr)	150		150	150		150	150		150	150		150
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	25%	7%	7%	7%	7%	7%	6%	6%	6%	25%	6%	6%
Parking (#/hr)								0				
Adj. Flow (vph)	63	461	0	0	366	40	87	864	79	68	0	70
Shared Lane Traffic (%)												
Lane Group Flow (vph)	63	461	0	0	406	0	87	943	0	68	0	70
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		Yes										
Headway Factor	*1.00	*1.00	*1.00	1.14	1.14	1.14	*1.00	*1.00	*1.00	1.14	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA			NA		Perm	NA		D.Pm		Perm
Protected Phases		1			1			2				
Permitted Phases	1						2			2		2
Minimum Split (s)	26.0	26.0			26.0		4.0	4.0		4.0		4.0
Total Split (s)	42.0	42.0			42.0		50.0	50.0		50.0		50.0
Total Split (%)	42.0%	42.0%			42.0%		50.0%	50.0%		50.0%		50.0%
Maximum Green (s)	37.0	37.0			37.0		48.0	48.0		48.0		48.0
Yellow Time (s)	4.0	4.0			4.0		2.0	2.0		2.0		2.0
All-Red Time (s)	1.0	1.0			1.0		0.0	0.0		0.0		0.0
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0		0.0		0.0
Total Lost Time (s)	5.0	5.0			5.0		2.0	2.0		2.0		2.0
Lead/Lag	Lag	Lag			Lag		Lag	Lag		Lag		Lag
Lead-Lag Optimize?												
Walk Time (s)	9.0	9.0			9.0							

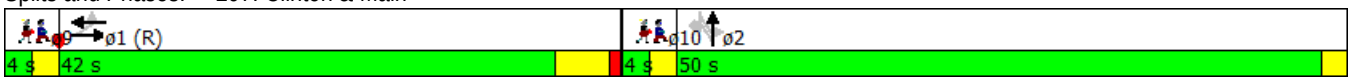
Lane Group	ø9	ø10
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Parking (#/hr)		
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)		
Turn Type		
Protected Phases	9	10
Permitted Phases		
Minimum Split (s)	4.0	4.0
Total Split (s)	4.0	4.0
Total Split (%)	4%	4%
Maximum Green (s)	2.0	2.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?		
Walk Time (s)		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)	12.0	12.0			12.0							
Pedestrian Calls (#/hr)	36	36			36							
Act Effct Green (s)	37.0	37.0			37.0		48.0	48.0		48.0		48.0
Actuated g/C Ratio	0.37	0.37			0.37		0.48	0.48		0.48		0.48
v/c Ratio	0.30	0.78			0.37		0.13	0.69		0.56		0.11
Control Delay	17.4	30.2			14.3		7.2	13.6		34.7		2.1
Queue Delay	0.0	5.1			1.1		0.0	0.5		0.0		0.0
Total Delay	17.4	35.3			15.4		7.2	14.1		34.7		2.1
LOS	B	D			B		A	B		C		A
Approach Delay		33.1			15.4			13.5				
Approach LOS		C			B			B				
Queue Length 50th (ft)	23	302			52		13	214		17		0
Queue Length 95th (ft)	53	#431			72		m19	237		m#97		m12
Internal Link Dist (ft)		279			173			679			360	
Turn Bay Length (ft)	150						50			75		
Base Capacity (vph)	209	591			1090		666	1374		122		624
Starvation Cap Reductn	0	80			444		0	0		0		0
Spillback Cap Reductn	0	0			0		0	138		0		0
Storage Cap Reductn	0	0			0		0	0		0		0
Reduced v/c Ratio	0.30	0.90			0.63		0.13	0.76		0.56		0.11

Intersection Summary

Area Type: CBD
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 18 (18%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 60
Control Type: Pretimed
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 19.1 Intersection LOS: B
Intersection Capacity Utilization 70.8% ICU Level of Service C
Analysis Period (min) 15
* User Entered Value
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 297: Clinton & Main



Lane Group	ø9	ø10
Flash Dont Walk (s)		
Pedestrian Calls (#/hr)		
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	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	410	4	0	362	1	3
Future Volume (vph)	410	4	0	362	1	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor	1.00				0.91	
Frt	0.998				0.892	
Flt Protected					0.990	
Satd. Flow (prot)	3357	0	0	3374	1527	0
Flt Permitted					0.990	
Satd. Flow (perm)	3357	0	0	3374	1503	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	2				4	
Link Speed (mph)	30			30	30	
Link Distance (ft)	253			295	164	
Travel Time (s)	5.8			6.7	3.7	
Confl. Peds. (#/hr)		150	150		50	50
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	7%	2%	2%	7%	2%	2%
Adj. Flow (vph)	494	5	0	436	1	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	499	0	0	436	5	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	0		1	0	2	
Detector Template						
Leading Detector (ft)	0		50	0	40	
Trailing Detector (ft)	0		0	0	-5	
Detector 1 Position(ft)	0		0	0	-5	
Detector 1 Size(ft)	50		50	50	20	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)					20	
Detector 2 Size(ft)					20	
Detector 2 Type					Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)					0.0	
Turn Type	NA			NA	Perm	
Protected Phases	1			1		
Permitted Phases			1		2	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector Phase	1		1	1	2	
Switch Phase						
Minimum Initial (s)	23.0		23.0	23.0	6.0	
Minimum Split (s)	28.5		28.5	28.5	24.5	
Total Split (s)	72.0		72.0	72.0	28.0	
Total Split (%)	72.0%		72.0%	72.0%	28.0%	
Maximum Green (s)	66.5		66.5	66.5	22.5	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.5		1.5	1.5	1.5	
Lost Time Adjust (s)	-3.0			-3.0	-1.0	
Total Lost Time (s)	2.5			2.5	4.5	
Lead/Lag	Lead		Lead	Lead	Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		2.0	2.0	2.0	
Recall Mode	C-Max		C-Max	C-Max	None	
Walk Time (s)	16.0		16.0	16.0	7.0	
Flash Dont Walk (s)	7.0		7.0	7.0	12.0	
Pedestrian Calls (#/hr)	0		0	0	10	
Act Effct Green (s)	91.8			91.8	9.6	
Actuated g/C Ratio	0.92			0.92	0.10	
v/c Ratio	0.16			0.14	0.03	
Control Delay	1.3			1.4	25.2	
Queue Delay	0.0			0.0	0.0	
Total Delay	1.3			1.4	25.2	
LOS	A			A	C	
Approach Delay	1.3			1.4	25.3	
Approach LOS	A			A	C	
Queue Length 50th (ft)	0			0	1	
Queue Length 95th (ft)	48			30	9	
Internal Link Dist (ft)	173			215	84	
Turn Bay Length (ft)						
Base Capacity (vph)	3082			3097	356	
Starvation Cap Reductn	446			425	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.19			0.16	0.01	

Intersection Summary	
Area Type: Other	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 83 (83%), Referenced to phase 1:EBWB, Start of Green	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.16	
Intersection Signal Delay: 1.5	Intersection LOS: A
Intersection Capacity Utilization 40.0%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 298: Cortland (Midtown) & Main

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	545	4	5	391	0	8
Future Volume (vph)	545	4	5	391	0	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor	1.00			1.00	0.69	
Frt	0.999				0.865	
Flt Protected				0.999		
Satd. Flow (prot)	3361	0	0	3372	1113	0
Flt Permitted				0.950		
Satd. Flow (perm)	3361	0	0	3200	1113	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	1				149	
Link Speed (mph)	30			30	30	
Link Distance (ft)	253			295	164	
Travel Time (s)	5.8			6.7	3.7	
Confl. Peds. (#/hr)		200	200			200
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	7%	2%	2%	7%	2%	2%
Adj. Flow (vph)	592	4	5	425	0	9
Shared Lane Traffic (%)						
Lane Group Flow (vph)	596	0	0	430	9	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	0		1	0	2	
Detector Template						
Leading Detector (ft)	0		50	0	40	
Trailing Detector (ft)	0		0	0	-5	
Detector 1 Position(ft)	0		0	0	-5	
Detector 1 Size(ft)	50		50	50	20	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)					20	
Detector 2 Size(ft)					20	
Detector 2 Type					Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)					0.0	
Turn Type	NA		Perm	NA	Perm	
Protected Phases	1			1		
Permitted Phases			1		2	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector Phase	1		1	1	2	
Switch Phase						
Minimum Initial (s)	23.0		23.0	23.0	6.0	
Minimum Split (s)	28.5		28.5	28.5	24.5	
Total Split (s)	71.0		71.0	71.0	29.0	
Total Split (%)	71.0%		71.0%	71.0%	29.0%	
Maximum Green (s)	65.5		65.5	65.5	23.5	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.5		1.5	1.5	1.5	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	5.5			5.5	5.5	
Lead/Lag	Lead		Lead	Lead	Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		2.0	2.0	2.0	
Recall Mode	C-Max		C-Max	C-Max	None	
Walk Time (s)	16.0		16.0	16.0	7.0	
Flash Dont Walk (s)	7.0		7.0	7.0	12.0	
Pedestrian Calls (#/hr)	0		0	0	10	
Act Effct Green (s)	90.6			90.6	8.6	
Actuated g/C Ratio	0.91			0.91	0.09	
v/c Ratio	0.20			0.15	0.04	
Control Delay	1.1			0.6	0.4	
Queue Delay	0.0			0.0	0.0	
Total Delay	1.1			0.6	0.4	
LOS	A			A	A	
Approach Delay	1.1			0.6	0.4	
Approach LOS	A			A	A	
Queue Length 50th (ft)	0			0	0	
Queue Length 95th (ft)	42			10	0	
Internal Link Dist (ft)	173			215	84	
Turn Bay Length (ft)						
Base Capacity (vph)	3045			2899	375	
Starvation Cap Reductn	435			388	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.23			0.17	0.02	

Intersection Summary	
Area Type: Other	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 11 (11%), Referenced to phase 1:EBWB, Start of Green	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.20	
Intersection Signal Delay: 0.9	Intersection LOS: A
Intersection Capacity Utilization 44.2%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 298: Cortland (Midtown) & Main

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	298	71	0	297	11	38	49	1	1	50	21
Future Volume (vph)	0	298	71	0	297	11	38	49	1	1	50	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor			0.93			0.93		1.00			0.98	
Frt			0.850			0.850		0.999			0.957	
Flt Protected								0.979			0.999	
Satd. Flow (prot)	0	1776	1583	0	1776	1583	0	3459	0	0	3312	0
Flt Permitted								0.835			0.954	
Satd. Flow (perm)	0	1776	1467	0	1776	1467	0	2950	0	0	3163	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			83			22		1			24	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		295			311			574			178	
Travel Time (s)		6.7			7.1			13.0			4.0	
Confl. Peds. (#/hr)			50			50			50			50
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	2%	7%	2%	2%	7%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	0	347	83	0	345	13	44	57	1	1	58	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	347	83	0	345	13	0	102	0	0	83	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA	Perm		NA	Perm	Perm	NA		Perm	NA	
Protected Phases		1			1			2			2	
Permitted Phases			1			1	2	2		2		
Minimum Split (s)		30.0	30.0		30.0	30.0	30.0	30.0		30.0	30.0	
Total Split (s)		64.0	64.0		64.0	64.0	36.0	36.0		36.0	36.0	
Total Split (%)		64.0%	64.0%		64.0%	64.0%	36.0%	36.0%		36.0%	36.0%	
Maximum Green (s)		59.0	59.0		59.0	59.0	31.0	31.0		31.0	31.0	
Yellow Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)		1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0		-2.0			-2.0	
Total Lost Time (s)		3.0	3.0		3.0	3.0		3.0			3.0	
Lead/Lag		Lead	Lead		Lead	Lead	Lag	Lag		Lag	Lag	
Lead-Lag Optimize?												
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		17.0	17.0		17.0	17.0	17.0	17.0		17.0	17.0	
Pedestrian Calls (#/hr)		0	0		0	0	0	0		0	0	
Act Effct Green (s)		61.0	61.0		61.0	61.0		33.0			33.0	
Actuated g/C Ratio		0.61	0.61		0.61	0.61		0.33			0.33	
v/c Ratio		0.32	0.09		0.32	0.01		0.10			0.08	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay		3.9	0.8		5.5	0.5		30.2			5.5	
Queue Delay		0.7	0.0		0.4	0.0		0.0			0.5	
Total Delay		4.6	0.8		5.9	0.5		30.2			6.0	
LOS		A	A		A	A		C			A	
Approach Delay		3.9			5.7			30.2			6.0	
Approach LOS		A			A			C			A	
Queue Length 50th (ft)		61	1		37	0		26			0	
Queue Length 95th (ft)		6	0		47	1		44			7	
Internal Link Dist (ft)		215			231			494			98	
Turn Bay Length (ft)												
Base Capacity (vph)		1083	927		1083	903		974			1059	
Starvation Cap Reductn		440	0		327	0		0			723	
Spillback Cap Reductn		0	0		0	0		0			0	
Storage Cap Reductn		0	0		0	0		0			0	
Reduced v/c Ratio		0.54	0.09		0.46	0.01		0.10			0.25	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 83 (83%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 60
Control Type: Pretimed
Maximum v/c Ratio: 0.32
Intersection Signal Delay: 7.5 Intersection LOS: A
Intersection Capacity Utilization 46.7% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 2991: East/Franklin & Main

Lanes, Volumes, Timings
2991: East/Franklin & Main

12/3/2015

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	427	129	0	328	7	47	43	2	2	69	24
Future Volume (vph)	4	427	129	0	328	7	47	43	2	2	69	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor			0.68			0.74		1.00			0.96	
Frt			0.850			0.850		0.997			0.962	
Flt Protected								0.975			0.999	
Satd. Flow (prot)	0	1776	1583	0	1776	1583	0	3425	0	0	3250	0
Flt Permitted		0.998						0.789			0.952	
Satd. Flow (perm)	0	1773	1078	0	1776	1178	0	2772	0	0	3097	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			145			22		2			27	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		295			311			574			178	
Travel Time (s)		6.7			7.1			13.0			4.0	
Confl. Peds. (#/hr)			294			199			174			134
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	2%	7%	2%	2%	7%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	4	480	145	0	369	8	53	48	2	2	78	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	484	145	0	369	8	0	103	0	0	107	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA	Perm		NA	Perm	Perm	NA		Perm	NA	
Protected Phases		1			1			2			2	
Permitted Phases	1		1			1	2	2		2		
Minimum Split (s)	30.0	30.0	30.0		30.0	30.0	30.0	30.0		30.0	30.0	
Total Split (s)	67.0	67.0	67.0		67.0	67.0	33.0	33.0		33.0	33.0	
Total Split (%)	67.0%	67.0%	67.0%		67.0%	67.0%	33.0%	33.0%		33.0%	33.0%	
Maximum Green (s)	62.0	62.0	62.0		62.0	62.0	28.0	28.0		28.0	28.0	
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0	0.0		0.0	0.0		0.0			0.0	
Total Lost Time (s)		5.0	5.0		5.0	5.0		5.0			5.0	
Lead/Lag	Lead	Lead	Lead		Lead	Lead	Lag	Lag		Lag	Lag	
Lead-Lag Optimize?												
Walk Time (s)	7.0	7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	17.0	17.0	17.0		17.0	17.0	17.0	17.0		17.0	17.0	
Pedestrian Calls (#/hr)	0	0	0		0	0	0	0		0	0	
Act Effct Green (s)		62.0	62.0		62.0	62.0		28.0			28.0	
Actuated g/C Ratio		0.62	0.62		0.62	0.62		0.28			0.28	
v/c Ratio		0.44	0.20		0.34	0.01		0.13			0.12	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay		6.2	1.2		4.2	0.0		39.2			5.1	
Queue Delay		0.7	0.0		0.3	0.0		0.0			0.5	
Total Delay		7.0	1.2		4.5	0.0		39.2			5.6	
LOS		A	A		A	A		D			A	
Approach Delay		5.6			4.4			39.2			5.6	
Approach LOS		A			A			D			A	
Queue Length 50th (ft)		72	0		19	0		34			1	
Queue Length 95th (ft)		89	7		43	0		61			8	
Internal Link Dist (ft)		215			231			494			98	
Turn Bay Length (ft)												
Base Capacity (vph)		1099	723		1101	738		777			886	
Starvation Cap Reductn		315	0		279	0		0			520	
Spillback Cap Reductn		0	0		0	0		0			0	
Storage Cap Reductn		0	0		0	0		0			0	
Reduced v/c Ratio		0.62	0.20		0.45	0.01		0.13			0.29	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 99 (99%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 60
Control Type: Pretimed
Maximum v/c Ratio: 0.44
Intersection Signal Delay: 8.1 Intersection LOS: A
Intersection Capacity Utilization 75.2% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 2991: East/Franklin & Main

2037 (ETC+20) SYNCHRO FILES

NO BUILD

2-PHASE SIGNALS

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	298	49	59	419	24	80	215	20	10	364	93
Future Volume (vph)	51	298	49	59	419	24	80	215	20	10	364	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	175		0	200		0	150		0	150		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.87	0.97		0.93	0.98			0.96		0.73	0.94	
Frt		0.979			0.992			0.987			0.969	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1300	1288	0	1518	2731	0	1533	1524	0	1379	1465	0
Flt Permitted	0.343			0.300			0.222			0.490		
Satd. Flow (perm)	408	1288	0	445	2731	0	358	1524	0	516	1465	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		10			7			6				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		693			335			717			429	
Travel Time (s)		15.8			7.6			16.3			9.8	
Confl. Peds. (#/hr)	150		150	150		150	200		200	200		200
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Heavy Vehicles (%)	25%	7%	7%	7%	7%	7%	6%	6%	6%	6%	6%	6%
Parking (#/hr)		10			10					0		
Adj. Flow (vph)	65	377	62	75	530	30	101	272	25	13	461	118
Shared Lane Traffic (%)												
Lane Group Flow (vph)	65	439	0	75	560	0	101	297	0	13	579	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	*1.00	*1.00	*1.00	1.14	1.26	1.14	1.14	1.14	1.14	1.30	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		1			1			2			2	
Permitted Phases	1			1			2			2		
Minimum Split (s)	26.0	26.0		26.0	26.0		25.0	25.0		25.0	25.0	
Total Split (s)	43.0	43.0		43.0	43.0		49.0	49.0		49.0	49.0	
Total Split (%)	43.0%	43.0%		43.0%	43.0%		49.0%	49.0%		49.0%	49.0%	
Maximum Green (s)	38.0	38.0		38.0	38.0		44.0	44.0		44.0	44.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	-1.0	-2.0		-2.0	-2.0		-1.0	-1.0		-1.0	-2.0	
Total Lost Time (s)	4.0	3.0		3.0	3.0		4.0	4.0		4.0	3.0	
Lead/Lag	Lag	Lag		Lag	Lag		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?												
Walk Time (s)	11.0	11.0		11.0	11.0		5.0	5.0		5.0	5.0	

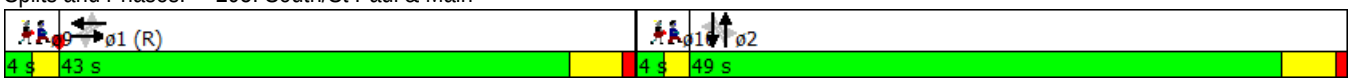
Lane Group	ø9	ø10
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Parking (#/hr)		
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)		
Turn Type		
Protected Phases	9	10
Permitted Phases		
Minimum Split (s)	4.0	4.0
Total Split (s)	4.0	4.0
Total Split (%)	4%	4%
Maximum Green (s)	2.0	2.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?		
Walk Time (s)		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)	10.0	10.0		10.0	10.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	36	36		36	36		0	0		0	0	
Act Effct Green (s)	39.0	40.0		40.0	40.0		45.0	45.0		45.0	46.0	
Actuated g/C Ratio	0.39	0.40		0.40	0.40		0.45	0.45		0.45	0.46	
v/c Ratio	0.41	0.84		0.42	0.51		0.63	0.43		0.06	0.86	
Control Delay	25.9	44.7		28.2	21.6		41.7	20.8		12.6	35.1	
Queue Delay	0.0	0.0		0.0	0.4		0.0	0.0		0.0	1.6	
Total Delay	25.9	44.7		28.2	22.0		41.7	20.8		12.6	36.7	
LOS	C	D		C	C		D	C		B	D	
Approach Delay		42.3			22.7			26.1			36.1	
Approach LOS		D			C			C			D	
Queue Length 50th (ft)	17	177		40	160		48	123		5	326	
Queue Length 95th (ft)	32	174		76	190		96	163		m7	392	
Internal Link Dist (ft)		613			255			637			349	
Turn Bay Length (ft)	175			200			150			150		
Base Capacity (vph)	159	521		178	1096		161	689		232	673	
Starvation Cap Reductn	0	0		0	167		0	0		0	25	
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	0.41	0.84		0.42	0.60		0.63	0.43		0.06	0.89	

Intersection Summary

Area Type: CBD
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 39 (39%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 80
Control Type: Pretimed
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 31.7 Intersection LOS: C
Intersection Capacity Utilization 81.7% ICU Level of Service D
Analysis Period (min) 15
* User Entered Value
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 295: South/St Paul & Main



Lane Group	ø9	ø10
Flash Dont Walk (s)		
Pedestrian Calls (#/hr)		
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

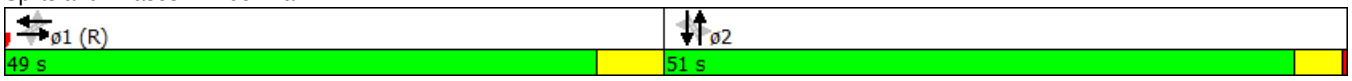
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	71	397	47	64	444	38	20	405	10	6	410	115
Future Volume (vph)	71	397	47	64	444	38	20	405	10	6	410	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	175		0	200		0	150		150	150		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.92	0.99		0.96	0.98			0.99		0.84	0.93	
Frt		0.984			0.988			0.996			0.967	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1444	1467	0	1687	3037	0	1703	1762	0	1703	1611	0
Flt Permitted	0.416			0.334			0.252			0.356		
Satd. Flow (perm)	583	1467	0	567	3037	0	452	1762	0	536	1611	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		8			11			2				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		693			335			717			429	
Travel Time (s)		15.8			7.6			16.3			9.8	
Confl. Peds. (#/hr)	150		150	150		150	200		200	200		200
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	25%	7%	7%	7%	7%	7%	6%	6%	6%	6%	6%	6%
Parking (#/hr)		10			10							
Adj. Flow (vph)	75	418	49	67	467	40	22	440	11	7	446	125
Shared Lane Traffic (%)												
Lane Group Flow (vph)	75	467	0	67	507	0	22	451	0	7	571	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.23	1.00	1.00	1.11	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
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		1			1			2			2	
Permitted Phases	1			1			2			2		
Minimum Split (s)	8.0	8.0		8.0	8.0		20.0	20.0		20.0	20.0	
Total Split (s)	49.0	49.0		49.0	49.0		51.0	51.0		51.0	51.0	
Total Split (%)	49.0%	49.0%		49.0%	49.0%		51.0%	51.0%		51.0%	51.0%	
Maximum Green (s)	44.0	44.0		44.0	44.0		47.0	47.0		47.0	47.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.0	0.0		0.0	0.0		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	-1.0	0.0		-1.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lead		Lead	Lead		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Walk Time (s)							5.0	5.0		5.0	5.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)							11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)							0	0		0	0	
Act Effct Green (s)	45.0	44.0		45.0	44.0		47.0	47.0		47.0	47.0	
Actuated g/C Ratio	0.45	0.44		0.45	0.44		0.47	0.47		0.47	0.47	
v/c Ratio	0.29	0.72		0.26	0.38		0.10	0.54		0.03	0.75	
Control Delay	19.9	29.0		13.8	12.8		16.5	21.9		7.3	21.4	
Queue Delay	0.0	0.0		0.0	0.3		0.0	0.0		0.0	18.1	
Total Delay	19.9	29.0		13.8	13.0		16.5	21.9		7.3	39.4	
LOS	B	C		B	B		B	C		A	D	
Approach Delay		27.7			13.1			21.6			39.0	
Approach LOS		C			B			C			D	
Queue Length 50th (ft)	29	284		20	83		8	197		1	350	
Queue Length 95th (ft)	93	423		48	128		23	292		m2	497	
Internal Link Dist (ft)		613			255			637			349	
Turn Bay Length (ft)	175			200			150			150		
Base Capacity (vph)	262	649		255	1342		212	829		251	757	
Starvation Cap Reductn	0	0		0	317		0	0		0	185	
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	0.29	0.72		0.26	0.49		0.10	0.54		0.03	1.00	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 50
Control Type: Pretimed
Maximum v/c Ratio: 0.75
Intersection Signal Delay: 25.5 Intersection LOS: C
Intersection Capacity Utilization 69.1% ICU Level of Service C
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 295: Main

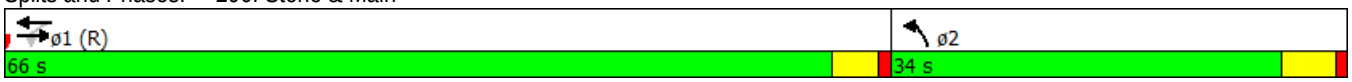


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	308	13	28	445	38	38
Future Volume (vph)	308	13	28	445	38	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	50		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Ped Bike Factor	0.99		0.84		0.90	
Frt	0.994				0.932	
Flt Protected			0.950		0.976	
Satd. Flow (prot)	1484	0	1770	3121	1583	0
Flt Permitted			0.488		0.976	
Satd. Flow (perm)	1484	0	766	3121	1529	0
Right Turn on Red		Yes				No
Satd. Flow (RTOR)	4					
Link Speed (mph)	30			30	30	
Link Distance (ft)	335			359	728	
Travel Time (s)	7.6			8.2	16.5	
Confl. Peds. (#/hr)		150	150		50	50
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	7%	2%	2%	7%	2%	2%
Parking (#/hr)	10			10		
Adj. Flow (vph)	350	15	32	506	43	43
Shared Lane Traffic (%)						
Lane Group Flow (vph)	365	0	32	506	86	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes			Yes		
Headway Factor	1.23	1.00	1.00	1.11	1.00	1.00
Turning Speed (mph)		9	15		15	9
Turn Type	NA		Perm	NA	Prot	
Protected Phases	1			1	2	
Permitted Phases			1			
Minimum Split (s)	31.0		31.0	31.0	29.0	
Total Split (s)	66.0		66.0	66.0	34.0	
Total Split (%)	66.0%		66.0%	66.0%	34.0%	
Maximum Green (s)	61.5		61.5	61.5	29.0	
Yellow Time (s)	3.5		3.5	3.5	4.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	-1.5		-1.0	-1.5	-2.0	
Total Lost Time (s)	3.0		3.5	3.0	3.0	
Lead/Lag	Lead		Lead	Lead	Lag	
Lead-Lag Optimize?						
Walk Time (s)	18.0		18.0	18.0	7.0	
Flash Dont Walk (s)	7.0		7.0	7.0	15.0	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effct Green (s)	63.0		62.5	63.0	31.0	
Actuated g/C Ratio	0.63		0.62	0.63	0.31	
v/c Ratio	0.39		0.07	0.26	0.18	
Control Delay	12.1		3.4	4.9	31.4	
Queue Delay	0.7		0.0	0.0	0.0	
Total Delay	12.8		3.4	4.9	31.4	
LOS	B		A	A	C	
Approach Delay	12.8			4.8	31.4	
Approach LOS	B			A	C	
Queue Length 50th (ft)	90		2	21	36	
Queue Length 95th (ft)	m95		m5	44	95	
Internal Link Dist (ft)	255			279	648	
Turn Bay Length (ft)			50			
Base Capacity (vph)	936		478	1966	490	
Starvation Cap Reductn	282		0	0	0	
Spillback Cap Reductn	30		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.56		0.07	0.26	0.18	

Intersection Summary	
Area Type: Other	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 13 (13%), Referenced to phase 1:EBWB, Start of Green	
Natural Cycle: 60	
Control Type: Pretimed	
Maximum v/c Ratio: 0.39	
Intersection Signal Delay: 10.1	Intersection LOS: B
Intersection Capacity Utilization 48.3%	ICU Level of Service A
Analysis Period (min) 15	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 296: Stone & Main

