



2050 CONDITIONS & RECOMMENDATIONS

Date: July 23, 2020 Project #: 24667
 To: Shane Stack, PE, Missoula County Public Works Director
 From: Bincy Koshy, Rachel Grosso, Andy Daleiden, PE – Kittelson & Associates
 cc: Donny Pfeifer, PE – DJ&A

INTRODUCTION

In November 2019, Missoula County and the City of Missoula were jointly awarded a federal BUILD Grant for the development of infrastructure in the Mullan Area of Missoula, with the vision of “Proactively and Collaboratively Building a Better Missoula” (Reference 1). Kittelson & Associates, Inc. (Kittelson) prepared this memorandum to summarize the projected 2050 transportation conditions for the Mullan–BUILD project, herein referred to as the project. This assessment compiles the results of a range of tasks, including analysis of 2050 travel demand model outputs, intersection control evaluations for each project intersection and a roadway network evaluation. The primary intent of this effort was to evaluate and identify intersection control types and roadway cross sections to inform the project at the 30% design-level. As the project progresses into final design, Kittelson will work with the project team to evaluate multimodal elements in detail for incorporating into the design of the intersections and roadways for this project.

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Project Area

The project is in Missoula County, Montana, generally west of the Missoula city limits, and approximately five miles from downtown Missoula. The project area is bordered by W Broadway Street to the north, Mary Jane Boulevard to the east, Mullan Road to the south and George Elmer Drive to the west. Other key roadways include Flynn Lane and England Boulevard in the project area. The project area, with BUILD facilities, is displayed in Figure 1.

The project area includes three major east-west roadways (W Broadway Street, England Boulevard and Mullan Road) and three major north-south roadways (George Elmer Drive, Flynn Lane and Mary Jane Boulevard). The project will construct:

- ▶ England Boulevard between Flynn Lane and George Elmer Drive,
- ▶ Mary Jane Boulevard between W Broadway Street and Camden Street, and Melrose Place and Mullan Road, and
- ▶ George Elmer Drive between Pius Way and W Broadway Street.

Figure 1 Project Area



PROJECTED TRANSPORTATION SYSTEM CHARACTERISTICS

This section summarizes the projected 2050 future conditions of the land uses and transportation system in the project area.

Population & Employment Growth

The comprehensive growth plans and land use policies applicable to the study area (detailed in *Technical Memorandum #1: Existing Transportation Conditions*) designate the general Mullan Area as nearly 1,500 acres of land for development with plans for light industrial, commercial, and workforce housing in the vicinity of the nearby airport (Reference 1). In the Missoula Metropolitan Planning Organization (MPO) travel demand model, the traffic analysis zones (TAZ) located in the Mullan Area were projected to grow by an additional 4,800 housing units as part of the Mullan Area Master Plan scenario planning (Reference 2). Further details on the travel demand model are available in A. These changes in housing development are reflected in Figure 2. Most notable is the increase in households south of the Flynn Lane & W Broadway Street intersection and northwest of the Mary Jane Boulevard & Flynn Lane intersection, as the increased density in these areas will affect traffic patterns on these roads. Additionally, changes in employment across all sectors is displayed in Figure 3, with an expected 4,100 jobs augmented by the Mullan BUILD project development.

Figure 2 Projected Population Growth (2015 - 2050) at TAZ Level

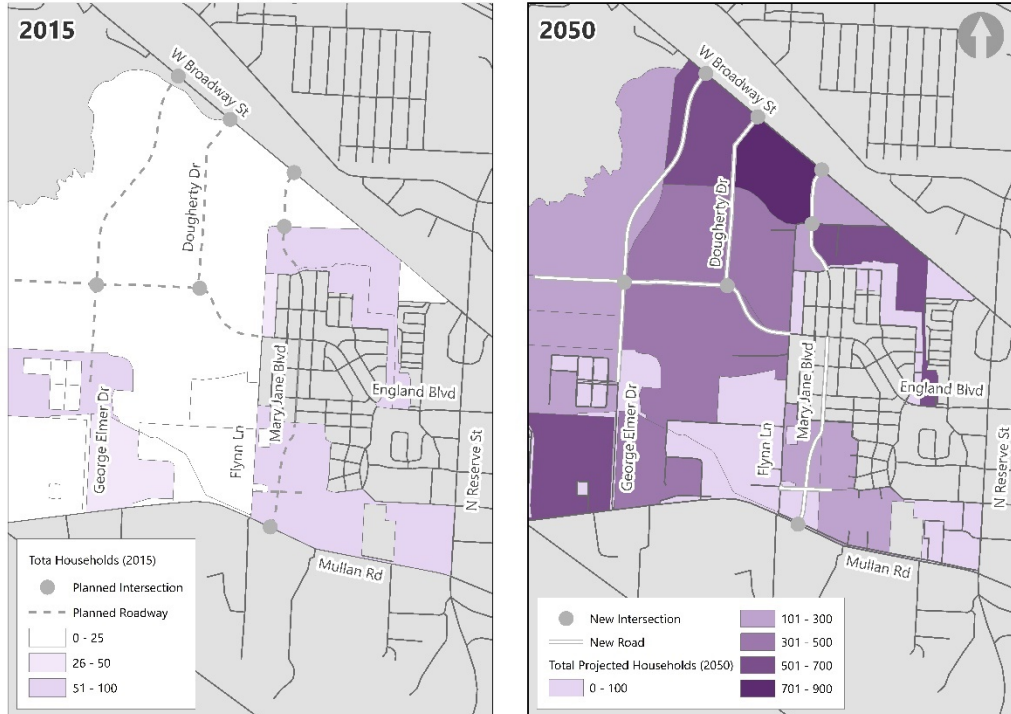
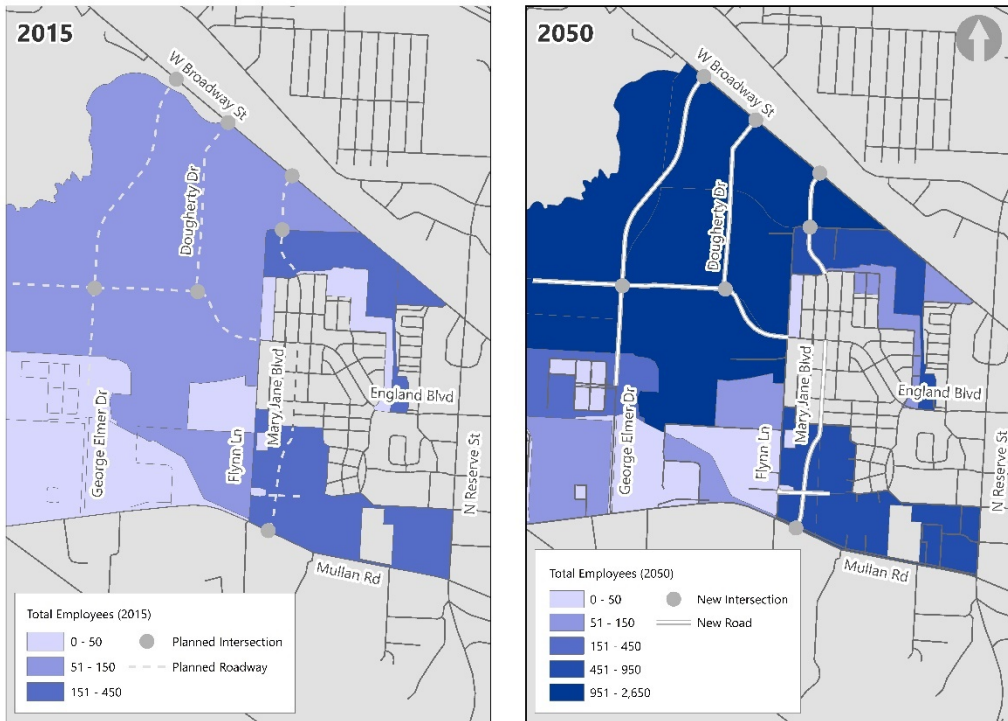


Figure 3 Projected Employment Growth (2015 - 2050) at TAZ Level



Roadway Network

Table 1 summarizes the roadway network characteristics for the project in comparison to current conditions.

Table 1 Roadway Network Characteristics

ROADWAY	EXTENTS	EXISTING CROSS-SECTION	PROPOSED FUNCTIONAL CLASSIFICATION & CROSS-SECTION	POSTED SPEED (MPH)
George Elmer Drive	W Broadway Street to England Boulevard	N/A	Two Lane Collector with Turn Lanes	30
	England Boulevard to Pius Way	N/A	Two Lane Collector with Turn Lanes	30
	Pius Way to Mullan Road	Two Lanes	Two Lane Collector with Turn Lanes	30
Flynn Lane	W Broadway Street to Mullan Road	Two Lanes	Two Lane Local	25
England Boulevard	George Elmer Drive to Flynn Lane	N/A	Two Lane Collector with Turn Lanes	30
Mary Jane Boulevard	W Broadway Street to Camden Street	N/A	Two Lane Collector with Turn Lanes	30



ROADWAY	EXTENTS	EXISTING CROSS-SECTION	PROPOSED FUNCTIONAL CLASSIFICATION & CROSS-SECTION	POSTED SPEED (MPH)
	Melrose Place to Mullan Road	N/A	Two Lane Collector with Turn Lanes	30
Mullan Road	George Elmer Drive to Mary Jane Boulevard	Two Lanes	Two Lane Arterial with Turn Lanes	45
	Mary Jane Boulevard to N Reserve Street	Two Lanes	Four Lane Arterial with Turn Lanes	45
W Broadway Street	Aviation Way to N Reserve Street	Five Lanes	No Change	55
N Reserve Street	W Broadway Street to Mullan Road	Five Lanes	No Change	45

Figure 4 displays the conditions of the 2050 model parameters, including functional classification and posted speed for the project area.

2050 Model Volumes

The Missoula MPO provided travel demand model daily, AM peak hour, and PM peak hour volumes for the year 2050. Figure 5 displays the projected daily volumes for 2050, and further information on the travel demand model is available in A. For each project intersection, Kittelson used the National Cooperative Highway Research Program (NCHRP) Report 765 (Reference 3) to estimate weekday AM and PM peak hour turning movement counts, derived from the 2050 model traffic volumes and existing traffic volumes collected in February 2020. This information can be found in B.

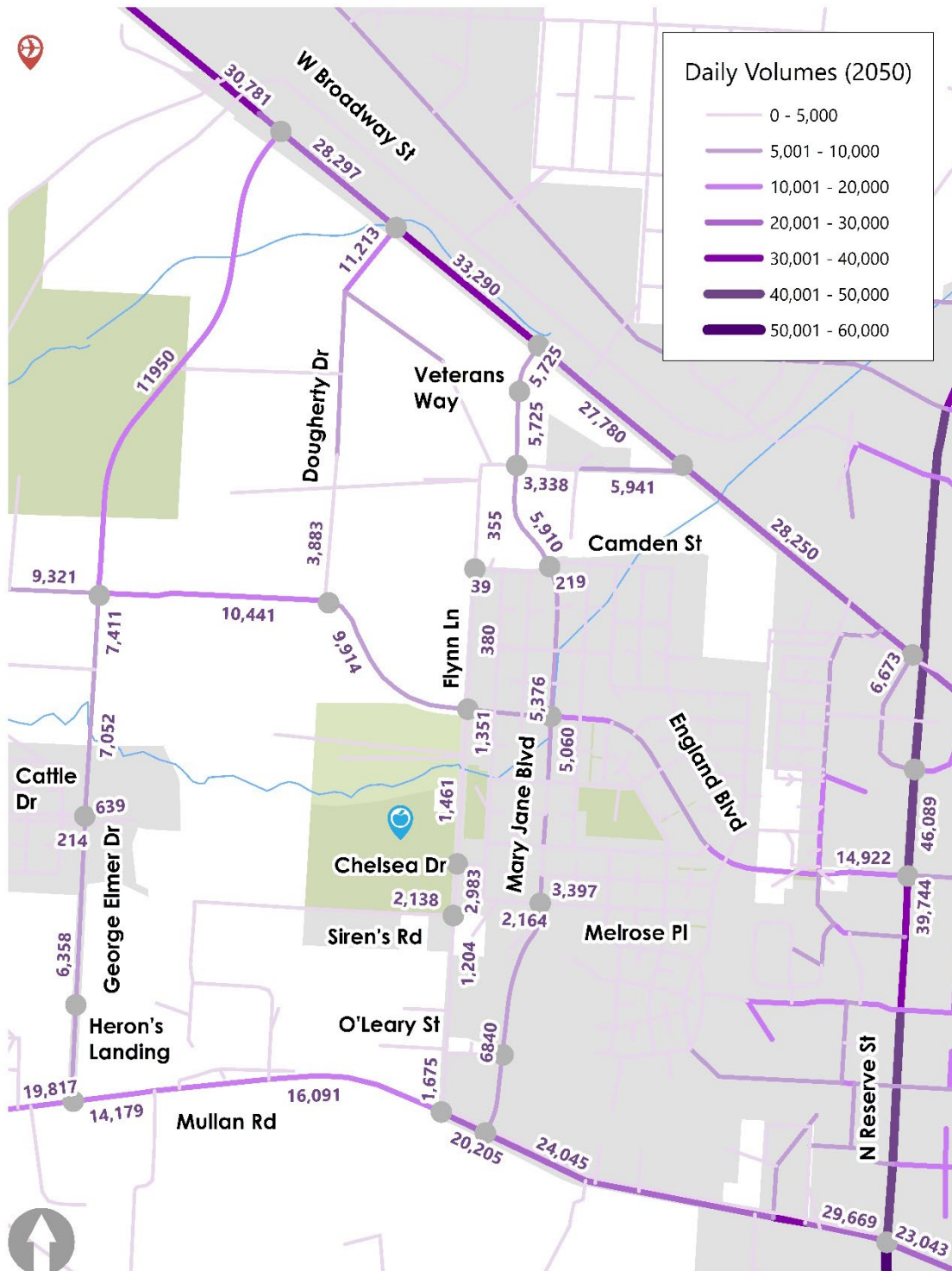
FREIGHT VOLUMES

The heavy vehicle percentages (HVP), calculated from the existing conditions data collection effort, were used where applicable in the new roadway network, but several HVPs were adjusted to reflect the higher classification roadways and additional connectivity of George Elmer Road and Mary Jane Boulevard over Flynn Lane. Further information on these approximate HVPs is available in C.

Figure 4 Roadway Network - Functional Classification & Posted Speed



Figure 5 Daily Traffic Volumes (2050)





Multi-Modal Network

MULLAN AREA MASTER PLAN

The Mullan Area Master Plan (MAMP), a concurrent effort with the Mullan BUILD project, identifies typical sections for the planned roadways in the Mullan Area. While these sections are preliminary, not yet engineered, and flexible for implementation, they include details about how people walking, rolling, biking and driving will share the street space as its built (Reference 4). The roadway network is displayed in Figure 6, and typical sections are depicted in Figure 7 and Figure 8.

As shown in Figure 7 and Figure 8, the project roads of Mary Jane Boulevard, England Boulevard, Dougherty Drive, and George Elmer Drive, all fall within the Main Collector or Neighborhood Collector typical section categories. These sections indicate the need for standard or buffered 6' bicycle lanes, standard 6' sidewalks with landscaped buffers and accommodations for transit buses.

HELLGATE ELEMENTARY SCHOOL

This K-8 school, located along Flynn Lane between Siren's Drive and Chelsea Drive, is an important community institution in the Mullan Area. The school is connected to the surrounding neighborhood by a detached paved asphalt trail and sidewalks on the west side of Flynn Lane between Mullan Road and Chelsea Drive. On the east side of Flynn Lane, there are detached sidewalks between Siren's Drive and Camden Street. Additionally, at the southern approach of the Flynn Lane/Chelsea Drive intersection, a high visibility crosswalk with a school zone flasher and curb bulb-outs serves as the transition point from a posted speed limit of 35 mph to 25 mph.

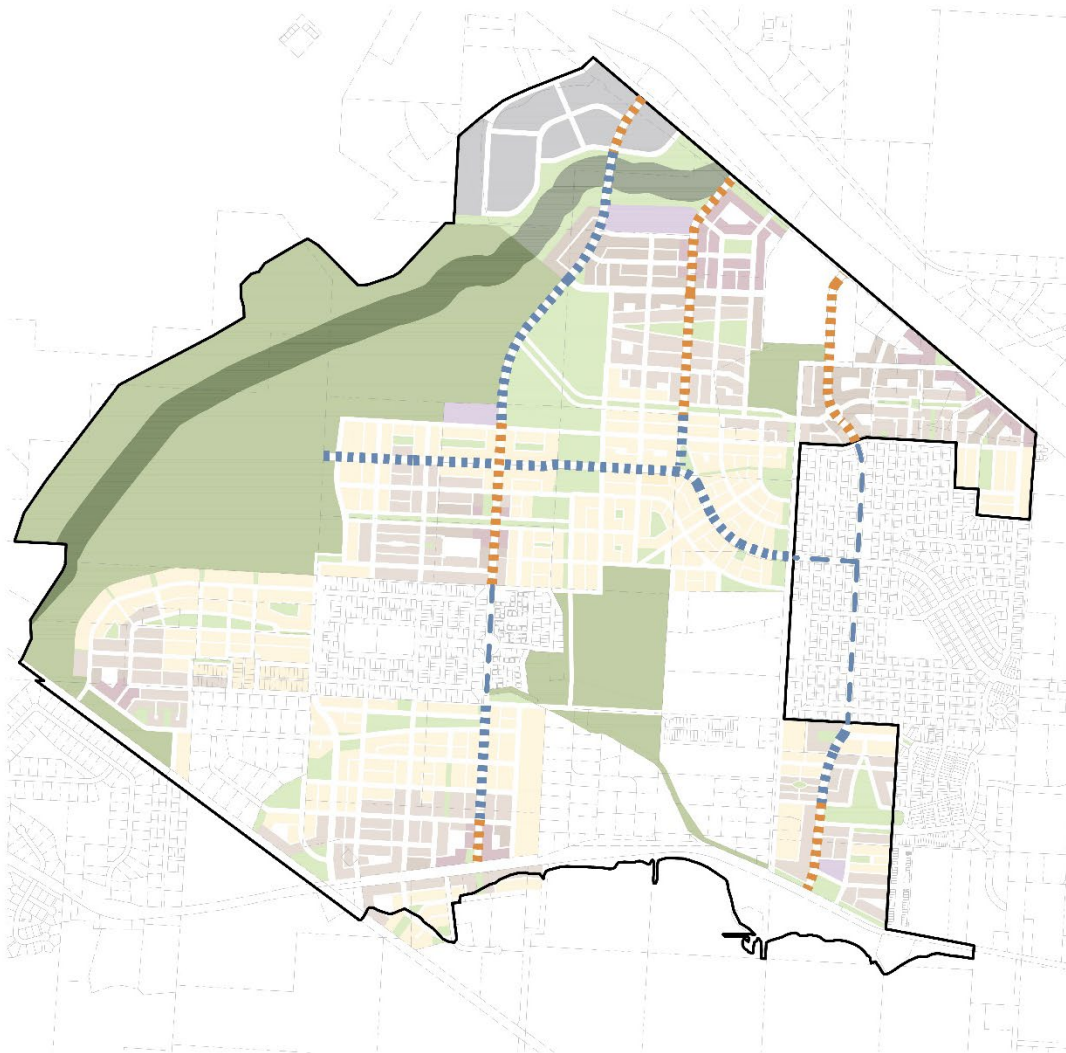
With the recommended intersection controls further described in subsequent sections, school bus routing will be altered due to the reconfiguration of the intersection of Flynn Lane and Mullan Road. To encourage the use of Mary Jane Boulevard as a primary north-south corridor in the eastern portion of the Mullan Area, the intersection of Flynn Lane & Mullan Road will be converted into an unsignalized right-in, right-out, left-in facility. This configuration will prevent southbound left turning traffic from Flynn Lane and redirect it to the intersection of Mary Jane Boulevard & Mullan Road over time. The objective of this configuration is both to redirect through traffic from Flynn Lane to Mary Jane Boulevard and to improve safety along this route due to the high volume of school-aged children using it. School bus routes that serve the areas east of Hellgate Elementary School and currently make a southbound left-turn at the intersection of Flynn Lane & Mullan Road, will require some alteration once these intersections are constructed.

Figure 6 Mullan Area Master Plan Street Atlas

MULLAN AREA MASTER PLAN
BUILD GRANT THOROUGHFARE STANDARDS

STREET ATLAS

- Main Street Collector
- Neighborhood Collector
- Neighborhood Collector Existing Street Segments



Mullan Area Master Plan - BUILD Grant Street Atlas

(preliminary draft for review)

Figure 7 Mullan Area Master Plan - Main Street Collector Typical Section

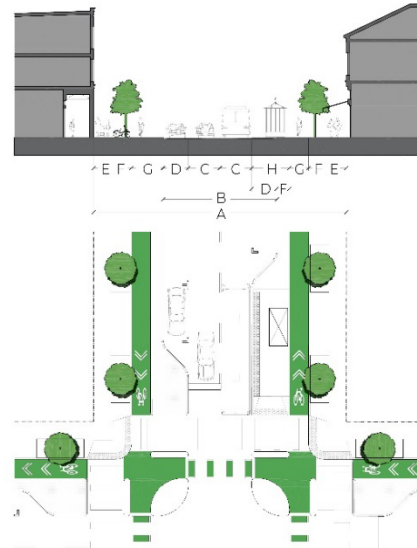
MULLAN AREA MASTER PLAN

BUILD GRANT THOROUGHFARE STANDARDS

STREET TYPES - TYPICAL SECTIONS AND INTERSECTIONS

The Typical Intersections shown represent possible intersection concepts only and are not fully engineered designs nor do they represent the full range of intersection treatments that may be appropriate.

A. Main Street Collector



Thoroughfare Type	Main Street Collector	
Right-of-Way Width	90 feet	A
Pavement Width	36 feet	B
Traffic Lanes	Two lanes - 10 feet wide	C
Transit	Bus	H
Bicycle / Micro-Mobility Facility	Two - 6' Protected Lanes 3 foot buffer	G
Parking Lanes/Curbside Flex Zone	Both sides @ 8 feet marked	D
Sidewalk: Clear & Frontage Zones	8 feet	E
Landscape Zone - Sidewalk	10' wide x 15' Tree Wells ¹	F
Landscape Type	Trees @ 35' o.c. average	F
Road Edge Treatment	Curb	
Green Infrastructure	Bioswale, Tree Box Filter	F

¹ Tree wells smaller than 7' wide by 15' are permitted if suspended pavement system is utilized.

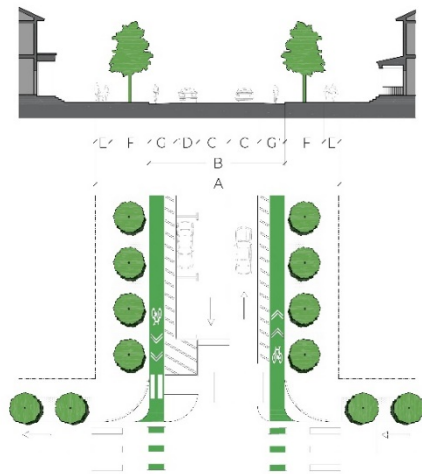
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Figure 8 Mullan Area Master Plan - Neighborhood Collector Typical Section

MULLAN AREA MASTER PLAN

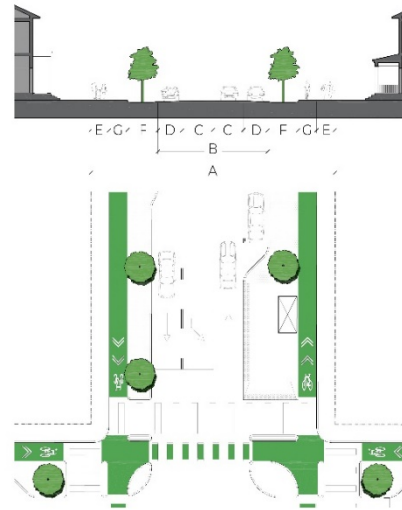
BUILD GRANT THOROUGHFARE STANDARDS

B. Neighborhood Collector — — —
Existing Street Segments



Thoroughfare Type	Neighborhood Collector Existing Street Segments	
Right-of-Way Width	80 feet	A
Pavement Width	44.5 feet	B
Traffic Lanes	Two - 10.5 foot drive lanes	C
Transit	Bus	
Bicycle / Micro-Mobility Facility	Two - 5' Protected Lanes 3 foot striped buffer	G
Parking Lanes/Curbside Flex Zone	One side @ 7.5 feet marked	D
Sidewalk: Clear & Frontage Zones	6 feet	E
Landscape Zone	12.75 foot continuous planter	F
Landscape Type	Trees @ 35' o.c. average	F
Road Edge Treatment	Curb	
Green Infrastructure	Bioswale	F

C. Neighborhood Collector ■ ■ ■



Thoroughfare Type	Neighborhood Collector	
Right-of-Way Width	90 feet	A
Pavement Width	36 feet	B
Traffic Lanes	Two - 10 foot drive lanes	C
Transit	Bus	
Bicycle / Micro-Mobility Facility	Two - 6' Protected Lanes	G
Parking Lanes/Curbside Flex Zone	Both sides @ 8 feet marked	D
Sidewalk: Clear & Frontage Zones	6 feet	E
Landscape Zone	10 to 15 foot continuous planter	F
Landscape Type	Trees @ 35' o.c. average	F
Road Edge Treatment	Curb	
Green Infrastructure	Bioswale	F

The Typical Intersections shown represent possible intersection concepts only and are not fully engineered designs nor do they represent the full range of intersection treatments that may be appropriate.

