Appendix A

Project Plans

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CITY OF ROCHESTER, NEW YORK

DEPARTMENT OF ENVIRONMENTAL SERVICES

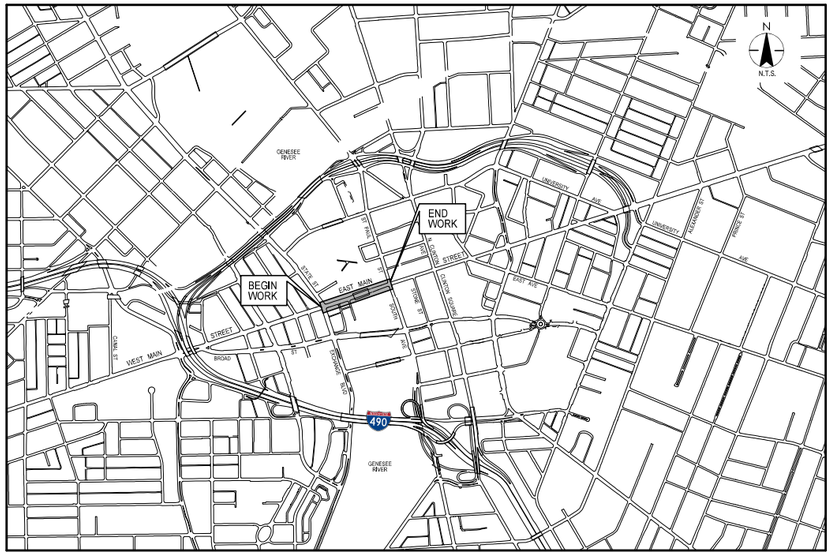
MAIN STREET STREETSCAPE & WAYFINDING PROJECT PHASE II

P.I.N. 4CR0.09 Dxxxxxx PC 18308

STATE STREET TO ST PAUL STREET

LENGTH - 1,200 FEET

PRELIMINARY (35%) PLANS



LOCATION MAP

A3

US DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

NEW YORK STATE OF OPPORTUNITY. Department of Transportation

CITY OF ROCHESTER

APPROVED BY: _____ DATE: _____
NORMAN H. JONES
COMMISSIONER
DEPARTMENT OF ENVIRONMENTAL SERVICES

APPROVED BY: _____ DATE: _____
HOLLY E. BARRETT, P.E.
CITY ENGINEER
BUREAU OF ARCHITECTURE & ENGINEERING

RECOMMENDED BY: _____ DATE: _____

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DATE ISSUED : 11-16-2018 DRAWING NO. : COVER SHEET NO. : 1 OF X

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ORIGINAL SHEET - ANSI B 11X17

ALIGNMENT

ABBR.	DESCRIPTION
AH	AHEAD
AZ	AZIMUTH
BK	BACK
℄	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

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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MAIN STREET STREETSCAPE AND PEDESTRIAN WAYFINDING ENHANCEMENTS PHASE II
P.I.N. 4CR0.09 D xxxxxx PC 18308

ROCHESTER, NEW YORK

File Name: ABB-01.DGN	SAR	JQH	SWM	18.11.16
	Dwn.	Chkd.	Dsgn.	YY.MM.DD

Title
ABBREVIATIONS & INDEX

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ORIGINAL SHEET - ANSI D HORIZ

FEATURE	SYMBOL EXISTING	SYMBOL PROPOSED
SURVEY DATA		
COORDINATE GRID	N 1,443,800	
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	RW.	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	TC	TC
TRAFFIC CONTROL BOX GROUND MOUNTED	TC	TC
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	100.00	

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		
WATER MAIN TRACER WIRE BOX		
WATER MAIN CATHODIC PROTECTION TEST STATION		
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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MAIN STREET STREETSCAPE AND PEDESTRIAN WAYFINDING ENHANCEMENTS PHASE II
P.I.N. 4CR0.09 D xxxxxx PC 18308

ROCHESTER, NEW YORK

File Name: LEG-1.DGN	SAR	JQH	SWM	18.11.16
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Title
LEGEND

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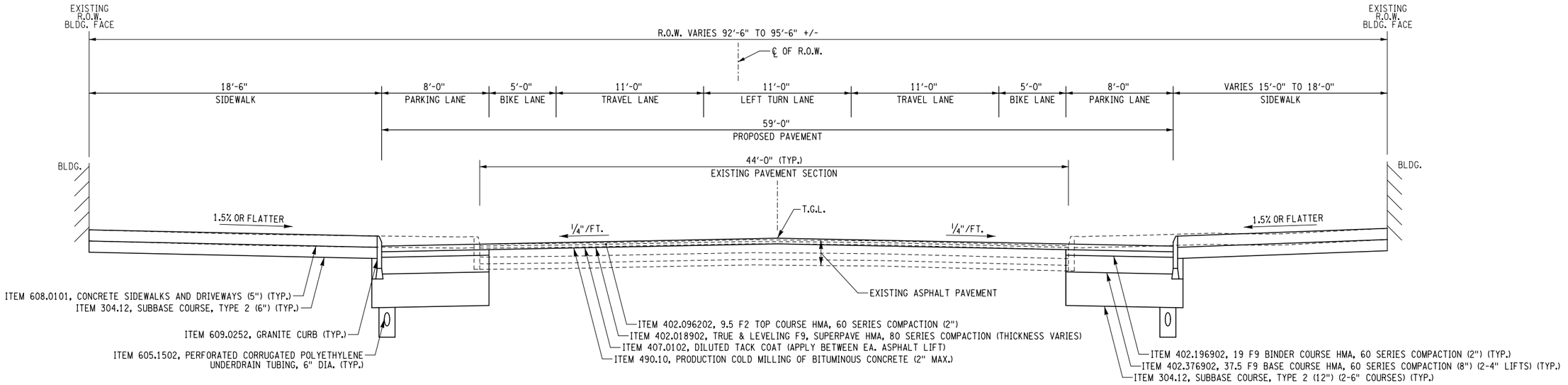
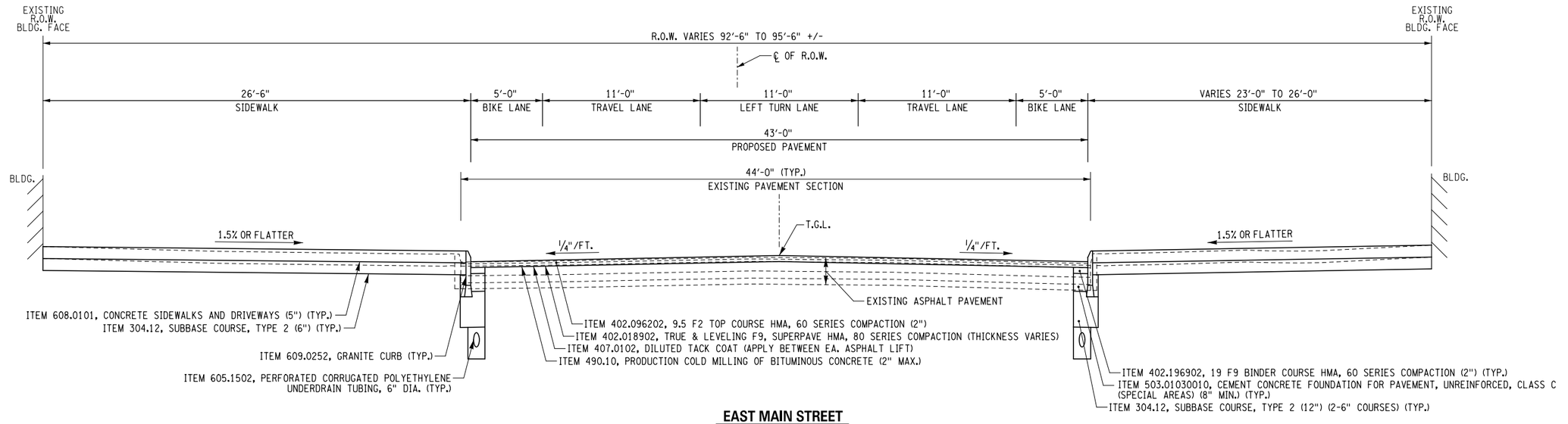


EAST MAIN STREET
PAVEMENT WIDENING AREAS
LOOKING EAST



EAST MAIN STREET
PAVEMENT MILLING & RESURFACING
LOOKING EAST

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MAIN STREET STREETSCAPE AND PEDESTRIAN WAYFINDING ENHANCEMENTS PHASE II
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ROCHESTER, NEW YORK

File Name: TYP-01.DGN	SAR	JQH	SWM	18.11.16
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Title
TYPICAL SECTION
MAIN STREET

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192800064	N.T.S.	
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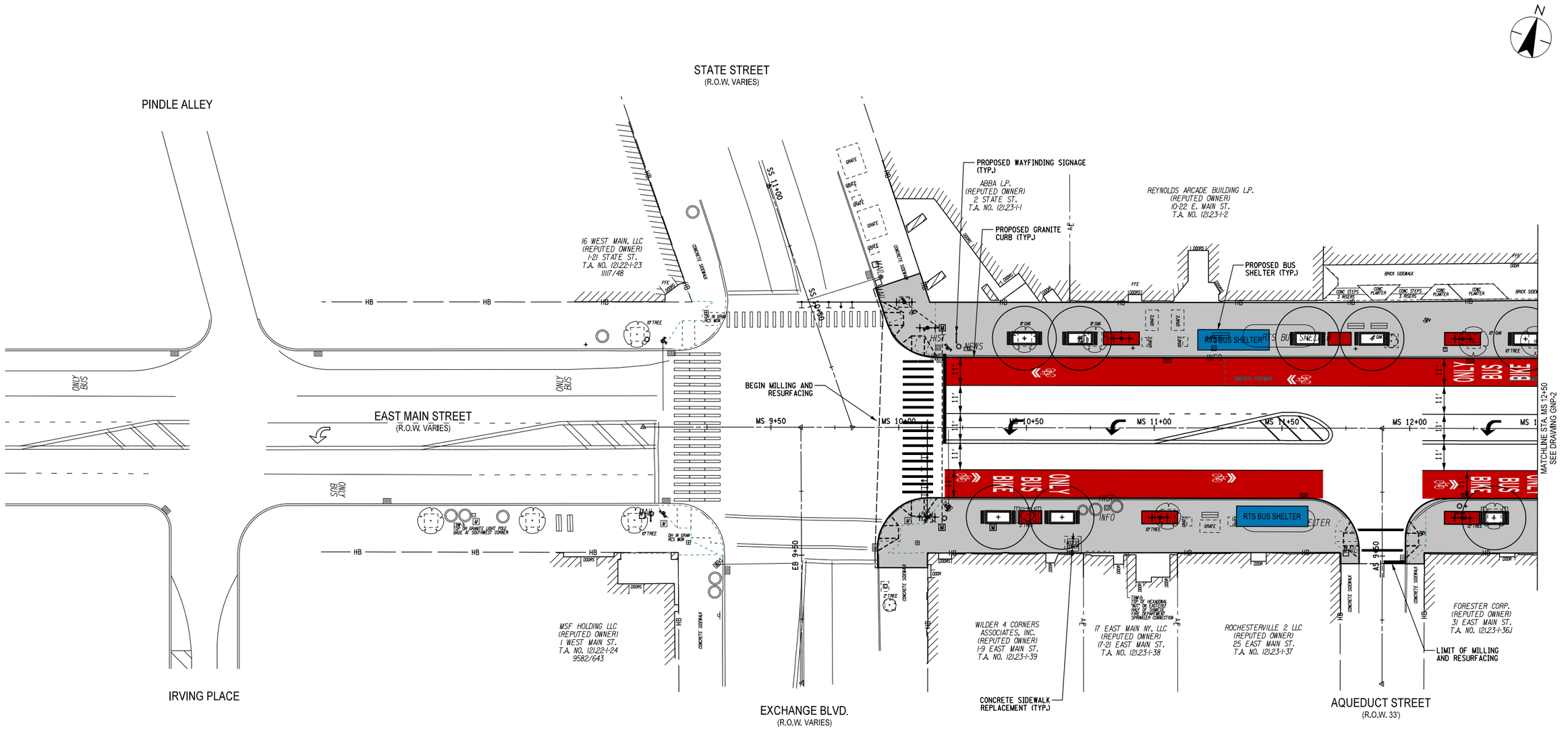

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ROCHESTER, NEW YORK

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Title
GENERAL PLAN
MAIN STREET

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192800064	1" = 20'	
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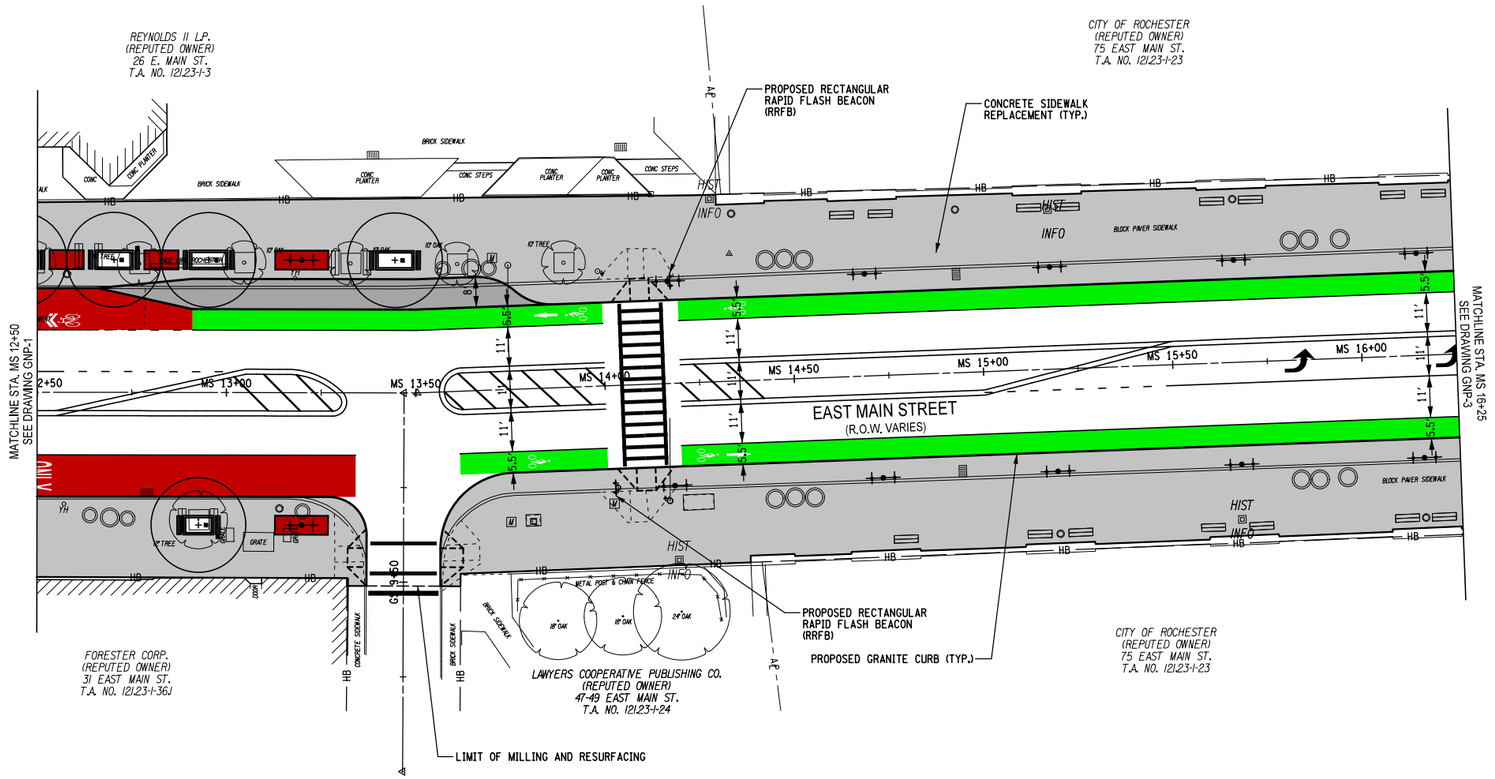

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ROCHESTER, NEW YORK

File Name: GNP-02.DGN	SAR	JGH	SWM	18.11.16
	Dwn.	Chkd.	Dsgn.	YY.MM.DD

Title
GENERAL PLAN
MAIN STREET

Project No.	Scale	
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Drawing No.	Sheet	Revision
GNP-2	6 of X	0

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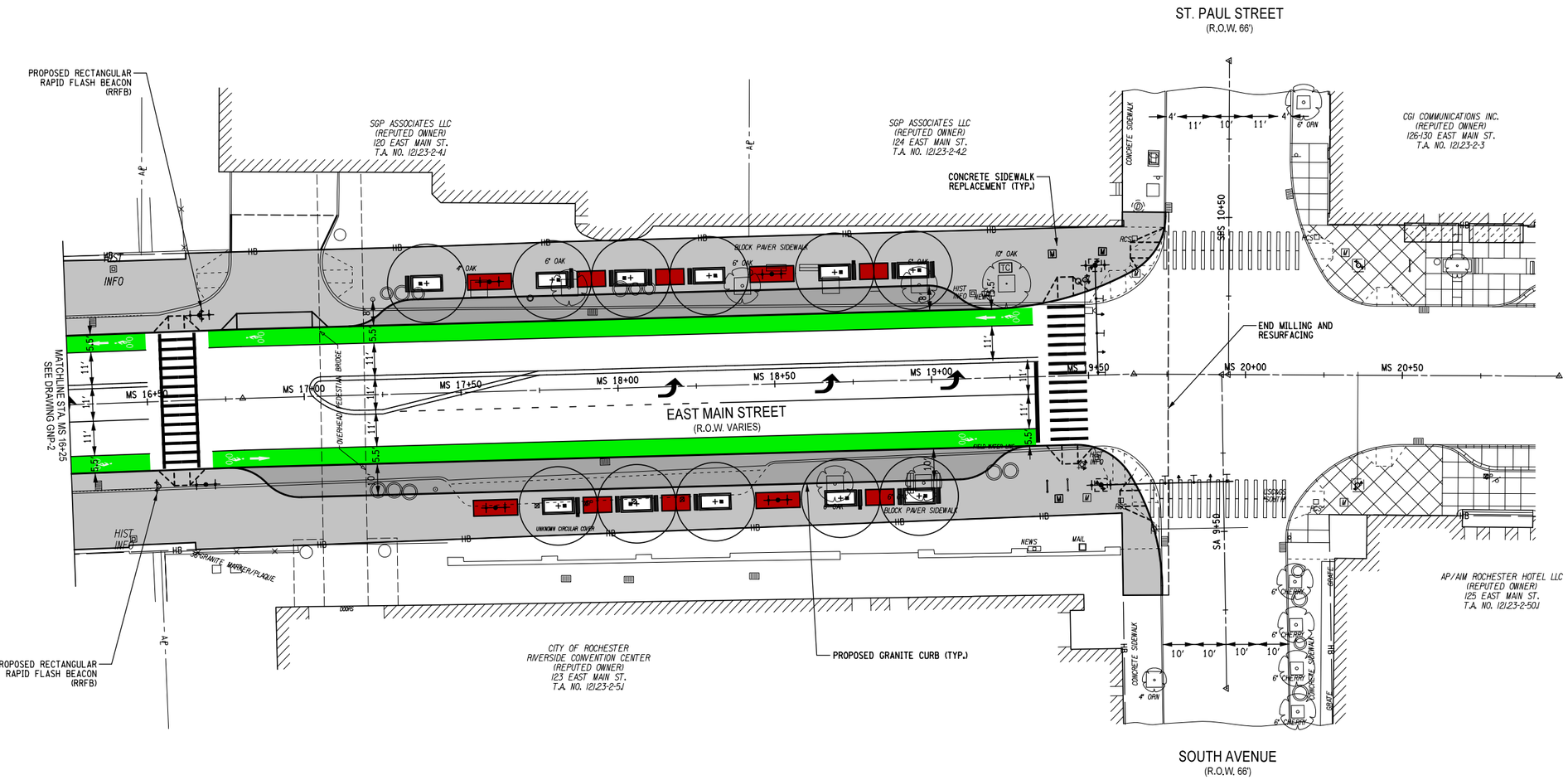
Date/Time: 11/16/2018 12:38:45 PM
Plotted By: swmiller

ORIGINAL SHEET - ANSI D HORIZ



Revision	By	Appd.	YY.MM.DD

Issued	By	Appd.	YY.MM.DD

Permit-Seal

Consultants

A9

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Client/Project
CITY OF ROCHESTER

MAIN STREET STREETSCAPE AND PEDESTRIAN WAYFINDING ENHANCEMENTS PHASE II
P.I.N. 4CR0.09 D xxxxxx PC 18308

ROCHESTER, NEW YORK

File Name: GNP-03.DGN	SAR	JQH	SWM	18.11.16
	Dwn.	Chkd.	Dsgn.	YY.MM.DD

Title
GENERAL PLAN
MAIN STREET

Project No.	Scale	
192800064	1' = 20'	
Drawing No.	Sheet	Revision
GNP-3	7 of X	0

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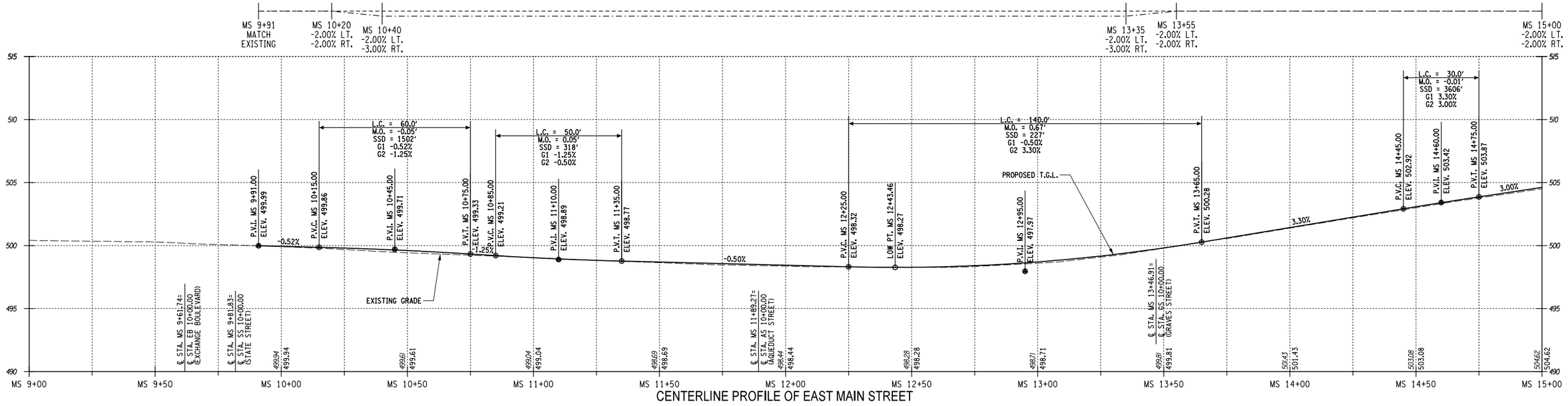
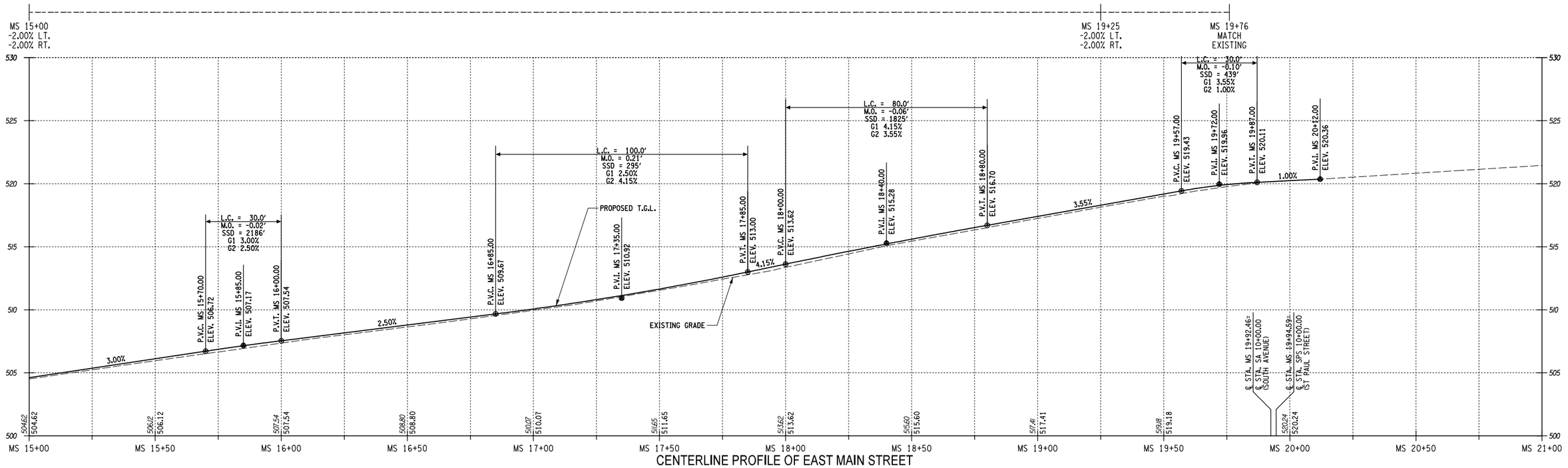


CENTERLINE PROFILE OF EAST MAIN STREET



CENTERLINE PROFILE OF EAST MAIN STREET

Revision	By	Appd.	YY.MM.DD

Issued	By	Appd.	YY.MM.DD

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MAIN STREET STREETSCAPE AND PEDESTRIAN WAYFINDING ENHANCEMENTS PHASE II
P.I.N. 4CR0.09 D xxxxxx PC 18308

ROCHESTER, NEW YORK

File Name: PRO-01.DGN	SAR	JQH	SWM	18.11.16
	Dwn.	Chkd.	Dsgn.	YY.MM.DD

Title
GENERAL ROADWAY PROFILE

Project No.	Scale	
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Drawing No.	Sheet	Revision
PRO-1	8 of X	0

Design File: U:\1928000\4\Transportation\Preliminary\Drawing\Plan Set\PRO\PRO-01.dgn
Date/time: 11/16/2018 12:38:47 PM
Plotted by: swmiller

ORIGINAL SHEET - ANSI D SIZE

Appendix B

Environmental Information

- **Federal Environmental Approvals Worksheet**
- **Social, Economic and Environmental Resource Checklist**
- **SEQR Determination Documentation**
- **Section 106 Project Submittal Package**
- **Section 106 Findings Documentation**
- **Environmental Screening Maps**
- **ESA Programmatic Determination**

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Federal Environmental Approval Worksheet

PIN: 4CR009	Completed by: EDR	Date Completed: 7/12/18 Revised: 7/25/2018	FUNDING TYPE: Federal
DESCRIPTION: The proposed Project consists of milling and overlaying existing pavement, installation of new granite curb, sidewalk improvements, installation of benches, bicycle racks, electrical outlets and charging stations, street tree additions, and traffic and pedestrian signage and pavement markings on Main Street, over the Genesee River in the City of Rochester, New York. The streetscape improvements will include a section of East Main Street between State Street/ Exchange Boulevard to the west, and St. Paul Street/ South Avenue to the east. Project disturbance will be limited to only that needed to complete the streetscape improvements in a 2.2-acre area. No work is anticipated to occur in the Genesee River. The Project does not include disturbance of any previously undisturbed land. All Project work will be completed within the existing developed pedestrian streetscape and within the existing Right-Of-Way.			NEPA CLASS: Class II: CE SEQR TYPE: Type II
LOCALITY (Village, Town, City): City of Rochester			COUNTY: Monroe

Purpose of this Worksheet:

- Implement the ***P****rogrammatic* ***A****greement Between the Federal Highway Administration, New York Division (FHWA), and the New York State Department of Transportation (NYSDOT)* ***R****egarding the Processing of Actions Classified as* ***C****ategorical* ***E****xclusions (CEs) for Federal-Aid Highway Projects* (PARCE)**,** executed September 2017.
- Communicate the project National Environmental Policy Act (NEPA) classification and identify whether the FHWA or the NYSDOT (titles identified per Project Development Manual (PDM) Chapter 4, Exhibit 4-2 is making the CE determination.
- Identify any FHWA independent determinations, approvals and/or concurrences required before the CE determination can be made.
- To be included within the Design Approval Document (DAD) in accordance with the documentation requirements in the PARCE.

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 771.115(b)).

Instructions:
Initial review of the Federal Environmental Approval Worksheet (FEAW) should occur in scoping or early in Design Phase I to identify potential risks. Complete new review of the FEAW periodically, particularly if project parameters or site condition changes result in potential resource impacts. Completion of the FEAW with signature in Step 4 is required prior to Design Approval. See PDM Chapter 4 for additional details.

Step 1A: Unusual Circumstances Threshold Determination – 23 CFR 771.117(b)
Do any, or the potential for any, unusual circumstances exist[1]?

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

If yes to any of the above, contact the Main Office Project Liaison (MOPL) (see PDM Exhibit 4-1). Any project which would normally be classified as a CE but could involve unusual circumstances (or even uncertainty) will require consultation with the Office of Environment (OOE) and subsequently with the FHWA to determine if CE classification is still warranted. If, after consultation with the 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, after consultation with the FHWA, it is determined that the project can be progressed as a CE, **proceed to step 1B.**

[1] See definitions and examples of unusual circumstances *in FEAW_Instructions.doc*

If no to all the above, then this project qualifies as a CE; **proceed to step 1B**.

Step 1B: Identification of CE action

Is the project an action listed in 23 CFR 771.117 (c) - (d) (or as identified in FHWA's additional flexibilities memo)?

YES☒ NO☐

If Yes, proceed to step 2.

If No, contact the MOPL (see PDM Exhibit 4-1). If, after consultation with the OOE and the 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, after consultation with the FHWA, it is determined that the project can continue as a CE, **proceed to step 2.**

Federal Environmental Approval Worksheet

Project ID Number: 4CR009

Step 2: FHWA environmental actions required prior to CE determination[2]
The Step 2 table identifies certain issues that require: the FHWA to make the CE determination (Column A and 2.4); independent FHWA determinations (2.1); FHWA approvals, compliance or concurrence (2.2); or notification to the FHWA (2.3). Review ***the FEAW Thresholds document*** to determine how to fill out each column of Step 2.

2.1	Required FHWA Independent environmental determinations	PARCE threshold exceeded[3]	FHWA independent determination/ concurrence required	Date determination/ concurrence issued	Resource not present, or present but threshold not exceeded
		A	B	B1	C
Executive Order (EO) 11990 Protection of Wetlands Individual Finding			☐	Date Issued	☒
ESA Section 7 Threatened and Endangered Species		☐	☒	7/23/2018	☐
Section 106 of National Historic Preservation Act		☐	☒	Date Issued	☐
Section 4(f) (Park, Wildlife Refuge, Historic Sites, and National Wild and Scenic Rivers)		☐	☐	Date Issued	☒
2.2	**Other FHWA environmental approvals, compliance and/or concurrence required**	**PARCE threshold exceeded[3]**	**Threshold exceeded; FHWA approval, compliance or concurrence required**		**Resource not present, or present but threshold not exceeded**
EO 11988 Floodplains		☐	☐		☒
EO 13112 Invasive Species			☐		☒
EO 12898 Environmental Justice			☐		☒
Safe Drinking Water Act Section 1424(e)			☐		☒
US Army Corps of Engineers, Section 404/10 NWP #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**	**PARCE threshold exceeded[3]**	**FHWA notification threshold exceeded**		**Resource not present, or present but threshold not exceeded**
US Army Corps of Engineers, Section 404/10 Individual Permit		☐	☐		☒
National Wild and Scenic Rivers		☐	☐		☒
US Coast Guard Bridge Permit		☐	☐		☒
Known hazardous waste site (only EPA National Priority list)			☐		☒
Project on or affecting Native American Lands			☐		☒
2.4	**Other Issues Triggering FHWA Approval of Categorical Exclusion**	**PARCE threshold exceeded[3]**			**Resource not present, or present but threshold not exceeded**
Property Acquisition		☐			☒
Major Traffic Disruptions		☐			☒
Changes in Access Control		☐			☒

[2] **This table does not represent all environmental issues and actions that a project is subject to**. Classification as a CE does not exempt the project from further environmental review. Refer to the PDM and The Environmental Manual (TEM) to determine review requirements**.**
[3] When PARCE threshold is exceeded, the NYSDOT recommends that the project qualifies as a CE and requests the FHWA make the CE determination. Information on PARCE specific thresholds are contained within ***the FEAW Thresholds document.***

Federal Environmental Approval Worksheet

Project ID Number: 4CR009

Step 3: Who makes the NEPA CE Determination?

To identify which party, either the FHWA or the NYSDOT, makes the CE determination in accordance with the PARCE, follow the instructions found in the table below, beginning in Step 3A. This step also identifies which correspondence shell to use to distribute the FEAW and other environmental notifications or approvals.

3	**Determine whether the FHWA or the NYSDOT makes the CE determination and whether additional notifications or approvals are required.**
3A	**Is the project an action listed in 23 CFR 771.117 (c) - (d)** (Answered yes in Step 1B)**?** **YES** ☒ If Yes, **proceed to 3B.** **NO** ☐ If No, the FHWA makes the CE determination. • For **Locally Administered Federal Aid Projects only**, the DAD, the NYSDOT recommendation and request (that the FHWA determines the project qualifies as a CE) are sent from the Regional Planning and Program Manager (RPPM) to the FHWA directly using **Shell 4.** • For all other projects, the DAD and the NYSDOT recommendation and request (that the FHWA determines the project qualifies as a CE) are sent to the MOPL for review using **Shell 3**. **Proceed to Step 4.**
3B	**Are any of the CE Thresholds from the PARCE not met** (Are there any checks in Column A of Step 2)**?** **YES** ☐ If Yes, the FHWA makes the CE determination. • For **Locally Administered Federal Aid Projects only**, the DAD and the NYSDOT recommendation and request (that the FHWA determines the project qualifies as a CE) are sent from the RPPM to the FHWA directly using **Shell 4.** • For all other projects, the DAD and the NYSDOT recommendation and request (that the FHWA determines the project qualifies as a CE) are sent to the MOPL for review using **Shell 3**. **Proceed to Step 4.** **NO** ☒ If No, **proceed to 3C.**
3C	**Are there outstanding independent environmental approvals or concurrences?** (Are there checks in column B of Step 2.1 without dates in column B1)**?** **YES** ☒ If Yes, then the FHWA makes the CE determination. • For **Locally Administered Federal Aid Projects only**, the DAD and the NYSDOT recommendation and request (that the FHWA determines the project qualifies as a CE) are sent from the RPPM to the FHWA directly using **Shell 4.** • For all other projects, the DAD and the NYSDOT recommendation and request (that the FHWA determines the project qualifies as a CE) are sent to the MOPL for review using **Shell 3**. **Proceed to Step 4.** **NO** ☐ If No, the NYSDOT makes the NEPA CE determination. **Proceed to 3D.**
3D	**Are there** ☐ any circumstances requiring demonstration of applicable EO compliance (any checks in column B of Table 2.2); or ☐ any issues requiring the FHWA environmental notification (any checks in column B of Table 2.3)? **YES** ☐ If **either** box is checked, **once all required approvals and concurrences have been secured,** the NYSDOT makes the CE determination but the information must be forwarded to FHWA for notification or action prior to Design Approval using **Shell 1. Proceed to step 5.** **NO** ☐ If **neither** box is checked, **once all required approvals and concurrences have been secured** the NYSDOT makes the CE determination without notification to the FHWA. The project will use **Shell 2**. **Proceed to step 4.**

Federal Environmental Approval Worksheet

Project ID Number: 4CR009

Step 4: Summary and Recommendation

- The project **is not** located within an area subject to transportation air quality conformity.
  - **If the project is within such areas, the NEPA process may not be completed until all transportation conformity requirements are met[4].** Transportation conformity requirements **have** been met at the time of this signature.
- This project does qualify to be progressed as a Categorical Exclusion.
- The NEPA Determination will be made by NYSDOT
- Project is c(26) "Modernization of a highway by resurfacing, restoration, rehabilitation, reconstruction, adding shoulders, or adding auxiliary lanes (including parking, weaving, turning, and climbing lanes), if the action meets the constraints in paragraph (e)..." [4]
- All outstanding FHWA environmental approvals will be obtained and are listed here:

List any outstanding approvals, or delete this text

- All the conditions of the PARCE are addressed herein (or within the DAD or attachments).

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

Project Manager/Designer
(or Responsible Local Official) X _____ Date_____

Print Name and Title: Sean W. Miller, PE; Senior Civil Engineer – Transportation; Stantec Consulting Services Inc.

Regional Environmental Unit
Supervisor X _____ Date_____

Print Name and Title: _____

Regional Local Project Liaison
(Locally Administered Projects Only) X _____ Date_____

Print Name and Title: _____

Changes that may have occurred since the preparation of the FEAW which would create the need to go through the FEAW 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).

[4] See additional information on identifying (c)26, (c)27 & (c)28 versus d (13) *in FEAW_Instructions.doc*

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Social, Economic and Environmental Resources Checklist (SEERC)

Introduction

For projects that use the IPP/FDR, PSR/FDR, and Bridge Rehabilitation Report design approval document formats, the SEERC is used to determine the topics and resources that will need to be analyzed to determine extent of adverse and beneficial impacts. The SEERC should not be used as the location to document the results of impact analysis. The results of these analyses should only be documented in the body of the design approval document. The SEERC must be attached or appended to the DAD as appropriate.

Instructions:

1. Answer the questions posed under the Social, Economic and Environmental headings to determine whether there is a potential for a project to affect the topics/resources.

2. Beginning with the first question under the Social heading, if the answer to a question is No, check off No in the first checkbox column and proceed to the next question.

3. If the answer to a question is Yes:
    a. Create a heading or section in the appropriate location in the IPP/FDR or PSR/FDR to document the particular resource or topic in question.

    b. Proceed to the Impact or Issue column. Once enough information is available, check off Yes or No in the Impact or Issue column, as applicable

4. Document all Yes *and* No answers in the Impact or Issue columns in the DAD under the section or heading created for the topic. This documentation must indicate the location, extent and/or a full description of the topic/resource. The documentation must appropriately illustrate the impact determination and measures to mitigate impacts. For No answers, ensure the documentation is complete as to the explanation of why the resource/topic will not be impacted.

5. For Yes answers, be sure to document adverse as well as beneficial impacts in the resource/topic sections of the DAD. For example, a project that is adding a project that impacts wetland for a SPDES practice will benefit the remaining wetland by treating stormwater. This documentation must include the nature and size or extent of an impact; measures taken to avoid or minimize impacts; and any mitigation being provided. Documentation for each issue should clearly note any necessary approvals and/or expected permits.

6. Prior to completing the Certification at the end of the checklist, review the checklist and appropriate sections of the DAD to ensure checkmarks and statements are valid (particularly review against changes in project scope) and for consistency between the checklist and DAD sections.

7. Complete the Certification.

8. Attach or append the checklist to the Design Approval document.

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Social, Economic and Environmental Resources Checklist

PIN: 4CR009	FUNDING TYPE: Federal
DESCRIPTION: The proposed Project consists of milling and overlaying existing pavement, installation of new granite curb, sidewalk improvements, installation of benches, bicycle racks, electrical outlets and charging stations, street tree additions, and traffic and pedestrian signage and pavement markings on Main Street, over the Genesee River in the City of Rochester, New York. The streetscape improvements will include a section of East Main Street between State Street/ Exchange Boulevard to the west, and St. Paul Street/South Avenue to the east. Project disturbance will be limited to only that needed to complete the streetscape improvements in a 2.2-acre area. No work is anticipated to occur in the Genesee River. The Project does not include disturbance of any previously undisturbed land. All Project work will be completed within the existing developed pedestrian streetscape and within the existing Right-Of-Way.	DATE:7/19/2018 REVISION DATE:
MUNICIPALITY: City of Rochester	NEPA CLASS: Class II, CE
COUNTY: Monroe County	SEQRA TYPE: Type II
SCOPE: The proposed Project is a continuation of Phase I of the same Project.	

SOCIAL, ECONOMIC AND ENVIRONMENTAL CONSIDERATIONS	IF YES, GO TO IMPACT OR ISSUE; IF NO CHECK BOX BELOW	IMPACT[1] OR ISSUE?	
	NO	YES	NO
Social			
A. Land Use			
1. Is there potential to affect current land use/zoning?	☒	☐	☐
2. Is there a lack of consistency with community's comprehensive plan and/or other local or regional planning goals?	☒	☐	☐
3. Will the project affect any planned or future development?	☒	☐	☐
B. Neighborhoods and Community Cohesion			
1. Are relocations of homes or businesses proposed or acquisition of community resources anticipated?	☒	☐	☐
2. Is there potential for changes to neighborhood character?	☐	☐	☒
3. Is there a potential to impact transportation options (e.g., transit, walking, bicycling)?	☐	☐	☒
4. Are there potential changes to travel patterns that could affect neighborhood quality of life?	☒	☐	☐

SOCIAL, ECONOMIC AND ENVIRONMENTAL CONSIDERATIONS	IF YES, GO TO IMPACT OR ISSUE; IF NO CHECK BOX BELOW	IMPACT[1] OR ISSUE?	
	NO	YES	NO
5. Will the project divide or isolate portions of the community or generate new development that could affect the current community structure?	☒	☐	☐
C. General Social Groups			
1. Are there potential effects to the ability of transit dependent, elderly, or disabled populations to access destinations (particularly local businesses and health care facilities)?	☒	☐	☐
2. Does the project have the potential to disproportionately impact low income or minority populations (Environmental Justice)?	☐	☐	☒
3. Are there alterations to pedestrian facilities that would affect the elderly or disabled such as lengthening pedestrian crossings or providing median refuge?	☒	☐	☐
D. Community Services			
1. Is there potential to affect access to or use of Schools, Recreation Areas or Places of Worship (e.g., detours, sidewalk removal, addition of curb ramps, crosswalks, pedestrian signals, etc.)?	☒	☐	☐
2. Is there potential to affect emergency service response?	☒	☐	☐
Economic			
A. Regional and Local Economies			
1. Is there potential to affect local economic viability (e.g., development potential, tax revenues, employment opportunities, retail sales or public expenditures)?	☒	☐	☐
2. Is there a potential to divert traffic away from businesses?	☒	☐	☐
B. Business Districts			
1. Are there potential effects on the viability or character of Business Districts?	☒	☐	☐
2. Will the project affect transportation options available for patrons getting into or out of the District?	☐	☐	☒
3. Will sidewalks, bicycling opportunities or transit opportunities to or within the district be affected?	☐	☐	☒
4. Will parking within the district be affected?	☒	☐	☐
C. Specific Business Impacts			
1. Are effects to specific businesses anticipated? (e.g., sidewalks, bicycling opportunities, or handicapped access to and from businesses)?	☒	☐	☐
2. Will the project affect available transportation options for patrons to businesses?	☒	☐	☐
3. Will the project affect the ability of businesses to receive deliveries?	☒	☐	☐
4. Will parking for businesses be affected?	☒	☐	☐
Environmental			

SOCIAL, ECONOMIC AND ENVIRONMENTAL CONSIDERATIONS	IF YES, GO TO IMPACT OR ISSUE; IF NO CHECK BOX BELOW	IMPACT[1] OR ISSUE?	
	NO	YES	NO
1. Are there wetlands within or immediately adjacent to the project limits? *See Environmental Procedures Manual (EPM) 4.A.R, Executive Order (EO) 11990 may apply.*	☐	☐	☒
2. Are there Surface Waters (other than wetlands) within or immediately adjacent to the project limits? *lakes, ponds streams or wetlands of any jurisdiction*	☐	☐	☒
3. Is there a designated Wild or Scenic River within or immediately adjacent to the project limits? *(See The Environmental Manual (TEM) 4.4.3)*	☒	☐	☐
4. Will the project require a U.S. Coast Guard Bridge Permit? *Project area includes a bridge over navigable waters of U.S.*	☒	☐	☐
5. Does the project area contain waters regulated as Navigable by U. S. Army Corps of Engineers? *Section 404/10 Individual Permit or NWP 23 may be required*	☒	☐	☐
6. Is the project in a mapped Flood Zone? *TEM section 4.?, EO 11988*	☐	☐	☒
7. Is the project in or could it affect a designated coastal area? *FAN and/or Consistency determination may be required. See TEM 4.6*	☒	☐	☐
8. Is the project area above a Sole Source Aquifer? *See TEM 4.4 Coordination with FHWA and/or EPA may be required.*	☒	☐	☐
9. Will the project involve one (1) acre of ground disturbance (or 5,000 sf in the East of Hudson watershed)?	☒	☐	☐
10. Are federally/state listed endangered species or designated critical habitat indicated for the project county? *Coordination with DEC and/or a FHWA determination may be required. See TEM 4.4.9.3*	☐	☐	☒
11. Is the project in a designated Critical Environmental Area? *TEM 4.4.11(SEQR issue)*	☐	☐	☒
12. Are there any resources protected by Section 106 (or Section 1409) within the project limits or immediate area? *See TEM 4.4.12 Appendix G*	☐	☐	☒
13. Is Native American coordination required outside of Section 106 consultation? *The project on or affecting Native American Lands or other areas of interest*	☒	☐	☐
14. Is there a use, constructive use or temporary occupancy of a 4(f) resource? *See SECTION 4(f) POLICY PAPER and contact Area Engineer.*	☒	☐	☐
15. Will the project involve conversion of a 6(f) resource? *listed as having Land and Water Conservation funds spent on the resource*	☒	☐	☐
16. Is there any potential to affect the character of important and possibly significant the visual resources of the project area and its environs? (*See PDM Chapter 3.2.2.2)*	☒	☐	☐
17. Will the project convert land protected by the Federal Farmland Protection Act? *See TEM 4.4.15*	☒	☐	☐
18. Will the project acquire active farmland from an Agricultural District? *(SEQR issue)*	☒	☐	☐
19. Is the project in a non-attainment area and exceed the CO screening criteria? *see EPM Chapter 1 1.1-19 an Air Quality Analysis required*	☒	☐	☐

SOCIAL, ECONOMIC AND ENVIRONMENTAL CONSIDERATIONS	IF YES, GO TO IMPACT OR ISSUE; IF NO CHECK BOX BELOW	IMPACT[1] OR ISSUE?	
	NO	YES	NO
20. Is the project in a non-attainment area and exceed the PM screening criteria? *see EPM Chapter 1 1.1-19? A hot spot analysis is required*	☒	☐	☐
21. Is the project a Type I Noise project as per 23 CFR 772? *See TEM 4.4.18*	☒	☐	☐
22. Will the project require the removal of Asbestos Containing Materials? *See TEM 4.4.19*	☒	☐	☐
23. Does the project area contain Contaminated and Hazardous Materials? *EPA National Priority List*	☐	☐	☒
24. Will the project increase the height of towers, construct new towers or other obstructions in a known migratory bird flyway?	☒	☐	☐

NOTES:
[1] The term "impacts" means both positive and negative effects. Both types of effects should be discussed in the body of the report as appropriate.

PREPARED BY (Hayley Effler, Senior Environmental Analyst, EDR)**:**

CERTIFICATION:

I certify that the information provided above is true and accurate.

Regional/Main Office Environmental Unit Supervisor _____ Date _____

Print Name and Title: _____

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

Project: Main Street Streetscape and Pedestrian Wayfinding Enhancement, Phase II

Project Boundaries/Address:
Main Street – Pindle Alley / Irving Place to St. Paul Street / South Avenue

PC# Number: 18308

Project Description: The project will rehabilitate the existing pavement and replace existing streetscape amenities from State Street / Exchange Boulevard to St. Paul Street / South Avenue. The project will also install pedestrian wayfinding signs at the West Main Street / State Street / Exchange Boulevard intersection.

Prepared by: Sean W. Miller, Stantec **Date:** 8/16/2018
Reviewer: Jeffery J. Mroczek, City of Rochester **Date:** 8/20/2018

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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Section 106 Project Submittal Package

Main Street Streetscape and Pedestrian Wayfinding Phase II

City of Rochester, Monroe County, New York

PIN 4CR009

Prepared for:

Stantec Consulting Services Inc.
61 Commercial Street, Suite 100
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
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June 2018

(July 2018 Revised)

NEW YORK STATE DEPARTMENT OF TRANSPORTATION PROJECT SUBMITTAL PACKAGE

Section 106 of the National Historic Preservation Act

For Locally-Administered Federal-Aid Projects

A Project Submittal Package is prepared by the Local Project Sponsor (Sponsor) or their consultants for federal aid transportation projects to provide sufficient information for NYSDOT assessment of Section 106 obligations.
The Sponsor sends the package to the Regional Local Project Liaison (RLPL) for Regional Cultural Resource Coordinator (RCRC) review. The RCRC will make recommendations to identify what is needed for Section 106 compliance for the project.

DATE: June 27, 2018 PIN: 4CR009 BIN(s): 2211270

IDENTIFICATION

Project Name (if any): Main Street Streetscape and Pedestrian Wayfinding Phase II.

Project Area Boundaries: East Main Street between State Street/Exchange Boulevard to the west, and St. Paul Street/ South Avenue to the east.

(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 web site 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? If yes: ☒ Yes ☐ No

- 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 National Register of Historic Places listed property? ☒ Yes ☐ No

*http://nysparks.state.ny.us then select HISTORIC PRESERVATION then Historic Preservation Field Services Bureau then On Line Tools – CRIS

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

Name: Kamal L. Crues, P.E. Title: City Engineer Firm/Agency: City of Rochester
Address: City Hall – 30 Church Street, Room 300B City: Rochester State: NY Zip: 14614
Phone: (585) 428-6828 E-Mail: Kamal.Crues@CityofRochester.Gov

Consultant Name: Environmental Design and Research, Landscape Architecture, Engineering and Environmental Services, D.P.C.
Contact Information: 217 Montgomery Street, Suite 1000, Syracuse, NY 13202 Phone: (315) 471-0688

1.0 Project Information

This Section 106 Project Submittal Package for the proposed Main Street Streetscape and Pedestrian Wayfinding Phase II Project (PIN 4CR009), 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 Main Street Streetscape and Pedestrian Wayfinding Phase II project (hereafter "the Project") will extend the improvements designed and implemented as part of the Phase I project. The streetscape improvements will include a section of East Main Street between State Street/Exchange Boulevard to the west, and St. Paul Street/South Avenue to the east. The full palette of Phase I improvements shall be extended, including:

- Broom finish concrete sidewalks with permeable accent pavement;
- Benches, bicycle parking, and trash receptacles;
- Charging stations for phones and computers;
- Electrical outlets for street tree lighting and special events;
- Conduit for EV charging stations (2 or 3 locations);
- Installation of 2 or 3 Comptec poles;
- New street trees planted in enlarged and curbed tree pits with structural soils utilized under the surrounding pavements;
- Under-plantings of shrubs and perennials for seasonal interest;
- Play elements integrated into the pedestrian zone;
- Salvaged and reinstalled historic markers;
- LED street lighting with banner arms, decoration brackets and GFI outlets;
- Recessed parking with handicapped accessible spaces;
- A Road Diet with Travel Lane Reconfiguration to accommodate on-street bicycle facilities;
- Utility upgrades and adjustments;
- Mill and overlay of existing pavement;
- Traffic signs, signals and striping as needed.

The proposed Project also includes the design and implement pedestrian wayfinding signage as recommended and as directed by the City. The project shall implement the remainder of the signage system, potentially including additional kiosks as designed in Phase I, to the extent feasible. 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* (Bergmann and Cloud Gehshan, 2012). The Project will also evaluate the two existing bus shelters for replacement alternatives. The selected alternative shall be designed and implemented accordingly.

All work proposed as part of the proposed Project 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 will be limited to only that needed to complete the streetscape improvements in a 2.2-acre area. No work is anticipated to occur in the Genesee River. The Project does not include disturbance of any previously undisturbed land. All Project work will be completed within the existing developed pedestrian streetscape. The proposed work on the Main Street Bridge is to resurface and narrow the roadway from 55' wide to 44' wide with new stone curbs, remove the existing concrete paver sidewalks and install new concrete sidewalks, replace the existing street lighting with new street lighting system, replace and add new landscape appurtenance to enhance the pedestrian experience on the bridge itself.

The Area of Potential Effect (APE) for this Project consists of the proposed limits of work, which includes only that needed to complete the proposed streetscape improvements. A map of the proposed Project boundary and APE is included as Attachment A.

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 in or eligible for listing in the State and/or National Register of Historic Places (S/NRHP) adjacent to the proposed project. No S/NRHP-eligible resources are located within the Project APE. A total of 18 NRHP-listed resources are located within 500 feet of the APE of the proposed Project:

- One NRHP-listed resource (the Main Street Bridge, 90NR01514) is located within the APE
- Fifteen individually listed resources are located within 500 feet of the APE of the proposed Project
- Two historic districts listed on the S/NRHP are located within 500 feet of the APE of the proposed Project

Descriptions of these properties, including their approximate distance from the APE are included in Table 1. The locations of all S/NRHP-listed properties are indicated on Attachment B. Photographs of the general streetscape including many of the resources located within the APE are included as Attachment C, with photograph locations noted on Attachment D.

Table 1. State/National Register-Listed Resources within the APE.

National Register Number/Unique Site Number (USN)	Name of Property/ District	Address	Description	Date Listed in the S/NRHP	Distance from the APE
90NR01514/ BIN 2211270	Main Street Bridge	East Main Street over the Genesee River	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 of Rochester	1984[a]	Within the APE
90NR01505	Wilder Building	1 East Main Street	Eleven-story steel/iron-framed, brick-clad office building constructed circa 1887-88 in a modified Romanesque style; architecturally significant as Rochester's first modern "skyscraper"	1985[a]	0 feet
90NR01499	Reynolds Arcade	16 East Main Street	Eleven-story stone structure constructed in 1932 in the streamlined Art Deco style	1985[a]	0 feet
90NR01512	Granite Building	124-130 East Main Street	Constructed in 1893 as the first skeletal steel skyscraper in the City of Rochester. Contributing property to the East Main Street Commercial Historic District	1984[b]	45 feet
16NR00076	East Main Street Commercial Historic District	Roughly bounded by Pleasant Street, Chestnut Street, Court Street and St. Paul Street/South Avenue	Largest collection of contiguous historically/architecturally significant resources in downtown Rochester, comprised of 52 properties	2018	45 feet
90NR01464	Powers Building	16 West Main Street	None-story "fireproof" building constructed circa 1869-70, designed by Andrew Jackson Warner	1973	70 feet
04NR05337[c]	Arcade Mill	26-32 Aqueduct Street	Federal-style rubble stone structure with first-story round-arched arcade, constructed circa 1840; earliest surviving industrial structure in the Inner Loop Multiple Resource Area	1985[a c]	202 feet
90NR01511	Edwards Building	26-34 Saint Paul Street	Constructed in 1908; Representative of work by Rochester architects Crandall and Strobel. Unique white terra cotta sheathing and architectural embellishments including floral motifs	1984[a b]	202 feet
90NR01490	First National Bank of Rochester--Old Monroe County Savings Bank	35 State Street	Constructed in 1924, designed by Mobray and Uffinger; architecturally significant as an outstanding example of an early twentieth century Neoclassical-style bank building	1985[a]	206 feet

National Register Number/Unique Site Number (USN)	Name of Property/ District	Address	Description	Date Listed in the S/NRHP	Distance from the APE
11NR06229	Central Trust Company Building	44 Exchange Boulevard	Five-story International-style building designed by Carl Traver, opened in 1959; comprised of several flat-roofed sections of varying heights	2012	227 feet
90NR01509	Cox Building	36-48 Saint Paul Street	Constructed in 1888, architecturally significant for it brick Roamesque Revival style design	1984[a b]	270 feet
90NR01515	National Company Building	155 East Main Street	Constructed in 1924, designed by prominent local architect J. Foster Warner; contributing property to the East Main Street Commercial Historic District	1984[a b]	295 feet
90NR01483	City Hall Historic District	West Main Street, Irving Place, West Broad Street and South Fitzhugh Street	Nineteenth century civic complex comprised of four contributing buildings: City Hall, Monroe County Courthouse, Rochester Free Academy, and St. Luke's Episcopal Church	1974	297 feet
90NR01476	Times Square Building	45 Exchange Boulevard	Major architectural landmark in the City of Rochester, designed by Voorhees, Gmelin and Walker, constructed in 1929-30 in Art Deco style with four large stylized wings	1982	304 feet
90NR01486	Chamber of Commerce	50 Saint Paul Street	Originally constructed 1916-17, designed by Claude Bragdon and Charles Evans in the Neoclassical style; representative example of Beaux-Arts Classicism	1985[a]	414 feet
90NR01484/ BIN 2256077 and 2256078	Erie Canal Second Genesee Aqueduct	East Broad Street over the Genesee River	Stone aqueduct originally constructed 1842 as third largest aqueduct in the Erie Canal System, (BIN 2256078) with circa 1927 concrete superstructure faced with stone built atop (BIN 2256078)	1976	438 feet
90NR01492	Gannett Building	55 Exchange Boulevard	Constructed 1927-28 with Neoclassical design elements; historically significant for its associations with the history of journalism in Rochester	1985[a]	466 feet
90NR01510[c]	Duffy-Powers Building	50 West Main Street	Constructed 1906; Representative of work by Rochester architects Crandall and Strobel. Unique white terra cotta sheathing and architectural embellishments including floral motifs	1984[c]	486 feet

[a] Listed as part of Inner Loop Multiple Resource Area (MRA)
[b] Contributing property to East Main Street Historic District (2018)
[c] State Register of Historic Places-Listed only

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

In addition, one historic resources survey has been conducted that includes the entire study area and APE:

- A *Cultural Resource Survey of Recent Past Buildings & Designed Landscapes within the Inner Loop of Rochester, 1940-1975* was conducted in 2009 by Francis R. Kowsky and Martin Wachadlo, on behalf of the Landmarks Society of Western New York. The survey inventoried historic resources that fit the designation of "recent past architecture" within the area known as the Inner Loop, an interstate arterial encompassing a large portion of downtown Rochester, constructed beginning in 1952. The survey did not include formal evaluations of NRHP eligibility but did recommend that an intensive-level survey should be conducted on the properties identified, and also that Landmark Society of Western New York should monitor buildings on the list after 1960 to determine if they will become eligible for the National Register or local designation after they pass fifty years of age (Kowsky and Wachadlo, 2009).

1.3 Archaeological Sensitivity

A review of the NYSPOPRHP CRIS website determined that although no archaeological sites have been documented directly within the APE, the proposed Project occurs entirely within an archaeologically sensitive area, indicating that the Project site lies within one-mile of one or more previously reported archaeological sites. One previously identified archaeological site is located within 500 feet of the proposed Project:

- The Water Street Millrace Site (USN 05540.001393) is an historic period archaeological site comprised of the remains of an historic mill race constructed circa 1875. The site is located approximately 105 feet north of the APE, and is noted on the New York State Historic Archaeological Site Inventory Form to be located beneath the street level along the east bank of the Genesee River (E&E, 1981). The Millrace Site does not have a formal determination of NRHP eligibility.

A review of the CRIS website also determined that one previous archaeological survey has been conducted within 500 feet of the proposed Project:

- A *Phase 1 Cultural Resources Survey of the Proposed Williams Communications, Inc., Rochester Metrobuild* (00SR50845) was conducted in 2000 to identify resources that may be impacted by the installation of a fiber

optics line and associated infrastructure located along an 11.2-mile corridor extending south from the City of Rochester. A total of eight archaeological sites and/or isolated finds were identified during the Phase 1 survey, none of which were located within the limits of the APE. No historic properties were anticipated to be impacted by installation of the line, and no further cultural resources surveys were recommended (Gray & Pape, 2000).

The location of this survey is indicated on Attachment B. 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 C. Photograph locations are noted on maps included as Attachment D.

LIST OF APPENDICES

Appendix A References Cited

LIST OF ATTACHMENTS

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

Appendix A. References Cited

Bergmann Associates and Cloud Gehshan Associates (Bergmann and Cloud Gehshan). 2012. Center City Pedestrian Circulation and Wayfinding Study, Rochester, New York. Prepared for the City of Rochester by Bergmann Associates, Rochester, NY. 2012.

Cultural Resource Information System (CRIS). 2018. New York State Office of Parks, Recreation, and Historic Preservation (NYSOPRHP), Waterford, NY. Available online at https://cris.parks.ny.gov.

Ecology & Environment (E & E). 1981. Water Street Millrace Site. New York State Historic Archaeological Site Inventory Form. August 1981. On file, New York State Office of Parks, Recreation, and Historic Preservation (NYSOPRHP), Waterford, NY. Available online at https://cris.parks.ny.gov.

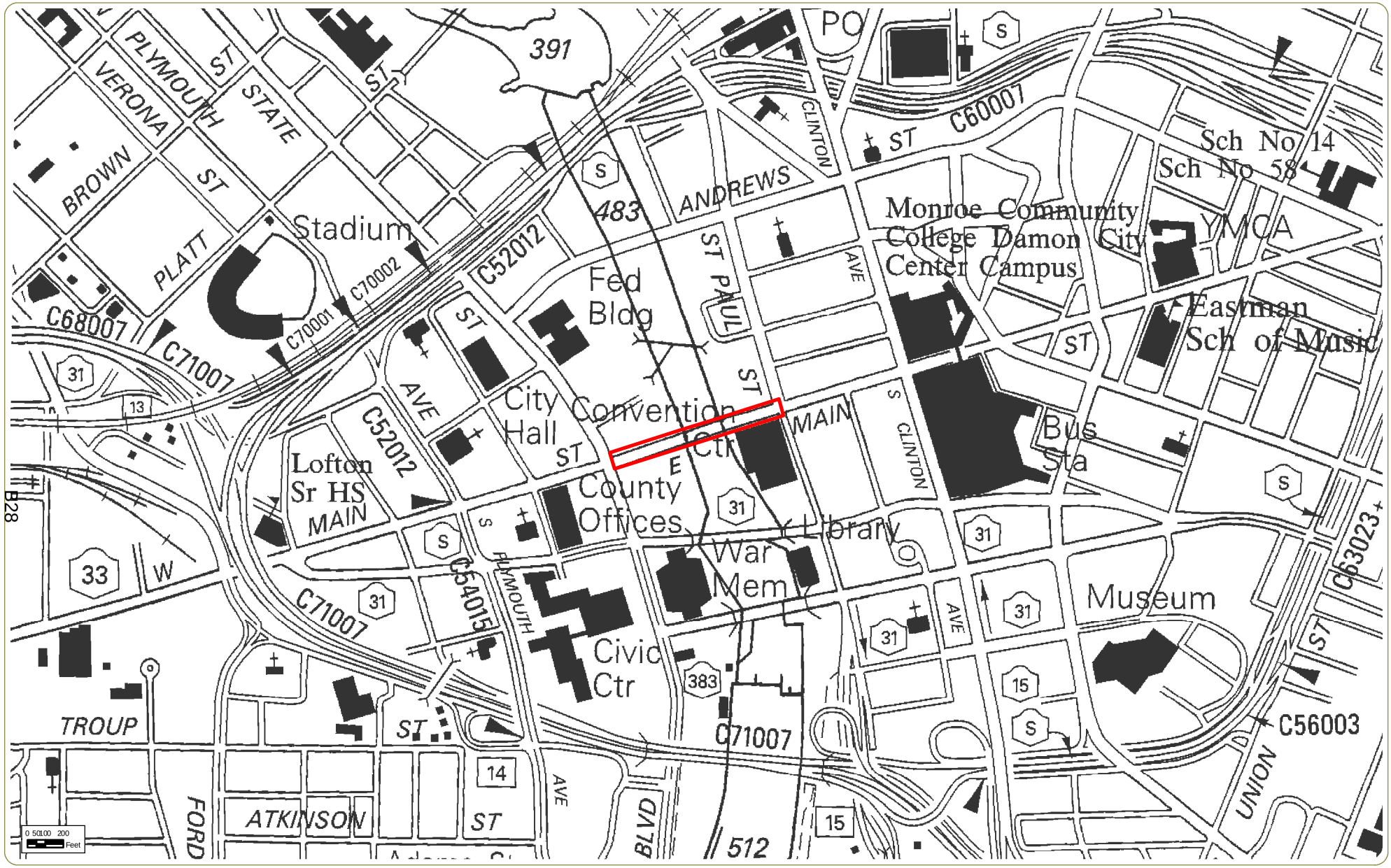
Gray & Pape, Inc. 2000. *Phase 1 Cultural Resources Survey of the Proposed Williams Communications, Inc., Rochester Metrobuild, Monroe County, New York*. Prepared for Williams Communications, Inc. by Gray & Pape, Inc., Cincinnati, Ohio. July 2000.

Kowsky, Francis R. and Martin Wachadlo. 2009. *Cultural Resource Survey of Recent Past Buildings & Designed Landscapes within the Inner Loop of Rochester, 1940-1975.* Prepared for the Landmark Society of Western New York, Rochester, NY. Available online at https://cris.parks.ny.gov.

Mead & Hunt and Allee, King, Rosen & Fleming, Inc. (Mead & Hunt and AKRF). 2002. *New York State Department of Transportation Historic Bridge Management Plan.* Prepared for New York State Department of Transportation (NYSDOT) by Mead & Hunt. On file at New York State Office of Parks, Recreation, and Historic Preservation (NYSOPRHP), Waterford, NY. Available online at https://cris.parks.ny.gov.

Attachment A:

Project Location Map



Main Street Streetscape and Pedestrian Wayfinding Phase II (PIN 4CR009)

City of Rochester, Monroe County, New York

Project Boundary (Area of Potential Effect [APE])

Attachment A: Project Location

Notes: 1. Basemap: NYSDOT Rochester East 7.5-minute planimetric quadrangle. 2. This map was generated in ArcMap on May 23, 2018. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

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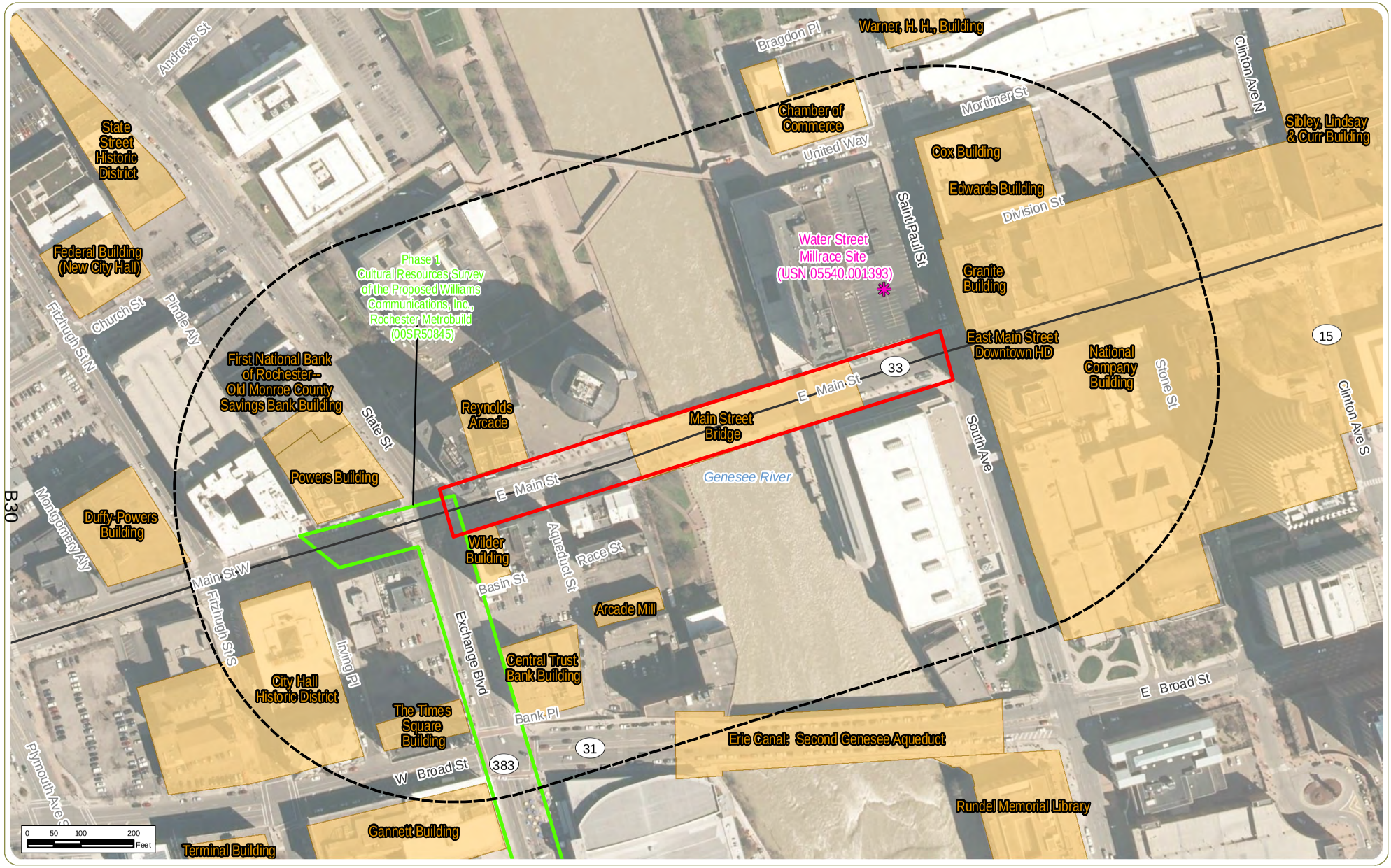
Attachment B:

Previously Identified Cultural Resources



Main Street Streetscape and Pedestrian Wayfinding Phase II (PIN 4CR009)

City of Rochester, Monroe County, New York

Attachment B: Previously Identified Cultural Resources

Notes: 1. Basemap: NYSDOP 2015 orthoimagery map service. 2. This map was generated in ArcMap on June 25, 2018. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

- Previously Identified Archaeological Site
- S/NRHP-Listed Site
- Previous Cultural Resources Survey
- 500 Foot Study Area
- Project Boundary (Area of Potential Effect [APE])

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Attachment C:

Photographs

Photograph 01:

View of NRHP-listed First National Bank of Rochester (90NR01490), 35 State Street, view to the west-northwest.

Photograph 02:

View toward NRHP-listed Powers Building (90NR01464) at intersection of West Main Street and State Street, view to the northeast.

Photograph 03:

View towards NRHP-listed Reynolds Arcade (90NR01499), 16 East Main Street, immediately adjacent to the APE. View to the north-west.

Photograph 04:

View toward City Hall Historic District (90NR01483) from intersection of West Main and Fitzhugh Streets, view to the southeast.

Photograph 05:

View toward NRHP-listed Times Square Building (93NR00460), 45 Exchange Boulevard, view to the southest.

Photograph 06:

View from West Main Street toward the NRHP-listed Wilder Building (90NR0505), 1 East Main Street, located at western end of the APE, view to the southeast.

Photograph 07:

View toward NRHP-listed Central Trust Bank Building (11NR02299) 44 Exchange Boulevard, view to the north-east.

Photograph 08:

View toward SRHP-listed Arcade Mill, 26-32 Aqueduct Street, view to the south-southeast.

Photograph 09:

View from East Main Street toward NRHP-listed Erie Canal Second Genesee Aqueduct (90NR01484) over Genesee River, view to the south-southeast.

Photograph 10:

View toward NRHP-listed Main Street Bridge (90NR01514) over Genesee River within the Project APE, view to the north-northeast.

Photograph 11:

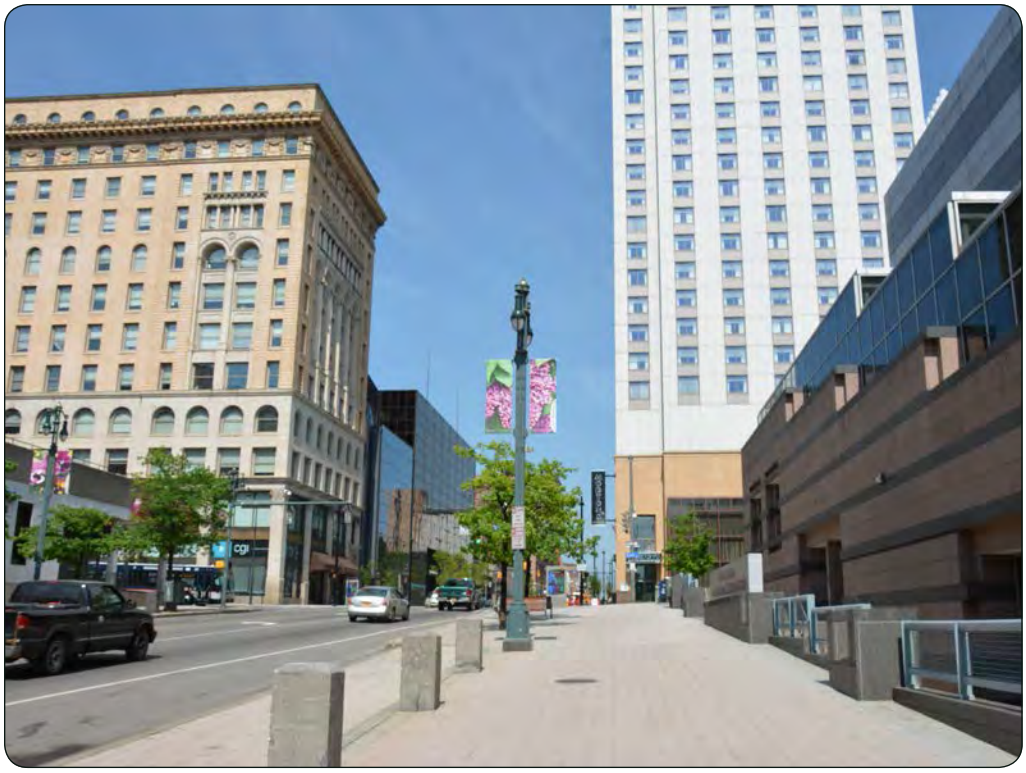
View toward NRHP-listed Chamber of Commerce building (90NR01486), 50 Saint Paul Street, view to the northwest.

Photograph 12:

View from interesection of Saint Paul and Mortimer Streets toward NRHP-listed Cox Building (90NR01509, left) and Edwards Building (90NR01511, right), view to the southeast.

Photograph 13:

View from the eastern end of the APE toward the NRHP-listed Granite Building (90NR01512), 124-130 East Main Street, view to the northeast.



Photograph 14:

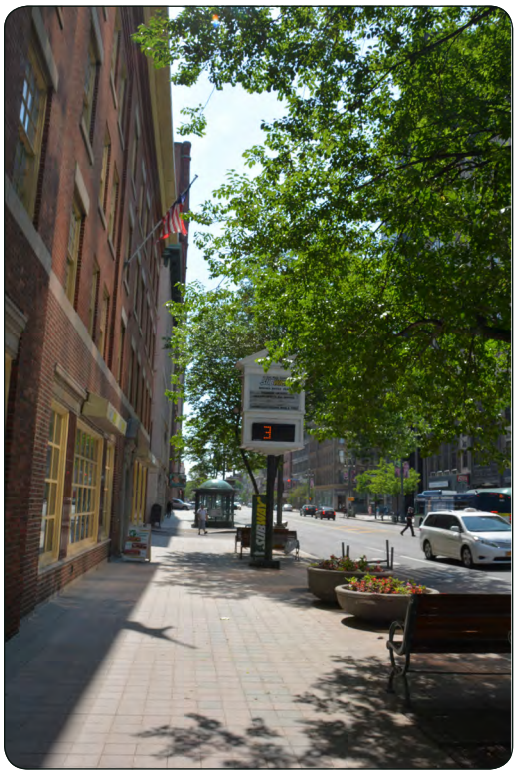
View from the Project APE toward the East Main Street Commercial Historic District (16NR00076), view to the east-northeast.

Photograph 15:

Existing conditions within the Project APE along south side of East Main Street, view to the west-southwest.

Photograph 16:

Existing conditions within the Project APE along south side of East Main Street, view to the east-northeast.



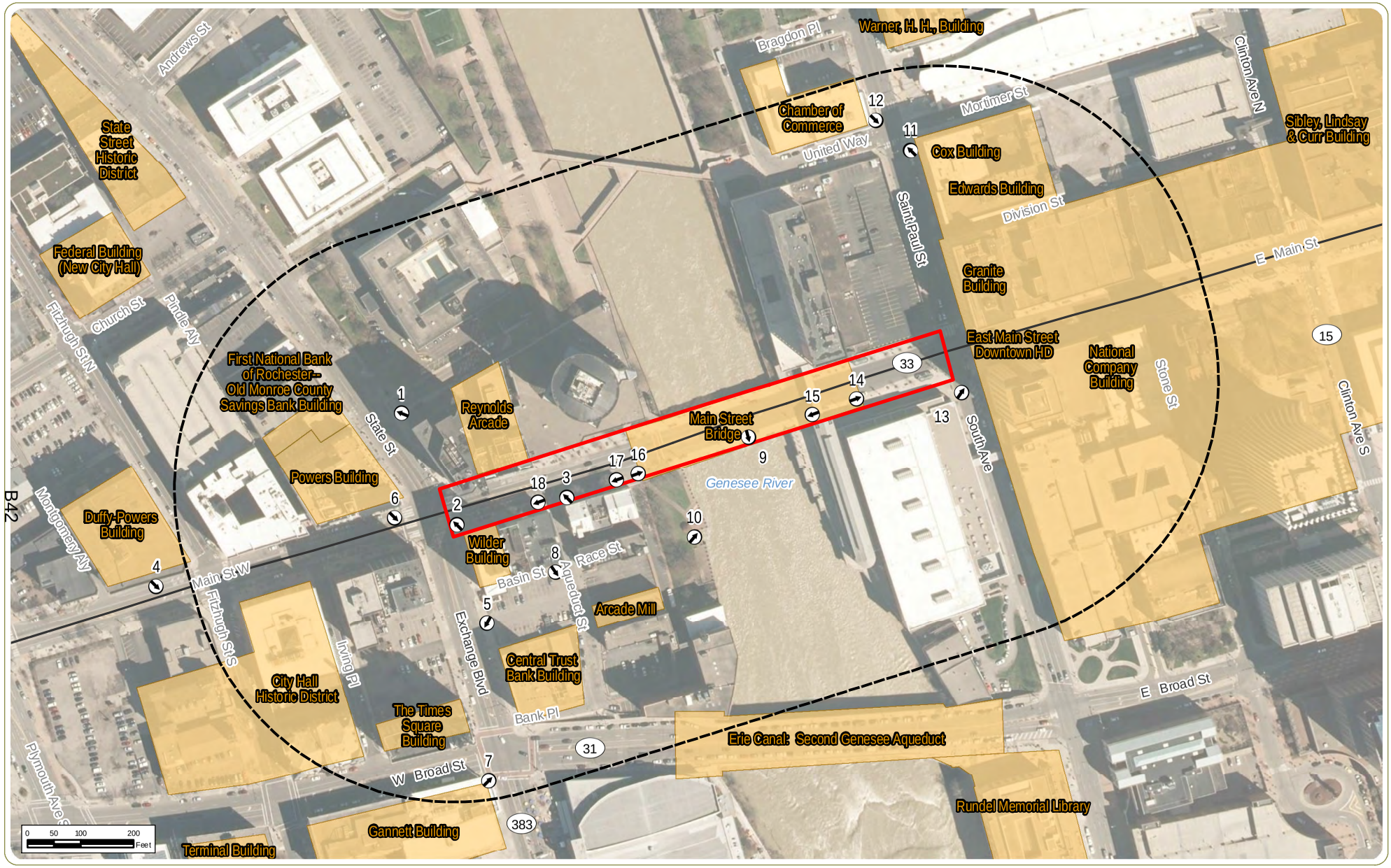
Photograph 17:

Existing conditions within the Project APE along south side of East Main Street, view to the west-southwest.

Photograph 18:

Existing conditions within the Project APE along south side of East Main Street at the intersection of Aqueduct Street, view to the west-southwest.

Attachment D:
Photograph Locations



Main Street Streetscape and Pedestrian Wayfinding Phase II (PIN 4CR009)

City of Rochester, Monroe County, New York

Attachment D: Photograph Locations

Notes: 1. Basemap: NYSDOP 2015 orthoimagery map service. 2. This map was generated in ArcMap on June 25, 2018. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

- Photograph Location
- NRHP-Listed Site
- 500 Foot Study Area
- Project Boundary (Area of Potential Effect [APE])

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Finding Documentation

PIN 4CR0.09 – Main Street Streetscape and Pedestrian Wayfinding Phase II

City of Rochester, Monroe County, New York

18PR04902

1) PROJECT DESCRIPTION

The proposed Local and Federally-Funded project primarily proposes to extend the improvements designed and implemented as part of the East Main Street Streetscape Improvements Project (16PR00102). The streetscape improvements will include a section of East Main Street between State Street/Exchange Boulevard to the west, and St. Paul/South Avenue to the east.

The Area of Potential Effect (APE) consists of the proposed limits of work, which includes only that needed to complete the proposed streetscape improvements along a portion of East Main Street between State Street/Exchange Boulevard to the west, and St. Paul/South Avenue to the east. The APE encompasses approximately 2.2 acres. A map of the proposed project boundary and APE is included as Attachment A.

Proposed work includes:

- Broom finish concrete sidewalks with permeable accent pavement;
- Benches, bicycle parking, and trash receptacles;
- Charging stations for phones and computers;
- Electrical outlets for street tree lighting and special events;
- Conduit for EV charging stations (2 or 3 locations);
- Installation of 2 or 3 Comptec poles;
- New street trees planted in enlarged and curbed tree pits with structural soils utilized under the surrounding pavements;
- Under-plantings of shrubs and perennials for seasonal interest;
- Play elements integrated into the pedestrian zone;
- Salvaged and reinstalled historic markers;
- LED street lighting with banner arms, decoration brackets and GFI outlets;
- Recessed parking with handicapped accessible spaces;

- A Road Diet with Travel Lane Reconfiguration to accommodate on-street bicycle facilities;
- Utility upgrades and adjustments;
- Mill and overlay of existing pavement;
- Traffic signs, signals and striping as needed.
- Pedestrian wayfinding signage.

All work will occur within previously disturbed areas within or immediately adjacent to existing pedestrian and vehicular rights-of-way along East Main Street. Ground disturbance will be limited to only that needed to complete the streetscape improvements in the 2.2-acre area. No work is anticipated to occur in the Genesee River. No changes to any building along the project route of the East Main Street Streetscape Improvements. All project work will be completed within the existing developed pedestrian streetscape.

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 in or eligible for listing in the State and/or National Register of Historic Places (S/NRHP) adjacent to the proposed project. located within the project APE. One NRHP-listed resource (the Main Street Bridge, 90NR01514) is located within the APE.

On June 27, 2018, a Section 106 Project Submittal Package (PSP) was submitted to the NYSDOT for review. The Project was submitted to the NYSHPO. In a letter dated August 1, 2018 the NYSHPO concurred that a Phase I Architecture Survery was not needed.

On August 1, 2018, the NYSDOT Region 4 Cultural Resources Coordinator requested that a Finding Documentation package be completed (to assess the effect of the project on the Main Street Bridge (90NR01514).

3) EVALUATION OF PROJECT IMPACT ON IDENTIFIED HISTORIC PROPERTIES

The Main Street Bridge (90NR01514) is listed in the NRHP and is located within the APE. The Main Street Bridge is an excellent example of a mid-nineteenth century bridge composed of local limestone and features five segmental arches that span the Genesee River. The bridge was designed by Daniel Marsh and I.F. Quinby and built by G.S. Copeland in 1857. The bridge's engineering grew out of a response to the inadequacy of the former wood bridge, constructed in 1812. The design of the bridge was controversial at the time because millers wanted wide, broad arches to lessen the flow of the river to the raceways, while downtown developers wanted strength in the design to support building construction on the north and south sides of the bridge. The buildings, constructed circa 1865, were

demolished in 1964. The bridge was designed to meet the transportation, power, and economic needs of downtown Rochester. It was designed with shallow arches which demonstrate the utilitarian nature of the structure and represent engineering capabilities in 1857, with aesthetic qualities considered secondary. The Main Street Bridge was listed in the NRHP in 1984 (Bartlett, 1984).