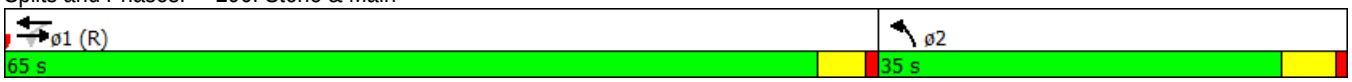


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	420	2	14	516	69	92
Future Volume (vph)	420	2	14	516	69	92
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	50		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			50		25	
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Ped Bike Factor	1.00		0.87		0.90	
Frt	0.999				0.923	
Flt Protected			0.950		0.979	
Satd. Flow (prot)	1506	0	1770	3121	1557	0
Flt Permitted			0.435		0.979	
Satd. Flow (perm)	1506	0	701	3121	1511	0
Right Turn on Red		Yes				No
Satd. Flow (RTOR)						
Link Speed (mph)	30			30	30	
Link Distance (ft)	335			359	728	
Travel Time (s)	7.6			8.2	16.5	
Confl. Peds. (#/hr)		150	150		50	50
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	7%	2%	2%	7%	2%	2%
Parking (#/hr)	10			10		
Adj. Flow (vph)	442	2	15	543	73	97
Shared Lane Traffic (%)						
Lane Group Flow (vph)	444	0	15	543	170	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes			Yes		
Headway Factor	1.23	1.00	1.00	1.11	1.00	1.00
Turning Speed (mph)		9	15		15	9
Turn Type	NA		Perm	NA	Prot	
Protected Phases	1			1	2	
Permitted Phases			1			
Minimum Split (s)	29.5		29.5	29.5	27.0	
Total Split (s)	65.0		65.0	65.0	35.0	
Total Split (%)	65.0%		65.0%	65.0%	35.0%	
Maximum Green (s)	60.5		60.5	60.5	30.0	
Yellow Time (s)	3.5		3.5	3.5	4.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	4.5		4.5	4.5	5.0	
Lead/Lag	Lead		Lead	Lead	Lag	
Lead-Lag Optimize?						
Walk Time (s)	18.0		18.0	18.0	7.0	
Flash Dont Walk (s)	7.0		7.0	7.0	15.0	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effct Green (s)	60.5		60.5	60.5	30.0	
Actuated g/C Ratio	0.60		0.60	0.60	0.30	
v/c Ratio	0.49		0.04	0.29	0.36	
Control Delay	4.4		5.1	5.7	16.8	
Queue Delay	0.4		0.0	0.3	0.0	
Total Delay	4.8		5.1	6.0	16.8	
LOS	A		A	A	B	
Approach Delay	4.8			5.9	16.8	
Approach LOS	A			A	B	
Queue Length 50th (ft)	25		2	38	67	
Queue Length 95th (ft)	63		m6	48	102	
Internal Link Dist (ft)	255			279	648	
Turn Bay Length (ft)			50			
Base Capacity (vph)	911		424	1888	467	
Starvation Cap Reductn	66		0	724	0	
Spillback Cap Reductn	136		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.57		0.04	0.47	0.36	

Intersection Summary	
Area Type: Other	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 85 (85%), Referenced to phase 1:EBWB, Start of Green	
Natural Cycle: 60	
Control Type: Pretimed	
Maximum v/c Ratio: 0.49	
Intersection Signal Delay: 7.1	Intersection LOS: A
Intersection Capacity Utilization 48.5%	ICU Level of Service A
Analysis Period (min) 15	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 296: Stone & Main



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	314	10	15	343	42	45	507	81	52	285	38
Future Volume (vph)	28	314	10	15	343	42	45	507	81	52	285	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	50		0	50		0	75		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	0.88	0.99		0.82	0.97		0.90	0.97		0.94	0.97	
Frt		0.996			0.984			0.979			0.982	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1300	1335	0	1518	2682	0	1533	2754	0	1300	1538	0
Flt Permitted	0.441			0.407			0.375			0.275		
Satd. Flow (perm)	530	1335	0	535	2682	0	546	2754	0	352	1538	0
Right Turn on Red			Yes			Yes			No			No
Satd. Flow (RTOR)		2			17							
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		359			253			759			440	
Travel Time (s)		8.2			5.8			17.3			10.0	
Confl. Peds. (#/hr)	150		150	150		150	150		150	150		150
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	25%	7%	7%	7%	7%	7%	6%	6%	6%	25%	6%	6%
Parking (#/hr)		10			10			0				
Adj. Flow (vph)	32	361	11	17	394	48	52	583	93	60	328	44
Shared Lane Traffic (%)												
Lane Group Flow (vph)	32	372	0	17	442	0	52	676	0	60	372	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes										
Headway Factor	*1.00	*1.00	*1.00	1.14	1.26	1.14	1.14	1.22	1.14	1.14	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		1			1			2			2	
Permitted Phases	1			1			2			2		
Minimum Split (s)	22.0	22.0		22.0	22.0		24.0	24.0		24.0	24.0	
Total Split (s)	49.0	49.0		49.0	49.0		43.0	43.0		43.0	43.0	
Total Split (%)	49.0%	49.0%		49.0%	49.0%		43.0%	43.0%		43.0%	43.0%	
Maximum Green (s)	44.0	44.0		44.0	44.0		38.0	38.0		38.0	38.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	-1.0	-2.0		-1.0	-2.0		-1.0	-2.0		-1.0	-1.0	
Total Lost Time (s)	4.0	3.0		4.0	3.0		4.0	3.0		4.0	4.0	
Lead/Lag	Lag	Lag		Lag	Lag		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		3.0	3.0		3.0	3.0	

Lane Group	ø9	ø10
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)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Parking (#/hr)		
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)		
Turn Type		
Protected Phases	9	10
Permitted Phases		
Minimum Split (s)	4.0	4.0
Total Split (s)	4.0	4.0
Total Split (%)	4%	4%
Maximum Green (s)	2.0	2.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?		
Walk Time (s)		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)	36	36		36	36		0	0		0	0	
Act Effct Green (s)	45.0	46.0		45.0	46.0		39.0	40.0		39.0	39.0	
Actuated g/C Ratio	0.45	0.46		0.45	0.46		0.39	0.40		0.39	0.39	
v/c Ratio	0.13	0.60		0.07	0.36		0.25	0.61		0.44	0.62	
Control Delay	22.5	29.8		9.8	10.7		24.5	26.8		33.2	28.7	
Queue Delay	0.0	0.5		0.0	0.8		0.0	0.0		0.0	0.6	
Total Delay	22.5	30.2		9.8	11.5		24.5	26.8		33.2	29.3	
LOS	C	C		A	B		C	C		C	C	
Approach Delay		29.6			11.4			26.7			29.8	
Approach LOS		C			B			C			C	
Queue Length 50th (ft)	14	166		3	63		22	176		28	192	
Queue Length 95th (ft)	37	238		11	81		51	227		69	279	
Internal Link Dist (ft)		279			173			679			360	
Turn Bay Length (ft)	150			50			50			75		
Base Capacity (vph)	238	615		240	1242		212	1101		137	599	
Starvation Cap Reductn	0	49		0	485		0	0		0	52	
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	0.13	0.66		0.07	0.58		0.25	0.61		0.44	0.68	

Intersection Summary

Area Type: CBD
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 55
Control Type: Pretimed
Maximum v/c Ratio: 0.62
Intersection Signal Delay: 24.5 Intersection LOS: C
Intersection Capacity Utilization 60.9% ICU Level of Service B
Analysis Period (min) 15
* User Entered Value

Splits and Phases: 297: Clinton & Main

Lane Group	ø9	ø10
Flash Dont Walk (s)		
Pedestrian Calls (#/hr)		
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	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	461	40	20	355	38	61	640	74	64	375	49
Future Volume (vph)	60	461	40	20	355	38	61	640	74	64	375	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	50		0	50		0	75		0
Storage Lanes	1		0	1		0	1		0	0		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	0.89	0.97		0.91	0.98		0.95	0.99		0.97	0.99	
Frt		0.988			0.986			0.984			0.983	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1444	1447	0	1687	3011	0	1703	3141	0	1444	1736	0
Flt Permitted	0.470			0.275			0.234			0.197		
Satd. Flow (perm)	636	1447	0	444	3011	0	400	3141	0	290	1736	0
Right Turn on Red			Yes			Yes			No			No
Satd. Flow (RTOR)		6			15							
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		359			253			759			440	
Travel Time (s)		8.2			5.8			17.3			10.0	
Confl. Peds. (#/hr)	150		150	150		150	150		150	150		150
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	25%	7%	7%	7%	7%	7%	6%	6%	6%	25%	6%	6%
Parking (#/hr)		10			10			0				
Adj. Flow (vph)	67	512	44	22	394	42	68	711	82	71	417	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	67	556	0	22	436	0	68	793	0	71	471	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes										
Headway Factor	*1.00	*1.00	*1.00	1.00	1.11	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
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		1			1			2			2	
Permitted Phases	1			1			2			2		
Minimum Split (s)	26.0	26.0		26.0	26.0		4.0	4.0		4.0	4.0	
Total Split (s)	52.0	52.0		52.0	52.0		40.0	40.0		40.0	40.0	
Total Split (%)	52.0%	52.0%		52.0%	52.0%		40.0%	40.0%		40.0%	40.0%	
Maximum Green (s)	47.0	47.0		47.0	47.0		38.0	38.0		38.0	38.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		2.0	2.0		2.0	2.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		0.0	0.0		0.0	0.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		2.0	2.0		2.0	2.0	
Lead/Lag	Lag	Lag		Lag	Lag		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?												
Walk Time (s)	9.0	9.0		9.0	9.0							

Lane Group	ø9	ø10
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)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Parking (#/hr)		
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)		
Turn Type		
Protected Phases	9	10
Permitted Phases		
Minimum Split (s)	4.0	4.0
Total Split (s)	4.0	4.0
Total Split (%)	4%	4%
Maximum Green (s)	2.0	2.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?		
Walk Time (s)		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)	12.0	12.0		12.0	12.0							
Pedestrian Calls (#/hr)	36	36		36	36							
Act Effct Green (s)	47.0	47.0		47.0	47.0		38.0	38.0		38.0	38.0	
Actuated g/C Ratio	0.47	0.47		0.47	0.47		0.38	0.38		0.38	0.38	
v/c Ratio	0.22	0.81		0.11	0.31		0.45	0.66		0.65	0.71	
Control Delay	9.9	23.8		10.0	9.6		34.7	29.0		53.3	30.9	
Queue Delay	0.0	15.5		0.0	0.7		0.0	0.0		0.0	1.8	
Total Delay	9.9	39.3		10.0	10.3		34.7	29.0		53.3	32.7	
LOS	A	D		A	B		C	C		D	C	
Approach Delay		36.1			10.3			29.5			35.4	
Approach LOS		D			B			C			D	
Queue Length 50th (ft)	9	319		5	47		32	217		38	257	
Queue Length 95th (ft)	31	#492		15	70		78	284		m#111	381	
Internal Link Dist (ft)		279			173			679			360	
Turn Bay Length (ft)	150			50			50			75		
Base Capacity (vph)	298	683		208	1423		152	1193		110	659	
Starvation Cap Reductn	0	122		0	630		0	0		0	79	
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	0.22	0.99		0.11	0.55		0.45	0.66		0.65	0.81	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 18 (18%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 70
Control Type: Pretimed
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 28.9 Intersection LOS: C
Intersection Capacity Utilization 76.7% ICU Level of Service D
Analysis Period (min) 15
* User Entered Value
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 297: Clinton & Main

Lane Group	ø9	ø10
Flash Dont Walk (s)		
Pedestrian Calls (#/hr)		
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	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	452	9	8	377	12	14
Future Volume (vph)	452	9	8	377	12	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor	0.99			1.00	0.92	
Frt	0.997				0.926	
Flt Protected				0.999	0.978	
Satd. Flow (prot)	3087	0	0	3121	1604	0
Flt Permitted				0.943	0.978	
Satd. Flow (perm)	3087	0	0	2934	1547	0
Right Turn on Red		Yes				No
Satd. Flow (RTOR)	4					
Link Speed (mph)	30			30	30	
Link Distance (ft)	253			295	164	
Travel Time (s)	5.8			6.7	3.7	
Confl. Peds. (#/hr)		200	200		50	50
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	7%	2%	2%	7%	2%	2%
Parking (#/hr)	10			10		
Adj. Flow (vph)	545	11	10	454	14	17
Shared Lane Traffic (%)						
Lane Group Flow (vph)	556	0	0	464	31	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.11	1.00	1.00	1.11	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	0		1	0	2	
Detector Template						
Leading Detector (ft)	0		50	0	40	
Trailing Detector (ft)	0		0	0	-5	
Detector 1 Position(ft)	0		0	0	-5	
Detector 1 Size(ft)	50		50	50	20	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)					20	
Detector 2 Size(ft)					20	
Detector 2 Type					Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)					0.0	
Turn Type	NA		Perm	NA	Perm	
Protected Phases	1			1		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Permitted Phases			1		2	
Detector Phase	1		1	1	2	
Switch Phase						
Minimum Initial (s)	23.0		23.0	23.0	6.0	
Minimum Split (s)	28.5		28.5	28.5	24.5	
Total Split (s)	68.0		68.0	68.0	32.0	
Total Split (%)	68.0%		68.0%	68.0%	32.0%	
Maximum Green (s)	62.5		62.5	62.5	26.5	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.5		1.5	1.5	1.5	
Lost Time Adjust (s)	-3.0			-3.0	-1.0	
Total Lost Time (s)	2.5			2.5	4.5	
Lead/Lag	Lead		Lead	Lead	Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		2.0	2.0	2.0	
Recall Mode	C-Max		C-Max	C-Max	None	
Walk Time (s)	16.0		16.0	16.0	7.0	
Flash Dont Walk (s)	7.0		7.0	7.0	12.0	
Pedestrian Calls (#/hr)	0		0	0	10	
Act Effct Green (s)	88.6			88.6	10.0	
Actuated g/C Ratio	0.89			0.89	0.10	
v/c Ratio	0.20			0.18	0.20	
Control Delay	0.8			1.5	41.9	
Queue Delay	0.2			0.1	0.0	
Total Delay	1.1			1.7	41.9	
LOS	A			A	D	
Approach Delay	1.1			1.7	41.9	
Approach LOS	A			A	D	
Queue Length 50th (ft)	1			18	19	
Queue Length 95th (ft)	34			34	38	
Internal Link Dist (ft)	173			215	84	
Turn Bay Length (ft)						
Base Capacity (vph)	2734			2598	425	
Starvation Cap Reductn	1387			1111	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.41			0.31	0.07	

Intersection Summary	
Area Type: Other	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 83 (83%), Referenced to phase 1:EBWB, Start of Green	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.20	
Intersection Signal Delay: 2.5	Intersection LOS: A
Intersection Capacity Utilization 40.0%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 298: Cortland (Midtown) & Main

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	585	9	13	406	13	19
Future Volume (vph)	585	9	13	406	13	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor	0.99			0.99	0.92	
Frt	0.998				0.919	
Flt Protected				0.998	0.980	
Satd. Flow (prot)	3095	0	0	3262	1588	0
Flt Permitted				0.932	0.980	
Satd. Flow (perm)	3095	0	0	3031	1538	0
Right Turn on Red		Yes				No
Satd. Flow (RTOR)	3					
Link Speed (mph)	30			30	30	
Link Distance (ft)	253			295	164	
Travel Time (s)	5.8			6.7	3.7	
Confl. Peds. (#/hr)		200	200		50	50
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	7%	2%	7%	2%	2%	2%
Parking (#/hr)	10			10		
Adj. Flow (vph)	636	10	14	441	14	21
Shared Lane Traffic (%)						
Lane Group Flow (vph)	646	0	0	455	35	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.11	1.00	1.00	1.11	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	0		1	0	2	
Detector Template						
Leading Detector (ft)	0		50	0	40	
Trailing Detector (ft)	0		0	0	-5	
Detector 1 Position(ft)	0		0	0	-5	
Detector 1 Size(ft)	50		50	50	20	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)					20	
Detector 2 Size(ft)					20	
Detector 2 Type					Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)					0.0	
Turn Type	NA		Perm	NA	Perm	
Protected Phases	1			1		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Permitted Phases			1		2	
Detector Phase	1		1	1	2	
Switch Phase						
Minimum Initial (s)	23.0		23.0	23.0	6.0	
Minimum Split (s)	28.5		28.5	28.5	24.5	
Total Split (s)	69.0		69.0	69.0	31.0	
Total Split (%)	69.0%		69.0%	69.0%	31.0%	
Maximum Green (s)	63.5		63.5	63.5	25.5	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.5		1.5	1.5	1.5	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	5.5			5.5	5.5	
Lead/Lag	Lead		Lead	Lead	Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		2.0	2.0	2.0	
Recall Mode	C-Max		C-Max	C-Max	None	
Walk Time (s)	16.0		16.0	16.0	7.0	
Flash Dont Walk (s)	7.0		7.0	7.0	12.0	
Pedestrian Calls (#/hr)	0		0	0	10	
Act Effct Green (s)	86.6			86.6	9.2	
Actuated g/C Ratio	0.87			0.87	0.09	
v/c Ratio	0.24			0.17	0.25	
Control Delay	1.1			1.5	44.2	
Queue Delay	0.3			0.1	0.0	
Total Delay	1.4			1.6	44.2	
LOS	A			A	D	
Approach Delay	1.4			1.6	44.2	
Approach LOS	A			A	D	
Queue Length 50th (ft)	16			11	22	
Queue Length 95th (ft)	42			24	46	
Internal Link Dist (ft)	173			215	84	
Turn Bay Length (ft)						
Base Capacity (vph)	2682			2626	392	
Starvation Cap Reductn	1318			1148	0	
Spillback Cap Reductn	23			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.47			0.31	0.09	

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 11 (11%), Referenced to phase 1:EBWB, Start of Green	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.25	
Intersection Signal Delay: 2.8	Intersection LOS: A
Intersection Capacity Utilization 43.6%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 298: Cortland (Midtown) & Main

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	316	79	0	317	11	40	51	1	1	52	22
Future Volume (vph)	0	316	79	0	317	11	40	51	1	1	52	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor			0.80			0.93		1.00			0.98	
Frt			0.850			0.850		0.999			0.955	
Flt Protected								0.979			0.999	
Satd. Flow (prot)	0	1509	1583	0	1776	1583	0	3459	0	0	3303	0
Flt Permitted								0.828			0.954	
Satd. Flow (perm)	0	1509	1273	0	1776	1467	0	2926	0	0	3154	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			92			22		1			26	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		295			311			574			178	
Travel Time (s)		6.7			7.1			13.0			4.0	
Confl. Peds. (#/hr)			150			50			50			50
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	2%	7%	2%	2%	7%	2%	2%	2%	2%	2%	2%	2%
Parking (#/hr)		10										
Adj. Flow (vph)	0	367	92	0	369	13	47	59	1	1	60	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	367	92	0	369	13	0	107	0	0	87	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.23	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
Turn Type		NA	Perm		NA	Perm	Perm	NA		Perm	NA	
Protected Phases		1			1			2			2	
Permitted Phases			1			1	2	2		2		
Minimum Split (s)		30.0	30.0		30.0	30.0	30.0	30.0		30.0	30.0	
Total Split (s)		66.0	66.0		66.0	66.0	34.0	34.0		34.0	34.0	
Total Split (%)		66.0%	66.0%		66.0%	66.0%	34.0%	34.0%		34.0%	34.0%	
Maximum Green (s)		61.0	61.0		61.0	61.0	29.0	29.0		29.0	29.0	
Yellow Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)		1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0		-2.0			-2.0	
Total Lost Time (s)		3.0	3.0		3.0	3.0		3.0			3.0	
Lead/Lag		Lead	Lead		Lead	Lead	Lag	Lag		Lag	Lag	
Lead-Lag Optimize?												
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		17.0	17.0		17.0	17.0	17.0	17.0		17.0	17.0	
Pedestrian Calls (#/hr)		0	0		0	0	0	0		0	0	
Act Effct Green (s)		63.0	63.0		63.0	63.0		31.0			31.0	
Actuated g/C Ratio		0.63	0.63		0.63	0.63		0.31			0.31	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.39	0.11		0.33	0.01		0.12			0.09	
Control Delay		5.8	1.1		5.4	0.5		32.0			5.3	
Queue Delay		0.6	0.0		0.3	0.0		0.0			0.5	
Total Delay		6.3	1.1		5.7	0.5		32.0			5.8	
LOS		A	A		A	A		C			A	
Approach Delay		5.3			5.5			32.0			5.8	
Approach LOS		A			A			C			A	
Queue Length 50th (ft)		70	1		39	0		27			0	
Queue Length 95th (ft)		114	0		49	1		46			7	
Internal Link Dist (ft)		215			231			494			98	
Turn Bay Length (ft)												
Base Capacity (vph)		950	836		1118	932		907			995	
Starvation Cap Reductn		268	0		312	0		0			655	
Spillback Cap Reductn		0	0		0	0		0			0	
Storage Cap Reductn		0	0		0	0		0			0	
Reduced v/c Ratio		0.54	0.11		0.46	0.01		0.12			0.26	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 83 (83%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 60
Control Type: Pretimed
Maximum v/c Ratio: 0.39
Intersection Signal Delay: 8.2 Intersection LOS: A
Intersection Capacity Utilization 46.7% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 2991: East/Franklin & Main

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	470	139	0	349	7	49	45	2	2	72	25
Future Volume (vph)	0	470	139	0	349	7	49	45	2	2	72	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor			0.80			0.93		1.00			0.98	
Frt			0.850			0.850		0.997			0.962	
Flt Protected								0.975			0.999	
Satd. Flow (prot)	0	1509	1509	0	1776	1509	0	3436	0	0	3338	0
Flt Permitted								0.786			0.952	
Satd. Flow (perm)	0	1509	1214	0	1776	1399	0	2770	0	0	3178	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			156			22		2			28	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		295			311			574			178	
Travel Time (s)		6.7			7.1			13.0			4.0	
Confl. Peds. (#/hr)			150	150		50			50	50		50
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	7%	7%	7%	7%	7%	7%	2%	2%	2%	2%	2%	2%
Parking (#/hr)		10										
Adj. Flow (vph)	0	528	156	0	392	8	55	51	2	2	81	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	528	156	0	392	8	0	108	0	0	111	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.23	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
Turn Type		NA	Perm		NA	Perm	Perm	NA		Perm	NA	
Protected Phases		1			1			2			2	
Permitted Phases			1			1	2	2		2		
Minimum Split (s)		30.0	30.0		30.0	30.0	30.0	30.0		30.0	30.0	
Total Split (s)		68.0	68.0		68.0	68.0	32.0	32.0		32.0	32.0	
Total Split (%)		68.0%	68.0%		68.0%	68.0%	32.0%	32.0%		32.0%	32.0%	
Maximum Green (s)		63.0	63.0		63.0	63.0	27.0	27.0		27.0	27.0	
Yellow Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)		1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0	0.0		0.0	0.0		0.0			0.0	
Total Lost Time (s)		5.0	5.0		5.0	5.0		5.0			5.0	
Lead/Lag		Lead	Lead		Lead	Lead	Lag	Lag		Lag	Lag	
Lead-Lag Optimize?												
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		17.0	17.0		17.0	17.0	17.0	17.0		17.0	17.0	
Pedestrian Calls (#/hr)		0	0		0	0	0	0		0	0	
Act Effct Green (s)		63.0	63.0		63.0	63.0		27.0			27.0	
Actuated g/C Ratio		0.63	0.63		0.63	0.63		0.27			0.27	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.56	0.19		0.35	0.01		0.14			0.13	
Control Delay		10.3	2.0		4.2	0.0		39.6			5.0	
Queue Delay		0.3	0.4		0.3	0.0		0.0			0.5	
Total Delay		10.6	2.3		4.5	0.0		39.6			5.5	
LOS		B	A		A	A		D			A	
Approach Delay		8.7			4.4			39.6			5.5	
Approach LOS		A			A			D			A	
Queue Length 50th (ft)		122	0		19	0		35			1	
Queue Length 95th (ft)		138	20		56	0		63			8	
Internal Link Dist (ft)		215			231			494			98	
Turn Bay Length (ft)												
Base Capacity (vph)		950	822		1118	889		749			878	
Starvation Cap Reductn		92	333		256	0		0			509	
Spillback Cap Reductn		0	0		0	0		0			0	
Storage Cap Reductn		0	0		0	0		0			0	
Reduced v/c Ratio		0.62	0.32		0.45	0.01		0.14			0.30	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 99 (99%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 60
Control Type: Pretimed
Maximum v/c Ratio: 0.56
Intersection Signal Delay: 9.7 Intersection LOS: A
Intersection Capacity Utilization 53.1% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 2991: East/Franklin & Main

2037 (ETC+20) SYNCHRO FILES

NO BUILD

E-W LEFT TURN PHASING AT SOUTH-ST PAUL & CLINTON

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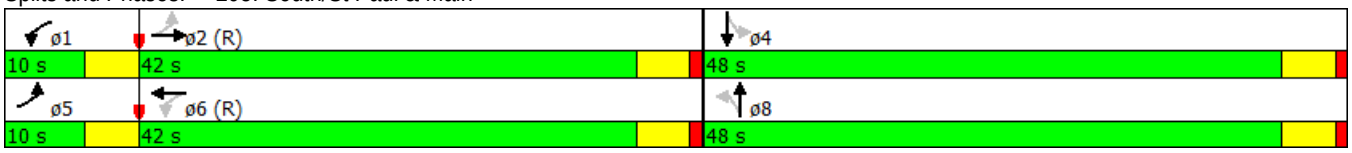
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	298	49	59	419	24	80	215	20	10	364	93
Future Volume (vph)	51	298	49	59	419	24	80	215	20	10	364	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	175		0	200		0	150		0	150		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.87	0.97		0.93	0.98			0.97		0.81	0.96	
Frt		0.979			0.992			0.987			0.969	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1300	1290	0	1518	2731	0	1533	1544	0	1379	1495	0
Flt Permitted	0.338			0.291			0.212			0.486		
Satd. Flow (perm)	403	1290	0	433	2731	0	342	1544	0	572	1495	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		10			7			6				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		693			335			717			429	
Travel Time (s)		15.8			7.6			16.3			9.8	
Confl. Peds. (#/hr)	150		150	150		150	150		150	150		150
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Heavy Vehicles (%)	25%	7%	7%	7%	7%	7%	6%	6%	6%	6%	6%	6%
Parking (#/hr)		10			10					0		
Adj. Flow (vph)	65	377	62	75	530	30	101	272	25	13	461	118
Shared Lane Traffic (%)												
Lane Group Flow (vph)	65	439	0	75	560	0	101	297	0	13	579	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	*1.00	*1.00	*1.00	1.14	1.26	1.14	1.14	1.14	1.14	1.30	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8			4		
Minimum Split (s)	10.0	27.0		10.0	26.0		27.0	27.0		27.0	27.0	
Total Split (s)	10.0	42.0		10.0	42.0		48.0	48.0		48.0	48.0	
Total Split (%)	10.0%	42.0%		10.0%	42.0%		48.0%	48.0%		48.0%	48.0%	
Maximum Green (s)	6.0	37.0		6.0	37.0		43.0	43.0		43.0	43.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	0.0	1.0		0.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	-1.0	-2.0		-2.0	-2.0		-1.0	-1.0		-1.0	-2.0	
Total Lost Time (s)	3.0	3.0		2.0	3.0		4.0	4.0		4.0	3.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)		7.0			11.0		7.0	7.0		7.0	7.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		15.0			10.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)		0			36		0	0		0	0	
Act Effct Green (s)	46.0	39.0		48.0	39.0		44.0	44.0		44.0	45.0	
Actuated g/C Ratio	0.46	0.39		0.48	0.39		0.44	0.44		0.44	0.45	
v/c Ratio	0.26	0.86		0.26	0.52		0.67	0.44		0.05	0.86	
Control Delay	19.8	52.8		11.6	16.3		47.9	21.5		13.6	35.4	
Queue Delay	0.0	0.0		0.0	0.4		0.0	0.0		0.0	1.9	
Total Delay	19.8	52.8		11.6	16.6		47.9	21.5		13.6	37.3	
LOS	B	D		B	B		D	C		B	D	
Approach Delay		48.5			16.0			28.2			36.7	
Approach LOS		D			B			C			D	
Queue Length 50th (ft)	30	283		17	71		50	125		4	328	
Queue Length 95th (ft)	56	#268		29	91		#110	165		m6	394	
Internal Link Dist (ft)		613			255			637			349	
Turn Bay Length (ft)	175			200			150			150		
Base Capacity (vph)	248	509		294	1069		150	682		251	672	
Starvation Cap Reductn	0	0		0	154		0	0		0	28	
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	0.26	0.86		0.26	0.61		0.67	0.44		0.05	0.90	