(preliminary draft for review)



TRAILS

In addition to the new roadways and intersections that will be designed and constructed as part of the project, 3.7 miles of new multi-use trails will also be included: the Grant Creek Trail, the Milwaukee Trail, the Tipperary Way Trail, the Flynn Lane Trail, and the Mullan Trail (Reference 1). These trails will include 10' asphalt paths with 1' shoulders. Major crossing locations, such as those at George Elmer Drive, Flynn Lane, and Mary Jane Boulevard are planned to include either rectangular rapid flashing beacons (RRFBs) or other crossing treatment to alert people driving of the presence of people walking, rolling, and biking (Reference 5). The trail components of the project are as follows:

- ▶ Grant Creek Trail
 - This trail extends south from W Broadway Street towards the Flynn Lane Trail.
 - This trail crosses George Elmer Drive just north of the creek.
- ▶ Milwaukee Trail
 - This trail connects the existing Mullan Trail northwest towards Grant Creek.
 - This trail will eventually provide a connection with the Grant Creek Trail.
- ▶ Tipperary Way Trail
 - This trail leads from Hellgate Elementary School towards Grant Creek along the Flynn Lowney Ditch, connecting with the Milwaukee Trail.
 - This trail crosses George Elmer Drive along the alignment of the Flynn Lowney Ditch, which is approximately 200 feet southeast of Filly Lane.
- ▶ Flynn Lane Trail
 - This trail extends north and west from its current terminus at Hellgate Elementary School, also connecting to the Grant Creek Trail.
 - As it traverses north, this trail crosses the new fourth leg of the Flynn Lane & England Boulevard intersection.
 - As the trail veers west after it reaches the bend of Flynn Lane, it crosses George Elmer Drive before crossing the creek and connecting with the Grant Creek Trail.
- ▶ Mullan Trail
 - This trail extends 0.75 miles from its current terminus to connect with the existing facilities along Reserve Street.
 - This trail is currently routed north of Mullan Road. Along the northern alignment, it crosses George Elmer Drive and crosses Flynn Lane towards Mary Jane Boulevard.
 - At the intersection of Mary Jane Boulevard with Mullan Road, the trail crosses and realigns south of Mullan Road towards Reserve Street.



TRANSIT NETWORK

Missoula Urban Transportation District (MUTD) operates the transit service in Missoula, called Mountain Line. Route 11 provides service every 60 minutes from 6 AM to 9 AM, 12 PM to 2 PM, 3 PM to 5 PM and at 6 PM between the Downtown Transfer Center and Missoula International Airport. Route 11 has stops on the eastern boundary of the project area on England Boulevard and northern boundary of the project area on W Broadway Street. In their long-range plan, MUTD identified the addition of route 15B to their service offerings, which will operate along England Boulevard, serving the expanded Mullan Area. This route is a part of MUTD's long term network, and as such, the expanded route and bus stop locations will be determined as funding becomes available and development occurs in the project area (Reference 6).

ANALYSIS METHODOLOGY

Kittelson analyzed future (2050) conditions to identify suitable options for intersection control and roadway segments in the project area. The purpose of the evaluation is to identify a preferred intersection control and the number of vehicular travel lanes for roadway segments based on 2050 traffic projections. Based on the study objectives, Kittelson used the safety performance and traffic operations results as primary drivers for selection of the recommended intersection control.

Intersection Methodology

Kittelson utilized the turning movement counts produced by the NCHRP 765 methodology to evaluate intersection control options based on 2050 AM and PM peak hour traffic volumes. Appendix B illustrates the process for developing 2050 AM and PM peak hour traffic volumes at the intersections.

TRAFFIC OPERATIONS

Working in PTV Vistro, four scenarios were developed for both the AM and PM peak HOURS, based on control type: Two Way Stop Control (TWSC), Signal, Roundabout (single-lane and multi-lane), and All Way Stop Control (AWSC). These scenarios were analyzed using the guidance of the 6th Edition of the Highway Capacity Manual (HCM) (Reference 7) as follows:

- ▶ All intersections were tested as TWSC. Intersections with failing movements and higher volume movements were evaluated for left-turn and right-turn lane warrants (Reference 8, Reference 9, and Reference 10).
- ▶ Intersections that met the Manual on Uniform Traffic Control Devices (MUTCD) signal warrants were evaluated as signalized intersections. MUTCD signal warrants #1, #2 and #3 were used in the evaluation (Reference 11).
- ▶ All intersections were tested as single-lane roundabouts with some being evaluated as multi-lane roundabouts to address any movement deficiencies.
- ▶ A few intersections were tested as AWSC due to an operational deficiency as a TWSC and not meeting MUTCD signal warrants.



SAFETY

In addition to the operational analysis, intersection safety analyses were performed by adapting the pedestrian risk score methodology developed by the Missoula MPO in their Pedestrian Facilities Master Plan (Reference 12). This analysis, utilizing the parameters of vehicular posted speed, vehicular daily traffic, and number of vehicular lanes, quantifies the level of risk that an unmitigated intersection poses for a person walking via a spreadsheet tool. The criteria, and associated risk scoring, are delineated in Table 2.

Table 2 Pedestrian Risk Scoring

SPEED (MPH)	POINTS	VOLUME (AADT)	POINTS	LANES	POINTS
25	1	<3,000	1	2	1
30	2	3,001 – 9,000	2	3	2
35	3	9,001 – 15,000	3	4	3
40	4	>15,001	4	5	4
45+	5	-	-	-	-

Additionally, Kittelson performed a safety analysis evaluating crash modification factors for total crashes and crash severity for the different intersection controls. This assessment is based on Highway Safety Manual methodology (Reference 13 and Reference 14) and the crash modification factor clearinghouse (Reference 14). Crash modification factors quantify the expected crash reduction associated with each intersection control are summarized in Table 3 (based on countermeasure scenario) and Table 4 (based on crash severity). In the case of a signalized intersection as a countermeasure, total number of crashes may be lower, however, crash severity will be generally low compared to a stop-controlled intersection. In the case of a roundabout at an intersection as a countermeasure, crash severity will be lower, compared to stop-controlled and signalized intersection. However, number of crashes are generally higher in case of a multi-lane roundabout when compared to a single-lane roundabout and traffic signal.

As needed for the project, Kittelson plans to prepare a separate memorandum to further analyze the safety component in detail at Flynn Lane and W Broadway Street, and Mary Jane Boulevard and W Broadway Street intersections after selection of intersection control type is determined. This memorandum will support the potential for securing funding associated with the Highway Safety Improvement Program (HSIP).



Table 3 Crash Modification Factors based on Intersection Control (All Crash Types)

COUNTERMEASURE	CMF	CRF ²	QUALITY RATING ¹
Convert Intersection from Stop Control to Right-In/Right-Out	0.55	45	4 Stars
Convert an Open Median to a Left-In Only Median	0.95	5	3 Stars
Convert Intersection from Minor Road Stop Control to All Way Stop Control	0.319	68.1	4 Stars
Convert Intersection from Stop Control to Signal	0.56	44	5 Stars
Convert Intersection from Stop Control to Signal (major road 40 mph)	0.95	5	4 Stars
Convert Intersection from Stop Control to Single-Lane Roundabout	0.56	44	5 Stars
Convert Intersection from Stop Control to Multi-Lane Roundabout	0.88-0.95	12-5	3 Stars
Convert Intersection from Signal to Single-Lane Roundabout	0.74	26	4 Stars
Convert Intersection from Signal to Multi-Lane Roundabout	0.81	19	4 Stars

Source: CMF Clearinghouse

Table 4 Crash Modification Factors based on Intersection Control (Crash Severity)

COUNTERMEASURE	CMF	CRF ²	QUALITY RATING ¹
Convert Intersection from Minor Road Stop Control to All Way Stop Control	0.23	77	4 Stars
Convert an Open Median to a Left-In Only Median	0.95	5	3 Stars
Install a Traffic Signal	0.782	21.8	4 Stars
Convert Intersection with Minor-Road Stop Control to Modern Roundabout (Single-Lane Roundabout)	0.22	78	4 Stars
Convert Intersection with Minor-Road Stop Control to Modern Roundabout (Multi-Lane Roundabout)	0.32	68	4 Stars
Convert Signalized Intersection into Single- or Multi-Lane Roundabout (Single-Lane Roundabout)	0.45	55	3 Stars
Convert Signalized Intersection into Single- or Multi-Lane Roundabout (Multi-Lane Roundabout)	0.29	71	4 Stars

Source: CMF Clearinghouse

Segment Methodology

Kittelton evaluated the project roadway segments based on 2050 daily traffic volumes using planning-level daily traffic volume thresholds from the Florida Department of Transportation's (FDOT) Quality/Level of Service Handbook tables (Reference 15). These planning-level thresholds are based on HCM methodology (Reference 7) and factor in roadway characteristics and land use-type considerations. These thresholds are used nationally as a reference guide for preliminary analysis of roadway cross-sections. Additionally, Kittelson used the intersection operations findings to assess consistency between the roadway segment analysis and lane arrangements identified at the study intersections.

¹ The star quality rating indicates the quality or confidence in the results of the study producing the CMF. The star rating is based on a scale of 1 to 5, with 5 indicating the highest or most reliable rating.

² The Crash Reduction Factor (CRF) indicates a decrease in crashes (%).



INTERSECTION AND ROADWAY CROSS-SECTION EVALUATION

This section describes the preliminary traffic control and cross-section options that can function at an acceptable LOS and under capacity at the intersections and on the segments under year 2050 traffic conditions. LOS D is used as the intersection LOS threshold. A volume-to-capacity ratio (V/C) of 0.90 is used as the movement V/C threshold for unsignalized and signalized intersections within the project area.

2050 Roadway Network Evaluation

The results of the level of service analysis are delineated in Table 5. All roadways are projected to operate at an acceptable level of service under year 2050 conditions with the proposed number of lanes.

Table 5 Roadway Level of Service (2050)

ROADWAY (LIMITS)	LANES	ADT (2050)	POSTED SPEED (MPH)	FUNCTIONAL CLASS	LEVEL OF SERVICE
West Broadway Street (Aviation Drive to Flynn Lane)	Four Lanes with Turn Lanes	30,780	55	Principal Arterial	C
George Elmer Drive (W Broadway Street to Pius Way)	Two Lanes with Turn Lanes	11,950	30	Collector	B
George Elmer Drive (Pius Way to Mullan Road)	Two Lanes with Turn Lanes	7,050	30	Collector	B
England Boulevard (George Elmer Drive to Flynn Lane)	Two Lanes with Turn Lanes	10,300	30	Collector	C
Mary Jane Boulevard (W Broadway Street to Camden Street)	Two Lanes with Turn Lanes	5,725	30	Collector	C
Mary Jane Boulevard (Camden Street to Melrose Place)	Two Lanes with Turn Lanes	5,910	30	Collector	C
Mary Jane Boulevard (Melrose Place to Mullan Road)	Two Lanes with Turn Lanes	6,840	30	Collector	C
Mullan Road (George Elmer Dr. to Mary Jane Blvd.)	Two Lanes with Turn Lanes	19,820	45	Minor Arterial	C
Mullan Road (Mary Jane Boulevard to Reserve St.)	Four Lanes with Turn Lanes	24,045	45	Minor Arterial	C

2050 Intersection Control Evaluation

This section outlines the evaluation of each project intersection by both congestion and safety performance measures, with the primary intent of selecting intersection control types for the project design effort. Kittelson evaluated control types at the following intersections:

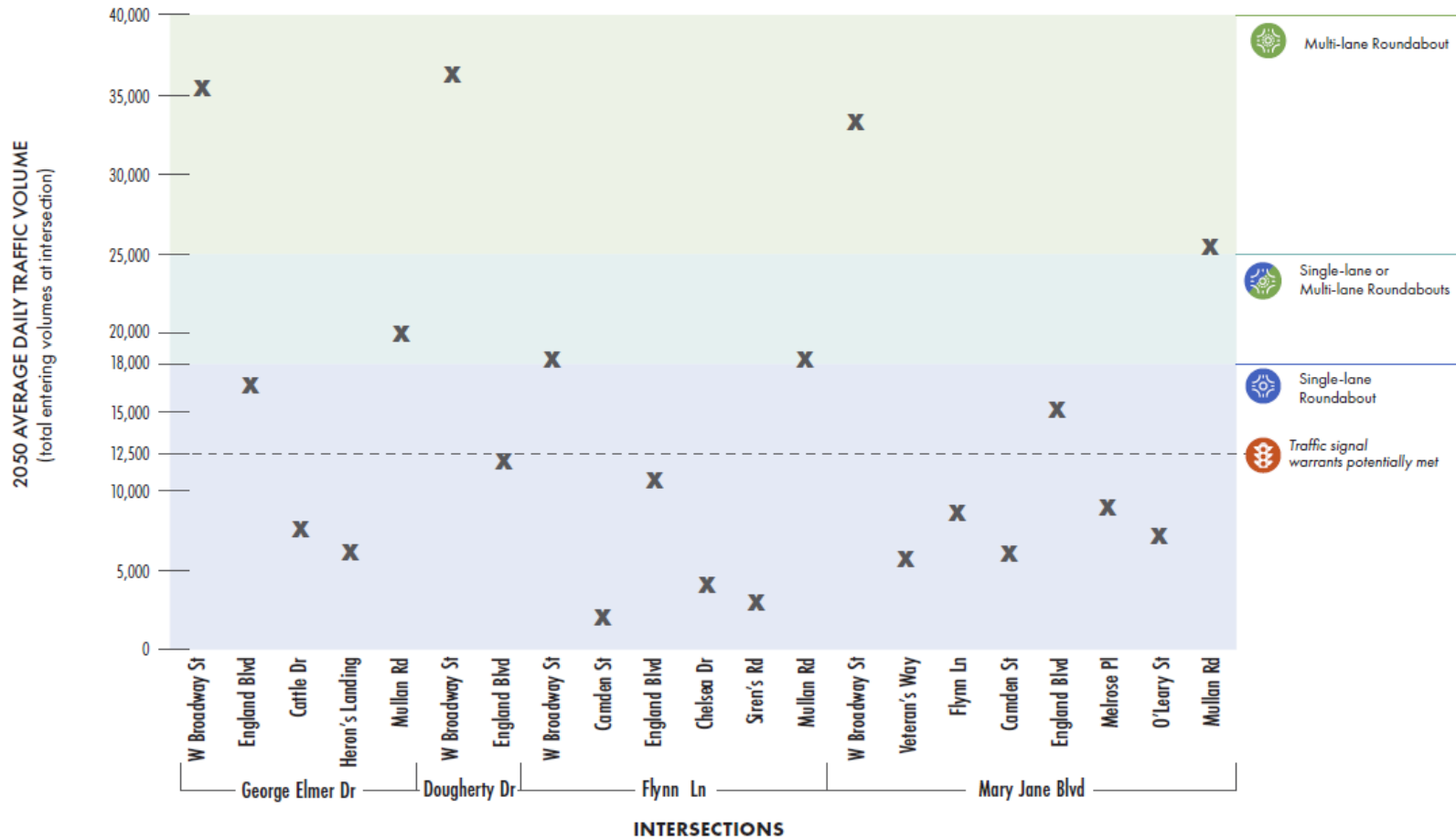
- ▶ #1 George Elmer Drive & W Broadway Street
- ▶ #2 George Elmer Drive & England Boulevard
- ▶ #3 George Elmer Drive & Cattle Drive
- ▶ #4 George Elmer Drive & Heron's Landing
- ▶ #5 George Elmer Drive & Mullan Road
- ▶ #6 Dougherty Drive & England Boulevard
- ▶ #7 Dougherty Drive & W Broadway Street
- ▶ #8 Flynn Lane & Camden Street
- ▶ #9 Flynn Lane & England Boulevard
- ▶ #10 Flynn Lane & Chelsea Drive
- ▶ #11 Flynn Lane & Siren's Road
- ▶ #12 Flynn Lane & Mullan Road
- ▶ #13 Mary Jane Boulevard & Mullan Road
- ▶ #14 Mary Jane Boulevard & O'Leary Street
- ▶ #15 Mary Jane Boulevard & Melrose Place
- ▶ #16 Mary Jane Boulevard & England Boulevard
- ▶ #17 Mary Jane Boulevard & Camden Street
- ▶ #18 Mary Jane Boulevard & Flynn Lane
- ▶ #19 Mary Jane Boulevard & Veteran's Way
- ▶ #20 Mary Jane Boulevard & W Broadway Street
- ▶ #21 Flynn Lane & W Broadway Street

On the next several pages (19 – 39), each intersection includes the following background and analysis results in tabular format:

- ▶ 2050 AM and PM peak hour traffic volumes
- ▶ MUTCD signal warrants #1, #2 and #3
- ▶ Left-turn lane and right-turn lane warrants
- ▶ Pedestrian risk score (Scores range between 3 – 13, with 13 being the riskiest)
- ▶ For each intersection control type:
 - Lane configurations
 - Traffic operations (LOS, delay, v/c ratio, 95th percentile queue in feet)
 - Safety assessment (crash modification factors and conflict points)
- ▶ Recommendation for intersection control type

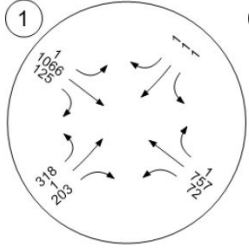
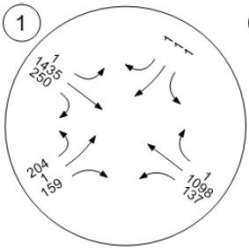
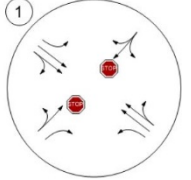
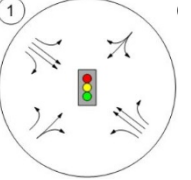
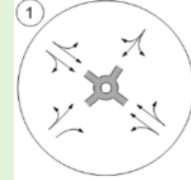
Figure 9 identifies the type of traffic control (e.g. roundabout and signal) anticipated based on year 2050 daily traffic volumes. Kittelson used this planning-level assessment to identify preliminary recommendations for intersection control at the study intersection.

Figure 9 Planning Level Roundabout Capacity and Signal Warrant Thresholds



Note: Shaded areas correspond to volume thresholds for roundabout control
 Source: Manual on Uniform Traffic Control Devices (MUTCD)
 NCHRP Report 765 and NCHRP Report 825
 Missoula MPO Travel Demand Model

#1 GEORGE ELMER DRIVE & WEST BROADWAY STREET

2050 TRAFFIC VOLUMES (WEEKDAY AM PEAK HOUR)			2050 TRAFFIC VOLUMES (WEEKDAY PM PEAK HOUR)			SIGNAL WARRANTED (MUTCD)						RECOMMENDATION								
						#1, #2, #3						MULTI-LANE ROUNDABOUT								
						LEFT-TURN LANE WARRANTED ON MAJOR STREET			RIGHT-TURN LANE WARRANTED ON MAJOR STREET											
						Yes			Yes											
						PEDESTRIAN RISK SCORE														
						13 ³														
TWO WAY STOP CONTROL				SIGNAL						ROUNDABOUT										
NBL ⁴	NBT	NBR		EBL	EBT	EBR	NBL	NBT	NBR		EBL	EBT	EBR	NBL	NBT	NBR		EBL	EBT	EBR
1,303 / 746	1,030 / 746	78 / 98		0 / 0	0 / 0	0 / 0	477 / 301	- / -	214 / 194		0 / 0	504 / 658	101 / 186	202 / 134	- / -	62 / 64		- / -	72 / 161	90 / 232
SBL	SBT	SBR		WBL	WBT	WBR	SBL	SBT	SBR		WBL	WBT	WBR	SBL	SBT	SBR		WBL	WBT	WBR
5 / 21	5 / 21	5 / 21	13 / 56	0 / 0	0 / 0	2 / 2	2 / 2	2 / 2	43 / 85	305 / 368	0 / 0	0 / 0	0 / 0	0 / 0	64 / 89	82 / 117	- / -			
LOS		DELAY (SEC.)		V/C		LOS		DELAY (SEC.)		V/C		LOS		DELAY (SEC.) ⁵		V/C				
F / F		>50 / >50		>1 (NBTL) / >1 (NBL)		C / C		34 / 28		0.71 (NBL) / 0.75 (NBL)		B / C		14 / 15		0.85 (NBL) / 0.8 (EBR)				
CONFLICT POINTS [DIVERGING/MERGING/CROSSING (TOTAL)] ; TOTAL CRASHES (CRF), CRASH SEVERITY⁶ (CRF)																				
3 / 3 / 3 (9) ; N/A						3 / 3 / 3 (9) ; ↓ total crashes (5%), ↓ crash severity (21.8%)						2 / 4 / 3 (9) ; ↓ total crashes (5-12%), ↓ crash severity (68%)								

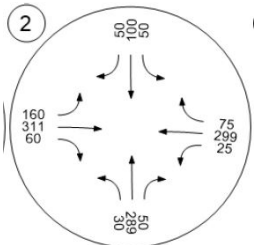
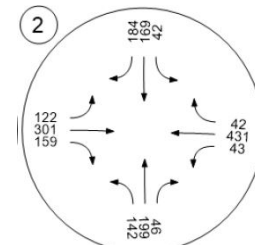
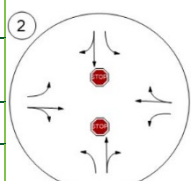
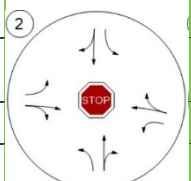
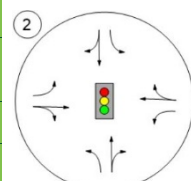
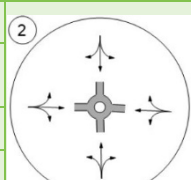
³ Possible Pedestrian Risk Scores range between 3 – 13, with 13 being the riskiest.

⁴ Queue length for approach (feet).

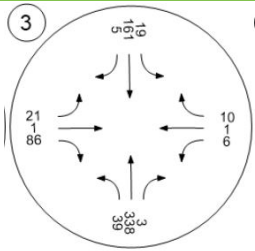
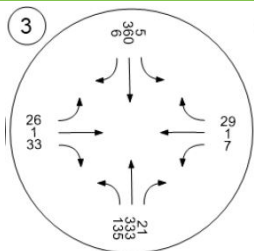
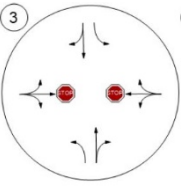
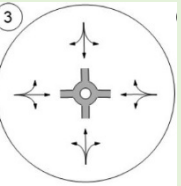
⁵ Intersection delay is reported for roundabouts.