Address/USN #	***Criteria Status***	***Proposed Work/ Effect***
Main Street Bridge (90NR01514/ 05540.000101) East Main Street over the Genesee River Rochester, New York	NRHP-Listed	No direct effect. This Project does not alter or remove elements of the property in any way related to its cultural or historic significance. NO ADVERSE EFFECT.

The proposed work on the Main Street Bridge will be limited to the existing roads and landscaped and/or paved areas\, and will include resurfacing and narrowing the roadway from 55 feet to 44 feet wide with new stone curbs, removing existing concrete paver sidewalks and installing new concrete sidewalks, replacing the existing street lighting with new street lighting system, replacing and adding new landscape appurtenance to enhance the pedestrian experience on the bridge itself. All proposed project work, including proposed work on the Main Street Bridge, is depicted in Attachment D.

The streetscape improvements that will be installed will not diminish the integrity of the location, design, setting, materials, workmanship, feeling, or association of the NRHP-listed Main Street Bridge.

4) BASIS FOR RECOMMENDED PROJECT FINDING

The project will not impact any properties listed on or eligible for listing on the National Register of Historic Places.

The Criteria of Adverse Effect has been applied in accordance with (36 CFR 800.5(b)) of the National Historic Preservation Act and we find that this undertaking will have an *No Adverse Effect* on properties eligible for or listed on the National Register of Historic Places.

5) PUBLIC INVOLVEMENT

This project has been and will continue to be coordinated with the City of Rochester, neighborhood groups and other governmental agencies with jurisdiction in the project limits. A public information meeting for the Project is tentatively scheduled for fall 2018.

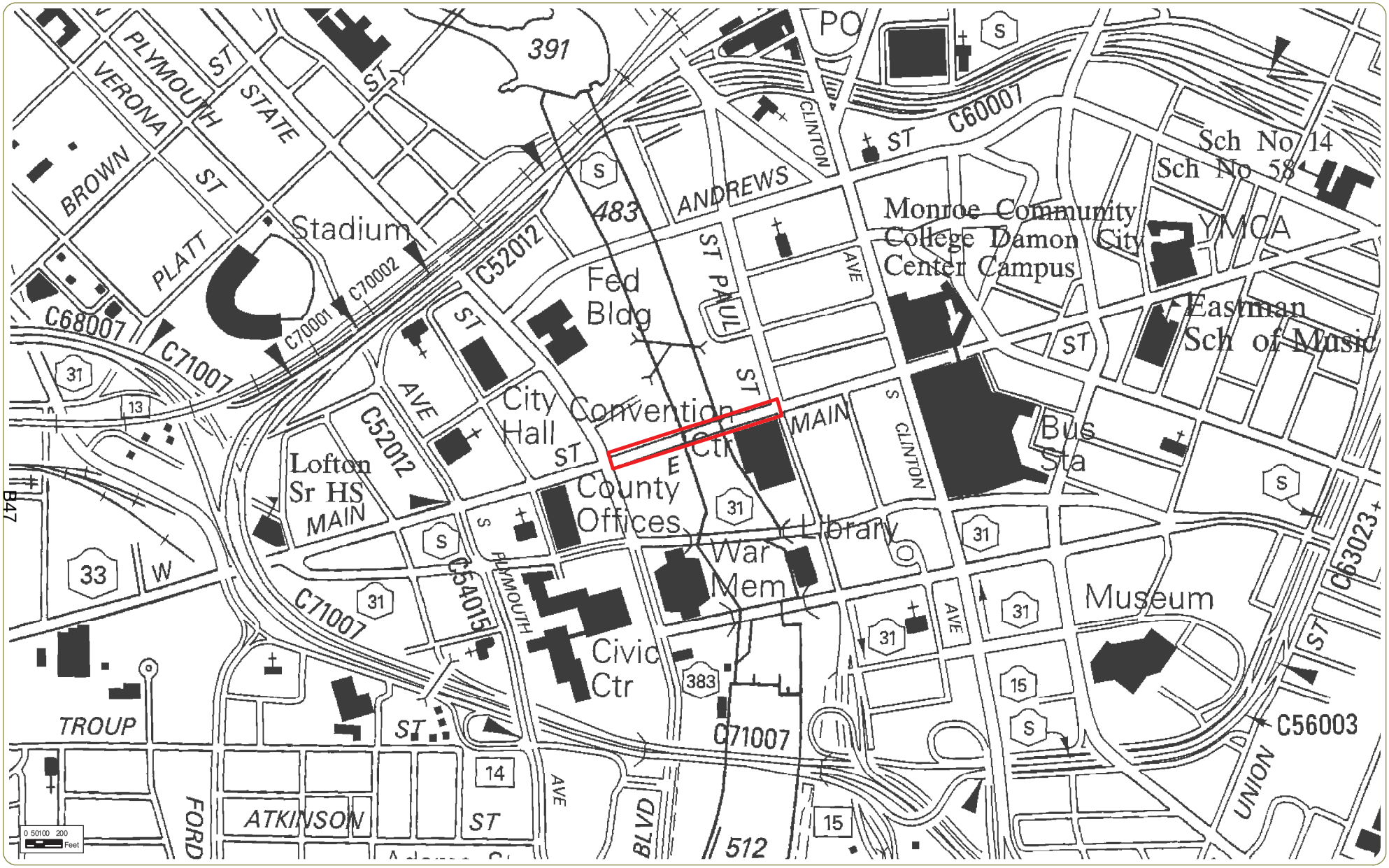
6) ATTACHMENTS

Attachment A. Project Location Map

Attachment B. Area of Potential Effect

Attachment C. Cultural Resources Located Within the Area of Potential Effect

Attachment D. Site Plans



Main Street Streetscape and Pedestrian Wayfinding Phase II (PIN 4CR009)

City of Rochester, Monroe County, New York

Project Boundary (Area of Potential Effect [APE])

Attachment A: Project Location

Notes: 1. Basemap: NYSDOT Rochester East 7.5-minute planimetric quadrangle. 2. This map was generated in ArcMap on May 23, 2018. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

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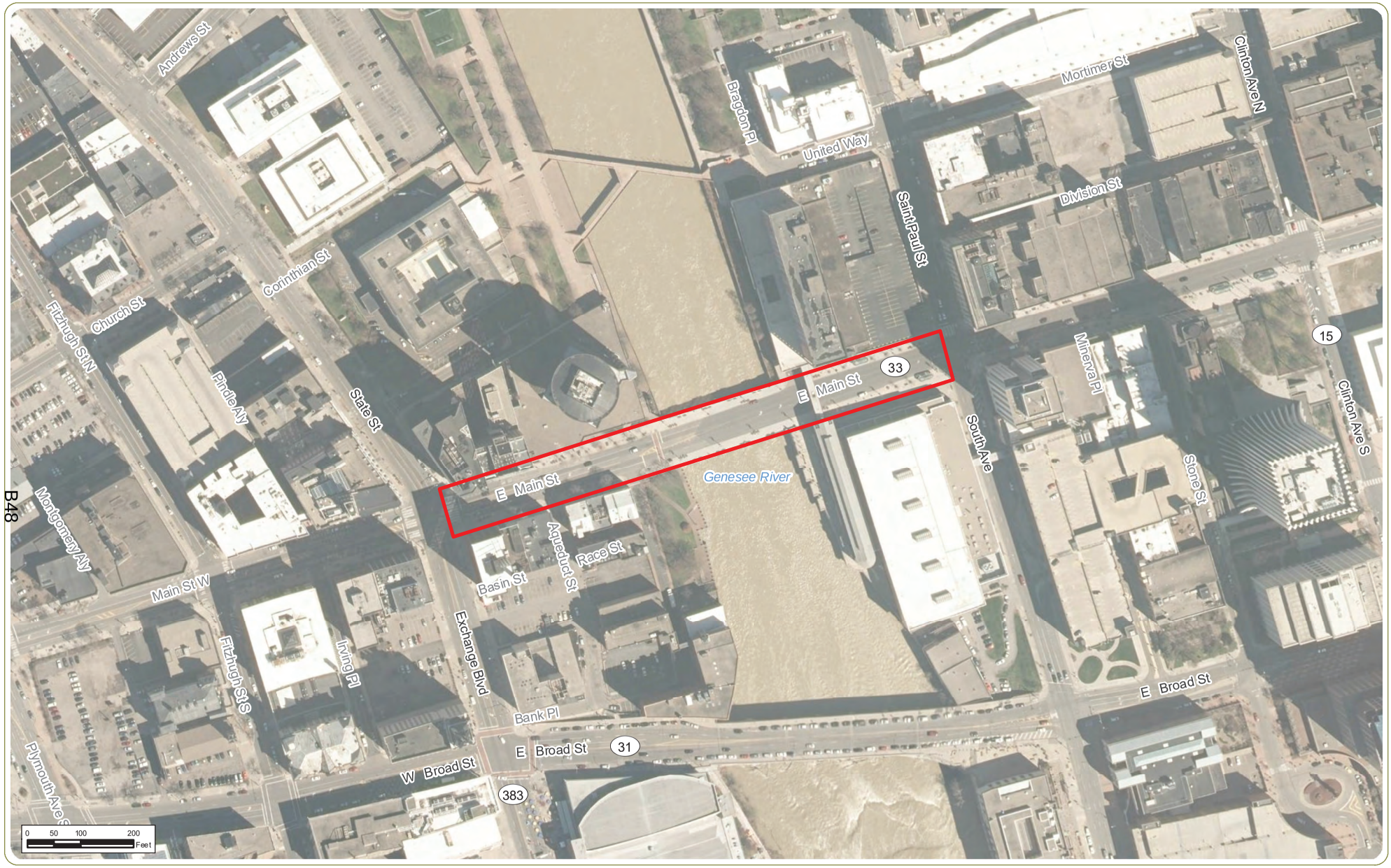

B48

Main Street Streetscape and Pedestrian Wayfinding Phase II (PIN 4CR009)

City of Rochester, Monroe County, New York

Attachment B: Area of Potential Effect

Project Boundary (Area of Potential Effect [APE])

Notes: 1. Basemap: NYSDOP 2015 orthoimagery map service. 2. This map was generated in ArcMap on August 10, 2018. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

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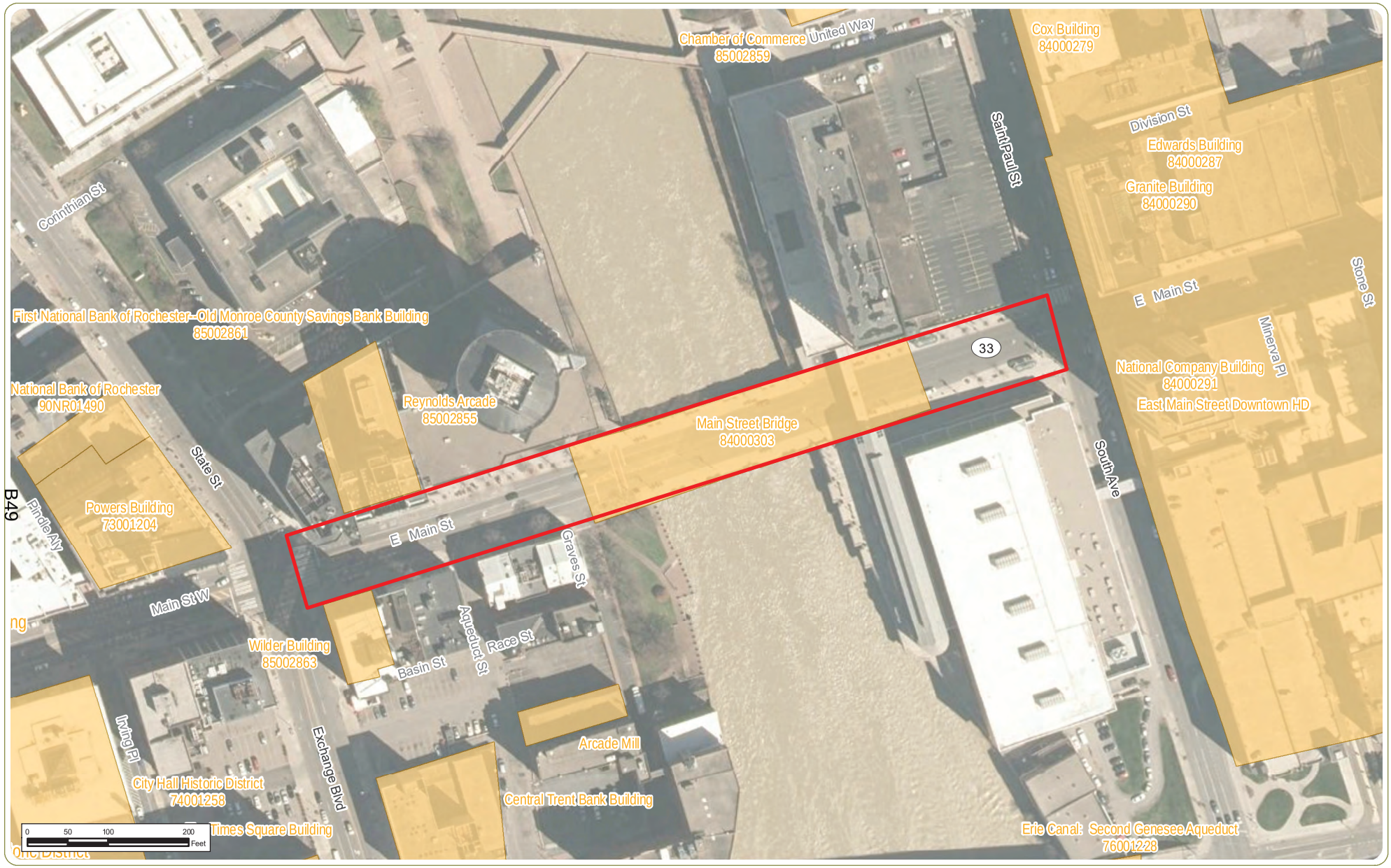

Main Street Streetscape and Pedestrian Wayfinding Phase II (PIN 4CR009)

City of Rochester, Monroe County, New York

Attachment C: Cultural Resources Located Within the Area of Potential Effect

NRHP-Listed Site

Project Boundary (Area of Potential Effect [APE])

Notes: 1. Basemap: NYSDOP 2015 orthoimagery map service. 2. This map was generated in ArcMap on August 16, 2018. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

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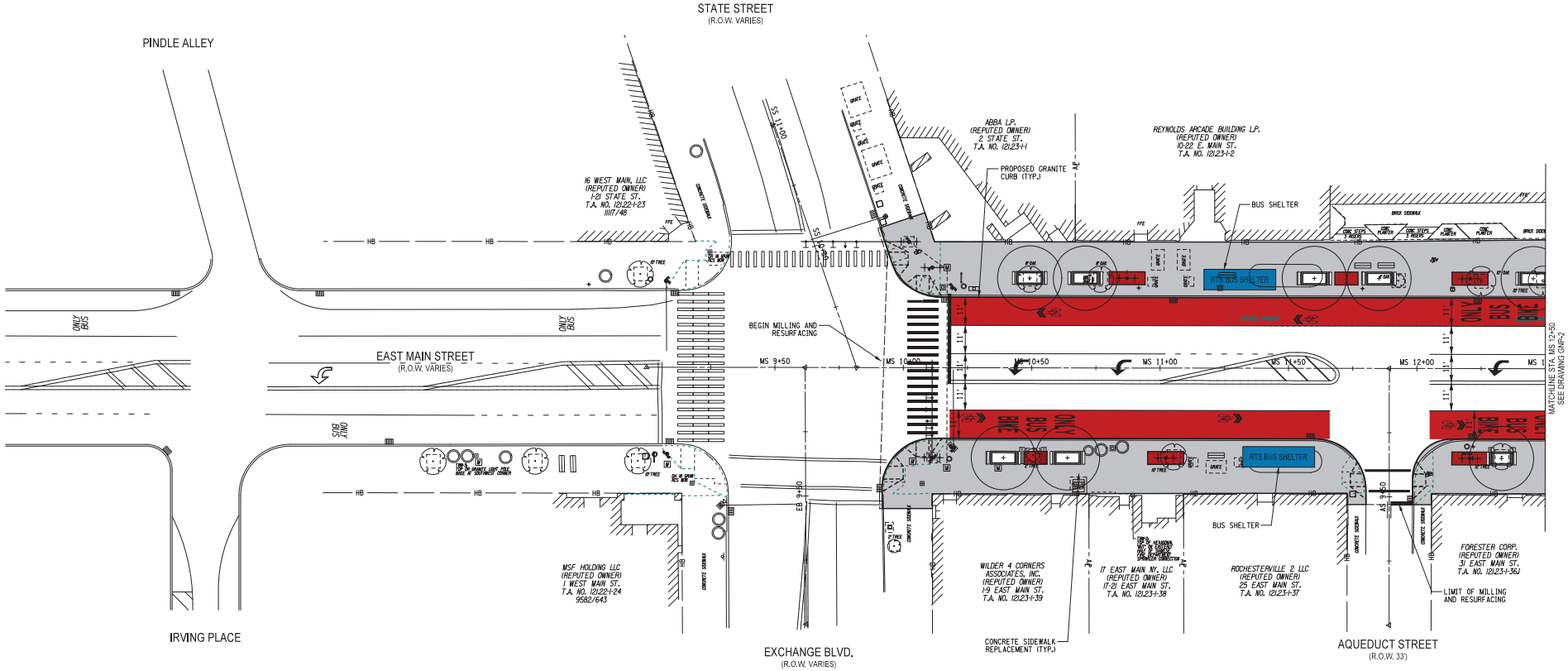

B50

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Revision	By	Appd.	YY.MM.DD

Issued	By	Appd.	YY.MM.DD

Permit-Seal

Consultants

Stantec
61 Commercial St. Suite 100
Rochester, NY 14614
www.stantec.com

Client/Project
CITY OF ROCHESTER

MAIN STREET STREETSCAPE AND PEDESTRIAN WAYFINDING ENHANCEMENTS PHASE II
P.I.N. 4CR0.09 D xxxxxx PC 18308

ROCHESTER, NEW YORK

File Name: GNP-01.DGN

SAR	JQH	SWM	18.08.17
Dwn.	Chkd.	Dsgn.	YY.MM.DD

Title
GENERAL PLAN
MAIN STREET

Project No.	Scale	
192800064	1" = 20'	
Drawing No.	Sheet	Revision
GNP-1	5 of X	0

Design File: U:\1192800064\Transportation\Preliminary\Drawing Plan Set\GNP\GNP-01.dgn
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Plotted By: swm

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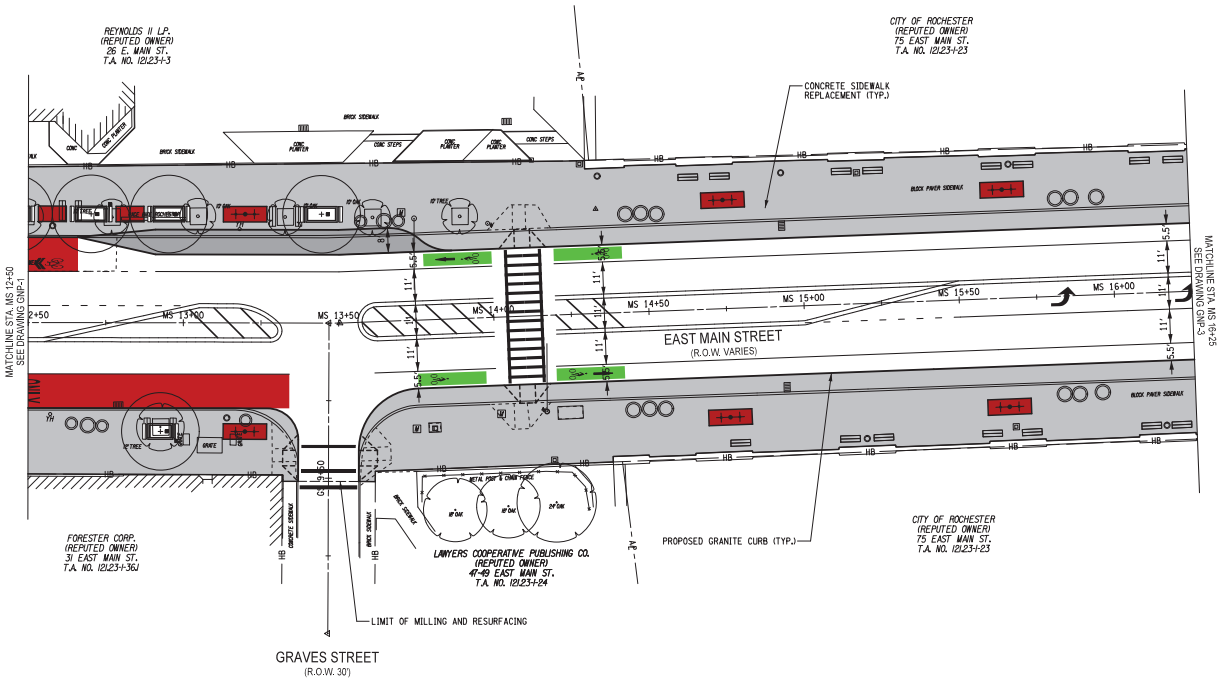

B51

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Issued	By	Appd.	YY.MM.DD

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Client/Project
CITY OF ROCHESTER

MAIN STREET STREETSCAPE AND PEDESTRIAN WAYFINDING ENHANCEMENTS PHASE II
P.I.N. 4CR0.09 D xxxxxx PC 18308

ROCHESTER, NEW YORK

File Name: GNP#2.DGN | Dwn. SAR | Chkd. JQH | Dsgn. SWM | YY.MM.DD 18.08.17

Title
GENERAL PLAN
MAIN STREET

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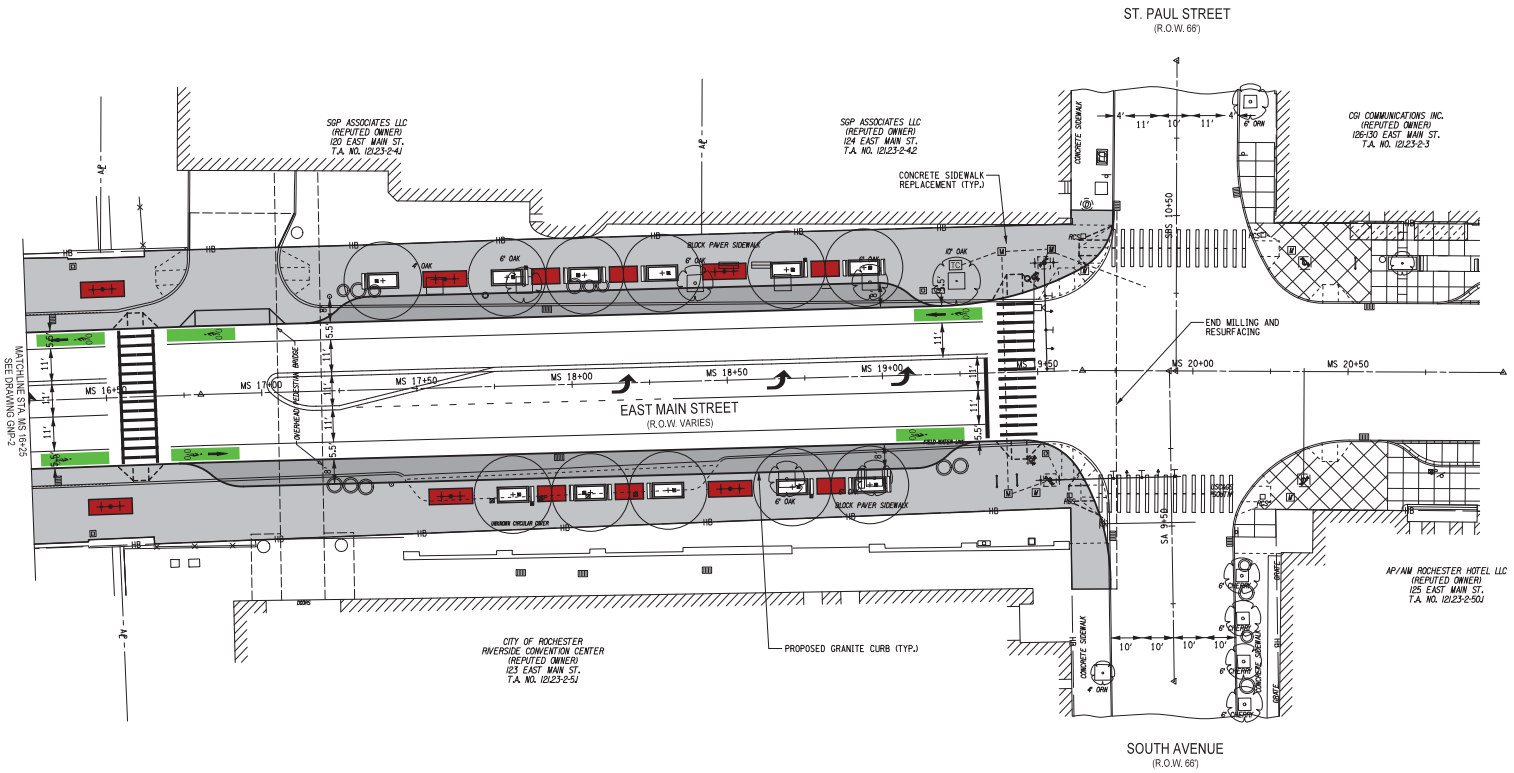

B52

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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 PHASE II
P.I.N. 4CR0.09 D xxxxxx PC 18308

ROCHESTER, NEW YORK

File Name: GNP-03.DGN	SAR	JQH	SWM	18.08.17
	Dwn.	Chkd.	Dsgn.	YY.MM.DD

Title
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MAIN STREET

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Drawing No.	Sheet	Revision
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Plotted By: swm

ORIGINAL SHEET - ANSI D HORIZ

NEW YORK STATE OF OPPORTUNITY. | Parks, Recreation, and Historic Preservation

ANDREW M. CUOMO
Governor

ROSE HARVEY
Commissioner

October 16, 2018

Mr. Christopher Caraccilo
Cultural Resource Coordinator
NYS Department of Transportation Region 4
1530 Jefferson Road
Rochester, NY 14623

Re: FHWA
Main Street Streetscape and Pedestrian Wayfinding Phase II
Main St., Rochester, Monroe County, NY
18PR04902
4CR009

Dear Mr. Caraccilo:

Thank you for continuing to consult with the New York State Historic Preservation Office (SHPO). We have reviewed the provided documentation in accordance with Section 106 of the National Historic Preservation Act of 1966. These comments are those of SHPO and relate only to Historic/Cultural resources.

We have reviewed the project submission received on 9/21/2018, including the cover letter and finding documentation. Based upon this review, the SHPO concurs with the DOT's finding that the project will have No Adverse Effect on historic properties.

If there are substantive changes to the project, consultation with our office should resume. If you have any questions, I can be reached at (518) 268-2217.

Sincerely,

Christina Vagvolgyi
Historic Preservation Technical Specialist
e-mail: christina.vagvolgyi@parks.ny.gov

via e-mail only

NEW YORK STATE OF OPPORTUNITY | Department of Transportation

ANDREW M. CUOMO
Governor

PAUL A. KARAS
Acting Commissioner

KEVIN BUSH, P.E.
Regional Director

October 16, 2018

Michael Canavan
Acting Division Administrator
Federal Highway Administration
Leo O'Brien Federal Building
Clinton Avenue and North Pearl Street
Albany, New York 12207

Locally Administered Project
PIN 4CR0.09
Main Street Streetscape and Pedestrian
Wayfinding Phase II Project
City of Rochester, Monroe County

Dear Mr. Canavan:

The City of Rochester is the sponsor of a Federally-funded transportation project on Main Street between South Ave and Exchange Blvd in Rochester, Monroe County. Finding Documentation, prepared in accordance with Section 106 of the National Historic Preservation Act, 36 Section 800.11(e) was forwarded to your office on September 21, 2018.

In a letter dated October 16, 2018 the State Historic Preservation Office (SHPO) concurred with the Department's Finding of *No Adverse Effect* for the above subject project. We respectfully request your agency's concurrence that the requirements of 36 CFR, Part 800 have been met for this project.

If you have any questions, please contact me at: 585-371-9250 or Christopher.caraccilo@dot.ny.gov.

Sincerely,

Chris Caraccilo

Christopher P. Caraccilo
Regional Cultural Resource Specialist

Attachment: SHPO concurrence letter dated October 16, 2018.

cc:
Mary Santangelo, Office of Environment, (Via CRIS)
Frank DiCostanzo, Regional Local Project Liaison (letter only)
Kamal L Crues, City of Rochester – City Engineer (letter only)
Sean Miller, Stantec, Project Consultant (letter only)

U.S. Department of Transportation
Federal Highway Administration

New York Division

Leo W. O'Brien Federal Building
11A Clinton Avenue, Suite 719
Albany, NY 12207
518-431-4127
Fax: 518-431-4121
New York.FHWA@dot.gov

October 19, 2018

In Reply Refer To:
HED-NY

Mr. Christopher P. Caraccilo
Regional Cultural Resource Coordinator
New York State Department of Transportation, Region 4
1530 Jefferson Road
Rochester NY 14623

Subject: PIN 4CR0.09 – Section 106 Consultation
Mainstreet Streetscape and Pedestrian Wayfinding Phase II Project
City of Rochester, Monroe County

Dear Mr. Caraccilo:

Please reference your letter dated October 16 requesting our review and concurrence that the requirements of 36 CFR Part 800 have been met for the subject project.

The New York State Department of Transportation (NYSDOT) applied the criteria of effect in accordance with Section 800.5(b) of 36 CFR Part 800 and concluded that the undertaking will have *No Adverse Effect* on cultural resources on or eligible for inclusion on the National Register of Historic Places.

On October 16, the New York State Historic Preservation Office (SHPO) provided an opinion that based on their review of the submitted information the project will have *No Adverse Effect* on historic properties.

We have reviewed the information provided and have determined that this project will have *No Adverse Effect* on any properties on or eligible for inclusion on the National Register of Historic Places. The requirements of 36 CFR Part 800 have been met for this project.

If you have any questions, please feel free to contact me at (518) 431-8892.

Sincerely,

Sara J. Gross, P.E.
Senior Area Engineer

cc: M. Lynch, Division Director, NYSHPO (18PR04902)
M. Santangelo, Office of Environment, NYSDOT
F. DiCostanzo, Regional Local Project Liaison, NYSDOT, Region 4

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Environmental Screening Maps

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Main Street Streetscape and Pedestrian Wayfinding Phase II (PIN 4CR009)

City of Rochester, Monroe County, New York

Project Location

Project Location

Notes: 1. Basemap: NYSDOP 2015 orthoimagery map service. 2. This map was generated in ArcMap on April 23, 2018. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

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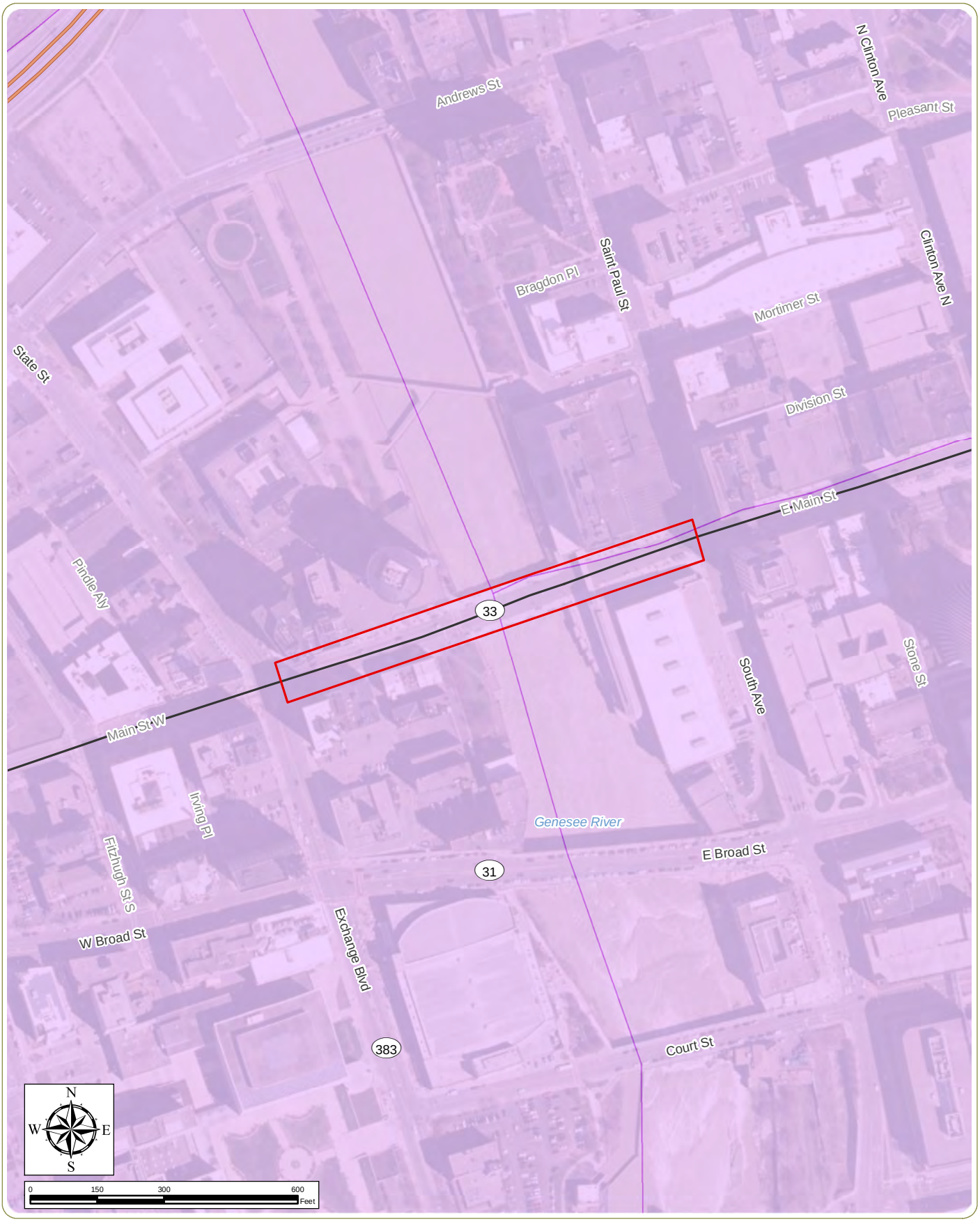

Main Street Streetscape and Pedestrian Wayfinding Phase II (PIN 4CR009)

City of Rochester, Monroe County, New York

Environmental Justice Areas

Environmental Justice Area

Project Location

Notes: 1. Basemap: NYSDOP 2015 orthoimagery map service. 2. This map was generated in ArcMap on April 23, 2018. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

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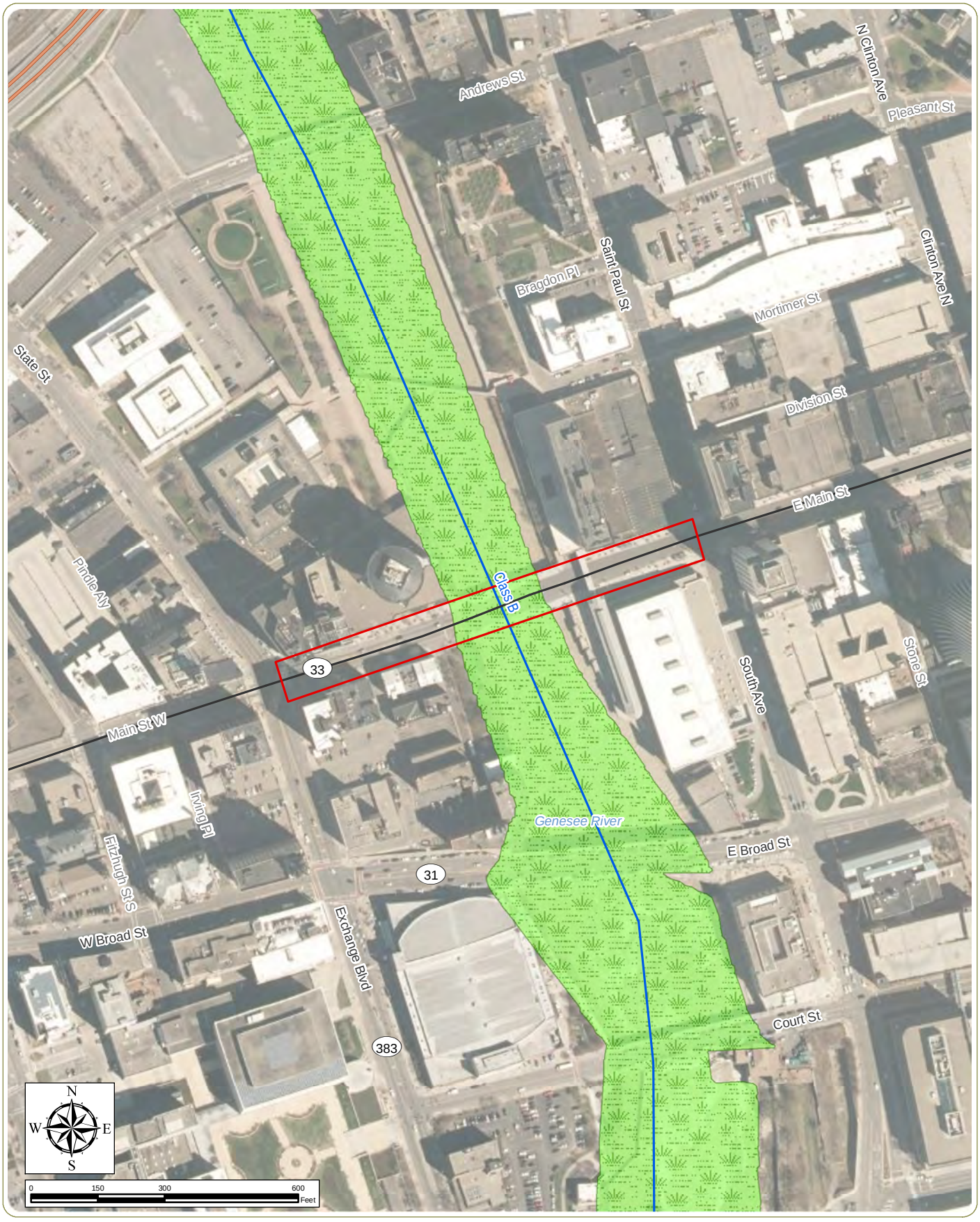

Main Street Streetscape and Pedestrian Wayfinding Phase II (PIN 4CR009)

City of Rochester, Monroe County, New York

Mapped Wetlands and Streams

Notes: 1. Basemap: NYSDOP 2015 orthoimagery map service. 2. This map was generated in ArcMap on April 23, 2018. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

NYSDEC Stream Classification:

- NYS Protected Stream
- NWI Mapped Wetland
- Project Location

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Main Street Streetscape and Pedestrian Wayfinding Phase II (PIN 4CR009)

City of Rochester, Monroe County, New York

FEMA Flood Hazards

FEMA Flood Hazard:

- 1% Annual Chance of Flooding
- Project Location

Notes: 1. Basemap: NYSDOP 2015 orthoimagery map service. 2. This map was generated in ArcMap on April 23, 2018. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

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Department of
Transportation

ANDREW M. CUOMO
Governor

PAUL A. KARAS
Acting Commissioner

KEVIN BUSH, P.E.
Regional Director

July 23, 2018

Sara Gross, Area Engineer
Federal Highway Administration – New York Division
Leo W. O'Brien Federal Building, Suite 719
11A Clinton Avenue
Albany, NY 12207

RE: ESA SECTION 7, RARE, THREATENED OR ENDANGERED SPECIES CONSISTENCY DETERMINATION
PIN 4CR009 – City of Rochester Main Street Streetscape and Pedestrian Wayfinding Phase II between State Street/Exchange Boulevard Intersection to the west and St. Paul Street/South Avenue Intersection to the east.
City of Rochester, Monroe County

Dear Mrs. Gross:

City of Rochester is in preliminary design phase for the second section of above-referenced federally-funded Streetscape and Pedestrian project. This section of Main Street crosses over the Genesee River with bridge BIN # 2211270. Project proposes milling and overlaying existing pavement, installation of new granite curb, sidewalk improvements, installation of benches, bicycle racks, electrical outlets and charging stations, street tree additions, and traffic and pedestrian signage and pavement markings. Letting is currently scheduled early 2019 with construction starting summer 2019 with a completion date in 2020.

An examination of the United States Fish & Wildlife Service's (USFWS) IPaC System and New York Natural Heritage Program (NYNHP) revealed that there is one [1] Federally – and state-listed threatened species in project area: the Northern Long-eared Bat (*Myotis Septentrionalis*).

The Northern Long-eared Bat (NLEB) is a small sized Myotis that hibernates in caves during the winter. During warm months, the species typically roosts underneath loose bark and in the cavities of both live and dead trees greater than three inches in diameter at breast-height (dbh). Clearing of trees three inches in dbh and larger is generally considered to have a potential effect on the NLEB. This project will include tree removals that meet 3-inch dbh criteria, however, trees in the project area are **not suitable** habitat for the NLEB. USFWS define unsuitable bat habitat as individual trees that are greater than 1000' from forested/wooded areas; trees found in highly-developed urban areas (e.g., street trees, downtown areas); and a pure stand of less than 3-inch dB trees that are not mixed with larger trees.

50 Wolf Road, Albany, NY 12232 | www.dot.ny.gov

Bridge structures are also considered potential NLEB habitat, however, an inspection of the bridge **did not reveal** the presence any roosting bats. Project will have no impacts to potential habitats. For these reasons, the project will have no effect upon the NLEB.

Therefore, sponsor in coordination with NYSDOT has determined that this project will have **"No Effect"** on any Federally – and state-listed species.

Please see the attachment ESA Documentation for additional explanation of the endangered species analysis performed by the project consultant. If you have any questions or require additional information, please feel free to contact me at (585)-272-3752 or frank.dicostanzo@dot.ny.gov.

Sincerely,

Frank DiCostanzo, P.E.
Local Projects Liaison
NYSDOT Region 4

Attachment

- ESA Transmittal Sheet
- iPaC Report

cc: J. Mroczek, City of Rochester
S. Miller, STANTEC
Sarah Piecuch, NYSDOT Region 4 Environmental Group

Main Street Streetscape and Pedestrian Wayfinding Phase II (PIN 4CR009)
City of Rochester, Monroe County, New York

Project Location

Project Location

Notes: 1. Basemap: NYSDOP 2015 orthoimagery map service. 2. This map was generated in ArcMap on April 23, 2018. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
New York Ecological Services Field Office
3817 Luker Road
Cortland, NY 13045-9385
Phone: (607) 753-9334 Fax: (607) 753-9699
http://www.fws.gov/northeast/nyfo/es/section7.htm

IPaC Record Locator: 689-12512444

May 15, 2018

Subject: Consistency letter for the 'PIN 4CR009 Main Street Streetscape and Pedestrian Wayfinding Phase II Project' project (TAILS 05E1NY00-2018-R-1879) under the revised February 5, 2018, FHWA, FRA, FTA Programmatic Biological Opinion for Transportation Projects within the Range of the Indiana Bat and Northern Long-eared Bat.

To whom it may concern:

The U.S. Fish and Wildlife Service (Service) has received your request dated to verify that the **PIN 4CR009 Main Street Streetscape and Pedestrian Wayfinding Phase II Project** (Proposed Action) may rely on the revised February 5, 2018, FHWA, FRA, FTA Programmatic Biological Opinion for Transportation Projects within the Range of the Indiana Bat and Northern Long-eared Bat (PBO) to satisfy requirements under Section 7(a)(2) of the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 *et seq.*).

Based on the information you provided (Project Description shown below), you have determined that the Proposed Action will have no effect on the endangered Indiana bat (*Myotis sodalis*) or the threatened Northern long-eared bat (*Myotis septentrionalis*). If the Proposed Action is not modified, **no consultation is required for these two species.**

For Proposed Actions that include bridge/structure removal, replacement, and/or maintenance activities: If your initial bridge/structure assessments failed to detect Indiana bats, but you later detect bats during construction, please submit the Post Assessment Discovery of Bats at Bridge/Structure Form (User Guide Appendix E) to this Service Office. In these instances, potential incidental take of Indiana bats may be exempted provided that the take is reported to the Service.

If the Proposed Action may affect any other federally-listed or proposed species and/or designated critical habitat, additional consultation between the lead Federal action agency and this Service Office is required. If the proposed action has the potential to take bald or golden eagles, additional coordination with the Service under the Bald and Golden Eagle Protection Act

may also be required. In either of these circumstances, please advise the lead Federal action agency for the Proposed Action accordingly.

Project Description

The following project name and description was collected in IPaC as part of the endangered species review process.

Name

PIN 4CR009 Main Street Streetscape and Pedestrian Wayfinding Phase II Project

Description

The Project is located along Main Street (State Route 33) between State Street to the west and St. Paul Street to the east. The Project is approximately 990 feet in length. The Project will extend the Phase I improvements designed and implemented west of State Street along the Phase II section of Main Street. The Project will include sidewalk improvements, installation of benches, bicycle parking, electrical outlets and charging stations, street trees, and traffic and pedestrian signage. The total Project area is approximately 2.2 acres.

Determination Key Result

Based on the information you provided, you have determined that the Proposed Action will have no effect on the endangered Indiana bat and/or the threatened Northern long-eared bat. Therefore, no consultation with the U.S. Fish and Wildlife Service pursuant to Section 7(a)(2) of the Endangered Species Act of 1973 (ESA) (87 Stat. 884, as amended 16 U.S.C. 1531 *et seq.*) is required for these two species.

Qualification Interview

1. Is the project within the range of the Indiana bat[1]?

   [1] See Indiana bat species profile

   Automatically answered
   No

2. Is the project within the range of the Northern long-eared bat[1]?

   [1] See Northern long-eared bat species profile

   Automatically answered
   Yes

3. Which Federal Agency is the lead for the action?
   A) Federal Highway Administration (FHWA)

4. Are *all* project activities limited to non-construction[1] activities only? (examples of non-construction activities include: bridge/abandoned structure assessments, surveys, planning and technical studies, property inspections, and property sales)

   [1] Construction refers to activities involving ground disturbance, percussive noise, and/or lighting.

   No

5. Does the project include *any* activities that are **greater than** 300 feet from existing road/ rail surfaces[1]?

   [1] Road surface is defined as the actively used [e.g. motorized vehicles] driving surface and shoulders [may be pavement, gravel, etc.] and rail surface is defined as the edge of the actively used rail ballast.

   No

6. Does the project include *any* activities **within** 0.5 miles of an Indiana bat and/or NLEB hibernaculum[1]?

   [1] For the purpose of this consultation, a hibernaculum is a site, most often a cave or mine, where bats hibernate during the winter (see suitable habitat), but could also include bridges and structures if bats are found to be hibernating there during the winter.

   No

7. Is the project located **within** a karst area?

   No

8. Is there *any* suitable[1] summer habitat for Indiana Bat or NLEB **within** the project action area[2]? (includes any trees suitable for maternity, roosting, foraging, or travelling habitat)

   [1] See the Service's summer survey guidance for our current definitions of suitable habitat.

   [2] The action area is defined as all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 CFR Section 402.02). Further clarification is provided by the national consultation FAQs.

   No

9. Does the project include maintenance of the surrounding landscape at existing facilities (e.g., rest areas, stormwater detention basins)?

   No

10. Does the project include wetland or stream protection activities associated with compensatory wetland mitigation?

    No

11. Does the project include slash pile burning?

    No

12. Does the project include *any* bridge removal, replacement, and/or maintenance activities (e.g., any bridge repair, retrofit, maintenance, and/or rehabilitation work)?

    Yes

13. Is there *any* suitable habitat[1] for Indiana bat or NLEB **within** 1,000 feet of the bridge? (includes any trees suitable for maternity, roosting, foraging, or travelling habitat)

    [1] See the Service's current summer survey guidance for our current definitions of suitable habitat.

    No

14. Does the project include the removal, replacement, and/or maintenance of *any* structure other than a bridge? (e.g., rest areas, offices, sheds, outbuildings, barns, parking garages, etc.)

    No

15. Will the project involve the use of **temporary** lighting *during* the active season?

    No

16. Will the project install new or replace existing **permanent** lighting?

    Yes

17. Is there *any* suitable habitat **within** 1,000 feet of the location(s) where **permanent** lighting will be installed or replaced?

    No

18. Are *all* project activities that are **not associated with** habitat removal, tree removal/ trimming, bridge or structure removal, replacement, and/or maintenance, lighting, or use of percussives, limited to actions that DO NOT cause any stressors to the bat species, including as described in the BA/BO (i.e. activities that do not involve ground disturbance, percussive noise, temporary or permanent lighting, tree removal/trimming, nor bridge/ structure activities)?

    Examples: lining roadways, unlighted signage , rail road crossing signals, signal lighting, and minor road repair such as asphalt fill of potholes, etc.

    Yes

19. Will the project raise the road profile **above the tree canopy**?

    No

20. Is the location of this project consistent with a No Effect determination in this key?

    Automatically answered
    Yes, because the project action area is outside of suitable Indiana bat and/or NLEB summer habitat

21. Is the bridge removal, replacement, or maintenance activities portion of this project consistent with a No Effect determination in this key?

    Automatically answered
    Yes, because the bridge is more than 1,000 feet from the nearest suitable habitat and is therefore considered unsuitable for use by bats

22. Is the permanent lighting portion of this project consistent with a No Effect determination in this key?

Automatically answered

Yes, because the lighting will be more than 1,000 feet from the nearest suitable habitat

Determination Key Description: FHWA, FRA, FTA Programmatic Consultation For Transportation Projects Affecting NLEB Or Indiana Bat

This key was last updated in IPaC on March 16, 2018. Keys are subject to periodic revision.

This decision key is intended for projects/activities funded or authorized by the Federal Highway Administration (FHWA), Federal Railroad Administration (FRA), and/or Federal Transit Administration (FTA), which require consultation with the U.S. Fish and Wildlife Service (Service) under Section 7 of the Endangered Species Act (ESA) for the endangered **Indiana bat** (*Myotis sodalis*) and the threatened **Northern long-eared bat** (NLEB) (*Myotis septentrionalis*).

This decision key should only be used to verify project applicability with the Service's February 5, 2018, FHWA, FRA, FTA Programmatic Biological Opinion for Transportation Projects. The programmatic biological opinion covers limited transportation activities that may affect either bat species, and addresses situations that are both likely and not likely to adversely affect either bat species. This decision key will assist in identifying the effect of a specific project/activity and applicability of the programmatic consultation. The programmatic biological opinion is not intended to cover all types of transportation actions. Activities outside the scope of the programmatic biological opinion, or that may affect ESA-listed species other than the Indiana bat or NLEB, or any designated critical habitat, may require additional ESA Section 7 consultation.

Bridge/Bat Survey Form

Note: One form can be submitted for all species of bats.

Project Name: Main Street Streetscape and Pedestrina Wayfinding Phase II PIN: 4CR009

Type of Road Carried: Asphalt paved road in large municipal city with sidewalks on each side of the bridge Lat/Long: 43.156190, -77.610480

Feature crossed (land, wetland, river, etc.): Genesee River BIN: 2211270

Project Description: The Project will include sidewalk improvements, installation of benches, bicycle parking, electrical outlets and charging stations, street trees, and traffic and pedestrian signage.

Project Start Date:

Bridge Characteristics

Bridge is over Water (Stream/River/Lake) Genesee River

What is the height over water/ road/ rail /land? 13 ft to the underside of the bridge

The bridge is made of Concrete The underside of the bridge also appears to be constructed out of stone.

Rate the human disturbance or traffic under the bridge: low The area may be used for recreation.

Methods of Bridge/Bat Survey

Is the Bridge/Bat survey complete within 1 year of the start of the work? YES

What was the survey method (Environmental Specialist w/ binoculars, staff w/ binoculars, manlift, etc)?

Environmental Specialist with binoculars

Were all areas checked for bats, including: expansion joints☐, rough surfaces☒ or imperfections in the concrete☒, spaces between walls and ceiling joists☐, guiderails☒, unsealed crevices☐, and vertical crevices that are sealed at the top☐? Comment: The rough cracks and crevices of the stone and concrete were examined.

Results of Bridge/Bat Survey

Are there bats present☐, or are there droppings☐, or is there staining from bats☐, or can you hear bats☐?

NO Comment: No bats or evidence of bats were observed.

If the answer is no, submit the form in the documentation for either a "No Effect, No Suitable Habitat" determination from FHWA, or as part of the package for other determinations (i.e. IPaC submittal, 30- Day Form, traditional Section 7 ESA, etc.).

If the answer is yes, the determination is that the bridge contains bats. The species needs to be determined by the USFWS, and clearance must be obtained from the USFWS before work can begin on the bridge. Please take photos of the bats, if possible, and coordinate with Main Office, who will, in turn, coordinate with the FHWA Area Engineer and Environmental Specialist and NYSDEC.

Details: Please provide any additional details regarding bats, including number of bats, observations, whether or not there is a colony or individual bats, if the bats appear to be using bird nests, etc.:

Name (individual completing the bridge survey): Madeline Turnquist

Signature: Date: 05/02/2018

NLEB and IBat

Fill-able Form v. April 2017

Bridge/ Bat Surveys

NOTE: One form can be submitted for all species of bats.

Requirements for Use

Does your project include any bridge work that either will be initiated between April 1 and September 30, or that the timing is unknown? YES / NO

a. No: The bridge survey requirement does not apply to your project.
b. Yes: A Bridge/Bat Survey is required to be completed during the active season (April 1 – September 30). The Bridge/Bat Survey can be conducted by any individual, and can be conducted from the ground below the bridge with the use of binoculars. Please complete the Bridge/Bat Survey Form and include it in the ESA documentation as required

NOTES:

One form can be submitted for all species of bats.

If your project involves the placement of exclusion netting below the bridge for Migratory Birds, you do not need to complete the survey.

NYSDOT additional note:

Bridge/ Bat Form to be done for ESA coordination (pre-design approval) but also needs to be done within 1 year of construction. Therefore, depending on project schedule, the form may need to be done again (during Active Season) within 1 year of construction.

PIN: 4CR009 PROJECT NAME: Main Street Streetscape and Pedestrian Wayfinding Phase II Project DATE: June 2018

Section 7 ESA Process: ESA Transmittal Sheet

Step 3: Documentation. Please complete the appropriate boxes below and complete the documentation as described.

	ESA Does Not Apply	No Effect, Activity-Based	No Effect, No Suitable Habitat or No Effect	BATS: MA, NLAA, 14-Day Form, or IPaC Submittal	NLEB: MA, LAA 30 Day Form or IPaC Submittal	MA, NLAA, Traditional 7-step Process	MA, LAA, Formal Consultation
Northern Long-eared Bat	☐		☒	☐	☐	☐	☐
Indiana Bat	☒		☐	☐	NA	☐	☐
Bog Turtle	☒		☐	NA	NA	☐	☐
Mollusks (Dwarf Wedge Mussel, Rayed Bean, Clubshell, Chittenango Ovate Amber Snail)	☒		☐	NA	NA	☐	☐
Karner Blue Butterfly	☒		☐	NA	NA	☐	☐
Sturgeon (Shortnose, Atlantic)	☒		☐	NA	NA	☐	☐
Other listed species (Please List)	☒		☐	NA	NA	☐	☐
Documentation Required	The IPaC report is included in the Design Report.	Record the corresponding number(s) of the activity in the box above. This sheet and the IPaC printout are included in the Design Report.	NYSDOT submits "No Suitable Habitat Determination" or "No Effect" Documentation to FHWA for Concurrence.	NYSDOT submits 14-day Form to the USFWS (cc: Area Engineer), or submits through IPaC w/ Area Engineer included	NYSDOT submits 30-day Form to FHWA (then to USFWS) or submits through IPaC w/ Area Engineer included	NYSDOT submits either BE or BA to FHWA, who submits to USFWS for concurrence.	NYSDOT submits BA to FHWA for Initiation of Formal Consultation with USFWS.

Instructions for Use: This Summary Sheet is sent to FHWA for concurrence for all submissions, except "ESA Does Not Apply" and "No Effect, Activity-Based". A submittal package should include all documentation for all species requiring concurrence, with a cover letter requesting concurrence, so that FHWA can make one ESA determination. **SEE EACH SPECIES-SPECIFIC PACKAGE FOR SPECIFIC DOCUMENTATION REQUIREMENTS FOR SUBMITTALS.** Also, FHWA requires documentation of compliance with ESA in the Design Report.

Fillable Form v. April 2017

Species Conclusions Table

Project Name: Main Street Streetscape and Pedestrian Wayfinding Phase II

Date: June 27, 2018

Species Name/Critical Habitat	Potential Habitat Present?	Species Present?	Critical Habitat Present?	ESA / Eagle Act Determination	Notes / Documentation Summary (include full rationale in your report)
NLEB *(Federal- and state-listed threatened species)*	No	No	No	No Effect, no suitable habitat present.	May 02, 2018 site visit observed no sightings or evidence of bats. Tree removal is expected to occur, but no suitable NLEB habitat will be removed as a part of the Project work.

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Appendix C

Traffic Information

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

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Exhibit 7-1 Resurfacing ADA and Safety Assessment Form (Page 1 of 2)

PIN: 4CR0.09	Date: 8/16/18	☐ PIL ☐ PII ☐ HAL	ADT: 11,646	Posted Speed: 30 mph

Safety Assessment Team

Design: Sean W. Miller, PE; Senior Civil Engineer, Transportation; Stantec Consulting Services Inc.

Traffic:

Maintenance :

✓	Element	Guidance	Comments
Elements for 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 EIs 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 for non-motorized traffic, or to restripe 12' and greater lane widths on low-speed highways with shoulders less than 4' to widen the shoulder for non-motorized traffic.	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	**1R projects**: curb ramps and crosswalks that were built or altered before March 15, 2012 must be in conformance with the appropriate acceptable values in the Critical Elements for the Design, Layout and Acceptance of Pedestrian Facilities table and HDM Section 7.3.2.1. Sidewalks and pedestrian signal upgrades are not required unless they are altered as part of the project. **2R / 3R projects**: all pedestrian facilities must be in conformance with the acceptable values in the Critical Elements for the Design, Layout and Acceptance of Pedestrian Facilities table , New or replacement pedestrian signals must be accessible. Exceptions on 1R/2R/3R projects must be justified per HDM Ch 2, Section 2.8.	Several locations require cross slope, surface repair and detectable warning units installed and or replaced.
✔	Rumble Strips	Include CARDs as required by EI 13-021, and SHARDs in accordance with EI 16- 014.	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	**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). **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 the 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 EIs) 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. (72' criteria for interstates)	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.

Exhibit 7-1 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 treatment adjacent to a travel lane or parking lane.
☑	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.
☑	Utilities	Manholes, valves, frames and grates are to be adjusted in accordance with Sections 655 and 663 of the Standard Specifications. Poles, guy wires, sign posts, trees, and other obstructions should be 18" or more from the face of curb. In uncurbed areas, they should be 48" or more from the edge line. Vertical drops at grates or frames should be addressed if they exceed 1" and horizontal gaps parallel to the direction of traffic should be addressed if they exceed 5/8".	Street Metals are present and will required adjustment.
Additional Elements 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 2-13a or 2-14a (which utilizes AASHTO Superelevation Distribution Method 5).	
☐	Speed Change Lanes	Speed change lanes should meet AASHTO "Green Book" Ch 10 standards. Shoulders for speed change lanes should meet HDM §2.7.5.2 and §2.7.5.3	
☐	Clear Zones	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 nonfreeway 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 HDM Chapter 5, Appendix 5A .	
☐	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	Pedestrian facilities must meet the requirements of HDM Chapter 18, and the values shown in the Critical Elements for the Design, Layout and Acceptance of Pedestrian Facilities table. Consider installing crosswalks and pedestrian push buttons at signals. Install pedestrian countdown timers as needed. Minimum shoulder width of 4' if no curbing.	

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.

b. Use the “Comment/Action” text box for brief remarks that clarify answers and indicate direction for the project. Use the section titled “Additional comments, supporting documentation and clarifications” at the end of Step 3 of the checklist for any supporting information or remarks that do not fit in the Comment/Action text box provided. Append additional pages if necessary. For additional text entered at the end, reference the step and checklist number.

c. 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).

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

e. 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.

f. 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”.

g. 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.

h. 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/

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

j. 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.

PIN:	4CR009	**Project Location:**	City of Rochester
Context:	◉ **Urban / Village** ○ **Suburban** ○ **Rural**		
Project Title:	Main Street Streetscape and Pedestrian Wayfinding Project Phase II		

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.*	○ **Yes** ◉ **No**
1.2	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**
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: Samuel Gavin Date: 6/27/2018

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	Rochester Bicycle Plan
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	-No shoulder -AADT is 11,646

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: Samuel Gavin Date: 07/05/2018

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	-RRFB
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	-Checked City Codes, nothing says bicycles allowed on sidewalks in central business district
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: Samuel Gavin Date: 07/05/2018

Additional comments, supporting documentation and clarifications for answers in step 1, 2 or 3:

Last Revised 10/12/2016

Stantec

Memo

To:	Jon Hartley	From:	Rory Weilnau
	Rochester NY Office		Rochester Office
File:	mem001_Accident Summary_20180606	Date:	June 6, 2018

Reference: **City of Rochester East Main Street**
South Avenue to State 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 South Avenue and State Street/Exchange Boulevard. Information available represents a 34-month period between 4/28/2015 and 1/31/2018. The accident history within the project limits identified a total of fifty-seven (57) accidents. There were a total of forty-four (44) reportable accidents on East Main Street with eight (8) being non-fatal injury accidents and thirty-six (36) property damage. Of the fifty-seven (57) accidents on East Main Street, thirteen (13) were non-reportable accidents. The following list summarizes the types and number of non-reportable and reportable accidents.

Accident Summary															
Number and % of Accidents by Type															
Accident Type															
Road	Sideswipe	Rear End	Right Angle	Left Turn	Pedestrian	Fixed Object	Head On	Bicycle	Right Turn	Driveway	Backing	Overtaking	Animal	Unknown	Total
East Main Street	13	23	6	6	1	2	0	1	5	0	0	0	0	0	**57**
Percent of Total	23%	40%	11%	11%	2%	4%	0%	2%	9%	0%	0%	0%	0%	0%	**100%**
Number and % of Non-Reportable and reportable Accidents															
Non-reportable	5	6	0	1	0	0	0	0	1	0	0	0	0	0	**13**
Percent Non-Reportable	38%	26%	0%	17%	0%	0%	0%	0%	20%	0%	0%	0%	0%	0%	**23%**
Reportable	8	17	6	5	1	2	0	1	4	0	0	0	0	0	**44**
Percent Reportable	62%	74%	100%	83%	100%	100%	0%	100%	80%	0%	0%	0%	0%	0%	**77%**

Reference: City of Rochester East Main Street
South Avenue to State Street
Accident Analysis

Accident History Overview

Accident Rate Summary

Pre-Build Accident Rates (non-reportable and reportable)			
Intersection	**Number of Accidents**	**County Rate**	**Actual Rate**
Intersection Rate (excludes midblock accidents)			
State Street/Exchange Blvd	38	0.93	1.44 ACC/MEV
Link Rate (includes midblock and intersection accidents)			
State St/Exchange Blvd to St. Paul St/South Ave	57	2.59	10.08 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 linking both sides of the Central Business District on either side of the Genesee River. The only signalized intersection in the project limits is located at State Street/Exchange Boulevard. Aqueduct Street and Graves Street are the only two (2) unsignalized intersections within the project limits. State Street/Exchange Boulevard is a principal arterial street mainly serving as a north-south commuter route within the Central Business District. Both Aqueduct Street and Graves Street can be classified as 'Local' City Streets. The Convention Center is located within the project limits. The overall corridor characteristics include both pedestrian and vehicular commuters, visitors, and bus traffic representing the broad range of accident types including rear-ends, sideswipes, right angle, and left turn.

The accident severity for the section of East Main Street included 6 injuries (11%) for pre-build conditions. The primary contributing factors were driver inattention, unsafe lane changes, following too closely, and failure to yield right-of-way.

State Street/Exchange Boulevard Intersection

This intersection has an accident rate higher than the county wide rate (0.93 acc/mev) for the pre-build analysis period. There was a total of thirty eight (38) accidents. The predominant accident type at State/Exchange are rear end accidents with a total of 15 (39%). The majority of these accidents occur in the westbound direction between right turning vehicles and vehicles following too closely behind. Based on field observations, the accidents may be the result of conflicts between right turning vehicles and pedestrians crossing State Street. Long queues with stop and go tendencies can increase the likelihood of rear end accidents.

To aide in the reduction of rear end accidents it is recommended that a lead pedestrian phase be implemented prior to the start of the East/West phase. This will minimize the number of conflicts between pedestrians in the cross walk and right turning vehicles.

Sideswipe accidents are also prevalent at State/Exchange with a total of 9 (24%). Most of these accidents occur in both southbound and westbound directions. In the westbound direction, sideswipe accidents are due to driver inability to safely merge or traverse the travel way. One instance involved a parked vehicle in the righthand lane causing an unexpected

Reference: City of Rochester East Main Street
South Avenue to State Street
Accident Analysis

Accident History Overview

disruption in the flow of traffic. Based on field observations, drivers are not paying attention to the “Bus Only” markings causing them to merge frequently into the left hand thru lane. This weave pattern resulting from driver inexperience with the area is a likely cause of sideswipe accidents.

To reduce the number of side swipe accidents, the proposed recommendation is to introduce a road diet east of State/Exchange. This will reduce the current configuration to one lane in each direction and will eliminate existing weave patterns. However, by decreasing the number of lanes will increase the likelihood of rear end accidents.

Right angle accidents are present in the intersection; however, most are caused with a disregard to traffic control. No further mitigation is recommended.

Aqueduct Street

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

Pedestrian Light near Graves Street

Few accidents have resulted from the current signalized crosswalk near Graves Street. Two accidents both rear ending accidents in the Eastbound direction were due to driver inattention. No pedestrian injuries/fatalities have been recorded at this location.

To increase awareness of the pedestrian crossing, it is recommended that additional signing and striping be added at this location.

Summary

Accidents within the project corridor are mainly comprised of rear end and sideswipe accidents with links to driver inattention, unsafe lane changes, following too closely, and failure to yield right-of-way. Vehicles traveling westbound attempting to make a right turn on to State Street are inhibited by significant pedestrian traffic within the cross walk. Drivers experience stop and go conditions as the vehicles turning right yield to the pedestrians on State Street resulting in a large number of rear end accidents. An additional pedestrian lead phase will allow those crossing State Street to clear the intersection. As a result, the potential for conflicts occurring with the right turning vehicles would decrease. Driver inattention and failure to yield right-of-way are often attributed to the apparent sideswipe accidents. A 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 increased in queue lengths.

Other recommendations within the corridor include increasing awareness of the pedestrian crossing just east of Graves Street with this use of additional signing and striping.

STANTEC CONSULTING SERVICES INC.

Reference: City of Rochester East Main Street
South Avenue to State Street
Accident Analysis

Accident History Overview

Rory Weilnau ENV SP
Transportation Engineer In Training

Phone: (585) 413-5348
Fax: (585) 272-1814
Rory.Weilnau@stantec.com

Attachment: Attachment

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: South Ave to State Str

Milepost: South Ave To: State Street

Date of Report: 6/20/201

P.I.N. _____

Case No. _____

File _____

By _____

Page Number 1

PERIOD STUDIED

From 4/28/2015

To: 1/31/2018

34 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	3/27/2016	16:13	2	PDO	1	1	2	3	4,5	REnd	V2 headed WB on Main waiting in traffic at light was rear ended by V1 when light turned green. (4) Driver Inattention (5) Driver Inexperience
2	2/8/2017	21:55	2	PDO	4	1	1	1	4,5	Side	WB V2 sideswiped by WB V1 during V2 right turn onto State (4) Driver Inattention (5) Driver Inexperience
3	4/26/2017	9:45	2	Non	1	1	1	1	9	REnd	V2 SB on State turning Right on Main rear ended by V2 SB on State (9) Following Too Closely
4	4/7/2017	17:08	2	PDO	1	1	1	2	9	REnd	WB V2 rear ended by WB V1 E of State. V1 left scene. (9) Following Too Closely
5	3/4/2017	10:05	2	Non	1	1	2	4	4,5	Side	WB V2 (RTS Bus) sideswiped by WB V1 at State. V1 left scene. (4) Driver Inattention (5) Driver Inexperience
6	12/25/2017	12:55	2	PDO	1	1	4	1	9,19	REnd	WB V2 rear ended by WB V1 approaching State. V1 left scene. (9) Following Too Closely (19) Unsafe Speed
7	11/18/2017	12:13	2	PDO	1	1	1	2	9	REnd	WB V1 was rear ended by WB V2 west of South Ave. V1 left scene. (9) Following Too Closely
8	11/12/2017	6:04	2	PDO	4	1	2	3	7	RAng	NB V1 ran red light and struck WB V2 at Main/Exchange (7) Failure to Yield Right of Way
9	11/9/2017	17:24	2	Inj	4	1	1	2	9,7	REnd	V2 parked on right shoulder rear ended by WB V1 100' east of Exchange (9) Following Too Closely (7) Failure to Yield Right of Way
10	10/29/2017	18:40	2	PDO	4	1	2	3	9	REnd	EB V2 was rear ended by EB V1 at Exchange (9) Following Too Closely
11	10/12/2017	16:59	2	PDO	1	2	1	1	20,7	Side	SB V2 side swiped by SB V1 at Main/State (20) Unsafe Lane Changing (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: South Ave to State Str

Milepost: South Ave To: State Street

Date of Report: 6/20/201

P.I.N. _____

Case No. _____

File _____

By _____

Page Number 2

PERIOD STUDIED

From 4/28/2015

To: 1/31/2018

34 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	9/29/2017	18:52	2	Non	4	2	1	2	, 13,20	Side	SB V1 stopped at red light at State/Main, SB V2 attempted to go around V1 and struck V1. V2 left scene. (13) Passing or Lane Usage Improper (20) Unsafe Lane Changing
13	8/18/2017	17:39	2	PDO	1	1	1	1	60, 60	Rght	V2 (RTS Bus) turning right from Main to State struck by V1 pulling into traffic NB on State (60) Other Vehicular (60) Other Vehicular
14	7/23/2017	11:18	2	Inj	1	1	1	1	17,7	RAng	EB V1 ran red light at Main/State, struck SB V2 (17) Traffic Control Disregarded (7) Failure to Yield Right of Way
15	10/17/2016	7:50	2	Non	1	1	2	3	9,4	REnd	EB V2 rear ended by EB V1 within Main/Exchange intersection. V1 left scene. (9) Following Too Closely (4) Driver Inattention
16	10/1/2016	22:38	2	Non	5	1	2	3	4,9	REnd	WB V2 stopped at red light rear ended by WB V1 at State (4) Driver Inattention (9) Following Too Closely
17	9/27/2016	18:17	2	PDO	2	1	1	1	60	Rght	NB V1 on Exchange attempted right onto Main and struck NB V2. V2 left scene. (60) Other Vehicular
18	9/12/2016	17:41	1	Inj	1	1	1	1	5,7	Bike	V1 was turning right from Main onto State and struck bicycle using crosswalk. V1 left scene. (5) Driver Inexperience (7) Failure to Yield Right of Way
19	9/10/2016	10:51	2	PDO	1	1	1	1	9	REnd	WB V1 and WB V2 stopped at red light at State. Light turned green and V1 rear ended V2. (9) Following Too Closely
20	9/5/2016	12:38	1	Inj	1	2	1	1	7,18	Pedn	V1 turning from WB Main to SB Exchange, struck wheelchair in crosswalk. (7) Failure to Yield Right of Way (18) Turning Improperly
21	8/14/2016	0:15	2	PDO	4	1	2	2	4,7	Rght	WB V2 attempted NB turn onto State from left lane, struck WB V2 in right lane. (4) Driver Inattention (7) Failure to Yield Right of Way
22	8/13/2016	5:30	1	Inj	4	1	1	1	4,5	FixO	EB V1 struck light pole at Exchange. (4) Driver Inattention (5) Driver Inexperience

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: South Ave to State Str

Milepost: South Ave To: State Street

Date of Report: 6/20/201

P.I.N. _____

Case No. _____

File _____

By _____

Page Number 3

PERIOD STUDIED

From 4/28/2015

To: 1/31/2018

34 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	6/6/2016	15:59	2	PDO	1	1	1	1	, 13	Rght	NB V2 illegally parked on State, struck by V1 (truck) turning from WB Main to NB State (13) Passing or Lane Usage Improper
24	6/6/2016	11:58	2	PDO	1	2	1	1	4,9	REnd	NB V2 stopped at red light at Main, rear ended by NB V1. (4) Driver Inattention (9) Following Too Closely
25	5/29/2016	13:45	3	Inj	1	1	1	1	19	RAng	WB V1 sideswiped parked WB V2 then t-boned SB V3 at Exchange. (19) Unsafe Speed
26	5/26/2016	14:26	2	PDO	1	2	1	2	9	REnd	EB V2 stopped at light at State and was rear ended by EB V1. (9) Following Too Closely
27	4/16/2016	20:00	2	Non	3	1	1	1	4,5	Side	EB V2 sideswiped by EB V1 as V1 tried to pass truck turning from EB Main to NB State. (4) Driver Inattention (5) Driver Inexperience
28	1/27/2016	17:07	2	PDO	3	2	1	2	60, 60	Side	V1 and V2 side by side NB Exchange at Main, both claim they were sideswiped by the other vehicle. (60) Other Vehicular (60) Other Vehicular
29	11/28/2015	17:40	2	Non	4	1	1	1	9	REnd	WB V2 rear ended by WB V1 at State. V1 left scene. (9) Following Too Closely
30	11/6/2015	18:56	2	PDO	4	1	1	1	, 7	Left	WB V2 attempting to turn SB on Exchange struck EB V2 traveling thru intersection. (7) Failure to Yield Right of Way
31	11/5/2015	9:02	3	Inj	1	1	1	2	, 9	REnd	NB V1 stopped on Exchange before turning EB on Main for pedestrian. NB V2 rear ended V1, NB V3 rear ended V2. (9) Following Too Closely
32	10/28/2015	5:30	2	PDO	4	1	2	3	17	RAng	SB V1 ran red light and struck WB V2 at Exchange/Main. (17) Traffic Control Disregarded
33	9/29/2015	20:05	2	PDO	4	1	2	3	2,7	RAng	WB V1 ran red light and struck NB V2 at Exchange. V1 driver arrested for DUI. (2) Alcohol Involvement (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: South Ave to State Str

Milepost: South Ave To: State Street

Date of Report: 6/20/201

P.I.N. _____

Case No. _____

File _____

By _____

Page Number 4

PERIOD STUDIED

From 4/28/2015

To: 1/31/2018

34 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	9/10/2015	8:35	2	PDO	1	1	1	1	20	Side	V2 SB on State attempted to change lanes to turn WB on Main, sideswiped SB V1. (20) Unsafe Lane Changing
35	8/29/2015	12:06	2	Inj	1	5	1	1	7	Left	V1 NB on Exchange attempted to turn WB on Main, V2 SB on State struck V1. (7) Failure to Yield Right of Way
36	8/7/2015	14:25	2	PDO	1	1	1	1		Side	SB V2 stopped at red light at Main side swiped by SB V1 as V1 attempted to pass V2 to turn WB on Main.
37	6/1/2015	15:32	2	PDO	1	1	2	3	17,18	Left	V2 SB on State. V1 NB on Exchange attempts illegal left turn onto WB Main, striking V2. (17) Traffic Control Disregarded (18) Turning Improperly
38	4/28/2015	12:35	2	PDO	1	4	1	1		Side	V1 (RTS Bus) SB on State at Main sideswiped by SB V2.
39	1/31/2018	12:25	2	Non	1	3	4	5	66	REnd	V2 NB on Exchange stopped at green at Main for EB emergency vehicle, rear ended by NB V1. (66) Pavement Slippery
40	1/8/2018	23:59	2	PDO	4	4	2	1	17	RAng	V1 SB on State ran red light and struck V2 EB on Main. (17) Traffic Control Disregarded
41	6/23/2017	14:21	3	PDO	1	1	2	3	4	REnd	EB V2 and EB V3 were stopped at red light on Main at Graves. EB V1 rear ended V2 which caused V2 to rear end V3. (4) Driver Inattention
42	5/18/2017	14:42	2	PDO	1	2	1	1	4	REnd	V1 was stopped at a red light traveling eastbound and when the light turned green V2 (bus) rear ended V1. (4) Driver Inattention
43	12/15/2016	12:05	2	PDO	1	2	4	4	66	REnd	V2 was parked on the side of the road, V1 was slowing to park behind V2. Due to the ice and slush V1 slid into the driver side rear of V2 causing mino (66) Pavement Slippery
44	9/30/2016	13:37	2	PDO	1	1	1	1	60	REnd	Unbrella from a hot dog car blew into road, the owner off the hot dog cart ran out into the road to grad the umbrella. V2 stopped and V1 rear ended V2 (60) Other Vehicular

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: South Ave to State Str

Milepost: South Ave To: State Street

Date of Report: 6/20/201

P.I.N. _____

Case No. _____

File _____

By _____

Page Number 5

PERIOD STUDIED

From 4/28/2015

To: 1/31/2018

34 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	7/19/2016	17:26	2	PDO	1	1	1	1	4,9	REnd	Both vehicles traveling WB in heavy traffic. V2 stopped/slowed due to traffic and V1 rear ended V2. (4) Driver Inattention (9) Following Too Closely
46	2/11/2016	10:15	1	PDO	1	1	4	4	66	FixO	Vehicle (not involved) was traveling WB infront V1 stopped suddenly, V1 slammed on brakes, turned slightly, slid on road and hit tree. (66) Pavement Slippery
47	6/30/2015	10:07	2	PDO	1	1		2	4,7	Side	Driver of V1 left the travel lane hitting V2. V1 driver was unfamiliar with roads and trying to make decision where to go when V1 veered out from lane (4) Driver Inattention (7) Failure to Yield Right of Way
48	3/5/2017	12:13	2	PDO		2		1	7	Side	V2 was in right lane of Main headed WB, west of St. paul. V2 in the left lane came into the lane hitting V1. (7) Failure to Yield Right of Way
49	10/27/2017	19:11	2	Non	4	1	1	1	4,18	Left	V1 traveling EB, pulled to right to let traffic pass in both directions before turning left into Radison. V2 made the left turn, V1 colided with V2. (4) Driver Inattention (18) Turning Improperly
50	8/5/2017	13:13	2	PDO	1	1	1	1	4,5	REnd	Both vehicles EB on Main, .25 mile before St. Paul, V2 slowed for traffic and V1 rear ended V2. (4) Driver Inattention (5) Driver Inexperience
51	7/13/2017	13:07	2	PDO	1	1	1	2	4,9	REnd	All vehicles headed WB on Main 300' W of St. Paul, V2 and V3 slowed in traffic, V1 hit V2 and pushed into V3. (4) Driver Inattention (9) Following Too Closely
52	11/15/2016	17:20	2	Non	4	1	1	1	9	REnd	Both vehicles EB 150' W of St. Paul, V2 slowed for traffic, V1 rear ended V2. (9) Following Too Closely
53	10/29/2016	18:08	2	Non	4	2	1	1	7,18	Rght	V2 (motorcycle) was in right lane headed WB on Main, V1 was in left lane WB. V2 turned right into Radison from left lane and hit V2. (7) Failure to Yield Right of Way (18) Turning Improperly
54	6/1/2016	17:30	2	Non	1	2	1	1	4	Side	V1 (bas) was in the turning lane when V2 sideswiped V1 approaching St. Paul intersection both traveling EB. (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: South Ave to State Str

Milepost: South Ave To: State Street

Date of Report: 6/20/201

P.I.N. _____

Case No. _____

File _____

By _____

Page Number 6

PERIOD STUDIED

From 4/28/2015

To: 1/31/2018

34 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
55	7/23/2015	9:55	2	Non	1	2	1	1	12,5	Side	V2 turned left from a stationary position 100' W of South Ave on Main, V1 was traveling EB and hit V2. (12) Passenger Distraction (5) Driver Inexperience
56	4/26/2016	13:41	2	PDO	1	2	1	2	69	Left	Truck was stopped in right lane WB of Main blocking view of V2 to turn left into Radison. Was struck by V1 headed WB when turn was made. (69) View Obstructed/Limited
57	2/25/2016	15:42	2	PDO	1	2	2	4	5,7	Left	V1 traveling WB in right lane. V2 traveling EB in left lane. V2 made left turn into Radison and collided with V1. (5) Driver Inexperience (7) Failure to Yield Right of Way

ACCIDENT RATE CALCULATIONS

Project Name: **East Main Street Streetscape and Pedestrain Wayfinding Phase II**
Date: 5/16/2018

Intersection Rate

(excludes midblock accidents)

E. Main St @
State Street/Exchange Blvd

# Accidents		Per Million Entering Vehicles						
38	x	1,000,000	=	38000000	=	**1.44**	**ACC/MEV**
25,514	x	2.833333 x 365		26385728			
Vehicles/Day		*# of Years* *Days/Year*					

0.93 County Rate

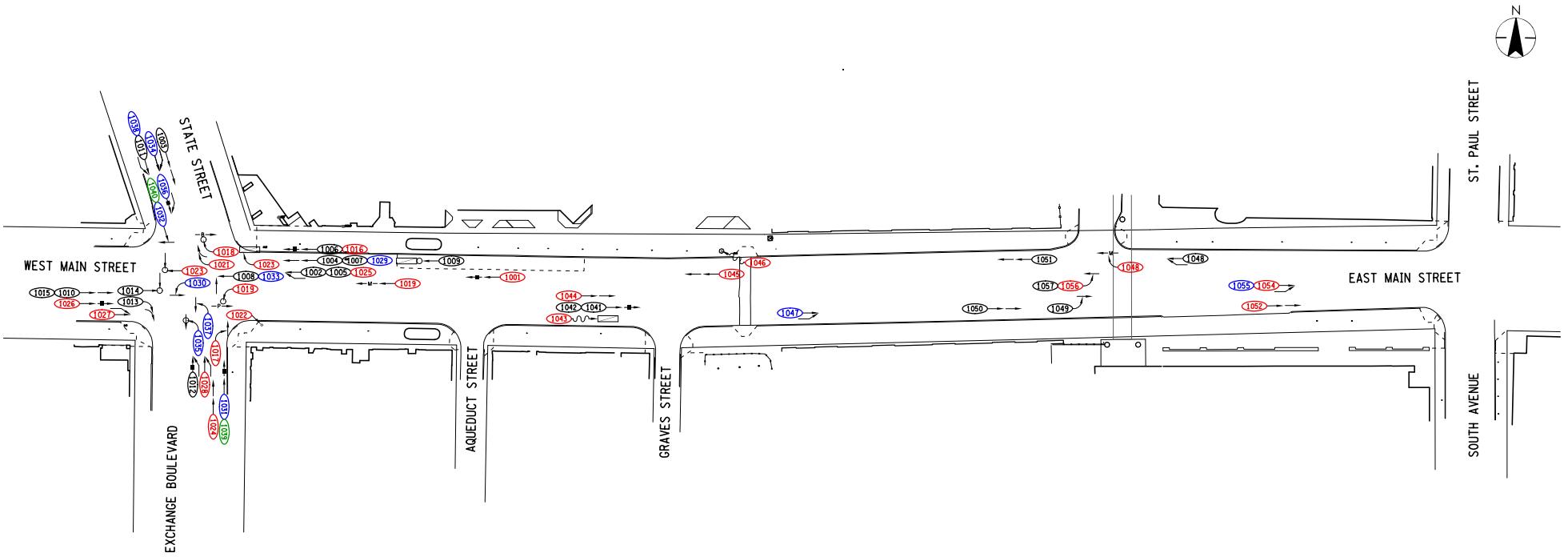
Total Link Rate

(All midblock & intersection accidents)

East Main St
State Street/Exchange Blvd. to South Ave

# Accidents		Per Million Entering Vehicles						
57	x	1,000,000	=	57000000	=	**10.08**	**ACC/MVM**
0.21	x	25,789 x 2.833333 x 365		5657298			
Length (miles)		*Vehicles/Day* *# of Years* *Days/Year*					

2.26 County Rate



ACCIDENT SYMBOLS LEGEND					
	V	VEHICLE	O	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	SP	SIGN POST

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

2018 ACCIDENT DATED 2018
2017 ACCIDENT DATED 2017
2016 ACCIDENT DATED 2016
2015 ACCIDENT DATED 2015

ACCIDENT DETAILS

TYPE OF ACCIDENT (SEE LEGEND)
XXXX
REFERENCE NUMBER OF ACCIDENT
(SEE FORM TE 213)

COMBINED ACCIDENTS FROM 04-01-2015 TO 03-31-2018

C22

Revision | By | Appd. | YY.MM.DD

Issued | By | Appd. | YY.MM.DD

Permit-Seal

Consultants

Stantec
61 Commercial St. Suite 100
Rochester, NY 14614
www.stantec.com

Client/Project
CITY OF ROCHESTER

MAIN STREET STREETSCAPE AND WAYFINDING PROJECT, PHASE II
P.I.N. 4CR0.09 DXXXXXX PC XXXXX

ROCHESTER, NEW YORK

File Name: ADP-01.DGN | SAR Dwn. | JQH Chkd. | JQH Dsgn. | 18.05.03 YY.MM.DD

Title
ACCIDENT DIAGRAM PLAN
EAST MAIN STREET

Project No.	Scale	
192800064	1" = 40'	
Drawing No.	Sheet	Revision
ADP-1	1 of 1	0

Stantec

Memo

To:	Jon Hartley Rochester, NY	From:	Rory Weilnau Rochester, NY
File:	m0001_Traffic Summary_20180620	Date:	June 20, 2018

Reference: **East Main Street Streetscape and Wayfinding Enhancements Phase II**
Traffic Summary

EXISTING CONDITIONS

Existing Traffic Counts

Manual turning movement traffic counts including pedestrian, and heavy vehicles were conducted by Stantec during the AM (7AM to 9AM) and PM (4PM to 6PM) peak periods on Tuesday April 10th 2018, Tuesday May 1st 2018, and Thursday May 17th 2018 at the following intersections:

East Main Street @

- State Street, Exchange Boulevard, and West Main Street
- Aqueduct Street
- Graves Street

Flow diagrams depicting the existing traffic conditions are shown in Figure 1. (See attached)

Heavy Vehicles

The percentage of heavy vehicles in the corridor is approximately 8% on East Main Street, 4% on State Street/Exchange Boulevard, 0% on Aqueduct Street, and 0% on Graves Street. Field observations show that the heavy vehicles counted are predominately transit busses. The southbound left turns at State/Exchange are restricted to bus traffic only during peak periods, therefore this movement has been assigned 100% heavy vehicles. All other streets and movements within the project corridor have been assigned 2% heavy vehicles.