Intersection Summary

Area Type: CBD
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Pretimed
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 31.8 Intersection LOS: C
Intersection Capacity Utilization 72.7% ICU Level of Service C
Analysis Period (min) 15
* User Entered Value
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 295: South/St Paul & Main



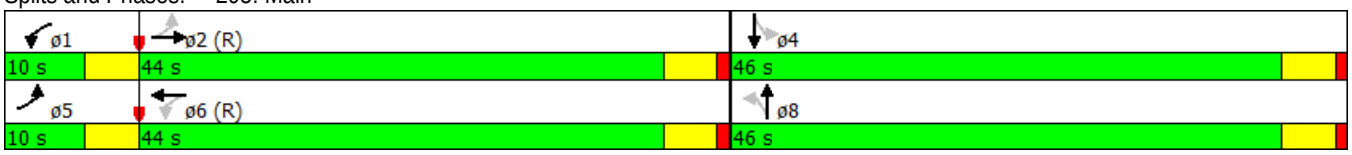
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	71	397	47	64	444	38	20	405	10	6	410	115
Future Volume (vph)	71	397	47	64	444	38	20	405	10	6	410	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	175		0	200		0	150		150	150		150
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.85	0.97		0.93	0.97			0.99		0.84	0.93	
Frt		0.984			0.988			0.996			0.967	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1444	1447	0	1687	2993	0	1703	1765	0	1703	1616	0
Flt Permitted	0.390			0.284			0.204			0.318		
Satd. Flow (perm)	504	1447	0	470	2993	0	366	1765	0	480	1616	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		7			11			2				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		693			335			717			429	
Travel Time (s)		15.8			7.6			16.3			9.8	
Confl. Peds. (#/hr)	150		150	150		150	200		200	200		200
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	25%	7%	7%	7%	7%	7%	6%	6%	6%	6%	6%	6%
Parking (#/hr)		10			10							
Adj. Flow (vph)	75	418	49	67	467	40	22	440	11	7	446	125
Shared Lane Traffic (%)												
Lane Group Flow (vph)	75	467	0	67	507	0	22	451	0	7	571	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.23	1.00	1.00	1.11	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
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8			4		
Minimum Split (s)	10.0	24.0		10.0	26.0		27.0	27.0		24.0	24.0	
Total Split (s)	10.0	44.0		10.0	44.0		46.0	46.0		46.0	46.0	
Total Split (%)	10.0%	44.0%		10.0%	44.0%		46.0%	46.0%		46.0%	46.0%	
Maximum Green (s)	6.0	39.0		6.0	39.0		41.0	41.0		41.0	41.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	0.0	1.0		0.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)		7.0			11.0		7.0	7.0		7.0	7.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		12.0			10.0		15.0	15.0		12.0	12.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)	48.0	40.0		48.0	40.0		42.0	42.0		42.0	42.0	
Actuated g/C Ratio	0.48	0.40		0.48	0.40		0.42	0.42		0.42	0.42	
v/c Ratio	0.24	0.80		0.22	0.42		0.14	0.61		0.03	0.84	
Control Delay	8.2	31.9		8.4	11.8		21.1	26.8		14.7	24.9	
Queue Delay	0.0	0.0		0.0	0.3		0.0	0.0		0.0	2.1	
Total Delay	8.2	31.9		8.4	12.1		21.1	26.8		14.7	27.0	
LOS	A	C		A	B		C	C		B	C	
Approach Delay		28.6			11.7			26.5			26.9	
Approach LOS		C			B			C			C	
Queue Length 50th (ft)	23	299		9	84		9	218		1	113	
Queue Length 95th (ft)	51	#437		19	108		26	323		m3	#501	
Internal Link Dist (ft)		613			255			637			349	
Turn Bay Length (ft)	175			200			150			150		
Base Capacity (vph)	307	583		310	1203		153	742		201	678	
Starvation Cap Reductn	0	0		0	243		0	0		0	37	
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	0.24	0.80		0.22	0.53		0.14	0.61		0.03	0.89	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 80
Control Type: Pretimed
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 23.2 Intersection LOS: C
Intersection Capacity Utilization 68.3% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 295: Main



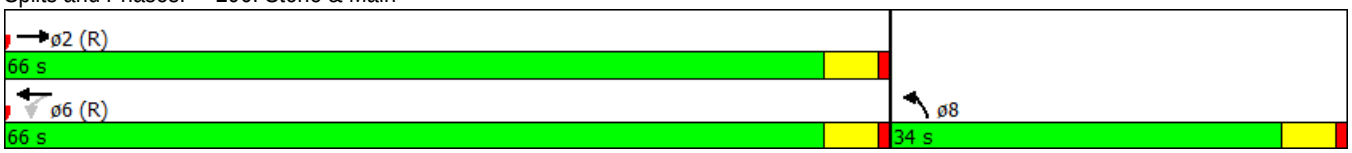
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	308	13	28	445	38	38
Future Volume (vph)	308	13	28	445	38	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	50		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Ped Bike Factor	0.99		0.82		0.90	
Frt	0.994				0.932	
Flt Protected			0.950		0.976	
Satd. Flow (prot)	1481	0	1770	3121	1583	0
Flt Permitted			0.491		0.976	
Satd. Flow (perm)	1481	0	753	3121	1529	0
Right Turn on Red		Yes				No
Satd. Flow (RTOR)	4					
Link Speed (mph)	30			30	30	
Link Distance (ft)	335			359	728	
Travel Time (s)	7.6			8.2	16.5	
Confl. Peds. (#/hr)		150	150		50	50
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	7%	2%	2%	7%	2%	2%
Parking (#/hr)	10			10		
Adj. Flow (vph)	350	15	32	506	43	43
Shared Lane Traffic (%)						
Lane Group Flow (vph)	365	0	32	506	86	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes			Yes		
Headway Factor	1.23	1.00	1.00	1.11	1.00	1.00
Turning Speed (mph)		9	15		15	9
Turn Type	NA		Perm	NA	Prot	
Protected Phases	2			6	8	
Permitted Phases			6			
Minimum Split (s)	29.0		31.0	31.0	29.0	
Total Split (s)	66.0		66.0	66.0	34.0	
Total Split (%)	66.0%		66.0%	66.0%	34.0%	
Maximum Green (s)	61.0		61.0	61.0	29.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	-1.5		-1.0	-1.5	-2.0	
Total Lost Time (s)	3.5		4.0	3.5	3.0	
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)	7.0		18.0	18.0	7.0	
Flash Dont Walk (s)	15.0		7.0	7.0	15.0	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effct Green (s)	62.5		62.0	62.5	31.0	
Actuated g/C Ratio	0.62		0.62	0.62	0.31	
v/c Ratio	0.39		0.07	0.26	0.18	
Control Delay	1.6		3.8	4.1	36.5	
Queue Delay	1.2		0.0	0.0	0.0	
Total Delay	2.8		3.8	4.1	36.5	
LOS	A		A	A	D	
Approach Delay	2.8			4.1	36.5	
Approach LOS	A			A	D	
Queue Length 50th (ft)	8		4	28	48	
Queue Length 95th (ft)	m12		m8	37	107	
Internal Link Dist (ft)	255			279	648	
Turn Bay Length (ft)			50			
Base Capacity (vph)	927		466	1950	490	
Starvation Cap Reductn	352		0	0	0	
Spillback Cap Reductn	12		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.63		0.07	0.26	0.18	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 7 (7%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
Natural Cycle: 60
Control Type: Pretimed
Maximum v/c Ratio: 0.39
Intersection Signal Delay: 6.4 Intersection LOS: A
Intersection Capacity Utilization 48.3% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 296: Stone & Main



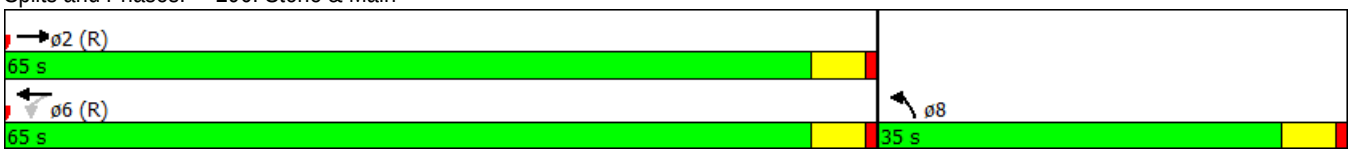
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	420	2	14	516	69	92
Future Volume (vph)	420	2	14	516	69	92
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	50		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			50		25	
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Ped Bike Factor	1.00		0.85		0.90	
Frt	0.999				0.923	
Flt Protected			0.950		0.979	
Satd. Flow (prot)	1506	0	1770	3121	1557	0
Flt Permitted			0.433		0.979	
Satd. Flow (perm)	1506	0	688	3121	1511	0
Right Turn on Red		Yes				No
Satd. Flow (RTOR)						
Link Speed (mph)	30			30	30	
Link Distance (ft)	335			359	728	
Travel Time (s)	7.6			8.2	16.5	
Confl. Peds. (#/hr)		150	150		50	50
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	7%	2%	2%	7%	2%	2%
Parking (#/hr)	10			10		
Adj. Flow (vph)	442	2	15	543	73	97
Shared Lane Traffic (%)						
Lane Group Flow (vph)	444	0	15	543	170	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes			Yes		
Headway Factor	1.23	1.00	1.00	1.11	1.00	1.00
Turning Speed (mph)		9	15		15	9
Turn Type	NA		Perm	NA	Prot	
Protected Phases	2			6	8	
Permitted Phases			6			
Minimum Split (s)	27.0		30.0	30.0	27.0	
Total Split (s)	65.0		65.0	65.0	35.0	
Total Split (%)	65.0%		65.0%	65.0%	35.0%	
Maximum Green (s)	60.0		60.0	60.0	30.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	-1.0		-1.0	-1.0	-1.0	
Total Lost Time (s)	4.0		4.0	4.0	4.0	
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)	7.0		18.0	18.0	7.0	
Flash Dont Walk (s)	15.0		7.0	7.0	15.0	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effct Green (s)	61.0		61.0	61.0	31.0	
Actuated g/C Ratio	0.61		0.61	0.61	0.31	
v/c Ratio	0.48		0.04	0.29	0.35	
Control Delay	2.0		5.2	6.1	16.3	
Queue Delay	0.6		0.0	0.1	0.0	
Total Delay	2.6		5.2	6.2	16.3	
LOS	A		A	A	B	
Approach Delay	2.6			6.1	16.3	
Approach LOS	A			A	B	
Queue Length 50th (ft)	13		2	46	65	
Queue Length 95th (ft)	m14		m6	55	113	
Internal Link Dist (ft)	255			279	648	
Turn Bay Length (ft)			50			
Base Capacity (vph)	918		419	1903	482	
Starvation Cap Reductn	191		0	438	0	
Spillback Cap Reductn	57		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.61		0.04	0.37	0.35	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 88 (88%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
Natural Cycle: 60
Control Type: Pretimed
Maximum v/c Ratio: 0.48
Intersection Signal Delay: 6.3 Intersection LOS: A
Intersection Capacity Utilization 47.3% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 296: Stone & Main



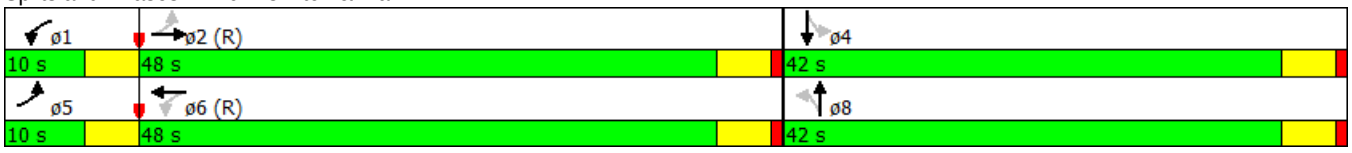
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	314	35	15	343	42	45	507	81	52	285	38
Future Volume (vph)	28	314	35	15	343	42	45	507	81	52	285	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	50		0	50		0	75		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	0.93	0.98		0.91	0.98		0.91	0.97		0.94	0.98	
Frt		0.985			0.984			0.979			0.982	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1300	1307	0	1518	2713	0	1533	2770	0	1300	1546	0
Flt Permitted	0.438			0.373			0.367			0.270		
Satd. Flow (perm)	555	1307	0	542	2713	0	541	2770	0	348	1546	0
Right Turn on Red			Yes			Yes			No			No
Satd. Flow (RTOR)		7			17							
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		359			253			759			440	
Travel Time (s)		8.2			5.8			17.3			10.0	
Confl. Peds. (#/hr)	100		100	100		100	150		150	150		150
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	25%	7%	7%	7%	7%	7%	6%	6%	6%	25%	6%	6%
Parking (#/hr)		10			10			0				
Adj. Flow (vph)	32	361	40	17	394	48	52	583	93	60	328	44
Shared Lane Traffic (%)												
Lane Group Flow (vph)	32	401	0	17	442	0	52	676	0	60	372	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes										
Headway Factor	*1.00	*1.00	*1.00	1.14	1.26	1.14	1.14	1.22	1.14	1.14	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8			4		
Minimum Split (s)	10.0	28.0		10.0	24.0		28.0	28.0		28.0	28.0	
Total Split (s)	10.0	48.0		10.0	48.0		42.0	42.0		42.0	42.0	
Total Split (%)	10.0%	48.0%		10.0%	48.0%		42.0%	42.0%		42.0%	42.0%	
Maximum Green (s)	6.0	43.0		6.0	43.0		37.0	37.0		37.0	37.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	0.0	1.0		0.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	-1.0	-2.0		-1.0	-2.0		-1.0	-2.0		-1.0	-1.0	
Total Lost Time (s)	3.0	3.0		3.0	3.0		4.0	3.0		4.0	4.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		16.0			12.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)		0			36		0	0		0	0	
Act Effct Green (s)	52.0	45.0		52.0	45.0		38.0	39.0		38.0	38.0	
Actuated g/C Ratio	0.52	0.45		0.52	0.45		0.38	0.39		0.38	0.38	
v/c Ratio	0.09	0.68		0.05	0.36		0.25	0.63		0.45	0.63	
Control Delay	9.9	18.2		7.4	12.0		25.5	27.8		34.6	29.3	
Queue Delay	0.0	0.5		0.0	0.8		0.0	0.0		0.0	0.6	
Total Delay	9.9	18.8		7.4	12.8		25.5	27.8		34.6	29.9	
LOS	A	B		A	B		C	C		C	C	
Approach Delay		18.1			12.6			27.6			30.5	
Approach LOS		B			B			C			C	
Queue Length 50th (ft)	6	79		3	61		22	180		29	195	
Queue Length 95th (ft)	17	142		8	47		52	231		70	283	
Internal Link Dist (ft)		279			173			679			360	
Turn Bay Length (ft)	150			50			50			75		
Base Capacity (vph)	340	592		350	1230		205	1080		132	587	
Starvation Cap Reductn	0	34		0	480		0	0		0	45	
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	0.09	0.72		0.05	0.59		0.25	0.63		0.45	0.69	

Intersection Summary

Area Type: CBD
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 70
Control Type: Pretimed
Maximum v/c Ratio: 0.68
Intersection Signal Delay: 22.9 Intersection LOS: C
Intersection Capacity Utilization 60.9% ICU Level of Service B
Analysis Period (min) 15
* User Entered Value

Splits and Phases: 297: Clinton & Main



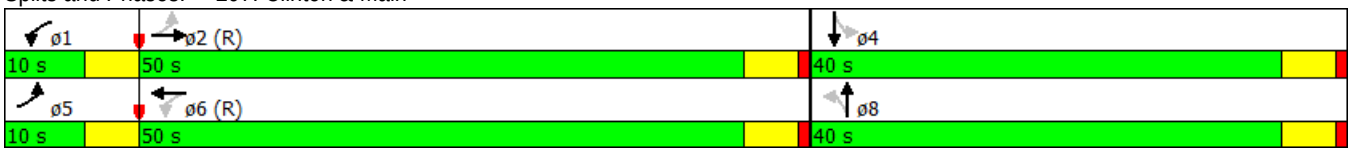
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	461	40	20	355	38	61	640	74	64	375	49
Future Volume (vph)	60	461	40	20	355	38	61	640	74	64	375	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	50		0	50		0	75		0
Storage Lanes	1		0	1		0	1		0	0		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	0.88	0.97		0.92	0.98		0.94	0.98		0.96	0.98	
Frt		0.988			0.986			0.984			0.983	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1444	1451	0	1687	3004	0	1703	3116	0	1444	1720	0
Flt Permitted	0.457			0.256			0.237			0.202		
Satd. Flow (perm)	614	1451	0	416	3004	0	399	3116	0	294	1720	0
Right Turn on Red			Yes			Yes			No			No
Satd. Flow (RTOR)		6			15							
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		359			253			759			440	
Travel Time (s)		8.2			5.8			17.3			10.0	
Confl. Peds. (#/hr)	150		150	150		150	150		150	150		150
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	25%	7%	7%	7%	7%	7%	6%	6%	6%	25%	6%	6%
Parking (#/hr)		10			10			0				
Adj. Flow (vph)	67	512	44	22	394	42	68	711	82	71	417	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	67	556	0	22	436	0	68	793	0	71	471	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes										
Headway Factor	*1.00	*1.00	*1.00	1.00	1.11	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
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8			4		
Minimum Split (s)	10.0	28.0		10.0	24.0		28.0	28.0		28.0	28.0	
Total Split (s)	10.0	50.0		10.0	50.0		40.0	40.0		40.0	40.0	
Total Split (%)	10.0%	50.0%		10.0%	50.0%		40.0%	40.0%		40.0%	40.0%	
Maximum Green (s)	6.0	45.0		6.0	45.0		35.0	35.0		35.0	35.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	0.0	1.0		0.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		16.0			12.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)		0			36		0	0		0	0	
Act Effct Green (s)	54.0	46.0		54.0	46.0		36.0	36.0		36.0	36.0	
Actuated g/C Ratio	0.54	0.46		0.54	0.46		0.36	0.36		0.36	0.36	
v/c Ratio	0.17	0.83		0.07	0.31		0.48	0.71		0.68	0.76	
Control Delay	9.7	26.5		6.1	10.5		38.1	31.7		58.5	34.3	
Queue Delay	0.0	0.7		0.0	0.7		0.0	9.9		0.0	2.0	
Total Delay	9.7	27.1		6.1	11.1		38.1	41.6		58.5	36.3	
LOS	A	C		A	B		D	D		E	D	
Approach Delay		25.3			10.9			41.3			39.2	
Approach LOS		C			B			D			D	
Queue Length 50th (ft)	11	122		3	56		33	225		30	200	
Queue Length 95th (ft)	32	#486		8	38		81	296		m#114	394	
Internal Link Dist (ft)		279			173			679			360	
Turn Bay Length (ft)	150			50			50			75		
Base Capacity (vph)	389	670		313	1389		143	1121		105	619	
Starvation Cap Reductn	0	16		0	606		0	0		0	58	
Spillback Cap Reductn	0	0		0	0		0	301		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.17	0.85		0.07	0.56		0.48	0.97		0.68	0.84	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 80
Control Type: Pretimed
Maximum v/c Ratio: 0.83
Intersection Signal Delay: 31.2 Intersection LOS: C
Intersection Capacity Utilization 72.4% ICU Level of Service C
Analysis Period (min) 15
* User Entered Value
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 297: Clinton & Main



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	452	9	8	377	12	14
Future Volume (vph)	452	9	8	377	12	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor	0.99			1.00	0.92	
Frt	0.997				0.926	
Flt Protected				0.999	0.978	
Satd. Flow (prot)	3120	0	0	3147	1604	0
Flt Permitted				0.943	0.978	
Satd. Flow (perm)	3120	0	0	2962	1547	0
Right Turn on Red		Yes				No
Satd. Flow (RTOR)	4					
Link Speed (mph)	30			30	30	
Link Distance (ft)	253			295	164	
Travel Time (s)	5.8			6.7	3.7	
Confl. Peds. (#/hr)		150	150		50	50
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	10%	10%	10%	10%	2%	2%
Bus Blockages (#/hr)	20	0	0	20	0	0
Adj. Flow (vph)	545	11	10	454	14	17
Shared Lane Traffic (%)						
Lane Group Flow (vph)	556	0	0	464	31	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.05	1.00	1.00	1.05	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	0		1	0	2	
Detector Template						
Leading Detector (ft)	0		50	0	40	
Trailing Detector (ft)	0		0	0	-5	
Detector 1 Position(ft)	0		0	0	-5	
Detector 1 Size(ft)	50		50	50	20	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)					20	
Detector 2 Size(ft)					20	
Detector 2 Type					Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)					0.0	
Turn Type	NA		Perm	NA	Perm	
Protected Phases	1			1		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Permitted Phases			1		2	
Detector Phase	1		1	1	2	
Switch Phase						
Minimum Initial (s)	23.0		23.0	23.0	6.0	
Minimum Split (s)	28.5		28.5	28.5	24.5	
Total Split (s)	68.0		68.0	68.0	32.0	
Total Split (%)	68.0%		68.0%	68.0%	32.0%	
Maximum Green (s)	62.5		62.5	62.5	26.5	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.5		1.5	1.5	1.5	
Lost Time Adjust (s)	-3.0			-3.0	-1.0	
Total Lost Time (s)	2.5			2.5	4.5	
Lead/Lag	Lead		Lead	Lead	Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		2.0	2.0	2.0	
Recall Mode	C-Max		C-Max	C-Max	None	
Walk Time (s)	16.0		16.0	16.0	7.0	
Flash Dont Walk (s)	7.0		7.0	7.0	12.0	
Pedestrian Calls (#/hr)	0		0	0	10	
Act Effct Green (s)	88.6			88.6	10.0	
Actuated g/C Ratio	0.89			0.89	0.10	
v/c Ratio	0.20			0.18	0.20	
Control Delay	1.5			1.4	41.9	
Queue Delay	0.3			0.1	0.0	
Total Delay	1.8			1.5	41.9	
LOS	A			A	D	
Approach Delay	1.8			1.5	41.9	
Approach LOS	A			A	D	
Queue Length 50th (ft)	17			16	19	
Queue Length 95th (ft)	43			27	38	
Internal Link Dist (ft)	173			215	84	
Turn Bay Length (ft)						
Base Capacity (vph)	2763			2623	425	
Starvation Cap Reductn	1509			1127	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.44			0.31	0.07	

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 4 (4%), Referenced to phase 1:EBWB, Start of Green	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.20	
Intersection Signal Delay: 2.9	Intersection LOS: A
Intersection Capacity Utilization 40.0%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 298: Cortland (Midtown) & Main

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	585	9	13	406	13	19
Future Volume (vph)	585	9	13	406	13	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor					0.81	
Frt	0.998				0.919	
Flt Protected				0.998	0.980	
Satd. Flow (prot)	3117	0	0	3119	1351	0
Flt Permitted				0.932	0.980	
Satd. Flow (perm)	3117	0	0	2913	1351	0
Right Turn on Red		Yes				No
Satd. Flow (RTOR)	3					
Link Speed (mph)	30			30	30	
Link Distance (ft)	253			295	164	
Travel Time (s)	5.8			6.7	3.7	
Confl. Peds. (#/hr)						250
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	7%	2%	2%	7%	2%	2%
Parking (#/hr)	10			10		
Adj. Flow (vph)	636	10	14	441	14	21
Shared Lane Traffic (%)						
Lane Group Flow (vph)	646	0	0	455	35	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.11	1.00	1.00	1.11	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	0		1	0	2	
Detector Template						
Leading Detector (ft)	0		50	0	40	
Trailing Detector (ft)	0		0	0	-5	
Detector 1 Position(ft)	0		0	0	-5	
Detector 1 Size(ft)	50		50	50	20	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)					20	
Detector 2 Size(ft)					20	
Detector 2 Type					Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)					0.0	
Turn Type	NA		Perm	NA	Perm	
Protected Phases	1			1		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Permitted Phases			1		2	
Detector Phase	1		1	1	2	
Switch Phase						
Minimum Initial (s)	23.0		23.0	23.0	6.0	
Minimum Split (s)	28.5		28.5	28.5	24.5	
Total Split (s)	68.0		68.0	68.0	32.0	
Total Split (%)	68.0%		68.0%	68.0%	32.0%	
Maximum Green (s)	62.5		62.5	62.5	26.5	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.5		1.5	1.5	1.5	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	5.5			5.5	5.5	
Lead/Lag	Lead		Lead	Lead	Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		2.0	2.0	2.0	
Recall Mode	C-Max		C-Max	C-Max	None	
Walk Time (s)	16.0		16.0	16.0	7.0	
Flash Dont Walk (s)	7.0		7.0	7.0	12.0	
Pedestrian Calls (#/hr)	0		0	0	10	
Act Effct Green (s)	86.5			86.5	9.3	
Actuated g/C Ratio	0.86			0.86	0.09	
v/c Ratio	0.24			0.18	0.28	
Control Delay	1.3			1.9	45.5	
Queue Delay	0.3			0.1	0.0	
Total Delay	1.6			2.0	45.5	
LOS	A			A	D	
Approach Delay	1.6			2.0	45.5	
Approach LOS	A			A	D	
Queue Length 50th (ft)	20			17	22	
Queue Length 95th (ft)	m40			41	47	
Internal Link Dist (ft)	173			215	84	
Turn Bay Length (ft)						
Base Capacity (vph)	2696			2519	358	
Starvation Cap Reductn	1366			1049	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.49			0.31	0.10	

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 1 (1%), Referenced to phase 1:EBWB, Start of Green	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.28	
Intersection Signal Delay: 3.1	Intersection LOS: A
Intersection Capacity Utilization 45.6%	ICU Level of Service A
Analysis Period (min) 15	

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

Splits and Phases: 298: Cortland (Midtown) & Main

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	316	79	0	317	11	40	51	1	1	52	22
Future Volume (vph)	0	316	79	0	317	11	40	51	1	1	52	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor			0.93			0.93		0.98			0.98	
Frt			0.850			0.850		0.999			0.955	
Flt Protected								0.979			0.999	
Satd. Flow (prot)	0	1509	1583	0	1776	1583	0	3459	0	0	3303	0
Flt Permitted								0.828			0.954	
Satd. Flow (perm)	0	1509	1467	0	1776	1467	0	2854	0	0	3152	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			92			22		1			26	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		295			311			574			178	
Travel Time (s)		6.7			7.1			13.0			4.0	
Confl. Peds. (#/hr)			50	50		50	50		50	50		50
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	2%	7%	2%	2%	7%	2%	2%	2%	2%	2%	2%	2%
Parking (#/hr)		10										
Adj. Flow (vph)	0	367	92	0	369	13	47	59	1	1	60	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	367	92	0	369	13	0	107	0	0	87	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.23	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
Turn Type		NA	Perm		NA	Perm	Perm	NA		Perm	NA	
Protected Phases		1			1			2			2	
Permitted Phases			1			1	2	2		2		
Minimum Split (s)		30.0	30.0		30.0	30.0	30.0	30.0		30.0	30.0	
Total Split (s)		66.0	66.0		66.0	66.0	34.0	34.0		34.0	34.0	
Total Split (%)		66.0%	66.0%		66.0%	66.0%	34.0%	34.0%		34.0%	34.0%	
Maximum Green (s)		61.0	61.0		61.0	61.0	29.0	29.0		29.0	29.0	
Yellow Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)		1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0		-2.0			-2.0	
Total Lost Time (s)		3.0	3.0		3.0	3.0		3.0			3.0	
Lead/Lag		Lead	Lead		Lead	Lead	Lag	Lag		Lag	Lag	
Lead-Lag Optimize?												
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		17.0	17.0		17.0	17.0	17.0	17.0		17.0	17.0	
Pedestrian Calls (#/hr)		0	0		0	0	0	0		0	0	
Act Effct Green (s)		63.0	63.0		63.0	63.0		31.0			31.0	
Actuated g/C Ratio		0.63	0.63		0.63	0.63		0.31			0.31	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.39	0.10		0.33	0.01		0.12			0.09	
Control Delay		6.8	0.8		2.5	0.1		20.1			5.3	
Queue Delay		0.6	0.0		0.3	0.0		0.0			0.5	
Total Delay		7.3	0.8		2.8	0.1		20.1			5.8	
LOS		A	A		A	A		C			A	
Approach Delay		6.0			2.7			20.1			5.8	
Approach LOS		A			A			C			A	
Queue Length 50th (ft)		80	1		11	0		17			0	
Queue Length 95th (ft)		44	0		26	1		34			7	
Internal Link Dist (ft)		215			231			494			98	
Turn Bay Length (ft)												
Base Capacity (vph)		950	958		1118	932		885			995	
Starvation Cap Reductn		268	0		312	0		0			651	
Spillback Cap Reductn		0	0		0	0		0			0	
Storage Cap Reductn		0	0		0	0		0			0	
Reduced v/c Ratio		0.54	0.10		0.46	0.01		0.12			0.25	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 99 (99%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 60
Control Type: Pretimed
Maximum v/c Ratio: 0.39
Intersection Signal Delay: 6.2 Intersection LOS: A
Intersection Capacity Utilization 46.7% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 2991: East/Franklin & Main