⁶ Compared to two way stop control; color variation of arrows refers to level of change between intersection control types (↓ , ↓ , ↓)

#2 GEORGE ELMER DRIVE & ENGLAND BOULEVARD

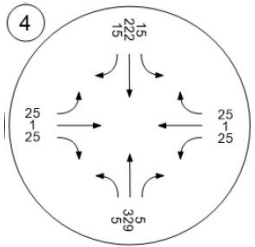
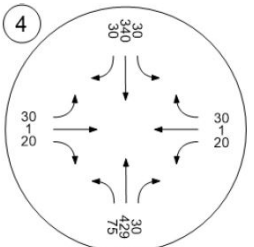
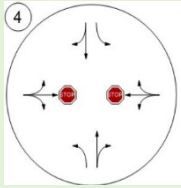
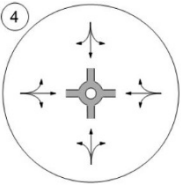
2050 TRAFFIC VOLUMES (WEEKDAY AM PEAK HOUR)			2050 TRAFFIC VOLUMES (WEEKDAY PM PEAK HOUR)			SIGNAL WARRANTED (MUTCD)						RECOMMENDATION														
						#3						SINGLE-LANE ROUNDABOUT														
						LEFT-TURN LANE WARRANTED ON MAJOR STREET			RIGHT-TURN LANE WARRANTED ON MAJOR STREET																	
						Yes			No																	
						PEDESTRIAN RISK SCORE																				
						7																				
TWO WAY STOP CONTROL						ALL WAY STOP CONTROL						SIGNAL														
NBL	NBT	NBR		EBL	EBT	EBR	NBL	NBT	NBR		EBL	EBT	EBR	NBL	NBT	NBR		EBL	EBT	EBR						
58 / 547	719 / 465	719 / 465		0 / 0	0 / 0	1 / 0	6 / 50	213 / 121	213 / 121		51 / 38	258 / 502	258 / 502	27 / 165	310 / 188	310 / 188		123 / 124	199 / 306	199 / 306						
SBL	SBT	SBR		WBL	WBT	WBR	SBL	SBT	SBR		WBL	WBT	WBR	SBL	SBT	SBR		WBL	WBT	WBR						
225 / 198	133 / 674	13 / 674		0 / 56	0 / 0	0 / 0	12 / 10	48 / 258	48 / 258		5 / 10	260 / 559	260 / 559	56 / 36	124 / 282	124 / 282		15 / 38	200 / 310	200 / 310						
LOS			DELAY (SEC.)			V/C			LOS			DELAY (SEC.)			V/C			LOS			DELAY (SEC.) ²			V/C		
F / F			>50 / >50			>1 (NBTR) / >1 (NBTR)			E / F			41 / >50			0.92 (WBT) / >1 (WBT)			C / C			21 / 24			0.52 (SBL) / 0.6 (NBL)		
CONFLICT POINTS [DIVERGING/MERGING/CROSSING (TOTAL)] ; TOTAL CRASHES (CRF), CRASH SEVERITY (CRF)																										
8 / 8 / 16 (32) ; N/A						8 / 8 / 16 (32) ; ↓ total crashes (68.1%), ↓ crash severity (77%)						8 / 8 / 16 (32) ; ↓ total crashes (44%), ↓ crash severity (21.8%)														
ROUNDABOUT						CONFLICT POINTS [DIVERGING/MERGING/CROSSING (TOTAL)] ; TOTAL CRASHES (CRF), CRASH SEVERITY (CRF)																				
NBL	NBT	NBR		EBL	EBT	EBR																				
85 / 78	85 / 78	85 / 78		83 / 114	83 / 114	83 / 114																				
SBL	SBT	SBR		WBL	WBT	WBR																				
23 / 115	23 / 115	23 / 115		89 / 147	89 / 147	89 / 147																				
LOS			DELAY (SEC.)			V/C																				
B / B			11 / 14			0.56 (WBLTR) / 0.7 (WBLTR)			4 / 4 / 0 (8) ; ↓ total crashes (44%), ↓ crash severity (78%)																	

#3 GEORGE ELMER DRIVE & CATTLE DRIVE

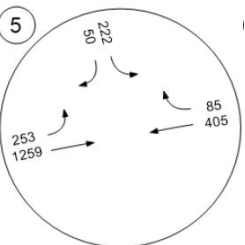
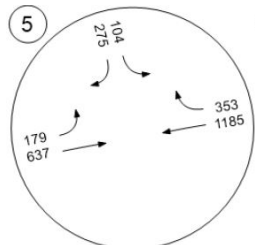
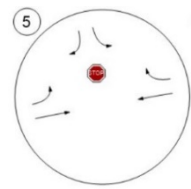
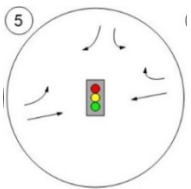
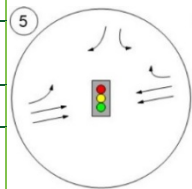
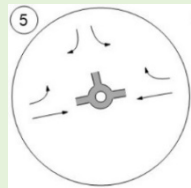

2050 TRAFFIC VOLUMES (WEEKDAY AM PEAK HOUR)			2050 TRAFFIC VOLUMES (WEEKDAY PM PEAK HOUR)			SIGNAL WARRANTED (MUTCD)			RECOMMENDATION				
						No				SINGLE-LANE ROUNDABOUT⁷			
LEFT-TURN LANE WARRANTED ON MAJOR STREET			RIGHT-TURN LANE WARRANTED ON MAJOR STREET			PEDESTRIAN RISK SCORE							
Yes			No			6							
Yes			No			6							
TWO WAY STOP CONTROL						ROUNDAABOUT							
NBL	NBT	NBR		EBL	EBT	EBR	NBL	NBT	NBR		EBL	EBT	EBR
2 / 10	0 / 0	0 / 0		15 / 21	15 / 21	15 / 21	35 / 51	35 / 51	35 / 51		8 / 5	8 / 5	8 / 5
SBL	SBT	SBR		WBL	WBT	WBR	SBL	SBT	SBR		WBL	WBT	WBR
1 / 0	0 / 0	0 / 0		3 / 8	3 / 8	3 / 8	14 / 40	14 / 40	14 / 40		1 / 4	1 / 4	1 / 4
LOS		DELAY (SEC.)		V/C		LOS		DELAY (SEC.)		V/C			
C / D		17 / 30		0.02 (WBL) / 0.17 (EBL)		A / A		5 / 6		0.32 (NBLTR) / 0.41 (NBLTR)			
CONFLICT POINTS [DIVERGING/MERGING/CROSSING (TOTAL)] ; TOTAL CRASHES (CRF), CRASH SEVERITY (CRF)													
8 / 8 / 16 (32) ; N/A						4 / 4 / 0 (8) ; ↓ total crashes (44%), ↓ crash severity (78%)							

⁷ A single-lane roundabout has been planned at this intersection as part of a past development approval.


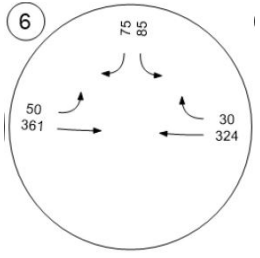
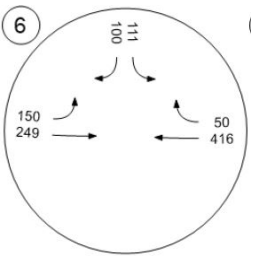
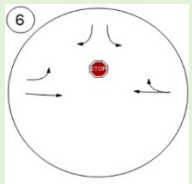
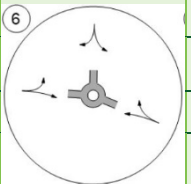
#4 GEORGE ELMER DRIVE & HERON'S LANDING

2050 TRAFFIC VOLUMES (WEEKDAY AM PEAK HOUR)			2050 TRAFFIC VOLUMES (WEEKDAY PM PEAK HOUR)			SIGNAL WARRANTED (MUTCD)			RECOMMENDATION					
						No			TWO WAY STOP CONTROL WITH NORTHBOUND & SOUTHBOUND LEFT-TURN LANES					
LEFT-TURN LANE WARRANTED ON MAJOR STREET			RIGHT-TURN LANE WARRANTED ON MAJOR STREET			Yes						No		
PEDESTRIAN RISK SCORE			6											
TWO WAY STOP CONTROL						ROUNDAABOUT								
NBL	NBT	NBR		EBL	EBT	EBR	NBL	NBT	NBR		EBL	EBT	EBR	
0 / 5	0 / 0	0 / 0		9 / 23	9 / 23	9 / 23	30 / 63	30 / 63	30 / 63		4 / 5	4 / 5	4 / 5	
SBL	SBT	SBR		WBL	WBT	WBR	SBL	SBT	SBR		4 / 6	4 / 6	4 / 6	
1 / 2	0 / 0	0 / 0	10 / 17	10 / 17	10 / 17	20 / 41	20 / 41	20 / 41						
LOS		DELAY (SEC.)		V/C		LOS		DELAY (SEC.)		V/C				
C / D		16 / 32		0.08 (WBL) / 0.21 (EBL)		A / A		4 / 6		0.29 (NBLTR) / 0.46 (NBLTR)				
CONFLICT POINTS [DIVERGING/MERGING/CROSSING (TOTAL)] ; TOTAL CRASHES (CRF), CRASH SEVERITY (CRF)														
8 / 8 / 16 (32) ; N/A						4 / 4 / 0 (8) ; ↓ total crashes (44%), ↓ crash severity (78%)								

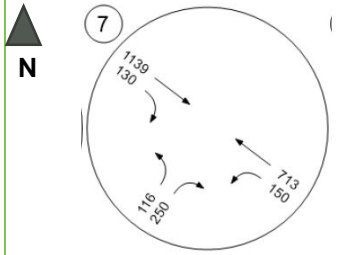
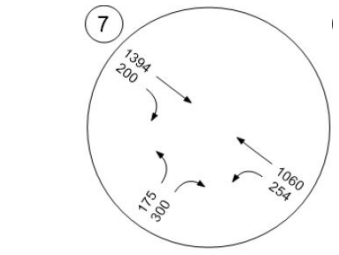
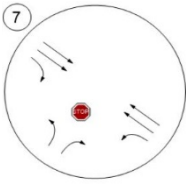
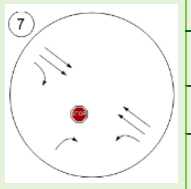
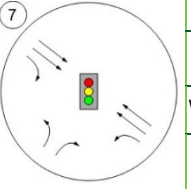

#5 GEORGE ELMER DRIVE & MULLAN ROAD

2050 TRAFFIC VOLUMES (WEEKDAY AM PEAK HOUR)			2050 TRAFFIC VOLUMES (WEEKDAY PM PEAK HOUR)			SIGNAL WARRANTED (MUTCD)			RECOMMENDATION											
						#1, #2, #3			<p>INTERIM: SINGLE-LANE ROUNDABOUT WITH EASTBOUND LEFT-TURN LANE AND WESTBOUND RIGHT-TURN LANE</p> <p>ULTIMATE: MULTI-LANE ROUNDABOUT WITH TWO EASTBOUND AND WESTBOUND THROUGH LANES</p>											
LEFT-TURN LANE WARRANTED ON MAJOR STREET			RIGHT-TURN LANE WARRANTED ON MAJOR STREET			PEDESTRIAN RISK SCORE														
Yes			Yes			12														
TWO WAY STOP CONTROL						INTERIM SIGNAL						ULTIMATE SIGNAL								
NBL	NBT	NBR		EBL	EBT	EBR	NBL	NBT	NBR		EBL	EBT	EBR	NBL	NBT	NBR		EBL	EBT	EBR
-/-	-/-	-/-		24 / 41	0 / 0	-/-	-/-	-/-	-/-		786 / 410	135 / 16	-/-	-/-	-/-	-/-		92 / 106	276 / 144	-/-
SBL	SBT	SBR		WBL	WBT	WBR	SBL	SBT	SBR		WBL	WBT	WBR	SBL	SBT	SBR		WBL	WBT	WBR
741 / 352	-/-	7 / 460	- / -	0 / 0	0 / 0	837 / 365	-/-	0 / 0	- / -	41 / 346	6 / 37	314 / 128	-/-	64 / 406	- / -	83 / 370	83 / 214			
LOS		DELAY (SEC.)		V/C		LOS		DELAY (SEC.)		V/C		LOS		DELAY (SEC.) ²		V/C				
F / F		>50 / >50		>1 (SBL) / >1 (SBL)		F / D		>80 / 43		0.91 (SBL) / 0.84 (SBL)		B / C		14 / 20		0.64 (SBL) / 0.66 (SBR)				
CONFLICT POINTS [DIVERGING/MERGING/CROSSING (TOTAL)] ; TOTAL CRASHES (CRF), CRASH SEVERITY (CRF)																				
3 / 3 / 3 (9) ; N/A						3 / 3 / 3 (9) ; ↓total crashes (5%), ↓crash severity (21.8%)						3 / 3 / 3 (9) ; ↓total crashes (5%), ↓crash severity (21.8%)								
INTERIM ROUNDABOUT (ACCEPTABLE LIFESPAN OF 15-21 YEARS)						ULTIMATE ROUNDABOUT														
NBL	NBT	NBR		EBL	EBT	EBR	NBL	NBT	NBR		EBL	EBT	EBR							
-/-	-/-	-/-		5 / 13	1233 / 88	-/-	-/-	-/-	-/-		160 / 37	194 / 43	-/-							
SBL	SBT	SBR		WBL	WBT	WBR	SBL	SBT	SBR		WBL	WBT	WBR							
27 / 29	-/-	4 / 115	- / -	54 / 785	7 / 37	28 / 28	-/-	5 / 113	- / -	28 / 141	33 / 200									
LOS		DELAY (SEC.)		V/C		LOS		DELAY (SEC.)		V/C										
F / E		>50 / 40		>1 (EBT) / >1 (WBT)		B / B		12 / 13		0.76 (EBT) / 0.77 (WBR)										
CONFLICT POINTS ; TOTAL CRASHES (CRF), CRASH SEVERITY (CRF)			2 / 4 / 3 (9) ; ↓total crashes (44%), ↓crash severity (78%)			CONFLICT POINTS ; TOTAL CRASHES (CRF), CRASH SEVERITY (CRF)			2 / 4 / 3 (9) ; ↓total crashes (5-12%), ↓crash severity (68%)											

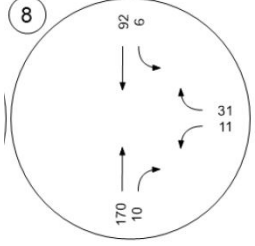
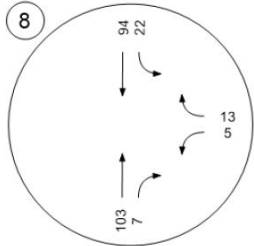
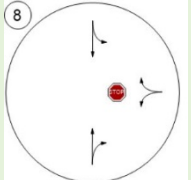
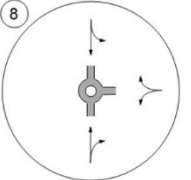
#6 DOUGHERTY DRIVE & ENGLAND BOULEVARD

2050 TRAFFIC VOLUMES (WEEKDAY AM PEAK HOUR)			2050 TRAFFIC VOLUMES (WEEKDAY PM PEAK HOUR)			SIGNAL WARRANTED (MUTCD)			RECOMMENDATION				
 		No			INTERIM: TWO WAY STOP CONTROL WITH EASTBOUND LEFT-TURN LANE ULTIMATE: SINGLE-LANE ROUNDABOUT								
		LEFT-TURN LANE WARRANTED ON MAJOR STREET	RIGHT-TURN LANE WARRANTED ON MAJOR STREET										
		Yes		No									
		PEDESTRIAN RISK SCORE				7							
TWO WAY STOP CONTROL (ACCEPTABLE LIFESPAN OF 26-30 YEARS)						ROUNDABOUT							
NBL	NBT	NBR		EBL	EBT	EBR	NBL	NBT	NBR		EBL	EBT	EBR
- / -	- / -	- / -		3 / 13	0 / 0	- / -	- / -	- / -	- / -		45 / 42	45 / 42	- / -
SBL	SBT	SBR		WBL	WBT	WBR	SBL	SBT	SBR		WBL	WBT	WBR
30 / 82	- / -	10 / 16		- / -	0 / 0	0 / 0	17 / 27	- / -	17 / 27		- / -	32 / 57	32 / 57
LOS		DELAY (SEC.)		V/C		LOS		DELAY (SEC.)		V/C			
C / E		21 / 45		0.30 (SBL) / 0.59 (SBL)		A / A		6 / 7		0.38 (EBLT) / 0.44 (WBTR)			
CONFLICT POINTS [DIVERGING/MERGING/CROSSING (TOTAL)] ; TOTAL CRASHES (CRF), CRASH SEVERITY (CRF)													
3 / 3 / 3 (9) ; N/A						2 / 2 / 0 (4) ; ↓ total crashes (44%), ↓ crash severity (78%)							

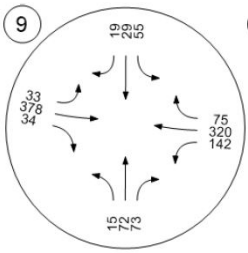
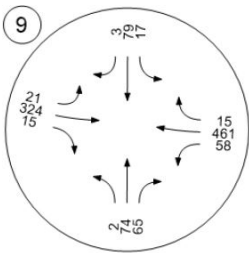
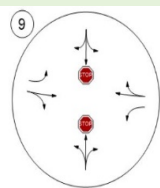
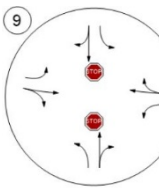
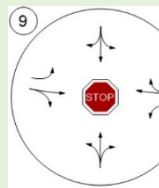
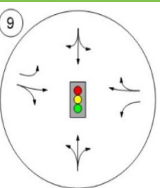
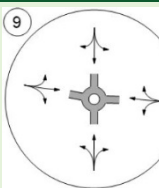
#7 DOUGHERTY DRIVE & WEST BROADWAY STREET

2050 TRAFFIC VOLUMES (WEEKDAY AM PEAK HOUR)			2050 TRAFFIC VOLUMES (WEEKDAY PM PEAK HOUR)			SIGNAL WARRANTED (MUTCD)			RECOMMENDATION											
						Yes LEFT-TURN LANE WARRANTED ON MAJOR STREET: Yes RIGHT-TURN LANE WARRANTED ON MAJOR STREET: Yes PEDESTRIAN RISK SCORE: 13			RIGHT-IN/RIGHT-OUT/LEFT-IN OR MULTI-LANE ROUNDABOUT											
TWO WAY STOP CONTROL						RIGHT-IN, RIGHT-OUT, LEFT-IN						SIGNAL								
NBL	NBT	NBR		EBL	EBT	EBR	NBL	NBT	NBR		EBL	EBT	EBR	NBL	NBT	NBR		EBL	EBT	EBR
154 / 540	- / -	105 / 241		- / -	0 / 0	0 / 0	- / -	- / -	258 / 693		- / -	0 / 0	0 / 0	147 / 212	- / -	337 / 392		- / -	379 / 637	69 / 145
SBL	SBT	SBR		WBL	WBT	WBR	SBL	SBT	SBR		WBL	WBT	WBR	SBL	SBT	SBR		WBL	WBT	WBR
- / -	- / -	- / -		35 / 154	0 / 0	- / -	- / -	- / -	- / -		35 / 154	0 / 0	- / -	- / -	- / -	- / -		67 / 204	153 / 280	- / -
LOS		DELAY (SEC.)		V/C		LOS		DELAY (SEC.)		V/C		LOS		DELAY (SEC.) ²		V/C				
F / F		>50 / >50		0.92 (NBL) / >1 (NBL)		F / F		>50 / >50		0.92 (NBR) / >1 (NBR)		B / C		19 / 29		0.68 (NBR) / 0.84 (WBL)				
CONFLICT POINTS [DIVERGING/MERGING/CROSSING (TOTAL)] ; TOTAL CRASHES (CRF), CRASH SEVERITY (CRF)																				
3 / 3 / 3 (9) ; N/A						2 / 2 / 1 (5) ; ↓ total crashes (5-45%) ↓ crash severity (5%)						3 / 3 / 3 (9) ; ↓ total crashes (5%) ↓ crash severity (21.8%)								
ROUNDABOUT																				
NBL	NBT	NBR		EBL	EBT	EBR														
34 / 90	- / -	98 / 211		- / -	94 / 188	123 / 277														
SBL	SBT	SBR		WBL	WBT	WBR														
- / -	- / -	- / -	47 / 95	60 / 125	- / -															
LOS		DELAY (SEC.)		V/C		CONFLICT POINTS [DIVERGING/MERGING/CROSSING (TOTAL)] ; TOTAL CRASHES (CRF), CRASH SEVERITY (CRF)														
B / C		11 / 20		0.64 (EBR) / 0.87 (NBR)		2 / 4 / 2 (8) ; ↓ total crashes (5-12%) ↓ crash severity (68%)														


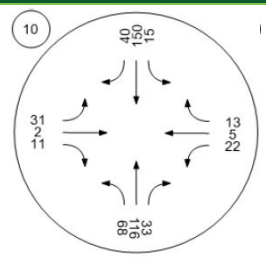
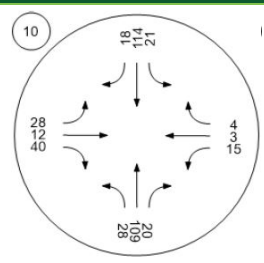
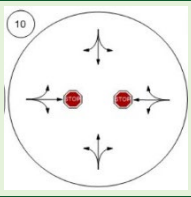
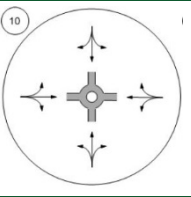
#8 FLYNN LANE & CAMDEN STREET

2050 TRAFFIC VOLUMES (WEEKDAY AM PEAK HOUR)			2050 TRAFFIC VOLUMES (WEEKDAY PM PEAK HOUR)			SIGNAL WARRANTED (MUTCD)			RECOMMENDATION				
						No				RETAIN TWO WAY STOP CONTROL			
LEFT-TURN LANE WARRANTED ON MAJOR STREET			RIGHT-TURN LANE WARRANTED ON MAJOR STREET			No							
PEDESTRIAN RISK SCORE			7										
TWO WAY STOP CONTROL				ROUNDAABOUT									
NBL	NBT	NBR		EBL	EBT	EBR	NBL	NBT	NBR		EBL	EBT	EBR
-/-	0 / 0	0 / 0		-/-	-/-	-/-	-/-	12 / 7	12 / 7		-/-	-/-	-/-
SBL	SBT	SBR		WBL	WBT	WBR	SBL	SBT	SBR		WBL	WBT	WBR
0 / 1	0 / 1	-/-		4 / 1	-/-	4 / 1	6 / 7	6 / 7	-/-		3 / 1	-/-	3 / 1
LOS		DELAY (SEC.)		V/C			LOS		DELAY (SEC.)		V/C		
B / B		10 / 10		0.02 (WBL) / 0.01 (WBL)			A / A		3 / 3		0.15 (NBTR) / 0.09 (NBTR, SBTL)		
CONFLICT POINTS [DIVERGING/MERGING/CROSSING (TOTAL)] ; TOTAL CRASHES (CRF), CRASH SEVERITY (CRF)													
3 / 3 / 3 (9) ; N/A							3 / 3 / 0 (6) ; ↓ total crashes (44%), ↓ crash severity (78%)						

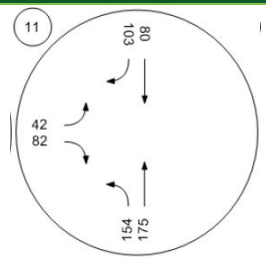
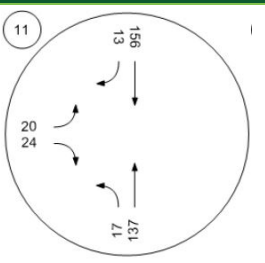
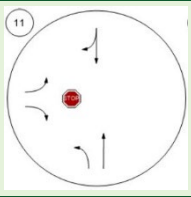
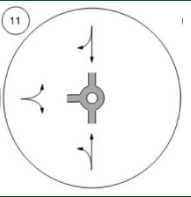
#9 FLYNN LANE & ENGLAND BOULEVARD

2050 TRAFFIC VOLUMES (WEEKDAY AM PEAK HOUR)			2050 TRAFFIC VOLUMES (WEEKDAY PM PEAK HOUR)			SIGNAL WARRANTED (MUTCD)			RECOMMENDATION											
						#3			<p>INTERIM: TWO WAY STOP CONTROL WITH EASTBOUND AND WESTBOUND LEFT-TURN LANES</p> <p>ULTIMATE: ALL WAY STOP CONTROL OR SINGLE-LANE ROUNDABOUT</p>											
LEFT-TURN LANE WARRANTED ON MAJOR STREET			RIGHT-TURN LANE WARRANTED ON MAJOR STREET			Yes						No								
PEDESTRIAN RISK SCORE						6														
INTERIM TWO WAY STOP CONTROL (ACCEPTABLE LIFESPAN OF 14 - 22 YEARS)						TWO WAY STOP CONTROL						ALL WAY STOP CONTROL								
NBL	NBT	NBR		EBL	EBT	EBR	NBL	NBT	NBR		EBL	EBT	EBR	NBL	NBT	NBR		EBL	EBT	EBR
146 / 65	146 / 65	146 / 65		2 / 1	0 / 0	0 / 0	12 / 1	106 / 62	106 / 62		2 / 1	0 / 0	0 / 0	35 / 28	35 / 28	35 / 28		5 / 3	200 / 113	200 / 113
SBL	SBT	SBR		WBL	WBT	WBR	SBL	SBT	SBR		WBL	WBT	WBR	SBL	SBT	SBR		WBL	WBT	WBR
191 / 77	191 / 77	191 / 77	12 / 4	0 / 0	0 / 0	114 / 13	23 / 47	23 / 47	12 / 4	0 / 0	0 / 0	21 / 19	21 / 19	21 / 19	30 / 9	163 / 244	163 / 244			
LOS		DELAY (SEC.)		V/C		LOS		DELAY (SEC.)		V/C		LOS		DELAY (SEC.) ²		V/C				
F / F		>50 / >50		0.94 (SBL) / 0.16 (SBL)		F / E		>50 / 43		0.95 (SBL) / 0.16 (SBL)		C / C		22 / 24		0.81 (EBT) / 0.86 (WBT)				
CONFLICT POINTS [DIVERGING/MERGING/CROSSING (TOTAL)] ; TOTAL CRASHES (CRF), CRASH SEVERITY (CRF)																				
8 / 8 / 16 (32) ; N/A						8 / 8 / 16 (32) ; N/A						8 / 8 / 16 (32) ; ↓ total crashes (68.1%), ↓ crash severity (77%)								
SIGNAL						ROUNDABOUT														
NBL	NBT	NBR		EBL	EBT	EBR	NBL	NBT	NBR		EBL	EBT	EBR	NBL	NBT	NBR	EBL	EBT	EBR	
177/157	177/157	177/157		7/4	201/141	201/141	21/15	21/15	21/15		67 / 38	67 / 38	67 / 38	67 / 38	67 / 38	67 / 38				
SBL	SBT	SBR		WBL	WBT	WBR	SBL	SBT	SBR		WBL	WBT	WBR	SBL	SBT	SBR	WBL	WBT	WBR	
113/105	113/105	113/105	29/10	177/203	177/203	12/12	12/12	12/12	72 / 66	72 / 66	72 / 66	72 / 66	72 / 66	72 / 66						
LOS		DELAY (SEC.)		V/C		LOS		DELAY (SEC.)		V/C		LOS		DELAY (SEC.)		V/C				
B / B		14 / 20		0.48 (NBR) / 0.46 (NBT)		A / A		8 / 7		0.50 (WBT) / 0.48 (WBT)										
CONFLICT POINTS ; TOTAL CRASHES (CRF), CRASH SEVERITY (CRF)				8 / 8 / 16 (32) ; ↓ total crashes (44%), ↓ crash severity (21.8%)				CONFLICT POINTS ; TOTAL CRASHES (CRF), CRASH SEVERITY (CRF)				4 / 4 / 0 (8) ; ↓ total crashes (44%), ↓ crash severity (78%)								