Corridor Observations

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

State / Exchange / E Main / W Main intersection

Northbound Approach – No capacity deficiencies were observed in the AM peak, however the NB through traffic queued beyond the intersection in the PM peak for approximately 15 minutes. The cause was observed upstream near the Inner loop/I-490 on ramps. The RG&E Rochester Area Reliability Project (RARP) has begun construction activities in the area and may be a potential cause for the excessive queuing at the South/Exchange intersection.

Southbound Approach – No capacity deficiencies were observed, no issues with right turning movements were observed and no issues with left turning movements were observed.

Eastbound Approach – No capacity or operational issues were observed.

Westbound Approach – No capacity issues were observed. Several vehicles made left turns ignoring the turn restriction during the peak period.

Pedestrian Accommodations – No pedestrian concerns were observed.

Bicycle Accommodations - Very few bicycles were observed, however those that were seen used both the roadway and sidewalk to traverse the intersection.

Aqueduct / E. Main Intersection

No capacity or operational issues were observed.

Pedestrian – Pedestrians were observed crossing E Main Street at this location to change busses. The closest available crosswalk is located at State/Exchange.

Bicycle – Very few bicycles were observed, however those that were seen used both the roadway and sidewalk to traverse the intersection.

Graves / E. Main Intersection and Pedestrian Crossing

No capacity or operational issues were observed, no issues with right turning movements were observed and no issues with left turning movements were observed.

Pedestrian – Pedestrians were observed crossing E Main Street at the signalized crosswalk located just East of Graves Street. Some pedestrians actuated the signal via the pedestrian button, and others walked without actuation.

Bicycle – Very few bicycles were observed, however those that were seen used both the roadway and sidewalk to traverse the intersection.

Pedestrian Volumes

Existing pedestrian volumes were observed at State/Exchange as well as the pedestrian crossing adjacent to Graves Street. Pedestrian Volumes in the PM peak are significantly greater than those in the AM peak. See Figure 2 for the existing pedestrian volumes.

BACKGROUND GROWTH RATE

Compared to the trends outlined in the 2015 East Main Street Phase I Streetscape and Pedestrian Wayfinding Enhancements Traffic Summary by Stantec, the volumes show a continued reduction in overall growth along East Main Street. 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. Based on the Phase I Traffic summary, we have incorporated a 0.5% growth rate for analysis.

TRAFFIC VOLUME PROJECTIONS

Estimated Time of Completion (ETC)

This project is scheduled to be completed in the year 2019. Traffic projections for ETC will be determined by applying a 0.5% growth rate to the traffic counts obtained in 2018 in order to establish 2019 traffic volumes.

A flow diagram depicting the ETC (2019) Base volumes are shown in Figure 3. (See Attached).

ETC Traffic Volume Adjustments from Surrounding Projects

The City's "Midtown Rising" project will finish converting Broad Street between Chestnut Street and South Ave from one-way to two-way operation in 2018 an will introduce new eastbound traffic through the Broad Street Corridor.

Projected volumes estimated in the 2011 Labella Broad Street Two-Way Conversion Traffic analysis were used to evaluate the effects from the Broad Street 2-Way conversion at the State/Exchange/E Main Intersection. By following the patterns observed in the 2015 Stantec Study and the 2011 Labella Study, the 2019 base volumes were adjusted.

E Main Street / State Street / Exchange Blvd,

- SB thru movement on State Street – The SB thru movement was increased to account for the new EB thru movement at the Stone / Broad intersection. The existing SB thru movement was increased by 7% of the new Broad Street volume. (increase of 15 vehicles AM and 25 vehicles PM).

Clinton Avenue between East Main Street and Broad Street will also be converted to support two-way traffic. Based on the 2015 Main Street Phase I traffic summary the resulting volume distribution from Clinton Avenue is minor. The minor addition in volume has been assumed to be included in the background growth projection.

A flow diagram depicting the ETC (2019) redistribution volumes are shown in Figure 4. (See Attached).

A Flow diagram depicting the ETC (2019) design volumes are shown in Figure 5. (See Attached).

Design Year

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 0.50% growth rate to the ETC (2019) volumes in order to establish 2039 volumes.

A Flow diagram depicting the ETC+20 volumes are shown in Figure 6. (See Attached).

Additional Traffic Impacts

Two-Way Conversion of South Ave

The City anticipates converting the remaining portion of South Ave (Main St to Broad St) in the near future. This conversion would introduce a new NB movement on South Avenue between Broad Street and Main Street.

The future conversion of South Ave between Main Street and Broad Street is anticipated to include the following minor re-distribution changes for this analysis:

E Main Street / State Street/ Exchange Blvd.

- WB thru and right turn movement on E Main Street – The AM (PM) WB thru and right turn volumes have been adjusted to account for minor traffic re-distribution from the additional movements added on South Ave. The existing WB thru and right turn movements have been increased by 14% (2%) and 3% (1%) of the new South Ave NB left turn volume respectively. (Increase of 48 (9) thru vehicles and 10 (5) right turn vehicles)

- NB thru and right turn movement on Exchange Boulevard – The AM (PM) NB thru and (PM) right turn volume has been adjusted to account for traffic heading north on South Ave as an alternative to turning left on to Exchange from Broad. The existing NB thru movement has been decreased by 8% (1%) and the right turn movement has been increased by (1%) of the Broad Street WB volume. (Decrease of 28 (5) thru vehicles and (5) right turn vehicles)

**Note: The projected 2-way conversion volumes account for full build out of the Midtown Development*

A flow diagram depicting the redistributed traffic impacts are shown in Figure 7. (See Attached)

A flow diagram depicting the adjusted ETC+20 (2039) volumes are shown in Figure 8. (See Attached).

Broad Street Bridge Closure

As requested by the City, the option to remove vehicular traffic from the Broad Street Bridge and revive the existing Aqueduct as outlined in the “ROC The Riverway Project” proposal has been incorporated into this analysis. This project would result in a redistribution of vehicular traffic from Broad Street between Exchange Blvd. and South Ave to the surrounding streets.

The future Broad Street Bridge Closure is anticipated to include the following re-distribution changes:

E. Main Street / State Street / Exchange Street

- NB right on Exchange Boulevard – The NB right turn movement has been increased to account for the re-distribution of traffic from Broad Street. The new volumes were established by using the projected volumes from the LaBerge 2012 traffic study and TYlin 2012 traffic study. The right turn movement was increased by 14% in the AM and 11% in the PM of the total EB volume on E Main Street. (Increased of 54 vehicles in the AM and 62 vehicles in the PM).

- EB thru on W. Main Street – The EB Thru movement has been increased to account for the re-distribution of traffic from Broad Street. The new volumes were established by using the projected volumes from the LaBerge 2012 traffic study and TYlin 2012 traffic study. The thru movement was increased by 88% in the AM and 64% in the PM of the total EB volume on E Main Street. (Increase of 338 vehicles in the AM and 363 vehicles in the PM).

- WB thru and right turn movement on E. Main Street – The WB Thru and right turn movements have been increased to account for traffic re-distributed from Broad Street. The new volumes were established by using the projected volumes from the LaBerge traffic study and TYlin traffic study. The thru movement has been increased in the AM by 11% and 15% in the PM of the total WB volume on E Main Street. The right turn movement has been increased by 2% in the AM and 4% in the PM of the total WB volume on E Main Street. (Increase of 38 thru and 7 right turns in the AM and 69 thru and 18 right turns in the PM).

A flow diagram depicting the redistribution volumes is shown in Figure 9.

Design Year (ETC+20 – 2039) Future Conditions

Three separate future conditions for ETC+20 (2039) have been analyzed within this report. The first condition (Condition A) incorporates the full re-distribution from the 2-Way conversion of South Ave. The second (Condition B) incorporates the re-distribution for the closure of the Broad Street Bridge. Lastly, the third (Condition C) combines both the 2-Way conversion and Broad Street Bridge Closure re-distributions.

Condition A – 2 Way Conversion of South Ave Only

Traffic projections for ETC+20 (2039) will be determined by applying a 0.5% growth rate to the ETC (2019) volumes shown in Figure 5 and then modified by Figure 7 to account for the re-distributions associated with the 2-Way Conversion of South Ave.

A Flow Diagram depicting the above identified volumes are shown in Figure 8.

Condition B – Broad Street Bridge Closure Only

Traffic projections for ETC+20 (2039) will be determined by applying a 0.5% growth rate to the ETC (2019) volumes shown in Figure 5 and then modified by Figure 9 to account for the re-distributions associated with the Broad Street Bridge Closure.

A Flow Diagram depicting the above identified volumes are shown in Figure 10.

Condition C – 2 Way Conversion and Broad Street Bridge Closure

Traffic projections for ETC+20 (2039) will be determined by combining volumes from Figure 7 and Figure 9 then added to the volumes in Figure 5 to account for the re-distributions associated with both conditions.

A Flow Diagram depicting the combined volumes from Figures 7 and 9 are shown in Figure 11.

A Flow Diagram depicting the total ETC+20 volumes are shown in Figure 12.

PROPOSED ALTERNATIVES

The following alternatives are being considered for this project:

- No Build Alternative – 5 Lane Section – This alternative assumes the project will not make any changes to the current lane geometry as a result of the project future operations.

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

- Alternative 2 – 5 Lane Section with on Street Parking – This alternative will maintain the existing lane configuration but will also provide recessed parking.

LEVEL OF SERVICE TABLE

The peak hour volumes for each alternative were entered into the MCDOT AM and PM Synchro model using the existing splits. The existing Level of Service (LOS) for each movement was calculated for each alternative. Synchro 10 output reports for each intersection are attached. Table 1, 2, and 3 on the following pages display a summary of the Level of Service for each alternative and design year.

Bus Only Lane

In its existing configuration and in Alternative 2, E Main Street between State/Exchange and the E Main Street Bridge has "Bus Only" lanes in both EB and WB directions. To represent this, the Synchro Lane Utilization Factor (F_{LU}) has been modified using Synchro methodologies and the existing Bus volumes. This allows for one lane to be heavier than the other if the volume splits are known.

Adjacent Parking Lane

To account for the future on street parking bays, the Synchro models were configured to represent an average number of parking maneuvers. Based on the storage size of each bay, it was estimated that the maneuvers per hour would be equal to the maximum number of parking spaces for this analysis.

TABLE 1

Level of Service (LOS) Summary: No Build Alternative
East Main Street Streetscape and Wayfinding Enhancement Phase II

Intersection	Approach & Movement	Existing (2018)										ETC (2019) No Build Base									
		AM LOS					PM LOS					AM LOS					PM LOS				
		V/C Ratio	Delay (s)	LOS	50th Queue (ft)	95th Queue (ft)	V/C Ratio	Delay (s)	LOS	50th Queue (ft)	95th Queue (ft)	V/C Ratio	Delay (s)	LOS	50th Queue (ft)	95th Queue (ft)	V/C Ratio	Delay (s)	LOS	50th Queue (ft)	95th Queue (ft)
State Street and Exchange Boulevard	EB THRU/LT/RT	0.4	9.9	A	140	215	0.5	14	B	86	115	0.4	9.9	A	42	57	0.5	14	B	87	116
	WB THRU/LT/RT	0.4	12	B	56	52	0.5	13	B	86	113	0.4	12	B	61	85	0.5	13	B	86	115
	NB THRU/LT/RT	0.4	13	B	204	260	0.5	15	B	121	145	0.4	13	B	81	108	0.5	15	B	122	146
	SB THRU/LT/RT	0.5	19	B	159	224	0.6	19	B	124	144	0.5	19	B	126	155	0.6	19	B	124	144
	OVERALL	**-**	**14**	**B**	**-**	**-**	**-**	**16**	**B**	**-**	**-**	**-**	**14**	**B**	**-**	**-**	**-**	**16**	**B**	**-**	**-**
Aqueduct Street	EB THRU/RT	-	0	A	-	-	-	0	A	-	-	-	0	A	-	-	-	0	A	-	-
	WB LEFT	-	8.4	A	-	-	-	9	A	-	-	-	8.4	A	-	-	-	9	A	-	-
	WB THRU	-	0.3	A	-	-	-	0.1	A	-	-	-	0.3	A	-	-	-	0.1	A	-	-
	NB LT/RT	-	9.9	A	-	-	-	11	B	-	-	-	9.9	A	-	-	-	11	B	-	-
	OVERALL	**-**	**0.2**	**A**	**-**	**-**	**-**	**0.3**	**A**	**-**	**-**	**-**	**0.2**	**A**	**-**	**-**	**-**	**0.3**	**A**	**-**	**-**
Graves Street	EB THRU	-	0	A	-	-	-	0	A	-	-	-	0	A	-	-	-	0	A	-	-
	WB THRU	-	0	A	-	-	-	0	A	-	-	-	0	A	-	-	-	0	A	-	-
	NB LT/RT	-	12	B	-	-	-	14	B	-	-	-	12	B	-	-	-	14	B	-	-
	OVERALL	**-**	**0.2**	**A**	**-**	**-**	**-**	**0.4**	**A**	**-**	**-**	**-**	**0.2**	**A**	**-**	**-**	**-**	**0.4**	**A**	**-**	**-**

Intersection	Approach & Movement	ETC (2019) No Build Broad Street 2-Way Conversion										ETC+20 (2039) No Build Base									
		AM LOS					PM LOS					AM LOS					PM LOS				
		V/C Ratio	Delay (s)	LOS	50th Queue (ft)	95th Queue (ft)	V/C Ratio	Delay (s)	LOS	50th Queue (ft)	95th Queue (ft)	V/C Ratio	Delay (s)	LOS	50th Queue (ft)	95th Queue (ft)	V/C Ratio	Delay (s)	LOS	50th Queue (ft)	95th Queue (ft)
State Street and Exchange Boulevard	EB THRU/LT/RT	0.4	9.9	A	42	57	0.5	14	B	87	116	0.4	11	B	49	65	0.6	15	B	96	315
	WB THRU/LT/RT	0.4	12	B	61	84	0.5	13	B	86	115	0.4	12	B	69	65	0.6	15	B	102	146
	NB THRU/LT/RT	0.4	13	B	81	108	0.5	15	B	122	146	0.5	13	B	90	118	0.6	16	B	140	166
	SB THRU/LT/RT	0.5	19	B	129	158	0.6	20	B	198	243	0.6	20	B	142	172	0.7	22	C	230	280
	OVERALL	**-**	**14**	**B**	**-**	**-**	**-**	**16**	**B**	**-**	**-**	**-**	**15**	**B**	**-**	**-**	**-**	**18**	**B**	**-**	**-**
Aqueduct Street	EB THRU/RT	-	0	A	-	-	-	0	A	-	-	-	0	A	-	-	-	0	A	-	-
	WB LEFT	-	8.4	A	-	-	-	9	A	-	-	-	8.5	A	-	-	-	9.2	A	-	-
	WB THRU	-	0.3	A	-	-	-	0.1	A	-	-	-	0.3	A	-	-	-	0.1	A	-	-
	NB LT/RT	-	9.9	A	-	-	-	11	B	-	-	-	10	B	-	-	-	11	B	-	-
	OVERALL	**-**	**0.2**	**A**	**-**	**-**	**-**	**0.3**	**A**	**-**	**-**	**-**	**0.3**	**A**	**-**	**-**	**-**	**0.3**	**A**	**-**	**-**
Graves Street	EB THRU	-	0	A	-	-	-	0	A	-	-	-	0	A	-	-	-	0	A	-	-
	WB THRU	-	0	A	-	-	-	0	A	-	-	-	0	A	-	-	-	0	A	-	-
	NB LT/RT	-	12	B	-	-	-	14	B	-	-	-	13	B	-	-	-	16	B	-	-
	OVERALL	**-**	**0.2**	**A**	**-**	**-**	**-**	**0.4**	**A**	**-**	**-**	**-**	**0.2**	**A**	**-**	**-**	**-**	**0.4**	**A**	**-**	**-**

Intersection	Approach & Movement	ETC+20 (2039) No Build Condition A										ETC+20 (2039) No Build Condition B									
		AM LOS					PM LOS					AM LOS (*)					PM LOS (*)				
		V/C Ratio	Delay (s)	LOS	50th Queue (ft)	95th Queue (ft)	V/C Ratio	Delay (s)	LOS	50th Queue (ft)	95th Queue (ft)	V/C Ratio	Delay (s)	LOS	50th Queue (ft)	95th Queue (ft)	V/C Ratio	Delay (s)	LOS	50th Queue (ft)	95th Queue (ft)
State Street and Exchange Boulevard	EB THRU/LT/RT	0.4	11	B	55	72	0.6	16	B	97	327	0.8	21	C	188	458	0.9	31	C	448	#676
	WB THRU/LT/RT	0.5	13	B	84	111	0.6	15	B	105	145	0.4	12	B	85	55	0.6	13	B	119	74
	NB THRU/LT/RT	0.4	13	B	86	113	0.6	16	B	141	167	0.6	16	B	108	140	0.7	21	C	182	214
	SB THRU/LT/RT	0.6	20	B	142	172	0.7	22	C	230	280	0.6	24	C	214	280	0.8	33	C	263	323
	OVERALL	**-**	**15**	**B**	**-**	**-**	**-**	**18**	**B**	**-**	**-**	**-**	**19**	**B**	**-**	**-**	**-**	**25**	**C**	**-**	**-**
Aqueduct Street	EB THRU/RT	-	0	A	-	-	-	0	A	-	-	-	0	A	-	-	-	0	A	-	-
	WB LEFT	-	8.5	A	-	-	-	9.3	A	-	-	-	10	B	-	-	-	11	B	-	-
	WB THRU	-	0	A	-	-	-	0.1	A	-	-	-	0.3	A	-	-	-	0.2	A	-	-
	NB LT/RT	-	10	B	-	-	-	12	B	-	-	-	12	B	-	-	-	14	B	-	-
	OVERALL	**-**	**0.2**	**A**	**-**	**-**	**-**	**0.3**	**A**	**-**	**-**	**-**	**0.2**	**A**	**-**	**-**	**-**	**0.3**	**A**	**-**	**-**
Graves Street	EB THRU	-	0	A	-	-	-	0	A	-	-	-	0	A	-	-	-	0	A	-	-
	WB THRU	-	0	A	-	-	-	0	A	-	-	-	0	A	-	-	-	0	A	-	-
	NB LT/RT	-	13	B	-	-	-	16	C	-	-	-	20	C	-	-	-	28	D	-	-
	OVERALL	**-**	**0.2**	**A**	**-**	**-**	**-**	**0.4**	**A**	**-**	**-**	**-**	**0.2**	**A**	**-**	**-**	**-**	**0.5**	**A**	**-**	**-**

Intersection	Approach & Movement	ETC+20 (2039) No Build Condition C									
		AM LOS (*)					PM LOS (*)				
		V/C Ratio	Delay (s)	LOS	50th Queue (ft)	95th Queue (ft)	V/C Ratio	Delay (s)	LOS	50th Queue (ft)	95th Queue (ft)
State Street and Exchange Boulevard	EB THRU/LT/RT	0.8	24	C	349	480	0.9	35	C	476	#717
	WB THRU/LT/RT	0.5	15	B	103	176	0.6	14	B	122	163
	NB THRU/LT/RT	0.5	16	B	103	134	0.7	21	C	181	213
	SB THRU/LT/RT	0.6	23	C	210	274	0.8	33	C	263	323
	OVERALL	**-**	**20**	**B**	**-**	**-**	**-**	**27**	**C**	**-**	**-**
Aqueduct Street	EB THRU/RT	-	0	A	-	-	-	0	A	-	-
	WB LEFT	-	10	B	-	-	-	11	B	-	-
	WB THRU	-	0.3	A	-	-	-	0.2	A	-	-
	NB LT/RT	-	12	B	-	-	-	13	B	-	-
	OVERALL	**-**	**0.2**	**A**	**-**	**-**	**-**	**0.3**	**A**	**-**	**-**
Graves Street	EB THRU	-	0	A	-	-	-	0	A	-	-
	WB THRU	-	0	A	-	-	-	0	A	-	-
	NB LT/RT	-	20	C	-	-	-	22	C	-	-
	OVERALL	**-**	**0.2**	**A**	**-**	**-**	**-**	**0.4**	**A**	**-**	**-**

(*) - Existing split times have been adjusted/optimized for State/Exchange/Main

TABLE 2

Level of Service (LOS) Summary: Alternative 1
East Main Street Streetscape and Wayfinding Enhancement Phase II

ETC (2019) Build Alternative 1

Intersection	Approach & Movement	AM LOS					PM LOS				
		V/C Ratio	Delay (s)	LOS	50th Queue (ft)	95th Queue (ft)	V/C Ratio	Delay (s)	LOS	50th Queue (ft)	95th Queue (ft)
State Street and Exchange Boulevard	EB THRU/LT/RT	0.5	12	B	58	78	0.6	17	B	121	161
	WB LEFT	0	8.7	A	2	3	0	6	A	2	2
	WB THRU/RT	0.6	16	B	85	120	0.8	23	C	268	#336
	NB THRU/LT/RT	0.4	13	B	81	108	0.5	15	B	124	148
	SB THRU/LT/RT	0.5	19	B	126	154	0.6	20	B	141	162
	OVERALL	**-**	**15**	**B**	**-**	**-**	**-**	**19**	**B**	**-**	**-**
Aqueduct Street	EB THRU/RT	-	0	A	-	-	-	0	A	-	-
	WB LEFT	-	8.3	A	-	-	-	9	A	-	-
	WB THRU	-	0.3	A	-	-	-	0.1	A	-	-
	NB LT/RT	-	11	B	-	-	-	13	B	-	-
	OVERALL	**-**	**0.3**	**A**	**-**	**-**	**-**	**0.3**	**A**	**-**	**-**
Graves Street	EB THRU	-	0	A	-	-	-	0	A	-	-
	WB THRU	-	0	A	-	-	-	0	A	-	-
	NB LT/RT	-	14	B	-	-	-	18	C	-	-
	OVERALL	**-**	**0.2**	**A**	**-**	**-**	**-**	**0.2**	**A**	**-**	**-**

ETC+20 (2039) Alternative 1 Base

Intersection	Approach & Movement	AM LOS					PM LOS				
		V/C Ratio	Delay (s)	LOS	50th Queue (ft)	95th Queue (ft)	V/C Ratio	Delay (s)	LOS	50th Queue (ft)	95th Queue (ft)
State Street and Exchange Boulevard	EB THRU/LT/RT	0.5	13	B	66	88	0.6	17	B	110	373
	WB LEFT	0	9.3	A	2	2	0	8	A	1	2
	WB THRU/RT	0.6	17	B	92	128	0.9	29	C	110	#474
	NB THRU/LT/RT	0.5	13	B	90	118	0.6	16	B	146	174
	SB THRU/LT/RT	0.6	20	B	142	172	0.7	22	C	168	192
	OVERALL	**-**	**16**	**B**	**-**	**-**	**-**	**20**	**C**	**-**	**-**
Aqueduct Street	EB THRU/RT	-	0	A	-	-	-	0	A	-	-
	WB LEFT	-	8.5	A	-	-	-	9.2	A	-	-
	WB THRU	-	0.3	A	-	-	-	0.1	A	-	-
	NB LT/RT	-	11	B	-	-	-	14	B	-	-
	OVERALL	**-**	**0.3**	**A**	**-**	**-**	**-**	**0.3**	**A**	**-**	**-**
Graves Street	EB THRU	-	0	A	-	-	-	0	A	-	-
	WB THRU	-	0	A	-	-	-	0	A	-	-
	NB LT/RT	-	14	B	-	-	-	20	C	-	-
	OVERALL	**-**	**0.2**	**A**	**-**	**-**	**-**	**0.2**	**A**	**-**	**-**

ETC+20 (2039) Alternative 1 Condition A

Intersection	Approach & Movement	AM LOS					PM LOS				
		V/C Ratio	Delay (s)	LOS	50th Queue (ft)	95th Queue (ft)	V/C Ratio	Delay (s)	LOS	50th Queue (ft)	95th Queue (ft)
State Street and Exchange Boulevard	EB THRU/LT/RT	0.5	13	B	66	88	0.6	14	B	103	135
	WB LEFT	0	8.7	A	2	3	0	8	A	2	1
	WB THRU/RT	0.7	20	C	106	156	0.8	24	C	134	#203
	NB THRU/LT/RT	0.4	13	B	86	113	0.6	19	B	157	186
	SB THRU/LT/RT	0.6	20	B	142	172	0.8	29	C	252	307
	OVERALL	**-**	**17**	**B**	**-**	**-**	**-**	**22**	**C**	**-**	**-**
Aqueduct Street	EB THRU/RT	-	0	A	-	-	-	0	A	-	-
	WB LEFT	-	8.5	A	-	-	-	9.3	A	-	-
	WB THRU	-	0.2	A	-	-	-	0.1	A	-	-
	NB LT/RT	-	11	B	-	-	-	14	B	-	-
	OVERALL	**-**	**0.2**	**A**	**-**	**-**	**-**	**0.3**	**A**	**-**	**-**
Graves Street	EB THRU	-	0	A	-	-	-	0	A	-	-
	WB THRU	-	0	A	-	-	-	0	A	-	-
	NB LT/RT	-	15	C	-	-	-	21	C	-	-
	OVERALL	**-**	**0.2**	**A**	**-**	**-**	**-**	**0.5**	**A**	**-**	**-**

ETC+20 (2039) Alternative 1 Condition B

Intersection	Approach & Movement	AM LOS					PM LOS				
		V/C Ratio	Delay (s)	LOS	50th Queue (ft)	95th Queue (ft)	V/C Ratio	Delay (s)	LOS	50th Queue (ft)	95th Queue (ft)
State Street and Exchange Boulevard	EB THRU/LT/RT	0.8	23	C	402	573	0.9	37	D	525	#802
	WB LEFT	0	8.7	A	1	2	0	7.5	A	2	1
	WB THRU/RT	0.6	17	B	111	208	0.9	18	C	160	#532
	NB THRU/LT/RT	0.6	20	B	116	148	0.7	24	C	194	228
	SB THRU/LT/RT	0.7	30	C	231	303	0.9	44	D	275	340
	OVERALL	**-**	**23**	**C**	**-**	**-**	**-**	**33**	**D**	**-**	**-**
Aqueduct Street	EB THRU/RT	-	0	A	-	-	-	0	A	-	-
	WB LEFT	-	10	B	-	-	-	11	B	-	-
	WB THRU	-	0.3	A	-	-	-	0.2	A	-	-
	NB LT/RT	-	17	C	-	-	-	23	C	-	-
	OVERALL	**-**	**0.2**	**A**	**-**	**-**	**-**	**0.4**	**A**	**-**	**-**
Graves Street	EB THRU	-	0	A	-	-	-	0	A	-	-
	WB THRU	-	0	A	-	-	-	0	A	-	-
	NB LT/RT	-	24	C	-	-	-	42	E	-	-
	OVERALL	**-**	**0.2**	**A**	**-**	**-**	**-**	**0.7**	**A**	**-**	**-**

ETC+20 (2039) Alternative 1 Condition C

Intersection	Approach & Movement	AM LOS					PM LOS				
		V/C Ratio	Delay (s)	LOS	50th Queue (ft)	95th Queue (ft)	V/C Ratio	Delay (s)	LOS	50th Queue (ft)	95th Queue (ft)
State Street and Exchange Boulevard	EB THRU/LT/RT	0.9	25	C	422	#657	1	43	D	561	#849
	WB LEFT	0	8.7	A	1	2	0	6.5	A	2	1
	WB THRU/RT	0.7	20	B	121	227	0.9	31	C	167	#564
	NB THRU/LT/RT	0.6	18	B	107	138	0.7	24	C	193	227
	SB THRU/LT/RT	0.7	28	C	226	296	0.9	42	D	275	338
	OVERALL	**-**	**23**	**C**	**-**	**-**	**-**	**35**	**D**	**-**	**-**
Aqueduct Street	EB THRU/RT	-	0	A	-	-	-	0	A	-	-
	WB LEFT	-	10	B	-	-	-	12	B	-	-
	WB THRU	-	0.3	A	-	-	-	0.1	A	-	-
	NB LT/RT	-	17	B	-	-	-	23	C	-	-
	OVERALL	**-**	**0.2**	**A**	**-**	**-**	**-**	**0.4**	**A**	**-**	**-**
Graves Street	EB THRU	-	0	A	-	-	-	0	A	-	-
	WB THRU	-	0	A	-	-	-	0	A	-	-
	NB LT/RT	-	26	D	-	-	-	46	E	-	-
	OVERALL	**-**	**0.2**	**A**	**-**	**-**	**-**	**0.8**	**A**	**-**	**-**

(*) - Existing split times have been adjusted/optimized for State/Exchange/Main

Reference: East Main Street Streetscape and Wayfinding Enhancements Phase II Traffic Summary

TABLE 3

Level of Service (LOS) Summary: Alternative 2
East Main Street Streetscape and Wayfinding Enhancement Phase II

ETC (2019) Build Alternative 2

Intersection	Approach & Movement	AM LOS V/C Ratio	AM LOS Delay (s)	AM LOS LOS	AM LOS 50th Queue (ft)	AM LOS 95th Queue (ft)	PM LOS V/C Ratio	PM LOS Delay (s)	PM LOS LOS	PM LOS 50th Queue (ft)	PM LOS 95th Queue (ft)
State Street and Exchange Boulevard	EB THRU/LT/RT	0.4	10	B	45	60	0.5	14	B	87	116
	WB THRU/LT/RT	0.4	12	B	62	87	0.5	13	B	86	115
	WB LEFT	-	-	-	-	-	-	-	-	-	-
	WB THRU/RT	-	-	-	-	-	-	-	-	-	-
	NB THRU/LT/RT	0.4	13	B	81	108	0.5	15	B	122	146
	SB THRU/LT/RT	0.5	19	B	132	161	0.6	20	B	198	243
	OVERALL	**-**	**19**	**B**	**-**	**-**	**-**	**16**	**B**	**-**	**-**
Aqueduct Street	EB THRU/RT	-	0	A	-	-	-	0	A	-	-
	WB LEFT	-	8.4	A	-	-	-	9	A	-	-
	WB THRU	-	0.3	A	-	-	-	0.1	A	-	-
	NB LT/RT	-	9.9	A	-	-	-	11	B	-	-
	OVERALL	**-**	**0.2**	**A**	**-**	**-**	**-**	**0.3**	**A**	**-**	**-**
Graves Street	EB THRU	-	0	A	-	-	-	0	A	-	-
	WB THRU	-	0	A	-	-	-	0	A	-	-
	NB LT/RT	-	12	B	-	-	-	14	B	-	-
	OVERALL	**-**	**0.2**	**A**	**-**	**-**	**-**	**0.4**	**A**	**-**	**-**

ETC+20 (2039) Alternative 2 Base

Intersection	Approach & Movement	AM LOS V/C Ratio	AM LOS Delay (s)	AM LOS LOS	AM LOS 50th Queue (ft)	AM LOS 95th Queue (ft)	PM LOS V/C Ratio	PM LOS Delay (s)	PM LOS LOS	PM LOS 50th Queue (ft)	PM LOS 95th Queue (ft)
State Street and Exchange Boulevard	EB THRU/LT/RT	0.4	11	B	49	65	0.6	15	B	96	315
	WB THRU/LT/RT	0.4	12	B	69	65	0.6	15	B	102	146
	WB LEFT	-	-	-	-	-	-	-	-	-	-
	WB THRU/RT	-	-	-	-	-	-	-	-	-	-
	NB THRU/LT/RT	0.5	13	B	90	118	0.6	16	B	140	166
	SB THRU/LT/RT	0.6	20	B	142	172	0.7	22	C	230	280
	OVERALL	**-**	**15**	**B**	**-**	**-**	**-**	**18**	**B**	**-**	**-**
Aqueduct Street	EB THRU/RT	-	0	A	-	-	-	0	A	-	-
	WB LEFT	-	8.5	A	-	-	-	9.2	A	-	-
	WB THRU	-	0.3	A	-	-	-	0.1	A	-	-
	NB LT/RT	-	10	B	-	-	-	11	B	-	-
	OVERALL	**-**	**0.3**	**A**	**-**	**-**	**-**	**0.3**	**A**	**-**	**-**
Graves Street	EB THRU	-	0	A	-	-	-	0	A	-	-
	WB THRU	-	0	A	-	-	-	0	A	-	-
	NB LT/RT	-	13	B	-	-	-	16	C	-	-
	OVERALL	**-**	**0.2**	**A**	**-**	**-**	**-**	**0.4**	**A**	**-**	**-**

ETC+20 (2039) Alternative 2 Condition A

Intersection	Approach & Movement	AM LOS V/C Ratio	AM LOS Delay (s)	AM LOS LOS	AM LOS 50th Queue (ft)	AM LOS 95th Queue (ft)	PM LOS V/C Ratio	PM LOS Delay (s)	PM LOS LOS	PM LOS 50th Queue (ft)	PM LOS 95th Queue (ft)
State Street and Exchange Boulevard	EB THRU/LT/RT	0.4	11	B	55	72	0.6	16	B	97	327
	WB THRU/LT/RT	0.5	13	B	84	111	0.6	15	B	105	145
	WB LEFT	-	-	-	-	-	-	-	-	-	-
	WB THRU/RT	-	-	-	-	-	-	-	-	-	-
	NB THRU/LT/RT	0.4	13	B	86	113	0.6	16	B	141	167
	SB THRU/LT/RT	0.6	20	B	142	172	0.7	22	C	230	280
	OVERALL	**-**	**15**	**B**	**-**	**-**	**-**	**18**	**B**	**-**	**-**
Aqueduct Street	EB THRU/RT	-	0	A	-	-	-	0	A	-	-
	WB LEFT	-	8.5	A	-	-	-	9.3	A	-	-
	WB THRU	-	0.2	A	-	-	-	0	A	-	-
	NB LT/RT	-	10	B	-	-	-	12	B	-	-
	OVERALL	**-**	**0.2**	**A**	**-**	**-**	**-**	**0.3**	**A**	**-**	**-**
Graves Street	EB THRU	-	0	A	-	-	-	0	A	-	-
	WB THRU	-	0	A	-	-	-	0	A	-	-
	NB LT/RT	-	13	B	-	-	-	16	C	-	-
	OVERALL	**-**	**0.2**	**A**	**-**	**-**	**-**	**0.4**	**A**	**-**	**-**

ETC+20 (2039) Alternative 2 Condition B

Intersection	Approach & Movement	AM LOS V/C Ratio	AM LOS Delay (s)	AM LOS LOS	AM LOS 50th Queue (ft)	AM LOS 95th Queue (ft)	PM LOS V/C Ratio	PM LOS Delay (s)	PM LOS LOS	PM LOS 50th Queue (ft)	PM LOS 95th Queue (ft)
State Street and Exchange Boulevard	EB THRU/LT/RT	0.8	21	C	188	458	0.9	31	C	448	#676
	WB THRU/LT/RT	0.4	12	B	85	55	0.6	13	B	119	74
	WB LEFT	-	-	-	-	-	-	-	-	-	-
	WB THRU/RT	-	-	-	-	-	-	-	-	-	-
	NB THRU/LT/RT	0.6	16	B	108	140	0.7	21	C	182	214
	SB THRU/LT/RT	0.6	24	C	214	280	0.8	33	C	263	323
	OVERALL	**-**	**19**	**B**	**-**	**-**	**-**	**25**	**C**	**-**	**-**
Aqueduct Street	EB THRU/RT	-	0	A	-	-	-	0	A	-	-
	WB LEFT	-	10	B	-	-	-	11	B	-	-
	WB THRU	-	0.3	A	-	-	-	0.2	A	-	-
	NB LT/RT	-	12	B	-	-	-	14	B	-	-
	OVERALL	**-**	**0.2**	**A**	**-**	**-**	**-**	**0.3**	**A**	**-**	**-**
Graves Street	EB THRU	-	0	A	-	-	-	0	A	-	-
	WB THRU	-	0	A	-	-	-	0	A	-	-
	NB LT/RT	-	20	C	-	-	-	28	D	-	-
	OVERALL	**-**	**0.2**	**A**	**-**	**-**	**-**	**0.5**	**A**	**-**	**-**

ETC+20 (2039) Alternative 2 Condition C

Intersection	Approach & Movement	AM LOS V/C Ratio	AM LOS Delay (s)	AM LOS LOS	AM LOS 50th Queue (ft)	AM LOS 95th Queue (ft)	PM LOS V/C Ratio	PM LOS Delay (s)	PM LOS LOS	PM LOS 50th Queue (ft)	PM LOS 95th Queue (ft)
State Street and Exchange Boulevard	EB THRU/LT/RT	0.8	24	C	349	480	0.9	35	C	476	#717
	WB THRU/LT/RT	0.5	15	B	103	176	0.6	14	B	426	89
	WB LEFT	-	-	-	-	-	-	-	-	-	-
	WB THRU/RT	-	-	-	-	-	-	-	-	-	-
	NB THRU/LT/RT	0.5	16	B	103	134	0.7	21	C	181	213
	SB THRU/LT/RT	0.6	23	C	210	274	0.8	33	C	263	323
	OVERALL	**-**	**20**	**B**	**-**	**-**	**-**	**27**	**C**	**-**	**-**
Aqueduct Street	EB THRU/RT	-	0	A	-	-	-	0	A	-	-
	WB LEFT	-	10	A	-	-	-	12	B	-	-
	WB THRU	-	0.3	A	-	-	-	0.1	A	-	-
	NB LT/RT	-	12	B	-	-	-	15	B	-	-
	OVERALL	**-**	**0.2**	**A**	**-**	**-**	**-**	**0.2**	**A**	**-**	**-**
Graves Street	EB THRU	-	0	A	-	-	-	0	A	-	-
	WB THRU	-	0	A	-	-	-	0	A	-	-
	NB LT/RT	-	20	C	-	-	-	30	D	-	-
	OVERALL	**-**	**0.2**	**A**	**-**	**-**	**-**	**0.5**	**A**	**-**	**-**

(*) - Existing split times have been adjusted/optimized for State/Exchange/Main

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ANALYSIS SUMMARY

The traffic analysis shows that both alternatives show degradation in overall level of service for the signalized intersection of E Main/State/Exchange. However, all intersections, signalized and unsignalized, continue to operate at acceptable level of service.

No Build Alternative – Existing 4 Lane Section

The no build alternative maintains the existing lane configuration which includes two (2) Westbound lanes and two (2) Eastbound lanes. Both directions designate the right most lane as a "Bus Only" lane. In ETC (2019) the effects from the Broad Street 2-way Conversion and background growth are very minor. The Level of Service remains relatively the same between the base and Broad Street 2-Way Conversion conditions. In ETC+20 (2039), the intersection LOS is primarily impacted by the Broad Street Bridge Closure (Condition B) which reallocates a significant amount of traffic to Main Street that previously used Broad Street. Under Condition C, all intersections operate within acceptable levels of service. Under Conditions B and C, the eastbound queue, estimated by both Synchro 10 and SimTraffic 10, extends beyond the Fitzhugh St/ W Main Street intersection.

Alternative 1 – 2 Lane Section with on street parking

Alternative 1 eliminates the outside lanes in both westbound and eastbound directions and adds bicycle lanes as well as on street parking bays, varying in length, to the project corridor. In ETC (2019), the intersection LOS is primarily impacted by the reduction in lanes and increasing the effects of conflicting bus stops along the corridor. However, in 2019, Alternative 1 operates similarly to the No Build Alternative in operating at adequate levels of service. In ETC+20 (2039), Alternative 1 shows the largest degradation under Condition B due to significant traffic increases along the corridor due to the closure of the Broad Street Bridge. The HCM Exhibit 10-7 outlines that for a Class III and Class IV Urban Street under the 2-lane condition the service volume can reach 1680 veh/hr and 1570 veh/hr respectively for a LOS D. Under Condition C in the PM peak the total volume on E Main Street reaches 1646 veh/hr. Between Condition A and Condition C, the queue lengths increase significantly in both AM and PM peak hours. Under Conditions B and C, the eastbound queue, estimated by both Synchro 10 and SimTraffic 10, extends beyond the Fitzhugh St/ W Main intersection and the westbound queue extends beyond the signalized pedestrian crossing.

Alternative 2 – 4 Lane Section with on street parking

Alternative 2 adds on street parking bays (varying in length) to the existing lane configuration. The "Bus Only" lanes are maintained in this alternative as well. Comparable the No Build Alternative, Alternative 2 operates within the same acceptable levels of service in ETC (2019) and ETC+20 (2039). Under Conditions B and C, the eastbound queue, estimated by both Synchro 10 and SimTraffic 10, extends beyond the Fitzhugh St/ W Main Street intersection.

RECOMMENDATIONS

The goal of the project is to provide improved conditions for pedestrians, multi-modal transportation, bicyclists, and promote economic growth within the project area. To achieve these goals, it is recommended that Alternative 1 be implemented due to the proposed bicycle lanes and on street parking.

Reference: East Main Street Streetscape and Wayfinding Enhancements Phase II Traffic Summary

Due to ROW restrictions, the improvements will need to utilize existing space occupied by sidewalk and pavement sections. From past configurations, the existing pavement section has available space for five lanes (4 thru lanes, 1 center turn lane). Based on this observation, the current sidewalk may need to be widened to define where the parking is and to narrow the travel way to provide the 3-lane section. In the future, providing a WB left turn lane and removing the left turn restriction may provide clarity to drivers not familiar with the area to travel within the central business district.

If the existing bus shelters are to remain operable under Alternative 1 it is recommended that a refuge area for buses making stops is available. Busses making stops in the only available thru lane will cause traffic flow to cease until the stop is finished.

Stantec Consulting Services Inc.

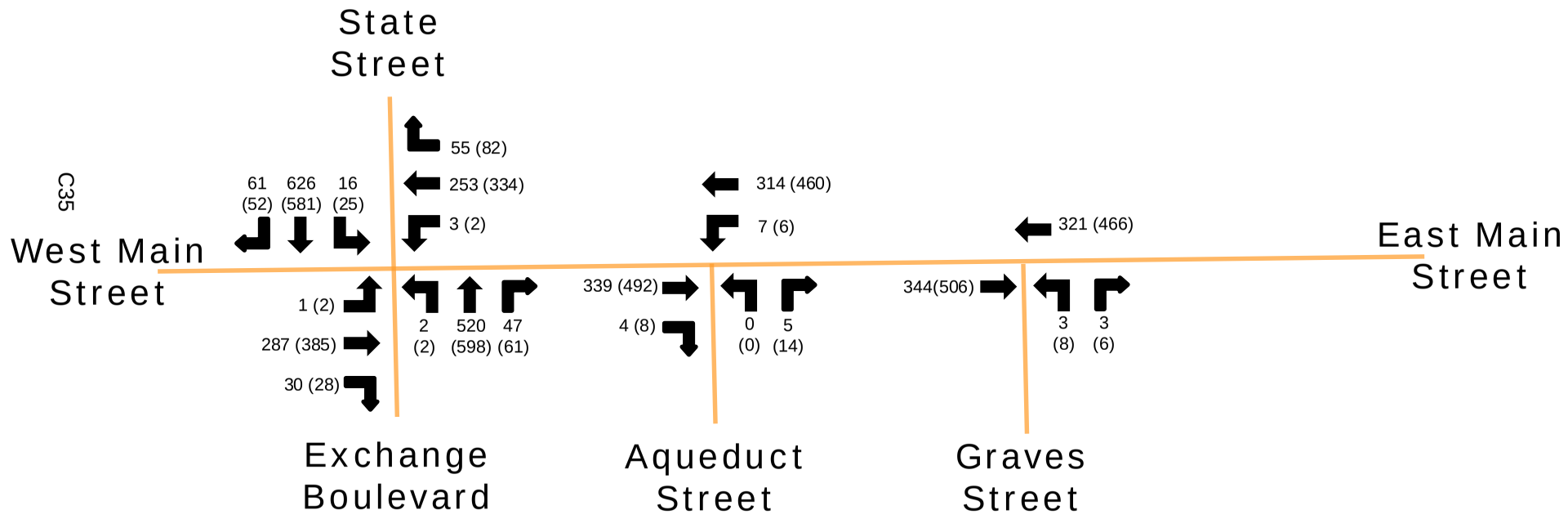
Rory Weilnau ENV SP
Transportation Engineer In Training

Phone: (585) 413-5348
Fax: (585) 272-1814
Rory.Weilnau@stantec.com

Attachment: Volume Diagrams and Synchro 10 Output Reports

c.

City of Rochester
City Project ID #: 18303, PIN 4CR009
Streetscape and Pedestrian Wayfinding Phase II
Main Street



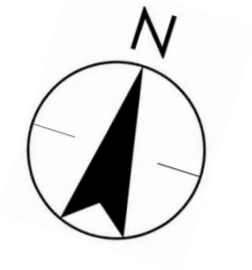


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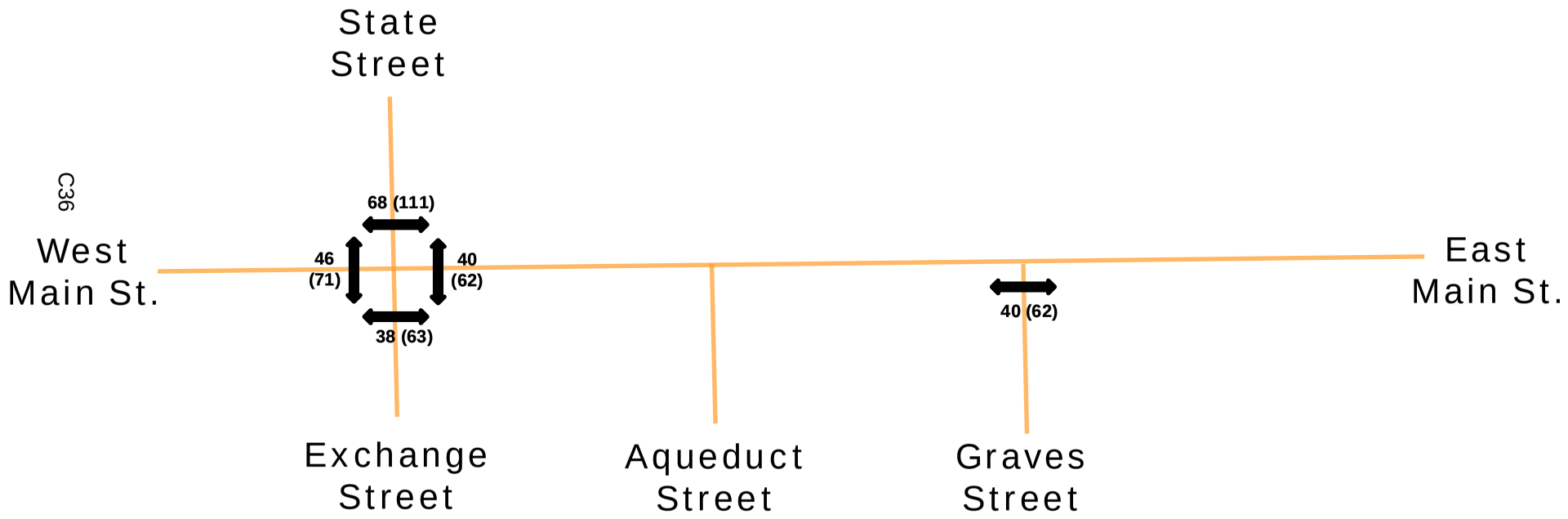
FIGURE 1

Existing (2018) Volumes
East Main St.
AM (PM)

City of Rochester
City Project ID #: 18303, PIN 4CR009
Streetscape and Pedestrian Wayfinding Phase II
Main Street



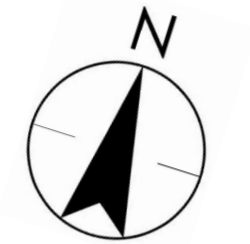


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FIGURE 2

2018 PED Volumes
East Main St.
AM (PM)

City of Rochester
City Project ID #: 18303, PIN 4CR009
Streetscape and Pedestrian Wayfinding Phase II
Main Street

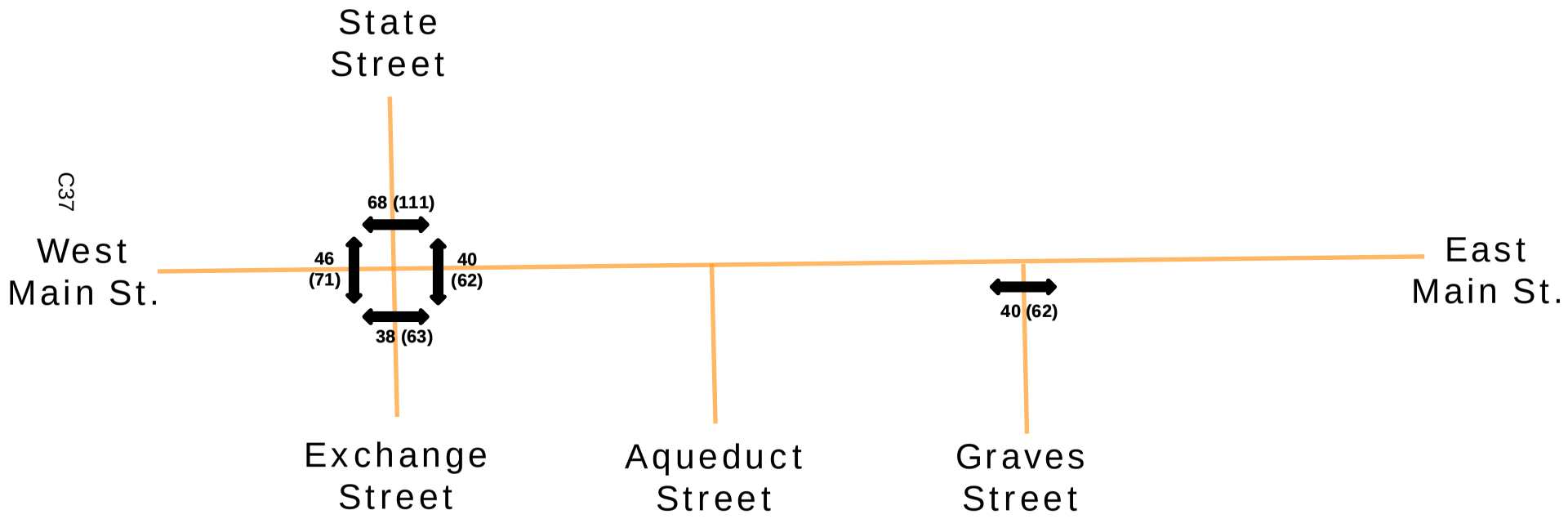

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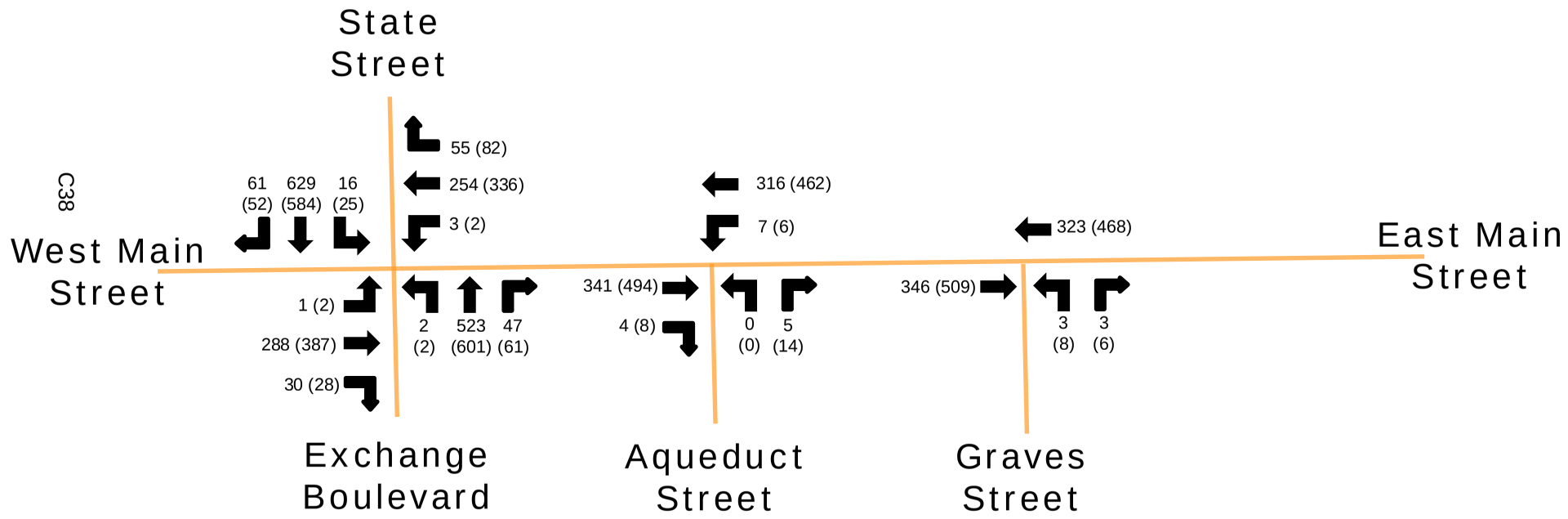
FIGURE 2

2018 PED Volumes
East Main St.
AM (PM)

City of Rochester
City Project ID #: 18303, PIN 4CR009
Streetscape and Pedestrian Wayfinding Phase II
Main Street



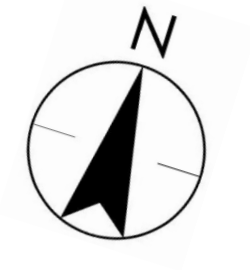


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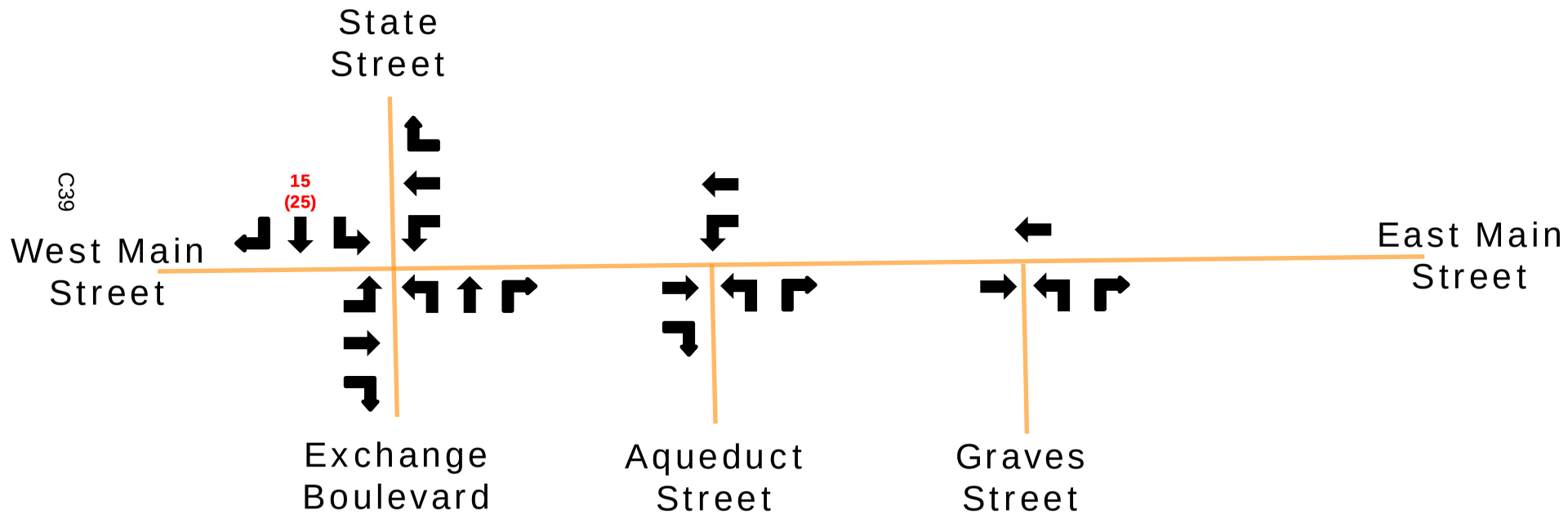
FIGURE 3

ETC (2019) Base Volumes
East Main St.
AM (PM)

City of Rochester
City Project ID #: 18303, PIN 4CR009
Streetscape and Pedestrian Wayfinding Phase II
Main Street



C39

xx = numbers in red are volumes calculated from LaBella March 2011 Broad Street two way conversion traffic study

N

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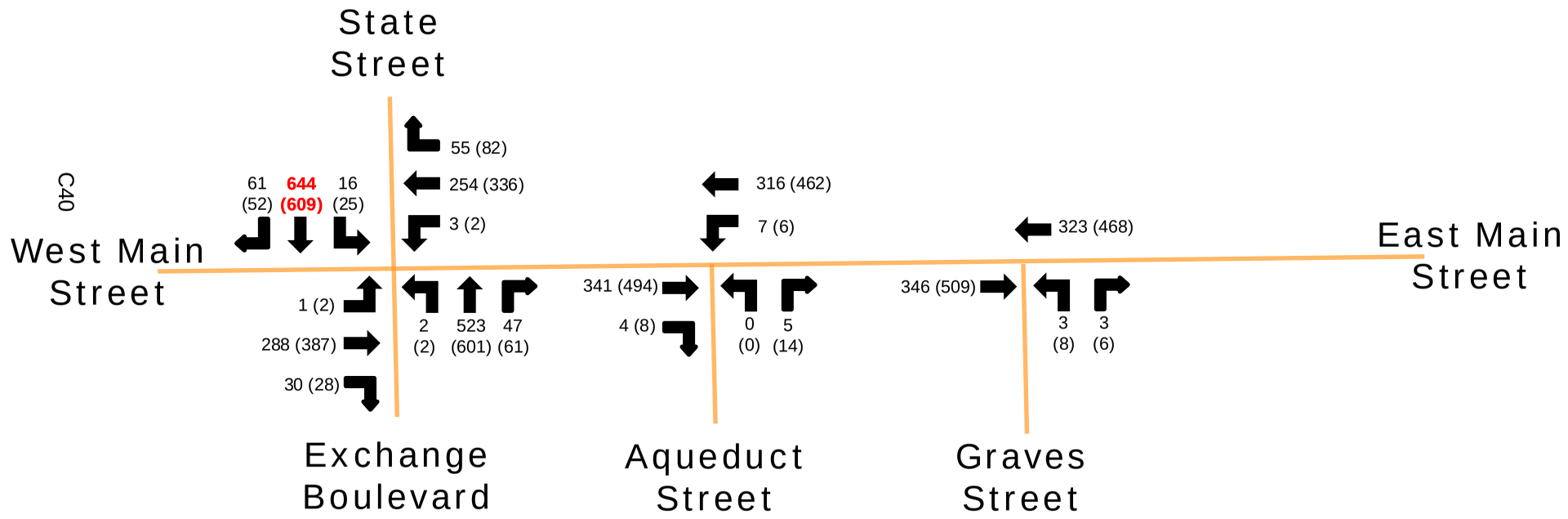
FIGURE 4

Broad Street 2 – Way Conversion
East Main St.
AM (PM)

City of Rochester
City Project ID #: 18303, PIN 4CR009
Streetscape and Pedestrian Wayfinding Phase II
Main Street



xx = numbers in red are volumes calculated from LaBella March 2011 Broad Street two way conversion traffic study

N

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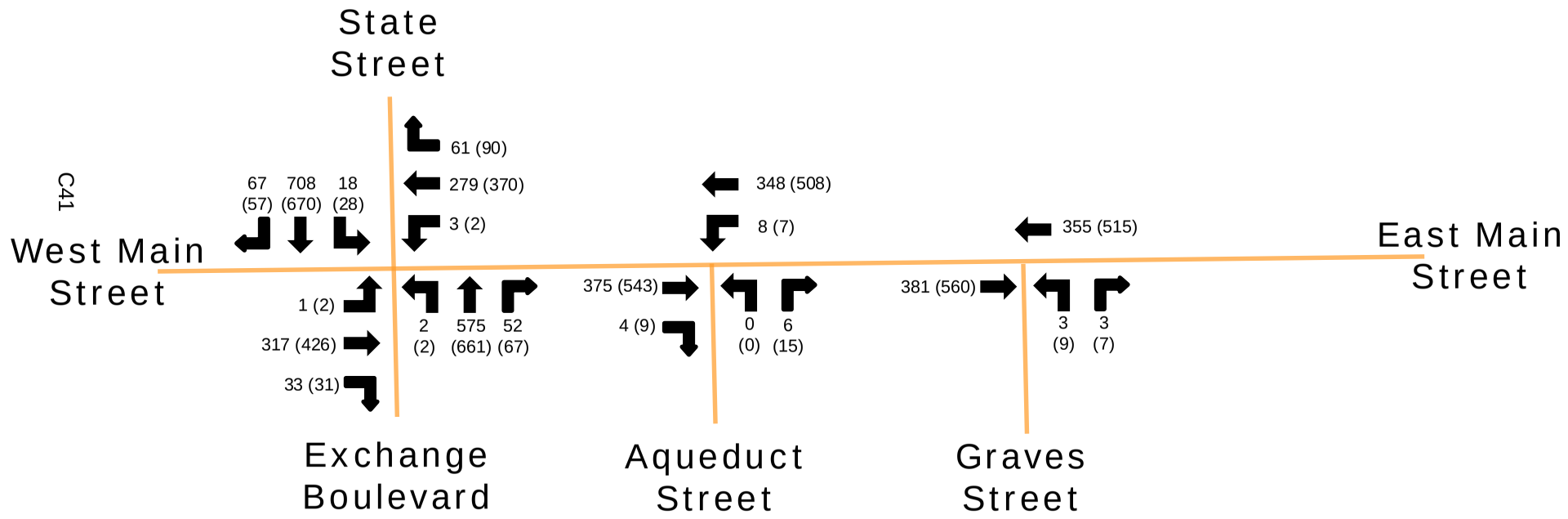
FIGURE 5

ETC (2019) Build Volumes
East Main St.
AM (PM)

City of Rochester
City Project ID #: 18303, PIN 4CR009
Streetscape and Pedestrian Wayfinding Phase II
Main Street



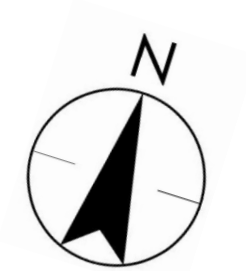


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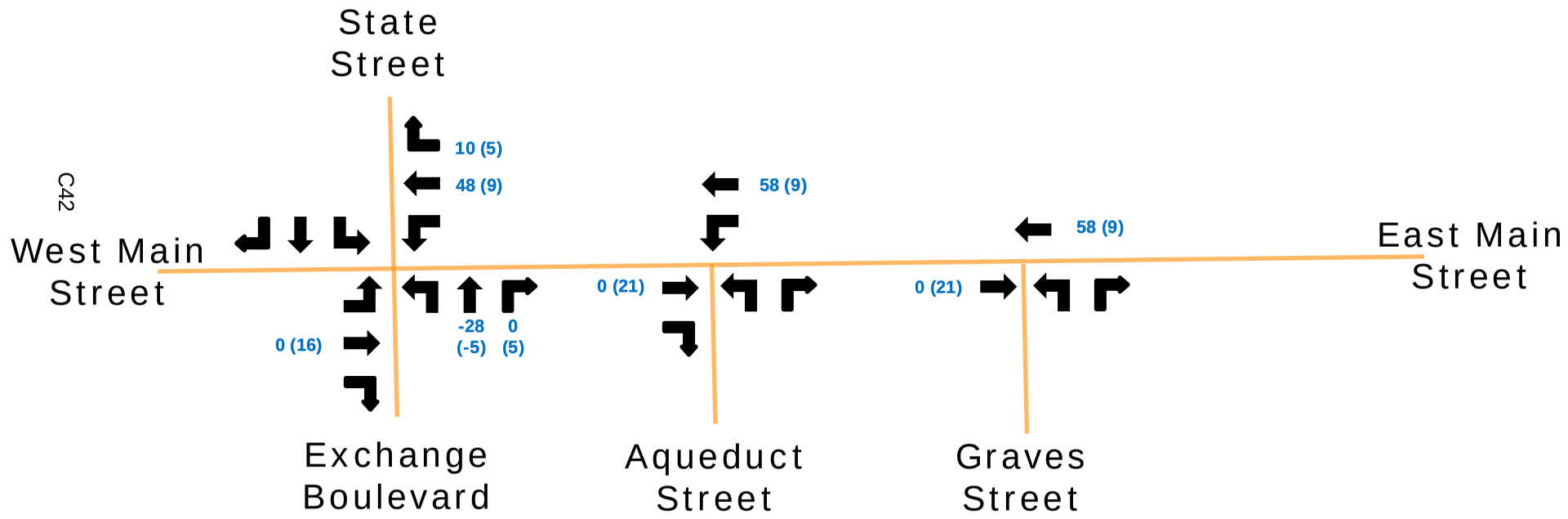
FIGURE 6

ETC+20 (2039) Base Volumes
East Main St.
AM (PM)

City of Rochester
City Project ID #: 18303, PIN 4CR009
Streetscape and Pedestrian Wayfinding Phase II
Main Street



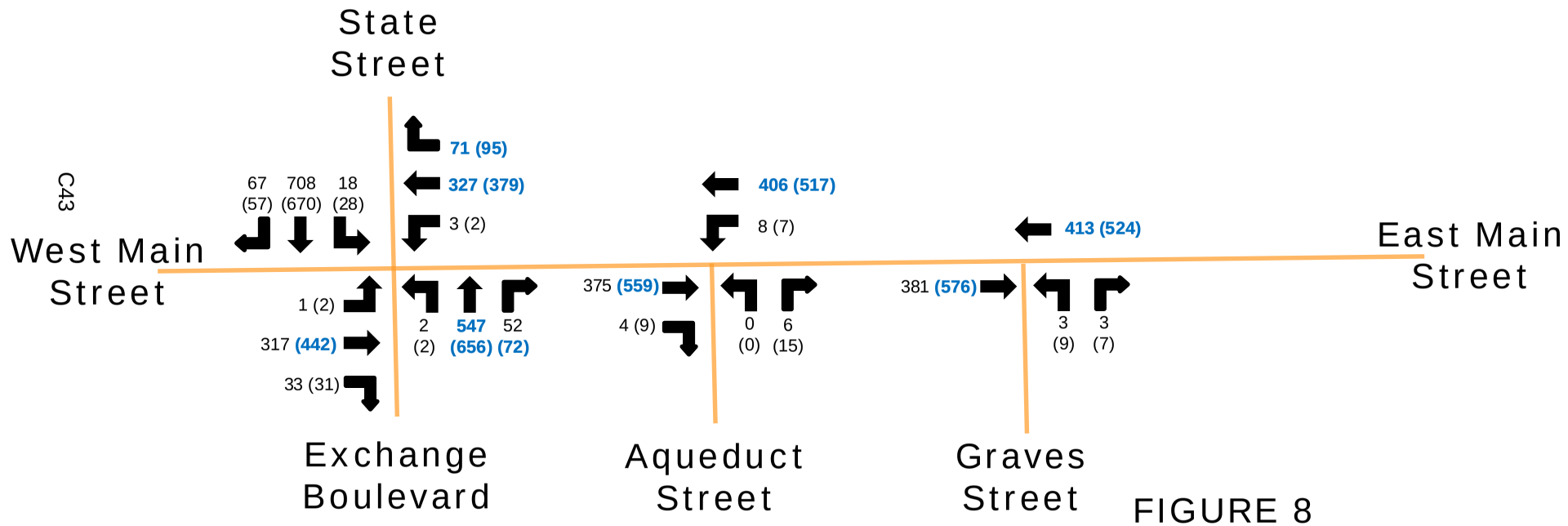
C42

xx = numbers in blue are volumes calculated from LABERGE August 2012 two way conversion traffic study

FIGURE 7

ETC+20 (2039) South Ave and Clinton Ave 2 – Way Conversion
East Main St.
AM (PM)

City of Rochester
City Project ID #: 18303, PIN 4CR009
Streetscape and Pedestrian Wayfinding Phase II
Main Street



xx = numbers in blue are volumes calculated from LABERGE August 2012 two way conversion traffic study

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FIGURE 8

ETC+20 (2039) South Ave and Clinton Ave 2 – Way Conversion Build Volumes
East Main St.
AM (PM)

City of Rochester
City Project ID #: 18303, PIN 4CR009
Streetscape and Pedestrian Wayfinding Phase II
Main Street

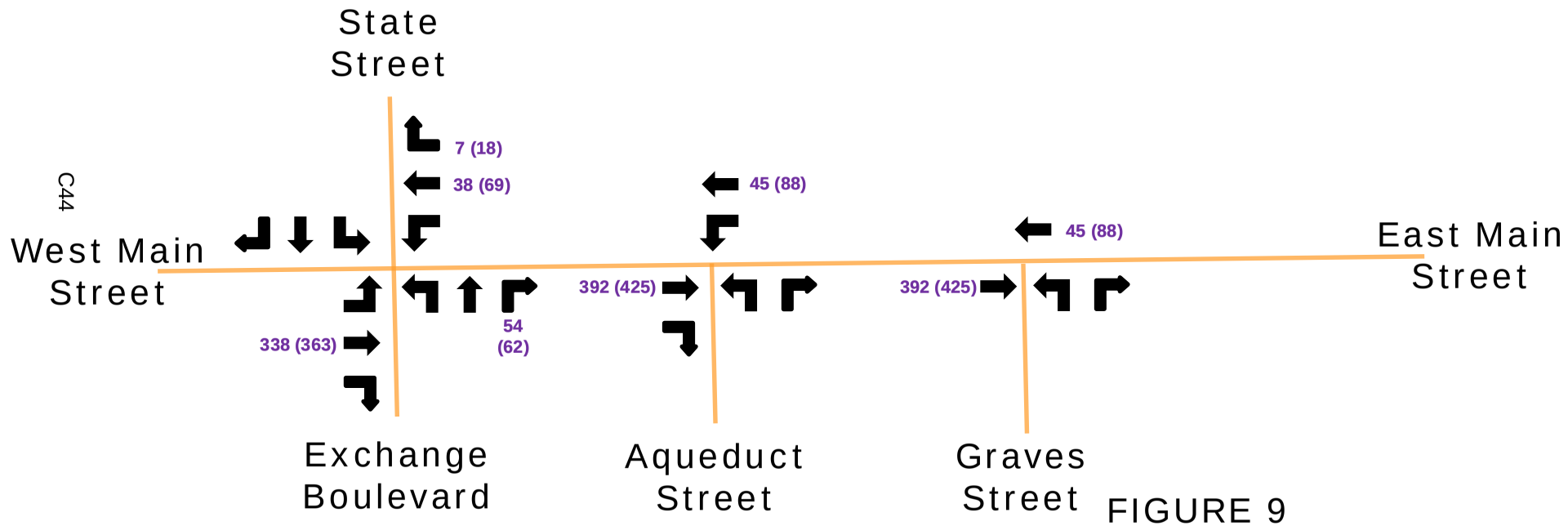

FIGURE 9

xx = numbers in purple are volumes calculated from LABERGE August 2012 two way conversion study and TYLIN January 2012 Broad Street corridor master plan

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ETC+20 (2039) Broad St. Bridge Closure w/o 2 – Way Conversion of South and Clinton Ave
East Main St.
AM (PM)

City of Rochester
City Project ID #: 18303, PIN 4CR009
Streetscape and Pedestrian Wayfinding Phase II
Main Street

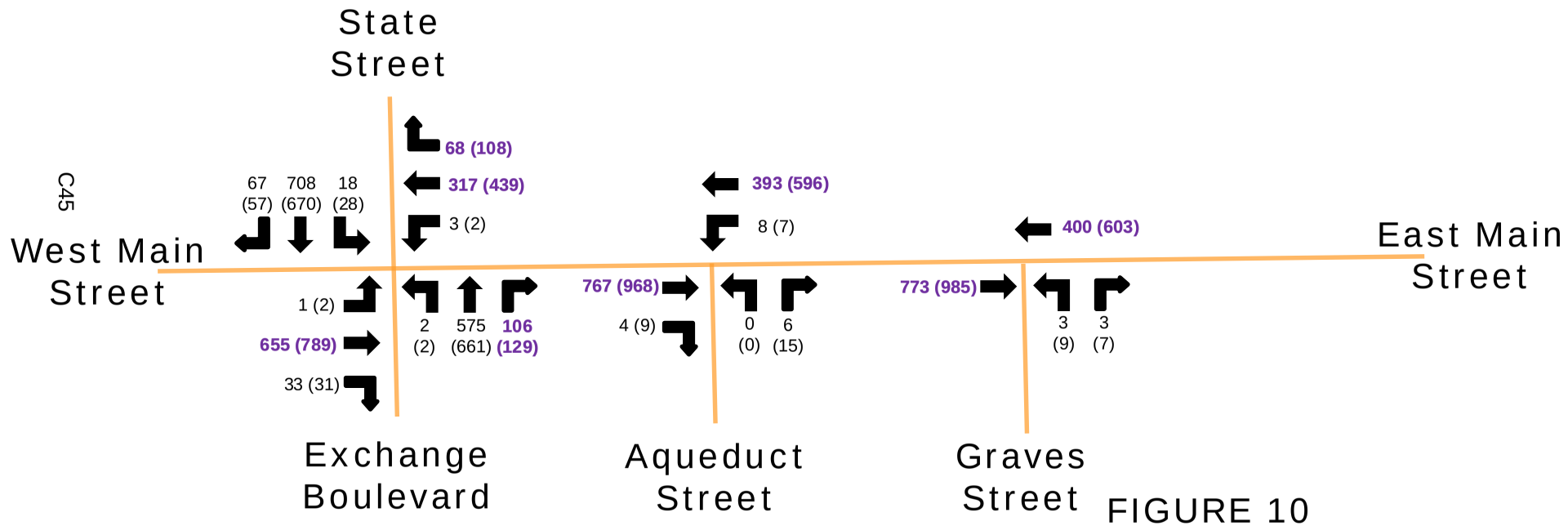


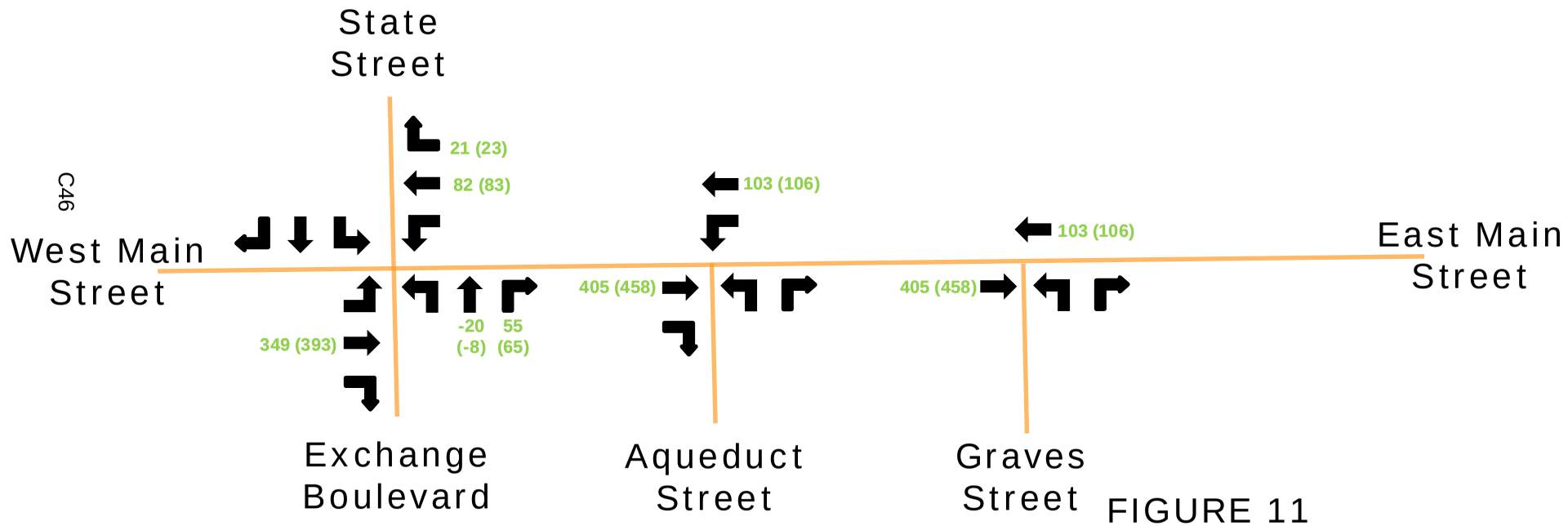
FIGURE 10

xx = numbers in purple are volumes calculated from LABERGE August 2012 two way conversion study and TYLIN January 2012 Broad Street corridor master plan

Stantec

ETC+20 (2039) Broad St. Bridge Closure w/o 2 – Way Conversion of South and Clinton Ave Build Volumes
East Main St.
AM (PM)

City of Rochester
City Project ID #: 18303, PIN 4CR009
Streetscape and Pedestrian Wayfinding Phase II
Main Street



C46

xx = numbers in green are volumes calculated from LABERGE August 2012 two-way conversion study

FIGURE 11

ETC+20 (2039) Broad St. Bridge Closure with 2 – Way Conversion of South and Clinton Ave
East Main St.
AM (PM)

City of Rochester
City Project ID #: 18303, PIN 4CR009
Streetscape and Pedestrian Wayfinding Phase II
Main Street

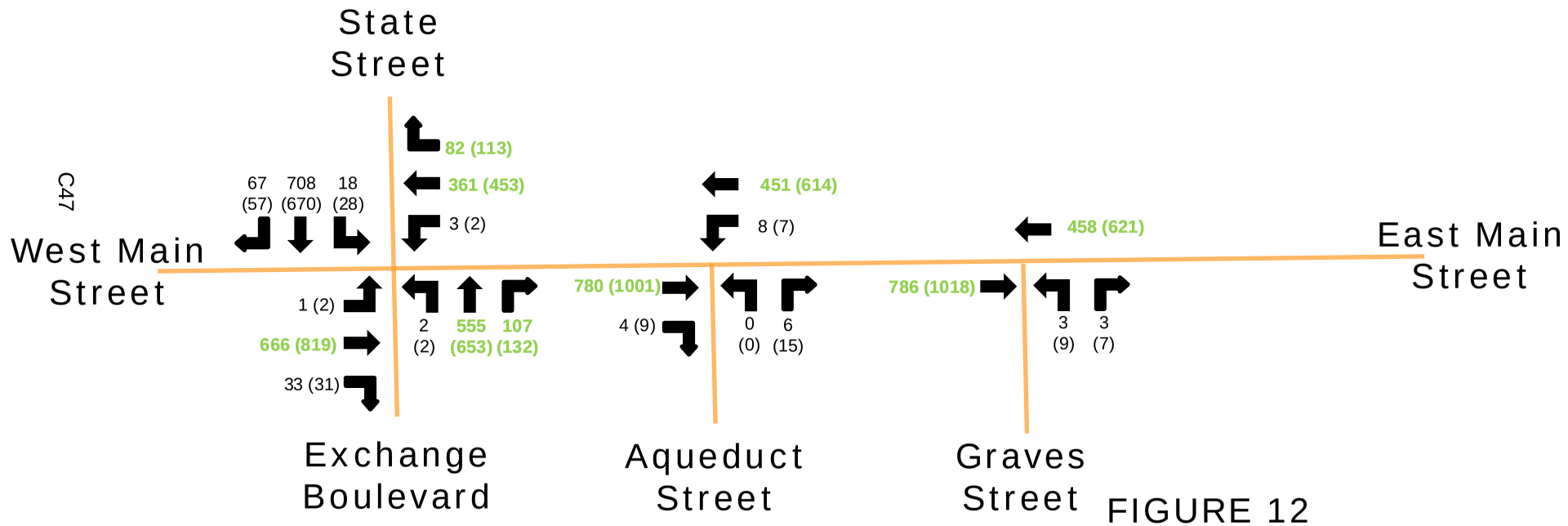


FIGURE 12

xx = numbers in green are volumes calculated from LABERGE August 2012 two-way conversion study

Stantec

ETC+20 (2039) Broad St. Bridge Closure with 2 – Way Conversion of South and Clinton Ave Build Volumes
East Main St.
AM (PM)

EXISTING 2018

SYNCHRO OUTPUT

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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	339	4	7	314	0	5
Future Volume (vph)	339	4	7	314	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	150		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			33		25	
Lane Util. Factor	*0.56	0.95	1.00	*0.55	1.00	1.00
Ped Bike Factor						
Frt	0.997				0.865	
Flt Protected			0.950			
Satd. Flow (prot)	1791	0	1770	1917	1611	0
Flt Permitted			0.950			
Satd. Flow (perm)	1791	0	1770	1917	1611	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	213			164	179	
Travel Time (s)	4.8			3.7	4.1	
Confl. Peds. (#/hr)		40	40			
Peak Hour Factor	0.88	0.50	0.58	0.86	1.00	0.63
Heavy Vehicles (%)	12%	2%	2%	9%	2%	2%
Bus Blockages (#/hr)	28	0	0	0	0	0
Adj. Flow (vph)	385	8	12	365	0	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	393	0	12	365	8	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	1.08	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 22.3%		ICU Level of Service A	
Analysis Period (min) 15			