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	470	139	0	317	11	49	45	2	2	72	25
Future Volume (vph)	0	470	139	0	317	11	49	45	2	2	72	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor			0.80			0.93		0.97			0.98	
Frt			0.850			0.850		0.997			0.962	
Flt Protected								0.975			0.999	
Satd. Flow (prot)	0	1509	1583	0	1776	1583	0	3436	0	0	3338	0
Flt Permitted								0.786			0.952	
Satd. Flow (perm)	0	1509	1273	0	1776	1467	0	2694	0	0	3178	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			156			22		2			28	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		295			311			574			178	
Travel Time (s)		6.7			7.1			13.0			4.0	
Confl. Peds. (#/hr)			150	150		50	50		50	50		50
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	2%	7%	2%	2%	7%	2%	2%	2%	2%	2%	2%	2%
Parking (#/hr)		10										
Adj. Flow (vph)	0	528	156	0	356	12	55	51	2	2	81	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	528	156	0	356	12	0	108	0	0	111	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.23	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
Turn Type		NA	Perm		NA	Perm	Perm	NA		Perm	NA	
Protected Phases		1			1			2			2	
Permitted Phases			1			1	2	2		2		
Minimum Split (s)		30.0	30.0		30.0	30.0	30.0	30.0		30.0	30.0	
Total Split (s)		68.0	68.0		68.0	68.0	32.0	32.0		32.0	32.0	
Total Split (%)		68.0%	68.0%		68.0%	68.0%	32.0%	32.0%		32.0%	32.0%	
Maximum Green (s)		63.0	63.0		63.0	63.0	27.0	27.0		27.0	27.0	
Yellow Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)		1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0	0.0		0.0	0.0		0.0			0.0	
Total Lost Time (s)		5.0	5.0		5.0	5.0		5.0			5.0	
Lead/Lag		Lead	Lead		Lead	Lead	Lag	Lag		Lag	Lag	
Lead-Lag Optimize?												
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		17.0	17.0		17.0	17.0	17.0	17.0		17.0	17.0	
Pedestrian Calls (#/hr)		0	0		0	0	0	0		0	0	
Act Effct Green (s)		63.0	63.0		63.0	63.0		27.0			27.0	
Actuated g/C Ratio		0.63	0.63		0.63	0.63		0.27			0.27	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.56	0.18		0.32	0.01		0.15			0.13	
Control Delay		7.0	0.8		2.8	0.1		29.3			5.0	
Queue Delay		0.3	0.4		0.3	0.0		0.0			0.5	
Total Delay		7.3	1.2		3.1	0.1		29.3			5.5	
LOS		A	A		A	A		C			A	
Approach Delay		5.9			3.0			29.3			5.5	
Approach LOS		A			A			C			A	
Queue Length 50th (ft)		94	1		12	0		23			1	
Queue Length 95th (ft)		49	0		28	0		48			8	
Internal Link Dist (ft)		215			231			494			98	
Turn Bay Length (ft)												
Base Capacity (vph)		950	859		1118	932		728			878	
Starvation Cap Reductn		91	369		304	0		0			509	
Spillback Cap Reductn		0	0		0	0		0			0	
Storage Cap Reductn		0	0		0	0		0			0	
Reduced v/c Ratio		0.61	0.32		0.44	0.01		0.15			0.30	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 97 (97%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 60
Control Type: Pretimed
Maximum v/c Ratio: 0.56
Intersection Signal Delay: 7.0 Intersection LOS: A
Intersection Capacity Utilization 53.1% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 2991: East/Franklin & Main

2037 (ETC+20) SYNCHRO FILES

ALTERNATIVE 1

2 PHASE SIGNALS

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	298	49	59	419	24	80	215	20	10	364	93
Future Volume (vph)	51	298	49	59	419	24	80	215	20	10	364	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	100		0	75		0	100		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.97		0.93	0.98			0.97		0.80	0.92	
Frt		0.979			0.992			0.987			0.969	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1300	1288	0	1518	1321	0	1533	1540	0	1379	1439	0
Flt Permitted	0.219			0.334			0.180			0.471		
Satd. Flow (perm)	300	1288	0	494	1321	0	290	1540	0	547	1439	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		11			4			6				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		693			335			717			429	
Travel Time (s)		15.8			7.6			16.3			9.8	
Confl. Peds. (#/hr)	150		150	150		150	150		150	150		150
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Heavy Vehicles (%)	25%	7%	7%	7%	7%	7%	6%	6%	6%	6%	6%	6%
Parking (#/hr)		10			10					0		
Adj. Flow (vph)	65	377	62	75	530	30	101	272	25	13	461	118
Shared Lane Traffic (%)												
Lane Group Flow (vph)	65	439	0	75	560	0	101	297	0	13	579	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	*1.00	*1.00	*1.00	1.14	1.40	1.14	1.14	1.14	1.14	1.30	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		1			1			2			2	
Permitted Phases	1			1			2			2		
Minimum Split (s)	26.0	26.0		26.0	26.0		25.0	25.0		25.0	25.0	
Total Split (s)	47.0	47.0		47.0	47.0		45.0	45.0		45.0	45.0	
Total Split (%)	47.0%	47.0%		47.0%	47.0%		45.0%	45.0%		45.0%	45.0%	
Maximum Green (s)	42.0	42.0		42.0	42.0		40.0	40.0		40.0	40.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	-1.0	-2.0		-2.0	-2.0		-1.0	-1.0		-1.0	-2.0	
Total Lost Time (s)	4.0	3.0		3.0	3.0		4.0	4.0		4.0	3.0	
Lead/Lag	Lag	Lag		Lag	Lag		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?												
Walk Time (s)	11.0	11.0		11.0	11.0		5.0	5.0		5.0	5.0	

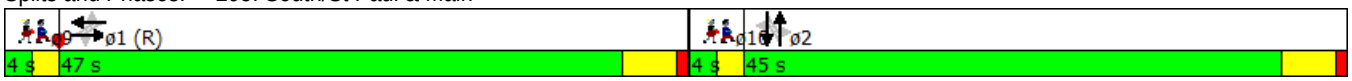
Lane Group	ø9	ø10
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Parking (#/hr)		
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)		
Turn Type		
Protected Phases	9	10
Permitted Phases		
Minimum Split (s)	4.0	4.0
Total Split (s)	4.0	4.0
Total Split (%)	4%	4%
Maximum Green (s)	2.0	2.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?		
Walk Time (s)		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)	10.0	10.0		10.0	10.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	36	36		36	36		0	0		0	0	
Act Effct Green (s)	43.0	44.0		44.0	44.0		41.0	41.0		41.0	42.0	
Actuated g/C Ratio	0.43	0.44		0.44	0.44		0.41	0.41		0.41	0.42	
v/c Ratio	0.50	0.77		0.35	0.96		0.86	0.47		0.06	0.96	
Control Delay	33.2	31.8		24.4	58.8		82.8	24.1		15.0	52.9	
Queue Delay	0.0	0.1		0.0	43.3		0.0	0.4		0.0	3.9	
Total Delay	33.2	31.9		24.4	102.1		82.8	24.5		15.0	56.8	
LOS	C	C		C	F		F	C		B	E	
Approach Delay		32.1			92.9			39.3			55.9	
Approach LOS		C			F			D			E	
Queue Length 50th (ft)	16	139		41	381		57	133		5	354	
Queue Length 95th (ft)	45	138		70	#461		#132	175		m9	#460	
Internal Link Dist (ft)		613			255			637			349	
Turn Bay Length (ft)	100			100			75			100		
Base Capacity (vph)	129	572		217	583		118	634		224	604	
Starvation Cap Reductn	0	0		0	165		0	0		0	14	
Spillback Cap Reductn	0	5		0	0		0	80		28	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.50	0.77		0.35	1.34		0.86	0.54		0.07	0.98	

Intersection Summary

Area Type: CBD
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 39 (39%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 90
Control Type: Pretimed
Maximum v/c Ratio: 0.96
Intersection Signal Delay: 58.2 Intersection LOS: E
Intersection Capacity Utilization 86.3% ICU Level of Service E
Analysis Period (min) 15
* User Entered Value
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 295: South/St Paul & Main



Lane Group	ø9	ø10
Flash Dont Walk (s)		
Pedestrian Calls (#/hr)		
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	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	71	397	47	64	444	38	20	405	10	6	410	115
Future Volume (vph)	71	397	47	64	444	38	20	405	10	6	410	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	175		0	200		0	150		0	75		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.90	0.98		0.93	0.97			0.99		0.82	0.89	
Frt		0.984			0.988			0.996			0.967	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1300	1305	0	1518	1303	0	1533	1586	0	1533	1385	0
Flt Permitted	0.261			0.302			0.237			0.336		
Satd. Flow (perm)	322	1305	0	449	1303	0	382	1586	0	447	1385	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		7			5			2				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		693			335			717			429	
Travel Time (s)		15.8			7.6			16.3			9.8	
Confl. Peds. (#/hr)	150		150	150		150	200		200	200		200
Confl. Bikes (#/hr)			5			5			5			5
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
Heavy Vehicles (%)	25%	7%	7%	7%	7%	7%	6%	6%	6%	6%	6%	6%
Parking (#/hr)		10			10							
Adj. Flow (vph)	75	418	49	67	467	40	21	426	11	6	432	121
Shared Lane Traffic (%)												
Lane Group Flow (vph)	75	467	0	67	507	0	21	437	0	6	553	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.14	1.40	1.14	1.14	1.40	1.14	1.14	1.14	1.14	*1.00	*1.00	*1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		1			1			2			2	
Permitted Phases	1			1			2			2		
Minimum Split (s)	26.0	26.0		26.0	26.0		26.0	26.0		26.0	26.0	
Total Split (s)	45.0	45.0		45.0	45.0		47.0	47.0		47.0	47.0	
Total Split (%)	45.0%	45.0%		45.0%	45.0%		47.0%	47.0%		47.0%	47.0%	
Maximum Green (s)	40.0	40.0		40.0	40.0		42.0	42.0		42.0	42.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	-1.0	0.0		-1.0	0.0		-1.0	-1.0		0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0		4.0	4.0		5.0	5.0	
Lead/Lag	Lag	Lag		Lag	Lag		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?												
Walk Time (s)	11.0	11.0		11.0	11.0		5.0	5.0		5.0	5.0	

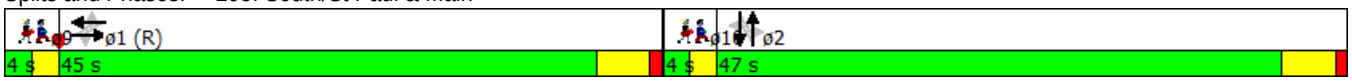
Lane Group	ø9	ø10
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Parking (#/hr)		
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)		
Turn Type		
Protected Phases	9	10
Permitted Phases		
Minimum Split (s)	4.0	4.0
Total Split (s)	4.0	4.0
Total Split (%)	4%	4%
Maximum Green (s)	2.0	2.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?		
Walk Time (s)		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)	10.0	10.0		10.0	10.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	36	36		36	36		0	0		0	0	
Act Effct Green (s)	41.0	40.0		41.0	40.0		43.0	43.0		42.0	42.0	
Actuated g/C Ratio	0.41	0.40		0.41	0.40		0.43	0.43		0.42	0.42	
v/c Ratio	0.57	0.89		0.36	0.97		0.13	0.64		0.03	0.95	
Control Delay	35.4	40.9		31.6	66.0		19.8	27.6		8.8	20.3	
Queue Delay	0.0	0.0		0.0	2.4		0.1	0.0		0.0	23.2	
Total Delay	35.4	40.9		31.6	68.4		19.9	27.6		8.8	43.5	
LOS	D	D		C	E		B	C		A	D	
Approach Delay		40.1			64.1			27.2			43.1	
Approach LOS		D			E			C			D	
Queue Length 50th (ft)	33	289		31	234		8	212		1	215	
Queue Length 95th (ft)	#101	#482		m48	#351		25	322		m1	m132	
Internal Link Dist (ft)		613			255			637			349	
Turn Bay Length (ft)	175			200			150			75		
Base Capacity (vph)	132	526		184	524		164	683		187	581	
Starvation Cap Reductn	0	0		0	7		0	0		0	53	
Spillback Cap Reductn	0	0		0	0		5	0		0	18	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.57	0.89		0.36	0.98		0.13	0.64		0.03	1.05	

Intersection Summary

Area Type: CBD
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 90 (90%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 90
Control Type: Pretimed
Maximum v/c Ratio: 0.97
Intersection Signal Delay: 44.6 Intersection LOS: D
Intersection Capacity Utilization 86.7% ICU Level of Service E
Analysis Period (min) 15
* User Entered Value
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 295: South/St Paul & Main



Lane Group	ø9	ø10
Flash Dont Walk (s)		
Pedestrian Calls (#/hr)		
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		

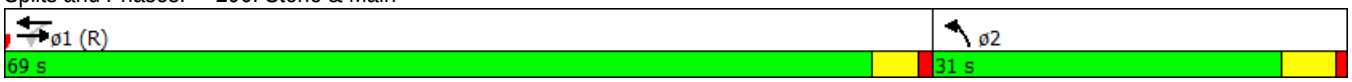
Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	308	13	28	445	38	38
Future Volume (vph)	308	13	28	445	38	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	100		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.84		0.88	
Frt	0.994				0.932	
Flt Protected			0.950		0.976	
Satd. Flow (prot)	1484	0	1770	1509	1583	0
Flt Permitted			0.497		0.976	
Satd. Flow (perm)	1484	0	777	1509	1493	0
Right Turn on Red		Yes				No
Satd. Flow (RTOR)	5					
Link Speed (mph)	30			30	30	
Link Distance (ft)	335			359	728	
Travel Time (s)	7.6			8.2	16.5	
Confl. Peds. (#/hr)		150	150		50	50
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	7%	2%	2%	7%	2%	2%
Parking (#/hr)	10			10		
Adj. Flow (vph)	350	15	32	506	43	43
Shared Lane Traffic (%)						
Lane Group Flow (vph)	365	0	32	506	86	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes			Yes		
Headway Factor	1.23	1.00	1.00	1.23	1.00	1.00
Turning Speed (mph)		9	15		15	9
Turn Type	NA		Perm	NA	Prot	
Protected Phases	1			1	2	
Permitted Phases			1			
Minimum Split (s)	31.0		31.0	31.0	29.0	
Total Split (s)	69.0		69.0	69.0	31.0	
Total Split (%)	69.0%		69.0%	69.0%	31.0%	
Maximum Green (s)	64.5		64.5	64.5	26.0	
Yellow Time (s)	3.5		3.5	3.5	4.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	-1.5		-1.0	-1.5	-2.0	
Total Lost Time (s)	3.0		3.5	3.0	3.0	
Lead/Lag	Lead		Lead	Lead	Lag	
Lead-Lag Optimize?						
Walk Time (s)	18.0		18.0	18.0	7.0	
Flash Dont Walk (s)	7.0		7.0	7.0	15.0	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effct Green (s)	66.0		65.5	66.0	28.0	
Actuated g/C Ratio	0.66		0.66	0.66	0.28	
v/c Ratio	0.37		0.06	0.51	0.19	
Control Delay	3.2		3.7	5.5	29.8	
Queue Delay	0.4		0.0	0.5	0.0	
Total Delay	3.6		3.7	6.0	29.8	
LOS	A		A	A	C	
Approach Delay	3.6			5.8	29.8	
Approach LOS	A			A	C	
Queue Length 50th (ft)	20		4	69	45	
Queue Length 95th (ft)	m60		m6	87	85	
Internal Link Dist (ft)	255			279	648	
Turn Bay Length (ft)			100			
Base Capacity (vph)	981		508	995	443	
Starvation Cap Reductn	241		0	154	0	
Spillback Cap Reductn	0		0	166	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.49		0.06	0.61	0.19	

Intersection Summary	
Area Type: Other	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 89 (89%), Referenced to phase 1:EBWB, Start of Green	
Natural Cycle: 60	
Control Type: Pretimed	
Maximum v/c Ratio: 0.51	
Intersection Signal Delay: 7.1	Intersection LOS: A
Intersection Capacity Utilization 48.4%	ICU Level of Service A
Analysis Period (min) 15	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 296: Stone & Main

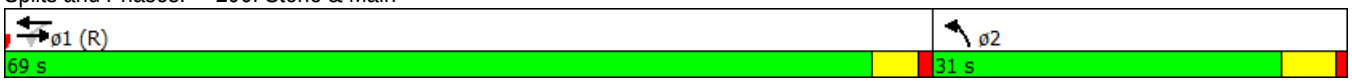


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	420	2	14	516	69	92
Future Volume (vph)	420	2	14	516	69	92
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	100		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			50		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00		0.86		0.88	
Frt	0.999				0.923	
Flt Protected			0.950		0.979	
Satd. Flow (prot)	1506	0	1770	1509	1557	0
Flt Permitted			0.450		0.979	
Satd. Flow (perm)	1506	0	722	1509	1481	0
Right Turn on Red		Yes				No
Satd. Flow (RTOR)						
Link Speed (mph)	30			30	30	
Link Distance (ft)	335			359	728	
Travel Time (s)	7.6			8.2	16.5	
Confl. Peds. (#/hr)		150	150		50	50
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	7%	2%	2%	7%	2%	2%
Parking (#/hr)	10			10		
Adj. Flow (vph)	442	2	15	543	73	97
Shared Lane Traffic (%)						
Lane Group Flow (vph)	444	0	15	543	170	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes			Yes		
Headway Factor	1.23	1.00	1.00	1.23	1.00	1.00
Turning Speed (mph)		9	15		15	9
Turn Type	NA		Perm	NA	Prot	
Protected Phases	1			1	2	
Permitted Phases			1			
Minimum Split (s)	29.5		29.5	29.5	27.0	
Total Split (s)	69.0		69.0	69.0	31.0	
Total Split (%)	69.0%		69.0%	69.0%	31.0%	
Maximum Green (s)	64.5		64.5	64.5	26.0	
Yellow Time (s)	3.5		3.5	3.5	4.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	4.5		4.5	4.5	5.0	
Lead/Lag	Lead		Lead	Lead	Lag	
Lead-Lag Optimize?						
Walk Time (s)	18.0		18.0	18.0	7.0	
Flash Dont Walk (s)	7.0		7.0	7.0	15.0	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effct Green (s)	64.5		64.5	64.5	26.0	
Actuated g/C Ratio	0.64		0.64	0.64	0.26	
v/c Ratio	0.46		0.03	0.56	0.42	
Control Delay	1.5		5.9	8.3	21.5	
Queue Delay	1.8		0.0	0.9	0.5	
Total Delay	3.3		5.9	9.2	22.0	
LOS	A		A	A	C	
Approach Delay	3.3			9.1	22.0	
Approach LOS	A			A	C	
Queue Length 50th (ft)	10		2	87	84	
Queue Length 95th (ft)	m12		m5	m181	148	
Internal Link Dist (ft)	255			279	648	
Turn Bay Length (ft)			100			
Base Capacity (vph)	971		465	973	404	
Starvation Cap Reductn	357		0	198	0	
Spillback Cap Reductn	313		0	0	59	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.72		0.03	0.70	0.49	

Intersection Summary	
Area Type: Other	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 93 (93%), Referenced to phase 1:EBWB, Start of Green	
Natural Cycle: 60	
Control Type: Pretimed	
Maximum v/c Ratio: 0.56	
Intersection Signal Delay: 8.8	Intersection LOS: A
Intersection Capacity Utilization 53.4%	ICU Level of Service A
Analysis Period (min) 15	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 296: Stone & Main



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	298	49	59	419	24	80	215	20	10	364	93
Future Volume (vph)	51	298	49	59	419	24	80	215	20	10	364	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	100		0	75		0	100		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.97		0.93	0.98			0.97		0.80	0.92	
Frt		0.979			0.992			0.987			0.969	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1300	1288	0	1518	1321	0	1533	1540	0	1379	1439	0
Flt Permitted	0.219			0.334			0.180			0.471		
Satd. Flow (perm)	300	1288	0	494	1321	0	290	1540	0	547	1439	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		11			4			6				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		693			335			717			429	
Travel Time (s)		15.8			7.6			16.3			9.8	
Confl. Peds. (#/hr)	150		150	150		150	150		150	150		150
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Heavy Vehicles (%)	25%	7%	7%	7%	7%	7%	6%	6%	6%	6%	6%	6%
Parking (#/hr)		10			10					0		
Adj. Flow (vph)	65	377	62	75	530	30	101	272	25	13	461	118
Shared Lane Traffic (%)												
Lane Group Flow (vph)	65	439	0	75	560	0	101	297	0	13	579	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	*1.00	*1.00	*1.00	1.14	1.40	1.14	1.14	1.14	1.14	1.30	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		1			1			2			2	
Permitted Phases	1			1			2			2		
Minimum Split (s)	26.0	26.0		26.0	26.0		25.0	25.0		25.0	25.0	
Total Split (s)	47.0	47.0		47.0	47.0		45.0	45.0		45.0	45.0	
Total Split (%)	47.0%	47.0%		47.0%	47.0%		45.0%	45.0%		45.0%	45.0%	
Maximum Green (s)	42.0	42.0		42.0	42.0		40.0	40.0		40.0	40.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	-1.0	-2.0		-2.0	-2.0		-1.0	-1.0		-1.0	-2.0	
Total Lost Time (s)	4.0	3.0		3.0	3.0		4.0	4.0		4.0	3.0	
Lead/Lag	Lag	Lag		Lag	Lag		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?												
Walk Time (s)	11.0	11.0		11.0	11.0		5.0	5.0		5.0	5.0	

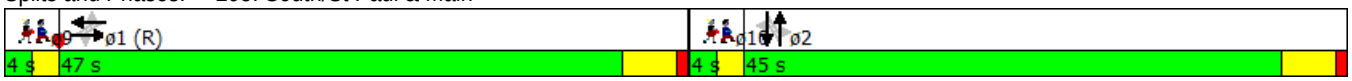
Lane Group	ø9	ø10
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Parking (#/hr)		
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)		
Turn Type		
Protected Phases	9	10
Permitted Phases		
Minimum Split (s)	4.0	4.0
Total Split (s)	4.0	4.0
Total Split (%)	4%	4%
Maximum Green (s)	2.0	2.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?		
Walk Time (s)		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)	10.0	10.0		10.0	10.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	36	36		36	36		0	0		0	0	
Act Effct Green (s)	43.0	44.0		44.0	44.0		41.0	41.0		41.0	42.0	
Actuated g/C Ratio	0.43	0.44		0.44	0.44		0.41	0.41		0.41	0.42	
v/c Ratio	0.50	0.77		0.35	0.96		0.86	0.47		0.06	0.96	
Control Delay	33.2	31.8		24.4	58.8		82.8	24.1		15.0	52.9	
Queue Delay	0.0	0.1		0.0	43.3		0.0	0.4		0.0	3.9	
Total Delay	33.2	31.9		24.4	102.1		82.8	24.5		15.0	56.8	
LOS	C	C		C	F		F	C		B	E	
Approach Delay		32.1			92.9			39.3			55.9	
Approach LOS		C			F			D			E	
Queue Length 50th (ft)	16	139		41	381		57	133		5	354	
Queue Length 95th (ft)	45	138		70	#461		#132	175		m9	#460	
Internal Link Dist (ft)		613			255			637			349	
Turn Bay Length (ft)	100			100			75			100		
Base Capacity (vph)	129	572		217	583		118	634		224	604	
Starvation Cap Reductn	0	0		0	165		0	0		0	14	
Spillback Cap Reductn	0	5		0	0		0	80		28	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.50	0.77		0.35	1.34		0.86	0.54		0.07	0.98	

Intersection Summary

Area Type: CBD
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 39 (39%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 90
Control Type: Pretimed
Maximum v/c Ratio: 0.96
Intersection Signal Delay: 58.2 Intersection LOS: E
Intersection Capacity Utilization 86.3% ICU Level of Service E
Analysis Period (min) 15
* User Entered Value
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 295: South/St Paul & Main



Lane Group	ø9	ø10
Flash Dont Walk (s)		
Pedestrian Calls (#/hr)		
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	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	461	40	20	355	38	61	640	74	64	375	49
Future Volume (vph)	60	461	40	20	355	38	61	640	74	64	375	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	100		0	200		0	75		0
Storage Lanes	1		0	1		0	1		0	0		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	0.92	0.97		0.91	0.98		0.92	0.98		0.95	0.97	
Frt		0.988			0.986			0.984			0.983	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1300	1303	0	1518	1311	0	1533	2799	0	1300	1545	0
Flt Permitted	0.386			0.283			0.222			0.190		
Satd. Flow (perm)	483	1303	0	410	1311	0	331	2799	0	246	1545	0
Right Turn on Red			Yes			Yes			No			No
Satd. Flow (RTOR)		6			7							
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		359			253			759			440	
Travel Time (s)		8.2			5.8			17.3			10.0	
Confl. Peds. (#/hr)	150		150	150		150	150		150	150		150
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	25%	7%	7%	7%	7%	7%	6%	6%	6%	25%	6%	6%
Parking (#/hr)		10			10			0				
Adj. Flow (vph)	67	512	44	22	394	42	68	711	82	71	417	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	67	556	0	22	436	0	68	793	0	71	471	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes										
Headway Factor	*1.00	*1.00	*1.00	1.14	1.40	1.14	*1.00	*1.00	*1.00	1.14	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		1			1			2			2	
Permitted Phases	1			1			2			2		
Minimum Split (s)	26.0	26.0		26.0	26.0		4.0	4.0		4.0	4.0	
Total Split (s)	53.0	53.0		53.0	53.0		39.0	39.0		39.0	39.0	
Total Split (%)	53.0%	53.0%		53.0%	53.0%		39.0%	39.0%		39.0%	39.0%	
Maximum Green (s)	48.0	48.0		48.0	48.0		37.0	37.0		37.0	37.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		2.0	2.0		2.0	2.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		0.0	0.0		0.0	0.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		2.0	2.0		2.0	2.0	
Lead/Lag	Lag	Lag		Lag	Lag		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?												
Walk Time (s)	9.0	9.0		9.0	9.0							