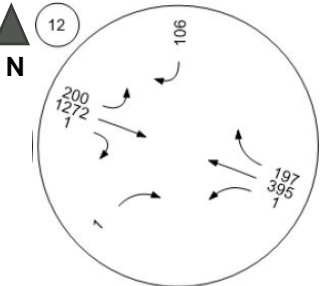
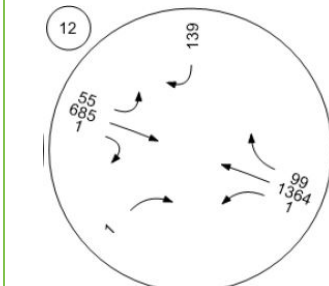
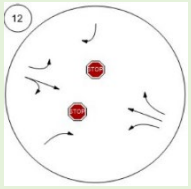
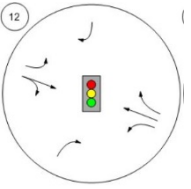
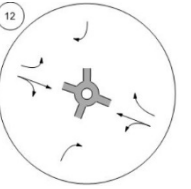
#10 FLYNN LANE & CHELSEA DRIVE

2050 TRAFFIC VOLUMES (WEEKDAY AM PEAK HOUR)			2050 TRAFFIC VOLUMES (WEEKDAY PM PEAK HOUR)			SIGNAL WARRANTED (MUTCD)			RECOMMENDATION				
 		No						RETAIN TWO WAY STOP CONTROL					
		LEFT-TURN LANE WARRANTED ON MAJOR STREET			RIGHT-TURN LANE WARRANTED ON MAJOR STREET								
		No			No								
		PEDESTRIAN RISK SCORE											
3													
TWO WAY STOP CONTROL						ROUNDAABOUT							
NBL	NBT	NBR		EBL	EBT	EBR	NBL	NBT	NBR		EBL	EBT	EBR
4 / 1	4 / 1	4 / 1		8 / 10	8 / 10	8 / 10	17 / 11	17 / 11	17 / 11		3 / 6	3 / 6	3 / 6
SBL	SBT	SBR		WBL	WBT	WBR	SBL	SBT	SBR		WBL	WBT	WBR
0 / 1	0 / 1	0 / 1		6 / 3	6 / 3	6 / 3	18 / 11	18 / 11	18 / 11		3 / 1	3 / 1	3 / 1
LOS		DELAY (SEC.)		V/C		LOS		DELAY (SEC.)		V/C			
C / B		3 / 3		0.01 (EBT) / 0.02 (EBT)		A / A		4 / 3		0.20 (SBLTR) / 0.14 (NBLTR)			
CONFLICT POINTS [DIVERGING/MERGING/CROSSING (TOTAL)] ; TOTAL CRASHES (CRF), CRASH SEVERITY (CRF)													
8 / 8 / 16 (32) ; N/A						4 / 4 / 0 (8) ; ↓ total crashes (44%), ↓ crash severity (78%)							

#11 FLYNN LANE & SIREN'S DRIVE

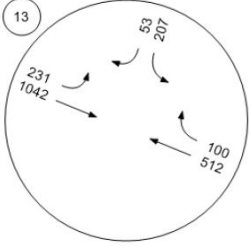
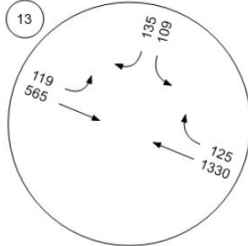
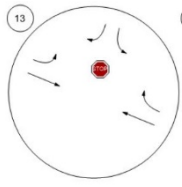
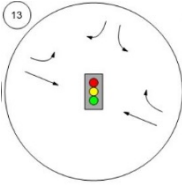
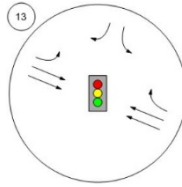
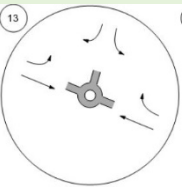

2050 TRAFFIC VOLUMES (WEEKDAY AM PEAK HOUR)			2050 TRAFFIC VOLUMES (WEEKDAY PM PEAK HOUR)			SIGNAL WARRANTED (MUTCD)			RECOMMENDATION				
						No			RETAIN TWO WAY STOP CONTROL				
LEFT-TURN LANE WARRANTED ON MAJOR STREET			RIGHT-TURN LANE WARRANTED ON MAJOR STREET			No							
PEDESTRIAN RISK SCORE			4										
TWO WAY STOP CONTROL						ROUNDBABOUT							
NBL	NBT	NBR		EBL	EBT	EBR	NBL	NBT	NBR		EBL	EBT	EBR
10 / 1	0 / 0	- / -		10 / 2	- / -	8 / 2	29 / 11	29 / 11	- / -		9 / 3	- / -	9 / 3
SBL	SBT	SBR		WBL	WBT	WBR	SBL	SBT	SBR		WBL	WBT	WBR
- / -	0 / 0	0 / 0		- / -	- / -	- / -	- / -	17 / 12	17 / 12		- / -	- / -	- / -
LOS		DELAY (SEC.)		V/C		LOS		DELAY (SEC.)		V/C			
C / B		16 / 11		0.12 (EBL) / 0.04 (EBL)		A / A		4 / 3		0.20 (NBLT) / 0.14 (SBTR)			
CONFLICT POINTS [DIVERGING/MERGING/CROSSING (TOTAL)] ; TOTAL CRASHES (CRF), CRASH SEVERITY (CRF)													
3 / 3 / 3 (9); N/A						3 / 3 / 0 (6) ; ↓ total crashes (44%), ↓ crash severity (78%)							

#12 FLYNN LANE & MULLAN ROAD⁸

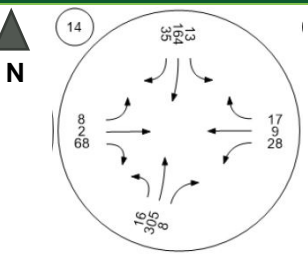
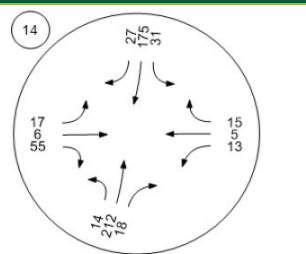
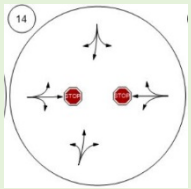
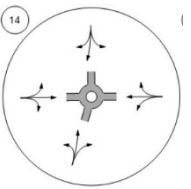
2050 TRAFFIC VOLUMES (WEEKDAY AM PEAK HOUR)			2050 TRAFFIC VOLUMES (WEEKDAY PM PEAK HOUR)			SIGNAL WARRANTED (MUTCD)						RECOMMENDATION														
						#1, #2, #3 LEFT-TURN LANE WARRANTED ON MAJOR STREET: Yes RIGHT-TURN LANE WARRANTED ON MAJOR STREET: Yes PEDESTRIAN RISK SCORE: 9						STOP-CONTROLLED RIGHT-IN, RIGHT-OUT, LEFT-IN														
TWO WAY STOP CONTROL (ACCEPTABLE LIFESPAN OF 18-30 YEARS)						SIGNAL						ROUNDABOUT														
NBL	NBT	NBR		EBL	EBT	EBR	NBL	NBT	NBR		EBL	EBT	EBR	NBL	NBT	NBR		EBL	EBT	EBR						
-/-	-/-	0/0		22 / 12	0 / 0	0 / 0	-/-	-/-	1 / 1		6 / 4	146 / 18	146 / 18	-/-	-/-	0 / 0		13 / 3	667 / 83	667 / 83						
SBL	SBT	SBR		WBL	WBT	WBR	SBL	SBT	SBR		WBL	WBT	WBR	SBL	SBT	SBR		WBL	WBT	WBR						
-/-	-/-	16/18 4		0 / 0	0 / 0	0 / 0	-/-	-/-	175 / 219		0 / 0	86 / 1,513	37 / 21	-/-	-/-	11 / 70		48 / 906	17 / 6	17 / 6						
LOS			DELAY (SEC.)			V/C			LOS			DELAY (SEC.)			V/C											
D / F			25 / >50			0.01 (NBR) / 0.98 (SBR)			A / D			9 / 46			0.89 (SBR) / >1 (WBT)			D / F			34 / >50			>1 (EBTR) / >1 (WBTL)		
CONFLICT POINTS [DIVERGING/MERGING/CROSSING (TOTAL)] ; TOTAL CRASHES (CRF), CRASH SEVERITY (CRF)																										
4 / 4 / 2 (10) ; ↓ total crashes (5-45%), ↓ crash severity (5%)						4 / 4 / 2 (10) ; ↓ total crashes (5%), ↓ crash severity (21.8%)						4 / 4 / 0 (8) ; ↓ total crashes (44%), ↓ crash severity (78%)														

⁸ With the extension of Mary Jane Boulevard to Mullan Road, the Flynn Lane and Mullan Road intersection is expected to be restricted to a right-in / right-out / left-in configuration to improve safety performance at the intersection.

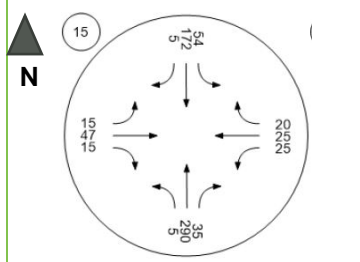
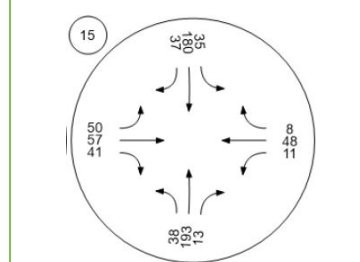
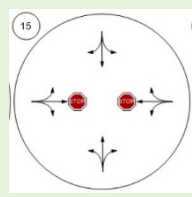
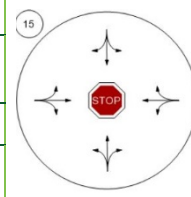
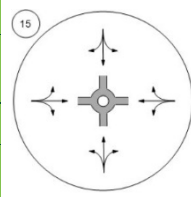
#13 MARY JANE BOULEVARD & MULLAN ROAD

2050 TRAFFIC VOLUMES (WEEKDAY AM PEAK HOUR)			2050 TRAFFIC VOLUMES (WEEKDAY PM PEAK HOUR)			SIGNAL WARRANTED (MUTCD)						RECOMMENDATION																	
						<p>#1, #2, #3</p> <table border="1"> <tr> <th colspan="3">LEFT-TURN LANE WARRANTED ON MAJOR STREET</th> <th colspan="3">RIGHT-TURN LANE WARRANTED ON MAJOR STREET</th> </tr> <tr> <td colspan="3">Yes</td> <td colspan="3">Yes</td> </tr> </table> <p>PEDESTRIAN RISK SCORE</p> <p>13</p>						LEFT-TURN LANE WARRANTED ON MAJOR STREET			RIGHT-TURN LANE WARRANTED ON MAJOR STREET			Yes			Yes			<p>INTERIM: SINGLE-LANE ROUNDABOUT WITH EASTBOUND LEFT-TURN LANE AND WESTBOUND RIGHT-TURN LANE</p> <p>ULTIMATE: MULTI-LANE ROUNDABOUT WITH TWO EASTBOUND AND WESTBOUND THROUGH LANES</p>					
LEFT-TURN LANE WARRANTED ON MAJOR STREET			RIGHT-TURN LANE WARRANTED ON MAJOR STREET																										
Yes			Yes																										
TWO WAY STOP CONTROL				INTERIM SIGNAL					ULTIMATE SIGNAL																				
NBL	NBT	NBR		EBL	EBT	EBR	NBL	NBT	NBR		EBL	EBT	EBR	NBL	NBT	NBR		EBL	EBT	EBR									
-/-	-/-	-/-		27 / 32	0 / 0	-/-	-/-	-/-	-/-		671 / 130	56 / 13	-/-	-/-	-/-	-/-		78 / 35	204 / 67	-/-									
SBL	SBT	SBR		WBL	WBT	WBR	SBL	SBT	SBR		WBL	WBT	WBR	SBL	SBT	SBR		WBL	WBT	WBR									
671 / 356	-/-	9 / 164	-/-	0 / 0	0 / 0	779 / 384	-/-	0 / 0	-/-	58 / 624	8 / 10	293 / 158	-/-	70 / 210	-/-	140 / 355	50 / 49												
LOS		DELAY (SEC.)		V/C		LOS		DELAY (SEC.)		V/C		LOS		DELAY (SEC.) ²		V/C													
F / F		>50 / >50		>1 (SBL) / >1 (SBL)		F / D		>80 / 43		0.76 (SBL) / 0.93 (SBL)		B / B		13 / 14		0.5 (SBL) / 0.6 (SBR)													
CONFLICT POINTS [DIVERGING/MERGING/CROSSING (TOTAL)] ; TOTAL CRASHES (CRF), CRASH SEVERITY (CRF)																													
3 / 3 / 3 (9) ; N/A						3 / 3 / 3 (9) ; ↓ total crashes (5%), ↓ crash severity (21.8%)						3 / 3 / 3 (9) ; ↓ total crashes (5%), ↓ crash severity (21.8%)																	
INTERIM ROUNDABOUT (ACCEPTABLE LIFESPAN OF 18-23 YEARS)						ULTIMATE ROUNDABOUT																							
NBL	NBT	NBR		EBL	EBT	EBR	NBL	NBT	NBR		EBL	EBT	EBR																
-/-	-/-	-/-		21 / 8	618 / 70	-/-	-/-	-/-	-/-		95 / 28	123 / 33	-/-																
SBL	SBT	SBR		WBL	WBT	WBR	SBL	SBT	SBR		WBL	WBT	WBR																
29 / 34	-/-	5 / 47	-/-	80 / 998	8 / 9	30 / 39	-/-	6 / 44	-/-	30 / 114	36 / 153																		
LOS		DELAY (SEC.)		V/C		LOS		DELAY (SEC.)		V/C																			
D / F		34 / 60		>1 (EBT) / >1 (WBT)		A / B		9 / 10		0.64 (EBT) / 0.7 (WBR)																			
CONFLICT POINTS ; TOTAL CRASHES (CRF), CRASH SEVERITY (CRF)				4 / 4 / 0 (8) ; ↓ total crashes (44%), ↓ crash severity (78%)				CONFLICT POINTS ; TOTAL CRASHES (CRF), CRASH SEVERITY (CRF)				2 / 4 / 3 (9) ; ↓ total crashes (5-12%), ↓ crash severity (68%)																	

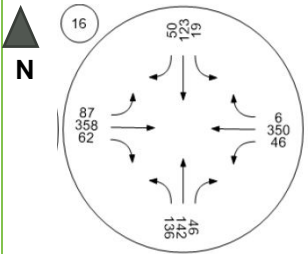
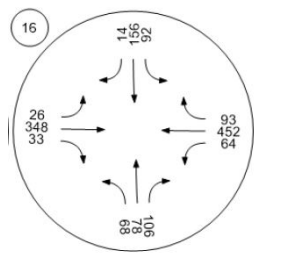
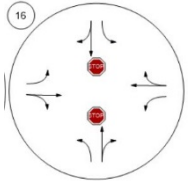
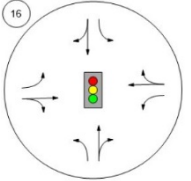
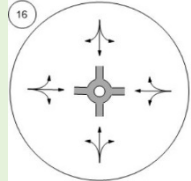
#14 MARY JANE BOULEVARD & O'LEARY STREET

2050 TRAFFIC VOLUMES (WEEKDAY AM PEAK HOUR)			2050 TRAFFIC VOLUMES (WEEKDAY PM PEAK HOUR)			SIGNAL WARRANTED (MUTCD)			RECOMMENDATION					
						No			TWO WAY STOP CONTROL					
LEFT-TURN LANE WARRANTED ON MAJOR STREET			RIGHT-TURN LANE WARRANTED ON MAJOR STREET			No								
PEDESTRIAN RISK SCORE			5											
TWO WAY STOP CONTROL						ROUNDABOUT								
NBL	NBT	NBR				EBL	EBT	EBR	NBL	NBT	NBR			
0 / 0	0 / 0	0 / 0				9 / 11	9 / 11	9 / 11	28 / 19	28 / 19	28 / 19	6 / 6		
SBL	SBT	SBR				WBL	WBT	WBR	SBL	SBT	SBR	4 / 2		
0 / 1	0 / 1	0 / 1				11 / 5	11 / 5	11 / 5	16 / 17	16 / 17	16 / 17	4 / 2		
LOS		DELAY (SEC.)		V/C		LOS		DELAY (SEC.)		V/C				
C / B		16 / 15		0.09 (WBL) / 0.04 (WBL)		A / A		4 / 4		0.27 (NBLTR) / 0.14 (NBLTR)				
CONFLICT POINTS [DIVERGING/MERGING/CROSSING (TOTAL)] ; TOTAL CRASHES (CRF), CRASH SEVERITY (CRF)														
8 / 8 / 16 (32) ; N/A						4 / 4 / 0 (8) ; ↓ total crashes (44%), ↓ crash severity (78%)								

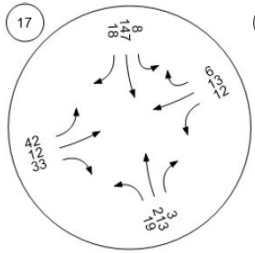
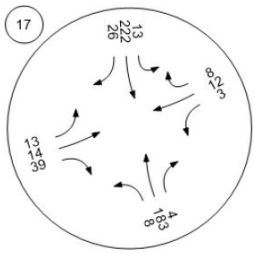
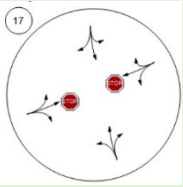
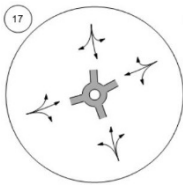
#15 MARY JANE BOULEVARD & MELROSE PLACE

2050 TRAFFIC VOLUMES (WEEKDAY AM PEAK HOUR)			2050 TRAFFIC VOLUMES (WEEKDAY PM PEAK HOUR)			SIGNAL WARRANTED (MUTCD)			RECOMMENDATION																	
						No			TWO WAY STOP CONTROL																	
LEFT-TURN LANE WARRANTED ON MAJOR STREET			RIGHT-TURN LANE WARRANTED ON MAJOR STREET			No																				
PEDESTRIAN RISK SCORE			5																							
TWO WAY STOP CONTROL						ALL WAY STOP CONTROL						ROUNDBOUT														
NBL	NBT	NBR				EBL	EBT	EBR	NBL	NBT	NBR				EBL	EBT	EBR	NBL	NBT	NBR				EBL	EBT	EBR
0 / 2	0 / 2	0 / 2				19 / 42	19 / 42	19 / 42	61 / 41	61 / 41	61 / 41				10 / 23	10 / 23	10 / 23	32 / 22	32 / 22	32 / 22				6 / 13	6 / 13	6 / 13
SBL	SBT	SBR				WBL	WBT	WBR	SBL	SBT	SBR				WBL	WBT	WBR	SBL	SBT	SBR				WBL	WBT	WBR
3 / 2	3 / 2	3 / 2				17 / 16	17 / 16	17 / 16	37 / 43	37 / 43	37 / 43				9 / 9	9 / 9	9 / 9	18 / 21	18 / 21	18 / 21				6 / 5	6 / 5	6 / 5
LOS		DELAY (SEC.)		V/C		LOS		DELAY (SEC.)		V/C		LOS		DELAY (SEC.) ²		V/C										
C / C		19 / 20		0.09 (WBL) / 0.16 (EBL)		B / B		10 / 10		0.46 (NBT) / 0.37 (NBT)		A / A		5 / 4		0.3 (NBLTR) / 0.23 (NBLTR, SBLTR)										
CONFLICT POINTS [DIVERGING/MERGING/CROSSING (TOTAL)] ; TOTAL CRASHES (CRF), CRASH SEVERITY (CRF)																										
8 / 8 / 16 (32) ; N/A						8 / 8 / 16 (32) ; ↓ total crashes (68.1%), ↓ crash severity (77%)						4 / 4 / 0 (8) ; ↓ total crashes (44%), ↓ crash severity (78%)														


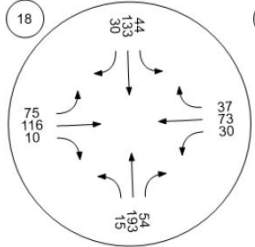
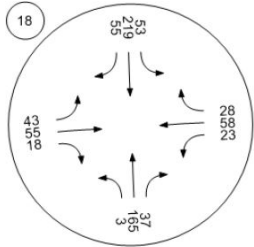
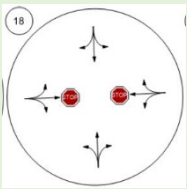
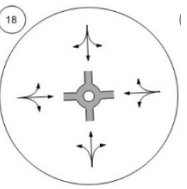
#16 MARY JANE BOULEVARD & ENGLAND BOULEVARD

2050 TRAFFIC VOLUMES (WEEKDAY AM PEAK HOUR)			2050 TRAFFIC VOLUMES (WEEKDAY PM PEAK HOUR)			SIGNAL WARRANTED (MUTCD)						RECOMMENDATION														
						#3						SINGLE-LANE ROUNDABOUT														
						LEFT-TURN LANE WARRANTED ON MAJOR STREET			RIGHT-TURN LANE WARRANTED ON MAJOR STREET																	
						Yes			No																	
						PEDESTRIAN RISK SCORE																				
6																										
TWO WAY STOP CONTROL						SIGNAL						ROUNDABOUT														
NBL	NBT	NBR		EBL	EBT	EBR	NBL	NBT	NBR		EBL	EBT	EBR	NBL	NBT	NBR		EBL	EBT	EBR						
385 / 232	189 / 111	189 / 111		6 / 2	0 / 0	0 / 0	146 / 69	167 / 167	167 / 167		54 / 17	214 / 182	214 / 182	59 / 38	59 / 38	59 / 38		79 / 9	79 / 9	79 / 9						
SBL	SBT	SBR		3 / 4	0 / 0	0 / 0	18 / 99	152 / 151	152 / 151		WBL	WBT	WBR	30 / 37	172 / 280	172 / 280		29 / 10	29 / 10	29 / 10	WBL	WBT	WBR	70 / 10	70 / 10	70 / 10
LOS			DELAY (SEC.)			V/C			LOS			DELAY (SEC.)			V/C											
F / F			>50 / >50			>1 (NBL) / >1 (NBL)			B / B			18 / 18			0.4 (NBL) / 0.5 (SBL)			B / B			10 / 10			0.53 (EBLTR) / 0.59 (WBLTR)		
CONFLICT POINTS [DIVERGING/MERGING/CROSSING (TOTAL)] ; TOTAL CRASHES (CRF), CRASH SEVERITY (CRF)																										
8 / 8 / 16 (32) ; N/A						8 / 8 / 16 (32) ; ↓ total crashes (44%), ↓ crash severity (21.8%)						4 / 4 / 0 (8) ; ↓ total crashes (44%), ↓ crash severity (78%)														

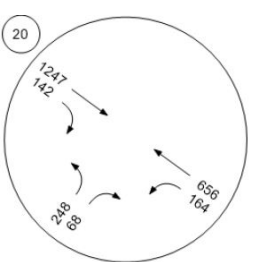
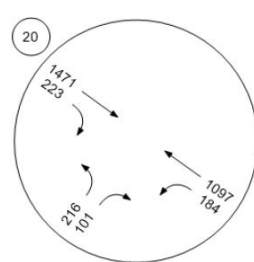
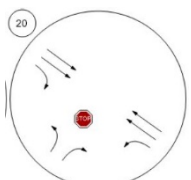
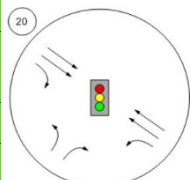
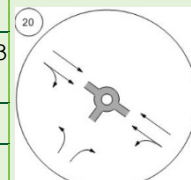
#17 MARY JANE BOULEVARD & CAMDEN STREET

2050 TRAFFIC VOLUMES (WEEKDAY AM PEAK HOUR)			2050 TRAFFIC VOLUMES (WEEKDAY PM PEAK HOUR)			SIGNAL WARRANTED (MUTCD)			RECOMMENDATION				
						No			TWO WAY STOP CONTROL				
LEFT-TURN LANE WARRANTED ON MAJOR STREET			RIGHT-TURN LANE WARRANTED ON MAJOR STREET			No							
PEDESTRIAN RISK SCORE			5										
TWO WAY STOP CONTROL						ROUNDAABOUT							
NBL	NBT	NBR		EBL	EBT	EBR	NBL	NBT	NBR		EBL	EBT	EBR
1 / 0	1 / 0	1 / 0		14 / 9	14 / 9	14 / 9	19 / 14	19 / 14	19 / 14		6 / 5	6 / 5	6 / 5
SBL	SBT	SBR		WBL	WBT	WBR	SBL	SBT	SBR		2 / 1	2 / 1	2 / 1
0 / 0	0 / 0	0 / 0		5 / 3	5 / 3	5 / 3	12 / 20	12 / 20	12 / 20				
LOS		DELAY (SEC.)		V/C		LOS		DELAY (SEC.)		V/C			
B / B		13 / 13		0.10 (EBL) / 0.01 (WBL)		A / A		4 / 4		0.20 (NBLTR) / 0.21 (SBLTR)			
CONFLICT POINTS [DIVERGING/MERGING/CROSSING (TOTAL)] ; TOTAL CRASHES (CRF), CRASH SEVERITY (CRF)													
8 / 8 / 16 (32) ; N/A						4 / 4 / 0 (8) ; ↓ total crashes (44%), ↓ crash severity (78%)							