* User Entered Value

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	339	4	7	314	0	5
Future Vol, veh/h	339	4	7	314	0	5
Conflicting Peds, #/hr	0	40	40	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	50	58	86	100	63
Heavy Vehicles, %	12	2	2	9	2	2
Mvmt Flow	385	8	12	365	0	8

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	433	0	636	237
Stage 1	-	-	-	-	429	-
Stage 2	-	-	-	-	207	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	1123	-	410	764
Stage 1	-	-	-	-	624	-
Stage 2	-	-	-	-	807	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1086	-	392	739
Mov Cap-2 Maneuver	-	-	-	-	392	-
Stage 1	-	-	-	-	597	-
Stage 2	-	-	-	-	807	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	9.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	739	-	-	1086	-
HCM Lane V/C Ratio	0.011	-	-	0.011	-
HCM Control Delay (s)	9.9	-	-	8.4	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	344	0	0	321	3	3
Future Volume (vph)	344	0	0	321	3	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	*0.56	1.00	1.00	*0.55	1.00	1.00
Frt					0.955	
Flt Protected					0.968	
Satd. Flow (prot)	1900	0	0	1917	1722	0
Flt Permitted					0.968	
Satd. Flow (perm)	1900	0	0	1917	1722	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	164			61	183	
Travel Time (s)	3.7			1.4	4.2	
Peak Hour Factor	0.89	1.00	1.00	0.85	0.38	0.75
Heavy Vehicles (%)	12%	2%	2%	9%	2%	2%
Adj. Flow (vph)	387	0	0	378	8	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	387	0	0	378	12	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	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 19.5%		ICU Level of Service A	
Analysis Period (min) 15			

* User Entered Value

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	344	0	0	321	3	3
Future Vol, veh/h	344	0	0	321	3	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	100	100	85	38	75
Heavy Vehicles, %	12	2	2	9	2	2
Mvmt Flow	387	0	0	378	8	4

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	576	194
Stage 1	-	-	-	-	387	-
Stage 2	-	-	-	-	189	-
Critical Hdwy	-	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	-	0	0	-	448	815
Stage 1	-	0	0	-	656	-
Stage 2	-	0	0	-	824	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	448	815
Mov Cap-2 Maneuver	-	-	-	-	448	-
Stage 1	-	-	-	-	656	-
Stage 2	-	-	-	-	824	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	12
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	528	-	-
HCM Lane V/C Ratio	0.023	-	-
HCM Control Delay (s)	12	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-

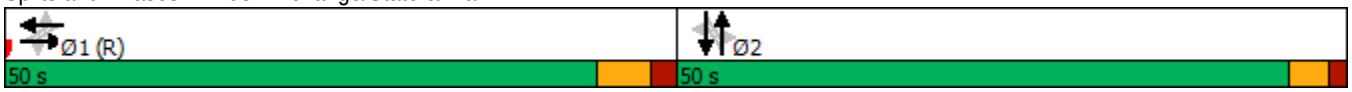
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	287	30	3	253	55	2	520	47	16	626	61
Future Volume (vph)	1	287	30	3	253	55	2	520	47	16	626	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	*0.60	0.95	0.95	*0.66	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor		1.00			0.99			0.99			0.99	
Frt		0.982			0.974			0.982			0.986	
Flt Protected		0.999			0.999			0.999			0.998	
Satd. Flow (prot)	0	2077	0	0	2078	0	0	3372	0	0	3337	0
Flt Permitted		0.951			0.941			0.946			0.917	
Satd. Flow (perm)	0	1976	0	0	1957	0	0	3192	0	0	3065	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		422			213			448			247	
Travel Time (s)		9.6			4.8			10.2			5.6	
Confl. Peds. (#/hr)	68		38	38		68	46		40	40		46
Peak Hour Factor	0.25	0.89	0.68	0.38	0.93	0.92	0.25	0.96	0.62	0.57	0.97	0.85
Heavy Vehicles (%)	2%	8%	2%	2%	8%	20%	2%	3%	13%	100%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	27	0	0	0	0	0	0	0
Adj. Flow (vph)	4	322	44	8	272	60	8	542	76	28	645	72
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	370	0	0	340	0	0	626	0	0	745	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			10			10			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	1.07	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)	50.0	50.0		50.0	50.0		29.0	29.0		29.0	29.0	
Total Split (s)	50.0	50.0		50.0	50.0		50.0	50.0		50.0	50.0	
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	
Maximum Green (s)	44.0	44.0		44.0	44.0		45.5	45.5		45.5	45.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		-3.0			-3.0			-3.0			-3.0	
Total Lost Time (s)		3.0			3.0			1.5			1.5	
Lead/Lag	Lead	Lead		Lead	Lead		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?												
Walk Time (s)	27.0	27.0		27.0	27.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	17.0	17.0		17.0	17.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		47.0			47.0			48.5			48.5	
Actuated g/C Ratio		0.47			0.47			0.48			0.48	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.40			0.37			0.40			0.50	
Control Delay		27.4			11.1			34.2			19.0	
Queue Delay		0.0			0.0			0.1			7.9	
Total Delay		27.4			11.1			34.3			26.9	
LOS		C			B			C			C	
Approach Delay		27.4			11.1			34.3			26.9	
Approach LOS		C			B			C			C	
Queue Length 50th (ft)		140			56			204			159	
Queue Length 95th (ft)		215			52			260			224	
Internal Link Dist (ft)		342			133			368			167	
Turn Bay Length (ft)												
Base Capacity (vph)		928			919			1548			1486	
Starvation Cap Reductn		0			0			0			694	
Spillback Cap Reductn		0			0			154			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.40			0.37			0.45			0.94	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green, Master Intersection			
Natural Cycle: 80			
Control Type: Pretimed			
Maximum v/c Ratio: 0.50			
Intersection Signal Delay: 26.6		Intersection LOS: C	
Intersection Capacity Utilization 74.5%		ICU Level of Service D	
Analysis Period (min) 15			

* User Entered Value

Splits and Phases: 293: Exchange/State & Main



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lane Configurations							
Traffic Volume (vph)	347	0	0	321	0	0	
Future Volume (vph)	347	0	0	321	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	*0.56	1.00	1.00	*0.55	1.00	1.00	
Ped Bike Factor							
Frt							
Flt Protected							
Satd. Flow (prot)	1900	0	0	1917	0	0	
Flt Permitted							
Satd. Flow (perm)	1900	0	0	1917	0	0	
Right Turn on Red		No				No	
Satd. Flow (RTOR)							
Link Speed (mph)	30			30	30		
Link Distance (ft)	61			608	45		
Travel Time (s)	1.4			13.8	1.0		
Confl. Peds. (#/hr)					30	30	
Peak Hour Factor	0.88	0.90	0.90	0.86	0.90	0.90	
Heavy Vehicles (%)	12%	2%	2%	9%	2%	2%	
Adj. Flow (vph)	394	0	0	373	0	0	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	394	0	0	373	0	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	10			10	0		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)		9	15		15	9	
Number of Detectors	0			0			
Detector Template							
Leading Detector (ft)	0			0			
Trailing Detector (ft)	0			0			
Turn Type	NA			NA			
Protected Phases	1			1			2
Permitted Phases							
Detector Phase	1			1			
Switch Phase							
Minimum Initial (s)	26.0			26.0			6.0
Minimum Split (s)	32.0			32.0			28.0
Total Split (s)	72.0			72.0			28.0
Total Split (%)	72.0%			72.0%			28%
Maximum Green (s)	67.0			67.0			25.0
Yellow Time (s)	4.0			4.0			3.0
All-Red Time (s)	1.0			1.0			0.0
Lost Time Adjust (s)	-2.0			-2.0			
Total Lost Time (s)	3.0			3.0			
Lead/Lag	Lead			Lead			Lag

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lead-Lag Optimize?							
Vehicle Extension (s)	2.0			2.0			2.0
Recall Mode	C-Max			C-Max			None
Walk Time (s)	19.0			19.0			7.0
Flash Dont Walk (s)	7.0			7.0			16.0
Pedestrian Calls (#/hr)	0			0			1
Act Effct Green (s)	94.2			94.2			
Actuated g/C Ratio	0.94			0.94			
v/c Ratio	0.22			0.21			
Control Delay	1.2			1.0			
Queue Delay	0.0			0.0			
Total Delay	1.2			1.0			
LOS	A			A			
Approach Delay	1.2			1.0			
Approach LOS	A			A			
Queue Length 50th (ft)	0			0			
Queue Length 95th (ft)	46			36			
Internal Link Dist (ft)	1			528	1		
Turn Bay Length (ft)							
Base Capacity (vph)	1790			1806			
Starvation Cap Reductn	0			0			
Spillback Cap Reductn	0			0			
Storage Cap Reductn	0			0			
Reduced v/c Ratio	0.22			0.21			

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: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.22			
Intersection Signal Delay: 1.1		Intersection LOS: A	
Intersection Capacity Utilization 38.0%		ICU Level of Service A	
Analysis Period (min) 15			

* User Entered Value

Splits and Phases: 294: Pedestrian Crossing & Main

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	492	8	6	460	0	14
Future Volume (vph)	492	8	6	460	0	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	150		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			33		25	
Lane Util. Factor	*0.54	0.95	1.00	*0.54	1.00	1.00
Ped Bike Factor						
Frt	0.995				0.865	
Flt Protected			0.950			
Satd. Flow (prot)	1780	0	1770	1883	1611	0
Flt Permitted			0.950			
Satd. Flow (perm)	1780	0	1770	1883	1611	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	213			164	179	
Travel Time (s)	4.8			3.7	4.1	
Confl. Peds. (#/hr)		62	62			
Peak Hour Factor	0.91	0.40	0.75	0.86	1.00	0.58
Heavy Vehicles (%)	9%	2%	2%	9%	2%	2%
Bus Blockages (#/hr)	26	0	0	0	0	0
Adj. Flow (vph)	541	20	8	535	0	24
Shared Lane Traffic (%)						
Lane Group Flow (vph)	561	0	8	535	24	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	1.07	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 23.9%		ICU Level of Service A	
Analysis Period (min) 15			

* User Entered Value

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	492	8	6	460	0	14
Future Vol, veh/h	492	8	6	460	0	14
Conflicting Peds, #/hr	0	62	62	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	40	75	86	100	58
Heavy Vehicles, %	9	2	2	9	2	2
Mvmt Flow	541	20	8	535	0	24

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	623	0	897	343
Stage 1	-	-	-	-	613	-
Stage 2	-	-	-	-	284	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	954	-	279	653
Stage 1	-	-	-	-	503	-
Stage 2	-	-	-	-	739	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	905	-	262	619
Mov Cap-2 Maneuver	-	-	-	-	262	-
Stage 1	-	-	-	-	472	-
Stage 2	-	-	-	-	739	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	11.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	619	-	-	905	-
HCM Lane V/C Ratio	0.039	-	-	0.009	-
HCM Control Delay (s)	11.1	-	-	9	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	506	0	0	466	8	6
Future Volume (vph)	506	0	0	466	8	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	*0.54	1.00	1.00	*0.54	1.00	1.00
Frt					0.942	
Flt Protected					0.972	
Satd. Flow (prot)	1883	0	0	1883	1706	0
Flt Permitted					0.972	
Satd. Flow (perm)	1883	0	0	1883	1706	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	164			61	183	
Travel Time (s)	3.7			1.4	4.2	
Peak Hour Factor	0.91	1.00	1.00	0.87	0.50	0.50
Heavy Vehicles (%)	9%	2%	2%	9%	2%	2%
Adj. Flow (vph)	556	0	0	536	16	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	556	0	0	536	28	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	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 24.0%		ICU Level of Service A	
Analysis Period (min) 15			

* User Entered Value

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	506	0	0	466	8	6
Future Vol, veh/h	506	0	0	466	8	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	100	100	87	50	50
Heavy Vehicles, %	9	2	2	9	2	2
Mvmt Flow	556	0	0	536	16	12

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	824	278
Stage 1	-	-	-	-	556	-
Stage 2	-	-	-	-	268	-
Critical Hdwy	-	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	-	0	0	-	311	719
Stage 1	-	0	0	-	538	-
Stage 2	-	0	0	-	753	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	311	719
Mov Cap-2 Maneuver	-	-	-	-	311	-
Stage 1	-	-	-	-	538	-
Stage 2	-	-	-	-	753	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	14.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	411	-	-
HCM Lane V/C Ratio	0.068	-	-
HCM Control Delay (s)	14.4	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-

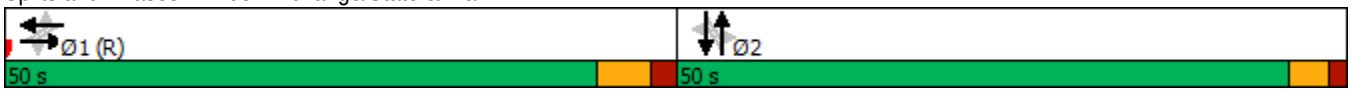
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	385	28	2	334	82	2	598	61	25	581	52
Future Volume (vph)	2	385	28	2	334	82	2	598	61	25	581	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	*0.57	0.95	0.95	*0.68	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor		0.99			0.98			0.99			0.99	
Frt		0.983			0.970			0.982			0.986	
Flt Protected					0.999			0.999			0.997	
Satd. Flow (prot)	0	2002	0	0	2103	0	0	3434	0	0	3319	0
Flt Permitted		0.951			0.941			0.947			0.872	
Satd. Flow (perm)	0	1903	0	0	1980	0	0	3254	0	0	2900	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		422			213			448			247	
Travel Time (s)		9.6			4.8			10.2			5.6	
Confl. Peds. (#/hr)	111		63	63		111	71		62	62		71
Peak Hour Factor	0.50	0.94	0.54	0.25	0.93	0.89	0.25	0.87	0.66	0.57	0.86	0.72
Heavy Vehicles (%)	100%	5%	4%	2%	8%	15%	2%	2%	2%	72%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	33	0	0	0	0	0	0	0
Adj. Flow (vph)	4	410	52	8	359	92	8	687	92	44	676	72
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	466	0	0	459	0	0	787	0	0	792	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			10			10			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	1.09	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)	50.0	50.0		50.0	50.0		29.0	29.0		29.0	29.0	
Total Split (s)	50.0	50.0		50.0	50.0		50.0	50.0		50.0	50.0	
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	
Maximum Green (s)	44.0	44.0		44.0	44.0		45.5	45.5		45.5	45.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		-3.0			-3.0			-3.0			-3.0	
Total Lost Time (s)		3.0			3.0			1.5			1.5	
Lead/Lag	Lead	Lead		Lead	Lead		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?												
Walk Time (s)	27.0	27.0		27.0	27.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	17.0	17.0		17.0	17.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		47.0			47.0			48.5			48.5	
Actuated g/C Ratio		0.47			0.47			0.48			0.48	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.52			0.49			0.50			0.56	
Control Delay		14.2			13.1			14.3			18.1	
Queue Delay		0.0			0.0			0.2			1.0	
Total Delay		14.2			13.1			14.5			19.1	
LOS		B			B			B			B	
Approach Delay		14.2			13.1			14.5			19.1	
Approach LOS		B			B			B			B	
Queue Length 50th (ft)		86			86			121			124	
Queue Length 95th (ft)		115			113			145			144	
Internal Link Dist (ft)		342			133			368			167	
Turn Bay Length (ft)												
Base Capacity (vph)		894			930			1578			1406	
Starvation Cap Reductn		0			0			210			347	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.52			0.49			0.58			0.75	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green, Master Intersection			
Natural Cycle: 80			
Control Type: Pretimed			
Maximum v/c Ratio: 0.56			
Intersection Signal Delay: 15.6		Intersection LOS: B	
Intersection Capacity Utilization 79.9%		ICU Level of Service D	
Analysis Period (min) 15			

* User Entered Value

Splits and Phases: 293: Exchange/State & Main



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lane Configurations							
Traffic Volume (vph)	512	0	0	466	0	0	
Future Volume (vph)	512	0	0	466	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	*0.54	1.00	1.00	*0.54	1.00	1.00	
Ped Bike Factor							
Frt							
Flt Protected							
Satd. Flow (prot)	1883	0	0	1883	0	0	
Flt Permitted							
Satd. Flow (perm)	1883	0	0	1883	0	0	
Right Turn on Red		No				No	
Satd. Flow (RTOR)							
Link Speed (mph)	30			30	30		
Link Distance (ft)	61			608	45		
Travel Time (s)	1.4			13.8	1.0		
Confl. Peds. (#/hr)					33	33	
Peak Hour Factor	0.91	0.90	0.90	0.86	0.90	0.90	
Heavy Vehicles (%)	9%	2%	2%	9%	2%	2%	
Adj. Flow (vph)	563	0	0	542	0	0	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	563	0	0	542	0	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	10			10	0		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)		9	15		15	9	
Number of Detectors	0			0			
Detector Template							
Leading Detector (ft)	0			0			
Trailing Detector (ft)	0			0			
Turn Type	NA			NA			
Protected Phases	1			1			2
Permitted Phases							
Detector Phase	1			1			
Switch Phase							
Minimum Initial (s)	26.0			26.0			6.0
Minimum Split (s)	32.0			32.0			28.0
Total Split (s)	72.0			72.0			28.0
Total Split (%)	72.0%			72.0%			28%
Maximum Green (s)	67.0			67.0			25.0
Yellow Time (s)	4.0			4.0			3.0
All-Red Time (s)	1.0			1.0			0.0
Lost Time Adjust (s)	-2.0			-2.0			
Total Lost Time (s)	3.0			3.0			
Lead/Lag	Lead			Lead			Lag

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lead-Lag Optimize?							
Vehicle Extension (s)	2.0			2.0			2.0
Recall Mode	C-Max			C-Max			None
Walk Time (s)	19.0			19.0			7.0
Flash Dont Walk (s)	7.0			7.0			16.0
Pedestrian Calls (#/hr)	0			0			1
Act Effct Green (s)	94.2			94.2			
Actuated g/C Ratio	0.94			0.94			
v/c Ratio	0.32			0.31			
Control Delay	1.3			2.2			
Queue Delay	0.0			0.0			
Total Delay	1.3			2.2			
LOS	A			A			
Approach Delay	1.3			2.2			
Approach LOS	A			A			
Queue Length 50th (ft)	0			28			
Queue Length 95th (ft)	88			72			
Internal Link Dist (ft)	1			528	1		
Turn Bay Length (ft)							
Base Capacity (vph)	1774			1774			
Starvation Cap Reductn	0			0			
Spillback Cap Reductn	0			0			
Storage Cap Reductn	0			0			
Reduced v/c Ratio	0.32			0.31			

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 88 (88%), Referenced to phase 1:EBWB, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.32			
Intersection Signal Delay: 1.8		Intersection LOS: A	
Intersection Capacity Utilization 38.3%		ICU Level of Service A	
Analysis Period (min) 15			

* User Entered Value

Splits and Phases: 294: Pedestrian Crossing & Main

BASE

ETC (2019)

SYNCHRO OUTPUT

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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	341	4	7	316	0	5
Future Volume (vph)	341	4	7	316	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	150		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			33		25	
Lane Util. Factor	*0.56	0.95	1.00	*0.55	1.00	1.00
Ped Bike Factor						
Frt	0.997				0.865	
Flt Protected			0.950			
Satd. Flow (prot)	1791	0	1770	1917	1611	0
Flt Permitted			0.950			
Satd. Flow (perm)	1791	0	1770	1917	1611	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	213			164	179	
Travel Time (s)	4.8			3.7	4.1	
Confl. Peds. (#/hr)		40	40			
Peak Hour Factor	0.88	0.50	0.58	0.86	1.00	0.63
Heavy Vehicles (%)	12%	2%	2%	9%	2%	2%
Bus Blockages (#/hr)	28	0	0	0	0	0
Adj. Flow (vph)	388	8	12	367	0	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	396	0	12	367	8	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	1.08	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 22.3%		ICU Level of Service A	
Analysis Period (min) 15			

* User Entered Value

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	341	4	7	316	0	5
Future Vol, veh/h	341	4	7	316	0	5
Conflicting Peds, #/hr	0	40	40	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	50	58	86	100	63
Heavy Vehicles, %	12	2	2	9	2	2
Mvmt Flow	388	8	12	367	0	8

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	436	0	640	238
Stage 1	-	-	-	-	432	-
Stage 2	-	-	-	-	208	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	1120	-	408	763
Stage 1	-	-	-	-	622	-
Stage 2	-	-	-	-	807	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1083	-	390	738
Mov Cap-2 Maneuver	-	-	-	-	390	-
Stage 1	-	-	-	-	595	-
Stage 2	-	-	-	-	807	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	9.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	738	-	-	1083	-
HCM Lane V/C Ratio	0.011	-	-	0.011	-
HCM Control Delay (s)	9.9	-	-	8.4	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	346	0	0	323	3	3
Future Volume (vph)	346	0	0	323	3	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	*0.56	1.00	1.00	*0.55	1.00	1.00
Frt					0.955	
Flt Protected					0.968	
Satd. Flow (prot)	1900	0	0	1917	1722	0
Flt Permitted					0.968	
Satd. Flow (perm)	1900	0	0	1917	1722	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	164			61	183	
Travel Time (s)	3.7			1.4	4.2	
Peak Hour Factor	0.89	1.00	1.00	0.85	0.38	0.75
Heavy Vehicles (%)	12%	2%	2%	9%	2%	2%
Adj. Flow (vph)	389	0	0	380	8	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	389	0	0	380	12	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	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 19.6%		ICU Level of Service A	
Analysis Period (min) 15			

* User Entered Value

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	346	0	0	323	3	3
Future Vol, veh/h	346	0	0	323	3	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	100	100	85	38	75
Heavy Vehicles, %	12	2	2	9	2	2
Mvmt Flow	389	0	0	380	8	4

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	579	195
Stage 1	-	-	-	-	389	-
Stage 2	-	-	-	-	190	-
Critical Hdwy	-	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	-	0	0	-	446	814
Stage 1	-	0	0	-	654	-
Stage 2	-	0	0	-	823	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	446	814
Mov Cap-2 Maneuver	-	-	-	-	446	-
Stage 1	-	-	-	-	654	-
Stage 2	-	-	-	-	823	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	12
HCM LOS			B

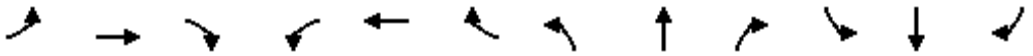
Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	526	-	-
HCM Lane V/C Ratio	0.023	-	-
HCM Control Delay (s)	12	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	17	28	590	146	117	774
Future Volume (vph)	17	28	590	146	117	774
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Ped Bike Factor	1.00	0.90	0.95			
Frt		0.850	0.970			
Flt Protected	0.950					0.993
Satd. Flow (prot)	1770	1583	3255	0	0	3514
Flt Permitted	0.950					0.719
Satd. Flow (perm)	1764	1425	3255	0	0	2545
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		31	72			
Link Speed (mph)	30		30			30
Link Distance (ft)	235		247			384
Travel Time (s)	5.3		5.6			8.7
Confl. Peds. (#/hr)	2	60		133		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	19	31	656	162	130	860
Shared Lane Traffic (%)						
Lane Group Flow (vph)	19	31	818	0	0	990
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	1		1	1
Detector Template						
Leading Detector (ft)	50	50	50		50	50
Trailing Detector (ft)	0	0	0		0	0
Detector 1 Position(ft)	0	0	0		0	0
Detector 1 Size(ft)	50	50	50		50	50
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0
Turn Type	Prot	Perm	NA		Perm	NA
Protected Phases	2		1			1
Permitted Phases		2			1	
Detector Phase	2	2	1		1	1
Switch Phase						
Minimum Initial (s)	6.0	6.0	20.0		20.0	20.0
Minimum Split (s)	27.0	27.0	33.0		33.0	33.0
Total Split (s)	27.0	27.0	73.0		73.0	73.0
Total Split (%)	27.0%	27.0%	73.0%		73.0%	73.0%

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Maximum Green (s)	22.0	22.0	68.0		68.0	68.0
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	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	Lag	Lag	Lead		Lead	Lead
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	2.0		2.0	2.0
Recall Mode	None	None	C-Max		C-Max	C-Max
Walk Time (s)	7.0	7.0	20.0		20.0	20.0
Flash Dont Walk (s)	13.0	13.0	7.0		7.0	7.0
Pedestrian Calls (#/hr)	0	0	0		0	0
Act Effct Green (s)	8.9	8.9	90.7			90.7
Actuated g/C Ratio	0.09	0.09	0.91			0.91
v/c Ratio	0.12	0.20	0.28			0.43
Control Delay	43.3	18.0	0.5			2.0
Queue Delay	0.1	0.0	0.2			0.0
Total Delay	43.4	18.0	0.7			2.0
LOS	D	B	A			A
Approach Delay	27.7		0.7			2.0
Approach LOS	C		A			A
Queue Length 50th (ft)	11	0	6			50
Queue Length 95th (ft)	34	28	13			83
Internal Link Dist (ft)	155		167			304
Turn Bay Length (ft)						
Base Capacity (vph)	424	365	2960			2309
Starvation Cap Reductn	0	0	1244			0
Spillback Cap Reductn	113	0	0			59
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.06	0.08	0.48			0.44

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 68 (68%), Referenced to phase 1:NBSB, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.43			
Intersection Signal Delay: 2.1		Intersection LOS: A	
Intersection Capacity Utilization 72.4%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 232: State & Corinthian

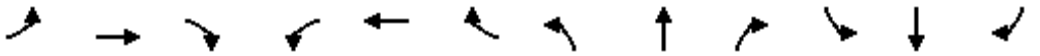


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	212	64	43	107	170	64	476	16	100	632	16
Future Volume (vph)	28	212	64	43	107	170	64	476	16	100	632	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	125		0	125		0	125		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		0.98			0.94			1.00			1.00	
Frt		0.965			0.908			0.995			0.996	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3353	0	1770	3024	0	1770	3508	0	1770	3514	0
Flt Permitted	0.528			0.528			0.307			0.395		
Satd. Flow (perm)	984	3353	0	984	3024	0	572	3508	0	736	3514	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		48			176			5			4	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		208			534			564			448	
Travel Time (s)		4.7			12.1			12.8			10.2	
Confl. Peds. (#/hr)			48			60			91			94
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.95	0.90	0.90
Adj. Flow (vph)	31	236	71	48	119	189	71	529	18	105	702	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	31	307	0	48	308	0	71	547	0	105	720	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			2			1			1	
Permitted Phases	2			2			1			1		
Minimum Split (s)	28.0	28.0		28.0	28.0		32.0	32.0		32.0	32.0	
Total Split (s)	45.0	45.0		45.0	45.0		55.0	55.0		55.0	55.0	
Total Split (%)	45.0%	45.0%		45.0%	45.0%		55.0%	55.0%		55.0%	55.0%	
Maximum Green (s)	40.0	40.0		40.0	40.0		49.0	49.0		49.0	49.0	
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		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-3.0	-3.0		-3.0	-3.0	
Total Lost Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lead/Lag	Lag	Lag		Lag	Lag		Lead	Lead		Lead	Lead	
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)	14.0	14.0		14.0	14.0		18.0	18.0		18.0	18.0	
Pedestrian Calls (#/hr)	32	32		32	32		28	28		28	28	
Act Effct Green (s)	42.0	42.0		42.0	42.0		52.0	52.0		52.0	52.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.42	0.42		0.42	0.42		0.52	0.52		0.52	0.52	
v/c Ratio	0.08	0.21		0.12	0.22		0.24	0.30		0.27	0.39	
Control Delay	18.1	15.9		18.8	8.2		15.9	14.1		5.4	4.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	18.1	15.9		18.8	8.2		15.9	14.1		5.4	4.3	
LOS	B	B		B	A		B	B		A	A	
Approach Delay		16.1			9.6			14.3			4.4	
Approach LOS		B			A			B			A	
Queue Length 50th (ft)	12	53		18	26		24	98		9	31	
Queue Length 95th (ft)	30	82		42	53		54	133		16	40	
Internal Link Dist (ft)		128			454			484			368	
Turn Bay Length (ft)	125			125			125			125		
Base Capacity (vph)	413	1436		413	1372		297	1826		382	1829	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.08	0.21		0.12	0.22		0.24	0.30		0.27	0.39	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 57 (57%), Referenced to phase 1:NBSB, Start of Green			
Natural Cycle: 60			
Control Type: Pretimed			
Maximum v/c Ratio: 0.39			
Intersection Signal Delay: 10.0		Intersection LOS: A	
Intersection Capacity Utilization 62.5%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 237: Exchange & Broad

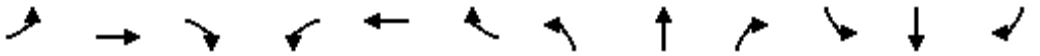


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	133	371	48	67	444	51	15	154	15	17	92	70
Future Volume (vph)	133	371	48	67	444	51	15	154	15	17	92	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	100		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	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98			0.97			0.99			0.97	
Frt		0.983			0.984			0.989			0.947	
Flt Protected	0.950			0.950				0.996			0.995	
Satd. Flow (prot)	1641	3149	0	1641	3146	0	0	1815	0	0	1699	0
Flt Permitted	0.417			0.467				0.970			0.963	
Satd. Flow (perm)	720	3149	0	807	3146	0	0	1768	0	0	1644	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		22			20			5			36	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		421			422			220			524	
Travel Time (s)		9.6			9.6			5.0			11.9	
Confl. Peds. (#/hr)			97			117			87			52
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 (%)	10%	10%	10%	10%	10%	10%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	148	412	53	74	493	57	17	171	17	19	102	78
Shared Lane Traffic (%)												
Lane Group Flow (vph)	148	465	0	74	550	0	0	205	0	0	199	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
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)	31.0	31.0		31.0	31.0		29.0	29.0		29.0	29.0	
Total Split (s)	60.0	60.0		60.0	60.0		40.0	40.0		40.0	40.0	
Total Split (%)	60.0%	60.0%		60.0%	60.0%		40.0%	40.0%		40.0%	40.0%	
Maximum Green (s)	55.0	55.0		55.0	55.0		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)	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)	14.0	14.0		14.0	14.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)	55.0	55.0		55.0	55.0			35.0			35.0	
Actuated g/C Ratio	0.55	0.55		0.55	0.55			0.35			0.35	
v/c Ratio	0.37	0.27		0.17	0.32			0.33			0.33	
Control Delay	16.2	11.7		9.5	9.1			25.1			21.2	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	16.2	11.7		9.5	9.1			25.1			21.2	
LOS	B	B		A	A			C			C	
Approach Delay		12.8			9.1			25.1			21.2	
Approach LOS		B			A			C			C	
Queue Length 50th (ft)	51	73		16	63			93			74	
Queue Length 95th (ft)	98	103		33	84			152			133	
Internal Link Dist (ft)		341			342			140			444	
Turn Bay Length (ft)	100			100								
Base Capacity (vph)	396	1741		443	1739			622			598	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.37	0.27		0.17	0.32			0.33			0.33	

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: 60			
Control Type: Pretimed			
Maximum v/c Ratio: 0.37			
Intersection Signal Delay: 14.0		Intersection LOS: B	
Intersection Capacity Utilization 63.3%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 292: Fitzhugh & Main



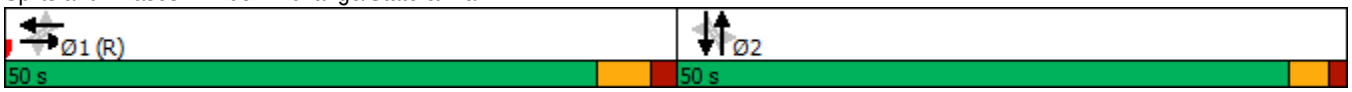
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	288	30	3	254	55	2	523	47	16	629	61
Future Volume (vph)	1	288	30	3	254	55	2	523	47	16	629	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	*0.60	0.95	0.95	*0.66	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor		1.00			0.99			0.99			0.99	
Frt		0.982			0.974			0.982			0.986	
Flt Protected		0.999			0.999			0.999			0.998	
Satd. Flow (prot)	0	2077	0	0	2078	0	0	3372	0	0	3338	0
Flt Permitted		0.951			0.941			0.946			0.917	
Satd. Flow (perm)	0	1976	0	0	1957	0	0	3192	0	0	3065	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		422			213			448			247	
Travel Time (s)		9.6			4.8			10.2			5.6	
Confl. Peds. (#/hr)	68		38	38		68	46		40	40		46
Peak Hour Factor	0.25	0.89	0.68	0.38	0.93	0.92	0.25	0.96	0.62	0.57	0.97	0.85
Heavy Vehicles (%)	2%	8%	2%	2%	8%	20%	2%	3%	13%	100%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	27	0	0	0	0	0	0	0
Adj. Flow (vph)	4	324	44	8	273	60	8	545	76	28	648	72
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	372	0	0	341	0	0	629	0	0	748	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			10			10			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	1.07	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)	50.0	50.0		50.0	50.0		29.0	29.0		29.0	29.0	
Total Split (s)	50.0	50.0		50.0	50.0		50.0	50.0		50.0	50.0	
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	
Maximum Green (s)	44.0	44.0		44.0	44.0		45.5	45.5		45.5	45.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		-3.0			-3.0			-3.0			-3.0	
Total Lost Time (s)		3.0			3.0			1.5			1.5	
Lead/Lag	Lead	Lead		Lead	Lead		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?												
Walk Time (s)	27.0	27.0		27.0	27.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	17.0	17.0		17.0	17.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		47.0			47.0			48.5			48.5	
Actuated g/C Ratio		0.47			0.47			0.48			0.48	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.40			0.37			0.41			0.50	
Control Delay		9.9			11.7			12.9			17.5	
Queue Delay		0.0			0.0			0.0			1.0	
Total Delay		9.9			11.7			12.9			18.5	
LOS		A			B			B			B	
Approach Delay		9.9			11.7			12.9			18.5	
Approach LOS		A			B			B			B	
Queue Length 50th (ft)		42			61			81			126	
Queue Length 95th (ft)		57			85			108			155	
Internal Link Dist (ft)		342			133			368			167	
Turn Bay Length (ft)												
Base Capacity (vph)		928			919			1548			1486	
Starvation Cap Reductn		0			0			0			454	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.40			0.37			0.41			0.72	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green, Master Intersection			
Natural Cycle: 80			
Control Type: Pretimed			
Maximum v/c Ratio: 0.50			
Intersection Signal Delay: 14.2		Intersection LOS: B	
Intersection Capacity Utilization 74.6%		ICU Level of Service D	
Analysis Period (min) 15			

* User Entered Value

Splits and Phases: 293: Exchange/State & Main



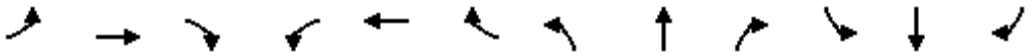
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lane Configurations							
Traffic Volume (vph)	347	0	0	321	0	0	
Future Volume (vph)	347	0	0	321	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	*0.56	1.00	1.00	*0.55	1.00	1.00	
Ped Bike Factor							
Frt							
Flt Protected							
Satd. Flow (prot)	1900	0	0	1917	0	0	
Flt Permitted							
Satd. Flow (perm)	1900	0	0	1917	0	0	
Right Turn on Red		No				No	
Satd. Flow (RTOR)							
Link Speed (mph)	30			30	30		
Link Distance (ft)	61			608	45		
Travel Time (s)	1.4			13.8	1.0		
Confl. Peds. (#/hr)					30	30	
Peak Hour Factor	0.88	0.90	0.90	0.86	0.90	0.90	
Heavy Vehicles (%)	12%	2%	2%	9%	2%	2%	
Adj. Flow (vph)	394	0	0	373	0	0	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	394	0	0	373	0	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	10			10	0		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)		9	15		15	9	
Number of Detectors	0			0			
Detector Template							
Leading Detector (ft)	0			0			
Trailing Detector (ft)	0			0			
Turn Type	NA			NA			
Protected Phases	1			1			2
Permitted Phases							
Detector Phase	1			1			
Switch Phase							
Minimum Initial (s)	26.0			26.0			6.0
Minimum Split (s)	32.0			32.0			28.0
Total Split (s)	72.0			72.0			28.0
Total Split (%)	72.0%			72.0%			28%
Maximum Green (s)	67.0			67.0			25.0
Yellow Time (s)	4.0			4.0			3.0
All-Red Time (s)	1.0			1.0			0.0
Lost Time Adjust (s)	-2.0			-2.0			
Total Lost Time (s)	3.0			3.0			
Lead/Lag	Lead			Lead			Lag

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lead-Lag Optimize?							
Vehicle Extension (s)	2.0			2.0			2.0
Recall Mode	C-Max			C-Max			None
Walk Time (s)	19.0			19.0			7.0
Flash Dont Walk (s)	7.0			7.0			16.0
Pedestrian Calls (#/hr)	0			0			1
Act Effct Green (s)	94.2			94.2			
Actuated g/C Ratio	0.94			0.94			
v/c Ratio	0.22			0.21			
Control Delay	1.2			0.9			
Queue Delay	0.0			0.0			
Total Delay	1.2			0.9			
LOS	A			A			
Approach Delay	1.2			0.9			
Approach LOS	A			A			
Queue Length 50th (ft)	0			0			
Queue Length 95th (ft)	58			46			
Internal Link Dist (ft)	1			528	1		
Turn Bay Length (ft)							
Base Capacity (vph)	1790			1806			
Starvation Cap Reductn	0			0			
Spillback Cap Reductn	0			0			
Storage Cap Reductn	0			0			
Reduced v/c Ratio	0.22			0.21			

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: Actuated-Coordinated			
Maximum v/c Ratio: 0.22			
Intersection Signal Delay: 1.0		Intersection LOS: A	
Intersection Capacity Utilization 38.0%		ICU Level of Service A	
Analysis Period (min) 15			

* User Entered Value

Splits and Phases: 294: Pedestrian Crossing & Main



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	279	45	77	395	31	0	0	0	8	376	90
Future Volume (vph)	49	279	45	77	395	31	0	0	0	8	376	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	14	12	10	10	12	12	12	12	12	12	12
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	0.84	0.99		0.96	0.97						0.93	
Frt		0.979			0.989						0.972	
Flt Protected	0.950			0.950							0.999	
Satd. Flow (prot)	1430	1535	0	1472	2643	0	0	0	0	0	2816	0
Flt Permitted	0.424			0.427							0.999	
Satd. Flow (perm)	536	1535	0	636	2643	0	0	0	0	0	2791	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		11			11							
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		608			335			717			429	
Travel Time (s)		13.8			7.6			16.3			9.8	
Confl. Peds. (#/hr)	150		60	60		150	280		250	250		280
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 (%)	6%	6%	3%	3%	6%	6%	3%	3%	3%	5%	5%	5%
Bus Blockages (#/hr)	0	20	0	0	20	0	0	0	0	0	0	0
Parking (#/hr)										0		
Adj. Flow (vph)	54	310	50	86	439	34	0	0	0	9	418	100
Shared Lane Traffic (%)												
Lane Group Flow (vph)	54	360	0	86	473	0	0	0	0	0	527	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)		10			10			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	1.25	1.31	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	

Lane Group	Ø9	Ø10
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
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 (%)		
Bus Blockages (#/hr)		
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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead-Lag Optimize?												
Walk Time (s)	11.0	11.0		11.0	11.0					5.0	5.0	
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	0.22	0.50		0.29	0.38						0.48	
Control Delay	12.5	12.9		19.6	17.8						24.8	
Queue Delay	0.0	0.0		0.0	0.0						0.0	
Total Delay	12.5	12.9		19.6	17.8						24.8	
LOS	B	B		B	B						C	
Approach Delay		12.9			18.0						24.8	
Approach LOS		B			B						C	
Queue Length 50th (ft)	14	95		33	96						130	
Queue Length 95th (ft)	18	67		70	136						180	
Internal Link Dist (ft)		528			255			637			349	
Turn Bay Length (ft)	175			200								
Base Capacity (vph)	246	727		298	1248						1088	
Starvation Cap Reductn	0	0		0	0						0	
Spillback Cap Reductn	0	0		0	0						0	
Storage Cap Reductn	0	0		0	0						0	
Reduced v/c Ratio	0.22	0.50		0.29	0.38						0.48	

Intersection Summary			
Area Type:	CBD		
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: 0.50			
Intersection Signal Delay: 19.0		Intersection LOS: B	
Intersection Capacity Utilization 62.4%		ICU Level of Service B	
Analysis Period (min) 15			

* User Entered Value

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

Lane Group	Ø9	Ø10
Lead-Lag Optimize?		
Walk Time (s)		
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)	494	8	6	462	0	14
Future Volume (vph)	494	8	6	462	0	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	150		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			33		25	
Lane Util. Factor	*0.54	0.95	1.00	*0.54	1.00	1.00
Ped Bike Factor						
Frt	0.995				0.865	
Flt Protected			0.950			
Satd. Flow (prot)	1780	0	1770	1883	1611	0
Flt Permitted			0.950			
Satd. Flow (perm)	1780	0	1770	1883	1611	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	213			164	179	
Travel Time (s)	4.8			3.7	4.1	
Confl. Peds. (#/hr)		62	62			
Peak Hour Factor	0.91	0.40	0.75	0.86	1.00	0.58
Heavy Vehicles (%)	9%	2%	2%	9%	2%	2%
Bus Blockages (#/hr)	26	0	0	0	0	0
Adj. Flow (vph)	543	20	8	537	0	24
Shared Lane Traffic (%)						
Lane Group Flow (vph)	563	0	8	537	24	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	1.07	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 24.0%		ICU Level of Service A	
Analysis Period (min) 15			

* User Entered Value

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	494	8	6	462	0	14
Future Vol, veh/h	494	8	6	462	0	14
Conflicting Peds, #/hr	0	62	62	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	40	75	86	100	58
Heavy Vehicles, %	9	2	2	9	2	2
Mvmt Flow	543	20	8	537	0	24

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	625	0	900	344
Stage 1	-	-	-	-	615	-
Stage 2	-	-	-	-	285	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	952	-	278	652
Stage 1	-	-	-	-	502	-
Stage 2	-	-	-	-	738	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	903	-	261	618
Mov Cap-2 Maneuver	-	-	-	-	261	-
Stage 1	-	-	-	-	471	-
Stage 2	-	-	-	-	738	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	11.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	618	-	-	903	-
HCM Lane V/C Ratio	0.039	-	-	0.009	-
HCM Control Delay (s)	11.1	-	-	9	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	509	0	0	468	8	6
Future Volume (vph)	509	0	0	468	8	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	*0.54	1.00	1.00	*0.54	1.00	1.00
Frt					0.942	
Flt Protected					0.972	
Satd. Flow (prot)	1883	0	0	1883	1706	0
Flt Permitted					0.972	
Satd. Flow (perm)	1883	0	0	1883	1706	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	164			61	183	
Travel Time (s)	3.7			1.4	4.2	
Peak Hour Factor	0.91	1.00	1.00	0.87	0.50	0.50
Heavy Vehicles (%)	9%	2%	2%	9%	2%	2%
Adj. Flow (vph)	559	0	0	538	16	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	559	0	0	538	28	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	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 24.1%		ICU Level of Service A	
Analysis Period (min) 15			

* User Entered Value

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	509	0	0	468	8	6
Future Vol, veh/h	509	0	0	468	8	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	100	100	87	50	50
Heavy Vehicles, %	9	2	2	9	2	2
Mvmt Flow	559	0	0	538	16	12

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	828	280
Stage 1	-	-	-	-	559	-
Stage 2	-	-	-	-	269	-
Critical Hdwy	-	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	-	0	0	-	309	717
Stage 1	-	0	0	-	536	-
Stage 2	-	0	0	-	752	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	309	717
Mov Cap-2 Maneuver	-	-	-	-	309	-
Stage 1	-	-	-	-	536	-
Stage 2	-	-	-	-	752	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	14.4
HCM LOS			B

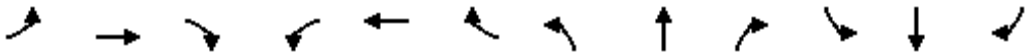
Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	409	-	-
HCM Lane V/C Ratio	0.068	-	-
HCM Control Delay (s)	14.4	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	37	54	767	34	34	766
Future Volume (vph)	37	54	767	34	34	766
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Ped Bike Factor	1.00	0.93	0.99			
Frt		0.850	0.994			
Flt Protected	0.950					0.998
Satd. Flow (prot)	1770	1583	3482	0	0	3532
Flt Permitted	0.950					0.880
Satd. Flow (perm)	1762	1471	3482	0	0	3115
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		60	10			
Link Speed (mph)	30		30			30
Link Distance (ft)	235		247			384
Travel Time (s)	5.3		5.6			8.7
Confl. Peds. (#/hr)	3	40		122		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	41	60	852	38	38	851
Shared Lane Traffic (%)						
Lane Group Flow (vph)	41	60	890	0	0	889
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	1		1	1
Detector Template						
Leading Detector (ft)	50	50	50		50	50
Trailing Detector (ft)	0	0	0		0	0
Detector 1 Position(ft)	0	0	0		0	0
Detector 1 Size(ft)	50	50	50		50	50
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0
Turn Type	Prot	Perm	NA		Perm	NA
Protected Phases	2		1			1
Permitted Phases		2			1	
Detector Phase	2	2	1		1	1
Switch Phase						
Minimum Initial (s)	6.0	6.0	20.0		20.0	20.0
Minimum Split (s)	27.0	27.0	33.0		33.0	33.0
Total Split (s)	27.0	27.0	73.0		73.0	73.0
Total Split (%)	27.0%	27.0%	73.0%		73.0%	73.0%

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Maximum Green (s)	22.0	22.0	68.0		68.0	68.0
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	5.0	5.0	5.0			5.0
Lead/Lag	Lag	Lag	Lead		Lead	Lead
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	2.0		2.0	2.0
Recall Mode	None	None	C-Max		C-Max	C-Max
Walk Time (s)	7.0	7.0	20.0		20.0	20.0
Flash Dont Walk (s)	13.0	13.0	7.0		7.0	7.0
Pedestrian Calls (#/hr)	0	0	0		0	0
Act Effct Green (s)	7.9	7.9	85.3			85.3
Actuated g/C Ratio	0.08	0.08	0.85			0.85
v/c Ratio	0.29	0.35	0.30			0.33
Control Delay	48.2	17.4	0.9			2.5
Queue Delay	0.3	0.0	0.2			0.0
Total Delay	48.5	17.4	1.1			2.5
LOS	D	B	A			A
Approach Delay	30.0		1.1			2.5
Approach LOS	C		A			A
Queue Length 50th (ft)	25	0	18			53
Queue Length 95th (ft)	58	38	24			85
Internal Link Dist (ft)	155		167			304
Turn Bay Length (ft)						
Base Capacity (vph)	389	370	2971			2657
Starvation Cap Reductn	0	0	1081			0
Spillback Cap Reductn	150	0	0			168
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.17	0.16	0.47			0.36

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 65 (65%), Referenced to phase 1:NBSB, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.35			
Intersection Signal Delay: 3.3		Intersection LOS: A	
Intersection Capacity Utilization 68.1%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 232: State & Corinthian

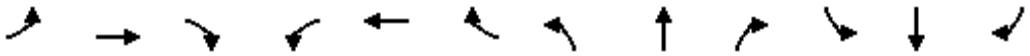


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	264	84	72	336	124	84	424	44	144	544	40
Future Volume (vph)	32	264	84	72	336	124	84	424	44	144	544	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	125		0	125		0	125		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		0.98			0.96			0.98			0.98	
Frt		0.964			0.959			0.986			0.990	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3328	0	1770	3269	0	1770	3433	0	1770	3447	0
Flt Permitted	0.399			0.489			0.357			0.430		
Satd. Flow (perm)	743	3328	0	911	3269	0	665	3433	0	801	3447	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		51			63			15			10	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		208			534			564			448	
Travel Time (s)		4.7			12.1			12.8			10.2	
Confl. Peds. (#/hr)			64			89			137			193
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
Adj. Flow (vph)	36	293	93	80	373	138	93	471	49	160	604	44
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	386	0	80	511	0	93	520	0	160	648	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			2			1			1	
Permitted Phases	2			2			1			1		
Minimum Split (s)	28.0	28.0		28.0	28.0		32.0	32.0		32.0	32.0	
Total Split (s)	45.0	45.0		45.0	45.0		55.0	55.0		55.0	55.0	
Total Split (%)	45.0%	45.0%		45.0%	45.0%		55.0%	55.0%		55.0%	55.0%	
Maximum Green (s)	40.0	40.0		40.0	40.0		49.0	49.0		49.0	49.0	
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		2.0	2.0		2.0	2.0	
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		6.0	6.0		6.0	6.0	
Lead/Lag	Lag	Lag		Lag	Lag		Lead	Lead		Lead	Lead	
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)	14.0	14.0		14.0	14.0		18.0	18.0		18.0	18.0	
Pedestrian Calls (#/hr)	152	152		152	152		72	72		72	72	
Act Effct Green (s)	40.0	40.0		40.0	40.0		49.0	49.0		49.0	49.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.40	0.40		0.40	0.40		0.49	0.49		0.49	0.49	
v/c Ratio	0.12	0.28		0.22	0.38		0.29	0.31		0.41	0.38	
Control Delay	20.4	18.1		21.8	19.4		18.2	15.4		6.6	4.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	20.4	18.1		21.8	19.4		18.2	15.4		6.6	4.0	
LOS	C	B		C	B		B	B		A	A	
Approach Delay		18.3			19.7			15.9			4.5	
Approach LOS		B			B			B			A	
Queue Length 50th (ft)	14	73		33	103		34	97		12	24	
Queue Length 95th (ft)	36	108		68	146		71	133		20	30	
Internal Link Dist (ft)		128			454			484			368	
Turn Bay Length (ft)	125			125			125			125		
Base Capacity (vph)	297	1361		364	1345		325	1689		392	1694	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.12	0.28		0.22	0.38		0.29	0.31		0.41	0.38	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 60 (60%), Referenced to phase 1:NBSB, Start of Green			
Natural Cycle: 60			
Control Type: Pretimed			
Maximum v/c Ratio: 0.41			
Intersection Signal Delay: 13.5		Intersection LOS: B	
Intersection Capacity Utilization 69.6%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 237: Exchange & Broad



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	403	16	60	672	30	9	106	29	46	165	111
Future Volume (vph)	46	403	16	60	672	30	9	106	29	46	165	111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	100		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	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			0.99			0.98			0.97	
Frt		0.994			0.994			0.973			0.953	
Flt Protected	0.950			0.950				0.997			0.993	
Satd. Flow (prot)	1770	3481	0	1770	3476	0	0	1772	0	0	1714	0
Flt Permitted	0.303			0.466				0.973			0.934	
Satd. Flow (perm)	564	3481	0	868	3476	0	0	1729	0	0	1612	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			7			14			29	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		421			422			220			524	
Travel Time (s)		9.6			9.6			5.0			11.9	
Confl. Peds. (#/hr)			130			133			64			51
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
Adj. Flow (vph)	51	448	18	67	747	33	10	118	32	51	183	123
Shared Lane Traffic (%)												
Lane Group Flow (vph)	51	466	0	67	780	0	0	160	0	0	357	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
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)	31.0	31.0		31.0	31.0		29.0	29.0		29.0	29.0	
Total Split (s)	60.0	60.0		60.0	60.0		40.0	40.0		40.0	40.0	
Total Split (%)	60.0%	60.0%		60.0%	60.0%		40.0%	40.0%		40.0%	40.0%	
Maximum Green (s)	55.0	55.0		55.0	55.0		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)	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)	14.0	14.0		14.0	14.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	55.0	55.0		55.0	55.0			35.0			35.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.55	0.55		0.55	0.55			0.35			0.35	
v/c Ratio	0.16	0.24		0.14	0.41			0.26			0.61	
Control Delay	12.9	11.9		8.4	8.9			22.5			30.0	
Queue Delay	0.0	0.0		0.0	0.2			0.0			0.0	
Total Delay	12.9	11.9		8.4	9.2			22.5			30.0	
LOS	B	B		A	A			C			C	
Approach Delay		12.0			9.1			22.5			30.0	
Approach LOS		B			A			C			C	
Queue Length 50th (ft)	15	75		13	85			65			171	
Queue Length 95th (ft)	37	104		m27	110			116			269	
Internal Link Dist (ft)		341			342			140			444	
Turn Bay Length (ft)	100			100								
Base Capacity (vph)	310	1917		477	1914			614			583	
Starvation Cap Reductn	0	0		0	469			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.16	0.24		0.14	0.54			0.26			0.61	

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: 60			
Control Type: Pretimed			
Maximum v/c Ratio: 0.61			
Intersection Signal Delay: 15.0		Intersection LOS: B	
Intersection Capacity Utilization 77.4%		ICU Level of Service D	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 292: Fitzhugh & Main

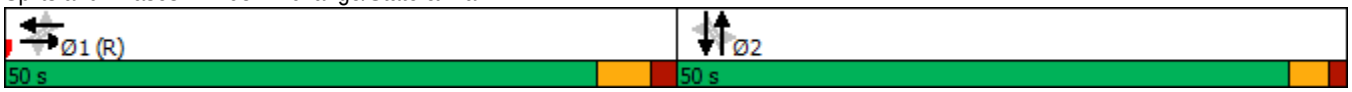
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	387	28	2	336	82	2	601	61	25	584	52
Future Volume (vph)	2	387	28	2	336	82	2	601	61	25	584	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	*0.57	0.95	0.95	*0.68	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor		0.99			0.98			0.99			0.99	
Frt		0.983			0.970			0.983			0.986	
Flt Protected					0.999			0.999			0.997	
Satd. Flow (prot)	0	2002	0	0	2103	0	0	3437	0	0	3319	0
Flt Permitted		0.951			0.941			0.947			0.872	
Satd. Flow (perm)	0	1904	0	0	1980	0	0	3258	0	0	2900	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		422			213			448			247	
Travel Time (s)		9.6			4.8			10.2			5.6	
Confl. Peds. (#/hr)	111		63	63		111	71		62	62		71
Peak Hour Factor	0.50	0.94	0.54	0.25	0.93	0.89	0.25	0.87	0.66	0.57	0.86	0.72
Heavy Vehicles (%)	100%	5%	4%	2%	8%	15%	2%	2%	2%	72%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	33	0	0	0	0	0	0	0
Adj. Flow (vph)	4	412	52	8	361	92	8	691	92	44	679	72
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	468	0	0	461	0	0	791	0	0	795	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			10			10			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	1.09	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)	50.0	50.0		50.0	50.0		29.0	29.0		29.0	29.0	
Total Split (s)	50.0	50.0		50.0	50.0		50.0	50.0		50.0	50.0	
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	
Maximum Green (s)	44.0	44.0		44.0	44.0		45.5	45.5		45.5	45.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		-3.0			-3.0			-3.0			-3.0	
Total Lost Time (s)		3.0			3.0			1.5			1.5	
Lead/Lag	Lead	Lead		Lead	Lead		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?												
Walk Time (s)	27.0	27.0		27.0	27.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	17.0	17.0		17.0	17.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		47.0			47.0			48.5			48.5	
Actuated g/C Ratio		0.47			0.47			0.48			0.48	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.52			0.50			0.50			0.57	
Control Delay		14.2			13.1			14.3			18.1	
Queue Delay		0.0			0.0			0.2			1.0	
Total Delay		14.2			13.1			14.5			19.1	
LOS		B			B			B			B	
Approach Delay		14.2			13.1			14.5			19.1	
Approach LOS		B			B			B			B	
Queue Length 50th (ft)		87			86			122			124	
Queue Length 95th (ft)		116			115			146			144	
Internal Link Dist (ft)		342			133			368			167	
Turn Bay Length (ft)												
Base Capacity (vph)		894			930			1580			1406	
Starvation Cap Reductn		0			0			211			345	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.52			0.50			0.58			0.75	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green, Master Intersection			
Natural Cycle: 80			
Control Type: Pretimed			
Maximum v/c Ratio: 0.57			
Intersection Signal Delay: 15.7		Intersection LOS: B	
Intersection Capacity Utilization 80.0%		ICU Level of Service D	
Analysis Period (min) 15			

* User Entered Value

Splits and Phases: 293: Exchange/State & Main



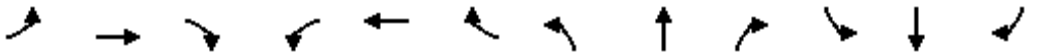
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lane Configurations							
Traffic Volume (vph)	512	0	0	466	0	0	
Future Volume (vph)	512	0	0	466	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	*0.54	1.00	1.00	*0.54	1.00	1.00	
Ped Bike Factor							
Frt							
Flt Protected							
Satd. Flow (prot)	1883	0	0	1883	0	0	
Flt Permitted							
Satd. Flow (perm)	1883	0	0	1883	0	0	
Right Turn on Red		No				No	
Satd. Flow (RTOR)							
Link Speed (mph)	30			30	30		
Link Distance (ft)	61			608	0		
Travel Time (s)	1.4			13.8	0.0		
Confl. Peds. (#/hr)					33	33	
Peak Hour Factor	0.91	0.90	0.90	0.86	0.90	0.90	
Heavy Vehicles (%)	9%	2%	2%	9%	2%	2%	
Adj. Flow (vph)	563	0	0	542	0	0	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	563	0	0	542	0	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	10			10	0		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)		9	15		15	9	
Number of Detectors	0			0			
Detector Template							
Leading Detector (ft)	0			0			
Trailing Detector (ft)	0			0			
Turn Type	NA			NA			
Protected Phases	1			1			2
Permitted Phases							
Detector Phase	1			1			
Switch Phase							
Minimum Initial (s)	26.0			26.0			6.0
Minimum Split (s)	32.0			32.0			28.0
Total Split (s)	72.0			72.0			28.0
Total Split (%)	72.0%			72.0%			28%
Maximum Green (s)	67.0			67.0			25.0
Yellow Time (s)	4.0			4.0			3.0
All-Red Time (s)	1.0			1.0			0.0
Lost Time Adjust (s)	-2.0			-2.0			
Total Lost Time (s)	3.0			3.0			
Lead/Lag	Lead			Lead			Lag

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lead-Lag Optimize?							
Vehicle Extension (s)	2.0			2.0			2.0
Recall Mode	C-Max			C-Max			None
Walk Time (s)	19.0			19.0			7.0
Flash Dont Walk (s)	7.0			7.0			16.0
Pedestrian Calls (#/hr)	0			0			1
Act Effct Green (s)	94.2			94.2			
Actuated g/C Ratio	0.94			0.94			
v/c Ratio	0.32			0.31			
Control Delay	1.3			2.2			
Queue Delay	0.0			0.0			
Total Delay	1.3			2.2			
LOS	A			A			
Approach Delay	1.3			2.2			
Approach LOS	A			A			
Queue Length 50th (ft)	0			28			
Queue Length 95th (ft)	88			72			
Internal Link Dist (ft)	1			528	1		
Turn Bay Length (ft)							
Base Capacity (vph)	1774			1774			
Starvation Cap Reductn	0			0			
Spillback Cap Reductn	0			0			
Storage Cap Reductn	0			0			
Reduced v/c Ratio	0.32			0.31			

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 88 (88%), Referenced to phase 1:EBWB, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.32			
Intersection Signal Delay: 1.8		Intersection LOS: A	
Intersection Capacity Utilization 38.3%		ICU Level of Service A	
Analysis Period (min) 15			

* User Entered Value

Splits and Phases: 294: Pedestrian Crossing & Main



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	279	45	77	395	31	0	0	0	8	376	90
Future Volume (vph)	49	279	45	77	395	31	0	0	0	8	376	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	14	12	10	10	12	12	12	12	12	12	12
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	0.84	0.99		0.96	0.97						0.93	
Frt		0.979			0.989						0.972	
Flt Protected	0.950			0.950							0.999	
Satd. Flow (prot)	1430	1535	0	1472	2643	0	0	0	0	0	2816	0
Flt Permitted	0.424			0.427							0.999	
Satd. Flow (perm)	536	1535	0	636	2643	0	0	0	0	0	2791	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		11			11							
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		608			335			717			429	
Travel Time (s)		13.8			7.6			16.3			9.8	
Confl. Peds. (#/hr)	150		60	60		150	280		250	250		280
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 (%)	6%	6%	3%	3%	6%	6%	3%	3%	3%	5%	5%	5%
Bus Blockages (#/hr)	0	20	0	0	20	0	0	0	0	0	0	0
Parking (#/hr)										0		
Adj. Flow (vph)	54	310	50	86	439	34	0	0	0	9	418	100
Shared Lane Traffic (%)												
Lane Group Flow (vph)	54	360	0	86	473	0	0	0	0	0	527	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)		10			10			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	1.25	1.31	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	

Lane Group	Ø9	Ø10
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
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 (%)		
Bus Blockages (#/hr)		
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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead-Lag Optimize?												
Walk Time (s)	11.0	11.0		11.0	11.0					5.0	5.0	
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	0.22	0.50		0.29	0.38						0.48	
Control Delay	14.1	13.6		19.6	17.8						24.8	
Queue Delay	0.0	0.0		0.0	0.0						0.0	
Total Delay	14.1	13.6		19.6	17.8						24.8	
LOS	B	B		B	B						C	
Approach Delay		13.7			18.0						24.8	
Approach LOS		B			B						C	
Queue Length 50th (ft)	13	90		33	96						130	
Queue Length 95th (ft)	20	132		70	136						180	
Internal Link Dist (ft)		528			255			637			349	
Turn Bay Length (ft)	175			200								
Base Capacity (vph)	246	727		298	1248						1088	
Starvation Cap Reductn	0	0		0	0						0	
Spillback Cap Reductn	0	0		0	0						0	
Storage Cap Reductn	0	0		0	0						0	
Reduced v/c Ratio	0.22	0.50		0.29	0.38						0.48	

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: 60			
Control Type: Pretimed			
Maximum v/c Ratio: 0.50			
Intersection Signal Delay: 19.2		Intersection LOS: B	
Intersection Capacity Utilization 62.4%		ICU Level of Service B	
Analysis Period (min) 15			

* User Entered Value

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

Lane Group	Ø9	Ø10
Lead-Lag Optimize?		
Walk Time (s)		
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

BASE
BROAD STREET 2-WAY CONVERSION
ETC (2019)
SYNCHRO OUTPUT

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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	341	4	7	316	0	5
Future Volume (vph)	341	4	7	316	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	150		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			33		25	
Lane Util. Factor	*0.56	0.95	1.00	*0.55	1.00	1.00
Ped Bike Factor						
Frt	0.997				0.865	
Flt Protected			0.950			
Satd. Flow (prot)	1791	0	1770	1917	1611	0
Flt Permitted			0.950			
Satd. Flow (perm)	1791	0	1770	1917	1611	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	213			164	179	
Travel Time (s)	4.8			3.7	4.1	
Confl. Peds. (#/hr)		40	40			
Peak Hour Factor	0.88	0.50	0.58	0.86	1.00	0.63
Heavy Vehicles (%)	12%	2%	2%	9%	2%	2%
Bus Blockages (#/hr)	28	0	0	0	0	0
Adj. Flow (vph)	388	8	12	367	0	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	396	0	12	367	8	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	1.08	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 22.3%		ICU Level of Service A	
Analysis Period (min) 15			

* User Entered Value

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	341	4	7	316	0	5
Future Vol, veh/h	341	4	7	316	0	5
Conflicting Peds, #/hr	0	40	40	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	50	58	86	100	63
Heavy Vehicles, %	12	2	2	9	2	2
Mvmt Flow	388	8	12	367	0	8

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	436	0	640	238
Stage 1	-	-	-	-	432	-
Stage 2	-	-	-	-	208	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	1120	-	408	763
Stage 1	-	-	-	-	622	-
Stage 2	-	-	-	-	807	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1083	-	390	738
Mov Cap-2 Maneuver	-	-	-	-	390	-
Stage 1	-	-	-	-	595	-
Stage 2	-	-	-	-	807	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	9.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	738	-	-	1083	-
HCM Lane V/C Ratio	0.011	-	-	0.011	-
HCM Control Delay (s)	9.9	-	-	8.4	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	346	0	0	323	3	3
Future Volume (vph)	346	0	0	323	3	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	*0.56	1.00	1.00	*0.55	1.00	1.00
Frt					0.955	
Flt Protected					0.968	
Satd. Flow (prot)	1900	0	0	1917	1722	0
Flt Permitted					0.968	
Satd. Flow (perm)	1900	0	0	1917	1722	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	164			61	183	
Travel Time (s)	3.7			1.4	4.2	
Peak Hour Factor	0.89	1.00	1.00	0.85	0.38	0.75
Heavy Vehicles (%)	12%	2%	2%	9%	2%	2%
Adj. Flow (vph)	389	0	0	380	8	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	389	0	0	380	12	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	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 19.6%		ICU Level of Service A	
Analysis Period (min) 15			

* User Entered Value

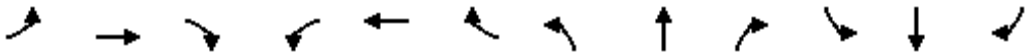
Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	346	0	0	323	3	3
Future Vol, veh/h	346	0	0	323	3	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	100	100	85	38	75
Heavy Vehicles, %	12	2	2	9	2	2
Mvmt Flow	389	0	0	380	8	4

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	579	195
Stage 1	-	-	-	-	389	-
Stage 2	-	-	-	-	190	-
Critical Hdwy	-	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	-	0	0	-	446	814
Stage 1	-	0	0	-	654	-
Stage 2	-	0	0	-	823	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	446	814
Mov Cap-2 Maneuver	-	-	-	-	446	-
Stage 1	-	-	-	-	654	-
Stage 2	-	-	-	-	823	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	12
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	526	-	-
HCM Lane V/C Ratio	0.023	-	-
HCM Control Delay (s)	12	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-



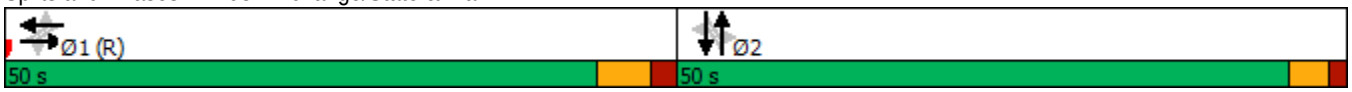
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	288	30	3	254	55	2	523	47	16	644	61
Future Volume (vph)	1	288	30	3	254	55	2	523	47	16	644	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	*0.60	0.95	0.95	*0.66	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor		1.00			0.99			0.99			0.99	
Frt		0.982			0.974			0.982			0.986	
Flt Protected		0.999			0.999			0.999			0.998	
Satd. Flow (prot)	0	2077	0	0	2078	0	0	3372	0	0	3341	0
Flt Permitted		0.951			0.941			0.946			0.917	
Satd. Flow (perm)	0	1976	0	0	1957	0	0	3192	0	0	3068	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		422			213			448			247	
Travel Time (s)		9.6			4.8			10.2			5.6	
Confl. Peds. (#/hr)	68		38	38		68	46		40	40		46
Peak Hour Factor	0.25	0.89	0.68	0.38	0.93	0.92	0.25	0.96	0.62	0.57	0.97	0.85
Heavy Vehicles (%)	2%	8%	2%	2%	8%	20%	2%	3%	13%	100%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	27	0	0	0	0	0	0	0
Adj. Flow (vph)	4	324	44	8	273	60	8	545	76	28	664	72
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	372	0	0	341	0	0	629	0	0	764	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			10			10			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	1.07	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)	50.0	50.0		50.0	50.0		29.0	29.0		29.0	29.0	
Total Split (s)	50.0	50.0		50.0	50.0		50.0	50.0		50.0	50.0	
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	
Maximum Green (s)	44.0	44.0		44.0	44.0		45.5	45.5		45.5	45.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		-3.0			-3.0			-3.0			-3.0	
Total Lost Time (s)		3.0			3.0			1.5			1.5	
Lead/Lag	Lead	Lead		Lead	Lead		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?												
Walk Time (s)	27.0	27.0		27.0	27.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	17.0	17.0		17.0	17.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		47.0			47.0			48.5			48.5	
Actuated g/C Ratio		0.47			0.47			0.48			0.48	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.40			0.37			0.41			0.51	
Control Delay		9.9			11.7			12.9			17.6	
Queue Delay		0.0			0.0			0.0			1.0	
Total Delay		9.9			11.7			12.9			18.6	
LOS		A			B			B			B	
Approach Delay		9.9			11.7			12.9			18.6	
Approach LOS		A			B			B			B	
Queue Length 50th (ft)		42			61			81			129	
Queue Length 95th (ft)		57			84			108			158	
Internal Link Dist (ft)		342			133			368			167	
Turn Bay Length (ft)												
Base Capacity (vph)		928			919			1548			1487	
Starvation Cap Reductn		0			0			0			443	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.40			0.37			0.41			0.73	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green, Master Intersection			
Natural Cycle: 80			
Control Type: Pretimed			
Maximum v/c Ratio: 0.51			
Intersection Signal Delay: 14.3		Intersection LOS: B	
Intersection Capacity Utilization 75.0%		ICU Level of Service D	
Analysis Period (min) 15			

* User Entered Value

Splits and Phases: 293: Exchange/State & Main



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lane Configurations							
Traffic Volume (vph)	349	0	0	323	0	0	
Future Volume (vph)	349	0	0	323	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	*0.56	1.00	1.00	*0.55	1.00	1.00	
Ped Bike Factor							
Frt							
Flt Protected							
Satd. Flow (prot)	1900	0	0	1917	0	0	
Flt Permitted							
Satd. Flow (perm)	1900	0	0	1917	0	0	
Right Turn on Red		No				No	
Satd. Flow (RTOR)							
Link Speed (mph)	30			30	30		
Link Distance (ft)	61			608	45		
Travel Time (s)	1.4			13.8	1.0		
Confl. Peds. (#/hr)					30	30	
Peak Hour Factor	0.88	0.90	0.90	0.86	0.90	0.90	
Heavy Vehicles (%)	12%	2%	2%	9%	2%	2%	
Adj. Flow (vph)	397	0	0	376	0	0	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	397	0	0	376	0	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	10			10	0		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)		9	15		15	9	
Number of Detectors	0			0			
Detector Template							
Leading Detector (ft)	0			0			
Trailing Detector (ft)	0			0			
Turn Type	NA			NA			
Protected Phases	1			1			2
Permitted Phases							
Detector Phase	1			1			
Switch Phase							
Minimum Initial (s)	26.0			26.0			6.0
Minimum Split (s)	32.0			32.0			28.0
Total Split (s)	72.0			72.0			28.0
Total Split (%)	72.0%			72.0%			28%
Maximum Green (s)	67.0			67.0			25.0
Yellow Time (s)	4.0			4.0			3.0
All-Red Time (s)	1.0			1.0			0.0
Lost Time Adjust (s)	-2.0			-2.0			
Total Lost Time (s)	3.0			3.0			
Lead/Lag	Lead			Lead			Lag

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lead-Lag Optimize?							
Vehicle Extension (s)	2.0			2.0			2.0
Recall Mode	C-Max			C-Max			None
Walk Time (s)	19.0			19.0			7.0
Flash Dont Walk (s)	7.0			7.0			16.0
Pedestrian Calls (#/hr)	0			0			1
Act Effct Green (s)	94.2			94.2			
Actuated g/C Ratio	0.94			0.94			
v/c Ratio	0.22			0.21			
Control Delay	1.2			0.9			
Queue Delay	0.0			0.0			
Total Delay	1.2			0.9			
LOS	A			A			
Approach Delay	1.2			0.9			
Approach LOS	A			A			
Queue Length 50th (ft)	0			0			
Queue Length 95th (ft)	59			46			
Internal Link Dist (ft)	1			528	1		
Turn Bay Length (ft)							
Base Capacity (vph)	1790			1806			
Starvation Cap Reductn	0			0			
Spillback Cap Reductn	0			0			
Storage Cap Reductn	0			0			
Reduced v/c Ratio	0.22			0.21			

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: Actuated-Coordinated			
Maximum v/c Ratio: 0.22			
Intersection Signal Delay: 1.0		Intersection LOS: A	
Intersection Capacity Utilization 38.0%		ICU Level of Service A	
Analysis Period (min) 15			

* User Entered Value

Splits and Phases: 294: Pedestrian Crossing & Main

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	494	8	6	462	0	14
Future Volume (vph)	494	8	6	462	0	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	150		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			33		25	
Lane Util. Factor	*0.54	0.95	1.00	*0.54	1.00	1.00
Ped Bike Factor						
Frt	0.995				0.865	
Flt Protected			0.950			
Satd. Flow (prot)	1780	0	1770	1883	1611	0
Flt Permitted			0.950			
Satd. Flow (perm)	1780	0	1770	1883	1611	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	213			164	179	
Travel Time (s)	4.8			3.7	4.1	
Confl. Peds. (#/hr)		62	62			
Peak Hour Factor	0.91	0.40	0.75	0.86	1.00	0.58
Heavy Vehicles (%)	9%	2%	2%	9%	2%	2%
Bus Blockages (#/hr)	26	0	0	0	0	0
Adj. Flow (vph)	543	20	8	537	0	24
Shared Lane Traffic (%)						
Lane Group Flow (vph)	563	0	8	537	24	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	1.07	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 24.0%		ICU Level of Service A	
Analysis Period (min) 15			

* User Entered Value

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	494	8	6	462	0	14
Future Vol, veh/h	494	8	6	462	0	14
Conflicting Peds, #/hr	0	62	62	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	40	75	86	100	58
Heavy Vehicles, %	9	2	2	9	2	2
Mvmt Flow	543	20	8	537	0	24

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	625	0	900	344
Stage 1	-	-	-	-	615	-
Stage 2	-	-	-	-	285	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	952	-	278	652
Stage 1	-	-	-	-	502	-
Stage 2	-	-	-	-	738	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	903	-	261	618
Mov Cap-2 Maneuver	-	-	-	-	261	-
Stage 1	-	-	-	-	471	-
Stage 2	-	-	-	-	738	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	11.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	618	-	-	903	-
HCM Lane V/C Ratio	0.039	-	-	0.009	-
HCM Control Delay (s)	11.1	-	-	9	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	509	0	0	468	8	6
Future Volume (vph)	509	0	0	468	8	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	*0.54	1.00	1.00	*0.54	1.00	1.00
Frt					0.942	
Flt Protected					0.972	
Satd. Flow (prot)	1883	0	0	1883	1706	0
Flt Permitted					0.972	
Satd. Flow (perm)	1883	0	0	1883	1706	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	164			61	183	
Travel Time (s)	3.7			1.4	4.2	
Peak Hour Factor	0.91	1.00	1.00	0.87	0.50	0.50
Heavy Vehicles (%)	9%	2%	2%	9%	2%	2%
Adj. Flow (vph)	559	0	0	538	16	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	559	0	0	538	28	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	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 24.1%		ICU Level of Service A	
Analysis Period (min) 15			

* User Entered Value

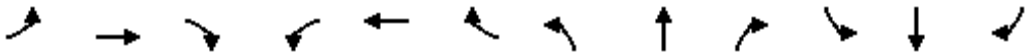
Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	509	0	0	468	8	6
Future Vol, veh/h	509	0	0	468	8	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	100	100	87	50	50
Heavy Vehicles, %	9	2	2	9	2	2
Mvmt Flow	559	0	0	538	16	12

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	828	280
Stage 1	-	-	-	-	559	-
Stage 2	-	-	-	-	269	-
Critical Hdwy	-	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	-	0	0	-	309	717
Stage 1	-	0	0	-	536	-
Stage 2	-	0	0	-	752	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	309	717
Mov Cap-2 Maneuver	-	-	-	-	309	-
Stage 1	-	-	-	-	536	-
Stage 2	-	-	-	-	752	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	14.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	409	-	-
HCM Lane V/C Ratio	0.068	-	-
HCM Control Delay (s)	14.4	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-



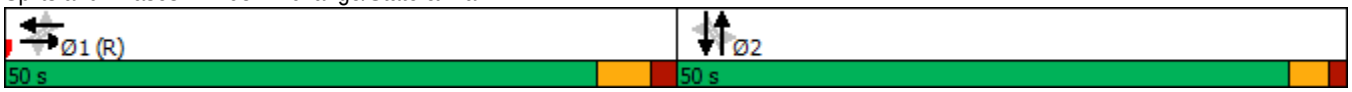
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	387	28	2	336	82	2	601	61	25	609	52
Future Volume (vph)	2	387	28	2	336	82	2	601	61	25	609	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	*0.57	0.95	0.95	*0.68	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor		0.99			0.98			0.99			0.99	
Frt		0.983			0.970			0.983			0.987	
Flt Protected					0.999			0.999			0.997	
Satd. Flow (prot)	0	2002	0	0	2103	0	0	3437	0	0	3328	0
Flt Permitted		0.951			0.941			0.947			0.874	
Satd. Flow (perm)	0	1904	0	0	1980	0	0	3258	0	0	2915	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		422			213			448			247	
Travel Time (s)		9.6			4.8			10.2			5.6	
Confl. Peds. (#/hr)	111		63	63		111	71		62	62		71
Peak Hour Factor	0.50	0.94	0.54	0.25	0.93	0.89	0.25	0.87	0.66	0.57	0.86	0.72
Heavy Vehicles (%)	100%	5%	4%	2%	8%	15%	2%	2%	2%	72%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	33	0	0	0	0	0	0	0
Adj. Flow (vph)	4	412	52	8	361	92	8	691	92	44	708	72
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	468	0	0	461	0	0	791	0	0	824	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			10			10			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	1.09	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)	50.0	50.0		50.0	50.0		29.0	29.0		29.0	29.0	
Total Split (s)	50.0	50.0		50.0	50.0		50.0	50.0		50.0	50.0	
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	
Maximum Green (s)	44.0	44.0		44.0	44.0		45.5	45.5		45.5	45.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		-3.0			-3.0			-3.0			-3.0	
Total Lost Time (s)		3.0			3.0			1.5			1.5	
Lead/Lag	Lead	Lead		Lead	Lead		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?												
Walk Time (s)	27.0	27.0		27.0	27.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	17.0	17.0		17.0	17.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		47.0			47.0			48.5			48.5	
Actuated g/C Ratio		0.47			0.47			0.48			0.48	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.52			0.50			0.50			0.58	
Control Delay		14.2			13.2			14.3			18.9	
Queue Delay		0.0			0.0			0.2			1.0	
Total Delay		14.2			13.2			14.5			19.9	
LOS		B			B			B			B	
Approach Delay		14.2			13.2			14.5			19.9	
Approach LOS		B			B			B			B	
Queue Length 50th (ft)		87			86			122			198	
Queue Length 95th (ft)		116			115			146			243	
Internal Link Dist (ft)		342			133			368			167	
Turn Bay Length (ft)												
Base Capacity (vph)		894			930			1580			1413	
Starvation Cap Reductn		0			0			211			329	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.52			0.50			0.58			0.76	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green, Master Intersection			
Natural Cycle: 80			
Control Type: Pretimed			
Maximum v/c Ratio: 0.58			
Intersection Signal Delay: 16.0		Intersection LOS: B	
Intersection Capacity Utilization 80.6%		ICU Level of Service D	
Analysis Period (min) 15			

* User Entered Value

Splits and Phases: 293: Exchange/State & Main



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lane Configurations							
Traffic Volume (vph)	515	0	0	468	0	0	
Future Volume (vph)	515	0	0	468	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	*0.54	1.00	1.00	*0.54	1.00	1.00	
Ped Bike Factor							
Frt							
Flt Protected							
Satd. Flow (prot)	1883	0	0	1883	0	0	
Flt Permitted							
Satd. Flow (perm)	1883	0	0	1883	0	0	
Right Turn on Red		No				No	
Satd. Flow (RTOR)							
Link Speed (mph)	30			30	30		
Link Distance (ft)	61			608	0		
Travel Time (s)	1.4			13.8	0.0		
Confl. Peds. (#/hr)					33	33	
Peak Hour Factor	0.91	0.90	0.90	0.86	0.90	0.90	
Heavy Vehicles (%)	9%	2%	2%	9%	2%	2%	
Adj. Flow (vph)	566	0	0	544	0	0	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	566	0	0	544	0	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	10			10	0		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)		9	15		15	9	
Number of Detectors	0			0			
Detector Template							
Leading Detector (ft)	0			0			
Trailing Detector (ft)	0			0			
Turn Type	NA			NA			
Protected Phases	1			1			2
Permitted Phases							
Detector Phase	1			1			
Switch Phase							
Minimum Initial (s)	26.0			26.0			6.0
Minimum Split (s)	32.0			32.0			28.0
Total Split (s)	72.0			72.0			28.0
Total Split (%)	72.0%			72.0%			28%
Maximum Green (s)	67.0			67.0			25.0
Yellow Time (s)	4.0			4.0			3.0
All-Red Time (s)	1.0			1.0			0.0
Lost Time Adjust (s)	-2.0			-2.0			
Total Lost Time (s)	3.0			3.0			
Lead/Lag	Lead			Lead			Lag

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lead-Lag Optimize?							
Vehicle Extension (s)	2.0			2.0			2.0
Recall Mode	C-Max			C-Max			None
Walk Time (s)	19.0			19.0			7.0
Flash Dont Walk (s)	7.0			7.0			16.0
Pedestrian Calls (#/hr)	0			0			1
Act Effct Green (s)	94.2			94.2			
Actuated g/C Ratio	0.94			0.94			
v/c Ratio	0.32			0.31			
Control Delay	1.3			2.2			
Queue Delay	0.0			0.0			
Total Delay	1.3			2.2			
LOS	A			A			
Approach Delay	1.3			2.2			
Approach LOS	A			A			
Queue Length 50th (ft)	0			28			
Queue Length 95th (ft)	88			72			
Internal Link Dist (ft)	1			528	1		
Turn Bay Length (ft)							
Base Capacity (vph)	1774			1774			
Starvation Cap Reductn	0			0			
Spillback Cap Reductn	0			0			
Storage Cap Reductn	0			0			
Reduced v/c Ratio	0.32			0.31			

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 88 (88%), Referenced to phase 1:EBWB, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.32			
Intersection Signal Delay: 1.8		Intersection LOS: A	
Intersection Capacity Utilization 38.3%		ICU Level of Service A	
Analysis Period (min) 15			

* User Entered Value

Splits and Phases: 294: Pedestrian Crossing & Main

ALTERNATIVE 1
ETC (2019)
SYNCHRO OUTPUT

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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	341	4	7	316	0	5
Future Volume (vph)	341	4	7	316	0	5
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	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.997				0.865	
Flt Protected			0.950			
Satd. Flow (prot)	1317	0	1770	1329	1611	0
Flt Permitted			0.950			
Satd. Flow (perm)	1317	0	1770	1329	1611	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	213			164	179	
Travel Time (s)	4.8			3.7	4.1	
Confl. Peds. (#/hr)		40	40			
Peak Hour Factor	0.88	0.50	0.58	0.86	1.00	0.63
Heavy Vehicles (%)	12%	2%	2%	9%	2%	2%
Bus Blockages (#/hr)	28	0	0	27	0	0
Parking (#/hr)	5			9		
Adj. Flow (vph)	388	8	12	367	0	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	396	0	12	367	8	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	1.37	1.00	1.00	1.40	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 28.2%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	341	4	7	316	0	5
Future Vol, veh/h	341	4	7	316	0	5
Conflicting Peds, #/hr	0	40	40	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	50	58	86	100	63
Heavy Vehicles, %	12	2	2	9	2	2
Mvmt Flow	388	8	12	367	0	8

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	436	0	823	432
Stage 1	-	-	-	-	432	-
Stage 2	-	-	-	-	391	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1124	-	343	624
Stage 1	-	-	-	-	655	-
Stage 2	-	-	-	-	683	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1087	-	328	603
Mov Cap-2 Maneuver	-	-	-	-	328	-
Stage 1	-	-	-	-	626	-
Stage 2	-	-	-	-	683	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	11.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	603	-	-	1087	-
HCM Lane V/C Ratio	0.013	-	-	0.011	-
HCM Control Delay (s)	11.1	-	-	8.3	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	346	0	0	323	3	3
Future Volume (vph)	346	0	0	323	3	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.955	
Flt Protected					0.968	
Satd. Flow (prot)	1311	0	0	1743	1722	0
Flt Permitted					0.968	
Satd. Flow (perm)	1311	0	0	1743	1722	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	164			61	183	
Travel Time (s)	3.7			1.4	4.2	
Peak Hour Factor	0.89	1.00	1.00	0.85	0.38	0.75
Heavy Vehicles (%)	12%	2%	2%	9%	2%	2%
Bus Blockages (#/hr)	28	0	0	0	0	0
Parking (#/hr)	6					
Adj. Flow (vph)	389	0	0	380	8	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	389	0	0	380	12	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	1.38	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 28.2%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	346	0	0	323	3	3
Future Vol, veh/h	346	0	0	323	3	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	100	100	85	38	75
Heavy Vehicles, %	12	2	2	9	2	2
Mvmt Flow	389	0	0	380	8	4