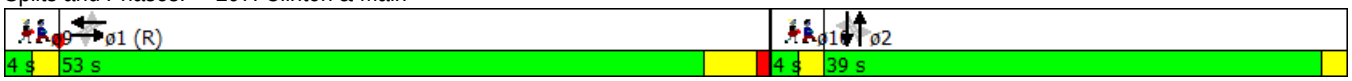
Lane Group	ø9	ø10
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Parking (#/hr)		
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)		
Turn Type		
Protected Phases	9	10
Permitted Phases		
Minimum Split (s)	4.0	4.0
Total Split (s)	4.0	4.0
Total Split (%)	4%	4%
Maximum Green (s)	2.0	2.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?		
Walk Time (s)		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)	12.0	12.0		12.0	12.0							
Pedestrian Calls (#/hr)	36	36		36	36							
Act Effct Green (s)	48.0	48.0		48.0	48.0		37.0	37.0		37.0	37.0	
Actuated g/C Ratio	0.48	0.48		0.48	0.48		0.37	0.37		0.37	0.37	
v/c Ratio	0.29	0.89		0.11	0.69		0.56	0.77		0.78	0.82	
Control Delay	16.5	41.1		10.3	20.0		45.7	33.6		78.9	39.9	
Queue Delay	0.0	0.4		0.0	1.4		0.0	0.0		0.0	1.9	
Total Delay	16.5	41.5		10.3	21.4		45.7	33.6		78.9	41.7	
LOS	B	D		B	C		D	C		E	D	
Approach Delay		38.8			20.9			34.6			46.6	
Approach LOS		D			C			C			D	
Queue Length 50th (ft)	23	372		5	242		34	230		40	273	
Queue Length 95th (ft)	64	#546		9	82		#97	306		m#107	#446	
Internal Link Dist (ft)		279			173			679			360	
Turn Bay Length (ft)	150			100			200			75		
Base Capacity (vph)	231	628		196	632		122	1035		91	571	
Starvation Cap Reductn	0	5		0	71		0	0		0	30	
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	0.29	0.89		0.11	0.78		0.56	0.77		0.78	0.87	

Intersection Summary

Area Type: CBD
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 18 (18%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 90
Control Type: Pretimed
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 35.7 Intersection LOS: D
Intersection Capacity Utilization 82.5% ICU Level of Service E
Analysis Period (min) 15
* User Entered Value
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 297: Clinton & Main



Lane Group	ø9	ø10
Flash Dont Walk (s)		
Pedestrian Calls (#/hr)		
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	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	452	9	8	377	12	14
Future Volume (vph)	452	9	8	377	12	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	100		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.88		0.86	
Frt	0.997				0.926	
Flt Protected			0.950		0.978	
Satd. Flow (prot)	1496	0	1770	1509	1549	0
Flt Permitted			0.434		0.978	
Satd. Flow (perm)	1496	0	714	1509	1457	0
Right Turn on Red		Yes				No
Satd. Flow (RTOR)	3					
Link Speed (mph)	30			30	30	
Link Distance (ft)	253			295	164	
Travel Time (s)	5.8			6.7	3.7	
Confl. Peds. (#/hr)		150	150		50	50
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	7%	2%	2%	7%	2%	2%
Parking (#/hr)	10			10		
Adj. Flow (vph)	545	11	10	454	14	17
Shared Lane Traffic (%)						
Lane Group Flow (vph)	556	0	10	454	31	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.23	1.00	1.00	1.23	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	0		1	0	2	
Detector Template						
Leading Detector (ft)	0		50	0	40	
Trailing Detector (ft)	0		0	0	-5	
Detector 1 Position(ft)	0		0	0	-5	
Detector 1 Size(ft)	50		50	50	20	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)					20	
Detector 2 Size(ft)					20	
Detector 2 Type					Cl+Ex	
Detector 2 Channel						

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector 2 Extend (s)					0.0	
Turn Type	NA		Perm	NA	Perm	
Protected Phases	1			1		
Permitted Phases			1		2	
Detector Phase	1		1	1	2	
Switch Phase						
Minimum Initial (s)	23.0		23.0	23.0	6.0	
Minimum Split (s)	28.5		28.5	28.5	24.5	
Total Split (s)	74.0		74.0	74.0	26.0	
Total Split (%)	74.0%		74.0%	74.0%	26.0%	
Maximum Green (s)	68.5		68.5	68.5	20.5	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.5		1.5	1.5	1.5	
Lost Time Adjust (s)	-3.0		-1.0	-3.0	-1.0	
Total Lost Time (s)	2.5		4.5	2.5	4.5	
Lead/Lag	Lead		Lead	Lead	Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		2.0	2.0	2.0	
Recall Mode	C-Max		C-Max	C-Max	None	
Walk Time (s)	16.0		16.0	16.0	7.0	
Flash Dont Walk (s)	7.0		7.0	7.0	12.0	
Pedestrian Calls (#/hr)	0		0	0	10	
Act Effct Green (s)	88.5		87.3	88.5	10.1	
Actuated g/C Ratio	0.88		0.87	0.88	0.10	
v/c Ratio	0.42		0.02	0.34	0.21	
Control Delay	2.2		2.6	2.4	42.3	
Queue Delay	0.3		0.0	0.1	0.0	
Total Delay	2.5		2.6	2.6	42.3	
LOS	A		A	A	D	
Approach Delay	2.5			2.6	42.3	
Approach LOS	A			A	D	
Queue Length 50th (ft)	23		1	45	19	
Queue Length 95th (ft)	103		m3	63	38	
Internal Link Dist (ft)	173			215	84	
Turn Bay Length (ft)			100			
Base Capacity (vph)	1324		623	1335	313	
Starvation Cap Reductn	271		0	247	0	
Spillback Cap Reductn	0		0	122	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.53		0.02	0.42	0.10	

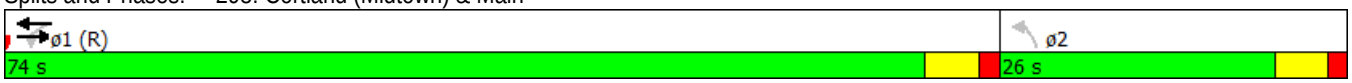
Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 83 (83%), Referenced to phase 1:EBWB, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.42	
Intersection Signal Delay: 3.7	Intersection LOS: A

Intersection Capacity Utilization 45.3% ICU Level of Service A

Analysis Period (min) 15

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

Splits and Phases: 298: Cortland (Midtown) & Main



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	585	9	13	406	13	19
Future Volume (vph)	585	9	13	406	13	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	100		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.87		0.86	
Frt	0.998				0.919	
Flt Protected			0.950		0.980	
Satd. Flow (prot)	1497	0	1770	1509	1528	0
Flt Permitted			0.397		0.980	
Satd. Flow (perm)	1497	0	641	1509	1447	0
Right Turn on Red		Yes				No
Satd. Flow (RTOR)	2					
Link Speed (mph)	30			30	30	
Link Distance (ft)	253			295	164	
Travel Time (s)	5.8			6.7	3.7	
Confl. Peds. (#/hr)		200	200		50	50
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	7%	2%	2%	7%	2%	2%
Parking (#/hr)	10			10		
Adj. Flow (vph)	636	10	14	441	14	21
Shared Lane Traffic (%)						
Lane Group Flow (vph)	646	0	14	441	35	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.23	1.00	1.00	1.23	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	0		1	0	2	
Detector Template						
Leading Detector (ft)	0		50	0	40	
Trailing Detector (ft)	0		0	0	-5	
Detector 1 Position(ft)	0		0	0	-5	
Detector 1 Size(ft)	50		50	50	20	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)					20	
Detector 2 Size(ft)					20	
Detector 2 Type					Cl+Ex	
Detector 2 Channel						

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector 2 Extend (s)					0.0	
Turn Type	NA		Perm	NA	Perm	
Protected Phases	1			1		
Permitted Phases			1		2	
Detector Phase	1		1	1	2	
Switch Phase						
Minimum Initial (s)	23.0		23.0	23.0	6.0	
Minimum Split (s)	28.5		28.5	28.5	24.5	
Total Split (s)	75.0		75.0	75.0	25.0	
Total Split (%)	75.0%		75.0%	75.0%	25.0%	
Maximum Green (s)	69.5		69.5	69.5	19.5	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.5		1.5	1.5	1.5	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	5.5		5.5	5.5	5.5	
Lead/Lag	Lead		Lead	Lead	Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		2.0	2.0	2.0	
Recall Mode	C-Max		C-Max	C-Max	None	
Walk Time (s)	16.0		16.0	16.0	7.0	
Flash Dont Walk (s)	7.0		7.0	7.0	12.0	
Pedestrian Calls (#/hr)	0		0	0	10	
Act Effct Green (s)	86.6		86.6	86.6	9.2	
Actuated g/C Ratio	0.87		0.87	0.87	0.09	
v/c Ratio	0.50		0.03	0.34	0.26	
Control Delay	2.5		1.6	1.9	44.8	
Queue Delay	0.9		0.0	0.2	0.0	
Total Delay	3.4		1.6	2.1	44.8	
LOS	A		A	A	D	
Approach Delay	3.4			2.1	44.8	
Approach LOS	A			A	D	
Queue Length 50th (ft)	66		0	13	22	
Queue Length 95th (ft)	m116		m2	55	46	
Internal Link Dist (ft)	173			215	84	
Turn Bay Length (ft)			100			
Base Capacity (vph)	1296		555	1306	282	
Starvation Cap Reductn	369		0	312	0	
Spillback Cap Reductn	0		0	100	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.70		0.03	0.44	0.12	

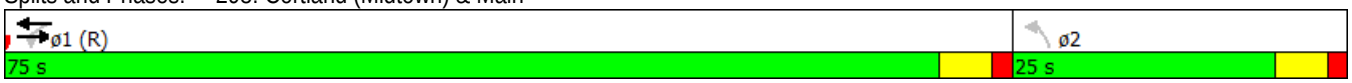
Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 11 (11%), Referenced to phase 1:EBWB, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.50	
Intersection Signal Delay: 4.2	Intersection LOS: A

Intersection Capacity Utilization 54.4% ICU Level of Service A

Analysis Period (min) 15

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

Splits and Phases: 298: Cortland (Midtown) & Main



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	316	79	0	317	11	40	51	1	1	52	22
Future Volume (vph)	0	316	79	0	317	11	40	51	1	1	52	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor		0.99			1.00			0.96			0.96	
Frt		0.973			0.995			0.999			0.955	
Flt Protected								0.979			0.999	
Satd. Flow (prot)	0	1461	0	0	1765	0	0	3459	0	0	3253	0
Flt Permitted								0.827			0.954	
Satd. Flow (perm)	0	1461	0	0	1765	0	0	2804	0	0	3105	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		26			4			1			26	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		295			311			574			178	
Travel Time (s)		6.7			7.1			13.0			4.0	
Confl. Peds. (#/hr)	50		50	50		50	50		50	50		50
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	2%	7%	2%	2%	7%	2%	2%	2%	2%	2%	2%	2%
Parking (#/hr)		10										
Adj. Flow (vph)	0	367	92	0	369	13	47	59	1	1	60	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	459	0	0	382	0	0	107	0	0	87	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.23	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
Turn Type		NA			NA		Perm	NA		Perm	NA	
Protected Phases		1			1			2			2	
Permitted Phases							2	2		2		
Minimum Split (s)		30.0			30.0		30.0	30.0		30.0	30.0	
Total Split (s)		68.0			68.0		32.0	32.0		32.0	32.0	
Total Split (%)		68.0%			68.0%		32.0%	32.0%		32.0%	32.0%	
Maximum Green (s)		63.0			63.0		27.0	27.0		27.0	27.0	
Yellow Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)		1.0			1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		-2.0			-2.0			-2.0			-2.0	
Total Lost Time (s)		3.0			3.0			3.0			3.0	
Lead/Lag		Lead			Lead		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?												
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	17.0		17.0	17.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)		65.0			65.0			29.0			29.0	
Actuated g/C Ratio		0.65			0.65			0.29			0.29	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.48			0.33			0.13			0.09	
Control Delay		10.1			4.5			33.9			5.3	
Queue Delay		0.4			0.3			0.0			0.5	
Total Delay		10.5			4.8			33.9			5.8	
LOS		B			A			C			A	
Approach Delay		10.5			4.8			33.9			5.8	
Approach LOS		B			A			C			A	
Queue Length 50th (ft)		152			33			28			0	
Queue Length 95th (ft)		61			45			48			7	
Internal Link Dist (ft)		215			231			494			98	
Turn Bay Length (ft)												
Base Capacity (vph)		958			1148			813			918	
Starvation Cap Reductn		162			302			0			577	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.58			0.45			0.13			0.26	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 83 (83%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 60
Control Type: Pretimed
Maximum v/c Ratio: 0.48
Intersection Signal Delay: 10.4 Intersection LOS: B
Intersection Capacity Utilization 48.9% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 2991: East/Franklin & Main

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	470	139	0	349	7	49	45	2	2	72	25
Future Volume (vph)	4	470	139	0	349	7	49	45	2	2	72	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	50		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor		0.96			1.00			0.95			0.97	
Frt		0.966			0.997			0.997			0.962	
Flt Protected	0.950							0.975			0.999	
Satd. Flow (prot)	1770	1408	0	1863	1769	0	0	3433	0	0	3297	0
Flt Permitted	0.486							0.784			0.952	
Satd. Flow (perm)	905	1408	0	1863	1769	0	0	2635	0	0	3136	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		30			2			2			28	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		295			311			574			178	
Travel Time (s)		6.7			7.1			13.0			4.0	
Confl. Peds. (#/hr)			150	150		50	50		50	50		50
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	2%	7%	2%	2%	7%	2%	2%	2%	2%	2%	2%	2%
Parking (#/hr)		10										
Adj. Flow (vph)	4	528	156	0	392	8	55	51	2	2	81	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	4	684	0	0	400	0	0	108	0	0	111	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.23	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
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		1			1			2			2	
Permitted Phases	1			1			2	2		2		
Minimum Split (s)	30.0	30.0		30.0	30.0		30.0	30.0		30.0	30.0	
Total Split (s)	70.0	70.0		70.0	70.0		30.0	30.0		30.0	30.0	
Total Split (%)	70.0%	70.0%		70.0%	70.0%		30.0%	30.0%		30.0%	30.0%	
Maximum Green (s)	65.0	65.0		65.0	65.0		25.0	25.0		25.0	25.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0			5.0	
Lead/Lag	Lead	Lead		Lead	Lead		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?												
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	17.0	17.0		17.0	17.0		17.0	17.0		17.0	17.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	65.0	65.0			65.0			25.0			25.0	
Actuated g/C Ratio	0.65	0.65			0.65			0.25			0.25	
v/c Ratio	0.01	0.74			0.35			0.16			0.14	
Control Delay	6.8	11.7			2.3			41.7			5.1	
Queue Delay	0.0	0.0			0.2			0.0			0.5	
Total Delay	6.8	11.7			2.5			41.7			5.6	
LOS	A	B			A			D			A	
Approach Delay		11.6			2.5			41.7			5.6	
Approach LOS		B			A			D			A	
Queue Length 50th (ft)	0	87			15			36			1	
Queue Length 95th (ft)	m1	153			25			63			8	
Internal Link Dist (ft)		215			231			494			98	
Turn Bay Length (ft)	100											
Base Capacity (vph)	588	925			1150			660			805	
Starvation Cap Reductn	0	0			253			0			438	
Spillback Cap Reductn	0	0			0			0			0	
Storage Cap Reductn	0	0			0			0			0	
Reduced v/c Ratio	0.01	0.74			0.45			0.16			0.30	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 99 (99%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 75
Control Type: Pretimed
Maximum v/c Ratio: 0.74
Intersection Signal Delay: 10.8 Intersection LOS: B
Intersection Capacity Utilization 63.1% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2991: East/Franklin & Main

2037 (ETC) SYNCHRO FILES

ALTERNATIVE 1

E-W LEFT TURN PHASING AT SOUTH-ST.PAUL & CLINTON

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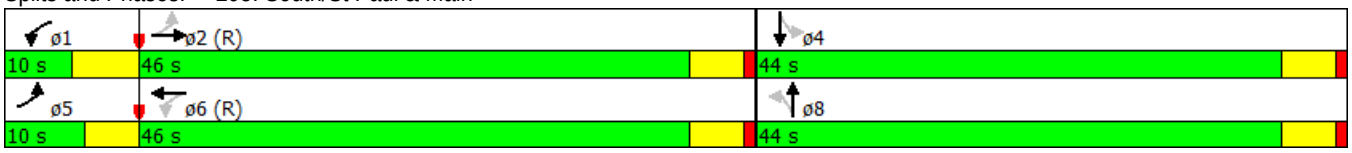
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	298	49	59	419	24	80	215	20	10	364	93
Future Volume (vph)	51	298	49	59	419	24	80	215	20	10	364	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		50	150		50	150		0	75		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.97		0.93	0.98			0.97		0.81	0.93	
Frt		0.979			0.992			0.987			0.969	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1300	1295	0	1518	1321	0	1533	1544	0	1379	1449	0
Flt Permitted	0.208			0.326			0.168			0.465		
Satd. Flow (perm)	285	1295	0	486	1321	0	271	1544	0	550	1449	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		10			4			6				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		693			335			717			429	
Travel Time (s)		15.8			7.6			16.3			9.8	
Confl. Peds. (#/hr)	150		150	150		150	150		150	150		150
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Heavy Vehicles (%)	25%	7%	7%	7%	7%	7%	6%	6%	6%	6%	6%	6%
Parking (#/hr)		10			10					0		
Adj. Flow (vph)	65	377	62	75	530	30	101	272	25	13	461	118
Shared Lane Traffic (%)												
Lane Group Flow (vph)	65	439	0	75	560	0	101	297	0	13	579	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	*1.00	*1.00	*1.00	1.14	1.40	1.14	1.14	1.14	1.14	1.30	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8			4		
Minimum Split (s)	10.0	31.0		10.0	26.0		27.0	27.0		27.0	27.0	
Total Split (s)	10.0	46.0		10.0	46.0		44.0	44.0		44.0	44.0	
Total Split (%)	10.0%	46.0%		10.0%	46.0%		44.0%	44.0%		44.0%	44.0%	
Maximum Green (s)	6.0	41.0		5.0	41.0		39.0	39.0		39.0	39.0	
Yellow Time (s)	4.0	4.0		5.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	0.0	1.0		0.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	-1.0	-2.0		-2.0	-2.0		-1.0	-1.0		-1.0	-2.0	
Total Lost Time (s)	3.0	3.0		3.0	3.0		4.0	4.0		4.0	3.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)		11.0			11.0		7.0	7.0		7.0	7.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		15.0			10.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)		0			36		0	0		0	0	
Act Effct Green (s)	50.0	43.0		50.0	43.0		40.0	40.0		40.0	41.0	
Actuated g/C Ratio	0.50	0.43		0.50	0.43		0.40	0.40		0.40	0.41	
v/c Ratio	0.31	0.78		0.24	0.98		0.94	0.48		0.06	0.97	
Control Delay	19.9	44.4		13.2	54.4		104.5	25.0		16.9	56.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	5.0	
Total Delay	19.9	44.4		13.2	54.4		104.5	25.0		16.9	61.3	
LOS	B	D		B	D		F	C		B	E	
Approach Delay		41.2			49.5			45.2			60.3	
Approach LOS		D			D			D			E	
Queue Length 50th (ft)	30	274		18	153		60	135		4	359	
Queue Length 95th (ft)	56	295		38	#449		#138	179		m8	#466	
Internal Link Dist (ft)		613			255			637			349	
Turn Bay Length (ft)	100			150			150			75		
Base Capacity (vph)	213	562		315	570		108	621		220	594	
Starvation Cap Reductn	0	0		0	0		0	0		0	14	
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	0.31	0.78		0.24	0.98		0.94	0.48		0.06	1.00	

Intersection Summary

Area Type: CBD
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Pretimed
Maximum v/c Ratio: 0.98
Intersection Signal Delay: 49.7 Intersection LOS: D
Intersection Capacity Utilization 77.2% ICU Level of Service D
Analysis Period (min) 15
* User Entered Value
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 295: South/St Paul & Main



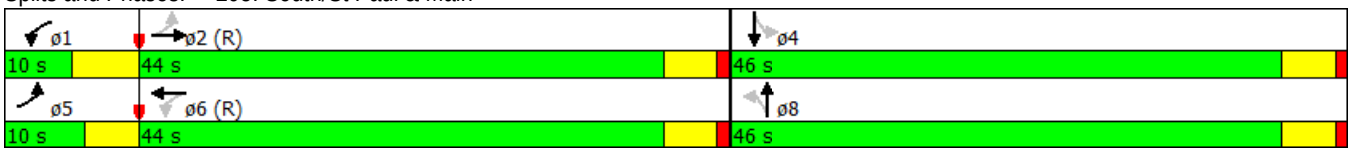
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	71	397	47	64	444	38	20	405	10	6	410	115
Future Volume (vph)	71	397	47	64	444	38	20	405	10	6	410	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	175		0	200		50	150		0	75		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.90	0.97		0.93	0.97			0.99		0.83	0.89	
Frt		0.984			0.988			0.996			0.967	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1300	1302	0	1518	1303	0	1533	1588	0	1533	1383	0
Flt Permitted	0.251			0.292			0.227			0.328		
Satd. Flow (perm)	310	1302	0	434	1303	0	366	1588	0	442	1383	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		7			5			2				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		693			335			717			429	
Travel Time (s)		15.8			7.6			16.3			9.8	
Confl. Peds. (#/hr)	150		150	150		150	200		200	200		200
Confl. Bikes (#/hr)			5			5			5			5
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
Heavy Vehicles (%)	25%	7%	7%	7%	7%	7%	6%	6%	6%	6%	6%	6%
Parking (#/hr)		10			10							
Adj. Flow (vph)	75	418	49	67	467	40	21	426	11	6	432	121
Shared Lane Traffic (%)												
Lane Group Flow (vph)	75	467	0	67	507	0	21	437	0	6	553	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.14	1.40	1.14	1.14	1.40	1.14	1.14	1.14	1.14	*1.00	*1.00	*1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8			4		
Minimum Split (s)	10.0	27.0		10.0	26.0		27.0	27.0		27.0	27.0	
Total Split (s)	10.0	44.0		10.0	44.0		46.0	46.0		46.0	46.0	
Total Split (%)	10.0%	44.0%		10.0%	44.0%		46.0%	46.0%		46.0%	46.0%	
Maximum Green (s)	6.0	39.0		5.0	39.0		41.0	41.0		41.0	41.0	
Yellow Time (s)	4.0	4.0		5.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	0.0	1.0		0.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	-1.0	0.0		-1.0	0.0		-1.0	-1.0		0.0	0.0	
Total Lost Time (s)	3.0	5.0		4.0	5.0		4.0	4.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)		7.0			11.0		7.0	7.0		7.0	7.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		12.0			10.0		15.0	15.0		12.0	12.0	
Pedestrian Calls (#/hr)		0			36		0	0		0	0	
Act Effct Green (s)	48.0	39.0		46.0	39.0		42.0	42.0		41.0	41.0	
Actuated g/C Ratio	0.48	0.39		0.46	0.39		0.42	0.42		0.41	0.41	
v/c Ratio	0.34	0.91		0.25	0.99		0.14	0.65		0.03	0.98	
Control Delay	14.3	48.8		16.5	62.1		20.9	28.8		13.7	28.2	
Queue Delay	0.0	0.0		0.0	2.9		0.1	0.0		0.0	24.4	
Total Delay	14.3	48.8		16.5	65.0		20.9	28.8		13.7	52.6	
LOS	B	D		B	E		C	C		B	D	
Approach Delay		44.0			59.3			28.4			52.1	
Approach LOS		D			E			C			D	
Queue Length 50th (ft)	23	300		18	232		8	217		1	236	
Queue Length 95th (ft)	65	#492		m41	#335		25	328		m1	m148	
Internal Link Dist (ft)		613			255			637			349	
Turn Bay Length (ft)	175			200			150			75		
Base Capacity (vph)	218	512		264	511		153	668		181	567	
Starvation Cap Reductn	0	0		0	6		0	0		0	46	
Spillback Cap Reductn	0	0		0	0		6	0		0	23	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.34	0.91		0.25	1.00		0.14	0.65		0.03	1.06	

Intersection Summary

Area Type: CBD
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Pretimed
Maximum v/c Ratio: 0.99
Intersection Signal Delay: 46.9 Intersection LOS: D
Intersection Capacity Utilization 78.6% ICU Level of Service D
Analysis Period (min) 15
* User Entered Value
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 295: South/St Paul & Main

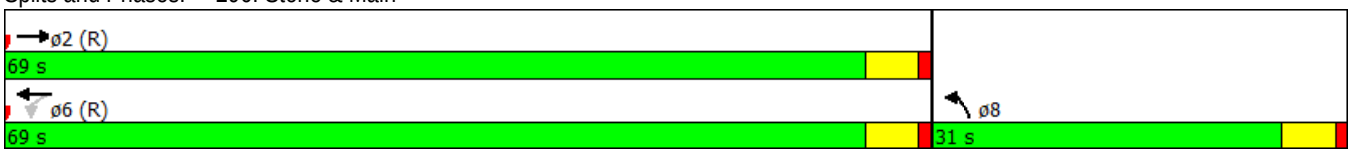


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	308	13	28	445	38	38
Future Volume (vph)	308	13	28	445	38	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	100		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.88		0.88	
Frt	0.994				0.932	
Flt Protected			0.950		0.976	
Satd. Flow (prot)	1488	0	1770	1509	1583	0
Flt Permitted			0.500		0.976	
Satd. Flow (perm)	1488	0	819	1509	1493	0
Right Turn on Red		Yes				No
Satd. Flow (RTOR)	4					
Link Speed (mph)	30			30	30	
Link Distance (ft)	335			359	728	
Travel Time (s)	7.6			8.2	16.5	
Confl. Peds. (#/hr)		100	100		50	50
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	7%	2%	2%	7%	2%	2%
Parking (#/hr)	10			10		
Adj. Flow (vph)	350	15	32	506	43	43
Shared Lane Traffic (%)						
Lane Group Flow (vph)	365	0	32	506	86	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes			Yes		
Headway Factor	1.23	1.00	1.00	1.23	1.00	1.00
Turning Speed (mph)		9	15		15	9
Turn Type	NA		Perm	NA	Prot	
Protected Phases	2			6	8	
Permitted Phases			6			
Minimum Split (s)	29.0		31.0	31.0	29.0	
Total Split (s)	69.0		69.0	69.0	31.0	
Total Split (%)	69.0%		69.0%	69.0%	31.0%	
Maximum Green (s)	64.0		64.0	64.0	26.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	-1.5		-1.0	-1.5	-2.0	
Total Lost Time (s)	3.5		4.0	3.5	3.0	
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)	7.0		18.0	18.0	7.0	
Flash Dont Walk (s)	15.0		7.0	7.0	15.0	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effct Green (s)	65.5		65.0	65.5	28.0	
Actuated g/C Ratio	0.66		0.65	0.66	0.28	
v/c Ratio	0.37		0.06	0.51	0.19	
Control Delay	1.5		3.1	4.4	36.7	
Queue Delay	1.0		0.0	1.0	0.0	
Total Delay	2.5		3.1	5.4	36.7	
LOS	A		A	A	D	
Approach Delay	2.5			5.3	36.7	
Approach LOS	A			A	D	
Queue Length 50th (ft)	7		2	38	57	
Queue Length 95th (ft)	m14		m5	63	104	
Internal Link Dist (ft)	255			279	648	
Turn Bay Length (ft)			100			
Base Capacity (vph)	976		532	988	443	
Starvation Cap Reductn	367		0	247	0	
Spillback Cap Reductn	0		0	92	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.60		0.06	0.68	0.19	

Intersection Summary	
Area Type: Other	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 5 (5%), Referenced to phase 2:EBT and 6:WBTL, Start of Green	
Natural Cycle: 60	
Control Type: Pretimed	
Maximum v/c Ratio: 0.51	
Intersection Signal Delay: 7.0	Intersection LOS: A
Intersection Capacity Utilization 48.4%	ICU Level of Service A
Analysis Period (min) 15	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 296: Stone & Main