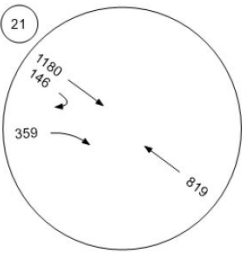
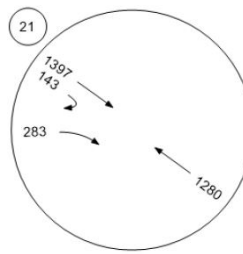
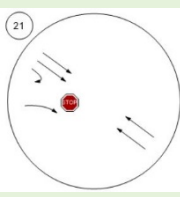
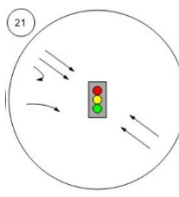
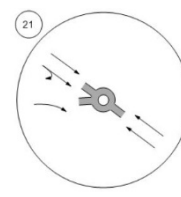
#18 MARY JANE BOULEVARD & FLYNN LANE

2050 TRAFFIC VOLUMES (WEEKDAY AM PEAK HOUR)			2050 TRAFFIC VOLUMES (WEEKDAY PM PEAK HOUR)			SIGNAL WARRANTED (MUTCD)			RECOMMENDATION				
 		No						TWO WAY STOP CONTROL					
		LEFT-TURN LANE WARRANTED ON MAJOR STREET			RIGHT-TURN LANE WARRANTED ON MAJOR STREET								
		No			No								
		PEDESTRIAN RISK SCORE											
6													
TWO WAY STOP CONTROL						ROUNDAABOUT							
NBL	NBT	NBR		EBL	EBT	EBR	NBL	NBT	NBR		EBL	EBT	EBR
0 / 0	0 / 0	0 / 0		84 / 35	84 / 35	84 / 35	28 / 18	28 / 18	28 / 18		19 / 11	19 / 11	19 / 11
SBL	SBT	SBR		WBL	WBT	WBR	SBL	SBT	SBR		WBL	WBT	WBR
2 / 3	2 / 3	2 / 3		38 / 27	38 / 27	38 / 27	17 / 30	17 / 30	17 / 30		13 / 9	13 / 9	13 / 9
LOS		DELAY (SEC.)		V/C		LOS		DELAY (SEC.)		V/C			
D / C		27 / 20		0.25 (EBL) / 0.15 (EBL)		A / A		5 / 5		0.28 (NBLTR) / 0.29 (SBLTR)			
CONFLICT POINTS [DIVERGING/MERGING/CROSSING (TOTAL)] ; TOTAL CRASHES (CRF), CRASH SEVERITY (CRF)													
8 / 8 / 16 (32) ; N/A						4 / 4 / 0 (8) ; ↓ total crashes (44%), ↓ crash severity (78%)							

#20 MARY JANE BOULEVARD & WEST BROADWAY STREET

2050 TRAFFIC VOLUMES (WEEKDAY AM PEAK HOUR)			2050 TRAFFIC VOLUMES (WEEKDAY PM PEAK HOUR)			SIGNAL WARRANTED (MUTCD)			RECOMMENDATION											
						#1, #2, #3			MULTI-LANE ROUNDABOUT											
LEFT-TURN LANE WARRANTED ON MAJOR STREET			RIGHT-TURN LANE WARRANTED ON MAJOR STREET			Yes						Yes								
PEDESTRIAN RISK SCORE			13																	
TWO WAY STOP CONTROL						SIGNAL						ROUNDABOUT								
NBL	NBT	NBR		EBL	EBT	EBR	NBL	NBT	NBR		EBL	EBT	EBR	NBL	NBT	NBR		EBL	EBT	EBR
586 / 622	- / -	17 / 36		- / -	0 / 0	0 / 0	335 / 300	- / -	86 / 137		- / -	405 / 497	71 / 116	163 / 161	- / -	16 / 33		- / -	120 / 186	161 / 275
SBL	SBT	SBR		WBL	WBT	WBR	SBL	SBT	SBR		WBL	WBT	WBR	SBL	SBT	SBR		WBL	WBT	WBR
- / -	- / -	- / -		49 / 97	0 / 0	- / -	- / -	- / -	- / -		72 / 84	122 / 207	- / -	- / -	- / -	- / -		54 / 99	69 / 131	- / -
LOS		DELAY (SEC.)		V/C		LOS		DELAY (SEC.)		V/C		LOS		DELAY (SEC.) ²		V/C				
F / F		>50 / >50		>1 (NBL) / >1 (NBL)		B / B		18 / 18		0.71 (NBL) / 0.75 (SBL)		C / C		15 / 18		0.79 (NBL) / 0.85 (EBTR)				
CONFLICT POINTS [DIVERGING/MERGING/CROSSING (TOTAL)] ; TOTAL CRASHES (CRF), CRASH SEVERITY (CRF)																				
3 / 3 / 3 (9) ; N/A						3 / 3 / 3 (9) ; ↓ total crashes (5%), ↓ crash severity (21.8%)						2 / 4 / 3 (9) ; ↓ total crashes (5-12%), ↓ crash severity (68%)								

#21 FLYNN LANE & WEST BROADWAY STREET⁹

2050 TRAFFIC VOLUMES (WEEKDAY AM PEAK HOUR)			2050 TRAFFIC VOLUMES (WEEKDAY PM PEAK HOUR)			SIGNAL WARRANTED (MUTCD)						RECOMMENDATION														
						#1, #2, #3						UNSIGNALIZED RIGHT-IN, RIGHT-OUT														
						LEFT-TURN LANE WARRANTED ON MAJOR STREET			RIGHT-TURN LANE WARRANTED ON MAJOR STREET																	
						Yes			Yes																	
						PEDESTRIAN RISK SCORE																				
						13																				
TWO WAY STOP CONTROL						SIGNAL						ROUNDAABOUT														
NBL	NBT	NBR		EBL	EBT	EBR	NBL	NBT	NBR		EBL	EBT	EBR	NBL	NBT	NBR		EBL	EBT	EBR						
-/-	-/-	262 / 212		-/-	0/0	0/0	-/-	-/-	187 / 154		-/-	157 / 162	25 / 19	-/-	-/-	237 / 43		-/-	76 / 92	97 / 122						
SBL	SBT	SBR		WBL	WBT	WBR	SBL	SBT	SBR		WBL	WBT	WBR	SBL	SBT	SBR		WBL	WBT	WBR						
-/-	-/-	-/-		-/-	0/0	-/-	-/-	-/-	-/-		-/-	72 / 135	-/-	-/-	-/-	-/-		37 / 64	45 / 81	-/-						
LOS			DELAY (SEC.)			V/C			LOS			DELAY (SEC.)			V/C			LOS			DELAY (SEC.) ²			V/C		
F / F			>50 / >50			0.94 (NBR) / 0.88 (NBR)			B / B			11 / 11			0.75 (NBT) / 0.84 (SBT)			B / B			14 / 11			0.89 (NBT) / 0.81 (NBT)		
CONFLICT POINTS [DIVERGING/MERGING/CROSSING (TOTAL)] ; TOTAL CRASHES (CRF), CRASH SEVERITY (CRF)																										
1 / 1 / 0 (2) ; ↓ total crashes (45%), crash severity (N/A)								1 / 1 / 0 (2) ; ↓ total crashes (5%), ↓ crash severity (21.8%)								1 / 1 / 0 (2) ; ↓ total crashes (5-12%), ↓ crash severity (68%)										

⁹ With the extension of Mary Jane Boulevard to W Broadway Street, the Flynn Lane and W Broadway Street intersection is expected to be restricted to a right-in / right-out configuration to improve safety performance at the intersection.

RECOMMENDATIONS

Kittelsohn identified the following recommendations based on year 2050 traffic conditions and evaluation results including in this memorandum. Table 6 delineates the recommended roadway cross-sections. Table 7 summarizes the recommended intersection controls. Figure 10 displays these recommendations on a project area map.

Table 6 Roadway Cross-Section Recommendations

ROADWAY	EXTENTS	FUNCTIONAL CLASSIFICATION & CROSS-SECTION	POSTED SPEED (MPH)
George Elmer Drive	West Broadway Street to England Boulevard	Two Lane Collector with Turn Lanes	30
	England Boulevard to Pius Way	Two Lane Collector with Turn Lanes	30
England Boulevard	George Elmer Drive to Flynn Lane	Two Lane Collector with Turn Lanes	30
Flynn Ln	W Broadway Street to Mullan Rd	Two Lane Local	25
Mary Jane Boulevard	West Broadway Street to Camden Street	Two Lane Collector with Turn Lanes	30
	Melrose Place to Mullan Road	Two Lane Collector with Turn Lanes	30
Mullan Road	George Elmer Drive to Mary Jane Boulevard	Two Lane Arterial with Turn Lanes	45
	Mary Jane Boulevard to Reserve Street	Four Lane Arterial with Turn Lanes	45
West Broadway Street	Aviation Drive to Flynn Lane	Four Lane Arterial with Turn Lanes	55



Table 7 Intersection Control Recommendations

INTERSECTION NUMBER	INTERSECTION	CONTROL RECOMMENDATION
1	George Elmer Drive / W Broadway Street	Multi-lane roundabout
2	George Elmer Drive / England Boulevard	Single-lane roundabout
3	George Elmer Drive / Cattle Drive	Single-lane roundabout
4	George Elmer Drive / Heron's Landing	TWSC ¹⁰ with NB & SB left-turn lanes
5	George Elmer Drive / Mullan Rd	Interim: Single-lane roundabout with EB left-turn & WB right-turn lanes (<i>Lifespan = 15 – 21 years</i>) Ultimate: Multi-lane Roundabout with two EB and WB through lanes
6	England Boulevard / Dougherty Drive	Interim: TWSC (<i>Lifespan = 26 – 30 years</i>) Ultimate: Single-lane roundabout
7	W Broadway Street / Dougherty Drive	Multi-lane roundabout
8	Flynn Ln / Camden Street	Retain TWSC
9	Flynn Ln / England Boulevard	Interim: TWSC (<i>Lifespan = 14 – 22 years</i>) Ultimate: AWSC ¹¹ or Single-lane roundabout
10	Flynn Ln / Chelsea Drive	Retain TWSC
11	Flynn Ln / Siren Drive	Retain TWSC
12	Flynn Ln / Mullan Rd	Stop-controlled right-In, right-out, left-In (<i>Lifespan = 18 – 30 years</i>)
13	Mary Jane Boulevard / Mullan Rd	Interim: Single-lane roundabout with EB left-turn & WB right-turn lanes (<i>Lifespan = 18 – 23 years</i>) Ultimate: Multi-lane roundabout with two EB and WB through lanes
14	Mary Jane Boulevard / O'Leary Street	TWSC
15	Mary Jane Boulevard / Melrose Pl	TWSC
16	Mary Jane Boulevard / England Boulevard	Single-lane roundabout
17	Mary Jane Boulevard / Camden Street	TWSC
18	Mary Jane Boulevard / Flynn Ln	TWSC
19	Mary Jane Boulevard / Veteran's Way	TWSC
20	Mary Jane Boulevard / W Broadway Street	Multi-lane roundabout
21	W Broadway Street / Flynn Ln	Unsignalized right-In, right-out

¹⁰ Two Way Stop Control

¹¹ All Way Stop Control

Figure 10 Intersection Control & Roadway Cross-Section Recommendations (2050)



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APPENDICES

- A. Travel Demand Model Volumes (2050)
- B. 2050 Turning Movement Counts
- C. 2050 Operational Analysis AM and PM
- D. Roadway Level of Service
- E. Pedestrian Intersection Risk Analysis



A. Travel Demand Model Volumes (2050)

Status	Roadway	From	To	2020 ADT (Counts)	2020 ADT (Model)	BUILD 2045 ADT	BUILD 2050 ADT
Existing	Broadway St	Flynn Ln	Reserve St	15,945	17,600	18,260	29,460
Existing	Broadway St	Aviation	Flynn Ln	18,064	18,160	18,230	30,780
Future	Dougherty Dr	George Elmer Dr	W Broadway St	-	-	0	11,956
Future	England Blvd	George Elmer Dr	Mary Jane Blvd	-	-	14,500	10,300
Existing	England Blvd	Mary Jane Blvd	Reserve St	2,520	5,000	14,800	14,920
Existing	Flynn Ln	Mullan Rd	England Blvd	4,066	4,000	2,400	1,675
Existing	Flynn Ln	England Blvd	W Broadway St	3,289	4,000	2,540	3,340
Existing	George Elmer Dr	Mullan Rd	Cattle Dr	2,563	1,000	9,000	7,050
Future	George Elmer Dr	England Blvd	Broadway St	-	-	10,400	11,950
Future	George Elmer Dr	Cattle Dr	England Blvd	-	-	12,500	7,050
Existing	Mary Jane Blvd	England Blvd	Camden St	137	200	6,000	5,910
Future	Mary Jane Blvd	Camden St	W Broadway St	-	-	6,000	5,725
Existing	Mary Jane Blvd	Melrose Pl	England Blvd	114	200	7,400	5,375
Future	Mary Jane Blvd	Mullan Rd	Melrose Pl	-	-	7,450	6,840
Existing	Mullan Rd	George Elmer Dr	Mary Jane Blvd	13,589	13,000	15,835	19,820
Existing	Mullan Rd	Mary Jane Blvd	Reserve St	13,319	15,000	21,100	24,045
Existing	Reserve St	Broadway St	England Blvd	33,000	28,940	43,570	47,760
Existing	Reserve St	England Blvd	Mullan Rd	30,875	39,640	44,330	57,015

MULLAN BUILD VOLUME LAYER DOCUMENTATION

2045_BUILD_MULLAN_DATA_2045_SCEN4_BUILD_HU3000_CONNECTOR_ADJUST_VOL

This layer includes 2045 forecast travel demand volumes associated with the 2019 BUILD Grant. The layer includes new roads to be constructed through the BUILD Grant that include Mary Jane Boulevard, George Elmer Boulevard and the extension of England Boulevard from Flynn Lane to George Elmer Boulevard. Flynn Lane has been reclassified as a local street with the assumption that Mary Jane Boulevard will become the primary collector in the area and signalized at Mullan Road.

New road configurations:

- George Elmer Boulevard north of England Boulevard: Minor Arterial, 35 mph
- George Elmer Boulevard south of England Boulevard: Collector, 35 mph
- England Boulevard: Collector, 25 mph
- Mary Jane Boulevard: Collector, 30 mph

2045 Traffic Analysis Zone (TAZ) Household Assumptions:

- 2045 TAZ ADJUSTMENT (492) TO 585 FOR MARY JANE EXTENSION FROM BROADWAY TO MULLAN AND (440) TO 3000 HU (518) TO 81 HU (520) TO 244 HU

Model Scenario Description:

- 2045 EXISTING NETWORK PLUS COMPLETED AND COMMITTED. COMPLETED ALTS: 3,125,128,133,137,138,209,212,1027,1034,2021,3008. COMMITTED ALTS: 1,2,132,135,204,208,217,1038,2026,2027. SCENARIO 4 ALTS, PLUS ALTS 211, 222. NETWORK - 2040NB, DATA - 2045MJ, ROUTES - MissoulaRoutes2015_w_Ph3_Stps. WYE 2018 BUILD ALTS: 200, 211, 778, 779, 782. INCREASED HU IN TAZ 440 TO 3,000, TAZ 492 TO 585, TAZ 518 TO 81, TAZ 520 TO 244

2045_SCEN4_BUILD_VOL

This layer includes 2045 forecast travel demand volumes associated with the 2019 BUILD Grant. The layer includes new roads to be constructed through the BUILD Grant that include Mary Jane Boulevard, George Elmer Boulevard and the extension of England Boulevard from Flynn Lane to George Elmer Boulevard. Flynn Lane has **NOT** been reclassified as a local street with the assumption that Mary Jane Boulevard will become the primary collector in the area and signalized at Mullan Road.

New road configurations:

- George Elmer Boulevard north of England Boulevard: Minor Arterial, 35 mph
- George Elmer Boulevard south of England Boulevard: Collector, 35 mph
- England Boulevard: Collector, 25 mph
- Mary Jane Boulevard: Collector, 30 mph

2045 Traffic Analysis Zone (TAZ) Household Assumptions:

- NO ADDITIONAL HOUSEHOLD ASSUMPTIONS OTHER THAN STRAIGHT HOUSEHOLD GROWTH IN THE TRAVEL DEMAND MODEL

Model Scenario Description:

2045 EXISTING NETWORK PLUS COMPLETED AND COMMITTED. COMPLETED ALTS: 3,125,128,133,137,138,209,212,1027,1034,2021,3008. COMMITTED ALTS: 1,2,132,135,204,208,217,1038,2026,2027. SCENARIO 4 ALTS. NETWORK - 2040NB, DATA - 2045I, ROUTES - MissoulaRoutes2015_w_Ph3_Stps. WYE 2018 BUILD ALTS: 200, 211, 778, 779, 782

2045_SCEN4_VOL

This layer includes 2045 forecast travel demand volumes based on current conditions. The layer **DOES NOT** include any new roads to be constructed through the BUILD Grant that includes Mary Jane Boulevard, George Elmer Boulevard and the extension of England Boulevard from Flynn Lane to George Elmer Boulevard. Flynn Lane has **NOT** been reclassified as a local street with the assumption that Mary Jane Boulevard will become the primary collector in the area and signalized at Mullan Road.

New road configurations:

- NONE

2045 Traffic Analysis Zone (TAZ) Household Assumptions:

- NO ADDITIONAL HOUSEHOLD ASSUMPTIONS OTHER THAN STRAIGHT HOUSEHOLD GROWTH IN THE TRAVEL DEMAND MODEL

Model Scenario Description:

2045 EXISTING NETWORK PLUS COMPLETED AND COMMITTED. COMPLETED ALTS: 3,125,128,133,137,138,209,212,1027,1034,2021,3008. COMMITTED ALTS: 1,2,132,135,204,208,217,1038,2026,2027. SCENARIO 4 ALTS. NETWORK - 2040NB, DATA - 2045I, ROUTES - MissoulaRoutes2015_w_Ph3_Stps.

Missoula_Network_2020

This layer contains the updated road alignments associated with the BUILD Grant that will be incorporated into the 2020 travel demand model.

2015_2045_TC7_TAZ

This layer contains the Traffic Analysis Zones (TAZs) used to associate the socioeconomic data in the travel demand model to the road and transit networks that was used to generate the BUILD Grant related volume layers. The layer contains 2015 and 2045 household and employment information. No BUILD household adjustments are reflected in this layer.

Missoula_TAZ_2020

This layer contains the Traffic Analysis Zones (TAZs) that will be incorporated into the 2020 travel demand model based on improvements resulting from the BUILD Grant. No socioeconomic data has been included.

Base_2050 – Update

2040NB Network, 2050 Socio, 2043TransitNetwork

The image shows two overlapping dialog boxes from a software application. The primary dialog, titled "Select Network Alternatives", features two list boxes: "Available Alternatives" on the left and "Active Alternatives" on the right. The "Available Alternatives" list contains the following items: 1, 2, 3, 81, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, and 110. Between these lists are four directional buttons: ">>", ">", "<", and "<<". At the bottom of this dialog are "OK" and "Cancel" buttons. The secondary dialog, titled "Scenario Settings", is partially visible on the right. It contains two dropdown menus: "Network" with the value "40NB" and "Data" with the value "2050B". It also has "OK" and "Cancel" buttons at the bottom.

Base_2050 - Update BUILD 051420 - TPEN_BUILD MAP

2040NB Network, 2050MP Socio, 2043TransitNetwork . ALTS: 200, 211, 222, 778, 779, 782. ALT 222 RECLASSIFIES FLYNN LN. AND DECREASES SPEED ASSOCIATED WITH MARY JANE BLVD IMPROVMENTS. ALT 784 INCREASES ENGLAND TO FT=3 FROM FLYNN TO RESERVE. LEFT TURN PROHIBITION FROM FLYNN TO BROADWAY

Select Network Alternatives ✕

Available Alternatives	Active Alternatives
1	200
2	211
3	222
81	778
100	779
101	782
102	784
103	
104	
105	
106	
107	
108	
109	
110	

Scenario Settings ✕

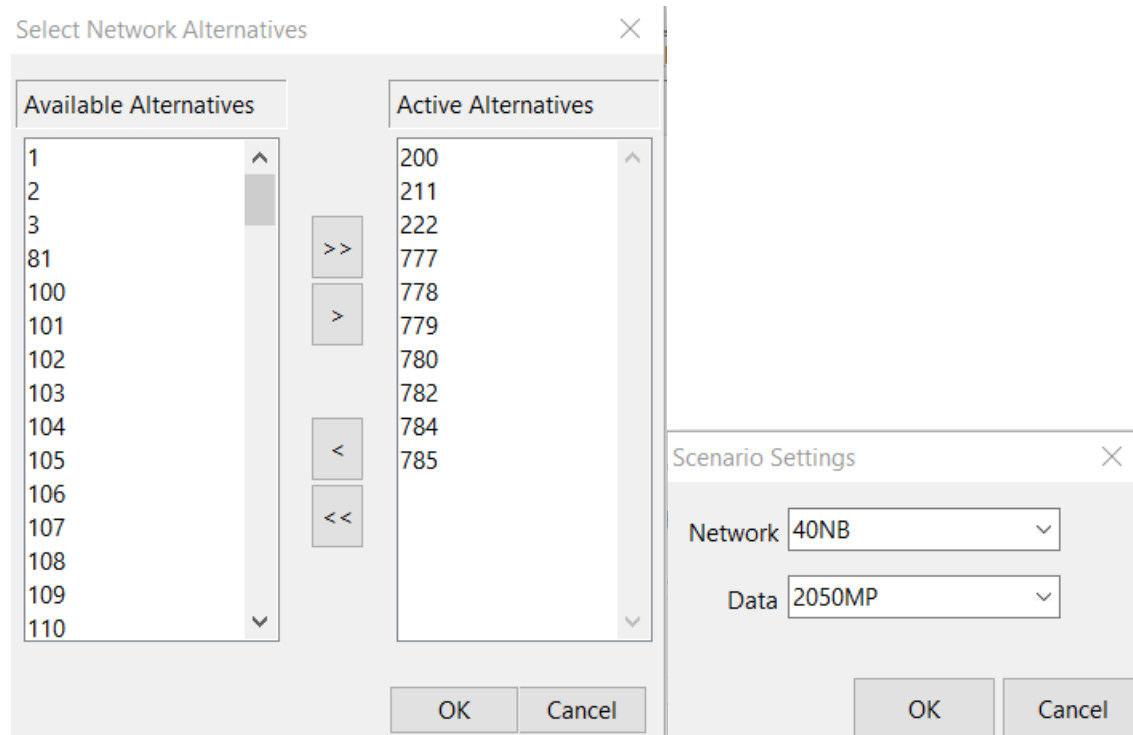
Network: 40NB ▾

Data: 2050MP ▾

OK Cancel OK Cancel

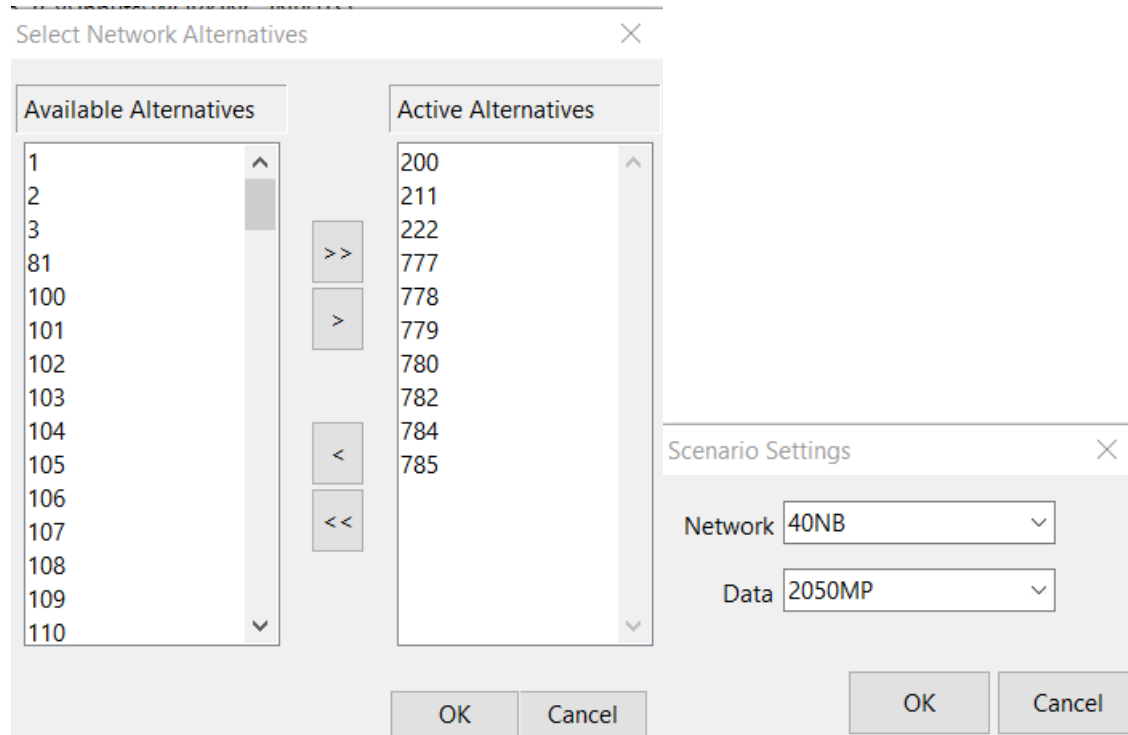
Base_2050 - Update BUILD 051420 - TPEN_BUILD MAP EXPANDED:

STANDARD INPUT FILES UPDATED TO INCLUDE EXPANDED ROAD NETWORK ALTERNATIVES. 2040NB Network, 2050MP Socio, 2043TransitNetwork . ALTS: 200, 211, 222, 778, 779, 782. ALT 222 RECLASSIFIES FLYNN LN. AND DECREASES SPEED ASSOCIATED WITH MARY JANE BLVD IMPROVMENTS. ALT 784 INCREASES ENGLAND TO FT=3 FROM FLYNN TO RESERVE. LEFT TURN PROHIBITION FROM FLYNN TO BROADWAY. EXPANDED TO INCLUDE DOUGHERTY DRIVE AND ENGLAND BLVD TO ROUNDUP. ALL ROADS MINOR ARTERIALS. ALTS 777, 780, 785

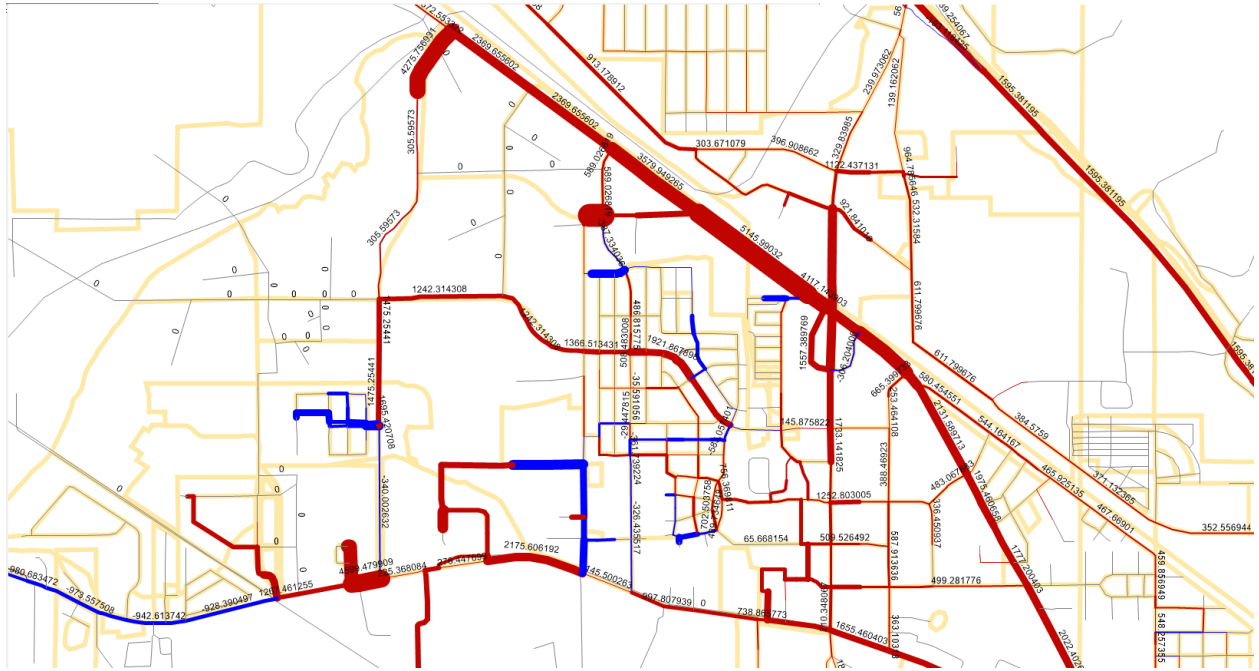
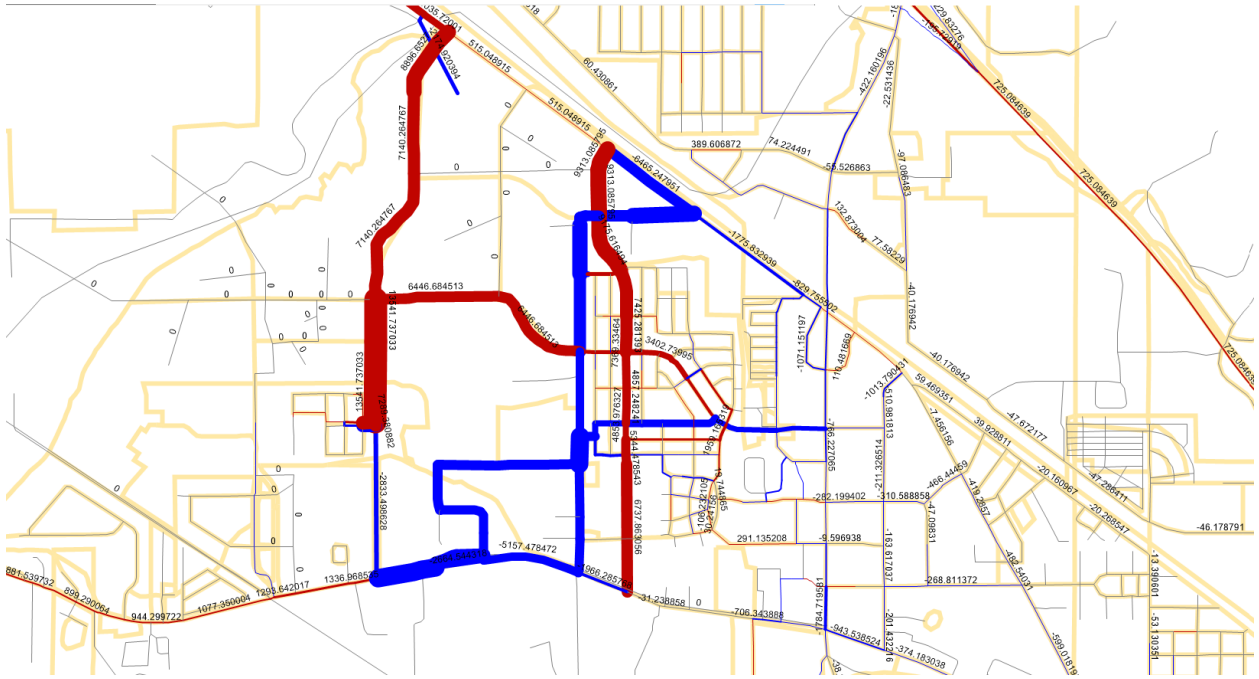


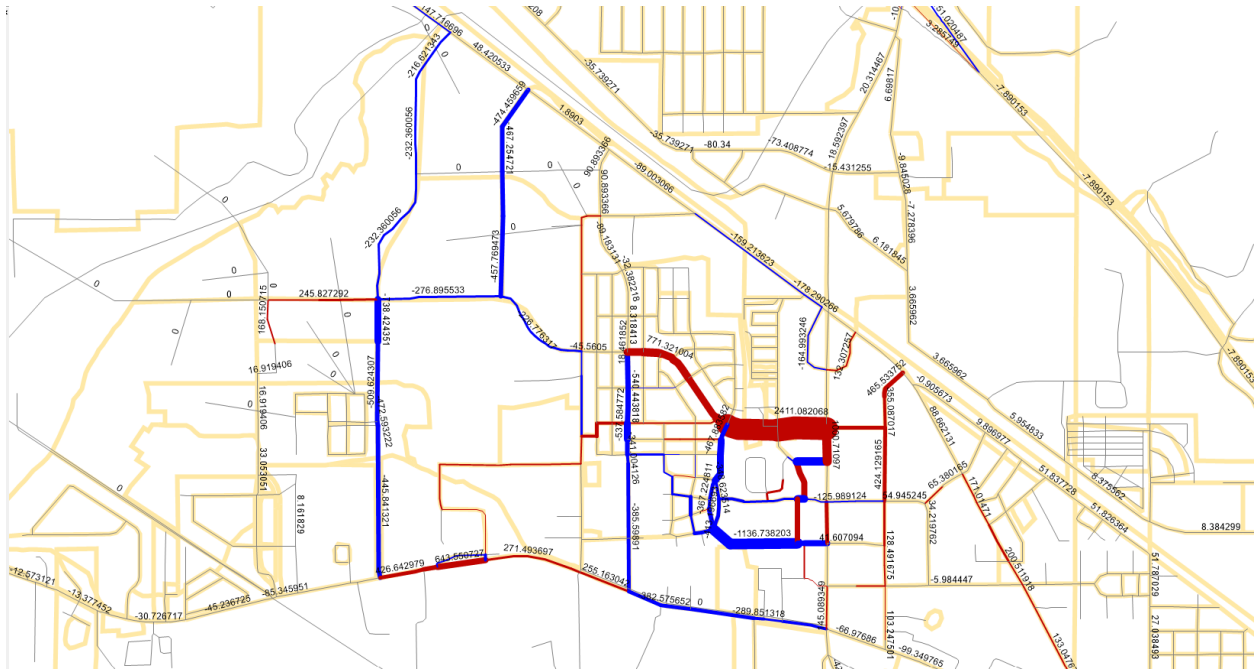
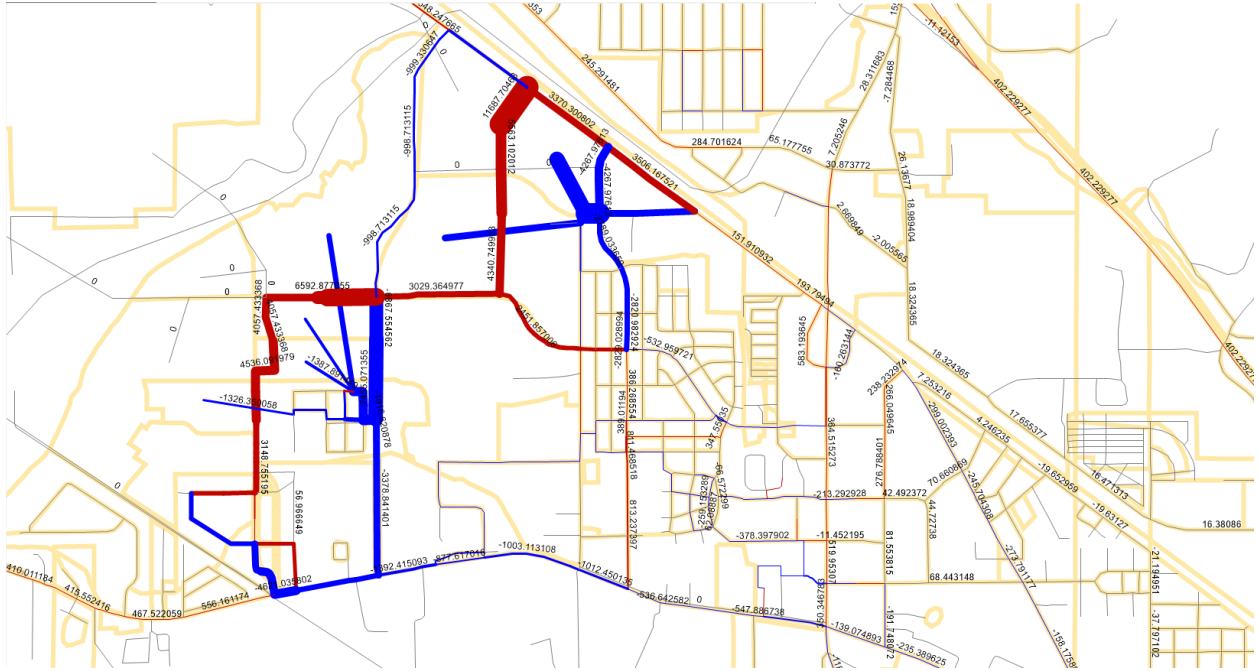
Base_2050 - Update BUILD 051420 - TPEN_BUILD MAP EXPANDED – COLLECTOR:

WORKING INPUT FILES UPDATED TO INCLUDE EXPANDED ROAD NETWORK ALTERNATIVES. 2040NB Network, 2050MP Socio, 2043TransitNetwork . ALTS: 200, 211, 222, 778, 779, 782. ALT 222 RECLASSIFIES FLYNN LN. AND DECREASES SPEED ASSOCIATED WITH MARY JANE BLVD IMPROVMENTS. ALT 784 **DECREASES** ENGLAND TO **FT=4** FROM FLYNN TO RESERVE. LEFT TURN PROHIBITION FROM FLYNN TO BROADWAY. EXPANDED TO INCLUDE DOUGHERTY DRIVE AND ENGLAND BLVD TO ROUNDUP. ALL ROADS COLLECTORS. ALTS 777, 780, 785



COMPARISON WITH 2050 EXISTING: 2050 BUILD, 2050 BUILD PLUS MAP, 2050 BUILD PLUS MAP, 2050 BUILD PLUS MAP EXPANDED (ARTERIALS), 2050 BUILD PLUS MAP EXPANDED (COLLECTORS):

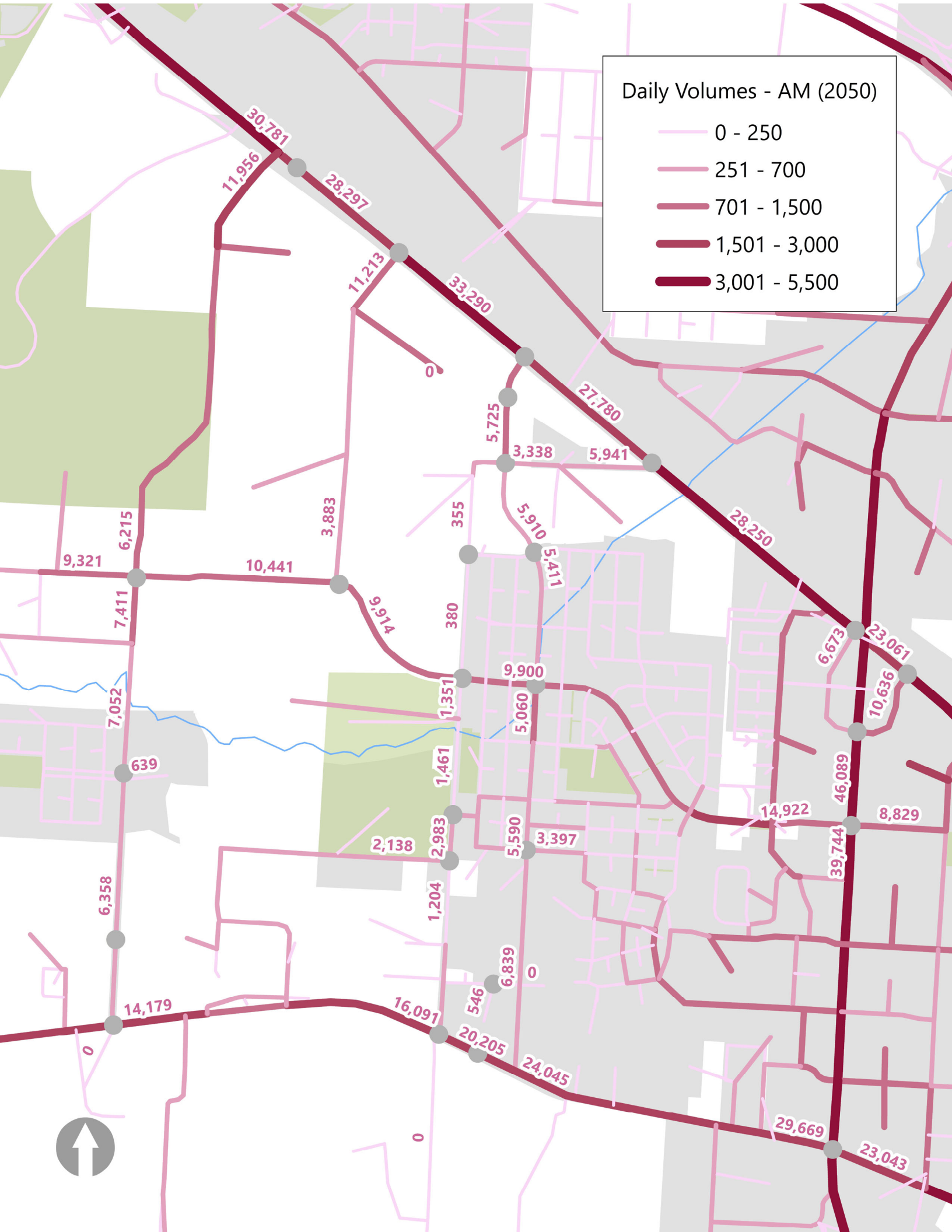
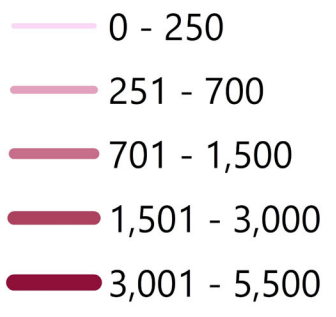






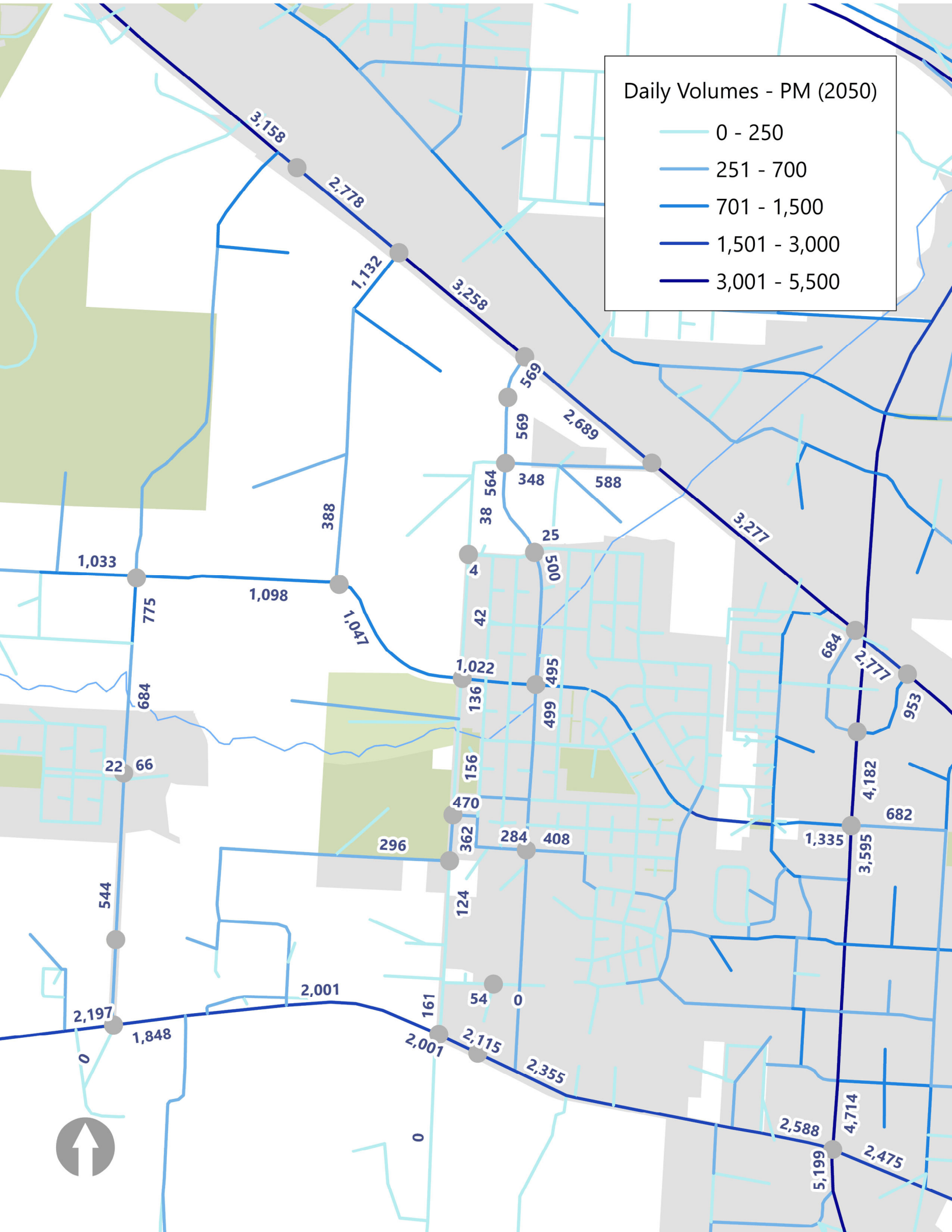
B. 2050 Turning Movement Counts

Daily Volumes - AM (2050)



Daily Volumes - PM (2050)

- 0 - 250
- 251 - 700
- 701 - 1,500
- 1,501 - 3,000
- 3,001 - 5,500





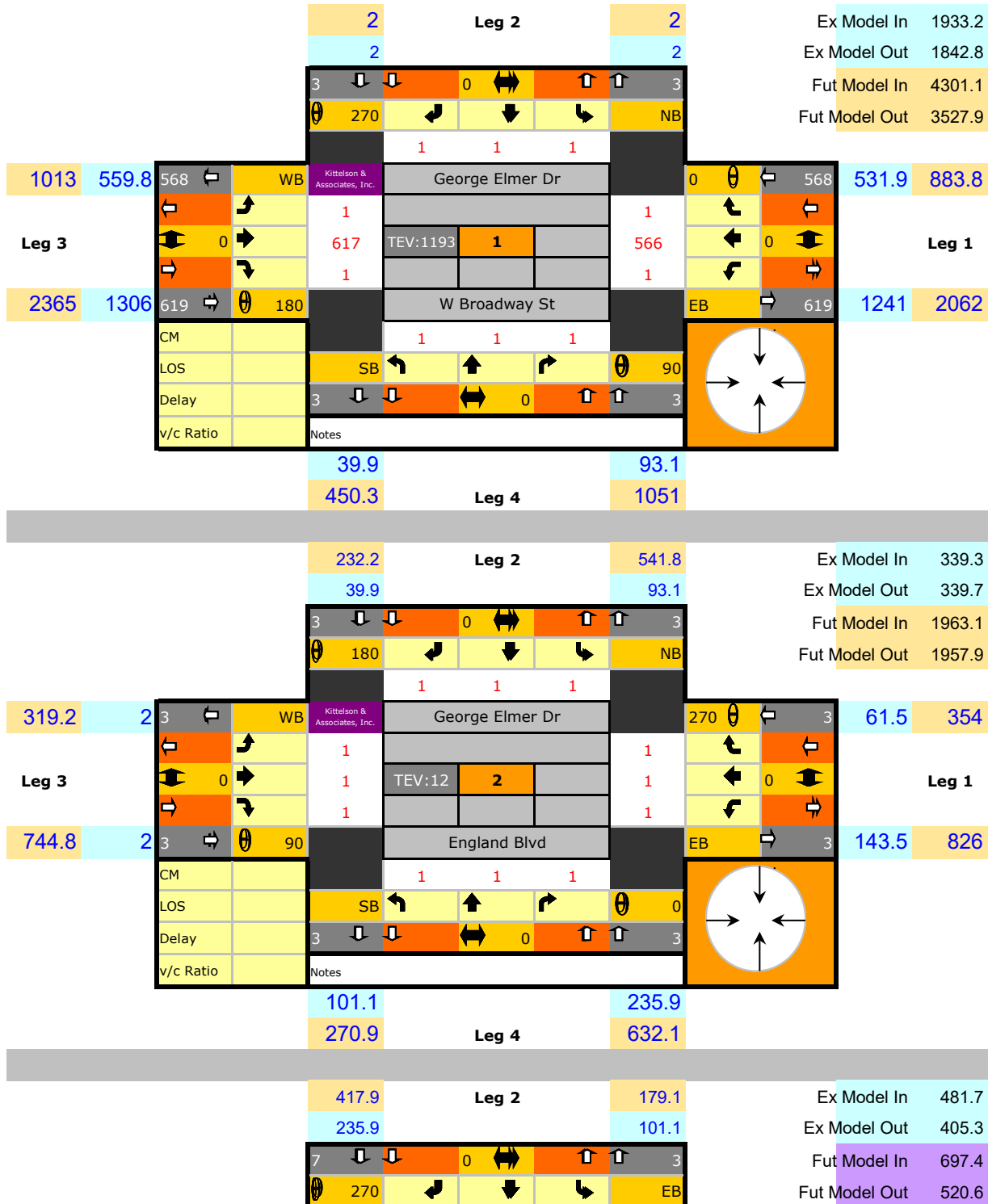
NCHRP 255 Post Processing Inputs (AM)