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	769	389
Stage 1	-	-	-	-	389	-
Stage 2	-	-	-	-	380	-
Critical Hdwy	-	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	-	0	0	-	369	659
Stage 1	-	0	0	-	685	-
Stage 2	-	0	0	-	691	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	369	659
Mov Cap-2 Maneuver	-	-	-	-	369	-
Stage 1	-	-	-	-	685	-
Stage 2	-	-	-	-	691	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	13.5
HCM LOS			B

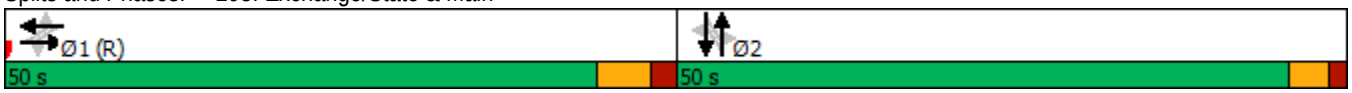
Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	433	-	-
HCM Lane V/C Ratio	0.027	-	-
HCM Control Delay (s)	13.5	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	288	30	3	254	55	2	523	47	16	644	61
Future Volume (vph)	1	288	30	3	254	55	2	523	47	16	644	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	90		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			50			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		1.00		0.99	0.99			0.99			0.99	
Frt		0.984			0.973			0.982			0.986	
Flt Protected		0.999		0.950				0.999			0.998	
Satd. Flow (prot)	0	1734	0	1770	1296	0	0	3354	0	0	3341	0
Flt Permitted		0.997		0.447				0.946			0.917	
Satd. Flow (perm)	0	1730	0	822	1296	0	0	3176	0	0	3066	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		200			213			448			247	
Travel Time (s)		4.5			4.8			10.2			5.6	
Confl. Peds. (#/hr)	68		38	38		68	46		40	40		46
Peak Hour Factor	0.25	0.89	0.68	0.38	0.93	0.92	0.25	0.96	0.62	0.57	0.97	0.85
Heavy Vehicles (%)	2%	8%	2%	2%	8%	20%	2%	3%	13%	100%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	27	0	0	0	0	0	0	0
Parking (#/hr)					5							
Adj. Flow (vph)	4	324	44	8	273	60	8	545	76	28	664	72
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	372	0	8	333	0	0	629	0	0	764	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			10			10			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	1.37	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)	50.0	50.0		50.0	50.0		29.0	29.0		29.0	29.0	
Total Split (s)	50.0	50.0		50.0	50.0		50.0	50.0		50.0	50.0	
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	
Maximum Green (s)	44.0	44.0		44.0	44.0		45.5	45.5		45.5	45.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		-3.0		-3.0	-3.0			-3.0			-3.0	
Total Lost Time (s)		3.0		3.0	3.0			1.5			1.5	
Lead/Lag	Lead	Lead		Lead	Lead		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?												
Walk Time (s)	27.0	27.0		27.0	27.0		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)	17.0	17.0		17.0	17.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		47.0		47.0	47.0			48.5			48.5	
Actuated g/C Ratio		0.47		0.47	0.47			0.48			0.48	
v/c Ratio		0.46		0.02	0.55			0.41			0.51	
Control Delay		11.5		8.7	15.2			12.9			17.7	
Queue Delay		0.2		0.0	0.3			0.0			1.0	
Total Delay		11.8		8.7	15.5			12.9			18.7	
LOS		B		A	B			B			B	
Approach Delay		11.8			15.3			12.9			18.7	
Approach LOS		B			B			B			B	
Queue Length 50th (ft)		58		2	85			81			126	
Queue Length 95th (ft)		78		3	120			108			154	
Internal Link Dist (ft)		120			133			368			167	
Turn Bay Length (ft)				90								
Base Capacity (vph)		813		386	609			1540			1487	
Starvation Cap Reductn		95		0	43			0			442	
Spillback Cap Reductn		0		0	0			0			0	
Storage Cap Reductn		0		0	0			0			0	
Reduced v/c Ratio		0.52		0.02	0.59			0.41			0.73	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green, Master Intersection			
Natural Cycle: 80			
Control Type: Pretimed			
Maximum v/c Ratio: 0.55			
Intersection Signal Delay: 15.2		Intersection LOS: B	
Intersection Capacity Utilization 75.0%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 293: Exchange/State & Main



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lane Configurations							
Traffic Volume (vph)	349	0	0	323	0	0	
Future Volume (vph)	349	0	0	323	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor							
Frt							
Flt Protected							
Satd. Flow (prot)	1696	0	0	1743	0	0	
Flt Permitted							
Satd. Flow (perm)	1696	0	0	1743	0	0	
Right Turn on Red		No				No	
Satd. Flow (RTOR)							
Link Speed (mph)	30			30	30		
Link Distance (ft)	61			608	45		
Travel Time (s)	1.4			13.8	1.0		
Confl. Peds. (#/hr)					30	30	
Peak Hour Factor	0.88	0.90	0.90	0.86	0.90	0.90	
Heavy Vehicles (%)	12%	2%	2%	9%	2%	2%	
Adj. Flow (vph)	397	0	0	376	0	0	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	397	0	0	376	0	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	10			10	0		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)		9	15		15	9	
Number of Detectors	0			0			
Detector Template							
Leading Detector (ft)	0			0			
Trailing Detector (ft)	0			0			
Turn Type	NA			NA			
Protected Phases	1			1			2
Permitted Phases							
Detector Phase	1			1			
Switch Phase							
Minimum Initial (s)	26.0			26.0			6.0
Minimum Split (s)	32.0			32.0			28.0
Total Split (s)	72.0			72.0			28.0
Total Split (%)	72.0%			72.0%			28%
Maximum Green (s)	67.0			67.0			25.0
Yellow Time (s)	4.0			4.0			3.0
All-Red Time (s)	1.0			1.0			0.0
Lost Time Adjust (s)	-2.0			-2.0			
Total Lost Time (s)	3.0			3.0			
Lead/Lag	Lead			Lead			Lag

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lead-Lag Optimize?							
Vehicle Extension (s)	2.0			2.0			2.0
Recall Mode	C-Max			C-Max			None
Walk Time (s)	19.0			19.0			7.0
Flash Dont Walk (s)	7.0			7.0			16.0
Pedestrian Calls (#/hr)	0			0			1
Act Effct Green (s)	94.2			94.2			
Actuated g/C Ratio	0.94			0.94			
v/c Ratio	0.25			0.23			
Control Delay	1.3			1.4			
Queue Delay	0.0			0.0			
Total Delay	1.4			1.4			
LOS	A			A			
Approach Delay	1.4			1.4			
Approach LOS	A			A			
Queue Length 50th (ft)	0			0			
Queue Length 95th (ft)	75			57			
Internal Link Dist (ft)	1			528	1		
Turn Bay Length (ft)							
Base Capacity (vph)	1598			1642			
Starvation Cap Reductn	92			0			
Spillback Cap Reductn	0			0			
Storage Cap Reductn	0			0			
Reduced v/c Ratio	0.26			0.23			

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 72 (72%), Referenced to phase 1:EBWB, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.25			
Intersection Signal Delay: 1.4		Intersection LOS: A	
Intersection Capacity Utilization 38.0%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 294: Pedestrian Crossing & Main

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	494	8	6	462	0	14
Future Volume (vph)	494	8	6	462	0	14
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)			33		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.995				0.865	
Flt Protected			0.950			
Satd. Flow (prot)	1363	0	1536	1490	1611	0
Flt Permitted			0.950			
Satd. Flow (perm)	1363	0	1536	1490	1611	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	213			164	179	
Travel Time (s)	4.8			3.7	4.1	
Confl. Peds. (#/hr)		62	62			
Peak Hour Factor	0.91	0.40	0.75	0.86	1.00	0.58
Heavy Vehicles (%)	9%	2%	2%	9%	2%	2%
Bus Blockages (#/hr)	26	0	33	0	0	0
Parking (#/hr)	5			9		
Adj. Flow (vph)	543	20	8	537	0	24
Shared Lane Traffic (%)						
Lane Group Flow (vph)	563	0	8	537	24	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	1.36	1.00	1.20	1.22	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 36.6%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	494	8	6	462	0	14
Future Vol, veh/h	494	8	6	462	0	14
Conflicting Peds, #/hr	0	62	62	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	40	75	86	100	58
Heavy Vehicles, %	9	2	2	9	2	2
Mvmt Flow	543	20	8	537	0	24

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	625	0	1168	615
Stage 1	-	-	-	-	615	-
Stage 2	-	-	-	-	553	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	956	-	214	491
Stage 1	-	-	-	-	539	-
Stage 2	-	-	-	-	576	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	907	-	201	466
Mov Cap-2 Maneuver	-	-	-	-	201	-
Stage 1	-	-	-	-	506	-
Stage 2	-	-	-	-	576	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	13.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	466	-	-	907	-
HCM Lane V/C Ratio	0.052	-	-	0.009	-
HCM Control Delay (s)	13.1	-	-	9	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	509	0	0	468	8	6
Future Volume (vph)	509	0	0	468	8	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.942	
Flt Protected					0.972	
Satd. Flow (prot)	1359	0	0	1743	1706	0
Flt Permitted					0.972	
Satd. Flow (perm)	1359	0	0	1743	1706	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	164			61	183	
Travel Time (s)	3.7			1.4	4.2	
Peak Hour Factor	0.91	1.00	1.00	0.87	0.50	0.50
Heavy Vehicles (%)	9%	2%	2%	9%	2%	2%
Bus Blockages (#/hr)	26	0	0	0	0	0
Parking (#/hr)	6					
Adj. Flow (vph)	559	0	0	538	16	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	559	0	0	538	28	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	1.37	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 36.8%		ICU Level of Service A	
Analysis Period (min) 15			

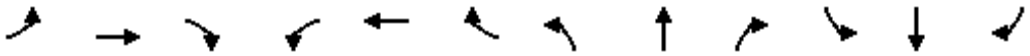
Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↱	
Traffic Vol, veh/h	509	0	0	468	8	6
Future Vol, veh/h	509	0	0	468	8	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	100	100	87	50	50
Heavy Vehicles, %	9	2	2	9	2	2
Mvmt Flow	559	0	0	538	16	12

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	1097	559
Stage 1	-	-	-	-	559	-
Stage 2	-	-	-	-	538	-
Critical Hdwy	-	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	-	0	0	-	236	529
Stage 1	-	0	0	-	572	-
Stage 2	-	0	0	-	585	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	236	529
Mov Cap-2 Maneuver	-	-	-	-	236	-
Stage 1	-	-	-	-	572	-
Stage 2	-	-	-	-	585	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	17.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	309	-	-
HCM Lane V/C Ratio	0.091	-	-
HCM Control Delay (s)	17.8	-	-
HCM Lane LOS	C	-	-
HCM 95th %tile Q(veh)	0.3	-	-

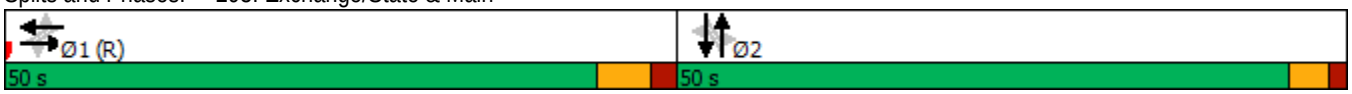


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	387	28	2	336	82	2	601	61	25	609	52
Future Volume (vph)	2	387	28	2	336	82	2	601	61	25	609	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	90		0	0		0	0		0
Storage Lanes	0		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		0.99		0.98	0.98			0.98			0.99	
Frt		0.985			0.970			0.983			0.987	
Flt Protected				0.950				0.999			0.997	
Satd. Flow (prot)	0	1760	0	1770	1257	0	0	3412	0	0	3328	0
Flt Permitted		0.997		0.383				0.947			0.874	
Satd. Flow (perm)	0	1754	0	700	1257	0	0	3233	0	0	2913	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		200			213			448			247	
Travel Time (s)		4.5			4.8			10.2			5.6	
Confl. Peds. (#/hr)	111		63	63		111	71		62	62		71
Peak Hour Factor	0.50	0.94	0.54	0.25	0.93	0.89	0.25	0.87	0.66	0.57	0.86	0.72
Heavy Vehicles (%)	100%	5%	4%	2%	8%	15%	2%	2%	2%	72%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	33	0	0	0	0	0	0	0
Parking (#/hr)					5							
Adj. Flow (vph)	4	412	52	8	361	92	8	691	92	44	708	72
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	468	0	8	453	0	0	791	0	0	824	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			10			10			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	1.41	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)	50.0	50.0		50.0	50.0		29.0	29.0		29.0	29.0	
Total Split (s)	50.0	50.0		50.0	50.0		50.0	50.0		50.0	50.0	
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	
Maximum Green (s)	44.0	44.0		44.0	44.0		45.5	45.5		45.5	45.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		-3.0		-3.0	-3.0			-3.0			-3.0	
Total Lost Time (s)		3.0		3.0	3.0			1.5			1.5	
Lead/Lag	Lead	Lead		Lead	Lead		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?												
Walk Time (s)	27.0	27.0		27.0	27.0		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)	17.0	17.0		17.0	17.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		47.0		47.0	47.0			48.5			48.5	
Actuated g/C Ratio		0.47		0.47	0.47			0.48			0.48	
v/c Ratio		0.57		0.02	0.77			0.50			0.58	
Control Delay		16.9		6.0	22.3			14.9			18.8	
Queue Delay		0.3		0.0	1.0			0.2			1.1	
Total Delay		17.2		6.0	23.3			15.1			20.0	
LOS		B		A	C			B			B	
Approach Delay		17.2			23.0			15.1			20.0	
Approach LOS		B			C			B			B	
Queue Length 50th (ft)		121		2	268			124			141	
Queue Length 95th (ft)		161		2	#336			148			162	
Internal Link Dist (ft)		120			133			368			167	
Turn Bay Length (ft)				90								
Base Capacity (vph)		824		329	590			1568			1412	
Starvation Cap Reductn		64		0	32			222			344	
Spillback Cap Reductn		26		0	0			0			0	
Storage Cap Reductn		0		0	0			0			0	
Reduced v/c Ratio		0.62		0.02	0.81			0.59			0.77	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green, Master Intersection			
Natural Cycle: 80			
Control Type: Pretimed			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay: 18.5		Intersection LOS: B	
Intersection Capacity Utilization 80.6%		ICU Level of Service D	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 293: Exchange/State & Main



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lane Configurations							
Traffic Volume (vph)	512	0	0	466	0	0	
Future Volume (vph)	512	0	0	466	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	*0.54	1.00	1.00	*0.54	1.00	1.00	
Ped Bike Factor							
Frt							
Flt Protected							
Satd. Flow (prot)	941	0	0	941	0	0	
Flt Permitted							
Satd. Flow (perm)	941	0	0	941	0	0	
Right Turn on Red		No				No	
Satd. Flow (RTOR)							
Link Speed (mph)	30			30	30		
Link Distance (ft)	61			608	45		
Travel Time (s)	1.4			13.8	1.0		
Confl. Peds. (#/hr)					33	33	
Peak Hour Factor	0.91	0.90	0.90	0.86	0.90	0.90	
Heavy Vehicles (%)	9%	2%	2%	9%	2%	2%	
Adj. Flow (vph)	563	0	0	542	0	0	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	563	0	0	542	0	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	10			10	0		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)		9	15		15	9	
Number of Detectors	0			0			
Detector Template							
Leading Detector (ft)	0			0			
Trailing Detector (ft)	0			0			
Turn Type	NA			NA			
Protected Phases	1			1			2
Permitted Phases							
Detector Phase	1			1			
Switch Phase							
Minimum Initial (s)	26.0			26.0			6.0
Minimum Split (s)	32.0			32.0			28.0
Total Split (s)	72.0			72.0			28.0
Total Split (%)	72.0%			72.0%			28%
Maximum Green (s)	67.0			67.0			25.0
Yellow Time (s)	4.0			4.0			3.0
All-Red Time (s)	1.0			1.0			0.0
Lost Time Adjust (s)	-2.0			-2.0			
Total Lost Time (s)	3.0			3.0			
Lead/Lag	Lead			Lead			Lag

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lead-Lag Optimize?							
Vehicle Extension (s)	2.0			2.0			2.0
Recall Mode	C-Max			C-Max			None
Walk Time (s)	19.0			19.0			7.0
Flash Dont Walk (s)	7.0			7.0			16.0
Pedestrian Calls (#/hr)	0			0			1
Act Effct Green (s)	94.2			94.2			
Actuated g/C Ratio	0.94			0.94			
v/c Ratio	0.64			0.61			
Control Delay	10.9			13.0			
Queue Delay	0.0			0.1			
Total Delay	10.9			13.1			
LOS	B			B			
Approach Delay	10.9			13.1			
Approach LOS	B			B			
Queue Length 50th (ft)	170			351			
Queue Length 95th (ft)	#916			775			
Internal Link Dist (ft)	1			528	1		
Turn Bay Length (ft)							
Base Capacity (vph)	886			886			
Starvation Cap Reductn	0			0			
Spillback Cap Reductn	0			19			
Storage Cap Reductn	0			0			
Reduced v/c Ratio	0.64			0.63			

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 68 (68%), Referenced to phase 1:EBWB, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.64			
Intersection Signal Delay: 11.9		Intersection LOS: B	
Intersection Capacity Utilization 43.6%		ICU Level of Service A	
Analysis Period (min) 15			

* User Entered Value

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

Splits and Phases: 294: Pedestrian Crossing & Main

ALTERNATIVE 2
ETC (2019)
SYNCHRO OUTPUT

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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	341	4	7	316	0	5
Future Volume (vph)	341	4	7	316	0	5
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	*0.56	0.95	1.00	*0.55	1.00	1.00
Ped Bike Factor						
Frt	0.997				0.865	
Flt Protected			0.950			
Satd. Flow (prot)	1791	0	1770	1691	1611	0
Flt Permitted			0.950			
Satd. Flow (perm)	1791	0	1770	1691	1611	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	213			164	179	
Travel Time (s)	4.8			3.7	4.1	
Confl. Peds. (#/hr)		40	40			
Peak Hour Factor	0.88	0.50	0.58	0.86	1.00	0.63
Heavy Vehicles (%)	12%	2%	2%	9%	2%	2%
Bus Blockages (#/hr)	28	0	0	27	0	0
Parking (#/hr)				7		
Adj. Flow (vph)	388	8	12	367	0	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	396	0	12	367	8	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	1.08	1.00	1.00	1.17	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 22.3%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	341	4	7	316	0	5
Future Vol, veh/h	341	4	7	316	0	5
Conflicting Peds, #/hr	0	40	40	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	50	58	86	100	63
Heavy Vehicles, %	12	2	2	9	2	2
Mvmt Flow	388	8	12	367	0	8

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	436	0	640	238
Stage 1	-	-	-	-	432	-
Stage 2	-	-	-	-	208	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	1120	-	408	763
Stage 1	-	-	-	-	622	-
Stage 2	-	-	-	-	807	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1083	-	390	738
Mov Cap-2 Maneuver	-	-	-	-	390	-
Stage 1	-	-	-	-	595	-
Stage 2	-	-	-	-	807	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	9.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	738	-	-	1083	-
HCM Lane V/C Ratio	0.011	-	-	0.011	-
HCM Control Delay (s)	9.9	-	-	8.4	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	346	0	0	323	3	3
Future Volume (vph)	346	0	0	323	3	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	*0.56	1.00	1.00	*0.55	1.00	1.00
Frt					0.955	
Flt Protected					0.968	
Satd. Flow (prot)	1777	0	0	1917	1722	0
Flt Permitted					0.968	
Satd. Flow (perm)	1777	0	0	1917	1722	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	164			61	183	
Travel Time (s)	3.7			1.4	4.2	
Peak Hour Factor	0.89	1.00	1.00	0.85	0.38	0.75
Heavy Vehicles (%)	12%	2%	2%	9%	2%	2%
Parking (#/hr)	6					
Adj. Flow (vph)	389	0	0	380	8	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	389	0	0	380	12	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	1.09	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 19.6%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	346	0	0	323	3	3
Future Vol, veh/h	346	0	0	323	3	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	100	100	85	38	75
Heavy Vehicles, %	12	2	2	9	2	2
Mvmt Flow	389	0	0	380	8	4

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	579	195
Stage 1	-	-	-	-	389	-
Stage 2	-	-	-	-	190	-
Critical Hdwy	-	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	-	0	0	-	446	814
Stage 1	-	0	0	-	654	-
Stage 2	-	0	0	-	823	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	446	814
Mov Cap-2 Maneuver	-	-	-	-	446	-
Stage 1	-	-	-	-	654	-
Stage 2	-	-	-	-	823	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	12
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	526	-	-
HCM Lane V/C Ratio	0.023	-	-
HCM Control Delay (s)	12	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-

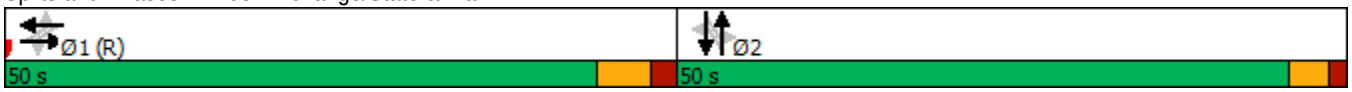
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	288	30	3	254	55	2	523	47	16	644	61
Future Volume (vph)	1	288	30	3	254	55	2	523	47	16	644	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	*0.60	0.95	0.95	*0.66	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor		1.00			0.99			0.99			0.99	
Frt		0.982			0.974			0.982			0.986	
Flt Protected		0.999			0.999			0.999			0.998	
Satd. Flow (prot)	0	2077	0	0	2078	0	0	3372	0	0	3341	0
Flt Permitted		0.951			0.941			0.946			0.917	
Satd. Flow (perm)	0	1976	0	0	1957	0	0	3192	0	0	3068	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		422			213			448			247	
Travel Time (s)		9.6			4.8			10.2			5.6	
Confl. Peds. (#/hr)	68		38	38		68	46		40	40		46
Peak Hour Factor	0.25	0.89	0.68	0.38	0.93	0.92	0.25	0.96	0.62	0.57	0.97	0.85
Heavy Vehicles (%)	2%	8%	2%	2%	8%	20%	2%	3%	13%	100%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	27	0	0	0	0	0	0	0
Adj. Flow (vph)	4	324	44	8	273	60	8	545	76	28	664	72
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	372	0	0	341	0	0	629	0	0	764	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			10			10			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	1.07	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)	50.0	50.0		50.0	50.0		29.0	29.0		29.0	29.0	
Total Split (s)	50.0	50.0		50.0	50.0		50.0	50.0		50.0	50.0	
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	
Maximum Green (s)	44.0	44.0		44.0	44.0		45.5	45.5		45.5	45.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		-3.0			-3.0			-3.0			-3.0	
Total Lost Time (s)		3.0			3.0			1.5			1.5	
Lead/Lag	Lead	Lead		Lead	Lead		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?												
Walk Time (s)	27.0	27.0		27.0	27.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	17.0	17.0		17.0	17.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		47.0			47.0			48.5			48.5	
Actuated g/C Ratio		0.47			0.47			0.48			0.48	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.40			0.37			0.41			0.51	
Control Delay		10.0			11.8			12.9			17.6	
Queue Delay		0.0			0.0			0.0			1.0	
Total Delay		10.0			11.8			12.9			18.6	
LOS		B			B			B			B	
Approach Delay		10.0			11.8			12.9			18.6	
Approach LOS		B			B			B			B	
Queue Length 50th (ft)		45			62			81			132	
Queue Length 95th (ft)		60			87			108			161	
Internal Link Dist (ft)		342			133			368			167	
Turn Bay Length (ft)												
Base Capacity (vph)		928			919			1548			1487	
Starvation Cap Reductn		0			0			0			443	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.40			0.37			0.41			0.73	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green, Master Intersection			
Natural Cycle: 80			
Control Type: Pretimed			
Maximum v/c Ratio: 0.51			
Intersection Signal Delay: 14.3		Intersection LOS: B	
Intersection Capacity Utilization 75.0%		ICU Level of Service D	
Analysis Period (min) 15			

* User Entered Value

Splits and Phases: 293: Exchange/State & Main



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lane Configurations							
Traffic Volume (vph)	349	0	0	323	0	0	
Future Volume (vph)	349	0	0	323	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	*0.56	1.00	1.00	*0.55	1.00	1.00	
Ped Bike Factor							
Frt							
Flt Protected							
Satd. Flow (prot)	1900	0	0	1917	0	0	
Flt Permitted							
Satd. Flow (perm)	1900	0	0	1917	0	0	
Right Turn on Red		No				No	
Satd. Flow (RTOR)							
Link Speed (mph)	30			30	30		
Link Distance (ft)	61			608	45		
Travel Time (s)	1.4			13.8	1.0		
Confl. Peds. (#/hr)					30	30	
Peak Hour Factor	0.88	0.90	0.90	0.86	0.90	0.90	
Heavy Vehicles (%)	12%	2%	2%	9%	2%	2%	
Adj. Flow (vph)	397	0	0	376	0	0	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	397	0	0	376	0	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	10			10	0		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)		9	15		15	9	
Number of Detectors	0			0			
Detector Template							
Leading Detector (ft)	0			0			
Trailing Detector (ft)	0			0			
Turn Type	NA			NA			
Protected Phases	1			1			2
Permitted Phases							
Detector Phase	1			1			
Switch Phase							
Minimum Initial (s)	26.0			26.0			6.0
Minimum Split (s)	32.0			32.0			28.0
Total Split (s)	72.0			72.0			28.0
Total Split (%)	72.0%			72.0%			28%
Maximum Green (s)	67.0			67.0			25.0
Yellow Time (s)	4.0			4.0			3.0
All-Red Time (s)	1.0			1.0			0.0
Lost Time Adjust (s)	-2.0			-2.0			
Total Lost Time (s)	3.0			3.0			
Lead/Lag	Lead			Lead			Lag

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lead-Lag Optimize?							
Vehicle Extension (s)	2.0			2.0			2.0
Recall Mode	C-Max			C-Max			None
Walk Time (s)	19.0			19.0			7.0
Flash Dont Walk (s)	7.0			7.0			16.0
Pedestrian Calls (#/hr)	0			0			1
Act Effct Green (s)	94.2			94.2			
Actuated g/C Ratio	0.94			0.94			
v/c Ratio	0.22			0.21			
Control Delay	1.2			0.9			
Queue Delay	0.0			0.0			
Total Delay	1.2			0.9			
LOS	A			A			
Approach Delay	1.2			0.9			
Approach LOS	A			A			
Queue Length 50th (ft)	0			0			
Queue Length 95th (ft)	59			46			
Internal Link Dist (ft)	1			528	1		
Turn Bay Length (ft)							
Base Capacity (vph)	1790			1806			
Starvation Cap Reductn	0			0			
Spillback Cap Reductn	0			0			
Storage Cap Reductn	0			0			
Reduced v/c Ratio	0.22			0.21			

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: Actuated-Coordinated			
Maximum v/c Ratio: 0.22			
Intersection Signal Delay: 1.0		Intersection LOS: A	
Intersection Capacity Utilization 38.0%		ICU Level of Service A	
Analysis Period (min) 15			

* User Entered Value

Splits and Phases: 294: Pedestrian Crossing & Main

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	494	8	6	462	0	14
Future Volume (vph)	494	8	6	462	0	14
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)			33		25	
Lane Util. Factor	*0.54	0.95	1.00	*0.54	1.00	1.00
Ped Bike Factor						
Frt	0.995				0.865	
Flt Protected			0.950			
Satd. Flow (prot)	1780	0	1770	1640	1611	0
Flt Permitted			0.950			
Satd. Flow (perm)	1780	0	1770	1640	1611	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	213			164	179	
Travel Time (s)	4.8			3.7	4.1	
Confl. Peds. (#/hr)		62	62			
Peak Hour Factor	0.91	0.40	0.75	0.86	1.00	0.58
Heavy Vehicles (%)	9%	2%	2%	9%	2%	2%
Bus Blockages (#/hr)	26	0	0	33	0	0
Parking (#/hr)				7		
Adj. Flow (vph)	543	20	8	537	0	24
Shared Lane Traffic (%)						
Lane Group Flow (vph)	563	0	8	537	24	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	1.07	1.00	1.00	1.19	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 24.0%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	494	8	6	462	0	14
Future Vol, veh/h	494	8	6	462	0	14
Conflicting Peds, #/hr	0	62	62	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	40	75	86	100	58
Heavy Vehicles, %	9	2	2	9	2	2
Mvmt Flow	543	20	8	537	0	24

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	625	0	900	344
Stage 1	-	-	-	-	615	-
Stage 2	-	-	-	-	285	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	952	-	278	652
Stage 1	-	-	-	-	502	-
Stage 2	-	-	-	-	738	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	903	-	261	618
Mov Cap-2 Maneuver	-	-	-	-	261	-
Stage 1	-	-	-	-	471	-
Stage 2	-	-	-	-	738	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	11.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	618	-	-	903	-
HCM Lane V/C Ratio	0.039	-	-	0.009	-
HCM Control Delay (s)	11.1	-	-	9	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	509	0	0	468	8	6
Future Volume (vph)	509	0	0	468	8	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	*0.54	1.00	1.00	*0.54	1.00	1.00
Frt					0.942	
Flt Protected					0.972	
Satd. Flow (prot)	1760	0	0	1883	1706	0
Flt Permitted					0.972	
Satd. Flow (perm)	1760	0	0	1883	1706	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	164			61	183	
Travel Time (s)	3.7			1.4	4.2	
Peak Hour Factor	0.91	1.00	1.00	0.87	0.50	0.50
Heavy Vehicles (%)	9%	2%	2%	9%	2%	2%
Parking (#/hr)	6					
Adj. Flow (vph)	559	0	0	538	16	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	559	0	0	538	28	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	1.09	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 24.1%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	509	0	0	468	8	6
Future Vol, veh/h	509	0	0	468	8	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	100	100	87	50	50
Heavy Vehicles, %	9	2	2	9	2	2
Mvmt Flow	559	0	0	538	16	12

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	828	280
Stage 1	-	-	-	-	559	-
Stage 2	-	-	-	-	269	-
Critical Hdwy	-	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	-	0	0	-	309	717
Stage 1	-	0	0	-	536	-
Stage 2	-	0	0	-	752	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	309	717
Mov Cap-2 Maneuver	-	-	-	-	309	-
Stage 1	-	-	-	-	536	-
Stage 2	-	-	-	-	752	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	14.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	409	-	-
HCM Lane V/C Ratio	0.068	-	-
HCM Control Delay (s)	14.4	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-

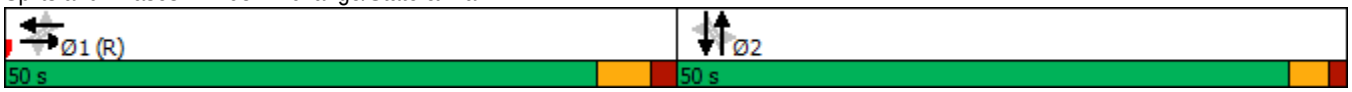
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	387	28	2	336	82	2	601	61	25	609	52
Future Volume (vph)	2	387	28	2	336	82	2	601	61	25	609	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	*0.57	0.95	0.95	*0.68	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor		0.99			0.98			0.99			0.99	
Frt		0.983			0.970			0.983			0.987	
Flt Protected					0.999			0.999			0.997	
Satd. Flow (prot)	0	2002	0	0	2103	0	0	3437	0	0	3328	0
Flt Permitted		0.951			0.941			0.947			0.874	
Satd. Flow (perm)	0	1904	0	0	1980	0	0	3258	0	0	2915	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		422			213			448			247	
Travel Time (s)		9.6			4.8			10.2			5.6	
Confl. Peds. (#/hr)	111		63	63		111	71		62	62		71
Peak Hour Factor	0.50	0.94	0.54	0.25	0.93	0.89	0.25	0.87	0.66	0.57	0.86	0.72
Heavy Vehicles (%)	100%	5%	4%	2%	8%	15%	2%	2%	2%	72%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	33	0	0	0	0	0	0	0
Adj. Flow (vph)	4	412	52	8	361	92	8	691	92	44	708	72
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	468	0	0	461	0	0	791	0	0	824	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			10			10			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	1.09	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)	50.0	50.0		50.0	50.0		29.0	29.0		29.0	29.0	
Total Split (s)	50.0	50.0		50.0	50.0		50.0	50.0		50.0	50.0	
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	
Maximum Green (s)	44.0	44.0		44.0	44.0		45.5	45.5		45.5	45.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		-3.0			-3.0			-3.0			-3.0	
Total Lost Time (s)		3.0			3.0			1.5			1.5	
Lead/Lag	Lead	Lead		Lead	Lead		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?												
Walk Time (s)	27.0	27.0		27.0	27.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	17.0	17.0		17.0	17.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		47.0			47.0			48.5			48.5	
Actuated g/C Ratio		0.47			0.47			0.48			0.48	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.52			0.50			0.50			0.58	
Control Delay		14.2			13.2			14.3			18.9	
Queue Delay		0.0			0.0			0.2			1.0	
Total Delay		14.2			13.2			14.5			19.9	
LOS		B			B			B			B	
Approach Delay		14.2			13.2			14.5			19.9	
Approach LOS		B			B			B			B	
Queue Length 50th (ft)		87			86			122			198	
Queue Length 95th (ft)		116			115			146			243	
Internal Link Dist (ft)		342			133			368			167	
Turn Bay Length (ft)												
Base Capacity (vph)		894			930			1580			1413	
Starvation Cap Reductn		0			0			211			329	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.52			0.50			0.58			0.76	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green, Master Intersection			
Natural Cycle: 80			
Control Type: Pretimed			
Maximum v/c Ratio: 0.58			
Intersection Signal Delay: 16.0		Intersection LOS: B	
Intersection Capacity Utilization 80.6%		ICU Level of Service D	
Analysis Period (min) 15			

* User Entered Value

Splits and Phases: 293: Exchange/State & Main



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lane Configurations							
Traffic Volume (vph)	515	0	0	468	0	0	
Future Volume (vph)	515	0	0	468	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	*0.54	1.00	1.00	*0.54	1.00	1.00	
Ped Bike Factor							
Frt							
Flt Protected							
Satd. Flow (prot)	1883	0	0	1883	0	0	
Flt Permitted							
Satd. Flow (perm)	1883	0	0	1883	0	0	
Right Turn on Red		No				No	
Satd. Flow (RTOR)							
Link Speed (mph)	30			30	30		
Link Distance (ft)	61			608	45		
Travel Time (s)	1.4			13.8	1.0		
Confl. Peds. (#/hr)					33	33	
Peak Hour Factor	0.91	0.90	0.90	0.86	0.90	0.90	
Heavy Vehicles (%)	9%	2%	2%	9%	2%	2%	
Adj. Flow (vph)	566	0	0	544	0	0	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	566	0	0	544	0	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	10			10	0		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)		9	15		15	9	
Number of Detectors	0			0			
Detector Template							
Leading Detector (ft)	0			0			
Trailing Detector (ft)	0			0			
Turn Type	NA			NA			
Protected Phases	1			1			2
Permitted Phases							
Detector Phase	1			1			
Switch Phase							
Minimum Initial (s)	26.0			26.0			6.0
Minimum Split (s)	32.0			32.0			28.0
Total Split (s)	72.0			72.0			28.0
Total Split (%)	72.0%			72.0%			28%
Maximum Green (s)	67.0			67.0			25.0
Yellow Time (s)	4.0			4.0			3.0
All-Red Time (s)	1.0			1.0			0.0
Lost Time Adjust (s)	-2.0			-2.0			
Total Lost Time (s)	3.0			3.0			
Lead/Lag	Lead			Lead			Lag

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lead-Lag Optimize?							
Vehicle Extension (s)	2.0			2.0			2.0
Recall Mode	C-Max			C-Max			None
Walk Time (s)	19.0			19.0			7.0
Flash Dont Walk (s)	7.0			7.0			16.0
Pedestrian Calls (#/hr)	0			0			1
Act Effct Green (s)	94.2			94.2			
Actuated g/C Ratio	0.94			0.94			
v/c Ratio	0.32			0.31			
Control Delay	1.3			2.2			
Queue Delay	0.0			0.0			
Total Delay	1.3			2.2			
LOS	A			A			
Approach Delay	1.3			2.2			
Approach LOS	A			A			
Queue Length 50th (ft)	0			28			
Queue Length 95th (ft)	88			72			
Internal Link Dist (ft)	1			528	1		
Turn Bay Length (ft)							
Base Capacity (vph)	1774			1774			
Starvation Cap Reductn	0			0			
Spillback Cap Reductn	0			0			
Storage Cap Reductn	0			0			
Reduced v/c Ratio	0.32			0.31			

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 88 (88%), Referenced to phase 1:EBWB, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.32			
Intersection Signal Delay: 1.8		Intersection LOS: A	
Intersection Capacity Utilization 38.3%		ICU Level of Service A	
Analysis Period (min) 15			

* User Entered Value

Splits and Phases: 294: Pedestrian Crossing & Main

BASE
ETC +20 (2039)
SYNCHRO OUTPUT

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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	375	4	8	348	0	6
Future Volume (vph)	375	4	8	348	0	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	150		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			33		25	
Lane Util. Factor	*0.56	0.95	1.00	*0.55	1.00	1.00
Ped Bike Factor						
Frt	0.997				0.865	
Flt Protected			0.950			
Satd. Flow (prot)	1791	0	1770	1917	1611	0
Flt Permitted			0.950			
Satd. Flow (perm)	1791	0	1770	1917	1611	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	213			164	179	
Travel Time (s)	4.8			3.7	4.1	
Confl. Peds. (#/hr)		40	40			
Peak Hour Factor	0.88	0.50	0.58	0.86	1.00	0.63
Heavy Vehicles (%)	12%	2%	2%	9%	2%	2%
Bus Blockages (#/hr)	28	0	0	0	0	0
Adj. Flow (vph)	426	8	14	405	0	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	434	0	14	405	10	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	1.08	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 22.6%		ICU Level of Service A	
Analysis Period (min) 15			

* User Entered Value

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	375	4	8	348	0	6
Future Vol, veh/h	375	4	8	348	0	6
Conflicting Peds, #/hr	0	40	40	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	50	58	86	100	63
Heavy Vehicles, %	12	2	2	9	2	2
Mvmt Flow	426	8	14	405	0	10

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	474	0	701	257
Stage 1	-	-	-	-	470	-
Stage 2	-	-	-	-	231	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	1084	-	373	742
Stage 1	-	-	-	-	595	-
Stage 2	-	-	-	-	785	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1048	-	356	717
Mov Cap-2 Maneuver	-	-	-	-	356	-
Stage 1	-	-	-	-	568	-
Stage 2	-	-	-	-	785	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	10.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	717	-	-	1048	-
HCM Lane V/C Ratio	0.013	-	-	0.013	-
HCM Control Delay (s)	10.1	-	-	8.5	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	381	0	0	355	3	3
Future Volume (vph)	381	0	0	355	3	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	*0.56	1.00	1.00	*0.55	1.00	1.00
Frt					0.955	
Flt Protected					0.968	
Satd. Flow (prot)	1900	0	0	1917	1722	0
Flt Permitted					0.968	
Satd. Flow (perm)	1900	0	0	1917	1722	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	164			61	183	
Travel Time (s)	3.7			1.4	4.2	
Peak Hour Factor	0.89	1.00	1.00	0.85	0.38	0.75
Heavy Vehicles (%)	12%	2%	2%	9%	2%	2%
Adj. Flow (vph)	428	0	0	418	8	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	428	0	0	418	12	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	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 20.5%		ICU Level of Service A	
Analysis Period (min) 15			

* User Entered Value

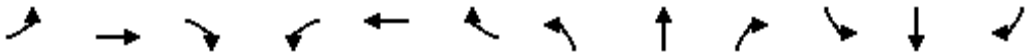
Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	381	0	0	355	3	3
Future Vol, veh/h	381	0	0	355	3	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	100	100	85	38	75
Heavy Vehicles, %	12	2	2	9	2	2
Mvmt Flow	428	0	0	418	8	4

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	637	214
Stage 1	-	-	-	-	428	-
Stage 2	-	-	-	-	209	-
Critical Hdwy	-	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	-	0	0	-	410	791
Stage 1	-	0	0	-	625	-
Stage 2	-	0	0	-	806	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	410	791
Mov Cap-2 Maneuver	-	-	-	-	410	-
Stage 1	-	-	-	-	625	-
Stage 2	-	-	-	-	806	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	12.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	489	-	-
HCM Lane V/C Ratio	0.024	-	-
HCM Control Delay (s)	12.5	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-



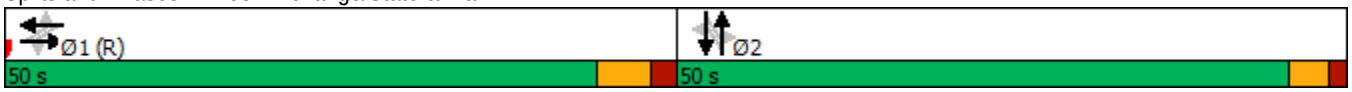
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	317	33	3	279	61	2	575	52	18	708	67
Future Volume (vph)	1	317	33	3	279	61	2	575	52	18	708	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	*0.60	0.95	0.95	*0.66	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor		1.00			0.99			0.99			0.99	
Frt		0.982			0.974			0.982			0.986	
Flt Protected					0.999			0.999			0.998	
Satd. Flow (prot)	0	2079	0	0	2078	0	0	3372	0	0	3337	0
Flt Permitted		0.951			0.941			0.946			0.909	
Satd. Flow (perm)	0	1976	0	0	1956	0	0	3192	0	0	3037	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		422			213			448			247	
Travel Time (s)		9.6			4.8			10.2			5.6	
Confl. Peds. (#/hr)	68		38	38		68	46		40	40		46
Peak Hour Factor	0.25	0.89	0.68	0.38	0.93	0.92	0.25	0.96	0.62	0.57	0.97	0.85
Heavy Vehicles (%)	2%	8%	2%	2%	8%	20%	2%	3%	13%	100%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	27	0	0	0	0	0	0	0
Adj. Flow (vph)	4	356	49	8	300	66	8	599	84	32	730	79
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	409	0	0	374	0	0	691	0	0	841	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			10			10			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	1.07	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)	50.0	50.0		50.0	50.0		29.0	29.0		29.0	29.0	
Total Split (s)	50.0	50.0		50.0	50.0		50.0	50.0		50.0	50.0	
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	
Maximum Green (s)	44.0	44.0		44.0	44.0		45.5	45.5		45.5	45.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		-3.0			-3.0			-3.0			-3.0	
Total Lost Time (s)		3.0			3.0			1.5			1.5	
Lead/Lag	Lead	Lead		Lead	Lead		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?												
Walk Time (s)	27.0	27.0		27.0	27.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	17.0	17.0		17.0	17.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		47.0			47.0			48.5			48.5	
Actuated g/C Ratio		0.47			0.47			0.48			0.48	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.44			0.41			0.45			0.57	
Control Delay		10.6			12.2			13.2			18.7	
Queue Delay		0.0			0.0			0.0			1.1	
Total Delay		10.6			12.2			13.2			19.8	
LOS		B			B			B			B	
Approach Delay		10.6			12.2			13.2			19.8	
Approach LOS		B			B			B			B	
Queue Length 50th (ft)		49			69			90			142	
Queue Length 95th (ft)		65			65			118			172	
Internal Link Dist (ft)		342			133			368			167	
Turn Bay Length (ft)												
Base Capacity (vph)		928			919			1548			1472	
Starvation Cap Reductn		0			0			0			372	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.44			0.41			0.45			0.76	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green, Master Intersection			
Natural Cycle: 80			
Control Type: Pretimed			
Maximum v/c Ratio: 0.57			
Intersection Signal Delay: 15.0		Intersection LOS: B	
Intersection Capacity Utilization 78.4%		ICU Level of Service D	
Analysis Period (min) 15			

* User Entered Value

Splits and Phases: 293: Exchange/State & Main



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lane Configurations							
Traffic Volume (vph)	384	0	0	355	0	0	
Future Volume (vph)	384	0	0	355	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	*0.56	1.00	1.00	*0.55	1.00	1.00	
Ped Bike Factor							
Frt							
Flt Protected							
Satd. Flow (prot)	1900	0	0	1917	0	0	
Flt Permitted							
Satd. Flow (perm)	1900	0	0	1917	0	0	
Right Turn on Red		No				No	
Satd. Flow (RTOR)							
Link Speed (mph)	30			30	30		
Link Distance (ft)	61			608	0		
Travel Time (s)	1.4			13.8	0.0		
Confl. Peds. (#/hr)					30	30	
Peak Hour Factor	0.88	0.90	0.90	0.86	0.90	0.90	
Heavy Vehicles (%)	12%	2%	2%	9%	2%	2%	
Adj. Flow (vph)	436	0	0	413	0	0	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	436	0	0	413	0	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	10			10	0		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)		9	15		15	9	
Number of Detectors	0			0			
Detector Template							
Leading Detector (ft)	0			0			
Trailing Detector (ft)	0			0			
Turn Type	NA			NA			
Protected Phases	1			1			2
Permitted Phases							
Detector Phase	1			1			
Switch Phase							
Minimum Initial (s)	26.0			26.0			6.0
Minimum Split (s)	32.0			32.0			28.0
Total Split (s)	72.0			72.0			28.0
Total Split (%)	72.0%			72.0%			28%
Maximum Green (s)	67.0			67.0			25.0
Yellow Time (s)	4.0			4.0			3.0
All-Red Time (s)	1.0			1.0			0.0
Lost Time Adjust (s)	-2.0			-2.0			
Total Lost Time (s)	3.0			3.0			
Lead/Lag	Lead			Lead			Lag

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lead-Lag Optimize?							
Vehicle Extension (s)	2.0			2.0			2.0
Recall Mode	C-Max			C-Max			None
Walk Time (s)	19.0			19.0			7.0
Flash Dont Walk (s)	7.0			7.0			16.0
Pedestrian Calls (#/hr)	0			0			1
Act Effct Green (s)	94.2			94.2			
Actuated g/C Ratio	0.94			0.94			
v/c Ratio	0.24			0.23			
Control Delay	1.3			0.9			
Queue Delay	0.0			0.0			
Total Delay	1.3			0.9			
LOS	A			A			
Approach Delay	1.3			0.9			
Approach LOS	A			A			
Queue Length 50th (ft)	0			0			
Queue Length 95th (ft)	72			51			
Internal Link Dist (ft)	1			528	1		
Turn Bay Length (ft)							
Base Capacity (vph)	1790			1806			
Starvation Cap Reductn	0			0			
Spillback Cap Reductn	0			0			
Storage Cap Reductn	0			0			
Reduced v/c Ratio	0.24			0.23			

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 91 (91%), Referenced to phase 1:EBWB, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.24			
Intersection Signal Delay: 1.1		Intersection LOS: A	
Intersection Capacity Utilization 38.0%		ICU Level of Service A	
Analysis Period (min) 15			

* User Entered Value

Splits and Phases: 294: Pedestrian Crossing & Main

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	543	9	7	508	0	15
Future Volume (vph)	543	9	7	508	0	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	150		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			33		25	
Lane Util. Factor	*0.54	0.95	1.00	*0.54	1.00	1.00
Ped Bike Factor						
Frt	0.994				0.865	
Flt Protected			0.950			
Satd. Flow (prot)	1778	0	1770	1883	1611	0
Flt Permitted			0.950			
Satd. Flow (perm)	1778	0	1770	1883	1611	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	213			164	179	
Travel Time (s)	4.8			3.7	4.1	
Confl. Peds. (#/hr)		62	62			
Peak Hour Factor	0.91	0.40	0.75	0.86	1.00	0.58
Heavy Vehicles (%)	9%	2%	2%	9%	2%	2%
Bus Blockages (#/hr)	26	0	0	0	0	0
Adj. Flow (vph)	597	23	9	591	0	26
Shared Lane Traffic (%)						
Lane Group Flow (vph)	620	0	9	591	26	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	1.07	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 25.4%		ICU Level of Service A	
Analysis Period (min) 15			

* User Entered Value

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	543	9	7	508	0	15
Future Vol, veh/h	543	9	7	508	0	15
Conflicting Peds, #/hr	0	62	62	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	40	75	86	100	58
Heavy Vehicles, %	9	2	2	9	2	2
Mvmt Flow	597	23	9	591	0	26

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	682	0	985	372
Stage 1	-	-	-	-	671	-
Stage 2	-	-	-	-	314	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	907	-	245	625
Stage 1	-	-	-	-	470	-
Stage 2	-	-	-	-	714	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	860	-	230	593
Mov Cap-2 Maneuver	-	-	-	-	230	-
Stage 1	-	-	-	-	441	-
Stage 2	-	-	-	-	714	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	11.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	593	-	-	860	-
HCM Lane V/C Ratio	0.044	-	-	0.011	-
HCM Control Delay (s)	11.3	-	-	9.2	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	560	0	0	515	9	7
Future Volume (vph)	560	0	0	515	9	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	*0.54	1.00	1.00	*0.54	1.00	1.00
Frt					0.941	
Flt Protected					0.973	
Satd. Flow (prot)	1883	0	0	1883	1706	0
Flt Permitted					0.973	
Satd. Flow (perm)	1883	0	0	1883	1706	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	164			61	183	
Travel Time (s)	3.7			1.4	4.2	
Peak Hour Factor	0.91	1.00	1.00	0.87	0.50	0.50
Heavy Vehicles (%)	9%	2%	2%	9%	2%	2%
Adj. Flow (vph)	615	0	0	592	18	14
Shared Lane Traffic (%)						
Lane Group Flow (vph)	615	0	0	592	32	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	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 25.5%		ICU Level of Service A	
Analysis Period (min) 15			

* User Entered Value

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	560	0	0	515	9	7
Future Vol, veh/h	560	0	0	515	9	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	100	100	87	50	50
Heavy Vehicles, %	9	2	2	9	2	2
Mvmt Flow	615	0	0	592	18	14

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	911	308
Stage 1	-	-	-	-	615	-
Stage 2	-	-	-	-	296	-
Critical Hdwy	-	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	-	0	0	-	274	688
Stage 1	-	0	0	-	502	-
Stage 2	-	0	0	-	729	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	274	688
Mov Cap-2 Maneuver	-	-	-	-	274	-
Stage 1	-	-	-	-	502	-
Stage 2	-	-	-	-	729	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	15.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	372	-	-
HCM Lane V/C Ratio	0.086	-	-
HCM Control Delay (s)	15.6	-	-
HCM Lane LOS	C	-	-
HCM 95th %tile Q(veh)	0.3	-	-

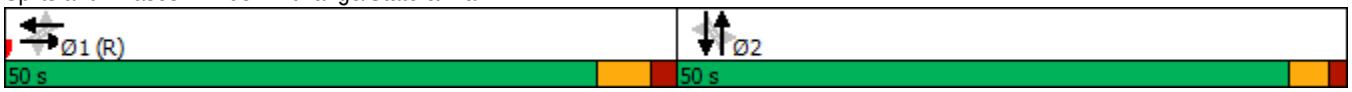
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	426	31	2	370	90	2	661	67	28	670	57
Future Volume (vph)	2	426	31	2	370	90	2	661	67	28	670	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	*0.57	0.95	0.95	*0.68	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor		0.99			0.98			0.99			0.99	
Frt		0.983			0.970			0.982			0.987	
Flt Protected					0.999						0.997	
Satd. Flow (prot)	0	2004	0	0	2103	0	0	3437	0	0	3327	0
Flt Permitted		0.951			0.941			0.947			0.840	
Satd. Flow (perm)	0	1905	0	0	1980	0	0	3254	0	0	2801	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		422			213			448			247	
Travel Time (s)		9.6			4.8			10.2			5.6	
Confl. Peds. (#/hr)	111		63	63		111	71		62	62		71
Peak Hour Factor	0.50	0.94	0.54	0.25	0.93	0.89	0.25	0.87	0.66	0.57	0.86	0.72
Heavy Vehicles (%)	100%	5%	4%	2%	8%	15%	2%	2%	2%	72%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	33	0	0	0	0	0	0	0
Adj. Flow (vph)	4	453	57	8	398	101	8	760	102	49	779	79
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	514	0	0	507	0	0	870	0	0	907	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			10			10			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	1.09	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)	50.0	50.0		50.0	50.0		29.0	29.0		29.0	29.0	
Total Split (s)	50.0	50.0		50.0	50.0		50.0	50.0		50.0	50.0	
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	
Maximum Green (s)	44.0	44.0		44.0	44.0		45.5	45.5		45.5	45.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		-3.0			-3.0			-3.0			-3.0	
Total Lost Time (s)		3.0			3.0			1.5			1.5	
Lead/Lag	Lead	Lead		Lead	Lead		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?												
Walk Time (s)	27.0	27.0		27.0	27.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	17.0	17.0		17.0	17.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		47.0			47.0			48.5			48.5	
Actuated g/C Ratio		0.47			0.47			0.48			0.48	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.57			0.55			0.55			0.67	
Control Delay		15.2			14.8			15.3			20.9	
Queue Delay		0.0			0.0			0.2			1.1	
Total Delay		15.2			14.8			15.5			22.1	
LOS		B			B			B			C	
Approach Delay		15.2			14.8			15.5			22.1	
Approach LOS		B			B			B			C	
Queue Length 50th (ft)		96			102			140			230	
Queue Length 95th (ft)		315			146			166			280	
Internal Link Dist (ft)		342			133			368			167	
Turn Bay Length (ft)												
Base Capacity (vph)		895			930			1578			1358	
Starvation Cap Reductn		0			0			195			230	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.57			0.55			0.63			0.80	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green, Master Intersection			
Natural Cycle: 80			
Control Type: Pretimed			
Maximum v/c Ratio: 0.67			
Intersection Signal Delay: 17.5		Intersection LOS: B	
Intersection Capacity Utilization 84.7%		ICU Level of Service E	
Analysis Period (min) 15			

* User Entered Value

Splits and Phases: 293: Exchange/State & Main



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lane Configurations							
Traffic Volume (vph)	567	0	0	515	0	0	
Future Volume (vph)	567	0	0	515	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	*0.54	1.00	1.00	*0.54	1.00	1.00	
Ped Bike Factor							
Frt							
Flt Protected							
Satd. Flow (prot)	1883	0	0	1883	0	0	
Flt Permitted							
Satd. Flow (perm)	1883	0	0	1883	0	0	
Right Turn on Red		No				No	
Satd. Flow (RTOR)							
Link Speed (mph)	30			30	30		
Link Distance (ft)	61			608	45		
Travel Time (s)	1.4			13.8	1.0		
Confl. Peds. (#/hr)					33	33	
Peak Hour Factor	0.91	0.90	0.90	0.86	0.90	0.90	
Heavy Vehicles (%)	9%	2%	2%	9%	2%	2%	
Adj. Flow (vph)	623	0	0	599	0	0	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	623	0	0	599	0	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	10			10	0		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)		9	15		15	9	
Number of Detectors	0			0			
Detector Template							
Leading Detector (ft)	0			0			
Trailing Detector (ft)	0			0			
Turn Type	NA			NA			
Protected Phases	1			1			2
Permitted Phases							
Detector Phase	1			1			
Switch Phase							
Minimum Initial (s)	26.0			26.0			6.0
Minimum Split (s)	32.0			32.0			28.0
Total Split (s)	72.0			72.0			28.0
Total Split (%)	72.0%			72.0%			28%
Maximum Green (s)	67.0			67.0			25.0
Yellow Time (s)	4.0			4.0			3.0
All-Red Time (s)	1.0			1.0			0.0
Lost Time Adjust (s)	-2.0			-2.0			
Total Lost Time (s)	3.0			3.0			
Lead/Lag	Lead			Lead			Lag

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lead-Lag Optimize?							
Vehicle Extension (s)	2.0			2.0			2.0
Recall Mode	C-Max			C-Max			None
Walk Time (s)	19.0			19.0			7.0
Flash Dont Walk (s)	7.0			7.0			16.0
Pedestrian Calls (#/hr)	0			0			1
Act Effct Green (s)	94.2			94.2			
Actuated g/C Ratio	0.94			0.94			
v/c Ratio	0.35			0.34			
Control Delay	1.4			2.4			
Queue Delay	0.0			0.0			
Total Delay	1.4			2.4			
LOS	A			A			
Approach Delay	1.4			2.4			
Approach LOS	A			A			
Queue Length 50th (ft)	0			32			
Queue Length 95th (ft)	95			89			
Internal Link Dist (ft)	1			528	1		
Turn Bay Length (ft)							
Base Capacity (vph)	1774			1774			
Starvation Cap Reductn	0			0			
Spillback Cap Reductn	0			0			
Storage Cap Reductn	0			0			
Reduced v/c Ratio	0.35			0.34			

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 88 (88%), Referenced to phase 1:EBWB, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.35			
Intersection Signal Delay: 1.9		Intersection LOS: A	
Intersection Capacity Utilization 38.3%		ICU Level of Service A	
Analysis Period (min) 15			

* User Entered Value

Splits and Phases: 294: Pedestrian Crossing & Main

BASE

CONDITION A

ETC +20 (2039)

SYNCHRO OUTPUT

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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	375	4	8	406	0	6
Future Volume (vph)	375	4	8	406	0	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	150		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			33		25	
Lane Util. Factor	*0.56	0.95	1.00	*0.55	1.00	1.00
Ped Bike Factor						
Frt	0.997				0.865	
Flt Protected			0.950			
Satd. Flow (prot)	1791	0	1770	1917	1611	0
Flt Permitted			0.950			
Satd. Flow (perm)	1791	0	1770	1917	1611	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	213			164	179	
Travel Time (s)	4.8			3.7	4.1	
Confl. Peds. (#/hr)		40	40			
Peak Hour Factor	0.88	0.50	0.58	0.86	1.00	0.63
Heavy Vehicles (%)	12%	2%	2%	9%	2%	2%
Bus Blockages (#/hr)	28	0	0	0	0	0
Adj. Flow (vph)	426	8	14	472	0	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	434	0	14	472	10	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	1.08	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 22.6%		ICU Level of Service A	
Analysis Period (min) 15			

* User Entered Value

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	375	4	8	406	0	6
Future Vol, veh/h	375	4	8	406	0	6
Conflicting Peds, #/hr	0	40	40	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	50	58	86	100	63
Heavy Vehicles, %	12	2	2	9	2	2
Mvmt Flow	426	8	14	472	0	10

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	474	0	734	257
Stage 1	-	-	-	-	470	-
Stage 2	-	-	-	-	264	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	1084	-	355	742
Stage 1	-	-	-	-	595	-
Stage 2	-	-	-	-	756	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1048	-	339	717
Mov Cap-2 Maneuver	-	-	-	-	339	-
Stage 1	-	-	-	-	568	-
Stage 2	-	-	-	-	756	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	10.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	717	-	-	1048	-
HCM Lane V/C Ratio	0.013	-	-	0.013	-
HCM Control Delay (s)	10.1	-	-	8.5	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	381	0	0	413	3	3
Future Volume (vph)	381	0	0	413	3	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	*0.56	1.00	1.00	*0.55	1.00	1.00
Frt					0.955	
Flt Protected					0.968	
Satd. Flow (prot)	1900	0	0	1917	1722	0
Flt Permitted					0.968	
Satd. Flow (perm)	1900	0	0	1917	1722	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	164			61	183	
Travel Time (s)	3.7			1.4	4.2	
Peak Hour Factor	0.89	1.00	1.00	0.85	0.38	0.75
Heavy Vehicles (%)	12%	2%	2%	9%	2%	2%
Adj. Flow (vph)	428	0	0	486	8	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	428	0	0	486	12	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	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 21.4%		ICU Level of Service A	
Analysis Period (min) 15			

* User Entered Value

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	381	0	0	413	3	3
Future Vol, veh/h	381	0	0	413	3	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	100	100	85	38	75
Heavy Vehicles, %	12	2	2	9	2	2
Mvmt Flow	428	0	0	486	8	4

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	671	214
Stage 1	-	-	-	-	428	-
Stage 2	-	-	-	-	243	-
Critical Hdwy	-	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	-	0	0	-	390	791
Stage 1	-	0	0	-	625	-
Stage 2	-	0	0	-	775	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	390	791
Mov Cap-2 Maneuver	-	-	-	-	390	-
Stage 1	-	-	-	-	625	-
Stage 2	-	-	-	-	775	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	12.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	470	-	-
HCM Lane V/C Ratio	0.025	-	-
HCM Control Delay (s)	12.9	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-

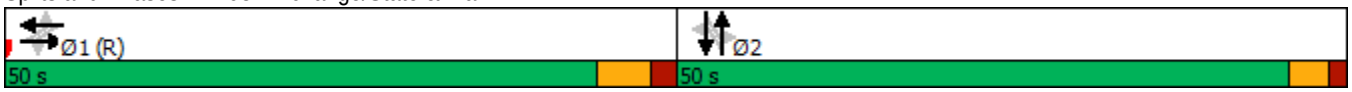
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	317	33	3	327	71	2	547	52	18	708	67
Future Volume (vph)	1	317	33	3	327	71	2	547	52	18	708	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	*0.60	0.95	0.95	*0.66	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor		1.00			0.99			0.99			0.99	
Frt		0.982			0.974			0.981			0.986	
Flt Protected					0.999			0.999			0.998	
Satd. Flow (prot)	0	2079	0	0	2077	0	0	3365	0	0	3337	0
Flt Permitted		0.950			0.943			0.945			0.911	
Satd. Flow (perm)	0	1974	0	0	1960	0	0	3183	0	0	3044	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		422			213			448			247	
Travel Time (s)		9.6			4.8			10.2			5.6	
Confl. Peds. (#/hr)	68		38	38		68	46		40	40		46
Peak Hour Factor	0.25	0.89	0.68	0.38	0.93	0.92	0.25	0.96	0.62	0.57	0.97	0.85
Heavy Vehicles (%)	2%	8%	2%	2%	8%	20%	2%	3%	13%	100%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	27	0	0	0	0	0	0	0
Adj. Flow (vph)	4	356	49	8	352	77	8	570	84	32	730	79
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	409	0	0	437	0	0	662	0	0	841	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			10			10			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	1.07	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)	50.0	50.0		50.0	50.0		29.0	29.0		29.0	29.0	
Total Split (s)	50.0	50.0		50.0	50.0		50.0	50.0		50.0	50.0	
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	
Maximum Green (s)	44.0	44.0		44.0	44.0		45.5	45.5		45.5	45.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		-3.0			-3.0			-3.0			-3.0	
Total Lost Time (s)		3.0			3.0			1.5			1.5	
Lead/Lag	Lead	Lead		Lead	Lead		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?												
Walk Time (s)	27.0	27.0		27.0	27.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	17.0	17.0		17.0	17.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		47.0			47.0			48.5			48.5	
Actuated g/C Ratio		0.47			0.47			0.48			0.48	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.44			0.47			0.43			0.57	
Control Delay		11.3			13.0			13.0			18.7	
Queue Delay		0.0			0.0			0.0			1.1	
Total Delay		11.3			13.0			13.0			19.7	
LOS		B			B			B			B	
Approach Delay		11.3			13.0			13.0			19.7	
Approach LOS		B			B			B			B	
Queue Length 50th (ft)		55			84			86			142	
Queue Length 95th (ft)		72			111			113			172	
Internal Link Dist (ft)		342			133			368			167	
Turn Bay Length (ft)												
Base Capacity (vph)		927			921			1543			1476	
Starvation Cap Reductn		0			0			0			375	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.44			0.47			0.43			0.76	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green, Master Intersection			
Natural Cycle: 80			
Control Type: Pretimed			
Maximum v/c Ratio: 0.57			
Intersection Signal Delay: 15.1		Intersection LOS: B	
Intersection Capacity Utilization 78.4%		ICU Level of Service D	
Analysis Period (min) 15			

* User Entered Value

Splits and Phases: 293: Exchange/State & Main



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lane Configurations							
Traffic Volume (vph)	384	0	0	413	0	0	
Future Volume (vph)	384	0	0	413	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	*0.56	1.00	1.00	*0.55	1.00	1.00	
Ped Bike Factor							
Frt							
Flt Protected							
Satd. Flow (prot)	1900	0	0	1917	0	0	
Flt Permitted							
Satd. Flow (perm)	1900	0	0	1917	0	0	
Right Turn on Red		No				No	
Satd. Flow (RTOR)							
Link Speed (mph)	30			30	30		
Link Distance (ft)	61			608	0		
Travel Time (s)	1.4			13.8	0.0		
Confl. Peds. (#/hr)					30	30	
Peak Hour Factor	0.88	0.90	0.90	0.86	0.90	0.90	
Heavy Vehicles (%)	12%	2%	2%	9%	2%	2%	
Adj. Flow (vph)	436	0	0	480	0	0	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	436	0	0	480	0	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	10			10	0		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)		9	15		15	9	
Number of Detectors	0			0			
Detector Template							
Leading Detector (ft)	0			0			
Trailing Detector (ft)	0			0			
Turn Type	NA			NA			
Protected Phases	1			1			2
Permitted Phases							
Detector Phase	1			1			
Switch Phase							
Minimum Initial (s)	26.0			26.0			6.0
Minimum Split (s)	32.0			32.0			28.0
Total Split (s)	72.0			72.0			28.0
Total Split (%)	72.0%			72.0%			28%
Maximum Green (s)	67.0			67.0			25.0
Yellow Time (s)	4.0			4.0			3.0
All-Red Time (s)	1.0			1.0			0.0
Lost Time Adjust (s)	-2.0			-2.0			
Total Lost Time (s)	3.0			3.0			
Lead/Lag	Lead			Lead			Lag

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lead-Lag Optimize?							
Vehicle Extension (s)	2.0			2.0			2.0
Recall Mode	C-Max			C-Max			None
Walk Time (s)	19.0			19.0			7.0
Flash Dont Walk (s)	7.0			7.0			16.0
Pedestrian Calls (#/hr)	0			0			1
Act Effct Green (s)	94.2			94.2			
Actuated g/C Ratio	0.94			0.94			
v/c Ratio	0.24			0.27			
Control Delay	1.3			1.5			
Queue Delay	0.0			0.0			
Total Delay	1.3			1.5			
LOS	A			A			
Approach Delay	1.3			1.5			
Approach LOS	A			A			
Queue Length 50th (ft)	0			10			
Queue Length 95th (ft)	69			60			
Internal Link Dist (ft)	1			528	1		
Turn Bay Length (ft)							
Base Capacity (vph)	1790			1806			
Starvation Cap Reductn	0			0			
Spillback Cap Reductn	0			0			
Storage Cap Reductn	0			0			
Reduced v/c Ratio	0.24			0.27			

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 90 (90%), Referenced to phase 1:EBWB, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.27			
Intersection Signal Delay: 1.4		Intersection LOS: A	
Intersection Capacity Utilization 38.0%		ICU Level of Service A	
Analysis Period (min) 15			

* User Entered Value

Splits and Phases: 294: Pedestrian Crossing & Main

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	564	9	7	517	0	15
Future Volume (vph)	564	9	7	517	0	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	150		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			33		25	
Lane Util. Factor	*0.54	0.95	1.00	*0.54	1.00	1.00
Ped Bike Factor						
Frt	0.995				0.865	
Flt Protected			0.950			
Satd. Flow (prot)	1780	0	1770	1883	1611	0
Flt Permitted			0.950			
Satd. Flow (perm)	1780	0	1770	1883	1611	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	213			164	179	
Travel Time (s)	4.8			3.7	4.1	
Confl. Peds. (#/hr)		62	62			
Peak Hour Factor	0.91	0.40	0.75	0.86	1.00	0.58
Heavy Vehicles (%)	9%	2%	2%	9%	2%	2%
Bus Blockages (#/hr)	26	0	0	0	0	0
Adj. Flow (vph)	620	23	9	601	0	26
Shared Lane Traffic (%)						
Lane Group Flow (vph)	643	0	9	601	26	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	1.07	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 25.9%		ICU Level of Service A	
Analysis Period (min) 15			

* User Entered Value

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	564	9	7	517	0	15
Future Vol, veh/h	564	9	7	517	0	15
Conflicting Peds, #/hr	0	62	62	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	40	75	86	100	58
Heavy Vehicles, %	9	2	2	9	2	2
Mvmt Flow	620	23	9	601	0	26

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	705	0	1013	384
Stage 1	-	-	-	-	694	-
Stage 2	-	-	-	-	319	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	889	-	235	614
Stage 1	-	-	-	-	457	-
Stage 2	-	-	-	-	710	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	843	-	220	582
Mov Cap-2 Maneuver	-	-	-	-	220	-
Stage 1	-	-	-	-	429	-
Stage 2	-	-	-	-	710	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	11.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	582	-	-	843	-
HCM Lane V/C Ratio	0.044	-	-	0.011	-
HCM Control Delay (s)	11.5	-	-	9.3	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	581	0	0	524	9	7
Future Volume (vph)	581	0	0	524	9	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	*0.54	1.00	1.00	*0.54	1.00	1.00
Frt					0.941	
Flt Protected					0.973	
Satd. Flow (prot)	1883	0	0	1883	1706	0
Flt Permitted					0.973	
Satd. Flow (perm)	1883	0	0	1883	1706	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	164			61	183	
Travel Time (s)	3.7			1.4	4.2	
Peak Hour Factor	0.91	1.00	1.00	0.87	0.50	0.50
Heavy Vehicles (%)	9%	2%	2%	9%	2%	2%
Adj. Flow (vph)	638	0	0	602	18	14
Shared Lane Traffic (%)						
Lane Group Flow (vph)	638	0	0	602	32	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	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 26.1%		ICU Level of Service A	
Analysis Period (min) 15			

* User Entered Value

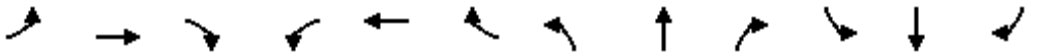
Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	581	0	0	524	9	7
Future Vol, veh/h	581	0	0	524	9	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	100	100	87	50	50
Heavy Vehicles, %	9	2	2	9	2	2
Mvmt Flow	638	0	0	602	18	14

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	939	319
Stage 1	-	-	-	-	638	-
Stage 2	-	-	-	-	301	-
Critical Hdwy	-	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	-	0	0	-	263	677
Stage 1	-	0	0	-	488	-
Stage 2	-	0	0	-	725	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	263	677
Mov Cap-2 Maneuver	-	-	-	-	263	-
Stage 1	-	-	-	-	488	-
Stage 2	-	-	-	-	725	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	16
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	359	-	-
HCM Lane V/C Ratio	0.089	-	-
HCM Control Delay (s)	16	-	-
HCM Lane LOS	C	-	-
HCM 95th %tile Q(veh)	0.3	-	-



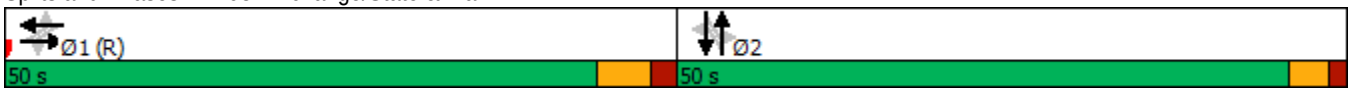
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	442	31	2	379	95	2	656	72	28	670	57
Future Volume (vph)	2	442	31	2	379	95	2	656	72	28	670	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	*0.57	0.95	0.95	*0.68	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor		0.99			0.98			0.99			0.99	
Frt		0.984			0.969			0.981			0.987	
Flt Protected					0.999						0.997	
Satd. Flow (prot)	0	2006	0	0	2099	0	0	3431	0	0	3327	0
Flt Permitted		0.951			0.941			0.947			0.840	
Satd. Flow (perm)	0	1908	0	0	1977	0	0	3248	0	0	2801	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		422			213			448			247	
Travel Time (s)		9.6			4.8			10.2			5.6	
Confl. Peds. (#/hr)	111		63	63		111	71		62	62		71
Peak Hour Factor	0.50	0.94	0.54	0.25	0.93	0.89	0.25	0.87	0.66	0.57	0.86	0.72
Heavy Vehicles (%)	100%	5%	4%	2%	8%	15%	2%	2%	2%	72%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	33	0	0	0	0	0	0	0
Adj. Flow (vph)	4	470	57	8	408	107	8	754	109	49	779	79
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	531	0	0	523	0	0	871	0	0	907	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			10			10			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	1.09	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)	50.0	50.0		50.0	50.0		29.0	29.0		29.0	29.0	
Total Split (s)	50.0	50.0		50.0	50.0		50.0	50.0		50.0	50.0	
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	
Maximum Green (s)	44.0	44.0		44.0	44.0		45.5	45.5		45.5	45.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		-3.0			-3.0			-3.0			-3.0	
Total Lost Time (s)		3.0			3.0			1.5			1.5	
Lead/Lag	Lead	Lead		Lead	Lead		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?												
Walk Time (s)	27.0	27.0		27.0	27.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	17.0	17.0		17.0	17.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		47.0			47.0			48.5			48.5	
Actuated g/C Ratio		0.47			0.47			0.48			0.48	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.59			0.56			0.55			0.67	
Control Delay		15.5			14.8			15.3			20.9	
Queue Delay		0.0			0.0			0.2			1.1	
Total Delay		15.5			14.8			15.5			22.1	
LOS		B			B			B			C	
Approach Delay		15.5			14.8			15.5			22.1	
Approach LOS		B			B			B			C	
Queue Length 50th (ft)		97			105			141			230	
Queue Length 95th (ft)		327			145			167			280	
Internal Link Dist (ft)		342			133			368			167	
Turn Bay Length (ft)												
Base Capacity (vph)		896			929			1575			1358	
Starvation Cap Reductn		0			0			194			230	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.59			0.56			0.63			0.80	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green, Master Intersection			
Natural Cycle: 80			
Control Type: Pretimed			
Maximum v/c Ratio: 0.67			
Intersection Signal Delay: 17.5		Intersection LOS: B	
Intersection Capacity Utilization 84.7%		ICU Level of Service E	
Analysis Period (min) 15			

* User Entered Value

Splits and Phases: 293: Exchange/State & Main



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lane Configurations							
Traffic Volume (vph)	588	0	0	524	0	0	
Future Volume (vph)	588	0	0	524	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	*0.54	1.00	1.00	*0.54	1.00	1.00	
Ped Bike Factor							
Frt							
Flt Protected							
Satd. Flow (prot)	1883	0	0	1883	0	0	
Flt Permitted							
Satd. Flow (perm)	1883	0	0	1883	0	0	
Right Turn on Red		No				No	
Satd. Flow (RTOR)							
Link Speed (mph)	30			30	30		
Link Distance (ft)	61			608	45		
Travel Time (s)	1.4			13.8	1.0		
Confl. Peds. (#/hr)					33	33	
Peak Hour Factor	0.91	0.90	0.90	0.86	0.90	0.90	
Heavy Vehicles (%)	9%	2%	2%	9%	2%	2%	
Adj. Flow (vph)	646	0	0	609	0	0	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	646	0	0	609	0	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	10			10	0		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)		9	15		15	9	
Number of Detectors	0			0			
Detector Template							
Leading Detector (ft)	0			0			
Trailing Detector (ft)	0			0			
Turn Type	NA			NA			
Protected Phases	1			1			2
Permitted Phases							
Detector Phase	1			1			
Switch Phase							
Minimum Initial (s)	26.0			26.0			6.0
Minimum Split (s)	32.0			32.0			28.0
Total Split (s)	72.0			72.0			28.0
Total Split (%)	72.0%			72.0%			28%
Maximum Green (s)	67.0			67.0			25.0
Yellow Time (s)	4.0			4.0			3.0
All-Red Time (s)	1.0			1.0			0.0
Lost Time Adjust (s)	-2.0			-2.0			
Total Lost Time (s)	3.0			3.0			
Lead/Lag	Lead			Lead			Lag

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lead-Lag Optimize?							
Vehicle Extension (s)	2.0			2.0			2.0
Recall Mode	C-Max			C-Max			None
Walk Time (s)	19.0			19.0			7.0
Flash Dont Walk (s)	7.0			7.0			16.0
Pedestrian Calls (#/hr)	0			0			1
Act Effct Green (s)	94.2			94.2			
Actuated g/C Ratio	0.94			0.94			
v/c Ratio	0.36			0.34			
Control Delay	1.4			2.4			
Queue Delay	0.0			0.0			
Total Delay	1.4			2.4			
LOS	A			A			
Approach Delay	1.4			2.4			
Approach LOS	A			A			
Queue Length 50th (ft)	0			33			
Queue Length 95th (ft)	100			92			
Internal Link Dist (ft)	1			528	1		
Turn Bay Length (ft)							
Base Capacity (vph)	1774			1774			
Starvation Cap Reductn	0			0			
Spillback Cap Reductn	0			0			
Storage Cap Reductn	0			0			
Reduced v/c Ratio	0.36			0.34			

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 88 (88%), Referenced to phase 1:EBWB, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.36			
Intersection Signal Delay: 1.9		Intersection LOS: A	
Intersection Capacity Utilization 38.3%		ICU Level of Service A	
Analysis Period (min) 15			

* User Entered Value

Splits and Phases: 294: Pedestrian Crossing & Main

BASE

CONDITION B

ETC +20 (2039)

SYNCHRO OUTPUT

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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	767	4	8	393	0	6
Future Volume (vph)	767	4	8	393	0	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	150		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	*0.56	0.95	1.00	*0.55	1.00	1.00
Ped Bike Factor						
Frt	0.999				0.865	
Flt Protected			0.950			
Satd. Flow (prot)	1793	0	1770	1917	1611	0
Flt Permitted			0.950			
Satd. Flow (perm)	1793	0	1770	1917	1611	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	213			164	179	
Travel Time (s)	4.8			3.7	4.1	
Confl. Peds. (#/hr)		40	40			
Peak Hour Factor	0.88	0.50	0.58	0.86	1.00	0.63
Heavy Vehicles (%)	12%	2%	2%	9%	2%	2%
Bus Blockages (#/hr)	28	0	0	0	0	0
Adj. Flow (vph)	872	8	14	457	0	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	880	0	14	457	10	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	1.08	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 31.3%		ICU Level of Service A	
Analysis Period (min) 15			

* User Entered Value

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	767	4	8	393	0	6
Future Vol, veh/h	767	4	8	393	0	6
Conflicting Peds, #/hr	0	40	40	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	50	58	86	100	63
Heavy Vehicles, %	12	2	2	9	2	2
Mvmt Flow	872	8	14	457	0	10

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	920	0	1173	480
Stage 1	-	-	-	-	916	-
Stage 2	-	-	-	-	257	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	738	-	185	532
Stage 1	-	-	-	-	350	-
Stage 2	-	-	-	-	762	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	713	-	175	514
Mov Cap-2 Maneuver	-	-	-	-	175	-
Stage 1	-	-	-	-	332	-
Stage 2	-	-	-	-	762	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	12.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	514	-	-	713	-
HCM Lane V/C Ratio	0.019	-	-	0.019	-
HCM Control Delay (s)	12.1	-	-	10.1	-
HCM Lane LOS	B	-	-	B	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	773	0	0	400	3	3
Future Volume (vph)	773	0	0	400	3	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	*0.56	1.00	1.00	*0.55	1.00	1.00
Frt					0.955	
Flt Protected					0.968	
Satd. Flow (prot)	1900	0	0	1917	1722	0
Flt Permitted					0.968	
Satd. Flow (perm)	1900	0	0	1917	1722	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	164			61	183	
Travel Time (s)	3.7			1.4	4.2	
Peak Hour Factor	0.89	1.00	1.00	0.85	0.38	0.75
Heavy Vehicles (%)	12%	2%	2%	9%	2%	2%
Adj. Flow (vph)	869	0	0	471	8	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	869	0	0	471	12	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	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

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

* User Entered Value

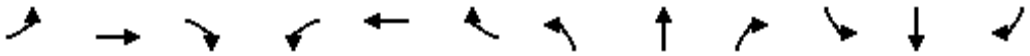
Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	773	0	0	400	3	3
Future Vol, veh/h	773	0	0	400	3	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	100	100	85	38	75
Heavy Vehicles, %	12	2	2	9	2	2
Mvmt Flow	869	0	0	471	8	4

Major/Minor	Major1			Major2		Minor1	
Conflicting Flow All	0	-	-	-	1105	435	
Stage 1	-	-	-	-	869	-	
Stage 2	-	-	-	-	236	-	
Critical Hdwy	-	-	-	-	6.84	6.94	
Critical Hdwy Stg 1	-	-	-	-	5.84	-	
Critical Hdwy Stg 2	-	-	-	-	5.84	-	
Follow-up Hdwy	-	-	-	-	3.52	3.32	
Pot Cap-1 Maneuver	-	0	0	-	205	569	
Stage 1	-	0	0	-	371	-	
Stage 2	-	0	0	-	781	-	
Platoon blocked, %	-			-			
Mov Cap-1 Maneuver	-	-	-	-	205	569	
Mov Cap-2 Maneuver	-	-	-	-	205	-	
Stage 1	-	-	-	-	371	-	
Stage 2	-	-	-	-	781	-	

Approach	EB	WB	NB
HCM Control Delay, s	0	0	19.5
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	261	-	-
HCM Lane V/C Ratio	0.046	-	-
HCM Control Delay (s)	19.5	-	-
HCM Lane LOS	C	-	-
HCM 95th %tile Q(veh)	0.1	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	655	33	3	317	68	2	575	106	18	708	67
Future Volume (vph)	1	655	33	3	317	68	2	575	106	18	708	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	*0.60	0.95	0.95	*0.66	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor		1.00			0.99			0.99			0.99	
Frt		0.991			0.974			0.967			0.986	
Flt Protected					0.999			0.999			0.998	
Satd. Flow (prot)	0	2095	0	0	2078	0	0	3268	0	0	3337	0
Flt Permitted		0.953			0.928			0.946			0.903	
Satd. Flow (perm)	0	1996	0	0	1930	0	0	3094	0	0	3018	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		422			213			448			247	
Travel Time (s)		9.6			4.8			10.2			5.6	
Confl. Peds. (#/hr)	68		38	38		68	46		40	40		46
Peak Hour Factor	0.25	0.89	0.68	0.38	0.93	0.92	0.25	0.96	0.62	0.57	0.97	0.85
Heavy Vehicles (%)	2%	8%	2%	2%	8%	20%	2%	3%	13%	100%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	27	0	0	0	0	0	0	0
Adj. Flow (vph)	4	736	49	8	341	74	8	599	171	32	730	79
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	789	0	0	423	0	0	778	0	0	841	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			10			10			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	1.07	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)	50.0	50.0		50.0	50.0		29.0	29.0		29.0	29.0	
Total Split (s)	54.0	54.0		54.0	54.0		46.0	46.0		46.0	46.0	
Total Split (%)	54.0%	54.0%		54.0%	54.0%		46.0%	46.0%		46.0%	46.0%	
Maximum Green (s)	48.0	48.0		48.0	48.0		41.5	41.5		41.5	41.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		-3.0			-3.0			-3.0			-3.0	
Total Lost Time (s)		3.0			3.0			1.5			1.5	
Lead/Lag	Lead	Lead		Lead	Lead		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?												
Walk Time (s)	27.0	27.0		27.0	27.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	17.0	17.0		17.0	17.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		51.0			51.0			44.5			44.5	
Actuated g/C Ratio		0.51			0.51			0.44			0.44	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.78			0.43			0.57			0.63	
Control Delay		21.2			11.6			16.2			22.5	
Queue Delay		0.1			0.0			0.2			1.7	
Total Delay		21.3			11.6			16.4			24.2	
LOS		C			B			B			C	
Approach Delay		21.3			11.6			16.4			24.2	
Approach LOS		C			B			B			C	
Queue Length 50th (ft)		188			85			108			214	
Queue Length 95th (ft)		458			55			140			280	
Internal Link Dist (ft)		342			133			368			167	
Turn Bay Length (ft)												
Base Capacity (vph)		1017			984			1376			1343	
Starvation Cap Reductn		6			0			120			322	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.78			0.43			0.62			0.82	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green, Master Intersection			
Natural Cycle: 80			
Control Type: Pretimed			
Maximum v/c Ratio: 0.78			
Intersection Signal Delay: 19.4		Intersection LOS: B	
Intersection Capacity Utilization 78.4%		ICU Level of Service D	
Analysis Period (min) 15			

* User Entered Value

Splits and Phases: 293: Exchange/State & Main

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lane Configurations							
Traffic Volume (vph)	776	0	0	400	0	0	
Future Volume (vph)	776	0	0	400	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	*0.56	1.00	1.00	*0.55	1.00	1.00	
Ped Bike Factor							
Frt							
Flt Protected							
Satd. Flow (prot)	1900	0	0	1917	0	0	
Flt Permitted							
Satd. Flow (perm)	1900	0	0	1917	0	0	
Right Turn on Red		No				No	
Satd. Flow (RTOR)							
Link Speed (mph)	30			30	30		
Link Distance (ft)	61			608	0		
Travel Time (s)	1.4			13.8	0.0		
Confl. Peds. (#/hr)					30	30	
Peak Hour Factor	0.88	0.90	0.90	0.86	0.90	0.90	
Heavy Vehicles (%)	12%	2%	2%	9%	2%	2%	
Adj. Flow (vph)	882	0	0	465	0	0	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	882	0	0	465	0	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	10			10	0		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)		9	15		15	9	
Number of Detectors	1			1			
Detector Template							
Leading Detector (ft)	0			0			
Trailing Detector (ft)	0			0			
Detector 1 Position(ft)	0			0			
Detector 1 Size(ft)	0			0			
Detector 1 Type	Cl+Ex			Cl+Ex			
Detector 1 Channel							
Detector 1 Extend (s)	0.0			0.0			
Detector 1 Queue (s)	0.0			0.0			
Detector 1 Delay (s)	0.0			0.0			
Turn Type	NA			NA			
Protected Phases	1			1			2
Permitted Phases							
Detector Phase	1			1			
Switch Phase							
Minimum Initial (s)	26.0			26.0			6.0
Minimum Split (s)	32.0			32.0			28.0
Total Split (s)	72.0			72.0			28.0

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Total Split (%)	72.0%			72.0%			28%
Maximum Green (s)	67.0			67.0			25.0
Yellow Time (s)	4.0			4.0			3.0
All-Red Time (s)	1.0			1.0			0.0
Lost Time Adjust (s)	-2.0			-2.0			
Total Lost Time (s)	3.0			3.0			
Lead/Lag	Lead			Lead			Lag
Lead-Lag Optimize?							
Vehicle Extension (s)	2.0			2.0			2.0
Recall Mode	C-Max			C-Max			None
Walk Time (s)	19.0			19.0			7.0
Flash Dont Walk (s)	7.0			7.0			16.0
Pedestrian Calls (#/hr)	0			0			1
Act Effct Green (s)	94.2			94.2			
Actuated g/C Ratio	0.94			0.94			
v/c Ratio	0.49			0.26			
Control Delay	1.5			1.5			
Queue Delay	0.0			0.0			
Total Delay	1.5			1.5			
LOS	A			A			
Approach Delay	1.5			1.5			
Approach LOS	A			A			
Queue Length 50th (ft)	0			7			
Queue Length 95th (ft)	125			60			
Internal Link Dist (ft)	1			528	1		
Turn Bay Length (ft)							
Base Capacity (vph)	1790			1806			
Starvation Cap Reductn	12			0			
Spillback Cap Reductn	0			0			
Storage Cap Reductn	0			0			
Reduced v/c Ratio	0.50			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: Actuated-Coordinated			
Maximum v/c Ratio: 0.49			
Intersection Signal Delay: 1.5		Intersection LOS: A	
Intersection Capacity Utilization 38.0%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			

Splits and Phases: 294: Pedestrian Crossing & Main

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	968	9	7	596	0	15
Future Volume (vph)	968	9	7	596	0	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	150		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			33		25	
Lane Util. Factor	*0.54	0.95	1.00	*0.54	1.00	1.00
Ped Bike Factor						
Frt	0.997				0.865	
Flt Protected			0.950			
Satd. Flow (prot)	1782	0	1770	1883	1611	0
Flt Permitted			0.950			
Satd. Flow (perm)	1782	0	1770	1883	1611	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	213			164	179	
Travel Time (s)	4.8			3.7	4.1	
Confl. Peds. (#/hr)		62	62			
Peak Hour Factor	0.91	0.40	0.75	0.86	1.00	0.58
Heavy Vehicles (%)	9%	2%	2%	9%	2%	2%
Bus Blockages (#/hr)	26	0	0	0	0	0
Adj. Flow (vph)	1064	23	9	693	0	26
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1087	0	9	693	26	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	1.07	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 37.1%		ICU Level of Service A	
Analysis Period (min) 15			

* User Entered Value

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	968	9	7	596	0	15
Future Vol, veh/h	968	9	7	596	0	15
Conflicting Peds, #/hr	0	62	62	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	40	75	86	100	58
Heavy Vehicles, %	9	2	2	9	2	2
Mvmt Flow	1064	23	9	693	0	26

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1149	0	1503	606
Stage 1	-	-	-	-	1138	-
Stage 2	-	-	-	-	365	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	604	-	112	440
Stage 1	-	-	-	-	268	-
Stage 2	-	-	-	-	673	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	573	-	104	417
Mov Cap-2 Maneuver	-	-	-	-	104	-
Stage 1	-	-	-	-	250	-
Stage 2	-	-	-	-	673	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	14.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	417	-	-	573	-
HCM Lane V/C Ratio	0.062	-	-	0.016	-
HCM Control Delay (s)	14.2	-	-	11.4	-
HCM Lane LOS	B	-	-	B	-
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	985	0	0	603	9	7
Future Volume (vph)	985	0	0	603	9	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	*0.54	1.00	1.00	*0.54	1.00	1.00
Frt					0.941	
Flt Protected					0.973	
Satd. Flow (prot)	1883	0	0	1883	1706	0
Flt Permitted					0.973	
Satd. Flow (perm)	1883	0	0	1883	1706	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	164			61	183	
Travel Time (s)	3.7			1.4	4.2	
Peak Hour Factor	0.91	1.00	1.00	0.87	0.50	0.50
Heavy Vehicles (%)	9%	2%	2%	9%	2%	2%
Adj. Flow (vph)	1082	0	0	693	18	14
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1082	0	0	693	32	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	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 37.2%		ICU Level of Service A	
Analysis Period (min) 15			

* User Entered Value

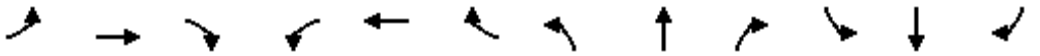
Intersection	
Int Delay, s/veh	0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	985	0	0	603	9	7
Future Vol, veh/h	985	0	0	603	9	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	100	100	87	50	50
Heavy Vehicles, %	9	2	2	9	2	2
Mvmt Flow	1082	0	0	693	18	14

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	1429	541
Stage 1	-	-	-	-	1082	-
Stage 2	-	-	-	-	347	-
Critical Hdwy	-	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	-	0	0	-	126	485
Stage 1	-	0	0	-	287	-
Stage 2	-	0	0	-	687	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	126	485
Mov Cap-2 Maneuver	-	-	-	-	126	-
Stage 1	-	-	-	-	287	-
Stage 2	-	-	-	-	687	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	28.3
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	186	-	-
HCM Lane V/C Ratio	0.172	-	-
HCM Control Delay (s)	28.3	-	-
HCM Lane LOS	D	-	-
HCM 95th %tile Q(veh)	0.6	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	789	31	2	439	108	2	661	129	28	670	57
Future Volume (vph)	2	789	31	2	439	108	2	661	129	28	670	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	*0.57	0.95	0.95	*0.68	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor		1.00			0.98			0.98			0.99	
Frt		0.990			0.970			0.970			0.987	
Flt Protected					0.999						0.997	
Satd. Flow (prot)	0	2028	0	0	2102	0	0	3367	0	0	3327	0
Flt Permitted		0.952			0.919			0.947			0.775	
Satd. Flow (perm)	0	1931	0	0	1934	0	0	3188	0	0	2585	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		422			213			448			247	
Travel Time (s)		9.6			4.8			10.2			5.6	
Confl. Peds. (#/hr)	111		63	63		111	71		62	62		71
Peak Hour Factor	0.50	0.94	0.54	0.25	0.93	0.89	0.25	0.87	0.66	0.57	0.86	0.72
Heavy Vehicles (%)	100%	5%	4%	2%	8%	15%	2%	2%	2%	72%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	33	0	0	0	0	0	0	0
Adj. Flow (vph)	4	839	57	8	472	121	8	760	195	49	779	79
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	900	0	0	601	0	0	963	0	0	907	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			10			10			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	1.09	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)	50.0	50.0		50.0	50.0		29.0	29.0		29.0	29.0	
Total Split (s)	55.0	55.0		55.0	55.0		45.0	45.0		45.0	45.0	
Total Split (%)	55.0%	55.0%		55.0%	55.0%		45.0%	45.0%		45.0%	45.0%	
Maximum Green (s)	49.0	49.0		49.0	49.0		40.5	40.5		40.5	40.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		-3.0			-3.0			-3.0			-3.0	
Total Lost Time (s)		3.0			3.0			1.5			1.5	
Lead/Lag	Lead	Lead		Lead	Lead		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?												
Walk Time (s)	27.0	27.0		27.0	27.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	17.0	17.0		17.0	17.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		52.0			52.0			43.5			43.5	
Actuated g/C Ratio		0.52			0.52			0.44			0.44	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.90			0.60			0.69			0.81	
Control Delay		30.6			13.2			20.7			29.6	
Queue Delay		0.0			0.0			0.4			2.9	
Total Delay		30.6			13.2			21.1			32.5	
LOS		C			B			C			C	
Approach Delay		30.6			13.2			21.1			32.5	
Approach LOS		C			B			C			C	
Queue Length 50th (ft)		448			119			182			263	
Queue Length 95th (ft)		#676			74			214			323	
Internal Link Dist (ft)		342			133			368			167	
Turn Bay Length (ft)												
Base Capacity (vph)		1004			1005			1386			1124	
Starvation Cap Reductn		0			0			114			127	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.90			0.60			0.76			0.91	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green, Master Intersection			
Natural Cycle: 80			
Control Type: Pretimed			
Maximum v/c Ratio: 0.90			
Intersection Signal Delay: 25.3		Intersection LOS: C	
Intersection Capacity Utilization 84.7%		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.