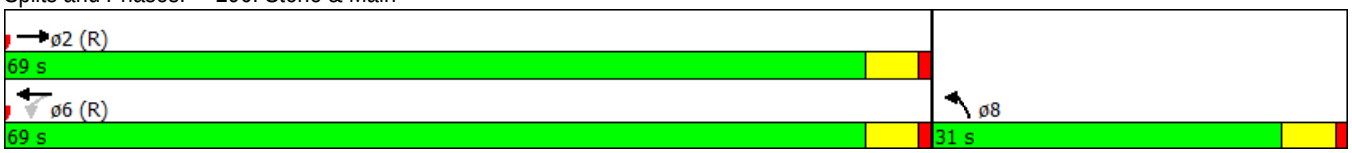
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	420	2	14	516	69	92
Future Volume (vph)	420	2	14	516	69	92
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	100		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			50		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00		0.84		0.88	
Frt	0.999				0.923	
Flt Protected			0.950		0.979	
Satd. Flow (prot)	1506	0	1770	1509	1557	0
Flt Permitted			0.452		0.979	
Satd. Flow (perm)	1506	0	711	1509	1481	0
Right Turn on Red		Yes				No
Satd. Flow (RTOR)						
Link Speed (mph)	30			30	30	
Link Distance (ft)	335			359	728	
Travel Time (s)	7.6			8.2	16.5	
Confl. Peds. (#/hr)		150	150		50	50
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	7%	2%	2%	7%	2%	2%
Parking (#/hr)	10			10		
Adj. Flow (vph)	442	2	15	543	73	97
Shared Lane Traffic (%)						
Lane Group Flow (vph)	444	0	15	543	170	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes			Yes		
Headway Factor	1.23	1.00	1.00	1.23	1.00	1.00
Turning Speed (mph)		9	15		15	9
Turn Type	NA		Perm	NA	Prot	
Protected Phases	2			6	8	
Permitted Phases			6			
Minimum Split (s)	27.0		30.0	30.0	27.0	
Total Split (s)	69.0		69.0	69.0	31.0	
Total Split (%)	69.0%		69.0%	69.0%	31.0%	
Maximum Green (s)	64.0		64.0	64.0	26.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	5.0		5.0	5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)	7.0		18.0	18.0	7.0	
Flash Dont Walk (s)	15.0		7.0	7.0	15.0	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effct Green (s)	64.0		64.0	64.0	26.0	
Actuated g/C Ratio	0.64		0.64	0.64	0.26	
v/c Ratio	0.46		0.03	0.56	0.42	
Control Delay	1.8		4.1	7.5	23.4	
Queue Delay	0.4		0.0	0.4	0.0	
Total Delay	2.2		4.1	7.9	23.4	
LOS	A		A	A	C	
Approach Delay	2.2			7.8	23.4	
Approach LOS	A			A	C	
Queue Length 50th (ft)	14		2	97	95	
Queue Length 95th (ft)	m14		m3	m125	162	
Internal Link Dist (ft)	255			279	648	
Turn Bay Length (ft)			100			
Base Capacity (vph)	963		455	965	404	
Starvation Cap Reductn	182		0	122	0	
Spillback Cap Reductn	43		0	73	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.57		0.03	0.64	0.42	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 96 (96%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
Natural Cycle: 60
Control Type: Pretimed
Maximum v/c Ratio: 0.56
Intersection Signal Delay: 7.9 Intersection LOS: A
Intersection Capacity Utilization 53.8% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 296: Stone & Main



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	314	10	15	343	42	45	507	81	52	285	38
Future Volume (vph)	28	314	10	15	343	42	45	507	81	52	285	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	100		0	50		0	75		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	0.95	0.99		0.90	0.98		0.86	0.95		0.91	0.96	
Frt		0.996			0.984			0.979			0.982	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1300	1344	0	1518	1312	0	1533	2716	0	1300	1520	0
Flt Permitted	0.342			0.407			0.359			0.264		
Satd. Flow (perm)	443	1344	0	586	1312	0	497	2716	0	327	1520	0
Right Turn on Red			Yes			Yes			No			No
Satd. Flow (RTOR)		2			8							
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		359			253			759			440	
Travel Time (s)		8.2			5.8			17.3			10.0	
Confl. Peds. (#/hr)	100		100	100		100	150		150	150		150
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	25%	7%	7%	7%	7%	7%	6%	6%	6%	25%	6%	6%
Parking (#/hr)		10			10			0				
Adj. Flow (vph)	32	361	11	17	394	48	52	583	93	60	328	44
Shared Lane Traffic (%)												
Lane Group Flow (vph)	32	372	0	17	442	0	52	676	0	60	372	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes										
Headway Factor	*1.00	*1.00	*1.00	1.14	1.40	1.14	1.14	1.22	1.14	1.14	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8			4		
Minimum Split (s)	10.0	28.0		10.0	24.0		28.0	28.0		28.0	28.0	
Total Split (s)	10.0	49.0		10.0	49.0		41.0	41.0		41.0	41.0	
Total Split (%)	10.0%	49.0%		10.0%	49.0%		41.0%	41.0%		41.0%	41.0%	
Maximum Green (s)	6.0	44.0		6.0	44.0		36.0	36.0		36.0	36.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	0.0	1.0		0.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	-1.0	-2.0		-1.0	-2.0		-1.0	-2.0		-1.0	-1.0	
Total Lost Time (s)	3.0	3.0		3.0	3.0		4.0	3.0		4.0	4.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		16.0			12.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)		0			36		0	0		0	0	
Act Effct Green (s)	53.0	46.0		53.0	46.0		37.0	38.0		37.0	37.0	
Actuated g/C Ratio	0.53	0.46		0.53	0.46		0.37	0.38		0.37	0.37	
v/c Ratio	0.11	0.60		0.05	0.73		0.28	0.66		0.50	0.66	
Control Delay	9.5	15.6		6.4	21.9		27.5	29.3		38.9	30.8	
Queue Delay	0.0	0.6		0.0	2.3		0.0	0.1		0.0	0.5	
Total Delay	9.5	16.2		6.4	24.2		27.5	29.4		38.9	31.3	
LOS	A	B		A	C		C	C		D	C	
Approach Delay		15.7			23.6			29.3			32.3	
Approach LOS		B			C			C			C	
Queue Length 50th (ft)	4	66		4	130		23	184		24	199	
Queue Length 95th (ft)	18	138		5	292		54	237		74	278	
Internal Link Dist (ft)		279			173			679			360	
Turn Bay Length (ft)	100			100			50			75		
Base Capacity (vph)	294	619		375	607		183	1032		120	562	
Starvation Cap Reductn	0	58		0	74		0	0		0	31	
Spillback Cap Reductn	0	0		0	0		0	33		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.11	0.66		0.05	0.83		0.28	0.68		0.50	0.70	

Intersection Summary

Area Type: CBD
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 70
Control Type: Pretimed
Maximum v/c Ratio: 0.73
Intersection Signal Delay: 25.9 Intersection LOS: C
Intersection Capacity Utilization 60.9% ICU Level of Service B
Analysis Period (min) 15
* User Entered Value

Splits and Phases: 297: Clinton & Main

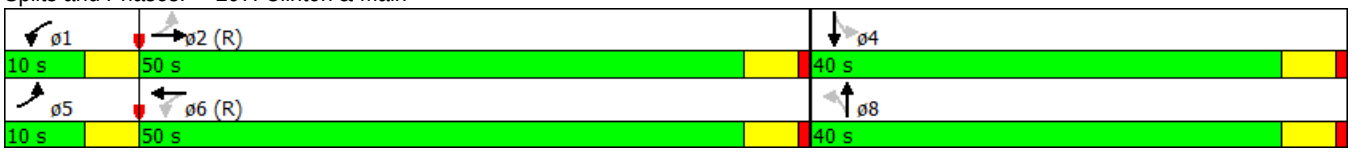
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	461	40	20	355	38	61	640	74	64	375	49
Future Volume (vph)	60	461	40	20	355	38	61	640	74	64	375	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	100		50	200		0	75		0
Storage Lanes	1		0	1		0	1		0	0		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	0.91	0.97		0.91	0.98		0.90	0.96		0.93	0.96	
Frt		0.988			0.986			0.984			0.983	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1300	1306	0	1518	1308	0	1533	2764	0	1300	1523	0
Flt Permitted	0.367			0.258			0.239			0.205		
Satd. Flow (perm)	459	1306	0	377	1308	0	346	2764	0	260	1523	0
Right Turn on Red			Yes			Yes			No			No
Satd. Flow (RTOR)		6			7							
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		359			253			759			440	
Travel Time (s)		8.2			5.8			17.3			10.0	
Confl. Peds. (#/hr)	150		150	150		150	150		150	150		150
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	25%	7%	7%	7%	7%	7%	6%	6%	6%	25%	6%	6%
Parking (#/hr)		10			10			0				
Adj. Flow (vph)	67	512	44	22	394	42	68	711	82	71	417	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	67	556	0	22	436	0	68	793	0	71	471	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes										
Headway Factor	*1.00	*1.00	*1.00	1.14	1.40	1.14	*1.00	*1.00	*1.00	1.14	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8			4		
Minimum Split (s)	10.0	28.0		10.0	24.0		28.0	28.0		28.0	28.0	
Total Split (s)	10.0	50.0		10.0	50.0		40.0	40.0		40.0	40.0	
Total Split (%)	10.0%	50.0%		10.0%	50.0%		40.0%	40.0%		40.0%	40.0%	
Maximum Green (s)	6.0	45.0		6.0	45.0		35.0	35.0		35.0	35.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	0.0	1.0		0.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		16.0			12.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)		0			36		0	0		0	0	
Act Effct Green (s)	52.0	45.0		52.0	45.0		35.0	35.0		35.0	35.0	
Actuated g/C Ratio	0.52	0.45		0.52	0.45		0.35	0.35		0.35	0.35	
v/c Ratio	0.23	0.94		0.08	0.74		0.56	0.82		0.78	0.88	
Control Delay	10.5	42.2		6.8	21.4		47.4	38.0		79.2	47.6	
Queue Delay	0.0	0.6		0.0	2.0		0.0	8.8		0.0	1.4	
Total Delay	10.5	42.8		6.8	23.5		47.4	46.8		79.2	49.0	
LOS	B	D		A	C		D	D		E	D	
Approach Delay		39.3			22.7			46.9			53.0	
Approach LOS		D			C			D			D	
Queue Length 50th (ft)	14	154		3	133		35	240		41	283	
Queue Length 95th (ft)	32	#541		9	203		#98	319		m#125	#473	
Internal Link Dist (ft)		279			173			679			360	
Turn Bay Length (ft)	150			100			200			75		
Base Capacity (vph)	289	591		264	592		121	967		91	533	
Starvation Cap Reductn	0	0		0	63		0	0		0	12	
Spillback Cap Reductn	0	3		0	0		0	148		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.23	0.95		0.08	0.82		0.56	0.97		0.78	0.90	

Intersection Summary

Area Type: CBD
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Pretimed
Maximum v/c Ratio: 0.94
Intersection Signal Delay: 41.8 Intersection LOS: D
Intersection Capacity Utilization 82.9% ICU Level of Service E
Analysis Period (min) 15
* User Entered Value
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 297: Clinton & Main



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	452	9	8	377	12	14
Future Volume (vph)	452	9	8	377	12	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	100		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.88		0.86	
Frt	0.997				0.926	
Flt Protected			0.950		0.978	
Satd. Flow (prot)	1496	0	1770	1509	1549	0
Flt Permitted			0.434		0.978	
Satd. Flow (perm)	1496	0	714	1509	1457	0
Right Turn on Red		Yes				No
Satd. Flow (RTOR)	3					
Link Speed (mph)	30			30	30	
Link Distance (ft)	253			295	164	
Travel Time (s)	5.8			6.7	3.7	
Confl. Peds. (#/hr)		150	150		50	50
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	7%	2%	2%	7%	2%	2%
Parking (#/hr)	10			10		
Adj. Flow (vph)	545	11	10	454	14	17
Shared Lane Traffic (%)						
Lane Group Flow (vph)	556	0	10	454	31	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.23	1.00	1.00	1.23	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	0		1	0	2	
Detector Template						
Leading Detector (ft)	0		50	0	40	
Trailing Detector (ft)	0		0	0	-5	
Detector 1 Position(ft)	0		0	0	-5	
Detector 1 Size(ft)	50		50	50	20	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)					20	
Detector 2 Size(ft)					20	
Detector 2 Type					Cl+Ex	
Detector 2 Channel						

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector 2 Extend (s)					0.0	
Turn Type	NA		Perm	NA	Perm	
Protected Phases	1			1		
Permitted Phases			1		2	
Detector Phase	1		1	1	2	
Switch Phase						
Minimum Initial (s)	23.0		23.0	23.0	6.0	
Minimum Split (s)	28.5		28.5	28.5	24.5	
Total Split (s)	74.0		74.0	74.0	26.0	
Total Split (%)	74.0%		74.0%	74.0%	26.0%	
Maximum Green (s)	68.5		68.5	68.5	20.5	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.5		1.5	1.5	1.5	
Lost Time Adjust (s)	-3.0		-1.0	-3.0	-1.0	
Total Lost Time (s)	2.5		4.5	2.5	4.5	
Lead/Lag	Lead		Lead	Lead	Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		2.0	2.0	2.0	
Recall Mode	C-Max		C-Max	C-Max	None	
Walk Time (s)	16.0		16.0	16.0	7.0	
Flash Dont Walk (s)	7.0		7.0	7.0	12.0	
Pedestrian Calls (#/hr)	0		0	0	10	
Act Effct Green (s)	88.5		87.3	88.5	10.1	
Actuated g/C Ratio	0.88		0.87	0.88	0.10	
v/c Ratio	0.42		0.02	0.34	0.21	
Control Delay	2.3		2.9	2.4	42.3	
Queue Delay	0.4		0.0	0.2	0.0	
Total Delay	2.7		2.9	2.6	42.3	
LOS	A		A	A	D	
Approach Delay	2.7			2.6	42.3	
Approach LOS	A			A	D	
Queue Length 50th (ft)	36		0	35	19	
Queue Length 95th (ft)	95		m4	75	38	
Internal Link Dist (ft)	173			215	84	
Turn Bay Length (ft)			100			
Base Capacity (vph)	1324		623	1335	313	
Starvation Cap Reductn	335		0	277	0	
Spillback Cap Reductn	0		0	68	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.56		0.02	0.43	0.10	

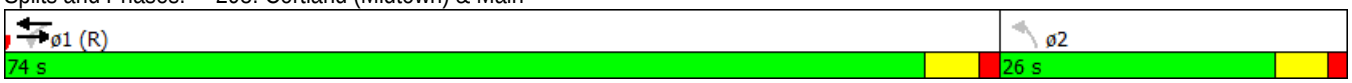
Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 86 (86%), Referenced to phase 1:EBWB, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.42	
Intersection Signal Delay: 3.8	Intersection LOS: A

Intersection Capacity Utilization 45.3% ICU Level of Service A

Analysis Period (min) 15

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

Splits and Phases: 298: Cortland (Midtown) & Main



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	585	9	13	406	13	19
Future Volume (vph)	585	9	13	406	13	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	100		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.87		0.86	
Frt	0.998				0.919	
Flt Protected			0.950		0.980	
Satd. Flow (prot)	1497	0	1770	1509	1528	0
Flt Permitted			0.397		0.980	
Satd. Flow (perm)	1497	0	641	1509	1447	0
Right Turn on Red		Yes				No
Satd. Flow (RTOR)	2					
Link Speed (mph)	30			30	30	
Link Distance (ft)	253			295	164	
Travel Time (s)	5.8			6.7	3.7	
Confl. Peds. (#/hr)		200	200		50	50
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	7%	2%	2%	7%	2%	2%
Parking (#/hr)	10			10		
Adj. Flow (vph)	636	10	14	441	14	21
Shared Lane Traffic (%)						
Lane Group Flow (vph)	646	0	14	441	35	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.23	1.00	1.00	1.23	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	0		1	0	2	
Detector Template						
Leading Detector (ft)	0		50	0	40	
Trailing Detector (ft)	0		0	0	-5	
Detector 1 Position(ft)	0		0	0	-5	
Detector 1 Size(ft)	50		50	50	20	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)					20	
Detector 2 Size(ft)					20	
Detector 2 Type					Cl+Ex	
Detector 2 Channel						

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector 2 Extend (s)					0.0	
Turn Type	NA		Perm	NA	Perm	
Protected Phases	1			1		
Permitted Phases			1		2	
Detector Phase	1		1	1	2	
Switch Phase						
Minimum Initial (s)	23.0		23.0	23.0	6.0	
Minimum Split (s)	28.5		28.5	28.5	24.5	
Total Split (s)	75.0		75.0	75.0	25.0	
Total Split (%)	75.0%		75.0%	75.0%	25.0%	
Maximum Green (s)	69.5		69.5	69.5	19.5	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.5		1.5	1.5	1.5	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	5.5		5.5	5.5	5.5	
Lead/Lag	Lead		Lead	Lead	Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		2.0	2.0	2.0	
Recall Mode	C-Max		C-Max	C-Max	None	
Walk Time (s)	16.0		16.0	16.0	7.0	
Flash Dont Walk (s)	7.0		7.0	7.0	12.0	
Pedestrian Calls (#/hr)	0		0	0	10	
Act Effct Green (s)	86.6		86.6	86.6	9.2	
Actuated g/C Ratio	0.87		0.87	0.87	0.09	
v/c Ratio	0.50		0.03	0.34	0.26	
Control Delay	2.6		2.8	2.9	44.8	
Queue Delay	1.0		0.0	0.2	0.0	
Total Delay	3.6		2.8	3.1	44.8	
LOS	A		A	A	D	
Approach Delay	3.6			3.1	44.8	
Approach LOS	A			A	D	
Queue Length 50th (ft)	69		1	39	22	
Queue Length 95th (ft)	m103		m5	68	46	
Internal Link Dist (ft)	173			215	84	
Turn Bay Length (ft)			100			
Base Capacity (vph)	1296		555	1306	282	
Starvation Cap Reductn	384		0	262	0	
Spillback Cap Reductn	0		0	16	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.71		0.03	0.42	0.12	

Intersection Summary

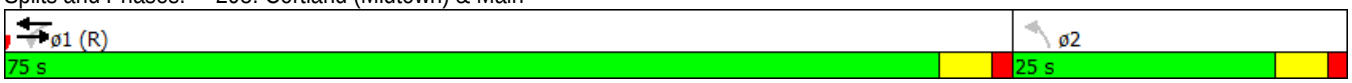
Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 99 (99%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.50
Intersection Signal Delay: 4.7 Intersection LOS: A

Intersection Capacity Utilization 54.4% ICU Level of Service A

Analysis Period (min) 15

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

Splits and Phases: 298: Cortland (Midtown) & Main



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	316	79	0	317	11	40	51	1	1	52	22
Future Volume (vph)	0	316	79	0	317	11	40	51	1	1	52	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor		0.96			1.00			0.96			0.96	
Frt		0.973			0.995			0.999			0.955	
Flt Protected								0.979			0.999	
Satd. Flow (prot)	0	1424	0	0	1765	0	0	3459	0	0	3253	0
Flt Permitted								0.827			0.954	
Satd. Flow (perm)	0	1424	0	0	1765	0	0	2804	0	0	3105	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		26			4			1			26	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		295			311			574			178	
Travel Time (s)		6.7			7.1			13.0			4.0	
Confl. Peds. (#/hr)	50		150	150		50	50		50	50		50
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	2%	7%	2%	2%	7%	2%	2%	2%	2%	2%	2%	2%
Parking (#/hr)		10										
Adj. Flow (vph)	0	367	92	0	369	13	47	59	1	1	60	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	459	0	0	382	0	0	107	0	0	87	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.23	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
Turn Type		NA			NA		Perm	NA		Perm	NA	
Protected Phases		1			1			2			2	
Permitted Phases							2	2		2		
Minimum Split (s)		30.0			30.0		30.0	30.0		30.0	30.0	
Total Split (s)		68.0			68.0		32.0	32.0		32.0	32.0	
Total Split (%)		68.0%			68.0%		32.0%	32.0%		32.0%	32.0%	
Maximum Green (s)		63.0			63.0		27.0	27.0		27.0	27.0	
Yellow Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)		1.0			1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		-2.0			-2.0			-2.0			-2.0	
Total Lost Time (s)		3.0			3.0			3.0			3.0	
Lead/Lag		Lead			Lead		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?												
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	17.0		17.0	17.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)		65.0			65.0			29.0			29.0	
Actuated g/C Ratio		0.65			0.65			0.29			0.29	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.49			0.33			0.13			0.09	
Control Delay		6.5			2.2			22.9			5.3	
Queue Delay		0.4			0.3			0.0			0.5	
Total Delay		6.9			2.5			22.9			5.8	
LOS		A			A			C			A	
Approach Delay		6.9			2.5			22.9			5.8	
Approach LOS		A			A			C			A	
Queue Length 50th (ft)		93			10			18			0	
Queue Length 95th (ft)		0			28			37			7	
Internal Link Dist (ft)		215			231			494			98	
Turn Bay Length (ft)												
Base Capacity (vph)		934			1148			813			918	
Starvation Cap Reductn		145			302			0			577	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.58			0.45			0.13			0.26	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 92 (92%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 60
Control Type: Pretimed
Maximum v/c Ratio: 0.49
Intersection Signal Delay: 6.8 Intersection LOS: A
Intersection Capacity Utilization 49.5% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 2991: East/Franklin & Main

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	470	139	0	349	7	49	45	2	2	72	25
Future Volume (vph)	4	470	139	0	349	7	49	45	2	2	72	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	50		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor	0.97	0.96			1.00			0.95			0.97	
Frt		0.966			0.997			0.997			0.962	
Flt Protected	0.950							0.975			0.999	
Satd. Flow (prot)	1770	1408	0	1863	1769	0	0	3433	0	0	3297	0
Flt Permitted	0.486							0.784			0.952	
Satd. Flow (perm)	876	1408	0	1863	1769	0	0	2635	0	0	3136	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		30			2			2			28	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		295			311			574			178	
Travel Time (s)		6.7			7.1			13.0			4.0	
Confl. Peds. (#/hr)	50		150	150		50	50		50	50		50
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	2%	7%	2%	2%	7%	2%	2%	2%	2%	2%	2%	2%
Parking (#/hr)		10										
Adj. Flow (vph)	4	528	156	0	392	8	55	51	2	2	81	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	4	684	0	0	400	0	0	108	0	0	111	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.23	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
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		1			1			2			2	
Permitted Phases	1			1			2	2		2		
Minimum Split (s)	30.0	30.0		30.0	30.0		30.0	30.0		30.0	30.0	
Total Split (s)	70.0	70.0		70.0	70.0		30.0	30.0		30.0	30.0	
Total Split (%)	70.0%	70.0%		70.0%	70.0%		30.0%	30.0%		30.0%	30.0%	
Maximum Green (s)	65.0	65.0		65.0	65.0		25.0	25.0		25.0	25.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0			5.0	
Lead/Lag	Lead	Lead		Lead	Lead		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?												
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	17.0	17.0		17.0	17.0		17.0	17.0		17.0	17.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	65.0	65.0			65.0			25.0			25.0	
Actuated g/C Ratio	0.65	0.65			0.65			0.25			0.25	
v/c Ratio	0.01	0.74			0.35			0.16			0.14	
Control Delay	4.5	11.0			2.5			33.8			5.1	
Queue Delay	0.0	0.0			0.2			0.0			0.5	
Total Delay	4.5	11.0			2.8			33.8			5.6	
LOS	A	B			A			C			A	
Approach Delay		10.9			2.8			33.8			5.6	
Approach LOS		B			A			C			A	
Queue Length 50th (ft)	0	163			15			27			1	
Queue Length 95th (ft)	m1	95			35			53			8	
Internal Link Dist (ft)		215			231			494			98	
Turn Bay Length (ft)	100											
Base Capacity (vph)	569	925			1150			660			805	
Starvation Cap Reductn	0	0			253			0			438	
Spillback Cap Reductn	0	0			0			0			0	
Storage Cap Reductn	0	0			0			0			0	
Reduced v/c Ratio	0.01	0.74			0.45			0.16			0.30	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 94 (94%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 75
Control Type: Pretimed
Maximum v/c Ratio: 0.74
Intersection Signal Delay: 9.9 Intersection LOS: A
Intersection Capacity Utilization 63.1% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2991: East/Franklin & Main

Appendix D

Pavement Information

- **Pavement Evaluation and Treatment Selection Report**

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PAVEMENT EVALUATION & TREATMENT SELECTION REPORT (PETSR)
2/22/2016

General
Region: 4 County: Monroe Route No.: E. Main St. PIN: 4755.91

Project Description: SMain Street Streetscape and Wayfinding

Begin RM: St. Paul End RM: Franklin St Total Length: 1200'

Latest Pavement Rehabilitation/Treatment Date(s): 2002 Mill/Resurface / 2007 Crack Filling

Original Contract Date(s): 1989

Related Pavement Data:
Traffic AADT (Range): 10,200 Date: 7/1/2015 % Trucks: 7
ESALs: _____ PG Binder: _____
Sufficiency Rating Surface Score: NA Date: _____

Roadway Features

Roadway:	☐ Divided	☒ Non-Divided	
Median:	☐ Flush	☐ Raised	☐ Concrete Median Barrier
Curbs:	☐ Mountable	☒ Non-Mountable	☐ HMA ☐ PCC ☒ Stone
Gutter:	☒ None	☐ Present	☐ Location -
MIARDS/CARDS:	☒ None	☐ Present	☐ Location -

Travel Lanes:
Number: 3 Width(s): 11'

Type: ☐ Reinforced PCC ☐ Non-Reinforced PCC ☒ HMA ☐ HMA over PCC

Thickness (normal): 11.5" Total: _____ (HMA: _____ PCC: _____)

Reinforced and Non-Reinforced PCC Pavements only:
Slab Length: _____
Load Transfer Type: ☐ Dowels ☐ 2 Component
Transverse Joints: ☐ Contraction ☐ Expansion

Subbase: Yes Type: Sand-Gravel Thickness(nominal): 12"

Shoulders:

Type: ☐ HMA ☐ PCC ☐ Gravel Thickness: _____
Surface Treatment/Stabilized Gravel: ☐ Thickness: _____

Width: _____ Left: _____ Right: _____

Drainage Type: ☐ Open System ☒ Closed System

PAVEMENT EVALUATION & TREATMENT SELECTION REPORT (PETSR)
2/22/2016

PAVEMENT DISTRESS	SEVERITY – Typical for Length of Project				COMMENTS
Wheelpath Cracking	☒ None	☐ Low	☐ Medium	☐ High	
Tranverse Cracking	☐ None	☒ Low	☒ Medium	☐ High	
Longitudinal Cracking	☐ None	☐ Low	☒ Medium	☐ High	
Edge Cracking	☐ None	☐ Low	☒ Medium	☐ High	
Raveling	☒ None	☐ Low	☐ Medium	☐ High	
Corrugations	☐ None	☒ Low	☐ Medium	☐ High	
Settlements/Heaves	☒ None	☐ Low	☐ Medium	☐ High	
Other	☐ None	☐ Low	☐ Medium	☐ High	

SHOULDER DISTRESS	SEVERITY – Typical for Length of Project				COMMENTS
Cracking	☐ None	☐ Low	☐ Medium	☐ High	N/A
Separation	☐ None	☐ Low	☐ Medium	☐ High	
Drop Off	☐ None	☐ Low	☐ Medium	☐ High	
Deformation	☐ None	☐ Low	☐ Medium	☐ High	

EXISTING PAVEMENT CONDITION REMARKS: The existing pavement has mainly minor to moderate longitudinal and transverse cracking with low to medium severity.

EXISTING SHOULDER REMARKS: N/A

REMARKS AND PAVEMENT RECOMMENDATIONS: Recommend single course mill/overlay with areas of multiple course pavement repair where distresses extend below the top course. Several catch basin grates will require adjustment as well as a few areas of curb repair.

GEOTECHNICAL REMARKS AND RECOMMENDATIONS:

PAVEMENT EVALUATION & TREATMENT SELECTION REPORT (PETSR)

Treatment Options:

1. 2” Top Course Mill and Overlay with areas of pavement repair where distresses extend into binder course.

2.

3.

Results of Life Cycle Cost Analysis: N/A

Recommendations 2” Top Course Mill and Overlay with areas of pavement repair where distresses extend into binder course.

If you have any questions regarding this report, please contact Kayle Stettner at 585-413-5263.