Blue Text - required input

Red and Black Text - 2020 Turning Movement Counts for existing intersections

(Turning movement counts at future intersections, except for through movements at some intersections are assumed to be 1)

Step 1 - Insert Volume Block and Model Link Volumes



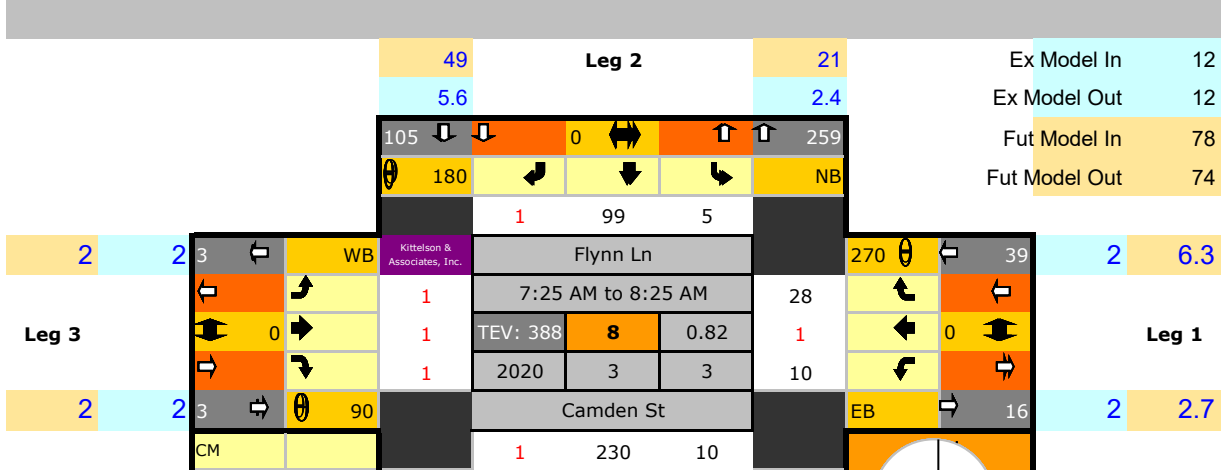
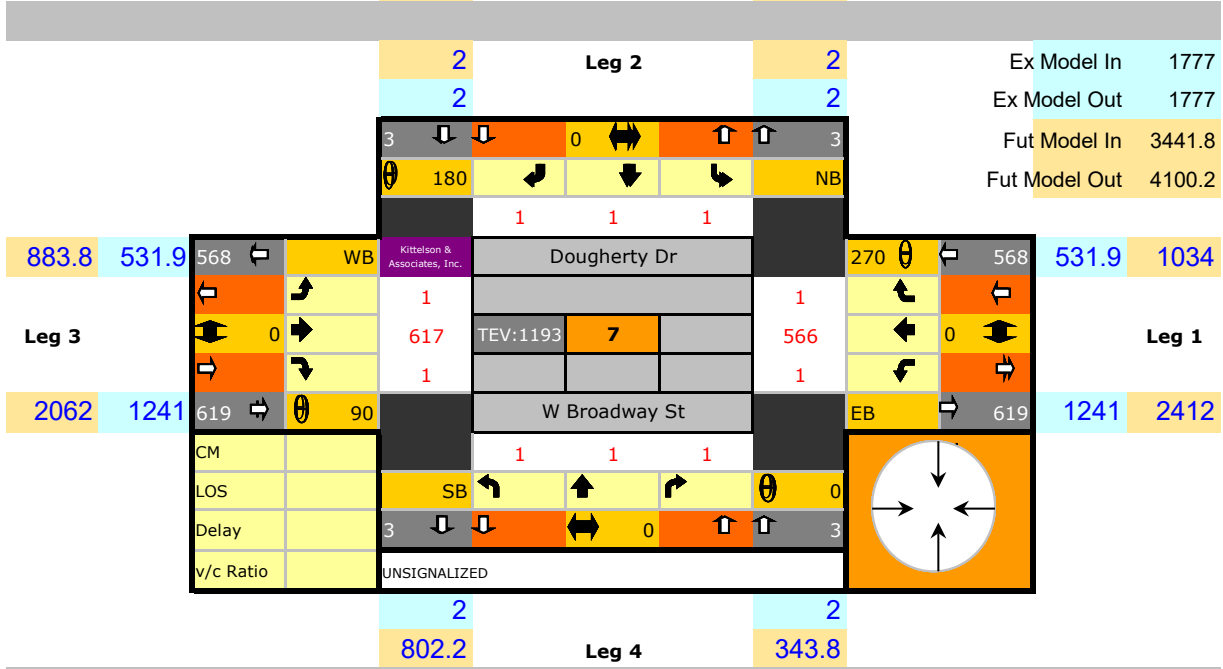
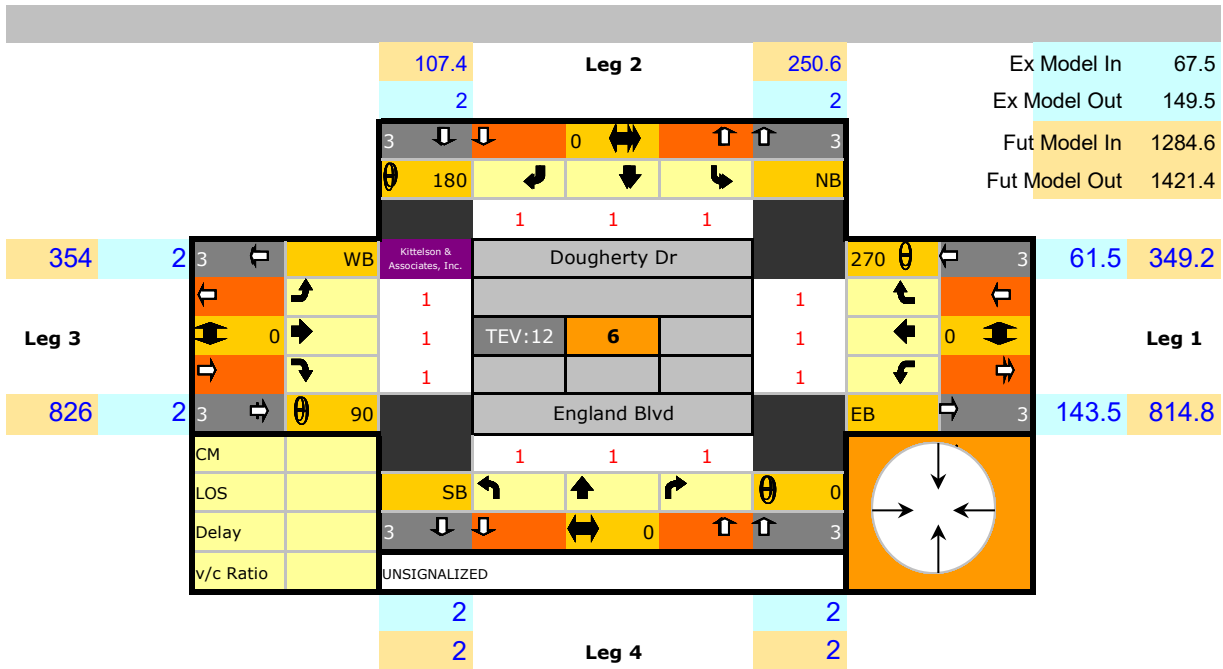
48.6	40.5	41	NB	Kittelson & Associates, Inc.	George Elmer Dr	0	18	46.9	49.7	
Leg 3	0	1	1	108	7:15 AM to 8:15 AM	1	1	Leg 1	0	
		TEV: 178	3	0.84	16					
		2020	3	3						
113.4	94.5	110	180		Cattle Dr	SB	5	20.1	21.3	
CM				39	1	3				
LOS		WB					90			
Delay		129				0	43			
v/c Ratio		Notes								
		243.6					104.4			
		271.6		Leg 4			116.4			

271.6	Leg 2	116.4	Ex Model In	352
243.6		104.4	Ex Model Out	352
			Fut Model In	392
			Fut Model Out	392

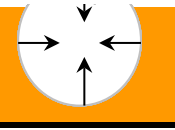
2	2	131	180	Kittelson & Associates, Inc.	George Elmer Dr	270	3	2	2	
Leg 3	0	1	1	1	7:15 AM to 8:15 AM	1	1	Leg 1	0	
		TEV: 182	4	0.94	1					
		2020	3	3	1					
2	2	3	90		Heron's Landing	EB	3	2	2	
CM				1	43	1				
LOS		SB					0			
Delay		131				0	45			
v/c Ratio		Notes								
		243.6					104.4			
		271.6		Leg 4			116.4			

271.6	Leg 2	116.4	Ex Model In	1311
243.6		104.4	Ex Model Out	1135
			Fut Model In	2228.7
			Fut Model Out	1980.3

607.5	327.9	128	180	Kittelson & Associates, Inc.	George Elmer Dr	270	224	300.3	537.6	
Leg 3	0	2	925	1	7:15 AM to 8:15 AM	35	188	Leg 1	0	
		TEV: 1283	5	0.94	1					
		2020	3	3	1					
1418	765.1	928	90		Mullan Rd	EB	1045	700.7	1254	
CM				1	1	1				
LOS		SB					0			
Delay		3				0	3			
v/c Ratio		Notes								
		2					2			
		2		Leg 4			2			



LOS		SB	↩	↑	↪	⌚	0
Delay		110	↓	↔	0	↑	241
v/c Ratio		Notes					



5.6 2.4
48.3 Leg 4 20.7

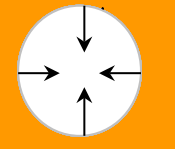
48.3 Leg 2 20.7
5.6 2.4

Ex Model In 290.3
Ex Model Out 126.7
Fut Model In 1705.6
Fut Model Out 806.4

112	↓	0	↔	↑	238
180	↩		↓	↪	NB
1		98		13	

349.2	61.5	3	↩	WB	Kittelson & Associates, Inc.	Flynn Ln	270	⌚	↩	177	140	802.9
Leg 3		1	↩			7:25 AM to 8:25 AM	34	↩	↩	0		Leg 1
		1	↩		TEV: 678	9	0.83	1	↩	0		
		1	↩		2020	3	3	142	↩	↩		
814.8	143.5	3	↩	90		England Blvd	EB	↩	196	60	344.1	

CM		1		203	182		
LOS		SB	↩	↑	↪	⌚	0
Delay		241	↓	↔	0	↑	386
v/c Ratio		Notes					



2.8 1.2
92.4 Leg 4 39.6

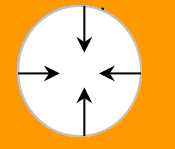
146.3 Leg 2 62.7
2.8 1.2

Ex Model In 217.8
Ex Model Out 216.2
Fut Model In 719.6
Fut Model Out 588.4

190	↓	0	↔	↑	278
0	↩		↓	↪	SB
40		135		15	

2	2	113	↩	EB	Kittelson & Associates, Inc.	Flynn Ln	90	⌚	↩	40	149.1	424.9
Leg 3		31	↩			7:25 AM to 8:25 AM	13	↩	↩	0		Leg 1
		2	↩		TEV: 609	10	0.91	5	↩	0		
		11	↩		2020	3	3	22	↩	↩		
2	2	44	↩	270		Chelsea Dr	WB	↩	50	63.9	182.1	

CM		68		234	33		
LOS		NB	↩	↑	↪	⌚	180
Delay		168	↓	↔	0	↑	335
v/c Ratio		Notes					



149.1 63.9
341.6 Leg 4 146.4

341.6 Leg 2 146.4
149.1 63.9

Ex Model In 385.7
Ex Model Out 613.3
Fut Model In 568.6
Fut Model Out 673.4

172	↓	0	↔	↑	334
270	↩		↓	↪	EB
103		68		1	

357	345.1	258	↩	NB	Kittelson & Associates, Inc.	Flynn Ln	0	⌚	↩	3	2	2
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Leg 3	42	7:30 AM to 8:30 AM	1	Leg 1	
	1	TEV: 746 11 0.83	1		
	82	2020 3 3	1		
153 147.9	125 180	Siren's Rd	SB	3	2 2
CM		154 291 1			
LOS		WB			90
Delay		151			446
v/c Ratio		Notes			
		202.3			86.7
		168	Leg 4		72

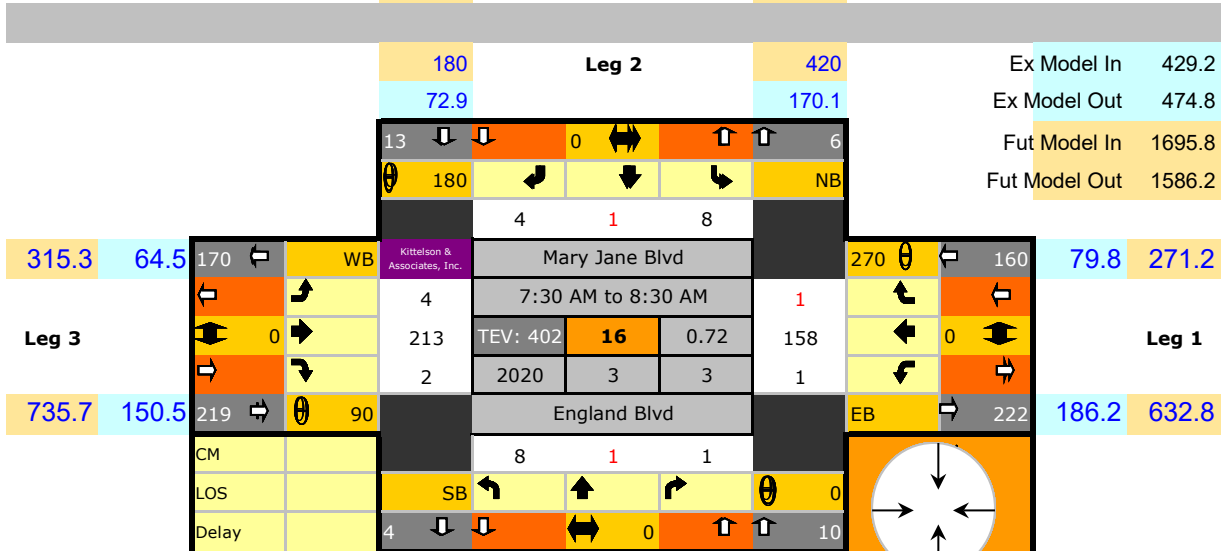
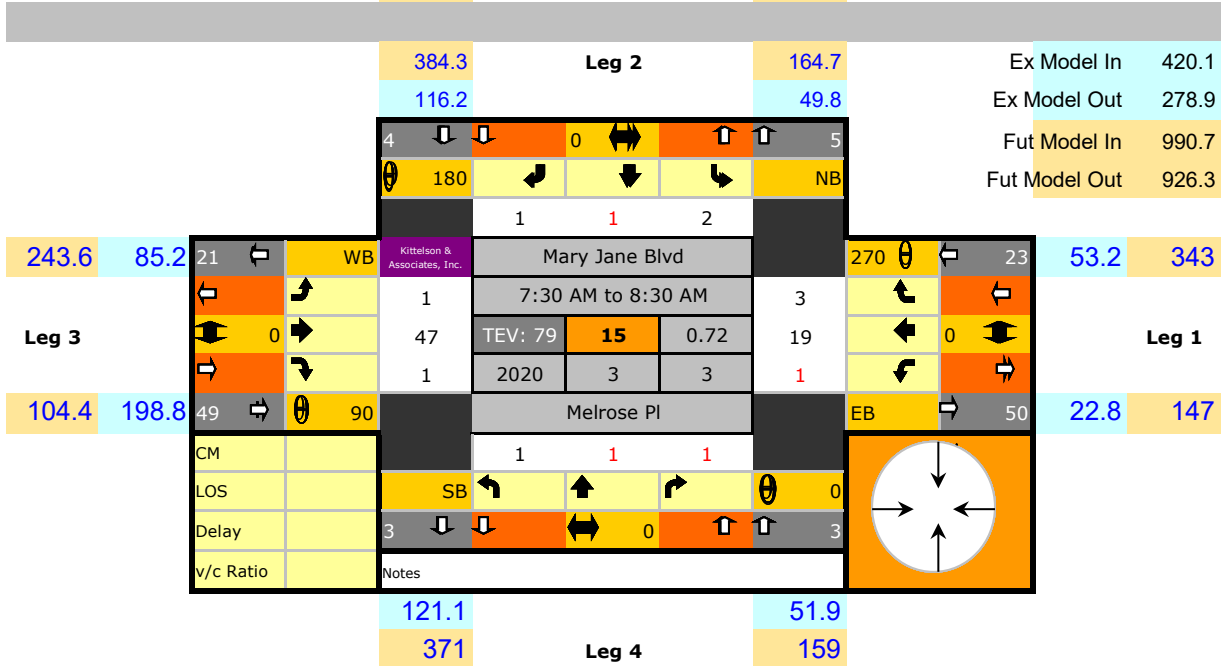
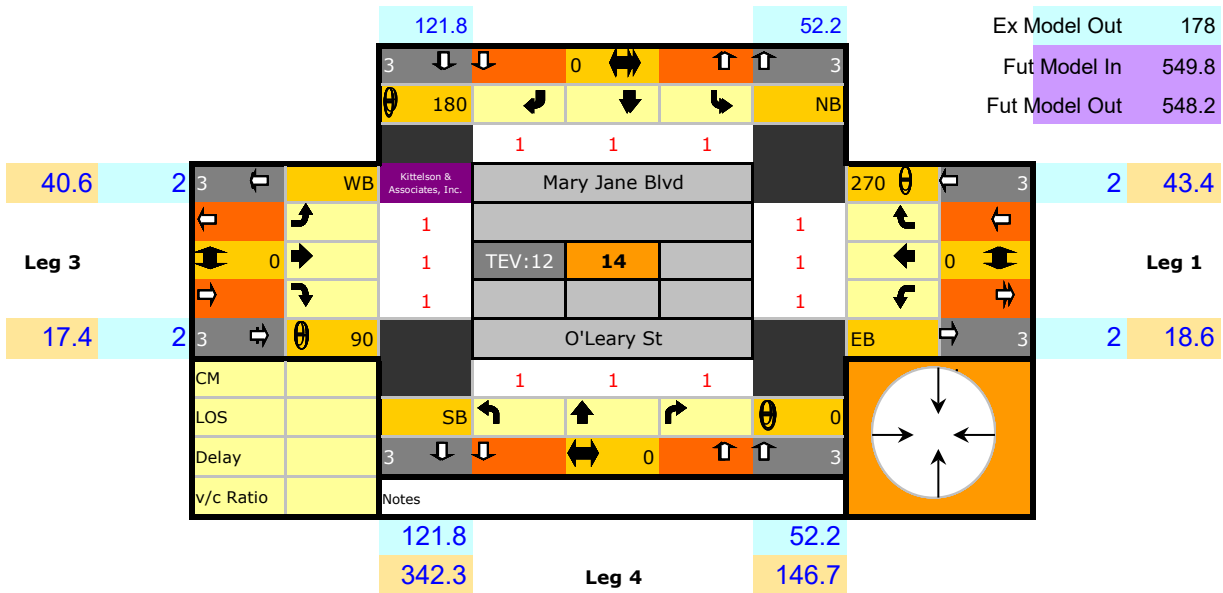
	86.7	Leg 2	202.3	Ex Model In	814.5
	87.9		205.1	Ex Model Out	520.5
				Fut Model In	1370.4
				Fut Model Out	829.6

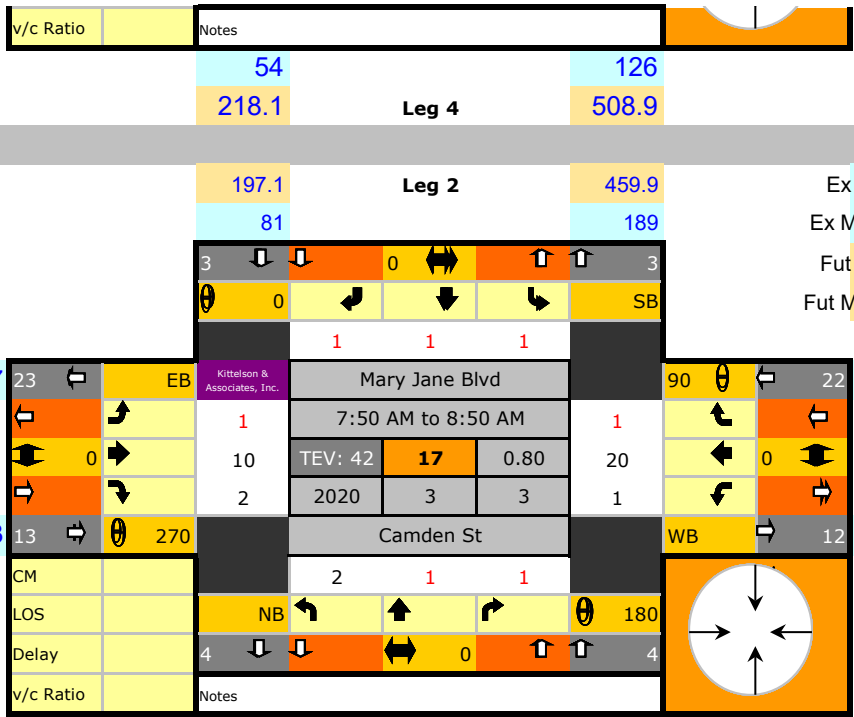
Leg 3	122	7:20 AM to 8:20 AM	167	Leg 1	
	180	TEV: 1547 12 0.92	176		
	65	2020 3 3	8		
531.9 309.6	242 351	Flynn Ln	NB	270 351	1.2 39.6
CM		292			
LOS		772			
Delay		4			
v/c Ratio		Notes			
		3			3
		3	Leg 4		3

	342.3	Leg 2	146.7	Ex Model In	1471.7
	121.8		52.2	Ex Model Out	1435.3
				Fut Model In	2426.1
				Fut Model Out	2336.9

Leg 3	3	Mary Jane Blvd	270 353	Leg 1	
	180	TEV: 1193 13 351	351		
	1	2020 3 3	1		
600.6 396.9	353 353	Mary Jane Blvd	NB	270 353	421.8 680.4
CM		832			
LOS		1			
Delay		1			
v/c Ratio		Notes			
		2			2
		2	Leg 4		2

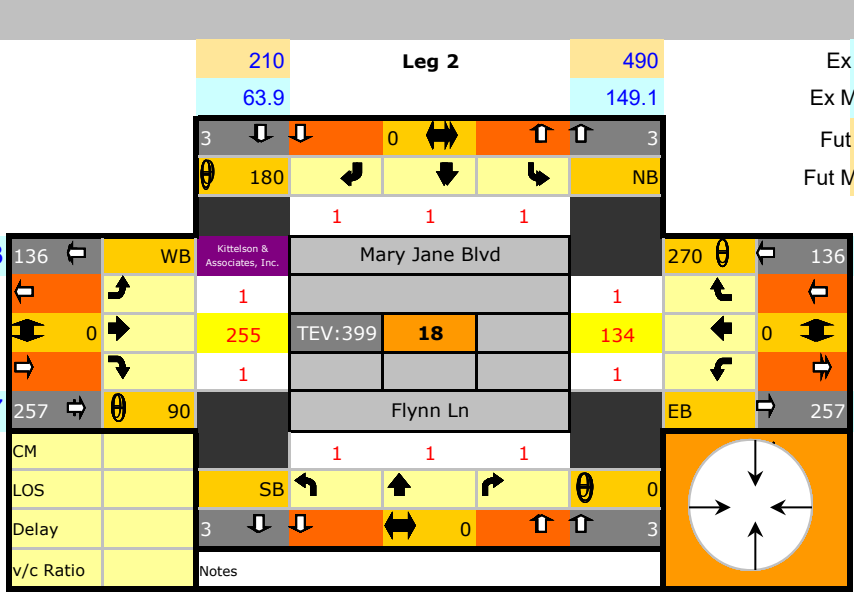
	342.3	Leg 2	146.7	Ex Model In	178
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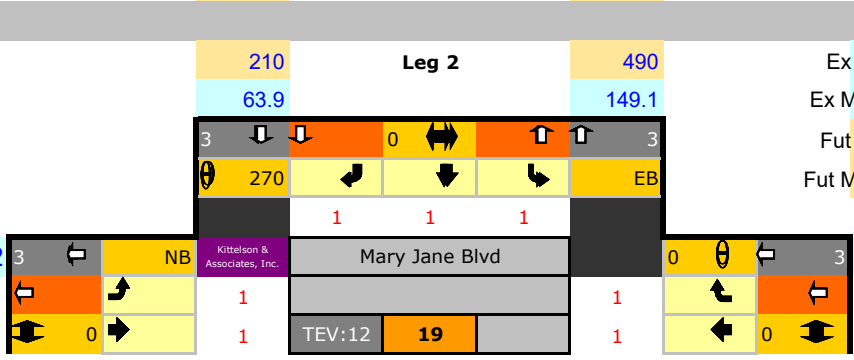
74.1	172.9
182.7	426.3
	Leg 4