Splits and Phases: 293: Exchange/State & Main

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lane Configurations							
Traffic Volume (vph)	992	0	0	603	0	0	
Future Volume (vph)	992	0	0	603	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	*0.54	1.00	1.00	*0.54	1.00	1.00	
Ped Bike Factor							
Frt							
Flt Protected							
Satd. Flow (prot)	1883	0	0	1883	0	0	
Flt Permitted							
Satd. Flow (perm)	1883	0	0	1883	0	0	
Right Turn on Red		No				No	
Satd. Flow (RTOR)							
Link Speed (mph)	30			30	30		
Link Distance (ft)	61			608	45		
Travel Time (s)	1.4			13.8	1.0		
Confl. Peds. (#/hr)					33	33	
Peak Hour Factor	0.91	0.90	0.90	0.86	0.90	0.90	
Heavy Vehicles (%)	9%	2%	2%	9%	2%	2%	
Adj. Flow (vph)	1090	0	0	701	0	0	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	1090	0	0	701	0	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	10			10	0		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)		9	15		15	9	
Number of Detectors	0			0			
Detector Template							
Leading Detector (ft)	0			0			
Trailing Detector (ft)	0			0			
Turn Type	NA			NA			
Protected Phases	1			1			2
Permitted Phases							
Detector Phase	1			1			
Switch Phase							
Minimum Initial (s)	26.0			26.0			6.0
Minimum Split (s)	32.0			32.0			28.0
Total Split (s)	72.0			72.0			28.0
Total Split (%)	72.0%			72.0%			28%
Maximum Green (s)	67.0			67.0			25.0
Yellow Time (s)	4.0			4.0			3.0
All-Red Time (s)	1.0			1.0			0.0
Lost Time Adjust (s)	-2.0			-2.0			
Total Lost Time (s)	3.0			3.0			
Lead/Lag	Lead			Lead			Lag

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lead-Lag Optimize?							
Vehicle Extension (s)	2.0			2.0			2.0
Recall Mode	C-Max			C-Max			None
Walk Time (s)	19.0			19.0			7.0
Flash Dont Walk (s)	7.0			7.0			16.0
Pedestrian Calls (#/hr)	0			0			1
Act Effct Green (s)	94.2			94.2			
Actuated g/C Ratio	0.94			0.94			
v/c Ratio	0.61			0.40			
Control Delay	2.2			2.7			
Queue Delay	0.0			0.0			
Total Delay	2.2			2.7			
LOS	A			A			
Approach Delay	2.2			2.7			
Approach LOS	A			A			
Queue Length 50th (ft)	0			40			
Queue Length 95th (ft)	m168			107			
Internal Link Dist (ft)	1			528	1		
Turn Bay Length (ft)							
Base Capacity (vph)	1774			1774			
Starvation Cap Reductn	19			0			
Spillback Cap Reductn	0			0			
Storage Cap Reductn	0			0			
Reduced v/c Ratio	0.62			0.40			

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 95 (95%), Referenced to phase 1:EBWB, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.61			
Intersection Signal Delay: 2.4		Intersection LOS: A	
Intersection Capacity Utilization 44.1%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 294: Pedestrian Crossing & Main

BASE

CONDITION C

ETC +20 (2039)

SYNCHRO OUTPUT

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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	780	4	8	451	0	6
Future Volume (vph)	780	4	8	451	0	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	150		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			33		25	
Lane Util. Factor	*0.56	0.95	1.00	*0.55	1.00	1.00
Ped Bike Factor						
Frt	0.999				0.865	
Flt Protected			0.950			
Satd. Flow (prot)	1793	0	1770	1917	1611	0
Flt Permitted			0.950			
Satd. Flow (perm)	1793	0	1770	1917	1611	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	213			164	179	
Travel Time (s)	4.8			3.7	4.1	
Confl. Peds. (#/hr)		40	40			
Peak Hour Factor	0.88	0.50	0.58	0.86	1.00	0.63
Heavy Vehicles (%)	12%	2%	2%	9%	2%	2%
Bus Blockages (#/hr)	28	0	0	0	0	0
Adj. Flow (vph)	886	8	14	524	0	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	894	0	14	524	10	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	1.08	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 31.7%		ICU Level of Service A	
Analysis Period (min) 15			

* User Entered Value

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	780	4	8	451	0	6
Future Vol, veh/h	780	4	8	451	0	6
Conflicting Peds, #/hr	0	40	40	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	50	58	86	100	63
Heavy Vehicles, %	12	2	2	9	2	2
Mvmt Flow	886	8	14	524	0	10

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	934	0	1220	487
Stage 1	-	-	-	-	930	-
Stage 2	-	-	-	-	290	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	729	-	172	526
Stage 1	-	-	-	-	344	-
Stage 2	-	-	-	-	734	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	705	-	163	508
Mov Cap-2 Maneuver	-	-	-	-	163	-
Stage 1	-	-	-	-	326	-
Stage 2	-	-	-	-	734	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	12.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	508	-	-	705	-
HCM Lane V/C Ratio	0.019	-	-	0.02	-
HCM Control Delay (s)	12.2	-	-	10.2	-
HCM Lane LOS	B	-	-	B	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	786	0	0	458	3	3
Future Volume (vph)	786	0	0	458	3	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	*0.56	1.00	1.00	*0.55	1.00	1.00
Frt					0.955	
Flt Protected					0.968	
Satd. Flow (prot)	1900	0	0	1917	1722	0
Flt Permitted					0.968	
Satd. Flow (perm)	1900	0	0	1917	1722	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	164			61	183	
Travel Time (s)	3.7			1.4	4.2	
Peak Hour Factor	0.89	1.00	1.00	0.85	0.38	0.75
Heavy Vehicles (%)	12%	2%	2%	9%	2%	2%
Adj. Flow (vph)	883	0	0	539	8	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	883	0	0	539	12	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	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 31.7%		ICU Level of Service A	
Analysis Period (min) 15			

* User Entered Value

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	786	0	0	458	3	3
Future Vol, veh/h	786	0	0	458	3	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	100	100	85	38	75
Heavy Vehicles, %	12	2	2	9	2	2
Mvmt Flow	883	0	0	539	8	4

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	1153	442
Stage 1	-	-	-	-	883	-
Stage 2	-	-	-	-	270	-
Critical Hdwy	-	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	-	0	0	-	191	563
Stage 1	-	0	0	-	365	-
Stage 2	-	0	0	-	751	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	191	563
Mov Cap-2 Maneuver	-	-	-	-	191	-
Stage 1	-	-	-	-	365	-
Stage 2	-	-	-	-	751	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	20.4
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	246	-	-
HCM Lane V/C Ratio	0.048	-	-
HCM Control Delay (s)	20.4	-	-
HCM Lane LOS	C	-	-
HCM 95th %tile Q(veh)	0.2	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	666	33	3	361	82	2	555	107	18	708	67
Future Volume (vph)	1	666	33	3	361	82	2	555	107	18	708	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	*0.60	0.95	0.95	*0.66	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor		1.00			0.99			0.98			0.99	
Frt		0.991			0.972			0.966			0.986	
Flt Protected					0.999			0.999			0.998	
Satd. Flow (prot)	0	2095	0	0	2070	0	0	3260	0	0	3337	0
Flt Permitted		0.952			0.931			0.946			0.904	
Satd. Flow (perm)	0	1994	0	0	1929	0	0	3087	0	0	3021	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		422			213			448			247	
Travel Time (s)		9.6			4.8			10.2			5.6	
Confl. Peds. (#/hr)	68		38	38		68	46		40	40		46
Peak Hour Factor	0.25	0.89	0.68	0.38	0.93	0.92	0.25	0.96	0.62	0.57	0.97	0.85
Heavy Vehicles (%)	2%	8%	2%	2%	8%	20%	2%	3%	13%	100%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	27	0	0	0	0	0	0	0
Adj. Flow (vph)	4	748	49	8	388	89	8	578	173	32	730	79
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	801	0	0	485	0	0	759	0	0	841	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			10			10			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	1.07	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)	50.0	50.0		50.0	50.0		29.0	29.0		29.0	29.0	
Total Split (s)	53.0	53.0		53.0	53.0		47.0	47.0		47.0	47.0	
Total Split (%)	53.0%	53.0%		53.0%	53.0%		47.0%	47.0%		47.0%	47.0%	
Maximum Green (s)	47.0	47.0		47.0	47.0		42.5	42.5		42.5	42.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		-3.0			-3.0			-3.0			-3.0	
Total Lost Time (s)		3.0			3.0			1.5			1.5	
Lead/Lag	Lead	Lead		Lead	Lead		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?												
Walk Time (s)	27.0	27.0		27.0	27.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	17.0	17.0		17.0	17.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		50.0			50.0			45.5			45.5	
Actuated g/C Ratio		0.50			0.50			0.46			0.46	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.80			0.50			0.54			0.61	
Control Delay		23.5			15.1			15.4			21.5	
Queue Delay		0.1			0.0			0.2			1.5	
Total Delay		23.5			15.1			15.5			23.1	
LOS		C			B			B			C	
Approach Delay		23.5			15.1			15.5			23.1	
Approach LOS		C			B			B			C	
Queue Length 50th (ft)		349			103			103			210	
Queue Length 95th (ft)		480			176			134			274	
Internal Link Dist (ft)		342			133			368			167	
Turn Bay Length (ft)												
Base Capacity (vph)		997			964			1404			1374	
Starvation Cap Reductn		4			0			131			334	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.81			0.50			0.60			0.81	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green, Master Intersection			
Natural Cycle: 80			
Control Type: Pretimed			
Maximum v/c Ratio: 0.80			
Intersection Signal Delay: 19.9		Intersection LOS: B	
Intersection Capacity Utilization 78.4%		ICU Level of Service D	
Analysis Period (min) 15			

* User Entered Value

Splits and Phases: 293: Exchange/State & Main

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lane Configurations							
Traffic Volume (vph)	789	0	0	458	0	0	
Future Volume (vph)	789	0	0	458	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	*0.56	1.00	1.00	*0.55	1.00	1.00	
Ped Bike Factor							
Frt							
Flt Protected							
Satd. Flow (prot)	1900	0	0	1917	0	0	
Flt Permitted							
Satd. Flow (perm)	1900	0	0	1917	0	0	
Right Turn on Red		No				No	
Satd. Flow (RTOR)							
Link Speed (mph)	30			30	30		
Link Distance (ft)	61			608	0		
Travel Time (s)	1.4			13.8	0.0		
Confl. Peds. (#/hr)					30	30	
Peak Hour Factor	0.88	0.90	0.90	0.86	0.90	0.90	
Heavy Vehicles (%)	12%	2%	2%	9%	2%	2%	
Adj. Flow (vph)	897	0	0	533	0	0	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	897	0	0	533	0	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	10			10	0		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)		9	15		15	9	
Number of Detectors	0			0			
Detector Template							
Leading Detector (ft)	0			0			
Trailing Detector (ft)	0			0			
Turn Type	NA			NA			
Protected Phases	1			1			2
Permitted Phases							
Detector Phase	1			1			
Switch Phase							
Minimum Initial (s)	26.0			26.0			6.0
Minimum Split (s)	32.0			32.0			28.0
Total Split (s)	72.0			72.0			28.0
Total Split (%)	72.0%			72.0%			28%
Maximum Green (s)	67.0			67.0			25.0
Yellow Time (s)	4.0			4.0			3.0
All-Red Time (s)	1.0			1.0			0.0
Lost Time Adjust (s)	-2.0			-2.0			
Total Lost Time (s)	3.0			3.0			
Lead/Lag	Lead			Lead			Lag

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lead-Lag Optimize?							
Vehicle Extension (s)	2.0			2.0			2.0
Recall Mode	C-Max			C-Max			None
Walk Time (s)	19.0			19.0			7.0
Flash Dont Walk (s)	7.0			7.0			16.0
Pedestrian Calls (#/hr)	0			0			1
Act Effct Green (s)	94.2			94.2			
Actuated g/C Ratio	0.94			0.94			
v/c Ratio	0.50			0.30			
Control Delay	1.5			2.2			
Queue Delay	0.0			0.0			
Total Delay	1.5			2.2			
LOS	A			A			
Approach Delay	1.5			2.2			
Approach LOS	A			A			
Queue Length 50th (ft)	0			23			
Queue Length 95th (ft)	125			70			
Internal Link Dist (ft)	1			528	1		
Turn Bay Length (ft)							
Base Capacity (vph)	1790			1806			
Starvation Cap Reductn	11			0			
Spillback Cap Reductn	0			0			
Storage Cap Reductn	0			0			
Reduced v/c Ratio	0.50			0.30			

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 91 (91%), Referenced to phase 1:EBWB, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.50			
Intersection Signal Delay: 1.8		Intersection LOS: A	
Intersection Capacity Utilization 38.1%		ICU Level of Service A	
Analysis Period (min) 15			

* User Entered Value

Splits and Phases: 294: Pedestrian Crossing & Main

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	817	9	7	526	0	15
Future Volume (vph)	817	9	7	526	0	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	150		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			33		25	
Lane Util. Factor	*0.54	0.95	1.00	*0.54	1.00	1.00
Ped Bike Factor						
Frt	0.996				0.865	
Flt Protected			0.950			
Satd. Flow (prot)	1780	0	1770	1883	1611	0
Flt Permitted			0.950			
Satd. Flow (perm)	1780	0	1770	1883	1611	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	213			164	179	
Travel Time (s)	4.8			3.7	4.1	
Confl. Peds. (#/hr)		62	62			
Peak Hour Factor	0.91	0.40	0.75	0.86	1.00	0.58
Heavy Vehicles (%)	9%	2%	2%	9%	2%	2%
Bus Blockages (#/hr)	26	0	0	0	0	0
Adj. Flow (vph)	898	23	9	612	0	26
Shared Lane Traffic (%)						
Lane Group Flow (vph)	921	0	9	612	26	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	1.07	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 32.9%		ICU Level of Service A	
Analysis Period (min) 15			

* User Entered Value

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	817	9	7	526	0	15
Future Vol, veh/h	817	9	7	526	0	15
Conflicting Peds, #/hr	0	62	62	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	40	75	86	100	58
Heavy Vehicles, %	9	2	2	9	2	2
Mvmt Flow	898	23	9	612	0	26

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	983	0	1296	523
Stage 1	-	-	-	-	972	-
Stage 2	-	-	-	-	324	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	698	-	154	499
Stage 1	-	-	-	-	327	-
Stage 2	-	-	-	-	705	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	662	-	144	473
Mov Cap-2 Maneuver	-	-	-	-	144	-
Stage 1	-	-	-	-	306	-
Stage 2	-	-	-	-	705	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	13.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	473	-	-	662	-
HCM Lane V/C Ratio	0.055	-	-	0.014	-
HCM Control Delay (s)	13.1	-	-	10.5	-
HCM Lane LOS	B	-	-	B	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	834	0	0	533	9	7
Future Volume (vph)	834	0	0	533	9	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	*0.54	1.00	1.00	*0.54	1.00	1.00
Frt					0.941	
Flt Protected					0.973	
Satd. Flow (prot)	1883	0	0	1883	1706	0
Flt Permitted					0.973	
Satd. Flow (perm)	1883	0	0	1883	1706	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	164			61	183	
Travel Time (s)	3.7			1.4	4.2	
Peak Hour Factor	0.91	1.00	1.00	0.87	0.50	0.50
Heavy Vehicles (%)	9%	2%	2%	9%	2%	2%
Adj. Flow (vph)	916	0	0	613	18	14
Shared Lane Traffic (%)						
Lane Group Flow (vph)	916	0	0	613	32	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	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 33.1%		ICU Level of Service A	
Analysis Period (min) 15			

* User Entered Value

Intersection	
Int Delay, s/veh	0.4

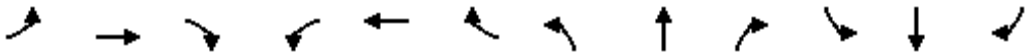
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	834	0	0	533	9	7
Future Vol, veh/h	834	0	0	533	9	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	100	100	87	50	50
Heavy Vehicles, %	9	2	2	9	2	2
Mvmt Flow	916	0	0	613	18	14

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	1223	458
Stage 1	-	-	-	-	916	-
Stage 2	-	-	-	-	307	-
Critical Hdwy	-	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	-	0	0	-	172	550
Stage 1	-	0	0	-	350	-
Stage 2	-	0	0	-	719	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	172	550
Mov Cap-2 Maneuver	-	-	-	-	172	-
Stage 1	-	-	-	-	350	-
Stage 2	-	-	-	-	719	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	21.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	246	-	-
HCM Lane V/C Ratio	0.13	-	-
HCM Control Delay (s)	21.8	-	-
HCM Lane LOS	C	-	-
HCM 95th %tile Q(veh)	0.4	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	819	31	2	453	113	2	653	132	28	670	57
Future Volume (vph)	2	819	31	2	453	113	2	653	132	28	670	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	*0.57	0.95	0.95	*0.68	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor		1.00			0.98			0.98			0.99	
Frt		0.991			0.969			0.969			0.987	
Flt Protected					0.999						0.997	
Satd. Flow (prot)	0	2031	0	0	2099	0	0	3362	0	0	3327	0
Flt Permitted		0.952			0.899			0.947			0.776	
Satd. Flow (perm)	0	1933	0	0	1889	0	0	3183	0	0	2588	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		422			213			448			247	
Travel Time (s)		9.6			4.8			10.2			5.6	
Confl. Peds. (#/hr)	111		63	63		111	71		62	62		71
Peak Hour Factor	0.50	0.94	0.54	0.25	0.93	0.89	0.25	0.87	0.66	0.57	0.86	0.72
Heavy Vehicles (%)	100%	5%	4%	2%	8%	15%	2%	2%	2%	72%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	33	0	0	0	0	0	0	0
Adj. Flow (vph)	4	871	57	8	487	127	8	751	200	49	779	79
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	932	0	0	622	0	0	959	0	0	907	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			10			10			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	1.09	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)	50.0	50.0		50.0	50.0		29.0	29.0		29.0	29.0	
Total Split (s)	55.0	55.0		55.0	55.0		45.0	45.0		45.0	45.0	
Total Split (%)	55.0%	55.0%		55.0%	55.0%		45.0%	45.0%		45.0%	45.0%	
Maximum Green (s)	49.0	49.0		49.0	49.0		40.5	40.5		40.5	40.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		-3.0			-3.0			-3.0			-3.0	
Total Lost Time (s)		3.0			3.0			1.5			1.5	
Lead/Lag	Lead	Lead		Lead	Lead		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?												
Walk Time (s)	27.0	27.0		27.0	27.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	17.0	17.0		17.0	17.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		52.0			52.0			43.5			43.5	
Actuated g/C Ratio		0.52			0.52			0.44			0.44	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.93			0.63			0.69			0.81	
Control Delay		34.7			13.9			20.6			29.6	
Queue Delay		0.0			0.0			0.4			2.9	
Total Delay		34.7			13.9			21.1			32.5	
LOS		C			B			C			C	
Approach Delay		34.7			13.9			21.1			32.5	
Approach LOS		C			B			C			C	
Queue Length 50th (ft)		476			122			181			263	
Queue Length 95th (ft)		#717			163			213			323	
Internal Link Dist (ft)		342			133			368			167	
Turn Bay Length (ft)												
Base Capacity (vph)		1005			982			1384			1125	
Starvation Cap Reductn		0			0			113			128	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.93			0.63			0.75			0.91	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green, Master Intersection			
Natural Cycle: 80			
Control Type: Pretimed			
Maximum v/c Ratio: 0.93			
Intersection Signal Delay: 26.5		Intersection LOS: C	
Intersection Capacity Utilization 84.7%		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.

Splits and Phases: 293: Exchange/State & Main

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lane Configurations							
Traffic Volume (vph)	841	0	0	540	0	0	
Future Volume (vph)	841	0	0	540	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	*0.54	1.00	1.00	*0.54	1.00	1.00	
Ped Bike Factor							
Frt							
Flt Protected							
Satd. Flow (prot)	1883	0	0	1883	0	0	
Flt Permitted							
Satd. Flow (perm)	1883	0	0	1883	0	0	
Right Turn on Red		No				No	
Satd. Flow (RTOR)							
Link Speed (mph)	30			30	30		
Link Distance (ft)	61			608	45		
Travel Time (s)	1.4			13.8	1.0		
Confl. Peds. (#/hr)					33	33	
Peak Hour Factor	0.91	0.90	0.90	0.86	0.90	0.90	
Heavy Vehicles (%)	9%	2%	2%	9%	2%	2%	
Adj. Flow (vph)	924	0	0	628	0	0	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	924	0	0	628	0	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	10			10	0		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)		9	15		15	9	
Number of Detectors	0			0			
Detector Template							
Leading Detector (ft)	0			0			
Trailing Detector (ft)	0			0			
Turn Type	NA			NA			
Protected Phases	1			1			2
Permitted Phases							
Detector Phase	1			1			
Switch Phase							
Minimum Initial (s)	26.0			26.0			6.0
Minimum Split (s)	32.0			32.0			28.0
Total Split (s)	72.0			72.0			28.0
Total Split (%)	72.0%			72.0%			28%
Maximum Green (s)	67.0			67.0			25.0
Yellow Time (s)	4.0			4.0			3.0
All-Red Time (s)	1.0			1.0			0.0
Lost Time Adjust (s)	-2.0			-2.0			
Total Lost Time (s)	3.0			3.0			
Lead/Lag	Lead			Lead			Lag

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lead-Lag Optimize?							
Vehicle Extension (s)	2.0			2.0			2.0
Recall Mode	C-Max			C-Max			None
Walk Time (s)	19.0			19.0			7.0
Flash Dont Walk (s)	7.0			7.0			16.0
Pedestrian Calls (#/hr)	0			0			1
Act Effct Green (s)	94.2			94.2			
Actuated g/C Ratio	0.94			0.94			
v/c Ratio	0.52			0.35			
Control Delay	1.4			2.5			
Queue Delay	0.0			0.0			
Total Delay	1.4			2.5			
LOS	A			A			
Approach Delay	1.4			2.5			
Approach LOS	A			A			
Queue Length 50th (ft)	0			35			
Queue Length 95th (ft)	m117			95			
Internal Link Dist (ft)	1			528	1		
Turn Bay Length (ft)							
Base Capacity (vph)	1774			1774			
Starvation Cap Reductn	24			0			
Spillback Cap Reductn	0			0			
Storage Cap Reductn	0			0			
Reduced v/c Ratio	0.53			0.35			

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: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.52			
Intersection Signal Delay: 1.8		Intersection LOS: A	
Intersection Capacity Utilization 39.9%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 294: Pedestrian Crossing & Main

ALTERNATIVE 1
BASE
ETC +20 (2039)
SYNCHRO OUTPUT

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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	375	4	8	348	0	6
Future Volume (vph)	375	4	8	348	0	6
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	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.998				0.865	
Flt Protected			0.950			
Satd. Flow (prot)	1318	0	1770	1329	1611	0
Flt Permitted			0.950			
Satd. Flow (perm)	1318	0	1770	1329	1611	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	213			164	179	
Travel Time (s)	4.8			3.7	4.1	
Confl. Peds. (#/hr)		40	40			
Peak Hour Factor	0.88	0.50	0.58	0.86	1.00	0.63
Heavy Vehicles (%)	12%	2%	2%	9%	2%	2%
Bus Blockages (#/hr)	28	0	0	27	0	0
Parking (#/hr)	5			9		
Adj. Flow (vph)	426	8	14	405	0	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	434	0	14	405	10	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	1.37	1.00	1.00	1.40	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

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

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	375	4	8	348	0	6
Future Vol, veh/h	375	4	8	348	0	6
Conflicting Peds, #/hr	0	40	40	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	50	58	86	100	63
Heavy Vehicles, %	12	2	2	9	2	2
Mvmt Flow	426	8	14	405	0	10

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	474	0	903	470
Stage 1	-	-	-	-	470	-
Stage 2	-	-	-	-	433	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1088	-	308	594
Stage 1	-	-	-	-	629	-
Stage 2	-	-	-	-	654	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1052	-	294	574
Mov Cap-2 Maneuver	-	-	-	-	294	-
Stage 1	-	-	-	-	600	-
Stage 2	-	-	-	-	654	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	11.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	574	-	-	1052	-
HCM Lane V/C Ratio	0.017	-	-	0.013	-
HCM Control Delay (s)	11.4	-	-	8.5	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	381	0	0	355	3	3
Future Volume (vph)	381	0	0	355	3	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.955	
Flt Protected					0.968	
Satd. Flow (prot)	1311	0	0	1743	1722	0
Flt Permitted					0.968	
Satd. Flow (perm)	1311	0	0	1743	1722	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	164			61	183	
Travel Time (s)	3.7			1.4	4.2	
Peak Hour Factor	0.89	1.00	1.00	0.85	0.38	0.75
Heavy Vehicles (%)	12%	2%	2%	9%	2%	2%
Bus Blockages (#/hr)	28	0	0	0	0	0
Parking (#/hr)	6					
Adj. Flow (vph)	428	0	0	418	8	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	428	0	0	418	12	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	1.38	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 30.1%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	381	0	0	355	3	3
Future Vol, veh/h	381	0	0	355	3	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	100	100	85	38	75
Heavy Vehicles, %	12	2	2	9	2	2
Mvmt Flow	428	0	0	418	8	4

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	846	428
Stage 1	-	-	-	-	428	-
Stage 2	-	-	-	-	418	-
Critical Hdwy	-	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	-	0	0	-	333	627
Stage 1	-	0	0	-	657	-
Stage 2	-	0	0	-	664	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	333	627
Mov Cap-2 Maneuver	-	-	-	-	333	-
Stage 1	-	-	-	-	657	-
Stage 2	-	-	-	-	664	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	14.4
HCM LOS			B

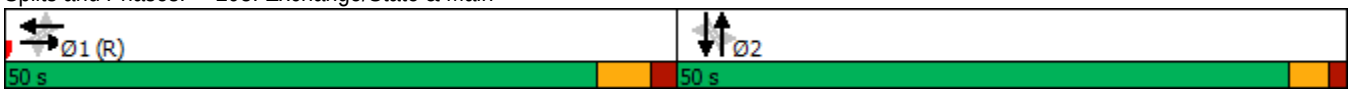
Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	395	-	-
HCM Lane V/C Ratio	0.03	-	-
HCM Control Delay (s)	14.4	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	317	33	3	279	61	2	575	52	18	708	67
Future Volume (vph)	1	317	33	3	279	61	2	575	52	18	708	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	90		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			50			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		1.00		0.99	0.99			0.99			0.99	
Frt		0.984			0.973			0.982			0.986	
Flt Protected				0.950				0.999			0.998	
Satd. Flow (prot)	0	1736	0	1770	1296	0	0	3354	0	0	3337	0
Flt Permitted		0.997		0.421				0.946			0.909	
Satd. Flow (perm)	0	1730	0	774	1296	0	0	3175	0	0	3036	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		200			213			448			247	
Travel Time (s)		4.5			4.8			10.2			5.6	
Confl. Peds. (#/hr)	68		38	38		68	46		40	40		46
Peak Hour Factor	0.25	0.89	0.68	0.38	0.93	0.92	0.25	0.96	0.62	0.57	0.97	0.85
Heavy Vehicles (%)	2%	8%	2%	2%	8%	20%	2%	3%	13%	100%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	27	0	0	0	0	0	0	0
Parking (#/hr)					5							
Adj. Flow (vph)	4	356	49	8	300	66	8	599	84	32	730	79
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	409	0	8	366	0	0	691	0	0	841	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			10			10			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	1.37	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)	50.0	50.0		50.0	50.0		29.0	29.0		29.0	29.0	
Total Split (s)	50.0	50.0		50.0	50.0		50.0	50.0		50.0	50.0	
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	
Maximum Green (s)	44.0	44.0		44.0	44.0		45.5	45.5		45.5	45.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		-3.0		-3.0	-3.0			-3.0			-3.0	
Total Lost Time (s)		3.0		3.0	3.0			1.5			1.5	
Lead/Lag	Lead	Lead		Lead	Lead		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?												
Walk Time (s)	27.0	27.0		27.0	27.0		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)	17.0	17.0		17.0	17.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		47.0		47.0	47.0			48.5			48.5	
Actuated g/C Ratio		0.47		0.47	0.47			0.48			0.48	
v/c Ratio		0.50		0.02	0.60			0.45			0.57	
Control Delay		12.5		9.3	16.5			13.2			18.7	
Queue Delay		0.2		0.0	0.3			0.0			1.1	
Total Delay		12.7		9.3	16.8			13.2			19.8	
LOS		B		A	B			B			B	
Approach Delay		12.7			16.6			13.2			19.8	
Approach LOS		B			B			B			B	
Queue Length 50th (ft)		66		2	92			90			142	
Queue Length 95th (ft)		88		2	128			118			172	
Internal Link Dist (ft)		120			133			368			167	
Turn Bay Length (ft)				90								
Base Capacity (vph)		813		363	609			1539			1472	
Starvation Cap Reductn		71		0	37			0			372	
Spillback Cap Reductn		0		0	0			0			0	
Storage Cap Reductn		0		0	0			0			0	
Reduced v/c Ratio		0.55		0.02	0.64			0.45			0.76	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green, Master Intersection			
Natural Cycle: 80			
Control Type: Pretimed			
Maximum v/c Ratio: 0.60			
Intersection Signal Delay: 16.1		Intersection LOS: B	
Intersection Capacity Utilization 78.4%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 293: Exchange/State & Main



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lane Configurations							
Traffic Volume (vph)	384	0	0	355	0	0	
Future Volume (vph)	384	0	0	355	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor							
Frt							
Flt Protected							
Satd. Flow (prot)	1696	0	0	1743	0	0	
Flt Permitted							
Satd. Flow (perm)	1696	0	0	1743	0	0	
Right Turn on Red		No				No	
Satd. Flow (RTOR)							
Link Speed (mph)	30			30	30		
Link Distance (ft)	61			608	45		
Travel Time (s)	1.4			13.8	1.0		
Confl. Peds. (#/hr)					30	30	
Peak Hour Factor	0.88	0.90	0.90	0.86	0.90	0.90	
Heavy Vehicles (%)	12%	2%	2%	9%	2%	2%	
Adj. Flow (vph)	436	0	0	413	0	0	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	436	0	0	413	0	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	10			10	0		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)		9	15		15	9	
Number of Detectors	0			0			
Detector Template							
Leading Detector (ft)	0			0			
Trailing Detector (ft)	0			0			
Turn Type	NA			NA			
Protected Phases	1			1			2
Permitted Phases							
Detector Phase	1			1			
Switch Phase							
Minimum Initial (s)	26.0			26.0			6.0
Minimum Split (s)	32.0			32.0			28.0
Total Split (s)	72.0			72.0			28.0
Total Split (%)	72.0%			72.0%			28%
Maximum Green (s)	67.0			67.0			25.0
Yellow Time (s)	4.0			4.0			3.0
All-Red Time (s)	1.0			1.0			0.0
Lost Time Adjust (s)	-2.0			-2.0			
Total Lost Time (s)	3.0			3.0			
Lead/Lag	Lead			Lead			Lag

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lead-Lag Optimize?							
Vehicle Extension (s)	2.0			2.0			2.0
Recall Mode	C-Max			C-Max			None
Walk Time (s)	19.0			19.0			7.0
Flash Dont Walk (s)	7.0			7.0			16.0
Pedestrian Calls (#/hr)	0			0			1
Act Effct Green (s)	94.2			94.2			
Actuated g/C Ratio	0.94			0.94			
v/c Ratio	0.27			0.25			
Control Delay	1.3			1.3			
Queue Delay	0.0			0.0			
Total Delay	1.3			1.3			
LOS	A			A			
Approach Delay	1.3			1.3			
Approach LOS	A			A			
Queue Length 50th (ft)	0			6			
Queue Length 95th (ft)	73			56			
Internal Link Dist (ft)	1			528	1		
Turn Bay Length (ft)							
Base Capacity (vph)	1598			1642			
Starvation Cap Reductn	48			0			
Spillback Cap Reductn	0			0			
Storage Cap Reductn	0			0			
Reduced v/c Ratio	0.28			0.25			

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 88 (88%), Referenced to phase 1:EBWB, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.27			
Intersection Signal Delay: 1.3		Intersection LOS: A	
Intersection Capacity Utilization 38.0%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 294: Pedestrian Crossing & Main

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	543	9	7	508	0	15
Future Volume (vph)	543	9	7	508	0	15
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)			33		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.995				0.865	
Flt Protected			0.950			
Satd. Flow (prot)	1363	0	1770	1294	1611	0
Flt Permitted			0.950			
Satd. Flow (perm)	1363	0	1770	1294	1611	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	213			164	179	
Travel Time (s)	4.8			3.7	4.1	
Confl. Peds. (#/hr)		62	62			
Peak Hour Factor	0.91	0.40	0.75	0.86	1.00	0.58
Heavy Vehicles (%)	9%	2%	2%	9%	2%	2%
Bus Blockages (#/hr)	26	0	0	33	0	0
Parking (#/hr)	5			9		
Adj. Flow (vph)	597	23	9	591	0	26
Shared Lane Traffic (%)						
Lane Group Flow (vph)	620	0	9	591	26	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	1.36	1.00	1.00	1.45	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 39.2%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	543	9	7	508	0	15
Future Vol, veh/h	543	9	7	508	0	15
Conflicting Peds, #/hr	0	62	62	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	40	75	86	100	58
Heavy Vehicles, %	9	2	2	9	2	2
Mvmt Flow	597	23	9	591	0	26

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	682	0	1280	671
Stage 1	-	-	-	-	671	-
Stage 2	-	-	-	-	609	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	911	-	183	456
Stage 1	-	-	-	-	508	-
Stage 2	-	-	-	-	543	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	864	-	172	432
Mov Cap-2 Maneuver	-	-	-	-	172	-
Stage 1	-	-	-	-	477	-
Stage 2	-	-	-	-	543	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	13.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	432	-	-	864	-
HCM Lane V/C Ratio	0.06	-	-	0.011	-
HCM Control Delay (s)	13.9	-	-	9.2	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	560	0	0	515	9	7
Future Volume (vph)	560	0	0	515	9	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.941	
Flt Protected					0.973	
Satd. Flow (prot)	1359	0	0	1743	1706	0
Flt Permitted					0.973	
Satd. Flow (perm)	1359	0	0	1743	1706	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	164			61	183	
Travel Time (s)	3.7			1.4	4.2	
Peak Hour Factor	0.91	1.00	1.00	0.87	0.50	0.50
Heavy Vehicles (%)	9%	2%	2%	9%	2%	2%
Bus Blockages (#/hr)	26	0	0	0	0	0
Parking (#/hr)	6					
Adj. Flow (vph)	615	0	0	592	18	14
Shared Lane Traffic (%)						
Lane Group Flow (vph)	615	0	0	592	32	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	1.37	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 39.5%		ICU Level of Service A	
Analysis Period (min) 15			

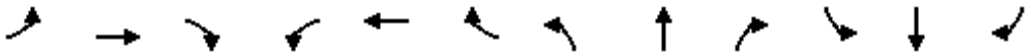
Intersection	
Int Delay, s/veh	0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↱	
Traffic Vol, veh/h	560	0	0	515	9	7
Future Vol, veh/h	560	0	0	515	9	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	100	100	87	50	50
Heavy Vehicles, %	9	2	2	9	2	2
Mvmt Flow	615	0	0	592	18	14

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	1207	615
Stage 1	-	-	-	-	615	-
Stage 2	-	-	-	-	592	-
Critical Hdwy	-	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	-	0	0	-	203	491
Stage 1	-	0	0	-	539	-
Stage 2	-	0	0	-	553	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	203	491
Mov Cap-2 Maneuver	-	-	-	-	203	-
Stage 1	-	-	-	-	539	-
Stage 2	-	-	-	-	553	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	19.9
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	273	-	-
HCM Lane V/C Ratio	0.117	-	-
HCM Control Delay (s)	19.9	-	-
HCM Lane LOS	C	-	-
HCM 95th %tile Q(veh)	0.4	-	-

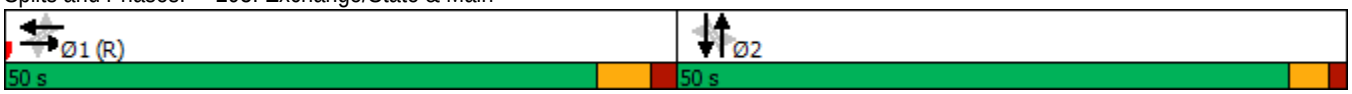


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	426	31	2	370	90	2	661	67	28	670	57
Future Volume (vph)	2	426	31	2	370	90	2	661	67	28	670	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	90		0	0		0	0		0
Storage Lanes	0		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		0.99		0.98	0.98			0.98			0.99	
Frt		0.985			0.970			0.982			0.987	
Flt Protected				0.950							0.997	
Satd. Flow (prot)	0	1761	0	1770	1257	0	0	3411	0	0	3327	0
Flt Permitted		0.997		0.355				0.947			0.840	
Satd. Flow (perm)	0	1755	0	650	1257	0	0	3230	0	0	2799	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		200			213			448			247	
Travel Time (s)		4.5			4.8			10.2			5.6	
Confl. Peds. (#/hr)	111		63	63		111	71		62	62		71
Peak Hour Factor	0.50	0.94	0.54	0.25	0.93	0.89	0.25	0.87	0.66	0.57	0.86	0.72
Heavy Vehicles (%)	100%	5%	4%	2%	8%	15%	2%	2%	2%	72%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	33	0	0	0	0	0	0	0
Parking (#/hr)					5							
Adj. Flow (vph)	4	453	57	8	398	101	8	760	102	49	779	79
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	514	0	8	499	0	0	870	0	0	907	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			10			10			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	1.41	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)	50.0	50.0		50.0	50.0		29.0	29.0		29.0	29.0	
Total Split (s)	50.0	50.0		50.0	50.0		50.0	50.0		50.0	50.0	
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	
Maximum Green (s)	44.0	44.0		44.0	44.0		45.5	45.5		45.5	45.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		-3.0		-3.0	-3.0			-3.0			-3.0	
Total Lost Time (s)		3.0		3.0	3.0			1.5			1.5	
Lead/Lag	Lead	Lead		Lead	Lead		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?												
Walk Time (s)	27.0	27.0		27.0	27.0		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)	17.0	17.0		17.0	17.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		47.0		47.0	47.0			48.5			48.5	
Actuated g/C Ratio		0.47		0.47	0.47			0.48			0.48	
v/c Ratio		0.62		0.03	0.85			0.56			0.67	
Control Delay		16.6		8.0	27.9			15.9			20.8	
Queue Delay		0.2		0.0	0.7			0.3			1.3	
Total Delay		16.9		8.0	28.6			16.2			22.1	
LOS		B		A	C			B			C	
Approach Delay		16.9			28.3			16.2			22.1	
Approach LOS		B			C			B			C	
Queue Length 50th (ft)		110		1	110			146			168	
Queue Length 95th (ft)		373		2	#474			174			192	
Internal Link Dist (ft)		120			133			368			167	
Turn Bay Length (ft)				90								
Base Capacity (vph)		824		305	590			1566			1357	
Starvation Cap Reductn		37		0	12			207			245	
Spillback Cap Reductn		0		0	0			24			0	
Storage Cap Reductn		0		0	0			0			0	
Reduced v/c Ratio		0.65		0.03	0.86			0.64			0.82	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green, Master Intersection			
Natural Cycle: 80			
Control Type: Pretimed			
Maximum v/c Ratio: 0.85			
Intersection Signal Delay: 20.4		Intersection LOS: C	
Intersection Capacity Utilization 84.7%		ICU Level of Service E	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 293: Exchange/State & Main



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lane Configurations							
Traffic Volume (vph)	567	0	0	515	0	0	
Future Volume (vph)	567	0	0	515	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor							
Frt							
Flt Protected							
Satd. Flow (prot)	1743	0	0	1743	0	0	
Flt Permitted							
Satd. Flow (perm)	1743	0	0	1743	0	0	
Right Turn on Red		No				No	
Satd. Flow (RTOR)							
Link Speed (mph)	30			30	30		
Link Distance (ft)	61			608	45		
Travel Time (s)	1.4			13.8	1.0		
Confl. Peds. (#/hr)					33	33	
Peak Hour Factor	0.91	0.90	0.90	0.86	0.90	0.90	
Heavy Vehicles (%)	9%	2%	2%	9%	2%	2%	
Adj. Flow (vph)	623	0	0	599	0	0	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	623	0	0	599	0	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	10			10	0		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)		9	15		15	9	
Number of Detectors	0			0			
Detector Template							
Leading Detector (ft)	0			0			
Trailing Detector (ft)	0			0			
Turn Type	NA			NA			
Protected Phases	1			1			2
Permitted Phases							
Detector Phase	1			1			
Switch Phase							
Minimum Initial (s)	26.0			26.0			6.0
Minimum Split (s)	32.0			32.0			28.0
Total Split (s)	72.0			72.0			28.0
Total Split (%)	72.0%			72.0%			28%
Maximum Green (s)	67.0			67.0			25.0
Yellow Time (s)	4.0			4.0			3.0
All-Red Time (s)	1.0			1.0			0.0
Lost Time Adjust (s)	-2.0			-2.0			
Total Lost Time (s)	3.0			3.0			
Lead/Lag	Lead			Lead			Lag

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lead-Lag Optimize?							
Vehicle Extension (s)	2.0			2.0			2.0
Recall Mode	C-Max			C-Max			None
Walk Time (s)	19.0			19.0			7.0
Flash Dont Walk (s)	7.0			7.0			16.0
Pedestrian Calls (#/hr)	0			0			1
Act Effct Green (s)	94.2			94.2			
Actuated g/C Ratio	0.94			0.94			
v/c Ratio	0.38			0.36			
Control Delay	1.5			2.8			
Queue Delay	0.0			0.0			
Total Delay	1.5			2.8			
LOS	A			A			
Approach Delay	1.5			2.8			
Approach LOS	A			A			
Queue Length 50th (ft)	0			52			
Queue Length 95th (ft)	109			88			
Internal Link Dist (ft)	1			528	1		
Turn Bay Length (ft)							
Base Capacity (vph)	1642			1642			
Starvation Cap Reductn	52			1			
Spillback Cap Reductn	0			61			
Storage Cap Reductn	0			0			
Reduced v/c Ratio	0.39			0.38			

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 78 (78%), Referenced to phase 1:EBWB, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.38			
Intersection Signal Delay: 2.2		Intersection LOS: A	
Intersection Capacity Utilization 46.5%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 294: Pedestrian Crossing & Main

ALTERNATIVE 1
CONDITION A
ETC +20 (2039)
SYNCHRO OUTPUT

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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	375	4	8	406	0	6
Future Volume (vph)	375	4	8	406	0	6
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	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.998				0.865	
Flt Protected			0.950			
Satd. Flow (prot)	1318	0	1770	1329	1611	0
Flt Permitted			0.950			
Satd. Flow (perm)	1318	0	1770	1329	1611	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	213			164	179	
Travel Time (s)	4.8			3.7	4.1	
Confl. Peds. (#/hr)		40	40			
Peak Hour Factor	0.88	0.50	0.58	0.86	1.00	0.63
Heavy Vehicles (%)	12%	2%	2%	9%	2%	2%
Bus Blockages (#/hr)	28	0	0	27	0	0
Parking (#/hr)	5			9		
Adj. Flow (vph)	426	8	14	472	0	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	434	0	14	472	10	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	1.37	1.00	1.00	1.40	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

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

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	375	4	8	406	0	6
Future Vol, veh/h	375	4	8	406	0	6
Conflicting Peds, #/hr	0	40	40	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	50	58	86	100	63
Heavy Vehicles, %	12	2	2	9	2	2
Mvmt Flow	426	8	14	472	0	10

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	474	0	970	470
Stage 1	-	-	-	-	470	-
Stage 2	-	-	-	-	500	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1088	-	281	594
Stage 1	-	-	-	-	629	-
Stage 2	-	-	-	-	609	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1052	-	268	574
Mov Cap-2 Maneuver	-	-	-	-	268	-
Stage 1	-	-	-	-	600	-
Stage 2	-	-	-	-	609	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	11.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	574	-	-	1052	-
HCM Lane V/C Ratio	0.017	-	-	0.013	-
HCM Control Delay (s)	11.4	-	-	8.5	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	381	0	0	413	3	3
Future Volume (vph)	381	0	0	413	3	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.955	
Flt Protected					0.968	
Satd. Flow (prot)	1311	0	0	1743	1722	0
Flt Permitted					0.968	
Satd. Flow (perm)	1311	0	0	1743	1722	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	164			61	183	
Travel Time (s)	3.7			1.4	4.2	
Peak Hour Factor	0.89	1.00	1.00	0.85	0.38	0.75
Heavy Vehicles (%)	12%	2%	2%	9%	2%	2%
Bus Blockages (#/hr)	28	0	0	0	0	0
Parking (#/hr)	6					
Adj. Flow (vph)	428	0	0	486	8	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	428	0	0	486	12	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	1.38	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 31.7%		ICU Level of Service A	
Analysis Period (min) 15			

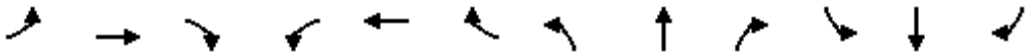
Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	381	0	0	413	3	3
Future Vol, veh/h	381	0	0	413	3	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	100	100	85	38	75
Heavy Vehicles, %	12	2	2	9	2	2
Mvmt Flow	428	0	0	486	8	4

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	914	428
Stage 1	-	-	-	-	428	-
Stage 2	-	-	-	-	486	-
Critical Hdwy	-	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	-	0	0	-	303	627
Stage 1	-	0	0	-	657	-
Stage 2	-	0	0	-	618	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	303	627
Mov Cap-2 Maneuver	-	-	-	-	303	-
Stage 1	-	-	-	-	657	-
Stage 2	-	-	-	-	618	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	15.1
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	367	-	-
HCM Lane V/C Ratio	0.032	-	-
HCM Control Delay (s)	15.1	-	-
HCM Lane LOS	C	-	-
HCM 95th %tile Q(veh)	0.1	-	-

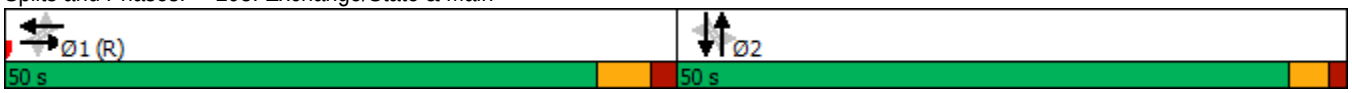


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	317	33	3	327	71	2	547	52	18	708	67
Future Volume (vph)	1	317	33	3	327	71	2	547	52	18	708	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	90		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			50			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		1.00		0.99	0.99			0.99			0.99	
Frt		0.984			0.973			0.981			0.986	
Flt Protected				0.950				0.999			0.998	
Satd. Flow (prot)	0	1736	0	1770	1296	0	0	3346	0	0	3337	0
Flt Permitted		0.997		0.421				0.945			0.911	
Satd. Flow (perm)	0	1730	0	774	1296	0	0	3165	0	0	3043	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		200			213			448			247	
Travel Time (s)		4.5			4.8			10.2			5.6	
Confl. Peds. (#/hr)	68		38	38		68	46		40	40		46
Peak Hour Factor	0.25	0.89	0.68	0.38	0.93	0.92	0.25	0.96	0.62	0.57	0.97	0.85
Heavy Vehicles (%)	2%	8%	2%	2%	8%	20%	2%	3%	13%	100%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	27	0	0	0	0	0	0	0
Parking (#/hr)					5							
Adj. Flow (vph)	4	356	49	8	352	77	8	570	84	32	730	79
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	409	0	8	429	0	0	662	0	0	841	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			10			10			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	1.37	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)	50.0	50.0		50.0	50.0		29.0	29.0		29.0	29.0	
Total Split (s)	50.0	50.0		50.0	50.0		50.0	50.0		50.0	50.0	
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	
Maximum Green (s)	44.0	44.0		44.0	44.0		45.5	45.5		45.5	45.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		-3.0		-3.0	-3.0			-3.0			-3.0	
Total Lost Time (s)		3.0		3.0	3.0			1.5			1.5	
Lead/Lag	Lead	Lead		Lead	Lead		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?												
Walk Time (s)	27.0	27.0		27.0	27.0		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)	17.0	17.0		17.0	17.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		47.0		47.0	47.0			48.5			48.5	
Actuated g/C Ratio		0.47		0.47	0.47			0.48			0.48	
v/c Ratio		0.50		0.02	0.70			0.43			0.57	
Control Delay		12.5		8.7	19.8			13.1			18.7	
Queue Delay		0.2		0.0	0.4			0.0			1.1	
Total Delay		12.7		8.7	20.2			13.1			19.8	
LOS		B		A	C			B			B	
Approach Delay		12.7			20.0			13.1			19.8	
Approach LOS		B			B			B			B	
Queue Length 50th (ft)		66		2	106			86			142	
Queue Length 95th (ft)		88		3	156			113			172	
Internal Link Dist (ft)		120			133			368			167	
Turn Bay Length (ft)				90								
Base Capacity (vph)		813		363	609			1535			1475	
Starvation Cap Reductn		71		0	26			0			374	
Spillback Cap Reductn		0		0	0			0			0	
Storage Cap Reductn		0		0	0			0			0	
Reduced v/c Ratio		0.55		0.02	0.74			0.43			0.76	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green, Master Intersection			
Natural Cycle: 80			
Control Type: Pretimed			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay: 16.7		Intersection LOS: B	
Intersection Capacity Utilization 78.4%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 293: Exchange/State & Main



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lane Configurations							
Traffic Volume (vph)	384	0	0	413	0	0	
Future Volume (vph)	384	0	0	413	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor							
Frt							
Flt Protected							
Satd. Flow (prot)	1696	0	0	1743	0	0	
Flt Permitted							
Satd. Flow (perm)	1696	0	0	1743	0	0	
Right Turn on Red		No				No	
Satd. Flow (RTOR)							
Link Speed (mph)	30			30	30		
Link Distance (ft)	61			608	45		
Travel Time (s)	1.4			13.8	1.0		
Confl. Peds. (#/hr)					30	30	
Peak Hour Factor	0.88	0.90	0.90	0.86	0.90	0.90	
Heavy Vehicles (%)	12%	2%	2%	9%	2%	2%	
Adj. Flow (vph)	436	0	0	480	0	0	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	436	0	0	480	0	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	10			10	0		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)		9	15		15	9	
Number of Detectors	0			0			
Detector Template							
Leading Detector (ft)	0			0			
Trailing Detector (ft)	0			0			
Turn Type	NA			NA			
Protected Phases	1			1			2
Permitted Phases							
Detector Phase	1			1			
Switch Phase							
Minimum Initial (s)	26.0			26.0			6.0
Minimum Split (s)	32.0			32.0			28.0
Total Split (s)	72.0			72.0			28.0
Total Split (%)	72.0%			72.0%			28%
Maximum Green (s)	67.0			67.0			25.0
Yellow Time (s)	4.0			4.0			3.0
All-Red Time (s)	1.0			1.0			0.0
Lost Time Adjust (s)	-2.0			-2.0			
Total Lost Time (s)	3.0			3.0			
Lead/Lag	Lead			Lead			Lag

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lead-Lag Optimize?							
Vehicle Extension (s)	2.0			2.0			2.0
Recall Mode	C-Max			C-Max			None
Walk Time (s)	19.0			19.0			7.0
Flash Dont Walk (s)	7.0			7.0			16.0
Pedestrian Calls (#/hr)	0			0			1
Act Effct Green (s)	94.2			94.2			
Actuated g/C Ratio	0.94			0.94			
v/c Ratio	0.27			0.29			
Control Delay	1.3			2.2			
Queue Delay	0.0			0.0			
Total Delay	1.3			2.2			
LOS	A			A			
Approach Delay	1.3			2.2			
Approach LOS	A			A			
Queue Length 50th (ft)	0			22			
Queue Length 95th (ft)	68			69			
Internal Link Dist (ft)	1			528	1		
Turn Bay Length (ft)							
Base Capacity (vph)	1598			1642			
Starvation Cap Reductn	60			0			
Spillback Cap Reductn	0			0			
Storage Cap Reductn	0			0			
Reduced v/c Ratio	0.28			0.29			

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 79 (79%), Referenced to phase 1:EBWB, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.29			
Intersection Signal Delay: 1.8		Intersection LOS: A	
Intersection Capacity Utilization 38.1%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 294: Pedestrian Crossing & Main

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	564	9	7	517	0	15
Future Volume (vph)	564	9	7	517	0	15
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)			33		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.995				0.865	
Flt Protected			0.950			
Satd. Flow (prot)	1363	0	1770	1294	1611	0
Flt Permitted			0.950			
Satd. Flow (perm)	1363	0	1770	1294	1611	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	213			164	179	
Travel Time (s)	4.8			3.7	4.1	
Confl. Peds. (#/hr)		62	62			
Peak Hour Factor	0.91	0.40	0.75	0.86	1.00	0.58
Heavy Vehicles (%)	9%	2%	2%	9%	2%	2%
Bus Blockages (#/hr)	26	0	0	33	0	0
Parking (#/hr)	5			9		
Adj. Flow (vph)	620	23	9	601	0	26
Shared Lane Traffic (%)						
Lane Group Flow (vph)	643	0	9	601	26	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	1.36	1.00	1.00	1.45	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 40.3%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	564	9	7	517	0	15
Future Vol, veh/h	564	9	7	517	0	15
Conflicting Peds, #/hr	0	62	62	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	40	75	86	100	58
Heavy Vehicles, %	9	2	2	9	2	2
Mvmt Flow	620	23	9	601	0	26

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	705	0	1313	694
Stage 1	-	-	-	-	694	-
Stage 2	-	-	-	-	619	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	893	-	175	443
Stage 1	-	-	-	-	496	-
Stage 2	-	-	-	-	537	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	847	-	164	420
Mov Cap-2 Maneuver	-	-	-	-	164	-
Stage 1	-	-	-	-	465	-
Stage 2	-	-	-	-	537	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	14.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	420	-	-	847	-
HCM Lane V/C Ratio	0.062	-	-	0.011	-
HCM Control Delay (s)	14.1	-	-	9.3	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	581	0	0	524	9	7
Future Volume (vph)	581	0	0	524	9	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.941	
Flt Protected					0.973	
Satd. Flow (prot)	1359	0	0	1743	1706	0
Flt Permitted					0.973	
Satd. Flow (perm)	1359	0	0	1743	1706	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	164			61	183	
Travel Time (s)	3.7			1.4	4.2	
Peak Hour Factor	0.91	1.00	1.00	0.87	0.50	0.50
Heavy Vehicles (%)	9%	2%	2%	9%	2%	2%
Bus Blockages (#/hr)	26	0	0	0	0	0
Parking (#/hr)	6					
Adj. Flow (vph)	638	0	0	602	18	14
Shared Lane Traffic (%)						
Lane Group Flow (vph)	638	0	0	602	32	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	1.37	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 40.6%		ICU Level of Service A	
Analysis Period (min) 15			

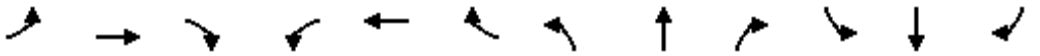
Intersection	
Int Delay, s/veh	0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↱	
Traffic Vol, veh/h	581	0	0	524	9	7
Future Vol, veh/h	581	0	0	524	9	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	100	100	87	50	50
Heavy Vehicles, %	9	2	2	9	2	2
Mvmt Flow	638	0	0	602	18	14

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	1240	638
Stage 1	-	-	-	-	638	-
Stage 2	-	-	-	-	602	-
Critical Hdwy	-	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	-	0	0	-	193	477
Stage 1	-	0	0	-	526	-
Stage 2	-	0	0	-	547	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	193	477
Mov Cap-2 Maneuver	-	-	-	-	193	-
Stage 1	-	-	-	-	526	-
Stage 2	-	-	-	-	547	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	20.7
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	261	-	-
HCM Lane V/C Ratio	0.123	-	-
HCM Control Delay (s)	20.7	-	-
HCM Lane LOS	C	-	-
HCM 95th %tile Q(veh)	0.4	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	442	31	2	379	95	2	656	72	28	670	57
Future Volume (vph)	2	442	31	2	379	95	2	656	72	28	670	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	90		0	0		0	0		0
Storage Lanes	0		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		0.99		0.98	0.98			0.98			0.99	
Frt		0.986			0.969			0.981			0.987	
Flt Protected				0.950							0.997	
Satd. Flow (prot)	0	1764	0	1770	1255	0	0	3403	0	0	3327	0
Flt Permitted		0.997		0.369				0.947			0.815	
Satd. Flow (perm)	0	1758	0	676	1255	0	0	3222	0	0	2716	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		200			213			448			247	
Travel Time (s)		4.5			4.8			10.2			5.6	
Confl. Peds. (#/hr)	111		63	63		111	71		62	62		71
Peak Hour Factor	0.50	0.94	0.54	0.25	0.93	0.89	0.25	0.87	0.66	0.57	0.86	0.72
Heavy Vehicles (%)	100%	5%	4%	2%	8%	15%	2%	2%	2%	72%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	33	0	0	0	0	0	0	0
Parking (#/hr)					5							
Adj. Flow (vph)	4	470	57	8	408	107	8	754	109	49	779	79
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	531	0	8	515	0	0	871	0	0	907	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			10			10			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	1.41	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)	50.0	50.0		50.0	50.0		29.0	29.0		29.0	29.0	
Total Split (s)	54.0	54.0		54.0	54.0		46.0	46.0		46.0	46.0	
Total Split (%)	54.0%	54.0%		54.0%	54.0%		46.0%	46.0%		46.0%	46.0%	
Maximum Green (s)	48.0	48.0		48.0	48.0		41.5	41.5		41.5	41.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		-3.0		-3.0	-3.0			-3.0			-3.0	
Total Lost Time (s)		3.0		3.0	3.0			1.5			1.5	
Lead/Lag	Lead	Lead		Lead	Lead		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?												
Walk Time (s)	27.0	27.0		27.0	27.0		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)	17.0	17.0		17.0	17.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		51.0		51.0	51.0			44.5			44.5	
Actuated g/C Ratio		0.51		0.51	0.51			0.44			0.44	
v/c Ratio		0.59		0.02	0.80			0.61			0.75	
Control Delay		14.0		8.0	23.8			18.6			26.0	
Queue Delay		0.1		0.0	0.6			0.3			2.6	
Total Delay		14.1		8.0	24.4			19.0			28.6	
LOS		B		A	C			B			C	
Approach Delay		14.1			24.2			19.0			28.6	
Approach LOS		B			C			B			C	
Queue Length 50th (ft)		103		2	134			157			252	
Queue Length 95th (ft)		135		1	#203			186			307	
Internal Link Dist (ft)		120			133			368			167	
Turn Bay Length (ft)				90								
Base Capacity (vph)		896		344	640			1433			1208	
Starvation Cap Reductn		32		0	17			158			188	
Spillback Cap Reductn		0		0	0			3			0	
Storage Cap Reductn		0		0	0			0			0	
Reduced v/c Ratio		0.61		0.02	0.83			0.68			0.89	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green, Master Intersection			
Natural Cycle: 80			
Control Type: Pretimed			
Maximum v/c Ratio: 0.80			
Intersection Signal Delay: 22.1		Intersection LOS: C	
Intersection Capacity Utilization 84.7%		ICU Level of Service E	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 293: Exchange/State & Main

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lane Configurations							
Traffic Volume (vph)	588	0	0	524	0	0	
Future Volume (vph)	588	0	0	524	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor							
Frt							
Flt Protected							
Satd. Flow (prot)	1743	0	0	1743	0	0	
Flt Permitted							
Satd. Flow (perm)	1743	0	0	1743	0	0	
Right Turn on Red		No				No	
Satd. Flow (RTOR)							
Link Speed (mph)	30			30	30		
Link Distance (ft)	61			608	45		
Travel Time (s)	1.4			13.8	1.0		
Confl. Peds. (#/hr)					33	33	
Peak Hour Factor	0.91	0.90	0.90	0.86	0.90	0.90	
Heavy Vehicles (%)	9%	2%	2%	9%	2%	2%	
Adj. Flow (vph)	646	0	0	609	0	0	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	646	0	0	609	0	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	10			10	0		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)		9	15		15	9	
Number of Detectors	0			0			
Detector Template							
Leading Detector (ft)	0			0			
Trailing Detector (ft)	0			0			
Turn Type	NA			NA			
Protected Phases	1			1			2
Permitted Phases							
Detector Phase	1			1			
Switch Phase							
Minimum Initial (s)	26.0			26.0			6.0
Minimum Split (s)	32.0			32.0			28.0
Total Split (s)	72.0			72.0			28.0
Total Split (%)	72.0%			72.0%			28%
Maximum Green (s)	67.0			67.0			25.0
Yellow Time (s)	4.0			4.0			3.0
All-Red Time (s)	1.0			1.0			0.0
Lost Time Adjust (s)	-2.0			-2.0			
Total Lost Time (s)	3.0			3.0			
Lead/Lag	Lead			Lead			Lag

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lead-Lag Optimize?							
Vehicle Extension (s)	2.0			2.0			2.0
Recall Mode	C-Max			C-Max			None
Walk Time (s)	19.0			19.0			7.0
Flash Dont Walk (s)	7.0			7.0			16.0
Pedestrian Calls (#/hr)	0			0			1
Act Effct Green (s)	94.2			94.2			
Actuated g/C Ratio	0.94			0.94			
v/c Ratio	0.39			0.37			
Control Delay	1.5			2.9			
Queue Delay	0.0			0.0			
Total Delay	1.6			2.9			
LOS	A			A			
Approach Delay	1.6			2.9			
Approach LOS	A			A			
Queue Length 50th (ft)	0			52			
Queue Length 95th (ft)	118			93			
Internal Link Dist (ft)	1			528	1		
Turn Bay Length (ft)							
Base Capacity (vph)	1642			1642			
Starvation Cap Reductn	33			0			
Spillback Cap Reductn	0			0			
Storage Cap Reductn	0			0			
Reduced v/c Ratio	0.40			0.37			

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 91 (91%), Referenced to phase 1:EBWB, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.39			
Intersection Signal Delay: 2.2		Intersection LOS: A	
Intersection Capacity Utilization 47.6%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 294: Pedestrian Crossing & Main

ALTERNATIVE 1

CONDITION B

ETC +20 (2039)

SYNCHRO OUTPUT

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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	767	4	8	393	0	6
Future Volume (vph)	767	4	8	393	0	6
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	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.999				0.865	
Flt Protected			0.950			
Satd. Flow (prot)	1318	0	1770	1329	1611	0
Flt Permitted			0.950			
Satd. Flow (perm)	1318	0	1770	1329	1611	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	213			164	179	
Travel Time (s)	4.8			3.7	4.1	
Confl. Peds. (#/hr)		40	40			
Peak Hour Factor	0.88	0.50	0.58	0.86	1.00	0.63
Heavy Vehicles (%)	12%	2%	2%	9%	2%	2%
Bus Blockages (#/hr)	28	0	0	27	0	0
Parking (#/hr)	5			9		
Adj. Flow (vph)	872	8	14	457	0	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	880	0	14	457	10	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	1.37	1.00	1.00	1.40	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	50.6%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	767	4	8	393	0	6
Future Vol, veh/h	767	4	8	393	0	6
Conflicting Peds, #/hr	0	40	40	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	50	58	86	100	63
Heavy Vehicles, %	12	2	2	9	2	2
Mvmt Flow	872	8	14	457	0	10

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	920	0	1401	916
Stage 1	-	-	-	-	916	-
Stage 2	-	-	-	-	485	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	742	-	154	330
Stage 1	-	-	-	-	390	-
Stage 2	-	-	-	-	619	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	717	-	146	319
Mov Cap-2 Maneuver	-	-	-	-	146	-
Stage 1	-	-	-	-	370	-
Stage 2	-	-	-	-	619	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	16.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	319	-	-	717	-
HCM Lane V/C Ratio	0.03	-	-	0.019	-
HCM Control Delay (s)	16.6	-	-	10.1	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	773	0	0	400	3	3
Future Volume (vph)	773	0	0	400	3	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.955	
Flt Protected					0.968	
Satd. Flow (prot)	1311	0	0	1743	1722	0
Flt Permitted					0.968	
Satd. Flow (perm)	1311	0	0	1743	1722	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	164			61	183	
Travel Time (s)	3.7			1.4	4.2	
Peak Hour Factor	0.89	1.00	1.00	0.85	0.38	0.75
Heavy Vehicles (%)	12%	2%	2%	9%	2%	2%
Bus Blockages (#/hr)	28	0	0	0	0	0
Parking (#/hr)	6					
Adj. Flow (vph)	869	0	0	471	8	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	869	0	0	471	12	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	1.38	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 50.7%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↱	
Traffic Vol, veh/h	773	0	0	400	3	3
Future Vol, veh/h	773	0	0	400	3	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	100	100	85	38	75
Heavy Vehicles, %	12	2	2	9	2	2
Mvmt Flow	869	0	0	471	8	4

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	1340	869
Stage 1	-	-	-	-	869	-
Stage 2	-	-	-	-	471	-
Critical Hdwy	-	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	-	0	0	-	168	351
Stage 1	-	0	0	-	410	-
Stage 2	-	0	0	-	628	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	168	351
Mov Cap-2 Maneuver	-	-	-	-	168	-
Stage 1	-	-	-	-	410	-
Stage 2	-	-	-	-	628	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	23.7
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	204	-	-
HCM Lane V/C Ratio	0.058	-	-
HCM Control Delay (s)	23.7	-	-
HCM Lane LOS	C	-	-
HCM 95th %tile Q(veh)	0.2	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	655	33	3	317	68	2	575	106	18	708	67
Future Volume (vph)	1	655	33	3	317	68	2	575	106	18	708	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	90		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			50			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		1.00		0.99	0.99			0.98			0.99	
Frt		0.992			0.973			0.967			0.986	
Flt Protected				0.950				0.999			0.998	
Satd. Flow (prot)	0	1748	0	1770	1297	0	0	3236	0	0	3337	0
Flt Permitted		0.998		0.276				0.946			0.894	
Satd. Flow (perm)	0	1744	0	511	1297	0	0	3064	0	0	2987	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		200			213			448			247	
Travel Time (s)		4.5			4.8			10.2			5.6	
Confl. Peds. (#/hr)	68		38	38		68	46		40	40		46
Peak Hour Factor	0.25	0.89	0.68	0.38	0.93	0.92	0.25	0.96	0.62	0.57	0.97	0.85
Heavy Vehicles (%)	2%	8%	2%	2%	8%	20%	2%	3%	13%	100%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	27	0	0	0	0	0	0	0
Parking (#/hr)					5							
Adj. Flow (vph)	4	736	49	8	341	74	8	599	171	32	730	79
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	789	0	8	415	0	0	778	0	0	841	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			10			10			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	1.37	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)	50.0	50.0		50.0	50.0		29.0	29.0		29.0	29.0	
Total Split (s)	58.0	58.0		58.0	58.0		42.0	42.0		42.0	42.0	
Total Split (%)	58.0%	58.0%		58.0%	58.0%		42.0%	42.0%		42.0%	42.0%	
Maximum Green (s)	52.0	52.0		52.0	52.0		37.5	37.5		37.5	37.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		-3.0		-3.0	-3.0			-3.0			-3.0	
Total Lost Time (s)		3.0		3.0	3.0			1.5			1.5	
Lead/Lag	Lead	Lead		Lead	Lead		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?												
Walk Time (s)	27.0	27.0		27.0	27.0		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)	17.0	17.0		17.0	17.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		55.0		55.0	55.0			40.5			40.5	
Actuated g/C Ratio		0.55		0.55	0.55			0.40			0.40	
v/c Ratio		0.82		0.03	0.58			0.63			0.70	
Control Delay		22.6		8.7	16.8			19.4			26.8	
Queue Delay		0.0		0.0	0.4			0.2			3.4	
Total Delay		22.6		8.7	17.2			19.5			30.3	
LOS		C		A	B			B			C	
Approach Delay		22.6			17.0			19.5			30.3	
Approach LOS		C			B			B			C	
Queue Length 50th (ft)		402		1	111			116			231	
Queue Length 95th (ft)		573		2	208			148			303	
Internal Link Dist (ft)		120			133			368			167	
Turn Bay Length (ft)				90								
Base Capacity (vph)		959		281	713			1240			1209	
Starvation Cap Reductn		0		0	58			74			269	
Spillback Cap Reductn		0		0	0			0			0	
Storage Cap Reductn		0		0	0			0			0	
Reduced v/c Ratio		0.82		0.03	0.63			0.67			0.89	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green, Master Intersection			
Natural Cycle: 80			
Control Type: Pretimed			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay: 23.2		Intersection LOS: C	
Intersection Capacity Utilization 79.2%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 293: Exchange/State & Main

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lane Configurations							
Traffic Volume (vph)	776	0	0	400	0	0	
Future Volume (vph)	776	0	0	400	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor							
Frt							
Flt Protected							
Satd. Flow (prot)	1696	0	0	1743	0	0	
Flt Permitted							
Satd. Flow (perm)	1696	0	0	1743	0	0	
Right Turn on Red		No				No	
Satd. Flow (RTOR)							
Link Speed (mph)	30			30	30		
Link Distance (ft)	61			608	45		
Travel Time (s)	1.4			13.8	1.0		
Confl. Peds. (#/hr)					30	30	
Peak Hour Factor	0.88	0.90	0.90	0.86	0.90	0.90	
Heavy Vehicles (%)	12%	2%	2%	9%	2%	2%	
Adj. Flow (vph)	882	0	0	465	0	0	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	882	0	0	465	0	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	10			10	0		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)		9	15		15	9	
Number of Detectors	0			0			
Detector Template							
Leading Detector (ft)	0			0			
Trailing Detector (ft)	0			0			
Turn Type	NA			NA			
Protected Phases	1			1			2
Permitted Phases							
Detector Phase	1			1			
Switch Phase							
Minimum Initial (s)	26.0			26.0			6.0
Minimum Split (s)	32.0			32.0			28.0
Total Split (s)	72.0			72.0			28.0
Total Split (%)	72.0%			72.0%			28%
Maximum Green (s)	67.0			67.0			25.0
Yellow Time (s)	4.0			4.0			3.0
All-Red Time (s)	1.0			1.0			0.0
Lost Time Adjust (s)	-2.0			-2.0			
Total Lost Time (s)	3.0			3.0			
Lead/Lag	Lead			Lead			Lag

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lead-Lag Optimize?							
Vehicle Extension (s)	2.0			2.0			2.0
Recall Mode	C-Max			C-Max			None
Walk Time (s)	19.0			19.0			7.0
Flash Dont Walk (s)	7.0			7.0			16.0
Pedestrian Calls (#/hr)	0			0			1
Act Effct Green (s)	94.2			94.2			
Actuated g/C Ratio	0.94			0.94			
v/c Ratio	0.55			0.28			
Control Delay	1.8			2.0			
Queue Delay	0.0			0.0			
Total Delay	1.8			2.0			
LOS	A			A			
Approach Delay	1.8			2.0			
Approach LOS	A			A			
Queue Length 50th (ft)	0			18			
Queue Length 95th (ft)	148			67			
Internal Link Dist (ft)	1			528	1		
Turn Bay Length (ft)							
Base Capacity (vph)	1598			1642			
Starvation Cap Reductn	27			0			
Spillback Cap Reductn	0			0			
Storage Cap Reductn	0			0			
Reduced v/c Ratio	0.56			0.28			

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 96 (96%), Referenced to phase 1:EBWB, Start of Green			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.55			
Intersection Signal Delay: 1.9		Intersection LOS: A	
Intersection Capacity Utilization 57.2%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 294: Pedestrian Crossing & Main

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	968	9	7	596	0	15
Future Volume (vph)	968	9	7	596	0	15
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)			33		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.997				0.865	
Flt Protected			0.950			
Satd. Flow (prot)	1364	0	1770	1294	1611	0
Flt Permitted			0.950			
Satd. Flow (perm)	1364	0	1770	1294	1611	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	213			164	179	
Travel Time (s)	4.8			3.7	4.1	
Confl. Peds. (#/hr)		62	62			
Peak Hour Factor	0.91	0.40	0.75	0.86	1.00	0.58
Heavy Vehicles (%)	9%	2%	2%	9%	2%	2%
Bus Blockages (#/hr)	26	0	0	33	0	0
Parking (#/hr)	5			9		
Adj. Flow (vph)	1064	23	9	693	0	26
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1087	0	9	693	26	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	1.36	1.00	1.00	1.45	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 61.5%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	968	9	7	596	0	15
Future Vol, veh/h	968	9	7	596	0	15
Conflicting Peds, #/hr	0	62	62	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	40	75	86	100	58
Heavy Vehicles, %	9	2	2	9	2	2
Mvmt Flow	1064	23	9	693	0	26