Prepared by: Kayle Stettner
Date: 2/22/2016

Approved by:
Date:

Professional Engineering Seal for Recommendations to Use Beyond Preservation Treatments:

Appendix E

Stakeholders and Public Input

- **Project Correspondence**

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Project Correspondence

1. Section 106 Recommendations – Christopher Caraccilo, NYSDOT – 1-5-2016
2. Section 106 Recommendations to SHPO - Christopher Caraccilo, NYSDOT – 1-6-2016
3. NY Heritage – NYSDEC – 1-8-2016
4. Section 4(f) Concurrence Request - Kayle Stettner, Stantec - 2-2-2016
5. Section 106 Recommendation Response – Ruth Pierpont, SHPO – 2-6-2016
6. Section 4(f) Concurrence – James McIntosh, City of Rochester – 2-16-2016
7. Section 106 Finding Documentation - Christopher Caraccilo, NYSDOT – 2-17-2016
8. Programmatic No Effect Notification to FHWA for Endangered Species – Steve Beauvais, NYSDOT – 2-23-2016

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NEW YORK STATE OF OPPORTUNITY. | Department of Transportation

ANDREW M. CUOMO
Governor

MATTHEW J. DRISCOLL
Commissioner

MEMORANDUM

TO: Steve Beauvais, Regional Local Project Liaison

FROM: Chris Caraccilo, Regional Cultural Resource Coordinator

SUBJECT: PROJECT SUBMITTAL PACKAGE – SECTION 106 RECOMMENDATIONS

PIN 4755.91, EAST MAIN STREET STREETSCAPE IMPROVEMENTS PROJECT

CITY OF ROCHESTER, MONROE COUNTY

January 5, 2016

As the Regional Cultural Resource Coordinator (RCRC) I have reviewed the Project Submittal Package (PSP) prepared for the above referenced Locally Administered Federal Aid project for assessment of obligations under Section 106 of the National Historic Preservation Act (36 CFR Part 800).
Based on review of this PSP, I conclude:

☐ The project activities have no potential to cause effects on historic properties in accordance with 36 CFR 800.3(a)(1) therefore, there are no further obligations for compliance with Section 106 of the National Historic Preservation Act. This determination should be recorded in the project environmental documentation.

The project activities may cause effects on historic properties:

✓ **The project will be uploaded to the CRIS for SHPO review. Further information *may* be required; a Finding Document *may* be needed to assess the project's effect on the Erie Canal corridor/prism. Further action TBD pending SHPO review and assessment.**

☐ However, this is no potential for historic properties present. Therefore, there are no further obligations for compliance with Section 106 of the National Historic Preservation Act. This determination should be recorded in the project environmental documentation.

☐ A Phase I Cultural Resource Survey is needed to identify historic and cultural resources. Based on project description and activities, the following preliminary Area of Potential Effect is recommended.

☐ Based on project description and activities in the PSP a preliminary Area of Potential Effect is provided.

☐ A bridge inventory and evaluation of National Register eligibility is needed for BIN _____, a pre-1961 bridge that has not been previously evaluated.

☐ A Finding Documentation package is needed to assess the project effect on one or more previously identified National Register (NR) listed and/ or NR eligible historic buildings, structures, bridges, districts, objects, or sites.

☐ The following additional information is needed to complete our assessment:

☐ Detailed project description & activities

☐ Project location map showing project limits (USGS Quad)

☐ BIN and date of construction for pre-1961 bridge(s)

☐ Approximate limits of ground disturbance associated with proposed project activities (vertical & horizontal)

☐ Photos of buildingS

☐ Other

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Division of Fish, Wildlife and Marine Resources
New York Natural Heritage Program
625 Broadway, 5th Floor, Albany, New York 12233-4757
Phone: (518) 402-8935 • Fax: (518) 402-8925
Website: www.dec.ny.gov

January 08, 2016

Caitlin Graff
EDR
217 Montgomery Street, Suite 1000
Syracuse, NY 13202

Re: Rochester Main Street Streetscape Improvement Project (EDR Project No. 15076)
Town/City: City Of Rochester. County: Monroe.

Dear Caitlin Graff:

In response to your recent request, we have reviewed the New York Natural Heritage Program database with respect to the above project.

Enclosed is a report of rare or state-listed animals and plants, and significant natural communities that our database indicates occur, or may occur, on your site or in the immediate vicinity of your site.

For most sites, comprehensive field surveys have not been conducted; the enclosed report only includes records from our database. We cannot provide a definitive statement as to the presence or absence of all rare or state-listed species or significant natural communities. Depending on the nature of the project and the conditions at the project site, further information from on-site surveys or other sources may be required to fully assess impacts on biological resources.

Our database is continually growing as records are added and updated. If this proposed project is still under development one year from now, we recommend that you contact us again so that we may update this response with the most current information.

The presence of the plants and animals identified in the enclosed report may result in this project requiring additional review or permit conditions. For further guidance, and for information regarding other permits that may be required under state law for regulated areas or activities (e.g., regulated wetlands), please contact the appropriate NYS DEC Regional Office, Division of Environmental Permits, as listed at www.dec.ny.gov/about/39381.html.

Sincerely,

Andrea Chaloux

Andrea Chaloux
Environmental Review Specialist
New York Natural Heritage Program

1450

NEW YORK STATE OF OPPORTUNITY | Department of Transportation

ANDREW M. CUOMO
Governor

MATTHEW J. DRISCOLL
Commissioner

January 6, 2016

Ms. Ruth Pierpont, Acting Deputy Commissioner
for Historic Preservation
P.O. Box 189 – Peebles Island
Waterford, NY 12188

LOCALLY ADMINISTERED PROJECT
RE: PIN 4755.91
East Main Street Streetscape Improvments Project
City of Rochester, Monroe County

Dear Ms. Pierpont:

The City of Rochester is the sponsor of a Federally-funded transportation project: East Main Street Streetscape Improvements Project in the City of Rochester, Monroe County.

This information is provided to notify you of this new project subject to review under Section 106 of the National Historic Preservation Act (36 CFR Part 800). Based on initial assessment of project information, NYSDOT recommended that the Local Project Sponsor does not need to prepare a Phase I Cultural Resource Survey Report (CRSR).

Please find enclosed for your information: a description of the proposed project; proposed plans, location maps and photos. We would appreciate at this time receiving any preliminary comments or particular concerns about the project.

If you have any questions or need additional information, please contact me at 585-272-4833 or Christopher.caraccilo@dot.ny.gov. We look forward to consulting with your office as the project progresses.

Sincerely,

Chris Caraccilo

Christopher Caraccilo
Regional Cultural Resources Coordinator

Enclosures (Photos, Project Location Map & Project Description)

cc: James McIntosh, City of Rochester – City Engineer (letter only)
Kayle Stettner, Stantec, Project Consultant (letter only)
Hans Anker, Area Engineer, Federal Highway Administration (w/enclosures)
Steve Beauvais, Regional Local Project Liaison (letter only)
Stephanie Delano, Office of Environment, POD 4-1 (letter only)

Stantec Consulting Services Inc.
61 Commercial Street Suite 100, Rochester NY 14614-1009

February 2, 2016

City of Rochester
30 Church Street
Rochester NY 14604

Dear Mr. James R. McIntosh, PE

Reference: Main Street Streetscape and pedestrian Wayfinding
PIN 4755.91
Section 4 (f) Concurrence

This letter is to request the City of Rochester's concurrence on Section 4(f). The approval process from the Federal Highway Administration (FHWA) requires that Section 4(f) of the USDOT Act of 1966 be met. Section 4(f) applies to any significant publicly owned public park, recreation area, or wildlife and waterfowl refuge and any land from an historic site of national, state or local significance.

As part of the proposed Main Street Streetscape and Pedestrian Wayfinding Project in the City of Rochester, the City will be rehabilitating the existing hardscape surface around the Liberty Pole Plaza. Liberty Pole Plaza is a recreational and public space owned by the City of Rochester. Liberty Pole Plaza may therefore be considered to be a Section 4(f) resource.

The rehabilitation of the existing pavers around Liberty Pole will require the occupancy of the plaza during construction. Per above, this might be considered a Section 4(f) use; however, there are exceptions to this in the regulations (23 CFR Part 774.13) which include; "Temporary occupancies of land that are so minimal as to not constitute a use within the meaning of Section 4(f)". The following conditions must be satisfied:

1. Duration must be temporary, *i.e.,* less than the time needed for construction of the project, and there should be no change in ownership of the land;
2. Scope of the work must be minor, *i.e.,* both the nature and the magnitude of the changes to the Section 4(f) property are minimal;
3. There are no anticipated permanent adverse physical impacts, nor will there be interference with the protected activities, features, or attributes of the property, on either a temporary or permanent basis;
4. The land being used must be fully restored, *i.e.* , the property must be returned to a condition which is at least as good as that which existed prior to the project; and
5. There must be documented agreement of the official(s) with jurisdiction over the Section 4(f) resource regarding the above conditions."

Reference: Main Street Streetscape and pedestrian Wayfinding
PIN 4755.91
Section 4 (f) Concurrence

The construction use of the Liberty Pole Plaza would be limited to a much shorter duration than the overall project. Minimal changes are proposed to replace the existing sidewalk pavers surrounding the Liberty Pole providing a benefit to users by correcting ADA deficiencies. Construction activities will be coordinated so that no interference with activities on a temporary or permanent basis would occur and the property would be fully restored at the end of the project.

Based on the above information and to meet condition number 5 we respectively request a letter from your office stating that the temporary occupancy of the Liberty Pole plaza does not constitute a use under the section 4(f) of the US DOT Act of 1966.

If you have any questions or comments please feel contact me.

Regards,

STANTEC CONSULTING SERVICES INC.

Kayle Stettner, PE
Senior Civil Engineer, Transportation
Phone: (585) 413-5263
Fax: (585) 272-1814
kayle.stettner@stantec.com

c. Jeff Mroczek, COR

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NEW YORK STATE OF OPPORTUNITY. | Parks, Recreation and Historic Preservation

ANDREW M. CUOMO
Governor

ROSE HARVEY
Commissioner

February 05, 2016

Mr. Christopher Caracillo
Cultural Resource Coordinator
NYS Department of Transportation Region 4
1530 Jefferson Road
Rochester, NY 14623

Re: FHWA
East Main Street Streetscape Improvements Project
East Main Street, Rochester, NY
16PR00102

Dear Mr. Caracillo:

Thank you for requesting the comments of the State Historic Preservation Office (SHPO). We have reviewed the project in accordance with Section 106 of the National Historic Preservation Act of 1966. These comments are those of the SHPO and relate only to Historic/Cultural resources. They do not include potential environmental impacts to New York State Parkland that may be involved in or near your project. Such impacts must be considered as part of the environmental review of the project pursuant to the National Environmental Policy Act and/or the State Environmental Quality Review Act (New York Environmental Conservation Law Article 8).

Based upon this review, we concur with your recommendation that the Local Project Sponsor does not need to prepare a Phase I Cultural Resource Survey Report (CRSR). We have no cultural resource concerns.

If further correspondence is required regarding this project, please be sure to refer to the OPRHP Project Review (PR) number noted above.

Sincerely,

Ruth L. Pierpont
Deputy Commissioner for Historic Preservation

Division for Historic Preservation
P.O. Box 189, Waterford, New York 12188-0189 • (518) 237-8643 • www.nysparks.com

City of Rochester

Department of Environmental Services
City Hall Room 300B, 30 Church Street
Rochester, New York 14614-1290
www.cityofrochester.gov

Bureau of Architecture
and Engineering

February 16, 2016

Kayle Stettner, PE
Senior Civil Engineer, Transportation
Stantec Consulting Services, Inc.
61 Commercial Street
Suite 100
Rochester, New York 14614-1009

RE: Main Street Streetscape and Pedestrian Wayfinding
PIN 4755.19
Section 4(f) Concurrence

Mr. Stettner,

I have reviewed your letter of February 2, 2016 requesting 4(f) concurrence on the subject project. Based on the information provided I concur that the temporary occupancy of the Liberty Pole plaza does not constitute a use under the section 4(f) of the US DOT Act of 1966.

Should the NYSDOT or FHWA have any questions regarding this project, the proposed improvements, or our concurrence, please contact the City's Project Manager, Jeff Mroczek, at 428-7124.

Sincerely,

James R. McIntosh, P.E.
City Engineer

JM:jjm

xc: J. Mroczek
G:\PROJ\DEV\Main St TAP 2015\NYSDOT\4(f) Concurrence - 2_16_16.doc

Phone: 585.428.6828 Fax: 585.428.6253 TTY: 585.428.6054 EEO/ADA Employer

NEW YORK STATE OF OPPORTUNITY. | Department of Transportation

ANDREW M. CUOMO
Governor

MATTHEW J. DRISCOLL
Commissioner

February 17, 2016

Ms. Ruth Pierpont, Acting Deputy Commissioner
for Historic Preservation
P.O. Box 189 – Peebles Island
Waterford, NY 12188

LOCALLY ADMINISTERED PROJECT
RE: PIN 4755.91
East Main Street Streetscape Improvments Project
City of Rochester, Monroe County
SHPO #16PR00102

Dear Ms. Pierpont:

Enclosed is Finding Documentation, prepared in accordance with Section 106 of the National Historic Preservation Act, 36 Section 800.11(e), for the above referenced Locally-Administered Federally-Aid project. The documentation summarizes the project and its effects on properties included in or eligible for inclusion on the National Register of Historic Places. The project objective is to rehabilitate bicycle & pedestrian facilities including wayfinding signage along East Main Street in downtown Rochester.

Based on our review of the project, we have applied the criteria of effect in accordance with 800.5(b) and conclude that this project will have *No Adverse Effect* on historic properties.

The NYSDOT respectfully requests the State Historic Preservation Officer (SHPO) review this finding. If the SHPO does not respond within the 45 day review period, we request, by copy of this letter, that the Federal Highway Administration confirm that the requirements of 36 CFR Part 800 have been met.

If you have any questions or need additional information, please contact me at 585-272-4833 or Christopher.caraccilo@dot.ny.gov.

Sincerely,

Christopher Caraccilo
Regional Cultural Resources Coordinator

Enclosures (Photos, Project Location Map & Project Description)

cc: Hans Anker, Area Engineer, Federal Highway Administration (w/enclosures)
James McIntosh, City of Rochester – City Engineer (letter only)
Kayle Stettner, Stantec, Project Consultant (letter only)
Steve Beauvais, Regional Local Project Liaison (letter only)
Stephanie Delano, Office of Environment, POD 4-1 (letter only)

NEW YORK STATE OF OPPORTUNITY. | Department of Transportation

ANDREW M. CUOMO
Governor

MATTHEW J. DRISCOLL
Commissioner

KEVIN BUSH, P.E.
Regional Director

February 23, 2016

Hans Anker, Senior Area Engineer
Federal Highway Administration
Leo W. O'Brien Federal Building, Room 719
11A Clinton Avenue
Albany, New York 12207

Re: Programmatic No Effect Notification with Suitable Habitat Assessment Form
Section 7 Endangered Species Act
PIN 4755.91 Main St. Streetscape and Pedestrian Wayfinding System Project
City of Rochester, Monroe County

Dear ~~Mr. Anker~~ Hans:

The New York State Department of Transportation (NYSDOT) is notifying Federal Highway Administration of the use of the Programmatic "No Effect" with a non-suitable habitat assessment. The scope of work includes streetscape improvements (sidewalk replacements, streetlights, and signage) from the Main St. Bridge over the Genesee River east to Franklin Street. This proposed project will remove 28 urban street trees, includes the planting of seven new trees at Liberty Pole Plaza, and no work on the Main Street Bridge. The tree removals will occur between October 1, 2016 and March 31, 2017.

A field visit was conducted on December 15, 2015 and a Suitable Habitat Assessment was conducted (see the attached form). The trees were determined to not be suitable summer bat habitat. Based on FHWA's Section 7 ESA Process Version 1, 2015 we conclude that this project qualifies for use of the Programmatic "No Effect."

I you have any questions or require additional information, please feel free to contact me at (585) 272-3466 or Sarah Piecuch (585) 272-3457.

Sincerely,

Steve Beauvais
Regional Local Projects Liaison

CC: Melissa Toni, FHWA Environmental Coordinator (w/attachment)
William R. O'Hern, NYSDOT Region 4 Environmental Contact (w/attachment)

Attachment: Suitable Habitat Assessment Form (Trees)

Suitable Habitat Assessment Form (Trees)

Project Name: Rochester Main Street Streetscape PIN: 4755.91

Acres Proposed to be Cut: 28 trees Lat/Long: 43° 9' 25.759"; -77° 36' 22.9998" (Main St. at Clinton Ave)

Project Description: This base project proposes to rehabilitate the existing pedestrian and bicycle facilities along East Main Street from the Genesee River to Liberty Pole Plaza. The extended project proposes wayfinding signage along the Main Street Corridor from Canal Street to Alexander Street. Also included in the project are enhancements to the Liberty Pole Plaza.

Results of Phase 1: Mapped Occurrences:

IPaC Species List	NYNHP Species List
Northern Long-eared Bat	Peregrine Falcon

Results of Phase 2: Field-based Suitable Bat Habitat Assessment:

- Does the Cutting Area contain forested/wooded habitat that is made up of trees greater than 3" dbh, that also exhibit signs of exfoliating bark, cracks crevices, and/or cavities, OR that also is mixed with larger trees? NO
- Does the Cutting Area have individual trees that have exfoliating bark, cracks, crevices, and/or cavities, and are closer than 1000' from other forested/wooded habitat? NO
- Does the Cutting Area contain adjacent and interspersed emergent wetlands and adjacent areas of agricultural fields, old fields, and pastures, and forests and woodlots (range from dense to loose aggregates of trees) that contain live trees and/or snags greater or equal to 3" dbh that have exfoliating bark, cracks, crevices, and/or cavities? NO

If the answer is yes to any of the above questions, the determination is that "Suitable Bat Habitat" exists within the Cutting Area.

Determination: ☐ Suitable Bat Habitat ☒ No Suitable Bat Habitat

Characterization/Description of the Habitat: Project area consist of urban street trees only. All trees are located along a main urban corridor along a fully developed roadway. Area is characterized by buildings, roadways, and sidewalks.

Comments (include specific bat species, if applicable, such as no Indiana bats if project elevation is over 900 ft NGVD, or roost trees for northern long-eared bat specifically were noted by NYNHP): Project area consists of urban street trees (trees found in highly-developed urban area) in downtown Rochester, NY. No suitable habitat for bat species was noted.

Name (individual completing the field assessment): Christy Conley, Caitlin Graff (EDR)

Signature: Date: January 2016

Appendix F

Cost Estimate

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PROJECT: **MAIN STREET STREETSCAPE AND PEDESTRIAN WAYFINDING**

PIN 4755.91

DATE: **March 7, 2016**

STANTEC CONSULTING SERVICES, INC.
61 COMMERCIAL STREET, SUITE 100
ROCHESTER, NY 14614

OPINION OF PROBABLE COST - Project Share Breakdown

						Project Eligible TAP Funds		Betterment City funds	
ITEM NO.	DESCRIPTION	QUANTITY	PAY UNIT	UNIT PRICE	AMOUNT	QUANTITY	AMOUNT	QUANTITY	AMOUNT
203.02	UNCLASSIFIED EXCAVATION AND DISPOSAL	4050	CY	$ 25.00	$ 101,250.00	2900	$ 72,500.00	1150	$ 28,750.00
203.03	EMBANKMENT IN PLACE	60	CY	$ 30.00	$ 1,800.00		$ -	60	$ 1,800.00
203.07	SELECT GRANULAR FILL	350	CY	$ 35.00	$ 12,250.00		$ -	350	$ 12,250.00
206.0201	TRENCH AND CULVERT EXCAVATION	530	CY	$ 25.00	$ 13,250.00		$ -	530	$ 13,250.00
206.03	CONDUIT EXCAVATION AND BACKFILL INCLUDING SURFACE RESTORATION	3000	LF	$ 15.00	$ 45,000.00	3000	$ 45,000.00		$ -
304.12	SUBBASE COURSE, TYPE 2	2015	CY	$ 40.00	$ 80,600.00	1350	$ 54,000.00	665	$ 26,600.00
402.018902	TRUE & LEVELING F9, SUPERPAVE HMA, 80 SERIES COMPACTION	250	TON	$ 125.00	$ 31,250.00		$ -	250	$ 31,250.00
402.018912	PLANT PRODUCTION QUALITY ADJUSTMENT TO 402.018902	13	QU	**$ 75.00**	$ 975.00		$ -	13	$ 975.00
402.096202	9.5 F2 TOP COURSE HMA, 60 SERIES COMPACTION	1000	TON	$ 95.00	$ 95,000.00		$ -	1000	$ 95,000.00
402.096212	PLANT PRODUCTION QUALITY ADJUSTMENT TO 402.096202	50	QU	**$ 75.00**	$ 3,750.00		$ -	50	$ 3,750.00
402.096222	PAVEMENT DENSITY QUALITY ADJUSTMENT TO 402.096202	1	QU	**$ 75.00**	$ 75.00		$ -	1	$ 75.00
402.096252	TEST SECTION ADJUSTMENT TO 402.096202	100	QU	**$ 75.00**	$ 7,500.00		$ -	100	$ 7,500.00
402.198902	19 F9 BINDER COURSE HMA, 80 SERIES COMPACTION	205	TON	$ 200.00	$ 41,000.00		$ -	205	$ 41,000.00
402.198912	PLANT PRODUCTION QUALITY ADJUSTMENT TO 402.198902	10	QU	**$ 75.00**	$ 750.00		$ -	10	$ 750.00
407.0102	DILUTED TACK COAT	1540	GAL	$ 5.50	$ 8,470.00		$ -	1540	$ 8,470.00
418.7603	ASPHALT PAVEMENT JOINT ADHESIVE	6000	LF	$ 0.75	$ 4,500.00		$ -	6000	$ 4,500.00
490.30	MISCELLANEOUS COLD MILLING OF BITUMINOUS CONCRETE	6650	SY	$ 4.25	$ 28,262.50		$ -	6650	$ 28,262.50
503.01030010	CEMENT CONCRETE FOUNDATION FOR PAVEMENT, UNREINFORCED, CLASS C (SPECIAL AREAS)	130	CY	$ 325.00	$ 42,250.00		$ -	130	$ 42,250.00
601.XXXX	DECORACTIVE SURFACE TREATMENT	10000	SF	$ 13.00	$ 130,000.00	8000	$ 104,000.00		$ -
552.17	SHIELDS AND SHORING	3000	SF	$ 0.05	$ 150.00		$ -	3000	$ 150.00
603.770100MO	LATERAL CONNECTION TO EXISTING LATERAL	14	EA	$ 750.00	$ 10,500.00		$ -	14	$ 10,500.00

PROJECT: **MAIN STREET STREETSCAPE AND PEDESTRIAN WAYFINDING**

PIN 4755.91

DATE: **March 7, 2016**

STANTEC CONSULTING SERVICES, INC.
61 COMMERCIAL STREET, SUITE 100
ROCHESTER, NY 14614

OPINION OF PROBABLE COST - Project Share Breakdown

						Project Eligible TAP Funds		Betterment City funds	
ITEM NO.	DESCRIPTION	QUANTITY	PAY UNIT	UNIT PRICE	AMOUNT	QUANTITY	AMOUNT	QUANTITY	AMOUNT
603.981008	POLYVINYL CHLORIDE (PVC) SEWER PIPE & FITTINGS 8" DIAMETER	300	LF	$ 80.00	$ 24,000.00		$ -	300	$ 24,000.00
604.070401	ALTERING DRAINAGE STRUCTURES, LEACHING BASINS AND MANHOLES	6	EA	$ 650.00	$ 3,900.00		$ -	6	$ 3,900.00
604.070402	ALTERING DRAINAGE STRUCTURES, LEACHING BASINS AND MANHOLES	6	EA	$ 800.00	$ 4,800.00		$ -	6	$ 4,800.00
604.500401	SPECIAL DRAINAGE STRUCTURE	60	LF	$ 300.00	$ 18,000.00		$ -	60	$ 18,000.00
604.560000MO	ABANDON EXISTING CATCH BASIN LATERAL AND PIPE	5	EA	$ 250.00	$ 1,250.00		$ -	5	$ 1,250.00
605.0901	UNDERDRAIN FILTER TYPE 1	175	CY	$ 45.00	$ 7,875.00		$ -	175	$ 7,875.00
605.1502	PERFORATED CORRUGATED POLYETHYLENE UNDERDRAIN TUBING, 6 INCH DIAMETER	2700	LF	$ 5.00	$ 13,500.00		$ -	2700	$ 13,500.00
607.4101001	TEMPORARY PLASTIC BARRIER FENCE	2400	LF	$ 3.00	$ 7,200.00	2400	$ 7,200.00		$ -
608.0101	CONCRETE SIDEWALKS AND DRIVEWAYS	1000	CY	$ 350.00	$ 350,000.00	1000	$ 350,000.00		$ -
608.21	EMBEDDED DETECTABLE WARNING UNITS	40	SY	$ 500.00	$ 20,000.00	40	$ 20,000.00		$ -
609.0251	GRANITE CURB (AS DETAILED) - TYPE I	2700	LF	$ 35.00	$ 94,500.00		$ -	2700	$ 94,500.00
611.0201	PLANTING - MINOR DECIDUOUS TREES - 2 INCH CALIPER BALL & BURLAP, FIELD POTTED OR FIELD BOXED	40	EA	$ 3,000.00	$ 120,000.00	40	$ 120,000.00		$ -
611.17	PORTABLE DRIP IRRIGATION SYSTEM	40	EA	$ 40.00	$ 1,600.00	40	$ 1,600.00		$ -
611.18	REMOVAL OF PORTABLE DRIP IRRIGATION SYSTEM	40	EA	$ 15.00	$ 600.00	40	$ 600.00		$ -
611.19020024	POST PLANTING CARE WITH REPLACEMENT - MINOR DECIDUOUS TREES	40	EA	$ 300.00	$ 12,000.00	40	$ 12,000.00		$ -
614.XXXX	TREE REMOVAL	28	EA	$ 1,000.00	$ 28,000.00	28	$ 28,000.00		$ -
615.XXXX	LANDSCAPE APPURTENANCES	1	LS	$ 70,000.00	$ 70,000.00	1	$ 70,000.00		$ -
619.04	TYPE III CONSTRUCTION BARRICADE	100	EA	$ 30.00	$ 3,000.00	100	$ 3,000.00		$ -
619.0701	TEMPORARY BUSINESS SIGNS	300	SF	$ 30.00	$ 9,000.00	200	$ 6,000.00	100	$ 3,000.00
619.0901	TEMPORARY PAVEMENT MARKINGS, STRIPES (TRAFFIC PAINT)	12000	LF	$ 0.25	$ 3,000.00		$ -	12000	$ 3,000.00
619.100201	INTERIM PAVEMENT MARKINGS, SYMBOLS (TRAFFIC PAINT)	30	EA	$ 85.00	$ 2,550.00		$ -	30	$ 2,550.00