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1149	0	1849	1138
Stage 1	-	-	-	-	1138	-
Stage 2	-	-	-	-	711	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	608	-	82	245
Stage 1	-	-	-	-	306	-
Stage 2	-	-	-	-	487	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	577	-	77	232
Mov Cap-2 Maneuver	-	-	-	-	77	-
Stage 1	-	-	-	-	285	-
Stage 2	-	-	-	-	487	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	22.5
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	232	-	-	577	-
HCM Lane V/C Ratio	0.111	-	-	0.016	-
HCM Control Delay (s)	22.5	-	-	11.3	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	0.4	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	985	0	0	603	9	7
Future Volume (vph)	985	0	0	603	9	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.941	
Flt Protected					0.973	
Satd. Flow (prot)	1359	0	0	1743	1706	0
Flt Permitted					0.973	
Satd. Flow (perm)	1359	0	0	1743	1706	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	164			61	183	
Travel Time (s)	3.7			1.4	4.2	
Peak Hour Factor	0.91	1.00	1.00	0.87	0.50	0.50
Heavy Vehicles (%)	9%	2%	2%	9%	2%	2%
Bus Blockages (#/hr)	26	0	0	0	0	0
Parking (#/hr)	6					
Adj. Flow (vph)	1082	0	0	693	18	14
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1082	0	0	693	32	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	1.37	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 61.8%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↱	
Traffic Vol, veh/h	985	0	0	603	9	7
Future Vol, veh/h	985	0	0	603	9	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	100	100	87	50	50
Heavy Vehicles, %	9	2	2	9	2	2
Mvmt Flow	1082	0	0	693	18	14

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	1775	1082
Stage 1	-	-	-	-	1082	-
Stage 2	-	-	-	-	693	-
Critical Hdwy	-	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	-	0	0	-	91	264
Stage 1	-	0	0	-	325	-
Stage 2	-	0	0	-	496	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	91	264
Mov Cap-2 Maneuver	-	-	-	-	91	-
Stage 1	-	-	-	-	325	-
Stage 2	-	-	-	-	496	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	42.3
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	128	-	-
HCM Lane V/C Ratio	0.25	-	-
HCM Control Delay (s)	42.3	-	-
HCM Lane LOS	E	-	-
HCM 95th %tile Q(veh)	0.9	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	789	31	2	439	108	2	661	129	28	670	57
Future Volume (vph)	2	789	31	2	439	108	2	661	129	28	670	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	90		0	0		0	0		0
Storage Lanes	0		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		1.00		0.99	0.98			0.97			0.99	
Frt		0.991			0.969			0.970			0.987	
Flt Protected				0.950							0.997	
Satd. Flow (prot)	0	1781	0	1770	1255	0	0	3323	0	0	3327	0
Flt Permitted		0.998		0.233				0.947			0.758	
Satd. Flow (perm)	0	1777	0	430	1255	0	0	3147	0	0	2527	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		200			213			448			247	
Travel Time (s)		4.5			4.8			10.2			5.6	
Confl. Peds. (#/hr)	111		63	63		111	71		62	62		71
Peak Hour Factor	0.50	0.94	0.54	0.25	0.93	0.89	0.25	0.87	0.66	0.57	0.86	0.72
Heavy Vehicles (%)	100%	5%	4%	2%	8%	15%	2%	2%	2%	72%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	33	0	0	0	0	0	0	0
Parking (#/hr)					5							
Adj. Flow (vph)	4	839	57	8	472	121	8	760	195	49	779	79
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	900	0	8	593	0	0	963	0	0	907	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			10			10			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	1.41	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)	50.0	50.0		50.0	50.0		29.0	29.0		29.0	29.0	
Total Split (s)	57.0	57.0		57.0	57.0		43.0	43.0		43.0	43.0	
Total Split (%)	57.0%	57.0%		57.0%	57.0%		43.0%	43.0%		43.0%	43.0%	
Maximum Green (s)	51.0	51.0		51.0	51.0		38.5	38.5		38.5	38.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		-3.0		-3.0	-3.0			-3.0			-3.0	
Total Lost Time (s)		3.0		3.0	3.0			1.5			1.5	
Lead/Lag	Lead	Lead		Lead	Lead		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?												
Walk Time (s)	27.0	27.0		27.0	27.0		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)	17.0	17.0		17.0	17.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		54.0		54.0	54.0			41.5			41.5	
Actuated g/C Ratio		0.54		0.54	0.54			0.42			0.42	
v/c Ratio		0.94		0.03	0.88			0.74			0.87	
Control Delay		36.0		7.5	27.3			23.6			35.7	
Queue Delay		1.0		0.0	0.5			0.6			7.5	
Total Delay		37.1		7.5	27.8			24.1			43.2	
LOS		D		A	C			C			D	
Approach Delay		37.1			27.5			24.1			43.2	
Approach LOS		D			C			C			D	
Queue Length 50th (ft)		525		2	160			194			275	
Queue Length 95th (ft)		#802		1	#532			228			340	
Internal Link Dist (ft)		120			133			368			167	
Turn Bay Length (ft)				90								
Base Capacity (vph)		959		232	677			1306			1048	
Starvation Cap Reductn		0		0	8			97			114	
Spillback Cap Reductn		11		0	0			0			0	
Storage Cap Reductn		0		0	0			0			0	
Reduced v/c Ratio		0.95		0.03	0.89			0.80			0.97	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green, Master Intersection			
Natural Cycle: 90			
Control Type: Pretimed			
Maximum v/c Ratio: 0.94			
Intersection Signal Delay: 33.3		Intersection LOS: C	
Intersection Capacity Utilization 93.2%		ICU Level of Service F	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 293: Exchange/State & Main

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lane Configurations							
Traffic Volume (vph)	992	0	0	603	0	0	
Future Volume (vph)	992	0	0	603	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor							
Frt							
Flt Protected							
Satd. Flow (prot)	1743	0	0	1743	0	0	
Flt Permitted							
Satd. Flow (perm)	1743	0	0	1743	0	0	
Right Turn on Red		No				No	
Satd. Flow (RTOR)							
Link Speed (mph)	30			30	30		
Link Distance (ft)	61			608	45		
Travel Time (s)	1.4			13.8	1.0		
Confl. Peds. (#/hr)					33	33	
Peak Hour Factor	0.91	0.90	0.90	0.86	0.90	0.90	
Heavy Vehicles (%)	9%	2%	2%	9%	2%	2%	
Adj. Flow (vph)	1090	0	0	701	0	0	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	1090	0	0	701	0	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	10			10	0		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)		9	15		15	9	
Number of Detectors	0			0			
Detector Template							
Leading Detector (ft)	0			0			
Trailing Detector (ft)	0			0			
Turn Type	NA			NA			
Protected Phases	1			1			2
Permitted Phases							
Detector Phase	1			1			
Switch Phase							
Minimum Initial (s)	26.0			26.0			6.0
Minimum Split (s)	32.0			32.0			28.0
Total Split (s)	72.0			72.0			28.0
Total Split (%)	72.0%			72.0%			28%
Maximum Green (s)	67.0			67.0			25.0
Yellow Time (s)	4.0			4.0			3.0
All-Red Time (s)	1.0			1.0			0.0
Lost Time Adjust (s)	-2.0			-2.0			
Total Lost Time (s)	3.0			3.0			
Lead/Lag	Lead			Lead			Lag

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lead-Lag Optimize?							
Vehicle Extension (s)	2.0			2.0			2.0
Recall Mode	C-Max			C-Max			None
Walk Time (s)	19.0			19.0			7.0
Flash Dont Walk (s)	7.0			7.0			16.0
Pedestrian Calls (#/hr)	0			0			1
Act Effct Green (s)	94.2			94.2			
Actuated g/C Ratio	0.94			0.94			
v/c Ratio	0.66			0.43			
Control Delay	3.2			3.3			
Queue Delay	0.0			0.0			
Total Delay	3.2			3.3			
LOS	A			A			
Approach Delay	3.2			3.3			
Approach LOS	A			A			
Queue Length 50th (ft)	0			65			
Queue Length 95th (ft)	m179			119			
Internal Link Dist (ft)	1			528	1		
Turn Bay Length (ft)							
Base Capacity (vph)	1642			1642			
Starvation Cap Reductn	16			11			
Spillback Cap Reductn	0			27			
Storage Cap Reductn	0			0			
Reduced v/c Ratio	0.67			0.43			

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: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.66			
Intersection Signal Delay: 3.2		Intersection LOS: A	
Intersection Capacity Utilization 68.9%		ICU Level of Service C	
Analysis Period (min) 15			

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

Splits and Phases: 294: Pedestrian Crossing & Main

ALTERNATIVE 1
CONDITION C
ETC +20 (2039)
SYNCHRO OUTPUT

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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	780	4	8	451	0	6
Future Volume (vph)	780	4	8	451	0	6
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	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.999				0.865	
Flt Protected			0.950			
Satd. Flow (prot)	1318	0	1770	1329	1611	0
Flt Permitted			0.950			
Satd. Flow (perm)	1318	0	1770	1329	1611	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	213			164	179	
Travel Time (s)	4.8			3.7	4.1	
Confl. Peds. (#/hr)		40	40			
Peak Hour Factor	0.88	0.50	0.58	0.86	1.00	0.63
Heavy Vehicles (%)	12%	2%	2%	9%	2%	2%
Bus Blockages (#/hr)	28	0	0	27	0	0
Parking (#/hr)	5			9		
Adj. Flow (vph)	886	8	14	524	0	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	894	0	14	524	10	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	1.37	1.00	1.00	1.40	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 51.3%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	780	4	8	451	0	6
Future Vol, veh/h	780	4	8	451	0	6
Conflicting Peds, #/hr	0	40	40	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	50	58	86	100	63
Heavy Vehicles, %	12	2	2	9	2	2
Mvmt Flow	886	8	14	524	0	10

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	934	0	1482	930
Stage 1	-	-	-	-	930	-
Stage 2	-	-	-	-	552	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	733	-	138	324
Stage 1	-	-	-	-	384	-
Stage 2	-	-	-	-	577	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	709	-	131	313
Mov Cap-2 Maneuver	-	-	-	-	131	-
Stage 1	-	-	-	-	364	-
Stage 2	-	-	-	-	577	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	16.9
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	313	-	-	709	-
HCM Lane V/C Ratio	0.03	-	-	0.019	-
HCM Control Delay (s)	16.9	-	-	10.2	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	786	0	0	458	3	3
Future Volume (vph)	786	0	0	458	3	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.955	
Flt Protected					0.968	
Satd. Flow (prot)	1311	0	0	1743	1722	0
Flt Permitted					0.968	
Satd. Flow (perm)	1311	0	0	1743	1722	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	164			61	183	
Travel Time (s)	3.7			1.4	4.2	
Peak Hour Factor	0.89	1.00	1.00	0.85	0.38	0.75
Heavy Vehicles (%)	12%	2%	2%	9%	2%	2%
Bus Blockages (#/hr)	28	0	0	0	0	0
Parking (#/hr)	6					
Adj. Flow (vph)	883	0	0	539	8	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	883	0	0	539	12	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	1.38	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 51.4%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↱	
Traffic Vol, veh/h	786	0	0	458	3	3
Future Vol, veh/h	786	0	0	458	3	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	100	100	85	38	75
Heavy Vehicles, %	12	2	2	9	2	2
Mvmt Flow	883	0	0	539	8	4

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	1422	883
Stage 1	-	-	-	-	883	-
Stage 2	-	-	-	-	539	-
Critical Hdwy	-	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	-	0	0	-	150	345
Stage 1	-	0	0	-	404	-
Stage 2	-	0	0	-	585	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	150	345
Mov Cap-2 Maneuver	-	-	-	-	150	-
Stage 1	-	-	-	-	404	-
Stage 2	-	-	-	-	585	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	25.8
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	185	-	-
HCM Lane V/C Ratio	0.064	-	-
HCM Control Delay (s)	25.8	-	-
HCM Lane LOS	D	-	-
HCM 95th %tile Q(veh)	0.2	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	666	33	3	361	82	2	555	107	18	708	67
Future Volume (vph)	1	666	33	3	361	82	2	555	107	18	708	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	90		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			50			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		1.00		0.99	0.99			0.98			0.99	
Frt		0.992			0.972			0.966			0.986	
Flt Protected				0.950				0.999			0.998	
Satd. Flow (prot)	0	1748	0	1770	1294	0	0	3227	0	0	3337	0
Flt Permitted		0.998		0.266				0.946			0.904	
Satd. Flow (perm)	0	1744	0	492	1294	0	0	3056	0	0	3020	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		200			213			448			247	
Travel Time (s)		4.5			4.8			10.2			5.6	
Confl. Peds. (#/hr)	68		38	38		68	46		40	40		46
Peak Hour Factor	0.25	0.89	0.68	0.38	0.93	0.92	0.25	0.96	0.62	0.57	0.97	0.85
Heavy Vehicles (%)	2%	8%	2%	2%	8%	20%	2%	3%	13%	100%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	27	0	0	0	0	0	0	0
Parking (#/hr)					5							
Adj. Flow (vph)	4	748	49	8	388	89	8	578	173	32	730	79
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	801	0	8	477	0	0	759	0	0	841	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			10			10			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	1.37	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)	50.0	50.0		50.0	50.0		29.0	29.0		29.0	29.0	
Total Split (s)	57.0	57.0		57.0	57.0		43.0	43.0		43.0	43.0	
Total Split (%)	57.0%	57.0%		57.0%	57.0%		43.0%	43.0%		43.0%	43.0%	
Maximum Green (s)	51.0	51.0		51.0	51.0		38.5	38.5		38.5	38.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		-3.0		-3.0	-3.0			-3.0			-3.0	
Total Lost Time (s)		3.0		3.0	3.0			1.5			1.5	
Lead/Lag	Lead	Lead		Lead	Lead		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?												
Walk Time (s)	27.0	27.0		27.0	27.0		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)	17.0	17.0		17.0	17.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		54.0		54.0	54.0			41.5			41.5	
Actuated g/C Ratio		0.54		0.54	0.54			0.42			0.42	
v/c Ratio		0.85		0.03	0.68			0.60			0.67	
Control Delay		25.4		8.7	19.5			18.0			25.5	
Queue Delay		0.0		0.0	0.4			0.2			2.8	
Total Delay		25.4		8.7	19.9			18.2			28.3	
LOS		C		A	B			B			C	
Approach Delay		25.4			19.7			18.2			28.3	
Approach LOS		C			B			B			C	
Queue Length 50th (ft)		422		1	121			107			226	
Queue Length 95th (ft)		#657		2	227			138			296	
Internal Link Dist (ft)		120			133			368			167	
Turn Bay Length (ft)				90								
Base Capacity (vph)		941		265	698			1268			1253	
Starvation Cap Reductn		0		0	35			84			291	
Spillback Cap Reductn		0		0	0			0			0	
Storage Cap Reductn		0		0	0			0			0	
Reduced v/c Ratio		0.85		0.03	0.72			0.64			0.87	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green, Master Intersection			
Natural Cycle: 80			
Control Type: Pretimed			
Maximum v/c Ratio: 0.85			
Intersection Signal Delay: 23.4		Intersection LOS: C	
Intersection Capacity Utilization 79.7%		ICU Level of Service D	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 293: Exchange/State & Main

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lane Configurations							
Traffic Volume (vph)	789	0	0	458	0	0	
Future Volume (vph)	789	0	0	458	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor							
Frt							
Flt Protected							
Satd. Flow (prot)	1696	0	0	1743	0	0	
Flt Permitted							
Satd. Flow (perm)	1696	0	0	1743	0	0	
Right Turn on Red		No				No	
Satd. Flow (RTOR)							
Link Speed (mph)	30			30	30		
Link Distance (ft)	61			608	45		
Travel Time (s)	1.4			13.8	1.0		
Confl. Peds. (#/hr)					30	30	
Peak Hour Factor	0.88	0.90	0.90	0.86	0.90	0.90	
Heavy Vehicles (%)	12%	2%	2%	9%	2%	2%	
Adj. Flow (vph)	897	0	0	533	0	0	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	897	0	0	533	0	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	10			10	0		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)		9	15		15	9	
Number of Detectors	0			0			
Detector Template							
Leading Detector (ft)	0			0			
Trailing Detector (ft)	0			0			
Turn Type	NA			NA			
Protected Phases	1			1			2
Permitted Phases							
Detector Phase	1			1			
Switch Phase							
Minimum Initial (s)	26.0			26.0			6.0
Minimum Split (s)	32.0			32.0			28.0
Total Split (s)	72.0			72.0			28.0
Total Split (%)	72.0%			72.0%			28%
Maximum Green (s)	67.0			67.0			25.0
Yellow Time (s)	4.0			4.0			3.0
All-Red Time (s)	1.0			1.0			0.0
Lost Time Adjust (s)	-2.0			-2.0			
Total Lost Time (s)	3.0			3.0			
Lead/Lag	Lead			Lead			Lag

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lead-Lag Optimize?							
Vehicle Extension (s)	2.0			2.0			2.0
Recall Mode	C-Max			C-Max			None
Walk Time (s)	19.0			19.0			7.0
Flash Dont Walk (s)	7.0			7.0			16.0
Pedestrian Calls (#/hr)	0			0			1
Act Effct Green (s)	94.2			94.2			
Actuated g/C Ratio	0.94			0.94			
v/c Ratio	0.56			0.32			
Control Delay	1.8			2.6			
Queue Delay	0.0			0.0			
Total Delay	1.8			2.6			
LOS	A			A			
Approach Delay	1.8			2.6			
Approach LOS	A			A			
Queue Length 50th (ft)	0			42			
Queue Length 95th (ft)	148			75			
Internal Link Dist (ft)	1			528	1		
Turn Bay Length (ft)							
Base Capacity (vph)	1598			1642			
Starvation Cap Reductn	27			0			
Spillback Cap Reductn	0			0			
Storage Cap Reductn	0			0			
Reduced v/c Ratio	0.57			0.32			

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 95 (95%), Referenced to phase 1:EBWB, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.56			
Intersection Signal Delay: 2.1		Intersection LOS: A	
Intersection Capacity Utilization 57.8%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 294: Pedestrian Crossing & Main

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1001	9	7	614	0	15
Future Volume (vph)	1001	9	7	614	0	15
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)			33		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.997				0.865	
Flt Protected			0.950			
Satd. Flow (prot)	1364	0	1770	1294	1611	0
Flt Permitted			0.950			
Satd. Flow (perm)	1364	0	1770	1294	1611	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	213			164	179	
Travel Time (s)	4.8			3.7	4.1	
Confl. Peds. (#/hr)		62	62			
Peak Hour Factor	0.91	0.40	0.75	0.86	1.00	0.58
Heavy Vehicles (%)	9%	2%	2%	9%	2%	2%
Bus Blockages (#/hr)	26	0	0	33	0	0
Parking (#/hr)	5			9		
Adj. Flow (vph)	1100	23	9	714	0	26
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1123	0	9	714	26	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	1.36	1.00	1.00	1.45	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 63.3%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1001	9	7	614	0	15
Future Vol, veh/h	1001	9	7	614	0	15
Conflicting Peds, #/hr	0	62	62	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	40	75	86	100	58
Heavy Vehicles, %	9	2	2	9	2	2
Mvmt Flow	1100	23	9	714	0	26

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1185	0	1906	1174
Stage 1	-	-	-	-	1174	-
Stage 2	-	-	-	-	732	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	589	-	75	234
Stage 1	-	-	-	-	294	-
Stage 2	-	-	-	-	476	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	559	-	70	222
Mov Cap-2 Maneuver	-	-	-	-	70	-
Stage 1	-	-	-	-	274	-
Stage 2	-	-	-	-	476	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	23.3
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	222	-	-	559	-
HCM Lane V/C Ratio	0.116	-	-	0.017	-
HCM Control Delay (s)	23.3	-	-	11.5	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	0.4	-	-	0.1	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1018	0	0	621	9	7
Future Volume (vph)	1018	0	0	621	9	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.941	
Flt Protected					0.973	
Satd. Flow (prot)	1359	0	0	1743	1706	0
Flt Permitted					0.973	
Satd. Flow (perm)	1359	0	0	1743	1706	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	164			61	183	
Travel Time (s)	3.7			1.4	4.2	
Peak Hour Factor	0.91	1.00	1.00	0.87	0.50	0.50
Heavy Vehicles (%)	9%	2%	2%	9%	2%	2%
Bus Blockages (#/hr)	26	0	0	0	0	0
Parking (#/hr)	6					
Adj. Flow (vph)	1119	0	0	714	18	14
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1119	0	0	714	32	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	1.37	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 63.6%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↱	
Traffic Vol, veh/h	1018	0	0	621	9	7
Future Vol, veh/h	1018	0	0	621	9	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	100	100	87	50	50
Heavy Vehicles, %	9	2	2	9	2	2
Mvmt Flow	1119	0	0	714	18	14

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	1833	1119
Stage 1	-	-	-	-	1119	-
Stage 2	-	-	-	-	714	-
Critical Hdwy	-	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	-	0	0	-	84	252
Stage 1	-	0	0	-	312	-
Stage 2	-	0	0	-	485	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	84	252
Mov Cap-2 Maneuver	-	-	-	-	84	-
Stage 1	-	-	-	-	312	-
Stage 2	-	-	-	-	485	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	46
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	119	-	-
HCM Lane V/C Ratio	0.269	-	-
HCM Control Delay (s)	46	-	-
HCM Lane LOS	E	-	-
HCM 95th %tile Q(veh)	1	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	819	31	2	453	113	2	653	132	28	670	57
Future Volume (vph)	2	819	31	2	453	113	2	653	132	28	670	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	90		0	0		0	0		0
Storage Lanes	0		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		1.00		0.99	0.98			0.97			0.99	
Frt		0.992			0.969			0.969			0.987	
Flt Protected				0.950							0.997	
Satd. Flow (prot)	0	1783	0	1770	1255	0	0	3316	0	0	3327	0
Flt Permitted		0.998		0.223				0.947			0.760	
Satd. Flow (perm)	0	1779	0	412	1255	0	0	3140	0	0	2533	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		200			213			448			247	
Travel Time (s)		4.5			4.8			10.2			5.6	
Confl. Peds. (#/hr)	111		63	63		111	71		62	62		71
Peak Hour Factor	0.50	0.94	0.54	0.25	0.93	0.89	0.25	0.87	0.66	0.57	0.86	0.72
Heavy Vehicles (%)	100%	5%	4%	2%	8%	15%	2%	2%	2%	72%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	33	0	0	0	0	0	0	0
Parking (#/hr)					5							
Adj. Flow (vph)	4	871	57	8	487	127	8	751	200	49	779	79
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	932	0	8	614	0	0	959	0	0	907	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			10			10			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	1.41	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)	50.0	50.0		50.0	50.0		29.0	29.0		29.0	29.0	
Total Split (s)	57.0	57.0		57.0	57.0		43.0	43.0		43.0	43.0	
Total Split (%)	57.0%	57.0%		57.0%	57.0%		43.0%	43.0%		43.0%	43.0%	
Maximum Green (s)	51.0	51.0		51.0	51.0		38.5	38.5		38.5	38.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		-3.0		-3.0	-3.0			-3.0			-3.0	
Total Lost Time (s)		3.0		3.0	3.0			1.5			1.5	
Lead/Lag	Lead	Lead		Lead	Lead		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?												
Walk Time (s)	27.0	27.0		27.0	27.0		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)	17.0	17.0		17.0	17.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		54.0		54.0	54.0			41.5			41.5	
Actuated g/C Ratio		0.54		0.54	0.54			0.42			0.42	
v/c Ratio		0.97		0.04	0.91			0.74			0.86	
Control Delay		42.3		6.5	30.4			23.5			34.8	
Queue Delay		0.8		0.0	0.4			0.6			7.4	
Total Delay		43.1		6.5	30.8			24.1			42.2	
LOS		D		A	C			C			D	
Approach Delay		43.1			30.5			24.1			42.2	
Approach LOS		D			C			C			D	
Queue Length 50th (ft)		561		2	167			193			275	
Queue Length 95th (ft)		#849		1	#564			227			338	
Internal Link Dist (ft)		120			133			368			167	
Turn Bay Length (ft)				90								
Base Capacity (vph)		960		222	677			1303			1051	
Starvation Cap Reductn		0		0	4			96			116	
Spillback Cap Reductn		5		0	0			32			26	
Storage Cap Reductn		0		0	0			0			0	
Reduced v/c Ratio		0.98		0.04	0.91			0.79			0.97	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green, Master Intersection			
Natural Cycle: 90			
Control Type: Pretimed			
Maximum v/c Ratio: 0.97			
Intersection Signal Delay: 35.2		Intersection LOS: D	
Intersection Capacity Utilization 94.8%		ICU Level of Service F	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 293: Exchange/State & Main

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lane Configurations							
Traffic Volume (vph)	1025	0	0	621	0	0	
Future Volume (vph)	1025	0	0	621	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor							
Frt							
Flt Protected							
Satd. Flow (prot)	1743	0	0	1743	0	0	
Flt Permitted							
Satd. Flow (perm)	1743	0	0	1743	0	0	
Right Turn on Red		No				No	
Satd. Flow (RTOR)							
Link Speed (mph)	30			30	30		
Link Distance (ft)	61			608	45		
Travel Time (s)	1.4			13.8	1.0		
Confl. Peds. (#/hr)					33	33	
Peak Hour Factor	0.91	0.90	0.90	0.86	0.90	0.90	
Heavy Vehicles (%)	9%	2%	2%	9%	2%	2%	
Adj. Flow (vph)	1126	0	0	722	0	0	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	1126	0	0	722	0	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	10			10	0		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)		9	15		15	9	
Number of Detectors	0			0			
Detector Template							
Leading Detector (ft)	0			0			
Trailing Detector (ft)	0			0			
Turn Type	NA			NA			
Protected Phases	1			1			2
Permitted Phases							
Detector Phase	1			1			
Switch Phase							
Minimum Initial (s)	26.0			26.0			6.0
Minimum Split (s)	32.0			32.0			28.0
Total Split (s)	72.0			72.0			28.0
Total Split (%)	72.0%			72.0%			28%
Maximum Green (s)	67.0			67.0			25.0
Yellow Time (s)	4.0			4.0			3.0
All-Red Time (s)	1.0			1.0			0.0
Lost Time Adjust (s)	-2.0			-2.0			
Total Lost Time (s)	3.0			3.0			
Lead/Lag	Lead			Lead			Lag

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lead-Lag Optimize?							
Vehicle Extension (s)	2.0			2.0			2.0
Recall Mode	C-Max			C-Max			None
Walk Time (s)	19.0			19.0			7.0
Flash Dont Walk (s)	7.0			7.0			16.0
Pedestrian Calls (#/hr)	0			0			1
Act Effct Green (s)	94.2			94.2			
Actuated g/C Ratio	0.94			0.94			
v/c Ratio	0.69			0.44			
Control Delay	4.5			3.5			
Queue Delay	0.0			0.0			
Total Delay	4.5			3.6			
LOS	A			A			
Approach Delay	4.5			3.6			
Approach LOS	A			A			
Queue Length 50th (ft)	0			69			
Queue Length 95th (ft)	m295			144			
Internal Link Dist (ft)	1			528	1		
Turn Bay Length (ft)							
Base Capacity (vph)	1642			1642			
Starvation Cap Reductn	15			0			
Spillback Cap Reductn	0			37			
Storage Cap Reductn	0			0			
Reduced v/c Ratio	0.69			0.45			

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 84 (84%), Referenced to phase 1:EBWB, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.69			
Intersection Signal Delay: 4.1		Intersection LOS: A	
Intersection Capacity Utilization 70.6%		ICU Level of Service C	
Analysis Period (min) 15			

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

Splits and Phases: 294: Pedestrian Crossing & Main

ALTERNATIVE 2
BASE
ETC +20 (2039)
SYNCHRO OUTPUT

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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	375	4	8	348	0	6
Future Volume (vph)	375	4	8	348	0	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	90		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			50		25	
Lane Util. Factor	*0.56	0.95	1.00	*0.55	1.00	1.00
Ped Bike Factor						
Frt	0.997				0.865	
Flt Protected			0.950			
Satd. Flow (prot)	1897	0	1770	1788	1611	0
Flt Permitted			0.950			
Satd. Flow (perm)	1897	0	1770	1788	1611	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	213			164	179	
Travel Time (s)	4.8			3.7	4.1	
Confl. Peds. (#/hr)		40	40			
Peak Hour Factor	0.88	0.50	0.58	0.86	1.00	0.63
Heavy Vehicles (%)	12%	2%	2%	9%	2%	2%
Parking (#/hr)				7		
Adj. Flow (vph)	426	8	14	405	0	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	434	0	14	405	10	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	1.00	1.00	1.00	1.09	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 22.6%		ICU Level of Service A	
Analysis Period (min) 15			

* User Entered Value

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	375	4	8	348	0	6
Future Vol, veh/h	375	4	8	348	0	6
Conflicting Peds, #/hr	0	40	40	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	90	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	50	58	86	100	63
Heavy Vehicles, %	12	2	2	9	2	2
Mvmt Flow	426	8	14	405	0	10

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	474	0	701	257
Stage 1	-	-	-	-	470	-
Stage 2	-	-	-	-	231	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	1084	-	373	742
Stage 1	-	-	-	-	595	-
Stage 2	-	-	-	-	785	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1048	-	356	717
Mov Cap-2 Maneuver	-	-	-	-	356	-
Stage 1	-	-	-	-	568	-
Stage 2	-	-	-	-	785	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	10.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	717	-	-	1048	-
HCM Lane V/C Ratio	0.013	-	-	0.013	-
HCM Control Delay (s)	10.1	-	-	8.5	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	381	0	0	355	3	3
Future Volume (vph)	381	0	0	355	3	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	*0.56	1.00	1.00	*0.55	1.00	1.00
Frt					0.955	
Flt Protected					0.968	
Satd. Flow (prot)	1777	0	0	1917	1722	0
Flt Permitted					0.968	
Satd. Flow (perm)	1777	0	0	1917	1722	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	164			61	183	
Travel Time (s)	3.7			1.4	4.2	
Peak Hour Factor	0.89	1.00	1.00	0.85	0.38	0.75
Heavy Vehicles (%)	12%	2%	2%	9%	2%	2%
Parking (#/hr)	6					
Adj. Flow (vph)	428	0	0	418	8	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	428	0	0	418	12	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	1.09	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 20.5%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	381	0	0	355	3	3
Future Vol, veh/h	381	0	0	355	3	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	100	100	85	38	75
Heavy Vehicles, %	12	2	2	9	2	2
Mvmt Flow	428	0	0	418	8	4

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	637	214
Stage 1	-	-	-	-	428	-
Stage 2	-	-	-	-	209	-
Critical Hdwy	-	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	-	0	0	-	410	791
Stage 1	-	0	0	-	625	-
Stage 2	-	0	0	-	806	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	410	791
Mov Cap-2 Maneuver	-	-	-	-	410	-
Stage 1	-	-	-	-	625	-
Stage 2	-	-	-	-	806	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	12.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	489	-	-
HCM Lane V/C Ratio	0.024	-	-
HCM Control Delay (s)	12.5	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-

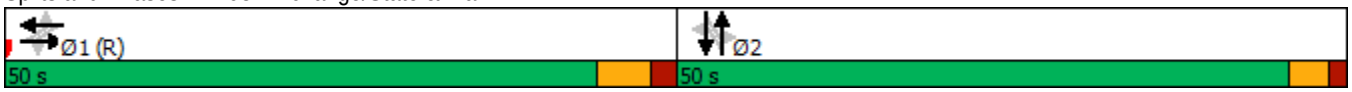
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	317	33	3	279	61	2	575	52	18	708	67
Future Volume (vph)	1	317	33	3	279	61	2	575	52	18	708	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	*0.60	0.95	0.95	*0.66	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor		1.00			0.99			0.99			0.99	
Frt		0.982			0.974			0.982			0.986	
Flt Protected					0.999			0.999			0.998	
Satd. Flow (prot)	0	2079	0	0	2078	0	0	3372	0	0	3337	0
Flt Permitted		0.951			0.941			0.946			0.909	
Satd. Flow (perm)	0	1976	0	0	1956	0	0	3192	0	0	3037	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		422			213			448			247	
Travel Time (s)		9.6			4.8			10.2			5.6	
Confl. Peds. (#/hr)	68		38	38		68	46		40	40		46
Peak Hour Factor	0.25	0.89	0.68	0.38	0.93	0.92	0.25	0.96	0.62	0.57	0.97	0.85
Heavy Vehicles (%)	2%	8%	2%	2%	8%	20%	2%	3%	13%	100%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	27	0	0	0	0	0	0	0
Adj. Flow (vph)	4	356	49	8	300	66	8	599	84	32	730	79
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	409	0	0	374	0	0	691	0	0	841	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			10			10			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	1.07	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)	50.0	50.0		50.0	50.0		29.0	29.0		29.0	29.0	
Total Split (s)	50.0	50.0		50.0	50.0		50.0	50.0		50.0	50.0	
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	
Maximum Green (s)	44.0	44.0		44.0	44.0		45.5	45.5		45.5	45.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		-3.0			-3.0			-3.0			-3.0	
Total Lost Time (s)		3.0			3.0			1.5			1.5	
Lead/Lag	Lead	Lead		Lead	Lead		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?												
Walk Time (s)	27.0	27.0		27.0	27.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	17.0	17.0		17.0	17.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		47.0			47.0			48.5			48.5	
Actuated g/C Ratio		0.47			0.47			0.48			0.48	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.44			0.41			0.45			0.57	
Control Delay		10.6			12.2			13.2			18.7	
Queue Delay		0.0			0.0			0.0			1.1	
Total Delay		10.6			12.2			13.2			19.8	
LOS		B			B			B			B	
Approach Delay		10.6			12.2			13.2			19.8	
Approach LOS		B			B			B			B	
Queue Length 50th (ft)		49			69			90			142	
Queue Length 95th (ft)		65			65			118			172	
Internal Link Dist (ft)		342			133			368			167	
Turn Bay Length (ft)												
Base Capacity (vph)		928			919			1548			1472	
Starvation Cap Reductn		0			0			0			372	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.44			0.41			0.45			0.76	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green, Master Intersection			
Natural Cycle: 80			
Control Type: Pretimed			
Maximum v/c Ratio: 0.57			
Intersection Signal Delay: 15.0		Intersection LOS: B	
Intersection Capacity Utilization 78.4%		ICU Level of Service D	
Analysis Period (min) 15			

* User Entered Value

Splits and Phases: 293: Exchange/State & Main



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lane Configurations							
Traffic Volume (vph)	384	0	0	355	0	0	
Future Volume (vph)	384	0	0	355	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	*0.56	1.00	1.00	*0.55	1.00	1.00	
Ped Bike Factor							
Frt							
Flt Protected							
Satd. Flow (prot)	1900	0	0	1917	0	0	
Flt Permitted							
Satd. Flow (perm)	1900	0	0	1917	0	0	
Right Turn on Red		No				No	
Satd. Flow (RTOR)							
Link Speed (mph)	30			30	30		
Link Distance (ft)	61			608	0		
Travel Time (s)	1.4			13.8	0.0		
Confl. Peds. (#/hr)					30	30	
Peak Hour Factor	0.88	0.90	0.90	0.86	0.90	0.90	
Heavy Vehicles (%)	12%	2%	2%	9%	2%	2%	
Adj. Flow (vph)	436	0	0	413	0	0	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	436	0	0	413	0	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	10			10	0		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)		9	15		15	9	
Number of Detectors	0			0			
Detector Template							
Leading Detector (ft)	0			0			
Trailing Detector (ft)	0			0			
Turn Type	NA			NA			
Protected Phases	1			1			2
Permitted Phases							
Detector Phase	1			1			
Switch Phase							
Minimum Initial (s)	26.0			26.0			6.0
Minimum Split (s)	32.0			32.0			28.0
Total Split (s)	72.0			72.0			28.0
Total Split (%)	72.0%			72.0%			28%
Maximum Green (s)	67.0			67.0			25.0
Yellow Time (s)	4.0			4.0			3.0
All-Red Time (s)	1.0			1.0			0.0
Lost Time Adjust (s)	-2.0			-2.0			
Total Lost Time (s)	3.0			3.0			
Lead/Lag	Lead			Lead			Lag

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lead-Lag Optimize?							
Vehicle Extension (s)	2.0			2.0			2.0
Recall Mode	C-Max			C-Max			None
Walk Time (s)	19.0			19.0			7.0
Flash Dont Walk (s)	7.0			7.0			16.0
Pedestrian Calls (#/hr)	0			0			1
Act Effct Green (s)	94.2			94.2			
Actuated g/C Ratio	0.94			0.94			
v/c Ratio	0.24			0.23			
Control Delay	1.3			0.9			
Queue Delay	0.0			0.0			
Total Delay	1.3			0.9			
LOS	A			A			
Approach Delay	1.3			0.9			
Approach LOS	A			A			
Queue Length 50th (ft)	0			0			
Queue Length 95th (ft)	72			51			
Internal Link Dist (ft)	1			528	1		
Turn Bay Length (ft)							
Base Capacity (vph)	1790			1806			
Starvation Cap Reductn	0			0			
Spillback Cap Reductn	0			0			
Storage Cap Reductn	0			0			
Reduced v/c Ratio	0.24			0.23			

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 91 (91%), Referenced to phase 1:EBWB, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.24			
Intersection Signal Delay: 1.1		Intersection LOS: A	
Intersection Capacity Utilization 38.0%		ICU Level of Service A	
Analysis Period (min) 15			

* User Entered Value

Splits and Phases: 294: Pedestrian Crossing & Main

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	543	9	7	508	0	15
Future Volume (vph)	543	9	7	508	0	15
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)			33		25	
Lane Util. Factor	*0.54	0.95	1.00	*0.54	1.00	1.00
Ped Bike Factor						
Frt	0.994				0.865	
Flt Protected			0.950			
Satd. Flow (prot)	1778	0	1770	1755	1611	0
Flt Permitted			0.950			
Satd. Flow (perm)	1778	0	1770	1755	1611	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	213			164	179	
Travel Time (s)	4.8			3.7	4.1	
Confl. Peds. (#/hr)		62	62			
Peak Hour Factor	0.91	0.40	0.75	0.86	1.00	0.58
Heavy Vehicles (%)	9%	2%	2%	9%	2%	2%
Bus Blockages (#/hr)	26	0	0	0	0	0
Parking (#/hr)				7		
Adj. Flow (vph)	597	23	9	591	0	26
Shared Lane Traffic (%)						
Lane Group Flow (vph)	620	0	9	591	26	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	1.07	1.00	1.00	1.09	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 25.4%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	543	9	7	508	0	15
Future Vol, veh/h	543	9	7	508	0	15
Conflicting Peds, #/hr	0	62	62	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	40	75	86	100	58
Heavy Vehicles, %	9	2	2	9	2	2
Mvmt Flow	597	23	9	591	0	26

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	682	0	985	372
Stage 1	-	-	-	-	671	-
Stage 2	-	-	-	-	314	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	907	-	245	625
Stage 1	-	-	-	-	470	-
Stage 2	-	-	-	-	714	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	860	-	230	593
Mov Cap-2 Maneuver	-	-	-	-	230	-
Stage 1	-	-	-	-	441	-
Stage 2	-	-	-	-	714	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	11.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	593	-	-	860	-
HCM Lane V/C Ratio	0.044	-	-	0.011	-
HCM Control Delay (s)	11.3	-	-	9.2	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	560	0	0	515	9	7
Future Volume (vph)	560	0	0	515	9	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	*0.54	1.00	1.00	*0.54	1.00	1.00
Frt					0.941	
Flt Protected					0.973	
Satd. Flow (prot)	1760	0	0	1883	1706	0
Flt Permitted					0.973	
Satd. Flow (perm)	1760	0	0	1883	1706	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	164			61	183	
Travel Time (s)	3.7			1.4	4.2	
Peak Hour Factor	0.91	1.00	1.00	0.87	0.50	0.50
Heavy Vehicles (%)	9%	2%	2%	9%	2%	2%
Parking (#/hr)	6					
Adj. Flow (vph)	615	0	0	592	18	14
Shared Lane Traffic (%)						
Lane Group Flow (vph)	615	0	0	592	32	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	1.09	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 25.5%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	560	0	0	515	9	7
Future Vol, veh/h	560	0	0	515	9	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	100	100	87	50	50
Heavy Vehicles, %	9	2	2	9	2	2
Mvmt Flow	615	0	0	592	18	14

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	911	308
Stage 1	-	-	-	-	615	-
Stage 2	-	-	-	-	296	-
Critical Hdwy	-	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	-	0	0	-	274	688
Stage 1	-	0	0	-	502	-
Stage 2	-	0	0	-	729	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	274	688
Mov Cap-2 Maneuver	-	-	-	-	274	-
Stage 1	-	-	-	-	502	-
Stage 2	-	-	-	-	729	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	15.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	372	-	-
HCM Lane V/C Ratio	0.086	-	-
HCM Control Delay (s)	15.6	-	-
HCM Lane LOS	C	-	-
HCM 95th %tile Q(veh)	0.3	-	-

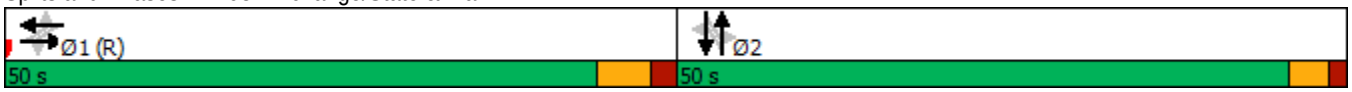
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	426	31	2	370	90	2	661	67	28	670	57
Future Volume (vph)	2	426	31	2	370	90	2	661	67	28	670	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	*0.57	0.95	0.95	*0.68	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor		0.99			0.98			0.99			0.99	
Frt		0.983			0.970			0.982			0.987	
Flt Protected					0.999						0.997	
Satd. Flow (prot)	0	2004	0	0	2103	0	0	3437	0	0	3327	0
Flt Permitted		0.951			0.941			0.947			0.840	
Satd. Flow (perm)	0	1905	0	0	1980	0	0	3254	0	0	2801	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		422			213			448			247	
Travel Time (s)		9.6			4.8			10.2			5.6	
Confl. Peds. (#/hr)	111		63	63		111	71		62	62		71
Peak Hour Factor	0.50	0.94	0.54	0.25	0.93	0.89	0.25	0.87	0.66	0.57	0.86	0.72
Heavy Vehicles (%)	100%	5%	4%	2%	8%	15%	2%	2%	2%	72%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	33	0	0	0	0	0	0	0
Adj. Flow (vph)	4	453	57	8	398	101	8	760	102	49	779	79
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	514	0	0	507	0	0	870	0	0	907	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			10			10			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	1.09	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)	50.0	50.0		50.0	50.0		29.0	29.0		29.0	29.0	
Total Split (s)	50.0	50.0		50.0	50.0		50.0	50.0		50.0	50.0	
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	
Maximum Green (s)	44.0	44.0		44.0	44.0		45.5	45.5		45.5	45.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		-3.0			-3.0			-3.0			-3.0	
Total Lost Time (s)		3.0			3.0			1.5			1.5	
Lead/Lag	Lead	Lead		Lead	Lead		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?												
Walk Time (s)	27.0	27.0		27.0	27.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	17.0	17.0		17.0	17.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		47.0			47.0			48.5			48.5	
Actuated g/C Ratio		0.47			0.47			0.48			0.48	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.57			0.55			0.55			0.67	
Control Delay		15.2			14.8			15.3			20.9	
Queue Delay		0.0			0.0			0.2			1.1	
Total Delay		15.2			14.8			15.5			22.1	
LOS		B			B			B			C	
Approach Delay		15.2			14.8			15.5			22.1	
Approach LOS		B			B			B			C	
Queue Length 50th (ft)		96			102			140			230	
Queue Length 95th (ft)		315			146			166			280	
Internal Link Dist (ft)		342			133			368			167	
Turn Bay Length (ft)												
Base Capacity (vph)		895			930			1578			1358	
Starvation Cap Reductn		0			0			195			230	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.57			0.55			0.63			0.80	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green, Master Intersection			
Natural Cycle: 80			
Control Type: Pretimed			
Maximum v/c Ratio: 0.67			
Intersection Signal Delay: 17.5		Intersection LOS: B	
Intersection Capacity Utilization 84.7%		ICU Level of Service E	
Analysis Period (min) 15			

* User Entered Value

Splits and Phases: 293: Exchange/State & Main



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lane Configurations							
Traffic Volume (vph)	567	0	0	515	0	0	
Future Volume (vph)	567	0	0	515	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	*0.54	1.00	1.00	*0.54	1.00	1.00	
Ped Bike Factor							
Frt							
Flt Protected							
Satd. Flow (prot)	1883	0	0	1883	0	0	
Flt Permitted							
Satd. Flow (perm)	1883	0	0	1883	0	0	
Right Turn on Red		No				No	
Satd. Flow (RTOR)							
Link Speed (mph)	30			30	30		
Link Distance (ft)	61			608	45		
Travel Time (s)	1.4			13.8	1.0		
Confl. Peds. (#/hr)					33	33	
Peak Hour Factor	0.91	0.90	0.90	0.86	0.90	0.90	
Heavy Vehicles (%)	9%	2%	2%	9%	2%	2%	
Adj. Flow (vph)	623	0	0	599	0	0	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	623	0	0	599	0	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	10			10	0		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)		9	15		15	9	
Number of Detectors	0			0			
Detector Template							
Leading Detector (ft)	0			0			
Trailing Detector (ft)	0			0			
Turn Type	NA			NA			
Protected Phases	1			1			2
Permitted Phases							
Detector Phase	1			1			
Switch Phase							
Minimum Initial (s)	26.0			26.0			6.0
Minimum Split (s)	32.0			32.0			28.0
Total Split (s)	72.0			72.0			28.0
Total Split (%)	72.0%			72.0%			28%
Maximum Green (s)	67.0			67.0			25.0
Yellow Time (s)	4.0			4.0			3.0
All-Red Time (s)	1.0			1.0			0.0
Lost Time Adjust (s)	-2.0			-2.0			
Total Lost Time (s)	3.0			3.0			
Lead/Lag	Lead			Lead			Lag

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lead-Lag Optimize?							
Vehicle Extension (s)	2.0			2.0			2.0
Recall Mode	C-Max			C-Max			None
Walk Time (s)	19.0			19.0			7.0
Flash Dont Walk (s)	7.0			7.0			16.0
Pedestrian Calls (#/hr)	0			0			1
Act Effct Green (s)	94.2			94.2			
Actuated g/C Ratio	0.94			0.94			
v/c Ratio	0.35			0.34			
Control Delay	1.4			2.4			
Queue Delay	0.0			0.0			
Total Delay	1.4			2.4			
LOS	A			A			
Approach Delay	1.4			2.4			
Approach LOS	A			A			
Queue Length 50th (ft)	0			32			
Queue Length 95th (ft)	95			89			
Internal Link Dist (ft)	1			528	1		
Turn Bay Length (ft)							
Base Capacity (vph)	1774			1774			
Starvation Cap Reductn	0			0			
Spillback Cap Reductn	0			0			
Storage Cap Reductn	0			0			
Reduced v/c Ratio	0.35			0.34			

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 88 (88%), Referenced to phase 1:EBWB, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.35			
Intersection Signal Delay: 1.9		Intersection LOS: A	
Intersection Capacity Utilization 38.3%		ICU Level of Service A	
Analysis Period (min) 15			

* User Entered Value

Splits and Phases: 294: Pedestrian Crossing & Main

ALTERNATIVE 2
CONDITION A
ETC +20 (2039)
SYNCHRO OUTPUT

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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	375	4	8	406	0	6
Future Volume (vph)	375	4	8	406	0	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	90		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			50		25	
Lane Util. Factor	*0.56	0.95	1.00	*0.55	1.00	1.00
Ped Bike Factor						
Frt	0.997				0.865	
Flt Protected			0.950			
Satd. Flow (prot)	1897	0	1770	1788	1611	0
Flt Permitted			0.950			
Satd. Flow (perm)	1897	0	1770	1788	1611	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	213			164	179	
Travel Time (s)	4.8			3.7	4.1	
Confl. Peds. (#/hr)		40	40			
Peak Hour Factor	0.88	0.50	0.58	0.86	1.00	0.63
Heavy Vehicles (%)	12%	2%	2%	9%	2%	2%
Parking (#/hr)				7		
Adj. Flow (vph)	426	8	14	472	0	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	434	0	14	472	10	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	1.00	1.00	1.00	1.09	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 22.6%		ICU Level of Service A	
Analysis Period (min) 15			

* User Entered Value

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	375	4	8	406	0	6
Future Vol, veh/h	375	4	8	406	0	6
Conflicting Peds, #/hr	0	40	40	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	90	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	50	58	86	100	63
Heavy Vehicles, %	12	2	2	9	2	2
Mvmt Flow	426	8	14	472	0	10

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	474	0	734	257
Stage 1	-	-	-	-	470	-
Stage 2	-	-	-	-	264	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	1084	-	355	742
Stage 1	-	-	-	-	595	-
Stage 2	-	-	-	-	756	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1048	-	339	717
Mov Cap-2 Maneuver	-	-	-	-	339	-
Stage 1	-	-	-	-	568	-
Stage 2	-	-	-	-	756	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	10.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	717	-	-	1048	-
HCM Lane V/C Ratio	0.013	-	-	0.013	-
HCM Control Delay (s)	10.1	-	-	8.5	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	381	0	0	413	3	3
Future Volume (vph)	381	0	0	413	3	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	*0.56	1.00	1.00	*0.55	1.00	1.00
Frt					0.955	
Flt Protected					0.968	
Satd. Flow (prot)	1777	0	0	1917	1722	0
Flt Permitted					0.968	
Satd. Flow (perm)	1777	0	0	1917	1722	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	164			61	183	
Travel Time (s)	3.7			1.4	4.2	
Peak Hour Factor	0.89	1.00	1.00	0.85	0.38	0.75
Heavy Vehicles (%)	12%	2%	2%	9%	2%	2%
Parking (#/hr)	6					
Adj. Flow (vph)	428	0	0	486	8	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	428	0	0	486	12	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	1.09	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 21.4%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	381	0	0	413	3	3
Future Vol, veh/h	381	0	0	413	3	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	100	100	85	38	75
Heavy Vehicles, %	12	2	2	9	2	2
Mvmt Flow	428	0	0	486	8	4

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	671	214
Stage 1	-	-	-	-	428	-
Stage 2	-	-	-	-	243	-
Critical Hdwy	-	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	-	0	0	-	390	791
Stage 1	-	0	0	-	625	-
Stage 2	-	0	0	-	775	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	390	791
Mov Cap-2 Maneuver	-	-	-	-	390	-
Stage 1	-	-	-	-	625	-
Stage 2	-	-	-	-	775	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	12.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	470	-	-
HCM Lane V/C Ratio	0.025	-	-
HCM Control Delay (s)	12.9	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-

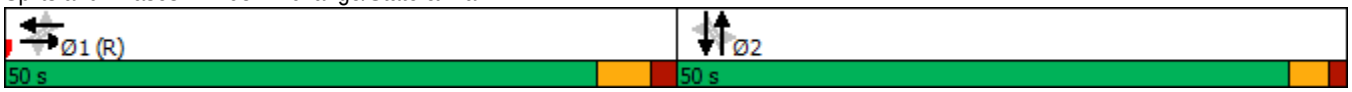
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	317	33	3	327	71	2	547	52	18	708	67
Future Volume (vph)	1	317	33	3	327	71	2	547	52	18	708	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	*0.60	0.95	0.95	*0.66	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor		1.00			0.99			0.99			0.99	
Frt		0.982			0.974			0.981			0.986	
Flt Protected					0.999			0.999			0.998	
Satd. Flow (prot)	0	2079	0	0	2077	0	0	3365	0	0	3337	0
Flt Permitted		0.950			0.943			0.945			0.911	
Satd. Flow (perm)	0	1974	0	0	1960	0	0	3183	0	0	3044	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		422			213			448			247	
Travel Time (s)		9.6			4.8			10.2			5.6	
Confl. Peds. (#/hr)	68		38	38		68	46		40	40		46
Peak Hour Factor	0.25	0.89	0.68	0.38	0.93	0.92	0.25	0.96	0.62	0.57	0.97	0.85
Heavy Vehicles (%)	2%	8%	2%	2%	8%	20%	2%	3%	13%	100%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	27	0	0	0	0	0	0	0
Adj. Flow (vph)	4	356	49	8	352	77	8	570	84	32	730	79
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	409	0	0	437	0	0	662	0	0	841	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			10			10			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	1.07	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)	50.0	50.0		50.0	50.0		29.0	29.0		29.0	29.0	
Total Split (s)	50.0	50.0		50.0	50.0		50.0	50.0		50.0	50.0	
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	
Maximum Green (s)	44.0	44.0		44.0	44.0		45.5	45.5		45.5	45.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		-3.0			-3.0			-3.0			-3.0	
Total Lost Time (s)		3.0			3.0			1.5			1.5	
Lead/Lag	Lead	Lead		Lead	Lead		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?												
Walk Time (s)	27.0	27.0		27.0	27.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	17.0	17.0		17.0	17.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		47.0			47.0			48.5			48.5	
Actuated g/C Ratio		0.47			0.47			0.48			0.48	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.44			0.47			0.43			0.57	
Control Delay		11.3			13.0			13.0			18.7	
Queue Delay		0.0			0.0			0.0			1.1	
Total Delay		11.3			13.0			13.0			19.7	
LOS		B			B			B			B	
Approach Delay		11.3			13.0			13.0			19.7	
Approach LOS		B			B			B			B	
Queue Length 50th (ft)		55			84			86			142	
Queue Length 95th (ft)		72			111			113			172	
Internal Link Dist (ft)		342			133			368			167	
Turn Bay Length (ft)												
Base Capacity (vph)		927			921			1543			1476	
Starvation Cap Reductn		0			0			0			375	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.44			0.47			0.43			0.76	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green, Master Intersection			
Natural Cycle: 80			
Control Type: Pretimed			
Maximum v/c Ratio: 0.57			
Intersection Signal Delay: 15.1		Intersection LOS: B	
Intersection Capacity Utilization 78.4%		ICU Level of Service D	
Analysis Period (min) 15			

* User Entered Value

Splits and Phases: 293: Exchange/State & Main



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lane Configurations							
Traffic Volume (vph)	384	0	0	413	0	0	
Future Volume (vph)	384	0	0	413	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	*0.56	1.00	1.00	*0.55	1.00	1.00	
Ped Bike Factor							
Frt							
Flt Protected							
Satd. Flow (prot)	1900	0	0	1917	0	0	
Flt Permitted							
Satd. Flow (perm)	1900	0	0	1917	0	0	
Right Turn on Red		No				No	
Satd. Flow (RTOR)							
Link Speed (mph)	30			30	30		
Link Distance (ft)	61			608	0		
Travel Time (s)	1.4			13.8	0.0		
Confl. Peds. (#/hr)					30	30	
Peak Hour Factor	0.88	0.90	0.90	0.86	0.90	0.90	
Heavy Vehicles (%)	12%	2%	2%	9%	2%	2%	
Adj. Flow (vph)	436	0	0	480	0	0	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	436	0	0	480	0	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	10			10	0		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)		9	15		15	9	
Number of Detectors	0			0			
Detector Template							
Leading Detector (ft)	0			0			
Trailing Detector (ft)	0			0			
Turn Type	NA			NA			
Protected Phases	1			1			2
Permitted Phases							
Detector Phase	1			1			
Switch Phase							
Minimum Initial (s)	26.0			26.0			6.0
Minimum Split (s)	32.0			32.0			28.0
Total Split (s)	72.0			72.0			28.0
Total Split (%)	72.0%			72.0%			28%
Maximum Green (s)	67.0			67.0			25.0
Yellow Time (s)	4.0			4.0			3.0
All-Red Time (s)	1.0			1.0			0.0
Lost Time Adjust (s)	-2.0			-2.0			
Total Lost Time (s)	3.0			3.0			
Lead/Lag	Lead			Lead			Lag

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lead-Lag Optimize?							
Vehicle Extension (s)	2.0			2.0			2.0
Recall Mode	C-Max			C-Max			None
Walk Time (s)	19.0			19.0			7.0
Flash Dont Walk (s)	7.0			7.0			16.0
Pedestrian Calls (#/hr)	0			0			1
Act Effct Green (s)	94.2			94.2			
Actuated g/C Ratio	0.94			0.94			
v/c Ratio	0.24			0.27			
Control Delay	1.3			1.5			
Queue Delay	0.0			0.0			
Total Delay	1.3			1.5			
LOS	A			A			
Approach Delay	1.3			1.5			
Approach LOS	A			A			
Queue Length 50th (ft)	0			10			
Queue Length 95th (ft)	69			60			
Internal Link Dist (ft)	1			528	1		
Turn Bay Length (ft)							
Base Capacity (vph)	1790			1806			
Starvation Cap Reductn	0			0			
Spillback Cap Reductn	0			0			
Storage Cap Reductn	0			0			
Reduced v/c Ratio	0.24			0.27			

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 90 (90%), Referenced to phase 1:EBWB, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.27			
Intersection Signal Delay: 1.4		Intersection LOS: A	
Intersection Capacity Utilization 38.0%		ICU Level of Service A	
Analysis Period (min) 15			

* User Entered Value

Splits and Phases: 294: Pedestrian Crossing & Main

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	564	9	7	517	0	15
Future Volume (vph)	564	9	7	517	0	15
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)			33		25	
Lane Util. Factor	*0.54	0.95	1.00	*0.54	1.00	1.00
Ped Bike Factor						
Frt	0.995				0.865	
Flt Protected			0.950			
Satd. Flow (prot)	1780	0	1770	1755	1611	0
Flt Permitted			0.950			
Satd. Flow (perm)	1780	0	1770	1755	1611	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	213			164	179	
Travel Time (s)	4.8			3.7	4.1	
Confl. Peds. (#/hr)		62	62			
Peak Hour Factor	0.91	0.40	0.75	0.86	1.00	0.58
Heavy Vehicles (%)	9%	2%	2%	9%	2%	2%
Bus Blockages (#/hr)	26	0	0	0	0	0
Parking (#/hr)				7		
Adj. Flow (vph)	620	23	9	601	0	26
Shared Lane Traffic (%)						
Lane Group Flow (vph)	643	0	9	601	26	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	1.07	1.00	1.00	1.09	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 25.9%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	564	9	7	517	0	15
Future Vol, veh/h	564	9	7	517	0	15
Conflicting Peds, #/hr	0	62	62	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	40	75	86	100	58
Heavy Vehicles, %	9	2	2	9	2	2
Mvmt Flow	620	23	9	601	0	26

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	705	0	1013	384
Stage 1	-	-	-	-	694	-
Stage 2	-	-	-	-	319	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	889	-	235	614
Stage 1	-	-	-	-	457	-
Stage 2	-	-	-	-	710	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	843	-	220	582
Mov Cap-2 Maneuver	-	-	-	-	220	-
Stage 1	-	-	-	-	429	-
Stage 2	-	-	-	-	710	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	11.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	582	-	-	843	-
HCM Lane V/C Ratio	0.044	-	-	0.011	-
HCM Control Delay (s)	11.5	-	-	9.3	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	581	0	0	524	9	7
Future Volume (vph)	581	0	0	524	9	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	*0.54	1.00	1.00	*0.54	1.00	1.00
Frt					0.941	
Flt Protected					0.973	
Satd. Flow (prot)	1760	0	0	1883	1706	0
Flt Permitted					0.973	
Satd. Flow (perm)	1760	0	0	1883	1706	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	164			61	183	
Travel Time (s)	3.7			1.4	4.2	
Peak Hour Factor	0.91	1.00	1.00	0.87	0.50	0.50
Heavy Vehicles (%)	9%	2%	2%	9%	2%	2%
Parking (#/hr)	6					
Adj. Flow (vph)	638	0	0	602	18	14
Shared Lane Traffic (%)						
Lane Group Flow (vph)	638	0	0	602	32	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	1.09	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 26.1%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↱	
Traffic Vol, veh/h	581	0	0	524	9	7
Future Vol, veh/h	581	0	0	524	9	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	100	100	87	50	50
Heavy Vehicles, %	9	2	2	9	2	2
Mvmt Flow	638	0	0	602	18	14

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	939	319
Stage 1	-	-	-	-	638	-
Stage 2	-	-	-	-	301	-
Critical Hdwy	-	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	-	0	0	-	263	677
Stage 1	-	0	0	-	488	-
Stage 2	-	0	0	-	725	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	263	677
Mov Cap-2 Maneuver	-	-	-	-	263	-
Stage 1	-	-	-	-	488	-
Stage 2	-	-	-	-	725	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	16
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	359	-	-
HCM Lane V/C Ratio	0.089	-	-
HCM Control Delay (s)	16	-	-
HCM Lane LOS	C	-	-
HCM 95th %tile Q(veh)	0.3	-	-

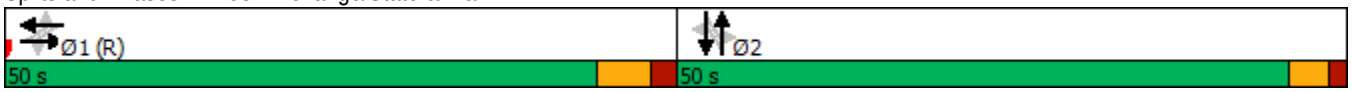
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	442	31	2	379	95	2	656	72	28	670	57
Future Volume (vph)	2	442	31	2	379	95	2	656	72	28	670	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	*0.57	0.95	0.95	*0.68	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor		0.99			0.98			0.99			0.99	
Frt		0.984			0.969			0.981			0.987	
Flt Protected					0.999						0.997	
Satd. Flow (prot)	0	2006	0	0	2099	0	0	3431	0	0	3327	0
Flt Permitted		0.951			0.941			0.947			0.840	
Satd. Flow (perm)	0	1908	0	0	1977	0	0	3248	0	0	2801	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		422			213			448			247	
Travel Time (s)		9.6			4.8			10.2			5.6	
Confl. Peds. (#/hr)	111		63	63		111	71		62	62		71
Peak Hour Factor	0.50	0.94	0.54	0.25	0.93	0.89	0.25	0.87	0.66	0.57	0.86	0.72
Heavy Vehicles (%)	100%	5%	4%	2%	8%	15%	2%	2%	2%	72%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	33	0	0	0	0	0	0	0
Adj. Flow (vph)	4	470	57	8	408	107	8	754	109	49	779	79
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	531	0	0	523	0	0	871	0	0	907	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			10			10			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	1.09	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)	50.0	50.0		50.0	50.0		29.0	29.0		29.0	29.0	
Total Split (s)	50.0	50.0		50.0	50.0		50.0	50.0		50.0	50.0	
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	
Maximum Green (s)	44.0	44.0		44.0	44.0		45.5	45.5		45.5	45.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		-3.0			-3.0			-3.0			-3.0	
Total Lost Time (s)		3.0			3.0			1.5			1.5	
Lead/Lag	Lead	Lead		Lead	Lead		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?												
Walk Time (s)	27.0	27.0		27.0	27.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	17.0	17.0		17.0	17.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		47.0			47.0			48.5			48.5	
Actuated g/C Ratio		0.47			0.47			0.48			0.48	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.59			0.56			0.55			0.67	
Control Delay		15.5			14.8			15.3			20.9	
Queue Delay		0.0			0.0			0.2			1.1	
Total Delay		15.5			14.8			15.5			22.1	
LOS		B			B			B			C	
Approach Delay		15.5			14.8			15.5			22.1	
Approach LOS		B			B			B			C	
Queue Length 50th (ft)		97			105			141			230	
Queue Length 95th (ft)		327			145			167			280	
Internal Link Dist (ft)		342			133			368			167	
Turn Bay Length (ft)												
Base Capacity (vph)		896			929			1575			1358	
Starvation Cap Reductn		0			0			194			230	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.59			0.56			0.63			0.80	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green, Master Intersection			
Natural Cycle: 80			
Control Type: Pretimed			
Maximum v/c Ratio: 0.67			
Intersection Signal Delay: 17.5		Intersection LOS: B	
Intersection Capacity Utilization 84.7%		ICU Level of Service E	
Analysis Period (min) 15			

* User Entered Value

Splits and Phases: 293: Exchange/State & Main



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lane Configurations							
Traffic Volume (vph)	588	0	0	524	0	0	
Future Volume (vph)	588	0	0	524	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	*0.54	1.00	1.00	*0.54	1.00	1.00	
Ped Bike Factor							
Frt							
Flt Protected							
Satd. Flow (prot)	1883	0	0	1883	0	0	
Flt Permitted							
Satd. Flow (perm)	1883	0	0	1883	0	0	
Right Turn on Red		No				No	
Satd. Flow (RTOR)							
Link Speed (mph)	30			30	30		
Link Distance (ft)	61			608	45		
Travel Time (s)	1.4			13.8	1.0		
Confl. Peds. (#/hr)					33	33	
Peak Hour Factor	0.91	0.90	0.90	0.86	0.90	0.90	
Heavy Vehicles (%)	9%	2%	2%	9%	2%	2%	
Adj. Flow (vph)	646	0	0	609	0	0	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	646	0	0	609	0	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	10			10	0		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)		9	15		15	9	
Number of Detectors	0			0			
Detector Template							
Leading Detector (ft)	0			0			
Trailing Detector (ft)	0			0			
Turn Type	NA			NA			
Protected Phases	1			1			2
Permitted Phases							
Detector Phase	1			1			
Switch Phase							
Minimum Initial (s)	26.0			26.0			6.0
Minimum Split (s)	32.0			32.0			28.0
Total Split (s)	72.0			72.0			28.0
Total Split (%)	72.0%			72.0%			28%
Maximum Green (s)	67.0			67.0			25.0
Yellow Time (s)	4.0			4.0			3.0
All-Red Time (s)	1.0			1.0			0.0
Lost Time Adjust (s)	-2.0			-2.0			
Total Lost Time (s)	3.0			3.0			
Lead/Lag	Lead			Lead			Lag

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lead-Lag Optimize?							
Vehicle Extension (s)	2.0			2.0			2.0
Recall Mode	C-Max			C-Max			None
Walk Time (s)	19.0			19.0			7.0
Flash Dont Walk (s)	7.0			7.0			16.0
Pedestrian Calls (#/hr)	0			0			1
Act Effct Green (s)	94.2			94.2			
Actuated g/C Ratio	0.94			0.94			
v/c Ratio	0.36			0.34			
Control Delay	1.4			2.4			
Queue Delay	0.0			0.0			
Total Delay	1.4			2.4			
LOS	A			A			
Approach Delay	1.4			2.4			
Approach LOS	A			A			
Queue Length 50th (ft)	0			33			
Queue Length 95th (ft)	100			92			
Internal Link Dist (ft)	1			528	1		
Turn Bay Length (ft)							
Base Capacity (vph)	1774			1774			
Starvation Cap Reductn	0			0			
Spillback Cap Reductn	0			0			
Storage Cap Reductn	0			0			
Reduced v/c Ratio	0.36			0.34			

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 88 (88%), Referenced to phase 1:EBWB, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.36			
Intersection Signal Delay: 1.9		Intersection LOS: A	
Intersection Capacity Utilization 38.3%		ICU Level of Service A	
Analysis Period (min) 15			

* User Entered Value

Splits and Phases: 294: Pedestrian Crossing & Main

ALTERNATIVE 2

CONDITION B

ETC +20 (2039)

SYNCHRO OUTPUT

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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	767	4	8	393	0	6
Future Volume (vph)	767	4	8	393	0	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	90		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			50		25	
Lane Util. Factor	*0.56	0.95	1.00	*0.55	1.00	1.00
Ped Bike Factor						
Frt	0.999				0.865	
Flt Protected			0.950			
Satd. Flow (prot)	1793	0	1770	1788	1611	0
Flt Permitted			0.950			
Satd. Flow (perm)	1793	0	1770	1788	1611	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	213			164	179	
Travel Time (s)	4.8			3.7	4.1	
Confl. Peds. (#/hr)		40	40			
Peak Hour Factor	0.88	0.50	0.58	0.86	1.00	0.63
Heavy Vehicles (%)	12%	2%	2%	9%	2%	2%
Bus Blockages (#/hr)	28	0	0	0	0	0
Parking (#/hr)				7		
Adj. Flow (vph)	872	8	14	457	0	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	880	0	14	457	10	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	1.08	1.00	1.00	1.09	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 31.3%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	767	4	8	393	0	6
Future Vol, veh/h	767	4	8	393	0	6
Conflicting Peds, #/hr	0	40	40	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	90	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	50	58	86	100	63
Heavy Vehicles, %	12	2	2	9	2	2
Mvmt Flow	872	8	14	457	0	10

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	920	0	1173	480
Stage 1	-	-	-	-	916	-
Stage 2	-	-	-	-	257	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	738	-	185	532
Stage 1	-	-	-	-	350	-
Stage 2	-	-	-	-	762	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	713	-	175	514
Mov Cap-2 Maneuver	-	-	-	-	175	-
Stage 1	-	-	-	-	332	-
Stage 2	-	-	-	-	762	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	12.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	514	-	-	713	-
HCM Lane V/C Ratio	0.019	-	-	0.019	-
HCM Control Delay (s)	12.1	-	-	10.1	-
HCM Lane LOS	B	-	-	B	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	773	0	0	400	3	3
Future Volume (vph)	773	0	0	400	3	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	*0.56	1.00	1.00	*0.55	1.00	1.00
Frt					0.955	
Flt Protected					0.968	
Satd. Flow (prot)	1777	0	0	1917	1722	0
Flt Permitted					0.968	
Satd. Flow (perm)	1777	0	0	1917	1722	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	164			61	183	
Travel Time (s)	3.7			1.4	4.2	
Peak Hour Factor	0.89	1.00	1.00	0.85	0.38	0.75
Heavy Vehicles (%)	12%	2%	2%	9%	2%	2%
Parking (#/hr)	6					
Adj. Flow (vph)	869	0	0	471	8	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	869	0	0	471	12	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	1.09	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

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

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	773	0	0	400	3	3
Future Vol, veh/h	773	0	0	400	3	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	100	100	85	38	75
Heavy Vehicles, %	12	2	2	9	2	2
Mvmt Flow	869	0	0	471	8	4

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	1105	435
Stage 1	-	-	-	-	869	-
Stage 2	-	-	-	-	236	-
Critical Hdwy	-	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	-	0	0	-	205	569
Stage 1	-	0	0	-	371	-
Stage 2	-	0	0	-	781	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	205	569
Mov Cap-2 Maneuver	-	-	-	-	205	-
Stage 1	-	-	-	-	371	-
Stage 2	-	-	-	-	781	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	19.5
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	261	-	-
HCM Lane V/C Ratio	0.046	-	-
HCM Control Delay (s)	19.5	-	-
HCM Lane LOS	C	-	-
HCM 95th %tile Q(veh)	0.1	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	655	33	3	317	68	2	575	106	18	708	67
Future Volume (vph)	1	655	33	3	317	68	2	575	106	18	708	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	*0.60	0.95	0.95	*0.66	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor		1.00			0.99			0.99			0.99	
Frt		0.991			0.974			0.967			0.986	
Flt Protected					0.999			0.999			0.998	
Satd. Flow (prot)	0	2095	0	0	2078	0	0	3268	0	0	3337	0
Flt Permitted		0.953			0.928			0.946			0.903	
Satd. Flow (perm)	0	1996	0	0	1930	0	0	3094	0	0	3018	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		422			213			448			247	
Travel Time (s)		9.6			4.8			10.2			5.6	
Confl. Peds. (#/hr)	68		38	38		68	46		40	40		46
Peak Hour Factor	0.25	0.89	0.68	0.38	0.93	0.92	0.25	0.96	0.62	0.57	0.97	0.85
Heavy Vehicles (%)	2%	8%	2%	2%	8%	20%	2%	3%	13%	100%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	27	0	0	0	0	0	0	0
Adj. Flow (vph)	4	736	49	8	341	74	8	599	171	32	730	79
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	789	0	0	423	0	0	778	0	0	841	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			10			10			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	1.07	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)	50.0	50.0		50.0	50.0		29.0	29.0		29.0	29.0	
Total Split (s)	54.0	54.0		54.0	54.0		46.0	46.0		46.0	46.0	
Total Split (%)	54.0%	54.0%		54.0%	54.0%		46.0%	46.0%		46.0%	46.0%	
Maximum Green (s)	48.0	48.0		48.0	48.0		41.5	41.5		41.5	41.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		-3.0			-3.0			-3.0			-3.0	
Total Lost Time (s)		3.0			3.0			1.5			1.5	
Lead/Lag	Lead	Lead		Lead	Lead		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?												
Walk Time (s)	27.0	27.0		27.0	27.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	17.0	17.0		17.0	17.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		51.0			51.0			44.5			44.5	
Actuated g/C Ratio		0.51			0.51			0.44			0.44	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.78			0.43			0.57			0.63	
Control Delay		21.2			11.6			16.2			22.5	
Queue Delay		0.1			0.0			0.2			1.7	
Total Delay		21.3			11.6			16.4			24.2	
LOS		C			B			B			C	
Approach Delay		21.3			11.6			16.4			24.2	
Approach LOS		C			B			B			C	
Queue Length 50th (ft)		188			85			108			214	
Queue Length 95th (ft)		458			55			140			280	
Internal Link Dist (ft)		342			133			368			167	
Turn Bay Length (ft)												
Base Capacity (vph)		1017			984			1376			1343	
Starvation Cap Reductn		6			0			120			322	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.78			0.43			0.62			0.82	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green, Master Intersection			
Natural Cycle: 80			
Control Type: Pretimed			
Maximum v/c Ratio: 0.78			
Intersection Signal Delay: 19.4		Intersection LOS: B	
Intersection Capacity Utilization 78.4%		ICU Level of Service D	
Analysis Period (min) 15			

* User Entered Value

Splits and Phases: 293: Exchange/State & Main

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lane Configurations							
Traffic Volume (vph)	776	0	0	400	0	0	
Future Volume (vph)	776	0	0	400	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	*0.56	1.00	1.00	*0.55	1.00	1.00	
Ped Bike Factor							
Frt							
Flt Protected							
Satd. Flow (prot)	1900	0	0	1917	0	0	
Flt Permitted							
Satd. Flow (perm)	1900	0	0	1917	0	0	
Right Turn on Red		No				No	
Satd. Flow (RTOR)							
Link Speed (mph)	30			30	30		
Link Distance (ft)	61			608	0		
Travel Time (s)	1.4			13.8	0.0		
Confl. Peds. (#/hr)					30	30	
Peak Hour Factor	0.88	0.90	0.90	0.86	0.90	0.90	
Heavy Vehicles (%)	12%	2%	2%	9%	2%	2%	
Adj. Flow (vph)	882	0	0	465	0	0	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	882	0	0	465	0	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	10			10	0		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)		9	15		15	9	
Number of Detectors	0			0			
Detector Template							
Leading Detector (ft)	0			0			
Trailing Detector (ft)	0			0			
Turn Type	NA			NA			
Protected Phases	1			1			2
Permitted Phases							
Detector Phase	1			1			
Switch Phase							
Minimum Initial (s)	26.0			26.0			6.0
Minimum Split (s)	32.0			32.0			28.0
Total Split (s)	72.0			72.0			28.0
Total Split (%)	72.0%			72.0%			28%
Maximum Green (s)	67.0			67.0			25.0
Yellow Time (s)	4.0			4.0			3.0
All-Red Time (s)	1.0			1.0			0.0
Lost Time Adjust (s)	-2.0			-2.0			
Total Lost Time (s)	3.0			3.0			
Lead/Lag	Lead			Lead			Lag

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lead-Lag Optimize?							
Vehicle Extension (s)	2.0			2.0			2.0
Recall Mode	C-Max			C-Max			None
Walk Time (s)	19.0			19.0			7.0
Flash Dont Walk (s)	7.0			7.0			16.0
Pedestrian Calls (#/hr)	0			0			1
Act Effct Green (s)	94.2			94.2			
Actuated g/C Ratio	0.94			0.94			
v/c Ratio	0.49			0.26			
Control Delay	1.5			1.5			
Queue Delay	0.0			0.0			
Total Delay	1.5			1.5			
LOS	A			A			
Approach Delay	1.5			1.5			
Approach LOS	A			A			
Queue Length 50th (ft)	0			7			
Queue Length 95th (ft)	125			60			
Internal Link Dist (ft)	1			528	1		
Turn Bay Length (ft)							
Base Capacity (vph)	1790			1806			
Starvation Cap Reductn	12			0			
Spillback Cap Reductn	0			0			
Storage Cap Reductn	0			0			
Reduced v/c Ratio	0.50			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: Actuated-Coordinated			
Maximum v/c Ratio: 0.49			
Intersection Signal Delay: 1.5		Intersection LOS: A	
Intersection Capacity Utilization 38.0%		ICU Level of Service A	
Analysis Period (min) 15			

* User Entered Value

Splits and Phases: 294: Pedestrian Crossing & Main

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	968	9	7	596	0	15
Future Volume (vph)	968	9	7	596	0	15
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)			33		25	
Lane Util. Factor	*0.54	0.95	1.00	*0.54	1.00	1.00
Ped Bike Factor						
Frt	0.997				0.865	
Flt Protected			0.950			
Satd. Flow (prot)	1782	0	1770	1755	1611	0
Flt Permitted			0.950			
Satd. Flow (perm)	1782	0	1770	1755	1611	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	213			164	179	
Travel Time (s)	4.8			3.7	4.1	
Confl. Peds. (#/hr)		62	62			
Peak Hour Factor	0.91	0.40	0.75	0.86	1.00	0.58
Heavy Vehicles (%)	9%	2%	2%	9%	2%	2%
Bus Blockages (#/hr)	26	0	0	0	0	0
Parking (#/hr)				7		
Adj. Flow (vph)	1064	23	9	693	0	26
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1087	0	9	693	26	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	1.07	1.00	1.00	1.09	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 37.1%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	968	9	7	596	0	15
Future Vol, veh/h	968	9	7	596	0	15
Conflicting Peds, #/hr	0	62	62	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	40	75	86	100	58
Heavy Vehicles, %	9	2	2	9	2	2
Mvmt Flow	1064	23	9	693	0	26

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1149	0	1503	606
Stage 1	-	-	-	-	1138	-
Stage 2	-	-	-	-	365	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	604	-	112	440
Stage 1	-	-	-	-	268	-
Stage 2	-	-	-	-	673	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	573	-	104	417
Mov Cap-2 Maneuver	-	-	-	-	104	-
Stage 1	-	-	-	-	250	-
Stage 2	-	-	-	-	673	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	14.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	417	-	-	573	-
HCM Lane V/C Ratio	0.062	-	-	0.016	-
HCM Control Delay (s)	14.2	-	-	11.4	-
HCM Lane LOS	B	-	-	B	-
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	985	0	0	603	9	7
Future Volume (vph)	985	0	0	603	9	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	*0.54	1.00	1.00	*0.54	1.00	1.00
Frt					0.941	
Flt Protected					0.973	
Satd. Flow (prot)	1760	0	0	1883	1706	0
Flt Permitted					0.973	
Satd. Flow (perm)	1760	0	0	1883	1706	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	164			61	183	
Travel Time (s)	3.7			1.4	4.2	
Peak Hour Factor	0.91	1.00	1.00	0.87	0.50	0.50
Heavy Vehicles (%)	9%	2%	2%	9%	2%	2%
Parking (#/hr)	6					
Adj. Flow (vph)	1082	0	0	693	18	14
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1082	0	0	693	32	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	1.09	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 37.2%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			

Intersection	
Int Delay, s/veh	0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	985	0	0	603	9	7
Future Vol, veh/h	985	0	0	603	9	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	100	100	87	50	50
Heavy Vehicles, %	9	2	2	9	2	2
Mvmt Flow	1082	0	0	693	18	14

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	1429	541
Stage 1	-	-	-	-	1082	-
Stage 2	-	-	-	-	347	-
Critical Hdwy	-	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	-	0	0	-	126	485
Stage 1	-	0	0	-	287	-
Stage 2	-	0	0	-	687	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	126	485
Mov Cap-2 Maneuver	-	-	-	-	126	-
Stage 1	-	-	-	-	287	-
Stage 2	-	-	-	-	687	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	28.3
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	186	-	-
HCM Lane V/C Ratio	0.172	-	-
HCM Control Delay (s)	28.3	-	-
HCM Lane LOS	D	-	-
HCM 95th %tile Q(veh)	0.6	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	789	31	2	439	108	2	661	129	28	670	57
Future Volume (vph)	2	789	31	2	439	108	2	661	129	28	670	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	*0.57	0.95	0.95	*0.68	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor		1.00			0.98			0.98			0.99	
Frt		0.990			0.970			0.970			0.987	
Flt Protected					0.999						0.997	
Satd. Flow (prot)	0	2028	0	0	2102	0	0	3367	0	0	3327	0
Flt Permitted		0.952			0.919			0.947			0.775	
Satd. Flow (perm)	0	1931	0	0	1934	0	0	3188	0	0	2585	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		422			213			448			247	
Travel Time (s)		9.6			4.8			10.2			5.6	
Confl. Peds. (#/hr)	111		63	63		111	71		62	62		71
Peak Hour Factor	0.50	0.94	0.54	0.25	0.93	0.89	0.25	0.87	0.66	0.57	0.86	0.72
Heavy Vehicles (%)	100%	5%	4%	2%	8%	15%	2%	2%	2%	72%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	33	0	0	0	0	0	0	0
Adj. Flow (vph)	4	839	57	8	472	121	8	760	195	49	779	79
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	900	0	0	601	0	0	963	0	0	907	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			10			10			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	1.09	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)	50.0	50.0		50.0	50.0		29.0	29.0		29.0	29.0	
Total Split (s)	55.0	55.0		55.0	55.0		45.0	45.0		45.0	45.0	
Total Split (%)	55.0%	55.0%		55.0%	55.0%		45.0%	45.0%		45.0%	45.0%	
Maximum Green (s)	49.0	49.0		49.0	49.0		40.5	40.5		40.5	40.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		-3.0			-3.0			-3.0			-3.0	
Total Lost Time (s)		3.0			3.0			1.5			1.5	
Lead/Lag	Lead	Lead		Lead	Lead		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?												
Walk Time (s)	27.0	27.0		27.0	27.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	17.0	17.0		17.0	17.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		52.0			52.0			43.5			43.5	
Actuated g/C Ratio		0.52			0.52			0.44			0.44	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.90			0.60			0.69			0.81	
Control Delay		30.6			13.2			20.7			29.6	
Queue Delay		0.0			0.0			0.4			2.9	
Total Delay		30.6			13.2			21.1			32.5	
LOS		C			B			C			C	
Approach Delay		30.6			13.2			21.1			32.5	
Approach LOS		C			B			C			C	
Queue Length 50th (ft)		448			119			182			263	
Queue Length 95th (ft)		#676			74			214			323	
Internal Link Dist (ft)		342			133			368			167	
Turn Bay Length (ft)												
Base Capacity (vph)		1004			1005			1386			1124	
Starvation Cap Reductn		0			0			114			127	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.90			0.60			0.76			0.91	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green, Master Intersection			
Natural Cycle: 80			
Control Type: Pretimed			
Maximum v/c Ratio: 0.90			
Intersection Signal Delay: 25.3		Intersection LOS: C	
Intersection Capacity Utilization 84.7%		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.