PROJECT: **MAIN STREET STREETSCAPE AND PEDESTRIAN WAYFINDING**

PIN 4755.91

DATE: **March 7, 2016**

STANTEC CONSULTING SERVICES, INC.
61 COMMERCIAL STREET, SUITE 100
ROCHESTER, NY 14614

OPINION OF PROBABLE COST - Project Share Breakdown

						Project Eligible TAP Funds		Betterment City funds	
ITEM NO.	DESCRIPTION	QUANTITY	PAY UNIT	UNIT PRICE	AMOUNT	QUANTITY	AMOUNT	QUANTITY	AMOUNT
619.110101	PORTABLE, VARIABLE MESSAGE SIGN (PVMS) (HYBRID FLIP DISK) (NONE)	2	EA	$ 3,000.00	$ 6,000.00	2	$ 6,000.00		$ -
619.1613	MAINTAIN TRAFFIC SIGNAL EQUIPMENT (REQUIREMENT C)	30	INTM	$ 200.00	$ 6,000.00	30	$ 6,000.00		$ -
619.500100MO	TEMPORARY PAVEMENT, HMA	15000	SF	$ 2.50	$ 37,500.00	15000	$ 37,500.00		$ -
623.12	CRUSHED STONE (IN PLACE MEASURE)	35	CY	$ 45.00	$ 1,575.00		$ -	35	$ 1,575.00
625.070600MO	RESET EXISTING MONUMENT FRAME AND COVER	10	EA	$ 200.00	$ 2,000.00	10	$ 2,000.00		$ -
645.050000MO	SIGN SLEEVE	30	EA	$ 225.00	$ 6,750.00	30	$ 6,750.00		$ -
645.5101	GROUND-MOUNTED SIGN PANELS WITHOUT Z-BARS	90	SF	$ 25.00	$ 2,250.00	90	$ 2,250.00		$ -
645.5201	GROUND-MOUNTED SIGN PANELS WITHOUT Z-BARS HIGH-VISABILITY SHEETING	60	SF	$ 30.00	$ 1,800.00	60	$ 1,800.00		$ -
645.81000000	TYPE A SIGN POSTS	40	EA	$ 175.00	$ 7,000.00	40	$ 7,000.00		$ -
645.85000000	POLE MOUNTED SIGN SUPPORT SYSTEM (BAND MOUNTED)	42	EA	$ 175.00	$ 7,350.00	42	$ 7,350.00		$ -
646.23000000	LARGE DELINEATOR, LARGE SNOWPLOWING MARKER, LARGE SUPPLEMENTARY SNOWPLOWING MARKER PANELS	20	EA	$ 17.00	$ 340.00	20	$ 340.00		$ -
646.32000000	STEEL POST, 2.0 LB/FT.	20	EA	$ 50.00	$ 1,000.00	20	$ 1,000.00		$ -
647.51000000	REMOVE AND DISPOSE SIGN PANEL, SIGN PANEL ASSEMBLY SIZE I (UNDER 30 SQUARE FEET)	45	EA	$ 25.00	$ 1,125.00	45	$ 1,125.00		$ -
655.11030000	WELDED FRAME AND RETICULINE GRATE 3	10	EA	$ 550.00	$ 5,500.00		$ -	10	$ 5,500.00
655.12020000	MANHOLE FRAME AND COVER	15	EA	$ 550.00	$ 8,250.00		$ -	15	$ 8,250.00
663.33000000	ADJUST EXISTING VALVE BOX ELEVATION	30	EA	$ 260.00	$ 7,800.00		$ -	30	$ 7,800.00
663.XXXX	RELOCATE EXISTING HYDRANT	6	EA	$ 7,500.00	$ 45,000.00	6	$ 45,000.00		$ -
670.0105	FOUNDATION FOR LIGHT STANDARDS, 5 FEET LONG	14	EA	$ 1,000.00	$ 14,000.00	14	$ 14,000.00		$ -
670.10010005	LIGHT STANDARD, SPECIAL - TYPE 1	14	EA	$ 1,750.00	$ 24,500.00	14	$ 24,500.00		$ -
670.26020000	RIGID PLASTIC CONDUIT, 2"	3200	LF	$ 4.00	$ 12,800.00	3200	$ 12,800.00		$ -
670.500401MO	LED LIGHTING FIXTURE - CCT 4000 K - TYPE 1	28	EA	$ 1,500.00	$ 42,000.00	28	$ 42,000.00		$ -
670.70040000	SINGLE CONDUCTOR CABLE, NUMBER 6 GAUGE	3200	LF	$ 1.50	$ 4,800.00	3200	$ 4,800.00		$ -
670.70060000	SINGLE CONDUCTOR CABLE, NUMBER 10 GAUGE	800	LF	$ 0.80	$ 640.00	800	$ 640.00		$ -

PROJECT: **MAIN STREET STREETSCAPE AND PEDESTRIAN WAYFINDING**

PIN 4755.91

DATE: **March 7, 2016**

STANTEC CONSULTING SERVICES, INC.
61 COMMERCIAL STREET, SUITE 100
ROCHESTER, NY 14614

OPINION OF PROBABLE COST - Project Share Breakdown

ITEM NO.	DESCRIPTION	QUANTITY	PAY UNIT	UNIT PRICE	AMOUNT	Project Eligible TAP Funds QUANTITY	Project Eligible TAP Funds AMOUNT	Betterment City funds QUANTITY	Betterment City funds AMOUNT
670.75010000	GROUND WIRE NO. 6 AWG	4000	LF	$ 1.50	$ 6,000.00	4000	$ 6,000.00		$ -
670.81000000	REMOVE AND DISPOSE OF LAMPPOST ASSEMBLY	12	EA	$ 300.00	$ 3,600.00	12	$ 3,600.00		$ -
670.82000000	REMOVE LAMPPOST FOUNDATION	12	EA	$ 350.00	$ 4,200.00	12	$ 4,200.00		$ -
670.990100MO	TEMPORARY STREET LIGHT	10	EA	$ 1,200.00	$ 12,000.00	10	$ 12,000.00		$ -
670.990200MO	TEMPORARY STREET LIGHT WIRING	2000	LF	$ 2.00	$ 4,000.00	2000	$ 4,000.00		$ -
670.XXX	LIBERTY POLE LIGHTING	1	LS	$ 225,000.00	$ 225,000.00	1	$ 225,000.00		$ -
670.XXX	PEDESTYRIAN WAYFINDING SIGNS	1	LS	$ 135,000.00	$ 135,000.00	1	$ 135,000.00		$ -
680.51000010	ALTER ELEVATION OF PULL BOXES	20	EA	$ 375.00	$ 7,500.00	20	$ 7,500.00		$ -
680.54000000	INDUCTANCE LOOP INSTALLATION	1500	LF	$ 8.00	$ 12,000.00		$ -	1500	$ 12,000.00
680.72000000	INDUCTANCE LOOP WIRE	4500	LF	$ 0.90	$ 4,050.00		$ -	4500	$ 4,050.00
680.xx	TRAFFIC SIGNALS	5	EA	$ 70,000.00	$ 350,000.00	5	$ 350,000.00		$ -
685.11	WHITE EPOXY REFLECTORIZED PAVEMENT STRIPES - 20 MILS	5150	LF	$ 1.50	$ 7,725.00		$ -	5150	$ 7,725.00
685.12	YELLOW EPOXY REFLECTORIZED PAVEMENT STRIPES - 20 MILS	2450	LF	$ 1.50	$ 3,675.00		$ -	2450	$ 3,675.00
688.01	WHITE PREFORMED REFLECTORIZED PAVEMENT STRIPES	8500	LF	$ 2.50	$ 21,250.00	6500	$ 16,250.00	2000	$ 5,000.00
688.04	WHITE PREFORMED REFLECTORIZED PAVEMENT SYMBOLS	20	EA	$ 210.00	$ 4,200.00		$ -	20	$ 4,200.00
	SUBTOTAL				**$2,499,537.50**	**75.23%**	**$ 1,880,305.00**	**23.73%**	**$ 593,232.50**
619.01	BASIC WORK ZONE TRAFFIC CONTROL	1	LS	$ 150,000.00	$ 150,000.00		$ 112,839.18		$ 35,600.54
625.01	SURVEY OPERATIONS	1	LS	$ 60,000.00	$ 60,000.00		$ 45,135.67		$ 14,240.21
637.12	ENGINEER'S FIELD OFFICE - TYPE 2	8	MO	$ 2,500.00	$ 20,000.00		$ 15,045.22		$ 4,746.74
637.34	OFFICE TECHNOLOGY AND SUPPLIES	1000	DC	**$ 1.00**	$ 1,000.00		$ 752.26		$ 237.34
697.03	FIELD CHANGE PAYMENT	160000	DC	**$ 1.00**	$ 160,000.00		$ 120,361.79		$ 37,973.91
	SUBTOTAL				**$2,890,537.50**		**$ 2,174,439.12**		**$ 686,031.23**
699.040001	MOBILIZATION	1	LS	$ 115,621.50	$ 115,621.50		$ 86,977.56		$ 27,441.25

PROJECT: **MAIN STREET STREETSCAPE AND PEDESTRIAN WAYFINDING**

PIN 4755.91

DATE: **March 7, 2016**

STANTEC CONSULTING SERVICES, INC.
61 COMMERCIAL STREET, SUITE 100
ROCHESTER, NY 14614

OPINION OF PROBABLE COST - Project Share Breakdown

ITEM NO.	DESCRIPTION	QUANTITY	PAY UNIT	UNIT PRICE	AMOUNT	Project Eligible TAP Funds QUANTITY	Project Eligible TAP Funds AMOUNT	Betterment City funds QUANTITY	Betterment City funds AMOUNT
	CONSTRUCTION COST				**$ 3,006,159.00**		**$ 2,261,416.68**		**$ 713,472.48**
	CONTINGENCY	10%	LS	$ 300,615.90	$ 300,615.90		$ 226,141.67		$ 71,347.25
	TOTAL CONSTRUCTION COST				**$ 3,306,774.90**		**$ 2,487,558.35**		**$ 784,819.73**

Appendix G

Miscellaneous

- **Smart Growth Screening Tool**
- **Quality Control Checklist**

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Smart Growth Screening Tool

PIN **4755.91**

Prepared By:EDR

Smart Growth Screening Tool (STEP 1)

NYSDOT & Local Sponsors – Fill out the Smart Growth Screening Tool until the directions indicate to **STOP** for the project type under consideration. For all other projects, complete answering the questions. For any questions, refer to Smart Growth Guidance document.

Title of Proposed Project: East Main Street Streetscape Improvement Project

Location of Project: East Main Street, Rochester, New York

Brief Description: The proposed East Main Street Streetscape Improvements Project proposes to rehabilitate the existing pedestrian and bicycle facilities along East Main Street from the Main Street Bridge over the Genesee River on the southwest to Liberty Pole Plaza on the northeast. The extended project includes the proposed installation of wayfinding signage along the Main Street Corridor from Canal Street on the southwest to Alexander Street on the northeast. Also included in the project are proposed enhancements to the Liberty Pole Plaza.

A. Infrastructure:

Addresses SG Law criterion a. –
(To advance projects for the use, maintenance or improvement of existing infrastructure)

1. Does this project use, maintain, or improve existing infrastructure?

Yes ☒ **No** ☐ **N/A** ☐

Explain: (use this space to expand on your answers above – the form has no limitations on the length of your narrative)

The new East Main Street streetscape has been designed to improve the conditions for pedestrians and enhance the aesthetic nature of the corridor. The existing sidewalks, street lights, wayfinding signs and streetscape amenities will be replaced. In addition, the project will evaluate the current roadway travel lanes and potential for adding parking throughout the project base corridor. Proposed changes within Liberty Pole Plaza include: the replacement of the existing sidewalk and accent lighting around the Liberty Pole. The Liberty Pole, surrounding seat wall and planter, memorial plaque and drinking fountain, and row of trees immediately adjacent to the Sibley Building will be preserved. In addition, existing pedestrian wayfinding kiosks installed in the 1980s will be replaced by a new system of pedestrian wayfinding signage that will implement the recommendations of the 2012 Center City Pedestrian Circulation and Wayfinding Study.

Maintenance Projects Only

a. Continue with screening tool for the four (4) types of maintenance projects listed below, as defined in **NYSDOT PDM Exhibit 7-1 and described in 7-4:** https://www.dot.ny.gov/divisions/engineering/design/dqab/pdm

- Shoulder rehabilitation and/or repair;
- Upgrade sign(s) and/or traffic signals;
- Park & ride lot rehabilitation;
- 1R projects that include single course surfacing (inlay or overlay), per Chapter 7 of the NYSDOT Highway Design Manual.

b. For all other maintenance projects, **STOP here.** Attach this document to the programmatic Smart Growth Impact Statement and signed Attestation for Maintenance projects.

For all other projects (other than maintenance), continue with screening tool.

B. Sustainability:

NYSDOT defines Sustainability as follows: A sustainable society manages resources in a way that fulfills the community/social, economic and environmental needs of the present without compromising the needs and opportunities of future generations. A transportation system that supports a sustainable society is one that:

- Allows individual and societal transportation needs to be met in a manner consistent with human and ecosystem health and with equity within and between generations.
- Is safe, affordable, and accessible, operates efficiently, offers choice of transport mode, and supports a vibrant economy.
- Protects and preserves the environment by limiting transportation emissions and wastes, minimizes the consumption of resources and enhances the existing environment as practicable.

For more information on the Department's Sustainability strategy, refer to Appendix 1 of the Smart Growth Guidance and the NYSDOT web site, www.dot.ny.gov/programs/greenlites/sustainability

(Addresses SG Law criterion j **:** to promote sustainability by strengthening existing and creating new communities which reduce greenhouse gas emissions and do not compromise the needs of future generations, by among other means encouraging broad based public involvement in developing and implementing a community plan and ensuring the governance structure is adequate to sustain and implement.)

1. Will this project promote sustainability by strengthening existing communities?

   Yes ☒ **No** ☐ **N/A** ☐

2. Will the project reduce greenhouse gas emissions?

   Yes ☒ **No** ☐ **N/A** ☐

Explain: (use this space to expand on your answers above)

The improvement of streetscape features including sidewalks, lighting, and signage will encourage pedestrian and bicycle traffic in downtown Rochester, thereby reducing automobile dependence and the resulting greenhouse gas emissions.

C. Smart Growth Location:

Plans and investments should preserve our communities by promoting its distinct identity through a local vision created by its citizens.

(Addresses SG Law criteria b and c**:** to advance projects located in municipal centers; to advance projects in developed areas or areas designated for concentrated infill development in a municipally approved comprehensive land use plan, local waterfront revitalization plan and/or brownfield opportunity area plan.)

1. Is this project located in a developed area?

   Yes ☒ **No** ☐ **N/A** ☐

2. Is the project located in a municipal center?

   Yes ☒ **No** ☐ **N/A** ☐

3. Will this project foster downtown revitalization?

   Yes ☒ **No** ☐ **N/A** ☐

4. Is this project located in an area designated for concentrated infill development in a municipally approved comprehensive land use plan, waterfront revitalization plan, or Brownfield Opportunity Area plan?

   Yes ☐ **No** ☐ **N/A** ☒

Explain: (use this space to expand on your answers above)

The project is a streetscape improvement project in the center of downtown Rochester, a fully developed city center. The pedestrian and wayfinding signage improvements will implement the recommendations of the 2012 Center City Pedestrian Circulation and Wayfinding Study.

D. Mixed Use Compact Development:

Future planning and development should assure the availability of a range of choices in housing and affordability, employment, education transportation and other essential services to encourage a jobs/housing balance and vibrant community-based workforce.

(Addresses SG Law criteria e and i: to foster mixed land uses and compact development, downtown revitalization, brownfield redevelopment, the enhancement of beauty in public spaces, the diversity and affordability of housing in proximity to places of employment, recreation and commercial development and the integration of all income groups; to ensure predictability in building and land use codes.)

1. Will this project foster mixed land uses?

   Yes ☐ **No** ☐ **N/A** ☒

2. Will the project foster brownfield redevelopment?

   Yes ☐ **No** ☐ **N/A** ☒

3. Will this project foster enhancement of beauty in public spaces?

   Yes ☒ **No** ☐ **N/A** ☐

4. Will the project foster a diversity of housing in proximity to places of employment and/or recreation?

   Yes ☐ **No** ☐ **N/A** ☒

5. Will the project foster a diversity of housing in proximity to places of commercial development and/or compact development?

   Yes ☐ **No** ☐ **N/A** ☒

6. Will this project foster integration of all income groups and/or age groups?

   Yes ☒ **No** ☐ **N/A** ☐

7. Will the project ensure predictability in land use codes?

   Yes ☐ **No** ☐ **N/A** ☒

8. Will the project ensure predictability in building codes?

   Yes ☐ **No** ☐ **N/A** ☒

Explain: (use this space to expand on your answers above)

The project has been designed to implement the recommendations of the 2012 Center City Pedestrian Circulation and Wayfinding Study. The purpose of the project is to improve the visitor's wayfinding experience within Rochester's Center City by beautifying public spaces along the East Main Street corridor, and by making it easier for visitors to navigate to places of interest in the city center.

E. Transportation and Access:

NYSDOT recognizes that Smart Growth encourages communities to offer a wide range of transportation options, from walking and biking to transit and automobiles, which increase people's access to jobs, goods, services, and recreation.

(Addresses SG Law criterion f: to provide mobility through transportation choices including improved public transportation and reduced automobile dependency.)

1. Will this project provide public transit?

   Yes ☐ **No** ☒ **N/A** ☐

2. Will this project enable reduced automobile dependency?

   Yes ☒ **No** ☐ **N/A** ☐

3. Will this project improve bicycle and pedestrian facilities (such as shoulder widening to provide for on-road bike lanes, lane striping, crosswalks, new or expanded sidewalks or new/improved pedestrian signals)?

   Yes ☒ **No** ☐ **N/A** ☐

   (Note: Question 3 is an expansion on question 2. The recently passed Complete Streets legislation requires that consideration be given to complete street design features in the planning, design, construction, reconstruction and rehabilitation, but not including resurfacing, maintenance, or pavement recycling of such projects.)

   Explain: (use this space to expand on your answers above)

   The project's intent is to create improved pedestrian and bicycle facilities to increase the use of these modes of transportation in downtown Rochester. As noted in the 2012 Pedestrian Circulation and Wayfinding Study, the goal is to create an environment where visitors to Center City would be more likely to travel on foot and explore beyond their traditional comfort zone. Such an appropriately designed system should function as the connective tissue of Center City, linking the myriad destinations, sub districts, trails and other resources together in a cohesive wayfinding network.

F. Coordinated, Community-Based Planning:

Past experience has shown that early and continuing input in the transportation planning process leads to better decisions and more effective use of limited resources. For information on community based planning efforts, the MPO may be a good resource if the project is located within the MPO planning area.

(Addresses SG Law criteria g and h: to coordinate between state and local government and inter-municipal and regional planning; to participate in community based planning and collaboration.)

1. Has there been participation in community-based planning and collaboration on the project?

Yes ☒ No ☐ N/A ☐

2. Is the project consistent with local plans?

Yes ☒ No ☐ N/A ☐

3. Is the project consistent with county, regional, and state plans?

Yes ☒ No ☐ N/A ☐

4. Has there been coordination between inter-municipal/regional planning and state planning on the project?

Yes ☒ No ☐ N/A ☐

Explain: (use this space to expand on your answers above)

A public information meeting is anticipated to be held in April 2016 as part of the preliminary design process. Neighborhood and business groups will also be coordinated with throughout the design process. Additional public information meetings will be held during final design and prior to the start of construction. The project has had coordination with the City of Rochester, and will implement the recommendations of the 2012 Center City Pedestrian Circulation and Wayfinding Study.

G. Stewardship of Natural and Cultural Resources:

Clean water, clean air and natural open land are essential elements of public health and quality of life for New York State residents, visitors, and future generations. Restoring and protecting natural assets, and open space, promoting energy efficiency, and green building, should be incorporated into all land use and infrastructure planning decisions.

(Addresses SG Law criterion d :To protect, preserve and enhance the State's resources, including agricultural land, forests surface and ground water, air quality, recreation and open space, scenic areas and significant historic and archeological resources.)

1. Will the project protect, preserve, and/or enhance agricultural land and/or forests?

Yes ☐ No ☐ N/A ☒

2. Will the project protect, preserve, and/or enhance surface water and/or groundwater?

Yes ☐ No ☐ N/A ☒

3. Will the project protect, preserve, and/or enhance air quality?

Yes ☒ No ☐ N/A ☐

4. Will the project protect, preserve, and/or enhance recreation and/or open space?

Yes ☒ No ☐ N/A ☐

5. Will the project protect, preserve, and/or enhance scenic areas?

Yes ☒ **No** ☐ **N/A** ☐

6. Will the project protect, preserve, and/or enhance historic and/or archeological resources?

Yes ☒ **No** ☐ **N/A** ☐

Explain: (use this space to expand on your answers above)

The project will enhance air quality by promoting the use of non-vehicular modes of transportation including pedestrian and bicycle travel. The project will enhance recreation and scenic areas by improving the aesthetics of the streetscape in downtown Rochester and Liberty Pole Plaza and improving connectivity between local parks, trails and visitor spaces. The project will also enhance the streetscapes outside nearby historic properties, thereby improving the experience of visitors to these sites.

Smart Growth Impact Statement (STEP 2)

NYSDOT: Complete a Smart Growth Impact Statement (SGIS) below using the information from the Screening Tool.

Local Sponsors: The local sponsors are **not** responsible for completing a Smart Growth Impact Statement. Proceed to **Step 3**.

Smart Growth Impact Statement

PIN: 4755.91

Project Name: East Main Street Streetscape Improvements

Pursuant to ECL Article 6, this project is compliant with the New York State Smart Growth Public Infrastructure Policy Act. This project has been determined to meet the relevant criteria, to the extent practicable, described in ECL Sec. 6-0107. Specifically, the project:

-
-
-
-
-
-

This publically supported infrastructure project complies with the state policy of maximizing the social, economic and environmental benefits from public infrastructure development. The project will not contribute to the unnecessary costs of sprawl development, including environmental degradation, disinvestment in urban and suburban communities, or loss of open space induced by sprawl.

Review & Attestation Instructions (STEP 3)

Local Sponsors: Once the Smart Growth Screening Tool is completed, the next step is to submit the project certification statement **(Section A)** to Responsible Local Official for signature. After signing the document, the completed Screening Tool and Certification statement should be sent to NYSDOT for review as noted below.

NYSDOT: For state-let projects, the Screening Tool and SGIS is forwarded to Regional Director/ RPPM/Main Office Program Director or designee for review, and upon approval, the attestation is signed **(Section B.2).** For locally administered projects, the sponsor's submission and certification statement is reviewed by NYSDOT staff, the appropriate box **(Section B.1)** is checked, and the attestation is signed (Section B.2).

A. CERTIFICATION (LOCAL PROJECT)

***I HEREBY CERTIFY**, to the best of my knowledge, all of the above to be true and correct.*

Preparer of this document:

Signature: _____ Date: 2/19/2016

Title: Project Manager/FDR, D.P.C Printed Name: Caitlin Graff

Responsible Local Official (for local projects):

Signature: _____ Date: 2/23/16

Title: CITY ENGINEER Printed Name: JAMES R. McIntosh

B. ATTESTATION (NYSDOT)

1. ***I HEREBY:***

☒ *Concur with the above certification, thereby attesting that this project is in compliance with the State Smart Growth Public Infrastructure Policy Act*

☐ *Concur with the above certification, with the following conditions (information requests, confirming studies, project modifications, etc.):*

(Attach additional sheets as needed)

☐ do not concur with the above certification, thereby deeming this project ineligible to be a recipient of State funding or a subrecipient of Federal funding in accordance with the State Smart Growth Public Infrastructure Policy Act.

2. ***NOW THEREFORE,*** pursuant to ECL Article 6, this project is compliant with the New York State Smart Growth Public Infrastructure Policy Act, to the extent practicable, as described in the attached Smart Growth Impact Statement.

NYSDOT Commissioner, Regional Director, MO Program Director,
Regional Planning & Programming Manager (or official designee):

Signature	Date: 2/24/16
Title: RPPM	Printed Name: James P. Willer

NYSDOT Design Report Review Checklist

PIN:	**4755.91**	**Dates:**	**February 2016**	**Regional Reviewer[2]:**	**Kayle Stettner Stantec Consulting Services Inc.**
Project Description:		**Main Street Streetscape and Wayfinding Project**		**Design Approval Grantor:**	**James McIntosh City Engineer**
Functional Classification:		**Urban Minor Arterial**		**Design Classification:**	**Urban Arterial**
NHS[3]:		Yes ☒ No ☐		**Requested Action:**	**Final Design Report Document Review**
Part of 4.9 m Vertical Clearance Network:		Yes ☐ No ☒ Cannot readily determine ☐ Consult RPPM or MO Structures to determine vertical clearance		**Report Prepared by:**	Region ☐ DSB ☐ Consultant ☒
Designated Qualifying and Access Highway:		Designated Qualifying Highway ☐ Within 1.6 km of Qualifying Highway ☒			Designated Access Highway ☒ Neither ☐

NEPA Class:	Class II CE – 'c' list ☒ CE – 'd' list - prog ☐ CE – 'd' list - FHWA ☐	Class III (EA) ☐	Class I (EIS) ☐	**SEQR Type:**	Type II ☒	Non-Type II (EA) ☐	Non-Type II (EIS) ☐

#	Y	Item	Comments
1	☒	Report content is in accordance with the Project Development Manual (PDM) Appendix 7 and all applicable appendices are included?	
2	☒	Project Objectives are clear and in accordance with PDM Appendix 4? Stakeholder's input on project objectives is indicated?	
3	☒	A Public Involvement (PI) Plan is prepared and followed in accordance with PDM § 2.2.6.1? Copy included?	Public Information meeting will be held in the Spring of 2016
	☒	Public outreach efforts are adequate and documented in the report?	
4	☒	Location maps with project location/limits are included?	
5	☒	All reasonable alternatives adequately evaluated/analyzed?	Project has only one Alternative
6	☒	Design speed is either the maximum functional class speed or reflective of anticipated off-peak 85th% speed per HDM § 2.6.1.1 (or 4.4 or 7.2.7.1)? Regional Traffic Engineer concurred with the design speed chosen? Basis for the selection of design speed is included per HDM § 2.6.1.1?	Design Speed is 30 MPH per the HDM
7	☒	Design criteria for all roads and/or ramps established using the proper standards per HDM Chapters 2, 4, or 7? Design Criteria Table used (HDM Table 2-16)? HDM and Bridge Manual references included? Design criteria for shared-use path established per AASHTO Guide for Bicycle Facilities?	

2: The DQAB Project Development Section tracks time allotted for reviews.
3: The NHS has been expanded to include all Principal Arterials, along with some additional routes. Consult with your RPPM for expanded/updated NHS information.

#	Y	Item	Comments
8	☒	Non-Standard Features to be created, worsened, or retained are identified? Associated safety concerns are discussed and explained?	No Non-Standard features are present.
	☒	Non-Standard Features are justified in accordance with HDM '2.8? Associated safety concerns are clearly addressed?	No Element Specific Non-Standard Features are present.
9	☒	Capacity of each feasible alternative analyzed per HDM ' 5.2 using a design year per PDM Appendix 5?	
10	☒	Accident analysis performed using HDM '5.3 (using current data or data representative of current conditions)?	
	☒	Accident mitigation measures considered and either incorporated or an explanation provided?	
11	☒	Prerequisites to environmental determinations are complete? (Check all appropriate boxes below)	
	☒	FEAW included and completed for Federal aid, NEPA Class II projects?	
	☒	FHWA Sign-off stating requirements of 36 CFR Part 800 (Fed-Aid w/ Cultural Resources) have been met and concurrence with SHPO effect determination included?	Pending
	☒	Environmental permits/coordination identified and in process?	None Required
	☒	Environmental studies complete (Ref. PDM Appendix 1)?	
	☒	If applicable, proposed mitigation measures discussed?	None Required
	☒	Public Hearing/opportunity offered (if applicable) and hearing certification included per 23 USC 128?	None Required
	☒	For Design Approval requests, has environmental determination been made?	Pending
12	☒	ROW acquisitions are adequate and necessary? Abstract Request Maps are prepared on time?	None Required
13	☒	Plans, profiles and sections for highway, bridge, and detours included per PDM Appendix 7?	
14	☒	Preliminary WZTC alternatives are evaluated and selected?	
15	☒	Project cost and schedule are reasonable?	
16	☒	Utility involvements are clearly defined? Utility conflicts identified? Coordination with utilities initiated?	Utility coordination will occur during final design
17	☒	Pedestrian Generator Checklist included per HDM § 18.5.1 and results are discussed in the report?	
18	☒	ITS needs are identified and discussed in the report? Coordination with Regional ITS Coordinator?	No ITS improvements are included in the scope of the project.
19	☒	Regional Construction Group is on board? Constructability review sought? If yes, discussed in the report?	Coordination with City Construction Division is ongoing.
20	☐	Final Design Report contains stamp and legal note from the preparer per PDM Appendix 7 § 6.1? Final Design Report sealed and signed by the Group Director responsible for the project per EI 08-001?	
21	☐	Region's Transmittal Memo matches the information contained in the Report and other attachments?	