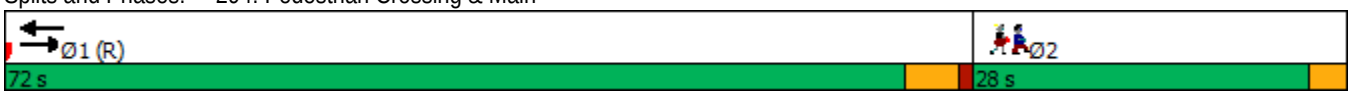
Splits and Phases: 293: Exchange/State & Main

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lane Configurations							
Traffic Volume (vph)	992	0	0	603	0	0	
Future Volume (vph)	992	0	0	603	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	*0.54	1.00	1.00	*0.54	1.00	1.00	
Ped Bike Factor							
Frt							
Flt Protected							
Satd. Flow (prot)	1883	0	0	1883	0	0	
Flt Permitted							
Satd. Flow (perm)	1883	0	0	1883	0	0	
Right Turn on Red		No				No	
Satd. Flow (RTOR)							
Link Speed (mph)	30			30	30		
Link Distance (ft)	61			608	45		
Travel Time (s)	1.4			13.8	1.0		
Confl. Peds. (#/hr)					33	33	
Peak Hour Factor	0.91	0.90	0.90	0.86	0.90	0.90	
Heavy Vehicles (%)	9%	2%	2%	9%	2%	2%	
Adj. Flow (vph)	1090	0	0	701	0	0	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	1090	0	0	701	0	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	10			10	0		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)		9	15		15	9	
Number of Detectors	0			0			
Detector Template							
Leading Detector (ft)	0			0			
Trailing Detector (ft)	0			0			
Turn Type	NA			NA			
Protected Phases	1			1			2
Permitted Phases							
Detector Phase	1			1			
Switch Phase							
Minimum Initial (s)	26.0			26.0			6.0
Minimum Split (s)	32.0			32.0			28.0
Total Split (s)	72.0			72.0			28.0
Total Split (%)	72.0%			72.0%			28%
Maximum Green (s)	67.0			67.0			25.0
Yellow Time (s)	4.0			4.0			3.0
All-Red Time (s)	1.0			1.0			0.0
Lost Time Adjust (s)	-2.0			-2.0			
Total Lost Time (s)	3.0			3.0			
Lead/Lag	Lead			Lead			Lag

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lead-Lag Optimize?							
Vehicle Extension (s)	2.0			2.0			2.0
Recall Mode	C-Max			C-Max			None
Walk Time (s)	19.0			19.0			7.0
Flash Dont Walk (s)	7.0			7.0			16.0
Pedestrian Calls (#/hr)	0			0			1
Act Effct Green (s)	94.2			94.2			
Actuated g/C Ratio	0.94			0.94			
v/c Ratio	0.61			0.40			
Control Delay	2.2			2.7			
Queue Delay	0.0			0.0			
Total Delay	2.2			2.7			
LOS	A			A			
Approach Delay	2.2			2.7			
Approach LOS	A			A			
Queue Length 50th (ft)	0			40			
Queue Length 95th (ft)	m168			107			
Internal Link Dist (ft)	1			528	1		
Turn Bay Length (ft)							
Base Capacity (vph)	1774			1774			
Starvation Cap Reductn	19			0			
Spillback Cap Reductn	0			0			
Storage Cap Reductn	0			0			
Reduced v/c Ratio	0.62			0.40			

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 95 (95%), Referenced to phase 1:EBWB, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.61			
Intersection Signal Delay: 2.4		Intersection LOS: A	
Intersection Capacity Utilization 44.1%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 294: Pedestrian Crossing & Main



ALTERNATIVE 2

CONDITION C

ETC +20 (2039)

SYNCHRO OUTPUT

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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	780	4	8	451	0	6
Future Volume (vph)	780	4	8	451	0	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	90		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			50		25	
Lane Util. Factor	*0.56	0.95	1.00	*0.55	1.00	1.00
Ped Bike Factor						
Frt	0.999				0.865	
Flt Protected			0.950			
Satd. Flow (prot)	1793	0	1770	1788	1611	0
Flt Permitted			0.950			
Satd. Flow (perm)	1793	0	1770	1788	1611	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	213			164	179	
Travel Time (s)	4.8			3.7	4.1	
Confl. Peds. (#/hr)		40	40			
Peak Hour Factor	0.88	0.50	0.58	0.86	1.00	0.63
Heavy Vehicles (%)	12%	2%	2%	9%	2%	2%
Bus Blockages (#/hr)	28	0	0	0	0	0
Parking (#/hr)				7		
Adj. Flow (vph)	886	8	14	524	0	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	894	0	14	524	10	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	1.08	1.00	1.00	1.09	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 31.7%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	780	4	8	451	0	6
Future Vol, veh/h	780	4	8	451	0	6
Conflicting Peds, #/hr	0	40	40	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	90	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	50	58	86	100	63
Heavy Vehicles, %	12	2	2	9	2	2
Mvmt Flow	886	8	14	524	0	10

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	934	0	1220	487
Stage 1	-	-	-	-	930	-
Stage 2	-	-	-	-	290	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	729	-	172	526
Stage 1	-	-	-	-	344	-
Stage 2	-	-	-	-	734	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	705	-	163	508
Mov Cap-2 Maneuver	-	-	-	-	163	-
Stage 1	-	-	-	-	326	-
Stage 2	-	-	-	-	734	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	12.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	508	-	-	705	-
HCM Lane V/C Ratio	0.019	-	-	0.02	-
HCM Control Delay (s)	12.2	-	-	10.2	-
HCM Lane LOS	B	-	-	B	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	786	0	0	458	3	3
Future Volume (vph)	786	0	0	458	3	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	*0.56	1.00	1.00	*0.55	1.00	1.00
Frt					0.955	
Flt Protected					0.968	
Satd. Flow (prot)	1777	0	0	1917	1722	0
Flt Permitted					0.968	
Satd. Flow (perm)	1777	0	0	1917	1722	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	164			61	183	
Travel Time (s)	3.7			1.4	4.2	
Peak Hour Factor	0.89	1.00	1.00	0.85	0.38	0.75
Heavy Vehicles (%)	12%	2%	2%	9%	2%	2%
Parking (#/hr)	6					
Adj. Flow (vph)	883	0	0	539	8	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	883	0	0	539	12	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	1.09	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 31.7%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	786	0	0	458	3	3
Future Vol, veh/h	786	0	0	458	3	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	100	100	85	38	75
Heavy Vehicles, %	12	2	2	9	2	2
Mvmt Flow	883	0	0	539	8	4

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	1153	442
Stage 1	-	-	-	-	883	-
Stage 2	-	-	-	-	270	-
Critical Hdwy	-	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	-	0	0	-	191	563
Stage 1	-	0	0	-	365	-
Stage 2	-	0	0	-	751	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	191	563
Mov Cap-2 Maneuver	-	-	-	-	191	-
Stage 1	-	-	-	-	365	-
Stage 2	-	-	-	-	751	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	20.4
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	246	-	-
HCM Lane V/C Ratio	0.048	-	-
HCM Control Delay (s)	20.4	-	-
HCM Lane LOS	C	-	-
HCM 95th %tile Q(veh)	0.2	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	666	33	3	361	82	2	555	107	18	708	67
Future Volume (vph)	1	666	33	3	361	82	2	555	107	18	708	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	*0.60	0.95	0.95	*0.66	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor		1.00			0.99			0.98			0.99	
Frt		0.991			0.972			0.966			0.986	
Flt Protected					0.999			0.999			0.998	
Satd. Flow (prot)	0	2095	0	0	2070	0	0	3260	0	0	3337	0
Flt Permitted		0.952			0.931			0.946			0.904	
Satd. Flow (perm)	0	1994	0	0	1929	0	0	3087	0	0	3021	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		422			213			448			247	
Travel Time (s)		9.6			4.8			10.2			5.6	
Confl. Peds. (#/hr)	68		38	38		68	46		40	40		46
Peak Hour Factor	0.25	0.89	0.68	0.38	0.93	0.92	0.25	0.96	0.62	0.57	0.97	0.85
Heavy Vehicles (%)	2%	8%	2%	2%	8%	20%	2%	3%	13%	100%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	27	0	0	0	0	0	0	0
Adj. Flow (vph)	4	748	49	8	388	89	8	578	173	32	730	79
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	801	0	0	485	0	0	759	0	0	841	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			10			10			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	1.07	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)	50.0	50.0		50.0	50.0		29.0	29.0		29.0	29.0	
Total Split (s)	53.0	53.0		53.0	53.0		47.0	47.0		47.0	47.0	
Total Split (%)	53.0%	53.0%		53.0%	53.0%		47.0%	47.0%		47.0%	47.0%	
Maximum Green (s)	47.0	47.0		47.0	47.0		42.5	42.5		42.5	42.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		-3.0			-3.0			-3.0			-3.0	
Total Lost Time (s)		3.0			3.0			1.5			1.5	
Lead/Lag	Lead	Lead		Lead	Lead		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?												
Walk Time (s)	27.0	27.0		27.0	27.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	17.0	17.0		17.0	17.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		50.0			50.0			45.5			45.5	
Actuated g/C Ratio		0.50			0.50			0.46			0.46	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.80			0.50			0.54			0.61	
Control Delay		23.5			15.1			15.4			21.5	
Queue Delay		0.1			0.0			0.2			1.5	
Total Delay		23.5			15.1			15.5			23.1	
LOS		C			B			B			C	
Approach Delay		23.5			15.1			15.5			23.1	
Approach LOS		C			B			B			C	
Queue Length 50th (ft)		349			103			103			210	
Queue Length 95th (ft)		480			176			134			274	
Internal Link Dist (ft)		342			133			368			167	
Turn Bay Length (ft)												
Base Capacity (vph)		997			964			1404			1374	
Starvation Cap Reductn		4			0			131			334	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.81			0.50			0.60			0.81	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green, Master Intersection			
Natural Cycle: 80			
Control Type: Pretimed			
Maximum v/c Ratio: 0.80			
Intersection Signal Delay: 19.9		Intersection LOS: B	
Intersection Capacity Utilization 78.4%		ICU Level of Service D	
Analysis Period (min) 15			

* User Entered Value

Splits and Phases: 293: Exchange/State & Main

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lane Configurations							
Traffic Volume (vph)	789	0	0	458	0	0	
Future Volume (vph)	789	0	0	458	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	*0.56	1.00	1.00	*0.55	1.00	1.00	
Ped Bike Factor							
Frt							
Flt Protected							
Satd. Flow (prot)	1900	0	0	1917	0	0	
Flt Permitted							
Satd. Flow (perm)	1900	0	0	1917	0	0	
Right Turn on Red		No				No	
Satd. Flow (RTOR)							
Link Speed (mph)	30			30	30		
Link Distance (ft)	61			608	0		
Travel Time (s)	1.4			13.8	0.0		
Confl. Peds. (#/hr)					30	30	
Peak Hour Factor	0.88	0.90	0.90	0.86	0.90	0.90	
Heavy Vehicles (%)	12%	2%	2%	9%	2%	2%	
Adj. Flow (vph)	897	0	0	533	0	0	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	897	0	0	533	0	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	10			10	0		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)		9	15		15	9	
Number of Detectors	0			0			
Detector Template							
Leading Detector (ft)	0			0			
Trailing Detector (ft)	0			0			
Turn Type	NA			NA			
Protected Phases	1			1			2
Permitted Phases							
Detector Phase	1			1			
Switch Phase							
Minimum Initial (s)	26.0			26.0			6.0
Minimum Split (s)	32.0			32.0			28.0
Total Split (s)	72.0			72.0			28.0
Total Split (%)	72.0%			72.0%			28%
Maximum Green (s)	67.0			67.0			25.0
Yellow Time (s)	4.0			4.0			3.0
All-Red Time (s)	1.0			1.0			0.0
Lost Time Adjust (s)	-2.0			-2.0			
Total Lost Time (s)	3.0			3.0			
Lead/Lag	Lead			Lead			Lag

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lead-Lag Optimize?							
Vehicle Extension (s)	2.0			2.0			2.0
Recall Mode	C-Max			C-Max			None
Walk Time (s)	19.0			19.0			7.0
Flash Dont Walk (s)	7.0			7.0			16.0
Pedestrian Calls (#/hr)	0			0			1
Act Effct Green (s)	94.2			94.2			
Actuated g/C Ratio	0.94			0.94			
v/c Ratio	0.50			0.30			
Control Delay	1.5			2.2			
Queue Delay	0.0			0.0			
Total Delay	1.5			2.2			
LOS	A			A			
Approach Delay	1.5			2.2			
Approach LOS	A			A			
Queue Length 50th (ft)	0			23			
Queue Length 95th (ft)	125			70			
Internal Link Dist (ft)	1			528	1		
Turn Bay Length (ft)							
Base Capacity (vph)	1790			1806			
Starvation Cap Reductn	11			0			
Spillback Cap Reductn	0			0			
Storage Cap Reductn	0			0			
Reduced v/c Ratio	0.50			0.30			

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 91 (91%), Referenced to phase 1:EBWB, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.50			
Intersection Signal Delay: 1.8		Intersection LOS: A	
Intersection Capacity Utilization 38.1%		ICU Level of Service A	
Analysis Period (min) 15			

* User Entered Value

Splits and Phases: 294: Pedestrian Crossing & Main

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1001	9	7	614	0	15
Future Volume (vph)	1001	9	7	614	0	15
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)			33		25	
Lane Util. Factor	*0.54	0.95	1.00	*0.54	1.00	1.00
Ped Bike Factor						
Frt	0.997				0.865	
Flt Protected			0.950			
Satd. Flow (prot)	1782	0	1770	1755	1611	0
Flt Permitted			0.950			
Satd. Flow (perm)	1782	0	1770	1755	1611	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	213			164	179	
Travel Time (s)	4.8			3.7	4.1	
Confl. Peds. (#/hr)		62	62			
Peak Hour Factor	0.91	0.40	0.75	0.86	1.00	0.58
Heavy Vehicles (%)	9%	2%	2%	9%	2%	2%
Bus Blockages (#/hr)	26	0	0	0	0	0
Parking (#/hr)				7		
Adj. Flow (vph)	1100	23	9	714	0	26
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1123	0	9	714	26	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	1.07	1.00	1.00	1.09	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 38.0%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1001	9	7	614	0	15
Future Vol, veh/h	1001	9	7	614	0	15
Conflicting Peds, #/hr	0	62	62	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	40	75	86	100	58
Heavy Vehicles, %	9	2	2	9	2	2
Mvmt Flow	1100	23	9	714	0	26

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1185	0	1549	624
Stage 1	-	-	-	-	1174	-
Stage 2	-	-	-	-	375	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	585	-	105	428
Stage 1	-	-	-	-	256	-
Stage 2	-	-	-	-	665	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	555	-	98	406
Mov Cap-2 Maneuver	-	-	-	-	98	-
Stage 1	-	-	-	-	239	-
Stage 2	-	-	-	-	665	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	14.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	406	-	-	555	-
HCM Lane V/C Ratio	0.064	-	-	0.017	-
HCM Control Delay (s)	14.5	-	-	11.6	-
HCM Lane LOS	B	-	-	B	-
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1018	0	0	621	9	7
Future Volume (vph)	1018	0	0	621	9	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	*0.54	1.00	1.00	*0.54	1.00	1.00
Frt					0.941	
Flt Protected					0.973	
Satd. Flow (prot)	1760	0	0	1883	1706	0
Flt Permitted					0.973	
Satd. Flow (perm)	1760	0	0	1883	1706	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	164			61	183	
Travel Time (s)	3.7			1.4	4.2	
Peak Hour Factor	0.91	1.00	1.00	0.87	0.50	0.50
Heavy Vehicles (%)	9%	2%	2%	9%	2%	2%
Parking (#/hr)	6					
Adj. Flow (vph)	1119	0	0	714	18	14
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1119	0	0	714	32	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	1.09	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 38.1%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			

Intersection	
Int Delay, s/veh	0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1018	0	0	621	9	7
Future Vol, veh/h	1018	0	0	621	9	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	100	100	87	50	50
Heavy Vehicles, %	9	2	2	9	2	2
Mvmt Flow	1119	0	0	714	18	14

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	1476	560
Stage 1	-	-	-	-	1119	-
Stage 2	-	-	-	-	357	-
Critical Hdwy	-	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	-	0	0	-	117	472
Stage 1	-	0	0	-	274	-
Stage 2	-	0	0	-	679	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	117	472
Mov Cap-2 Maneuver	-	-	-	-	117	-
Stage 1	-	-	-	-	274	-
Stage 2	-	-	-	-	679	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	30.3
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	174	-	-
HCM Lane V/C Ratio	0.184	-	-
HCM Control Delay (s)	30.3	-	-
HCM Lane LOS	D	-	-
HCM 95th %tile Q(veh)	0.7	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	819	31	2	453	113	2	653	132	28	670	57
Future Volume (vph)	2	819	31	2	453	113	2	653	132	28	670	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	*0.57	0.95	0.95	*0.68	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor		1.00			0.98			0.98			0.99	
Frt		0.991			0.969			0.969			0.987	
Flt Protected					0.999						0.997	
Satd. Flow (prot)	0	2031	0	0	2099	0	0	3362	0	0	3327	0
Flt Permitted		0.952			0.899			0.947			0.776	
Satd. Flow (perm)	0	1933	0	0	1889	0	0	3183	0	0	2588	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		422			213			448			247	
Travel Time (s)		9.6			4.8			10.2			5.6	
Confl. Peds. (#/hr)	111		63	63		111	71		62	62		71
Peak Hour Factor	0.50	0.94	0.54	0.25	0.93	0.89	0.25	0.87	0.66	0.57	0.86	0.72
Heavy Vehicles (%)	100%	5%	4%	2%	8%	15%	2%	2%	2%	72%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	33	0	0	0	0	0	0	0
Adj. Flow (vph)	4	871	57	8	487	127	8	751	200	49	779	79
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	932	0	0	622	0	0	959	0	0	907	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			10			10			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	1.09	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)	50.0	50.0		50.0	50.0		29.0	29.0		29.0	29.0	
Total Split (s)	55.0	55.0		55.0	55.0		45.0	45.0		45.0	45.0	
Total Split (%)	55.0%	55.0%		55.0%	55.0%		45.0%	45.0%		45.0%	45.0%	
Maximum Green (s)	49.0	49.0		49.0	49.0		40.5	40.5		40.5	40.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		-3.0			-3.0			-3.0			-3.0	
Total Lost Time (s)		3.0			3.0			1.5			1.5	
Lead/Lag	Lead	Lead		Lead	Lead		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?												
Walk Time (s)	27.0	27.0		27.0	27.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	17.0	17.0		17.0	17.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		52.0			52.0			43.5			43.5	
Actuated g/C Ratio		0.52			0.52			0.44			0.44	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.93			0.63			0.69			0.81	
Control Delay		34.7			14.0			20.6			29.6	
Queue Delay		0.0			0.0			0.4			2.9	
Total Delay		34.7			14.0			21.1			32.5	
LOS		C			B			C			C	
Approach Delay		34.7			14.0			21.1			32.5	
Approach LOS		C			B			C			C	
Queue Length 50th (ft)		476			126			181			263	
Queue Length 95th (ft)		#717			89			213			323	
Internal Link Dist (ft)		342			133			368			167	
Turn Bay Length (ft)												
Base Capacity (vph)		1005			982			1384			1125	
Starvation Cap Reductn		0			0			113			128	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.93			0.63			0.75			0.91	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green, Master Intersection			
Natural Cycle: 80			
Control Type: Pretimed			
Maximum v/c Ratio: 0.93			
Intersection Signal Delay: 26.5		Intersection LOS: C	
Intersection Capacity Utilization 84.7%		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.

Splits and Phases: 293: Exchange/State & Main

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lane Configurations							
Traffic Volume (vph)	1025	0	0	621	0	0	
Future Volume (vph)	1025	0	0	621	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	*0.54	1.00	1.00	*0.54	1.00	1.00	
Ped Bike Factor							
Frt							
Flt Protected							
Satd. Flow (prot)	1883	0	0	1883	0	0	
Flt Permitted							
Satd. Flow (perm)	1883	0	0	1883	0	0	
Right Turn on Red		No				No	
Satd. Flow (RTOR)							
Link Speed (mph)	30			30	30		
Link Distance (ft)	61			608	45		
Travel Time (s)	1.4			13.8	1.0		
Confl. Peds. (#/hr)					33	33	
Peak Hour Factor	0.91	0.90	0.90	0.86	0.90	0.90	
Heavy Vehicles (%)	9%	2%	2%	9%	2%	2%	
Adj. Flow (vph)	1126	0	0	722	0	0	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	1126	0	0	722	0	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	10			10	0		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)		9	15		15	9	
Number of Detectors	0			0			
Detector Template							
Leading Detector (ft)	0			0			
Trailing Detector (ft)	0			0			
Turn Type	NA			NA			
Protected Phases	1			1			2
Permitted Phases							
Detector Phase	1			1			
Switch Phase							
Minimum Initial (s)	26.0			26.0			6.0
Minimum Split (s)	32.0			32.0			28.0
Total Split (s)	72.0			72.0			28.0
Total Split (%)	72.0%			72.0%			28%
Maximum Green (s)	67.0			67.0			25.0
Yellow Time (s)	4.0			4.0			3.0
All-Red Time (s)	1.0			1.0			0.0
Lost Time Adjust (s)	-2.0			-2.0			
Total Lost Time (s)	3.0			3.0			
Lead/Lag	Lead			Lead			Lag

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø2
Lead-Lag Optimize?							
Vehicle Extension (s)	2.0			2.0			2.0
Recall Mode	C-Max			C-Max			None
Walk Time (s)	19.0			19.0			7.0
Flash Dont Walk (s)	7.0			7.0			16.0
Pedestrian Calls (#/hr)	0			0			1
Act Effct Green (s)	94.2			94.2			
Actuated g/C Ratio	0.94			0.94			
v/c Ratio	0.63			0.41			
Control Delay	2.7			2.8			
Queue Delay	0.0			0.0			
Total Delay	2.7			2.8			
LOS	A			A			
Approach Delay	2.7			2.8			
Approach LOS	A			A			
Queue Length 50th (ft)	0			42			
Queue Length 95th (ft)	m163			112			
Internal Link Dist (ft)	1			528	1		
Turn Bay Length (ft)							
Base Capacity (vph)	1774			1774			
Starvation Cap Reductn	13			0			
Spillback Cap Reductn	0			0			
Storage Cap Reductn	0			0			
Reduced v/c Ratio	0.64			0.41			

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: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.63			
Intersection Signal Delay: 2.7		Intersection LOS: A	
Intersection Capacity Utilization 45.0%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 294: Pedestrian Crossing & Main

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Appendix D

Pavement Information

- **Pavement Evaluation and Treatment Selection Report**

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PAVEMENT EVALUATION & TREATMENT SELECTION REPORT (PETSR)
8/15/2018

General
Region: 4 County: Monroe Route No.: E. Main St PIN: 4CR0.09

Project Description: Main Street Street Scape and Wayfinding - Phase 2

Begin RM: State St End RM: St. Paul Total Length: 1100'

Latest Pavement Rehabilitation/Treatment Date(s): 2010?? M&R / 2014 M&R

Original Contract Date(s): 1989

Related Pavement Data:
Traffic AADT (Range): 10,500 Date: 5/1/2018 % Trucks: 8
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: 5 Width(s): 11 ft

Type: ☐ Reinforced PCC ☐ Non-Reinforced PCC ☒ HMA ☐ HMA over PCC

Thickness (normal): 11.5" Total: 11.5" (HMA: 11.5" PCC: 0")

Reinforced and Non-Reinforced PCC Pavements only:
Slab Length: _____
Load Transfer Type: ☐ Dowels ☐ 2 Component
Transverse Joints: ☐ Contraction ☐ Expansion

Subbase: Yes Type: NYSDOT Type 1&2 Thickness(nominal): 5"-1; 6"-2

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)

8/15/2018

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	PCC Section
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 moderate to severe longitudinal and transverse cracking between State/Exchange and the Bridge over Genesee River. The PCC section located in the WB Bus lane has severe settlement/heaving.

EXISTING SHOULDER REMARKS: No Shoulder

REMARKS AND PAVEMENT RECOMMENDATIONS: Recommended one course mill/overlay with areas of multiple course pavement repair where distress extends below the binder course. Several piece of street metals will require adjustment as well a few areas of curb repair / replacement.

GEOTECHNICAL REMARKS AND RECOMMENDATIONS:

PAVEMENT EVALUATION & TREATMENT SELECTION REPORT (PETSR)
8/15/2018

Treatment Options:

1. 2" Top Course Mill and Overlay with areas of pavement repair where distresses extend below the binder course and Truing and Leveling of the Milled surface to fix any cross slope issues or minor profile changes.

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 below the binder course and Truing and Leveling of the Milled surface to fix any cross slope issues or minor profile changes.

If you have any questions regarding this report, please contact Sean Miller at 585-475-1440.

Prepared by: Sean W. Miller
Date: 8/15/18

Approved by:
Date:

Professional Engineering Seal for Recommendations to Use Beyond Preservation Treatments:

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Appendix E

Structures Information

- **Bridge Inspection Report**

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New York State Department of Transportation
General Bridge Inspection Report

Inspection Date: August 18, 2017

Structure Information

BIN: **2211270**
Feature Carried: MAIN STREET
Feature Crossed: GENESEE RIVER
Orientation: 3 - EAST

Region: 04 - ROCHESTER
County: MONROE
Political Unit: City of ROCHESTER
Approximate Year Built: 1865

Primary Owner: 42 - City
Primary Maintenance Responsibility: 42 - City
General Type Main Span: 8 - Masonry, 11 - Arch - Deck
This Bridge is not a Ramp
Number of Spans: 5

Postings

Inventoried Posted Load: Not Posted
Posted Load Matches Inventory: N/A

Inventoried Vertical Clearances:
On: Not Posted
Under: Not Posted

Number of Flags Issued

Red PIA: 0
Red: 0
Yellow: 0
Safety PIA: 1

New York State Inspection Overview

General Recommendation: 4

Federal NBI Ratings

NBI Deck Condition: 6
NBI Superstructure Condition: 6
NBI Substructure Condition: 5
NBI Channel Condition: 6
NBI Culvert Condition: N

Action Items

Non-Structural Condition Observations noted: NO
Vulnerability Reviews Recommended: NO
Diving Inspection Requested: NO
Further Investigation Requested: NO

Inspector & Reviewer Signature Information

Inspection Signature: Grant M. DeRue, P.E. 079891-1 *Date:* December 14, 2017
Review Signature: Thomas Sheehan, P.E. 063948-1 *Date:* December 14, 2017
Processed by : *Date:*

Report Printed: December 18, 2017 1:32:12 PM

Additional Information

Overloads Observed

No overload vehicles observed during this inspection.

Notes to Next Inspector

The BIN plate is on the begin side of the left headwall at the begin abutment.

2017 access used - walking, 40ft UBIU, and Lane Closure with Shadow vehicle. RG&E was contacted regarding our bridge access. We worked off of the right side of the structure, and the water was low enough to access the piers and abutment by walking the footings. PFDs were worn, and a life ring was present in case of emergency. Contact the City of Rochester DES to have the benches and planters moved prior to the inspection (coordination necessary).

Improvements Observed

None

Pedestrian Fence Height

None

Snow Fence

None

Bin Plate Condition

OK

Scour Critical Rating

8 - Foundation stable for conditions; scour above footing

Field Notes

Staff Present During Inspection		
Name	**Title**	**Organization**
Amanda B. Warmus	ATL	CVA
Dave Rudney	Laborer	CPWARD
Frank DiSalvo	Foreman	CPWARD
Hank Britton	UBIU Operator	CPWARD
Yvonne Agosto	UBIU Operator trainee - laborer	CPWARD

General Equipment Required for Inspection*
Access Type
13 - Walking
15 - Extension Ladder
16 - 40 foot Under Bridge Inspection Unit (UBIU)
24 - Diving
28 - Lane Closure Without Shadow Vehicle
29 - Lane Closure With Shadow Vehicle
30 - Other

*** For span specific equipment requirements refer to the Active Inventory's "Access Needs" tab in BDIS.**

Detailed Time & Weather Conditions				
Field Date	**Arrival**	**Departure**	**Temp (F)**	**Weather Conditions**
08/18/2017	08:30 AM	12:30 PM	75	Sunny

Inspection Times (hours)	
Time required for travel, inspection and report preparation	12
Lane closure usage	4
Railroad flagging time	No

Element Quantities

Element Assessment Summary Table							
Element	**Total Quantity**	**Unit**	**CS-1**	**CS-2**	**CS-3**	**CS-4**	**CS-5**
12 - Reinforced Concrete Deck	20565	ft^2	20565				0
145 - Masonry Arch	215	ft		211	4		0
210 - Reinforced Concrete Pier Wall	97	ft		97			0
213 - Masonry Pier Wall	291	ft		262	29		0
217 - Masonry Abutment	194	ft		182	12		0
220 - Reinforced Concrete Pile/Cap Footing	634	ft		634			0
330 - Metal Bridge Railing	254	ft	254				0
331 - Reinforced Concrete Bridge Railing	173	ft	171		2		0
510 - Wearing Surfaces	12720	ft^2		12720			0
515 - Steel Protective Coating	2860	ft^2	2860				0
800 - Erosion or Scour	970	ft	388	566	16		0
801 - Stream Hydraulics	1	each			1		0
810 - Sidewalk	7848	ft^2	7848				0
811 - Curb	425	ft		425			0

Element Assessment by Span							
Element**	**Total Quantity**	**Unit**	**CS-1**	**CS-2**	**CS-3**	**CS-4**	**CS-5**
Span Number : 1							
BA217 - Masonry Abutment	97	ft		92	5		0
BA220 - Reinforced Concrete Pile/Cap Footing	97	ft		97			0
BA800 - Erosion or Scour	97	ft	97				0
PR213 - Masonry Pier Wall	97	ft		93	4		0
PR220 - Reinforced Concrete Pile/Cap Footing	110	ft		110			0
PR800 - Erosion or Scour	194	ft		190	4		0
12 - Reinforced Concrete Deck	3225	ft^2	3225				0
510 - Wearing Surfaces	1995	ft^2		1995			0
145 - Masonry Arch	34	ft		30	4		0
330 - Metal Bridge Railing	34	ft	34				0
515 - Steel Protective Coating	366	ft^2	366				0
331 - Reinforced Concrete Bridge Railing	31	ft	31				0
801 - Stream Hydraulics	1	each			1		0
810 - Sidewalk	1230	ft^2	1230				0
811 - Curb	67	ft		67			0
Span Number : 2							

Element**	Total Quantity	Unit	CS-1	CS-2	CS-3	CS-4	CS-5
PR213 - Masonry Pier Wall	97	ft		77	20		0
PR220 - Reinforced Concrete Pile/Cap Footing	110	ft		110			0
PR800 - Erosion or Scour	194	ft	194				0
12 - Reinforced Concrete Deck	4697	ft^2	4697				0
510 - Wearing Surfaces	2905	ft^2		2905			0
145 - Masonry Arch	49	ft		49			0
330 - Metal Bridge Railing	62	ft	62				0
515 - Steel Protective Coating	653	ft^2	653				0
331 - Reinforced Concrete Bridge Railing	37	ft	35		2		0
810 - Sidewalk	1795	ft^2	1795				0
811 - Curb	97	ft		97			0
Span Number : 3							
PR210 - Reinforced Concrete Pier Wall	97	ft		97			0
PR220 - Reinforced Concrete Pile/Cap Footing	110	ft		110			0
PR800 - Erosion or Scour	194	ft		190	4		0
12 - Reinforced Concrete Deck	4705	ft^2	4705				0
510 - Wearing Surfaces	2910	ft^2		2910			0
145 - Masonry Arch	49	ft		49			0
330 - Metal Bridge Railing	62	ft	62				0
515 - Steel Protective Coating	653	ft^2	653				0
331 - Reinforced Concrete Bridge Railing	37	ft	37				0
810 - Sidewalk	1795	ft^2	1795				0
811 - Curb	97	ft		97			0
Span Number : 4							
PR213 - Masonry Pier Wall	97	ft		92	5		0
PR220 - Reinforced Concrete Pile/Cap Footing	110	ft		110			0
PR800 - Erosion or Scour	194	ft		186	8		0
12 - Reinforced Concrete Deck	4705	ft^2	4705				0
510 - Wearing Surfaces	2910	ft^2		2910			0
145 - Masonry Arch	49	ft		49			0
330 - Metal Bridge Railing	62	ft	62				0
515 - Steel Protective Coating	653	ft^2	653				0
331 - Reinforced Concrete Bridge Railing	37	ft	37				0
810 - Sidewalk	1795	ft^2	1795				0
811 - Curb	97	ft		97			0
Span Number : 5							
EA217 - Masonry Abutment	97	ft		90	7		0

Element**	Total Quantity	Unit	CS-1	CS-2	CS-3	CS-4	CS-5
EA220 - Reinforced Concrete Pile/Cap Footing	97	ft		97			0
EA800 - Erosion or Scour	97	ft	97				0
12 - Reinforced Concrete Deck	3233	ft^2	3233				0
510 - Wearing Surfaces	2000	ft^2		2000			0
145 - Masonry Arch	34	ft		34			0
330 - Metal Bridge Railing	34	ft	34				0
515 - Steel Protective Coating	535	ft^2	535				0
331 - Reinforced Concrete Bridge Railing	31	ft	31				0
810 - Sidewalk	1233	ft^2	1233				0
811 - Curb	67	ft		67			0

** Elements with a prefix designate the locations of BA-Begin Abutment, BW-Begin Wingwall, EA-End Abutment, EW-End Wingwall, CO-Culvert Outlet, and PR-Pier. No prefix generally indicates the element is part of the superstructure.

Inspection Notes

General Comments

2017: The wingwall elements have been removed from this inspection. There isn't a clear difference from the adjacent river walls to a specific bridge wingwall in any of the quadrants.

Safety PIA Flag 4B17P4W018 was issued with the following text:
"Near the bridge in the begin left and begin right approach quadrants, signal poles are missing their hand hole covers (1 in each quadrant - photos 1 and 3). Wires are exposed at each location (photos 2 and 4). The condition in the begin left quadrant is new.

The bridge is not posted for load."

The flage photos have been linked to this report as report photos 1-4. The flag has since been removed.

Element Condition Notes

	TQ	CS-1	CS-2	CS-3	CS-4	CS-5
Span 1: 145 - Masonry Arch	34	0	30	4	0	0
Span 2: 145 - Masonry Arch	49	0	49	0	0	0
Span 3: 145 - Masonry Arch	49	0	49	0	0	0
Span 4: 145 - Masonry Arch	49	0	49	0	0	0
Span 5: 145 - Masonry Arch	34	0	34	0	0	0

Condition State 2 Note

Referenced Photo(s): 5, 6, 10, 14, 16, 20

Referenced Sketch(es): None

2017: In all spans, the arches have areas of cracking, minor areas of missing mortar, and some leakage (photos 5, 6, 10, 14, 16, and 20). The steel plates in each span are being rated under masonry arch.

	TQ	CS-1	CS-2	CS-3	CS-4	CS-5
Span 1: 145 - Masonry Arch	34	0	30	4	0	0

Condition State 3 Note

Referenced Photo(s): 5, 6

Referenced Sketch(es): None

2017: The arch has a void that is on the begin face approximately 12ft from the left opening. The void it 6ft tall by 2.5ft wide by up to 1.5ft deep (photo 5). The stones surrounding the void are deteriorated and stained.

The begin face of the arch is missing a small stone near the right side scupper outlet (photo 6).

The remainder of this element in this span is rated CS-2.

	TQ	CS-1	CS-2	CS-3	CS-4	CS-5
Span 1: PR213 - Masonry Pier Wall	97	0	93	4	0	0

Condition State 3 Note

Referenced Photo(s): 7

Referenced Sketch(es): None

2017: There is a 9sf area of void on the left side of the end face of the pier (photo 7). The void is up to 1ft deep, but the stones at this location are stable. A few smaller stones are missing on the right end of the end face of the pier stem wall.

The remainder of this element in this span is rated CS-2.

	TQ	CS-1	CS-2	CS-3	CS-4	CS-5
Span 1: BA217 - Masonry Abutment	97	0	92	5	0	0

Condition State 3 Note

Referenced Photo(s): 5

Referenced Sketch(es): None

2017: There is a large are of loose, cracked, and missing stones near the left edge of the begin abutment (photo 5) that is located 2ft above the footing. The area is 5ft wide by 2.5ft high, by up to 3ft deep. One large stone is missing and another has shifted.

The remainder of the begin abutment stem has isolated areas of missing mortar and rates CS-2.

	TQ	CS-1	CS-2	CS-3	CS-4	CS-5
Span 1: PR800 - Erosion or Scour	194	0	190	4	0	0
Span 3: PR800 - Erosion or Scour	194	0	190	4	0	0
Span 4: PR800 - Erosion or Scour	194	0	186	8	0	0

Condition State 3 Note

Referenced Photo(s): 15, 17

Referenced Sketch(es): None

2017: Each pier has a concrete encasement around the masonry footings that have been founded on bedrock (photos 15 and 17). On the end sides of piers 1 and 3, small voids have formed below the concrete encasement. At pier 4, more substantial voids exist at the upstream and downstream noses of the pier. This data was listed in the 2014 diving inspection report.

The remainder of this element in each of these spans is rated CS-2.

	TQ	CS-1	CS-2	CS-3	CS-4	CS-5
Span 1: 801 - Stream Hydraulics	1	0	0	1	0	0

Condition State 3 Note

Referenced Photo(s): 8, 9, 15, 17

Referenced Sketch(es): 2

2017: The stream hydraulics defect history has been linked to this element.

The pier footings have a concrete encasement around them (photos 15 and 17). The 2014 diving inspection noted voids on the end sides of the pier 1 and pier 3 concrete encasements. The 2014 diving inspection also noted voids beneath the

encasement on the upstream and downstream sides of pier 4. No undermining of the actual masonry footings was noted.

Due to the bedrock river bed (photos 8 and 9), channel profile readings have historically not been taken for this structure.

	TQ	CS-1	CS-2	CS-3	CS-4	CS-5
Span 2: PR213 - Masonry Pier Wall	97	0	77	20	0	0

Condition State 3 Note

Referenced Photo(s): 11, 12

Referenced Sketch(es): None

2017: The begin face of the pier 2 masonry wall has areas of missing mortar near each opening (photos 11 and 12).

The remainder of this element in this span is rated CS-2.

	TQ	CS-1	CS-2	CS-3	CS-4	CS-5
Span 2: 331 - Reinforced Concrete Bridge Railing	37	35	0	2	0	0

Condition State 3 Note

Referenced Photo(s): 13

Referenced Sketch(es): None

2017: In span 2, the right side of the masonry and concrete railing section is missing mortar and a brick on its right side (photo 13). The remainder of this element in this span is rated CS-1.

	TQ	CS-1	CS-2	CS-3	CS-4	CS-5
Span 4: PR213 - Masonry Pier Wall	97	0	92	5	0	0

Condition State 3 Note

Referenced Photo(s): 18, 19

Referenced Sketch(es): None

2017: Pier 4 has an area of missing stones on the end face approximately 17ft from the right end (photos 18 and 19). The area is 5ft wide by 22in deep by 22in high. The area surrounding the missing stones appears to be stable with no signs of distress.

The remainder of this element is rated CS-2.

	TQ	CS-1	CS-2	CS-3	CS-4	CS-5
Span 5: EA217 - Masonry Abutment	97	0	90	7	0	0

Condition State 3 Note

Referenced Photo(s): 21

Referenced Sketch(es): None

2017: Near the left end of the end stem, there is a 7ft wide by 16in deep void with loose and broken stones directly above the footing (photo 21). There are no signs of displacement, distress, or a loss of fill.

The remainder of this element is rated CS-2.

Inspection Photographs

Attachment Description:
Begin left approach signal pole base from the left

Photo Number: **1** Photo Filename: **1-Begin left approach signal pole base from**

Attachment Description:
Begin left approach signal pole base from the left

Photo Number: **2** Photo Filename: **2-Begin left approach signal pole base from**

Attachment Description:
Begin right approach signal pole base from the end right

Photo Number: **3** Photo Filename: **3-Begin right approach signal pole base from**

Attachment Description:
Begin right approach signal pole base from the end side

Photo Number: **4** Photo Filename: **4-Begin right approach signal pole base from**

Attachment Description:
Left side of span 1

Photo Number: **5** Photo Filename: **5-Left side of span 1.JPG**

Attachment Description:
Begin right side of span 1

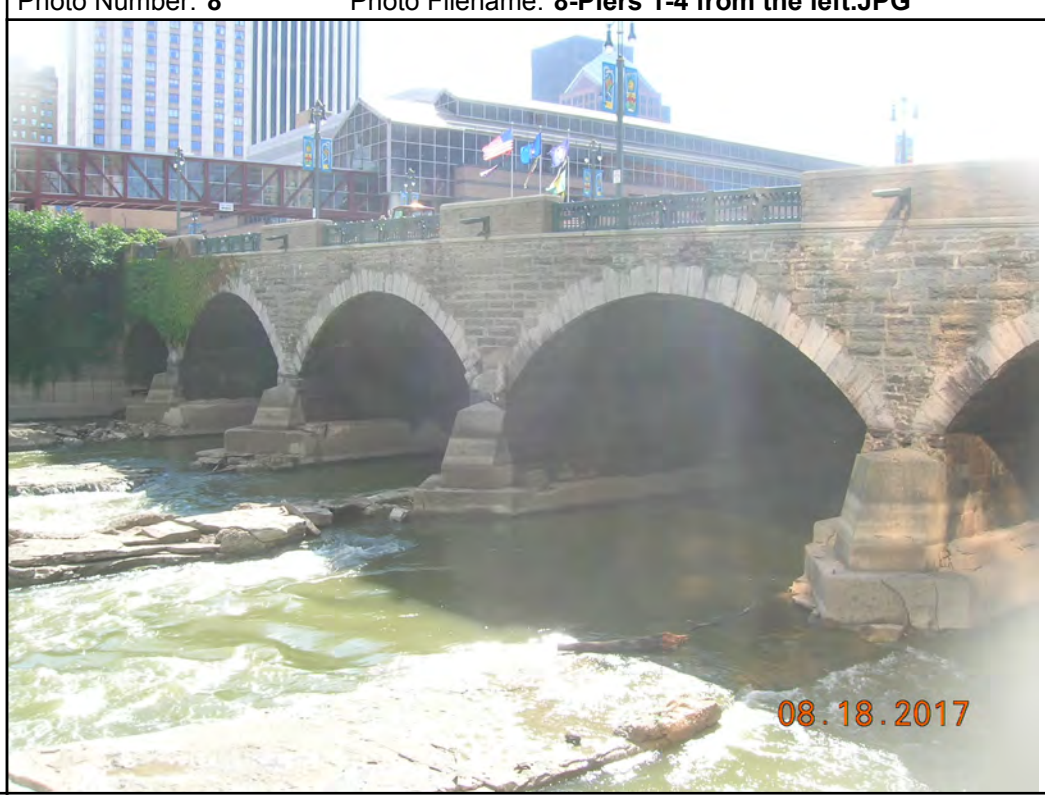
Photo Number: **6** Photo Filename: **6-Begin right side of span 1.JPG**

Attachment Description:
End left side of the pier 1 stem wall

Photo Number: **7** Photo Filename: **7-End left side of the pier 1 stem wall.JPG**

Attachment Description:
Piers 1-4 from the left

Photo Number: **8** Photo Filename: **8-Piers 1-4 from the left.JPG**



Attachment Description:
Spans 1-4 from the right

Photo Number: **9** Photo Filename: **9-Spans 1-4 from the right.JPG**

Attachment Description:
End left side of Span 2

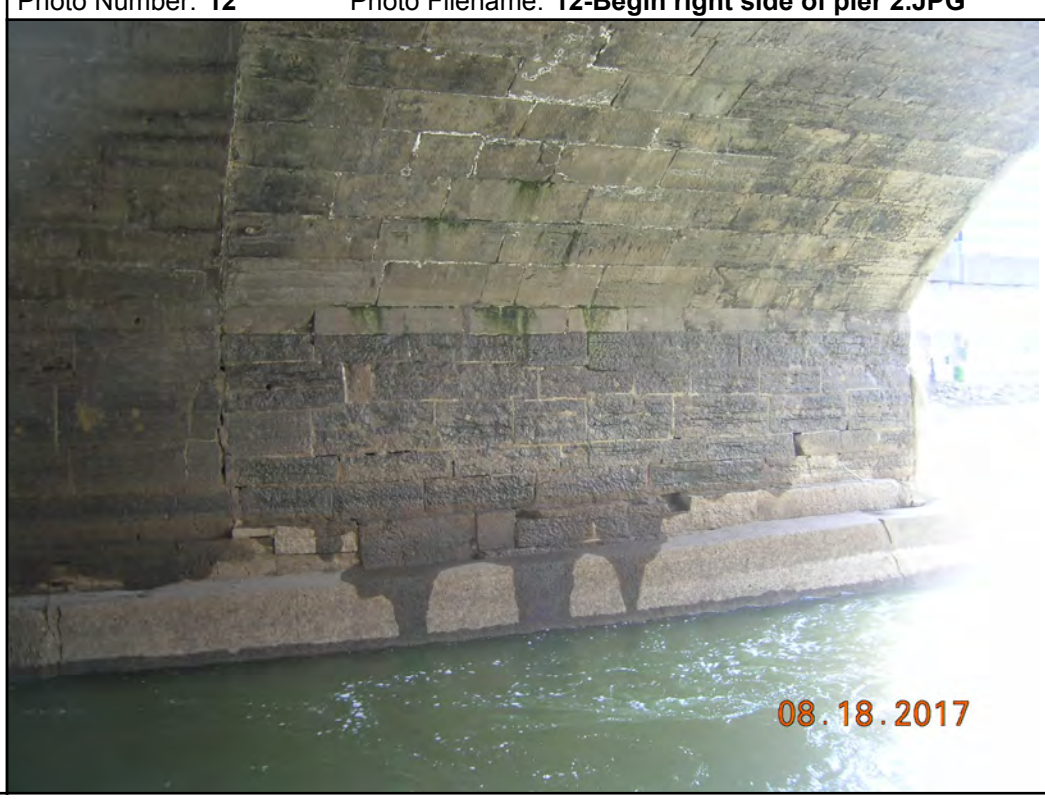
Photo Number: **10** Photo Filename: **10-End left side of Span 2.JPG**

Attachment Description:
Begin left side of pier 2

Photo Number: **11** Photo Filename: **11-Begin left side of pier 2.JPG**

Attachment Description:
Begin right side of pier 2

Photo Number: **12** Photo Filename: **12-Begin right side of pier 2.JPG**



Attachment Description:
Right side concrete-masonry rail in span 2 from the right

Photo Number: **13** Photo Filename: **13-Right side concrete-masonry rail in span 2**

Attachment Description:
End right side of the span 3 arch

Photo Number: **14** Photo Filename: **14-End right side of the span 3 arch.JPG**

Photo Number: **15** Photo Filename: **15-End right side of pier 3.JPG**

Attachment Description:
End right side of pier 3

Photo Number: **16** Photo Filename: **16-Span 4 arch from the end right.JPG**

Attachment Description:
Span 4 arch from the end right

Attachment Description:
Begin right side of pier 4

Photo Number: **17** Photo Filename: **17-Begin right side of pier 4.JPG**

Attachment Description:
End right side of the pier 4 stem wall from the left

Photo Number: **18** Photo Filename: **18-End right side of the pier 4 stem wall from**

Attachment Description:
End right side of the pier 4 stem wall from the right

Photo Number: **19** Photo Filename: **19-End right side of the pier 4 stem wall from**

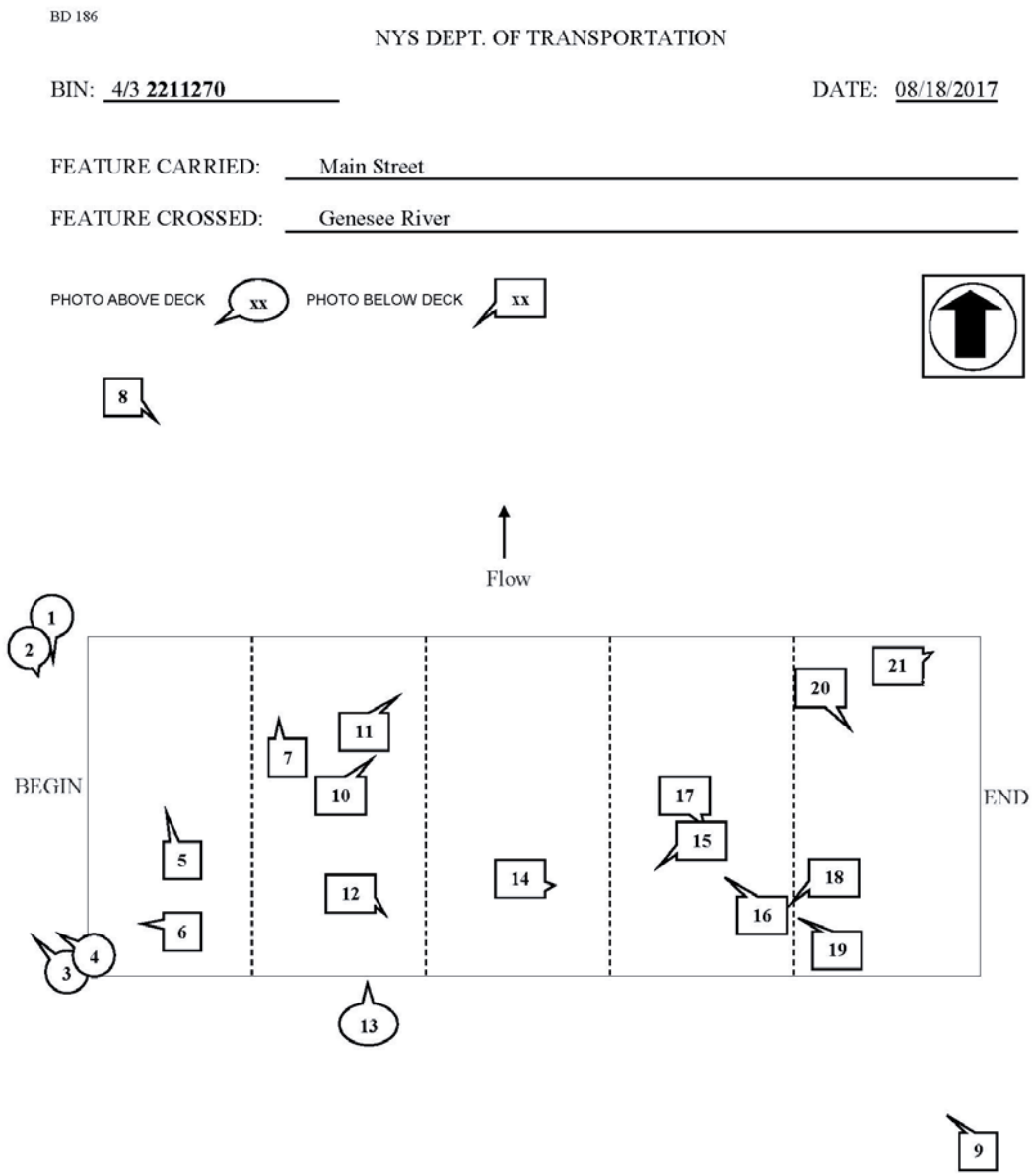
Attachment Description:
Span 5 from the begin left side

Photo Number: **20** Photo Filename: **20-Span 5 from the begin left side.JPG**

Attachment Description: Left side of the end abutment	Photo Number: **21** Photo Filename: **21-Left side of the end abutment.JPG** 

Inspection Sketches

Sketch Number: **1** Sketch Filename: **17PLP.jpg**



Sketch Description: Photo location plan

Sketch Number: **2** Sketch Filename: **Stream Hydraulics Defect History.jpg**

Agency Defined Element 801 - Stream Hydraulics Defect History

BIN: 2211270

ADE 801 DEFECTS		CONDITION STATES (CS)			
		Previous Inspections			Current Inspection
		dd/mm/yyyy	*dd/mm/yyyy*	*dd/mm/yyyy*	*dd/mm/yyyy*
6120	Channel Alignment				CS-1
6130	Channel Scour				CS-3
6140	Waterway Opening				CS-1
6150	Scour Protection				CS-2
6160	Bank Protection				CS-2
6165	Bank Erosion				CS-1
6180	Debris Near Bridge				CS-2
6190	Countermeasures				CS-5
	ADE 801 - Controlling Condition State =				CS-3

Inspector's Comment (comment required for each defect assessed CS-3 or CS-4):

There are voids below the concrete encasement at piers 1, 3, and 4. The voids are beneath the encasements and not the actual masonry footings (photos 15 and 17). This data is from the 2014 diving inspection.

Sketch Description: Stream Hydraulics Defect History

Sketch Number: **3** Sketch Filename: **17LoadRating.jpg**

NEW YORK STATE DEPARTMENT OF TRANSPORTATION
Region 4 Bridge Inspection Load Rating Review Form

B.I.N. 2211270 (Bridge Identification Number) Main Street (Feature Carried) over Genesee River (Feature Crossed)

1. **Current Load Rating**: 9/17/2015 (in BIN Folder) (Date)

2. Bridge Load Posting: Check box if no posting: ☑

3. **Updates Made to Plans by Inspector**: Check box if no updates: ☑

4. **Load Rating Condition Documentation**: Check box if no condition documentation: ☑

5. **Structural Flags Issued**: Check box if no structural flags issued: ☑

6. **Notes to Load Rating Engineer**: Check box if no notes to LRE: ☑

7. **Inspector**: Grant M. DeRue, PE **Date:** 8/18/2017

Sketch Description: Load rating form

New York State Department of Transportation
PIA Safety Flag 4B17P4W018

By: Grant M. DeRue
Flag Date: August 18, 2017

Superseding Information:

This flag supersedes: SF 4B15TPW040

Structure Information

BIN: **2211270**
Feature Carried: MAIN STREET
Feature Crossed: GENESEE RIVER
Orientation: 3 - EAST

Region: 04 - ROCHESTER
County: MONROE
Political Unit: City of ROCHESTER
Approximate Year Built: 1865

Bridge Load Posting (Tons) : Not Posted for Load

Primary Owner: 42 - City
Primary Maintenance Responsibility: 42 - City
Typical or Main Span Type: 8 - Masonry, 11 - Arch - Deck
This Bridge is not a Ramp
Number of Spans: 5

Verbal Notification Information

Person Notified: Bernadette Petroski
Date: August 18, 2017 2:17:00 PM

Of: R4 Regional Office

Signature Information

Signature: Grant M. DeRue, P.E. 079891-1
Date: August 18, 2017

Reviewed By: Thomas Sheehan
Date: August 18, 2017

Attachments: 4

PIA Safety Flag 4B17P4W018 BIN 2211270 Flag Date: August 18, 2017

Flagged Elements

No Flagged Elements

Flagged Condition Description

2017: Near the bridge in the begin left and begin right approach quadrants, signal poles are missing their hand hole covers (1 in each quadrant - photos 1 and 3). Wires are exposed at each location (photos 2 and 4). The condition in the begin left quadrant is new.

The bridge is not posted for load.

PIA Safety Flag 4B17P4W018 BIN 2211270 Flag Date: August 18, 2017

Flag Photographs

Photo Number: **1** Photo Filename: **1-Begin left approach signal pole base from the left.**

Attachment Description: **Begin left approach signal pole base from the left**

PIA Safety Flag 4B17P4W018 BIN 2211270 Flag Date: August 18, 2017

Photo Number: **2** Photo Filename: **2-Begin left approach signal pole base from the left.**

Attachment Description: **Begin left approach signal pole base from the left - close up**

PIA Safety Flag 4B17P4W018 BIN 2211270 Flag Date: August 18, 2017

Photo Number: **3** Photo Filename: **3-Begin right approach signal pole base from the end**

Attachment Description: **Begin right approach signal pole base from the end right**

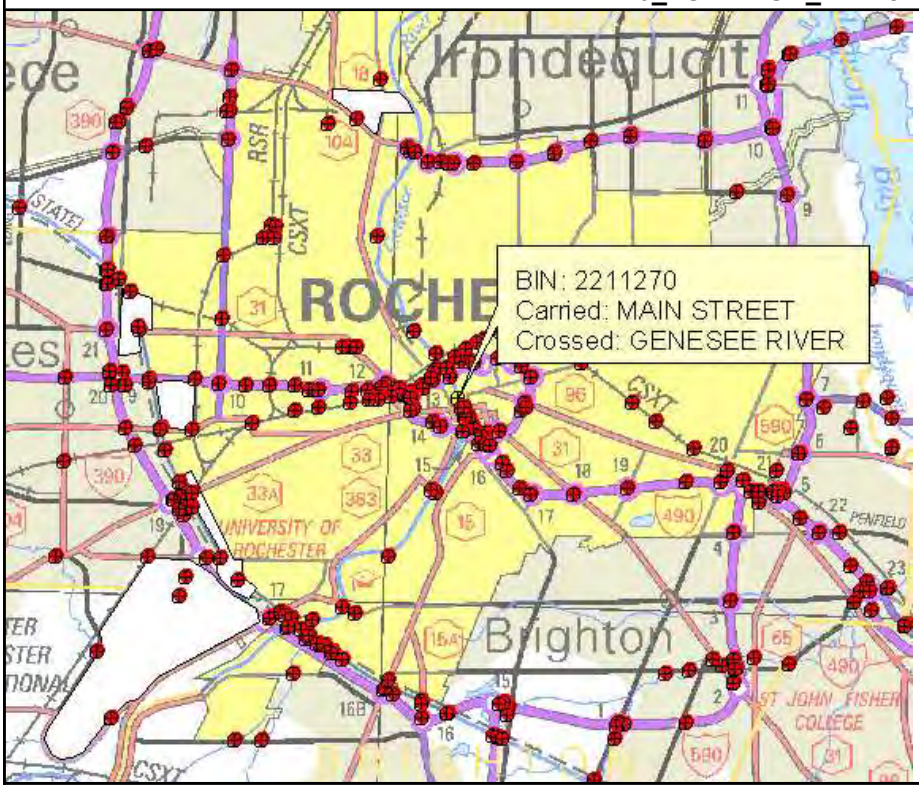
PIA Safety Flag 4B17P4W018 BIN 2211270 Flag Date: August 18, 2017

Photo Number: **4** Photo Filename: **4-Begin right approach signal pole base from the end**

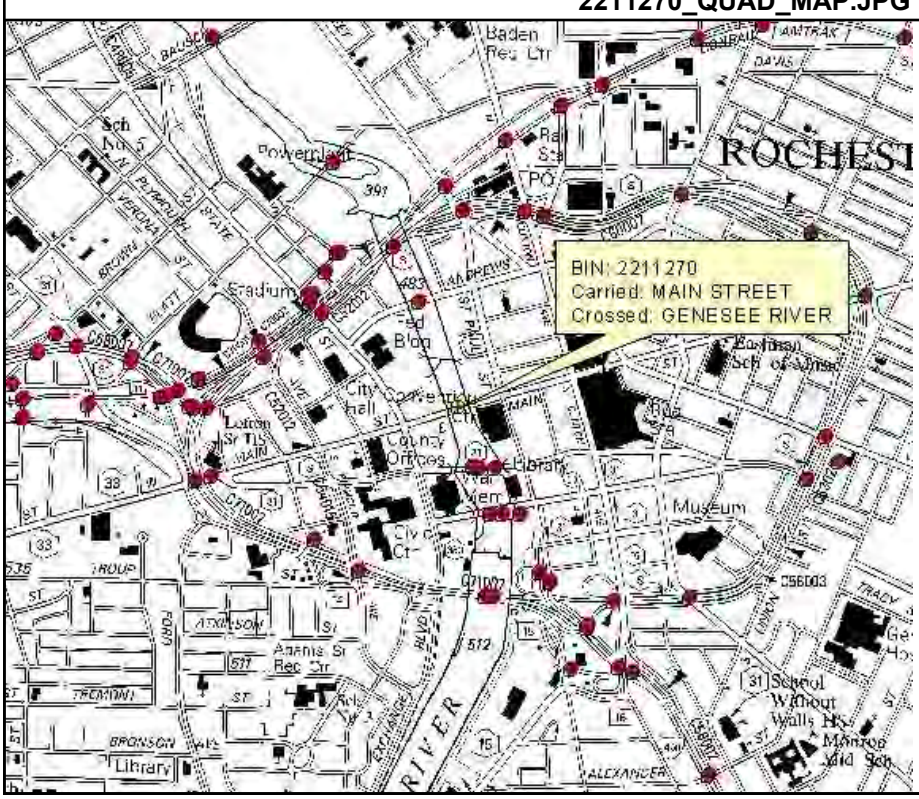
Attachment Description: **Begin right approach signal pole base from the end side**

Standard Photographs

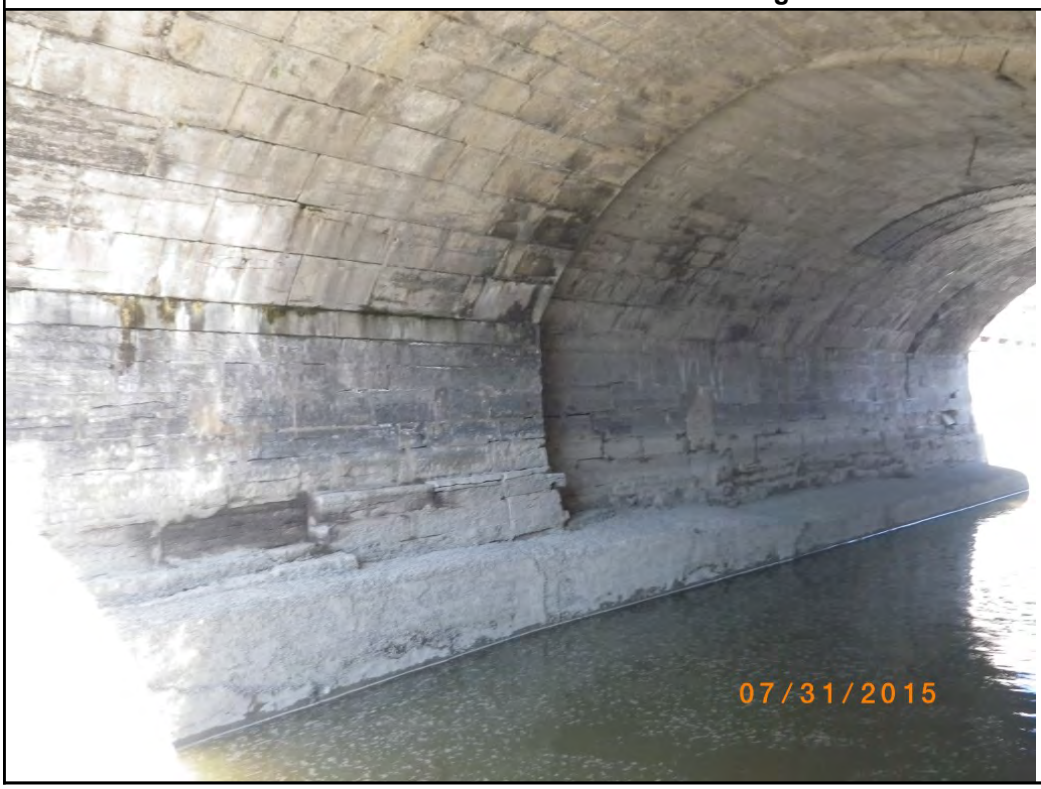
2211270_LOCATION_MAP.JPG



2211270_QUAD_MAP.JPG



AbutmentBegin.JPG



ApproachBegin.JPG

ApproachEnd.JPG

ElevationLeft.JPG

ElevationRight.JPG

F2CrossedLeft.JPG

F2CrossedRight.JPG

Framing.JPG

Pier2.JPG

Appendix F

Nonstandard Feature Justification

- **Nonstandard Feature Justification Form**

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Justification Number: 1

NEW YORK STATE OF OPPORTUNITY. Department of Transportation

Exhibit 2-15
Nonstandard Feature Justification

Rev. 04/24/17

PIN: 4CR0.09	**Route No. and Name:** East Main Street		
Project Type: 3R	☐ National Network/Qualifying Highway ☐ Access Highway		
Functional Class: Urban Principal Arterial - Other	**Design Classification (AASHTO Class):** Arterial - Urban		
ADT: 11,646	**% Trucks:** 8%	◉ NHS ○ Non-NHS	**Terrain:** Level

1. Description of Nonstandard Feature

Type of Feature: Cross Slope

Location: East Main Street

Latitude and Longitude (Linear Feature) **FROM** Lat: 43.155738 Long: -77.612434 **TO** Lat: 43.156045 Long: -77.611092

Latitude and Longitude (Point Feature) Lat: Long:

Standard Value:	1.5% to 2.5%	**Design Speed:**	30 MPH
Existing Value:	3.0%	**Recommended Speed - Existing:**	N/A
Proposed Value:	3%	**Recommended Speed - Proposed:**	N/A

2. Accident Analysis

Current Accident Rate[1]: 10.08 ◉ acc/mvm ○ acc/mev

From April 2015 **to** January 2018

Statewide Accident Rate: 2.59 ◉ acc/mvm ○ acc/mev

Is the Nonstandard Feature a contributing factor? ○ Yes ◉ No

Anticipated accident rates, severity, and costs:

The cause of the accidents that occurred along the project corridor within the three-year study period were not directly or indirectly caused by the existing roadway cross slope. There is no ancipated increase in the rate, severity, and cost of accidents along East Main Street.

3. Cost Estimates

Cost to fully meet standards: $560,000

Cost(s) for incremental improvements: $100,000

4. Mitigation

e.g., increased superelevation and speed change lane length for a non-standard ramp radius

Reconstruct this section of East Main Street or install a trench drain at the front edge of the sidewalk along the south side of East Main Street.

5. Compatibility with Adjacent Segments and Future Plans

Reconstructing this section of East Main Street and fixing the cross slope issue would be compatable with adjacent sections of Main Street; However, installing a trench drain at the front edge of the sidewalk along the south side of East Main Street would not be compatable with the adjacent sidewalk sections along Main Street.

6. Other Factors

e.g., social, economic, and environmental

Correction of the non-standard feature would require extensive roadway reconstruction or the installation of a trench drain at the front edge of sidewalk. This would require the reconstruction 400 to 500 LF of East Main Street between Exchange Boulevard / State Street and the East Main Street Bridge over the Gensee River. Additional work required would be major in terms of the overall cost of the project (increase project cost greater than 10%). In addition, this work falls outside of the scope and funding limits of this project.

7. Proposed Treatment (i.e., recommendation)

Based on engineering judgement, the recommendation is to leave the Non-Standard Feature as is. The Non-Standard Feature is not a contributing factor in the accident rate of this roadway.

[1] *Use accidents per million vehicle miles (acc/mvm) for linear highway segments; use accidents per million entering vehicles (acc/meh) for intersections.*

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Appendix G

Stakeholder and Public Input

- **Project Correspondence (Not Included)**

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Appendix H

Miscellaneous

- **Cost Estimate**
- **Smart Growth Screening Tool**
- **Quality Control Checklist**

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PROJECT: **MAIN STREET STREETSCAPE AND PEDESTRIAN WAYFINDING - PHASE II**
PIN 4CR0.09

DATE: **November 15, 2018**

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	City Street (TAP Eligible) QUANTITY	City Street (TAP Eligible) AMOUNT	City Street (Betterment) QUANTITY	City Street (Betterment) AMOUNT	MCDOT QUANTITY	MCDOT AMOUNT	MCPW QUANTITY	MCPW AMOUNT	COR Water QUANTITY	COR Water AMOUNT
203.02	UNCLASSIFIED EXCAVATION AND DISPOSAL	2250	CY	$ 40.00	$ 90,000.00	2100	$ 84,000.00	150	$ 6,000.00		$ -		$ -		$ -
206.0201	TRENCH AND CULVERT EXCAVATION	300	CY	$ 30.00	$ 9,000.00		$ -		$ -		$ -	300	$ 9,000.00		$ -
206.03	CONDUIT EXCAVATION AND BACKFILL INCLUDING SURFACE RESTORATION	2500	LF	$ 20.00	$ 50,000.00	1900	$ 38,000.00	425	$ 8,500.00	175	$ 3,500.00		$ -		$ -
304.12	SUBBASE COURSE TYPE 2	1225	CY	$ 60.00	$ 73,500.00	925	$ 55,500.00	245	$ 14,700.00	5	$ 300.00	25	$ 1,500.00	25	$ 1,500.00
402.000013	PLANT PRODUCTION QUALITY ADJUSTMENT TO HMA ITEMS	55	QU	$ 70.00	$ 3,850.00		$ -	55	$ 3,850.00		$ -		$ -		$ -
402.018903	TRUE & LEVELING F9, SUPERPAVE HMA, 80 SERIES COMPACTION	310	TON	$ 125.00	$ 38,750.00		$ -	310	$ 38,750.00		$ -		$ -		$ -
402.097203	9.5 F2 TOP COURSE HMA, 70 SERIES COMPACTION	625	TON	$ 110.00	$ 68,750.00		$ -	625	$ 68,750.00		$ -		$ -		$ -
402.198903	19 F9 BINDER COURSE HMA, 80 SERIES COMPACTION	60	TON	$ 175.00	$ 10,500.00		$ -	60	$ 10,500.00		$ -		$ -		$ -
402.378903	37.5 F9 BASE COURSE HMA, 80 SERIES COMPACTION	100	TON	$ 150.00	$ 15,000.00		$ -	100	$ 15,000.00		$ -		$ -		$ -
407.0102	DILUTED TACK COAT	1050	GAL	$ 6.00	$ 6,300.00		$ -	1050	$ 6,300.00		$ -		$ -		$ -
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	6200	SY	$ 4.50	$ 27,900.00		$ -	6200	$ 27,900.00		$ -		$ -		$ -
503.01030010	CEMENT CONCRETE FOUNDATION FOR PAVEMENT, UNREINFORCED, CLASS C (SPECIAL AREAS)	120	CY	$ 325.00	$ 39,000.00		$ -	120	$ 39,000.00		$ -		$ -		$ -
55X.XXXX	BRIDGE MAINTENANCE	1	LS	$ 150,000.00	$ 150,000.00		$ -	1	$ 150,000.00		$ -		$ -		$ -
604.XXXX	NEW DRAINAGE STRUCTURE	10	EA	$ 6,000.00	$ 60,000.00		$ -		$ -		$ -	10	$ 60,000.00		$ -
604.070401	ALTERING DRAINAGE STRUCTURES, LEACHING BASINS AND MANHOLES (ADJUSTMENTS)	15	EA	$ 925.00	$ 13,875.00		$ -		$ -		$ -	15	$ 13,875.00		$ -
605.XXXX	UNDERDRAIN	2100	LF	$ 10.00	$ 21,000.00		$ -	2100	$ 21,000.00		$ -		$ -		$ -
608.0101	CONCRETE SIDEWALK AND DRIVEWAYS	725	CY	$ 425.00	$ 308,125.00	725	$ 308,125.00		$ -		$ -		$ -		$ -
608.01030005	COLORED PORTLAND CEMENT CONCRETE SIDEWALK	160	CY	$ 475.00	$ 76,000.00	160	$ 76,000.00		$ -		$ -		$ -		$ -
608.21000003	CAST IRON EMBEDDED DETECTABLE WARNING UNITS	15	SY	$ 350.00	$ 5,250.00	15	$ 5,250.00		$ -		$ -		$ -		$ -
609.0251	GRANITE CURB (AS DETAILED) - TYPE I	2100	LF	$ 40.00	$ 84,000.00		$ -	2100	$ 84,000.00		$ -		$ -		$ -
609.0252	GRANITE CURB (AS DETAILED) - TYPE II	1300	LF	$ 50.00	$ 65,000.00		$ -	1300	$ 65,000.00		$ -		$ -		$ -
610.1404	TOPSOIL - SPECIAL PLANTING MIX	175	CY	$ 80.00	$ 14,000.00	175	$ 14,000.00		$ -		$ -		$ -		$ -
610.1400011	STRUCTURAL SOIL MIX (30")	300	CY	$ 105.00	$ 31,500.00	300	$ 31,500.00		$ -		$ -		$ -		$ -
611.0151	PLANTING - MAJOR DECIDUOUS TREES - 2 INCH CALIPER BALL & BURLAP, FIELD POTTED OR FIELD BOXED	25	EA	$ 1,250.00	$ 31,250.00	25	$ 31,250.00		$ -		$ -		$ -		$ -
611.17	PORTABLE DRIP IRRIGATION SYSTEM	25	EA	$ 45.00	$ 1,125.00	$25.00	$ 1,125.00		$ -		$ -		$ -		$ -
611.18	REMOVAL OF PORTABLE DRIP IRRIGATION SYSTEM	25	EA	$ 12.50	$ 312.50	25	$ 312.50		$ -		$ -		$ -		$ -
611.19020024	POST PLANTING CARE WITH REPLACEMENT - MINOR DECIDUOUS TREES	25	EA	$ 250.00	$ 6,250.00	25	$ 6,250.00		$ -		$ -		$ -		$ -
614.XXXX	TREE REMOVAL	21	EA	$ 750.00	$ 15,750.00	21	$ 15,750.00		$ -		$ -		$ -		$ -
615.XXXX	SITE FURNISHINGS	1	LS	$ 100,000.00	$ 100,000.00	1	$ 100,000.00		$ -		$ -		$ -		$ -
615.XXYY	BRIDGE ENHANCEMENTS	1	LS	$ 350,000.00	$ 350,000.00	1	$ 350,000.00		$ -		$ -		$ -		$ -
615.XXZZ	PLANTINGS FOR NEW PLANTERS	23	EA	$ 750.00	$ 17,250.00	23	$ 17,250.00		$ -		$ -		$ -		$ -
619.500100MO	TEMPORARY PAVEMENT, HMA	2000	SF	$ 4.00	$ 8,000.00		$ -	2000	$ 8,000.00		$ -		$ -		$ -
622.2ZXXYY08	PREFABRICATED BUS SHELTER	2	EA	$ 125,000.00	$ 250,000.00	2	$ 250,000.00		$ -		$ -		$ -		$ -
645.XXXX	TRAFFIC SIGNS	1	LS	$ 30,000.00	$ 30,000.00			0.8	$ 24,000.00	0.2	$ 6,000.00				
663.XXXX	HYDRANT RELOCATIONS	10	EA	$ 15,000.00	$ 150,000.00		$ -		$ -		$ -		$ -	10	$ 150,000.00
663.33	ADJUST EXISTING VALVE BOX ELEVATION	33	EA	$ 250.00	$ 8,250.00		$ -		$ -		$ -		$ -	33	$ 8,250.00
670.10010005	LIGHT STANDARD, SPECIAL - TYPE 1	18	EA	$ 12,500.00	$ 225,000.00	18	$ 225,000.00		$ -		$ -		$ -		$ -
670.10080005	LIGHT STANDARD, SPECIAL - TYPE 2	2	EA	$ 35,000.00	$ 70,000.00	2	$ 70,000.00		$ -		$ -		$ -		$ -
670.2602	RIGID PLASTIC CONDUIT, 2"	5000	LF	$ 10.00	$ 50,000.00	5000	$ 50,000.00		$ -		$ -		$ -		$ -

PROJECT: **MAIN STREET STREETSCAPE AND PEDESTRIAN WAYFINDING - PHASE II**
PIN 4CR0.09

DATE: **November 15, 2018**

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	City Street (TAP Eligible) QUANTITY	City Street (TAP Eligible) AMOUNT	City Street (Betterment) QUANTITY	City Street (Betterment) AMOUNT	MCDOT QUANTITY	MCDOT AMOUNT	MCPW QUANTITY	MCPW AMOUNT	COR Water QUANTITY	COR Water AMOUNT
670.2604	RIGID PLASTIC CONDUIT, 4"	1200	LF	$ 12.50	$ 15,000.00	1200	$ 15,000.00		$ -		$ -		$ -		$ -
680.521610MO	CONDUIT, PVC SCHEDULE 80, 4" DIAMETER	2400	LF	$ 14.00	$ 33,600.00	2400	$ 33,600.00		$ -		$ -		$ -		$ -
680.82210110	RECTANGULAR RAPID FLASHING BEACON (RRFB) ELECTRIC-POWERED WITH BREAKAWAY TRANFORMER BASE	4	EA	$ 15,000.00	$ 60,000.00	4	$ 60,000.00		$ -		$ -		$ -		$ -
680.XXXX	TRAFFIC SIGNALS	2	EA	$ 150,000.00	$ 300,000.00	0.5	$ 75,000.00	1.1	$ 165,000.00	0.4	$ 60,000.00		$ -		$ -
685.11	WHITE EPOXY REFLECTORIZED PAVEMENT STRIPES - 20 MILS	2025	LF	$ 1.50	$ 3,037.50		$ -	2025	$ 3,037.50		$ -		$ -		$ -
685.12	YELLOW EPOXY REFLECTORIZED PAVEMENT STRIPES - 20 MILS	2500	LF	$ 1.50	$ 3,750.00		$ -	2500	$ 3,750.00		$ -		$ -		$ -
686.01000011	WHITE PREFROMED THERMOPLASTIC REFLECTORIZED PAVEMENT STRIPES	1250	LF	$ 7.00	$ 8,750.00	750	$ 5,250.00	500	$ 3,500.00		$ -		$ -		$ -
686.02000011	YELLOW PREFROMED THERMOPLASTIC REFLECTORIZED PAVEMENT STRIPES	615	LF	$ 7.00	$ 4,305.00		$ -	615	$ 4,305.00		$ -		$ -		$ -
686.03000011	WHITE PREFROMED THERMOPLASTIC REFLECTORIZED PAVEMENT LETTERS	14	EA	$ 250.00	$ 3,500.00		$ -	14	$ 3,500.00		$ -		$ -		$ -
686.04000011	WHITE PREFROMED THERMOPLASTIC REFLECTORIZED PAVEMENT SYMBOLS	8	EA	$ 300.00	$ 2,400.00		$ -	8	$ 2,400.00		$ -		$ -		$ -
686.05000011	MULTI-COLOR PREFORMED THERMOPLASTIC REFLECTORIZED PAVEMENTSYMBOLS	12	EA	$ 2,000.00	$ 24,000.00		$ -	12	$ 24,000.00		$ -		$ -		$ -
698.04	ASPHALT PRICE ADJUSTMENT	3833	DC	$ 1.00	$ 3,833.00		$ -	3833	$ 3,833.00		$ -		$ -		$ -
698.05	FUEL PRICE ADJUSTMENT	100	DC	$ 1.00	$ 100.00		$ -	100	$ 100.00		$ -		$ -		$ -
698.06	STEEL / IRON PRICE ADJUSTMENT	100	DC	$ 1.00	$ 100.00		$ -	100	$ 100.00		$ -		$ -		$ -
	SUBTOTAL				**$ 3,041,363.00**	63.07%	**$ 1,918,162.50**	26.61%	**$ 809,275.50**	2.30%	**$ 69,800.00**	2.77%	**$ 84,375.00**	5.25%	**$ 159,750.00**
619.01	BASIC WORK ZONE TRAFFIC CONTROL	1	LS	$ 100,000.00	$ 100,000.00		$ 63,069.17		$ 26,608.97		$ 2,295.02		$ 2,774.25		$ 5,252.58
625.01	SURVEY OPERATIONS	1	LS	$ 50,000.00	$ 50,000.00		$ 31,534.59		$ 13,304.49		$ 1,147.51		$ 1,387.12		$ 2,626.29
637.12	ENGINEER'S FIELD OFFICE	12	MO	$ 2,250.00	$ 27,000.00		$ 17,028.68		$ 7,184.42		$ 619.66		$ 749.05		$ 1,418.20
637.34	OFFICE TECHNOLOGY AND SUPPLIES	1000	DC	$ 1.00	$ 1,000.00		$ 630.69		$ 266.09		$ 22.95		$ 27.74		$ 52.53
	SUBTOTAL				**$ 3,219,363.00**		**$ 2,030,425.63**		**$ 856,639.47**		**$ 73,885.14**		**$ 89,313.16**		**$ 169,099.59**
697.03	FIELD CHANGE PAYMENT	161000	DC	$ 1.00	$ 161,000.00		$ 101,541.37		$ 42,840.45		$ 3,694.99		$ 4,466.54		$ 8,456.65
	SUBTOTAL				**$ 3,380,363.00**		**$ 2,131,967.00**		**$ 899,479.92**		**$ 77,580.13**		**$ 93,779.71**		**$ 177,556.24**
	CONTINGENCY	10%	LS	$ 338,036.30	$ 338,036.30	10%	$ 213,196.70	10%	$ 89,947.99	10%	$ 7,758.01	10%	$ 9,377.97	10%	$ 17,755.62
	SUBTOTAL				**$ 3,718,399.30**		**$ 2,345,163.70**		**$ 989,427.92**		**$ 85,338.14**		**$ 103,157.68**		**$ 195,311.87**
699.040001	MOBILIZATION	1	LS	$ 148,735.97	$ 148,735.97		$ 93,806.55		$ 39,577.12		$ 3,413.53		$ 4,126.31		$ 7,812.47
	TOTAL CONSTRUCTION COST				**$ 3,867,135.27**		**$ 2,438,970.24**		**$ 1,029,005.03**		**$ 88,751.67**		**$ 107,283.98**		**$ 203,124.34**
	INFLATION (3% PER YEAR TO CONST. MID PT.)	2	YR	3.00%	$ 232,028.12		$ 146,338.21		$ 61,740.30		$ 5,325.10		$ 6,437.04		$ 12,187.46
	CONSTRUCTION INSPECTION (15%)			15.00%	$ 580,070.29		$ 365,845.54		$ 154,350.75		$ 13,312.75		$ 16,092.60		$ 30,468.65
	ROW COSTS (NONE)			0.00%	$ -		$ -		$ -		$ -		$ -		$ -
	TOTAL ALTERNATIVE COST				**$ 5,065,947.21**		**$ 3,195,051.02**		**$ 1,347,996.59**		**$ 116,264.69**		**$ 140,542.02**		**$ 266,092.89**

Smart Growth Screening Tool

PIN **4CR0.09**

Prepared By:

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: Albany Skyway

Location of Project: City of Albany, Albany County, New York

Brief Description: The Albany Skyway project will convert the underutilized elevated Interstate 787 interchange northbound ramp from Quay Street to Clinton Avenue into an urban linear park that will provide a landscaped connection for pedestrians and bicyclists between Downtown Albany and the Hudson River waterfront.

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 Main Street Streetscape and Pedestrian Wayfinding Phase II Project (hereafter, "Project") consists of milling and overlaying existing pavement, installation of new granite curb, sidewalk improvements, installation of benches, bicycle racks, electrical outlets and charging stations, street tree additions, and traffic and pedestrian signage and pavement markings on Main Street, over the Genesee River in the City of Rochester, New York. This Project is a continuation of Phase I of the same Project.

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 Project work involves additional street tree plantings and charging stations for electric transportation. The installation of charging stations improves existing infrastructure for sustainable transportation, which will reduce greenhouse gas emissions. Improved transportation options will also strengthen existing communities.

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 located in a developed area, and will promote downtown revitalization to the neighboring community. The improvements upon Phase I of the Project will benefit any user group looking to utilize the bridge area.

The Project is located above the Genesee River, which is included in the City of Rochester's Local Waterfront Revitalization Program. However, since the bridge is a functionally-dependent use, the Project will not affect the Genesee River negatively.

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 promotes different transportation options and opportunities for residents within the City of Rochester, while also beautifying the existing structure (i.e., tree plantings, updated outdoor seating over the Genesee River). The Project is not located within a brownfield site; therefore, there will be no brownfield redevelopment.

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 will provide updated and enhancement bicycle and pedestrian opportunities, while also promoting sustainable transportation (i.e., charging stations).

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)

There is a public information component to the transportation management plan. This plan is consistent with local, county, and state plans. There has been, and will continue to be, coordination between state and local officials and groups.

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 the public space on the existing structure, and will enhance the scenic nature of the surrounding area. Please refer to discussions above.

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: 4CR0.09

Project Name: Main Street Streetscape and Pedestrian Wayfinding, Phase II

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:

August 20, 2018

Signature | Date

Senior Environmental Analyst, EDR, D.P.C. | Hayley Effler

Title | Printed Name

Responsible Local Official (for local projects):

Signature | Date

Title | Printed Name

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
Title	Printed Name

NYSDOT Design Report Review Checklist

PIN:	**4CR0.09**	**Dates:**	**August 2018**	**Regional Reviewer[1]:**	**Sean W. Miller Stantec Consulting Services Inc.**
Project Description:		**Main Street Streetscape and Pedestrian Wayfinding, Phase II**		**Design Approval Grantor:**	**Holly E. Barrett City Engineer**
Functional Classification:		**Urban Principal Arterial Other**		**Design Classification:**	**Urban Arterial**
NHS[2]:		Yes ☒ No ☐		**Requested Action:**	**Final Design Report Document Review**
Part of 16 foot 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 mile of a 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 Fall of 2018
	☒	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 of 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?	
8	☒	Non-Standard Features to be created, worsened, or retained are identified? Associated safety concerns are discussed and explained?	One nonstandard feature is present and will be retained

1: The DQAB Project Development Section tracks time allotted for reviews.
2: 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
	☒	Non-Standard Features are justified in accordance with HDM § 2.8? Associated safety concerns are clearly addressed?	One element specific nonstandard feature is present and will be retained
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	☒	Complete Streets 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?	
22	☐	Was the GreenLITES scorecard completed?	