Ex Model In	264.4
Ex Model Out	275.6
Fut Model In	687.4
Fut Model Out	682.6

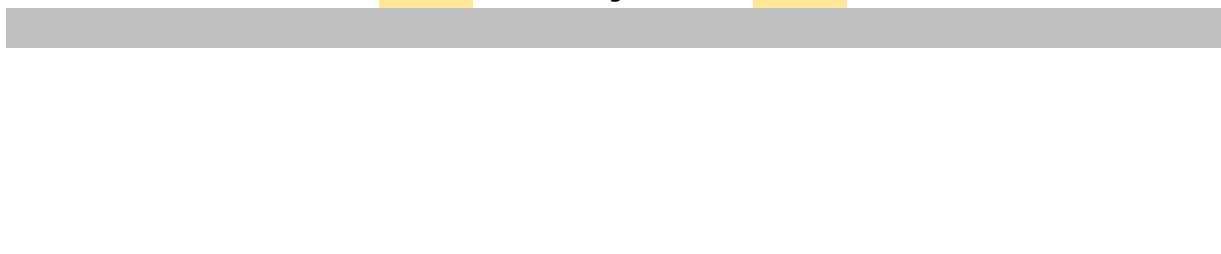
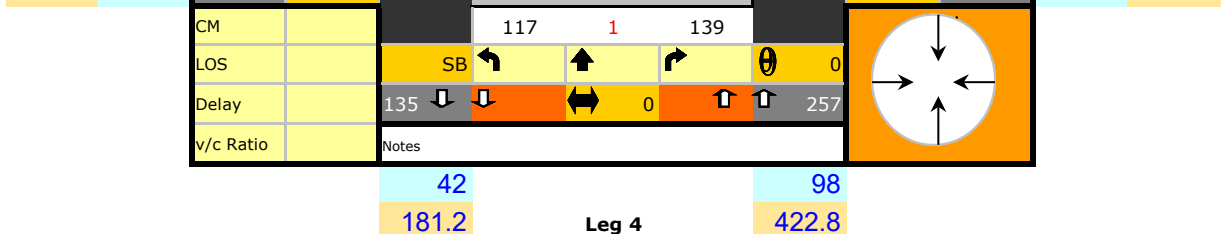
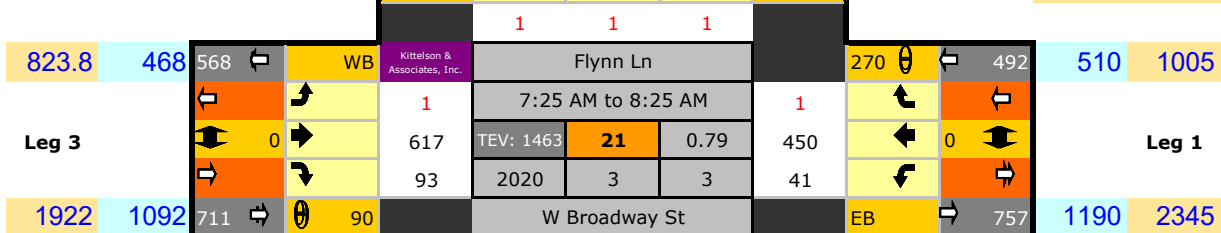
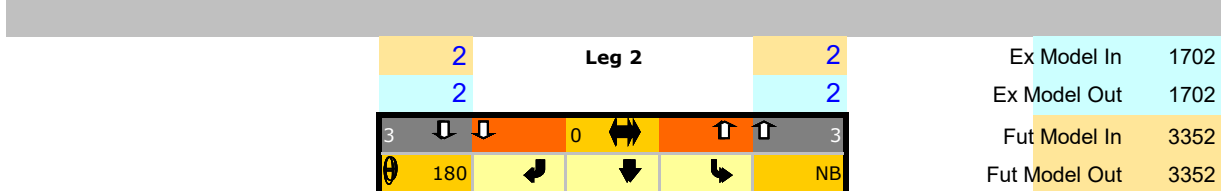
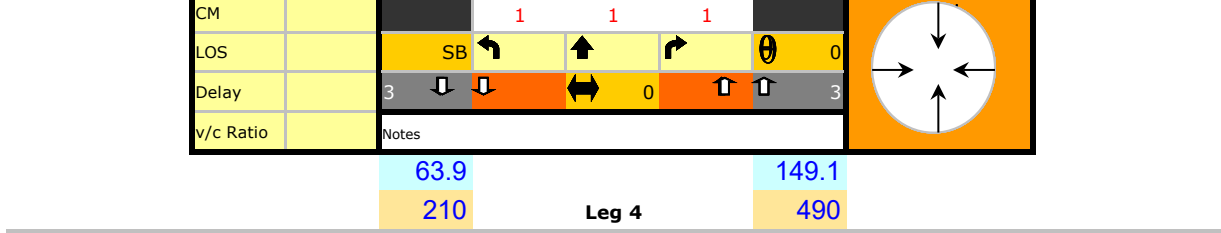
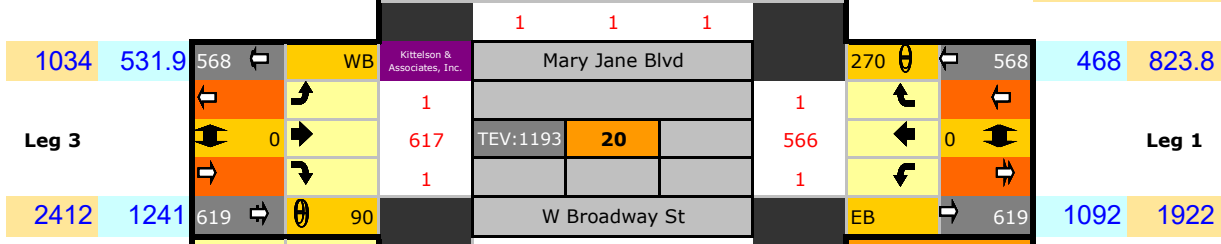
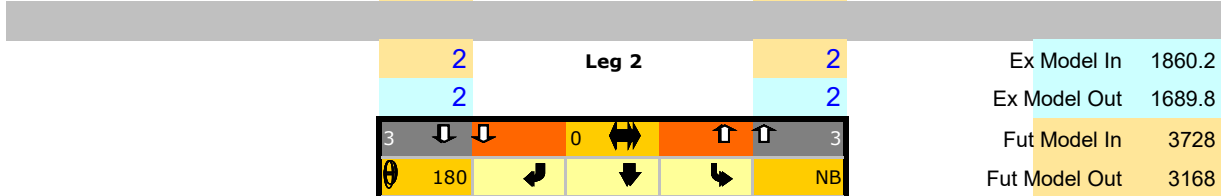
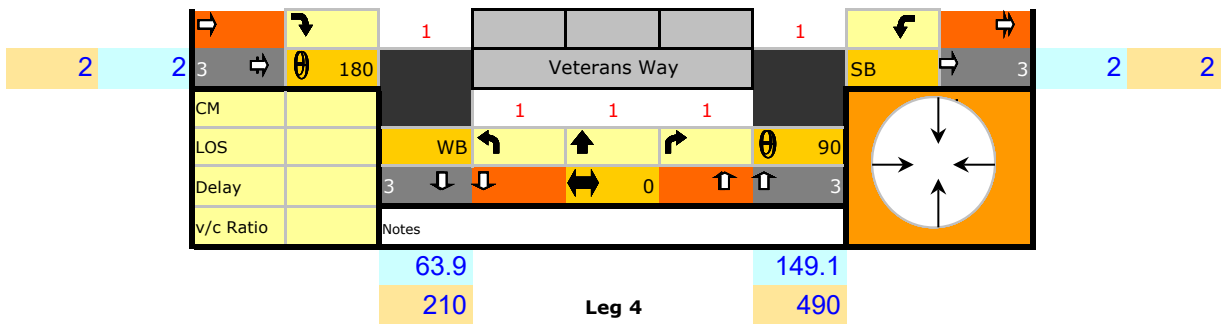


81	189
197.1	459.9
	Leg 4

Ex Model In	339.5
Ex Model Out	337.5
Fut Model In	983
Fut Model Out	1035



Ex Model In	217
Ex Model Out	217
Fut Model In	704
Fut Model Out	704



Ex Model In	1860.2
Ex Model Out	1689.8
Fut Model In	3728
Fut Model Out	3168

Ex Model In	1702
Ex Model Out	1702
Fut Model In	3352
Fut Model Out	3352

Ex Model In	510
Ex Model Out	1005
Fut Model In	1190
Fut Model Out	2345



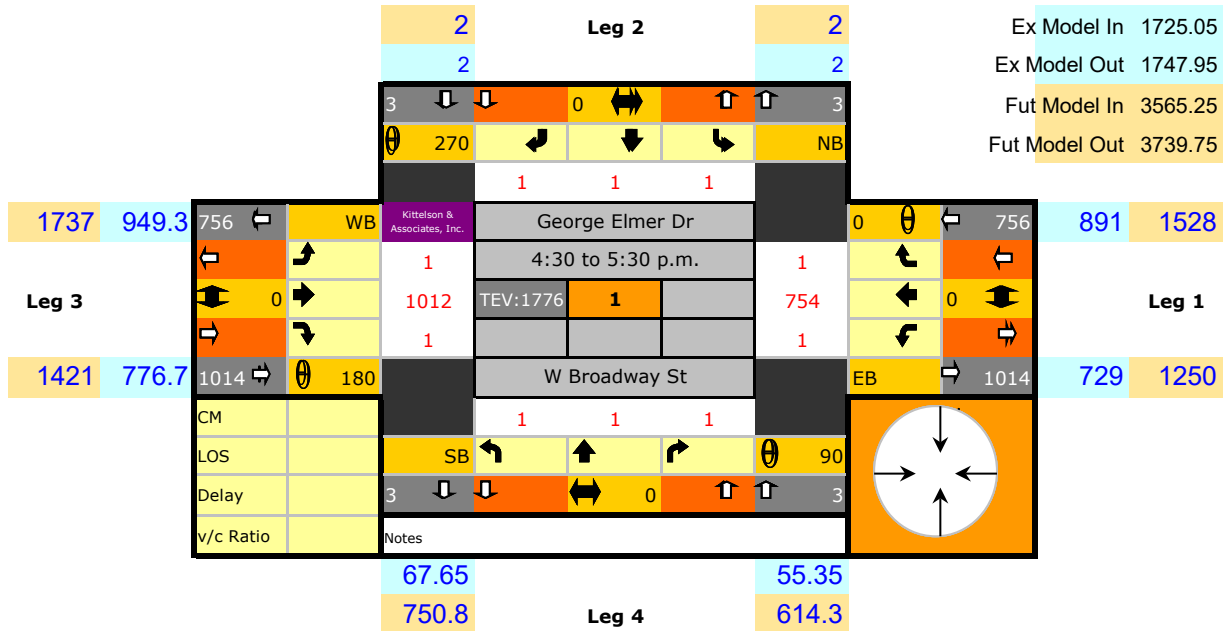
NCHRP 255 Post Processing Inputs (PM)

Blue Text - required input

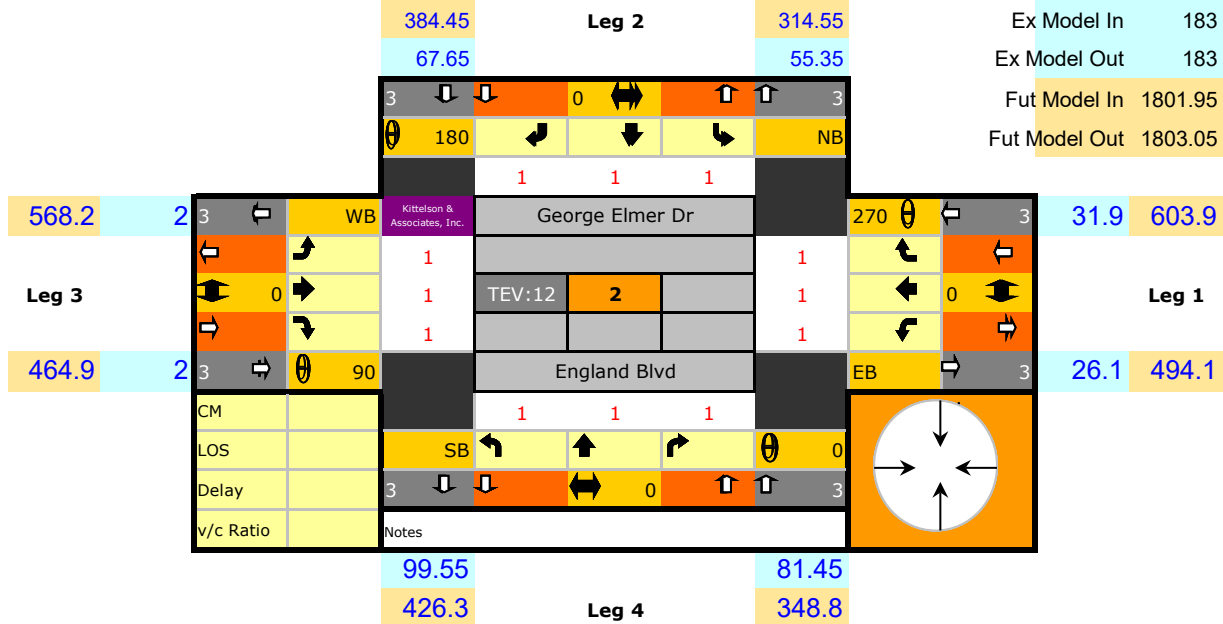
Red and Black Text - 2020 Turning Movement Counts for existing intersections

(Turning movement counts at future intersections, except for through movements at some intersections are assumed to be 1)

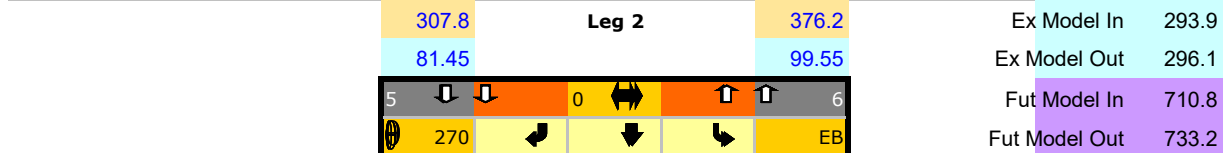
Step 1 - Insert Volume Block and Model Link Volumes



Ex Model In	1725.05
Ex Model Out	1747.95
Fut Model In	3565.25
Fut Model Out	3739.75



Ex Model In	183
Ex Model Out	183
Fut Model In	1801.95
Fut Model Out	1803.05



Ex Model In	293.9
Ex Model Out	296.1
Fut Model In	710.8
Fut Model Out	733.2

82.5	68.75	122	NB	Kittelson & Associates, Inc.	George Elmer Dr	0	11	34.65	36.3
Leg 3		1			4:55 to 5:55 p.m.	1			
		0			TEV: 196	3	0.73		
		31			2020	3	3	9	Leg 1
67.5	56.25	33	180		Cattle Dr	SB	25	28.35	29.7
		CM			120	4	23		
		LOS		WB			90		
		Delay		43		0		147	
		v/c Ratio		Notes					
				99.45				121.6	
				244.8	Leg 4			299.2	

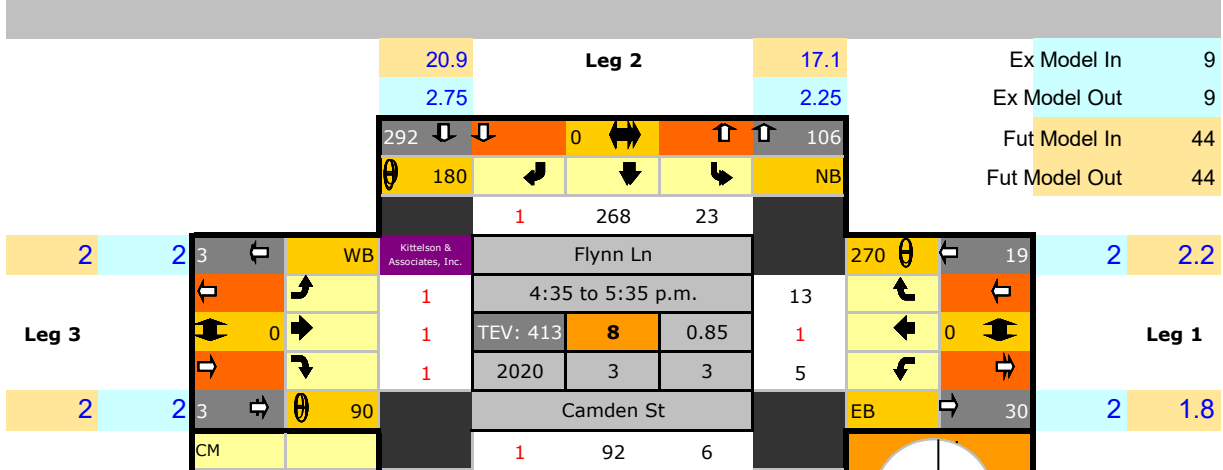
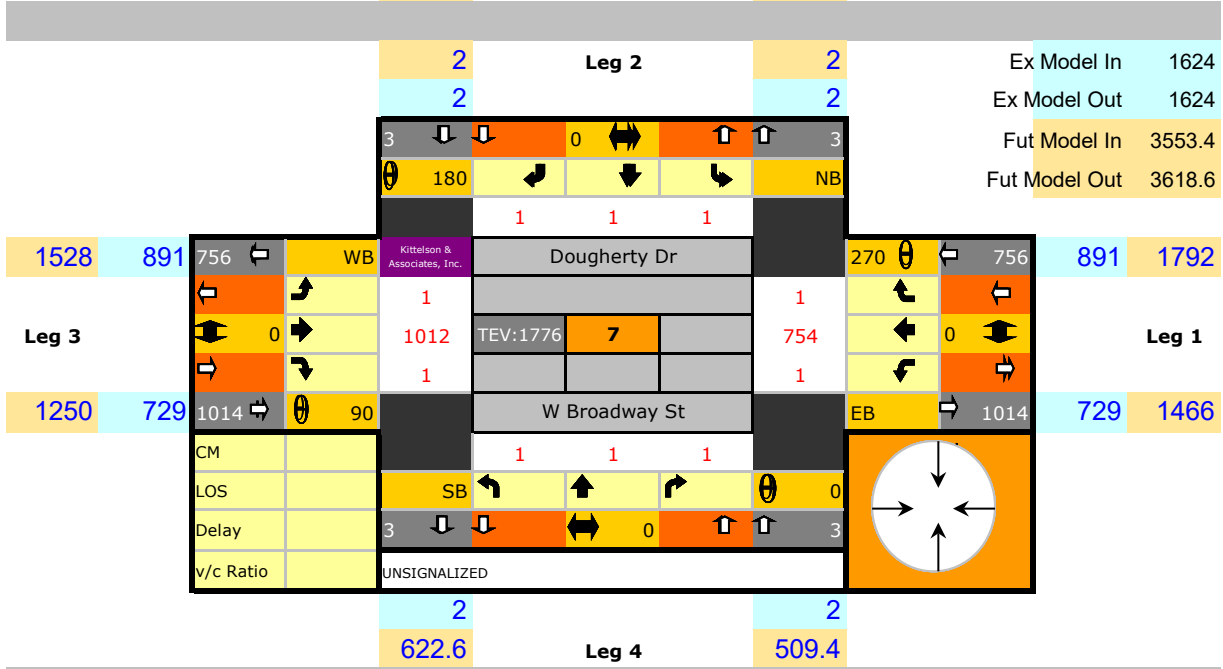
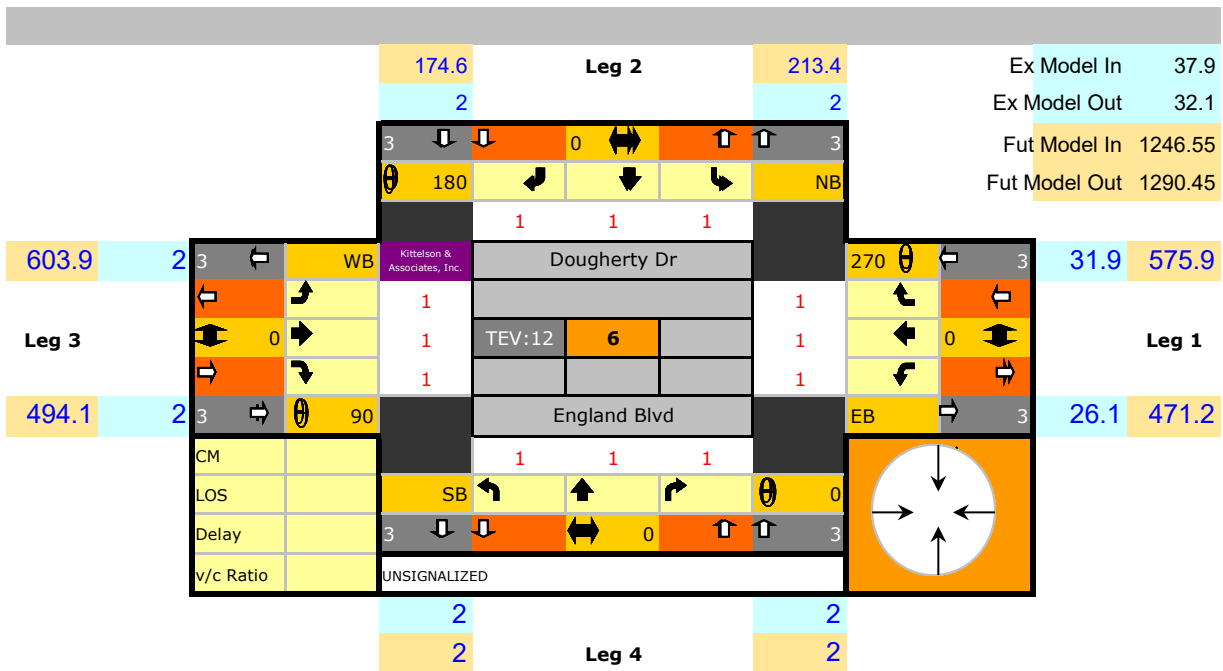
244.8	Leg 2	299.2	Ex Model In	225
99.45		121.55	Ex Model Out	225

2	2	45	180		George Elmer Dr	270	3	2	2
Leg 3		1			TEV:200	4			
		0					0		
		3			1	43	1		Leg 1
2	2	3	90		Heron's Landing	EB	3	2	2
		CM			1	147	1		
		LOS		SB			0		
		Delay		45		0		149	
		v/c Ratio		Notes					
				99.45				121.6	
				244.8	Leg 4			299.2	

244.8	Leg 2	299.2	Ex Model In	225
99.45		121.55	Ex Model Out	225
			Fut Model In	548
			Fut Model Out	548

1208	622.1	47	180		George Elmer Dr	270	928	647.4	1016
Leg 3		10			5:00 to 6:00 p.m.	135			
		0			TEV: 1384	5	0.94		
		395			2020	3	3	1	Leg 1
988.7	509	406	90		Mullan Rd	EB	438	529.7	831.6
		CM			1	1	1		
		LOS		SB			0		
		Delay		3		0		3	
		v/c Ratio		Notes					
				2				2	
				2	Leg 4			2	

244.8	Leg 2	299.2	Ex Model In	1257.75
99.45		121.55	Ex Model Out	1275.25
			Fut Model In	2251.85
			Fut Model Out	2341.15



LOS		SB	↶	↷	↵	0	
Delay		274	↶	↷	0	99	
v/c Ratio		Notes					

2.75
23.1 **Leg 4** 2.25
18.9

23.1 **Leg 2** 18.9 Ex Model In 67.8
2.75 2.25 Ex Model Out 56.2
Fut Model In 1222.25
Fut Model Out 1024.75

471.2	26.1	3	↶	WB	Kittelson & Associates, Inc.	Flynn Ln	270	↶	86	31.35	562.1
Leg 3		1	↶			4:35 to 5:35 p.m.	18	↶		Leg 1	
		1	↶			TEV: 524	9	0.85	1		
		1	↶			2020	3	3	67		
575.9	31.9	3	↶	90		England Blvd	EB	↶	172	25.65	459.9

CM		1	80	80					
LOS		SB	↶	↷	↵	0			
Delay		250	↶	↷	0	161			
v/c Ratio		Notes							

2.2
74.8 **Leg 4** 1.8
61.2

70.2 **Leg 2** 85.8 Ex Model In 194.35
1.8 2.2 Ex Model Out 194.65
Fut Model In 482.8
Fut Model Out 509.2

2	2	49	↶	EB	Kittelson & Associates, Inc.	Flynn Ln	90	↶	22	85.5	211.5
Leg 3		28	↶			4:30 to 5:30 p.m.	4	↶		Leg 1	
		12	↶			TEV: 512	10	0.71	3		
		40	↶			2020	3	3	15		
2	2	80	↶	270		Chelsea Dr	WB	↶	52	104.5	258.5

CM		28	112	19					
LOS		NB	↶	↷	↵	180			
Delay		267	↶	↷	0	159			
v/c Ratio		Notes							

85.95
162.9 **Leg 4** 105.1
199.1

162.9 **Leg 2** 199.1 Ex Model In 459.2
85.95 105.05 Ex Model Out 410.8
Fut Model In 395.9
Fut Model Out 390.1

133.2	192.2	31	↶	NB	Kittelson & Associates, Inc.	Flynn Ln	0	↶	3	2	2
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Leg 3	45	180	20	4:45 PM to 5:45 PM	1	1	1	Leg 1
	TEV: 461	11	0.73	1	1	1		
	2020	3	3	1	1	1		
	162.8	234.9	111.6	136.4				
Siren's Rd		3	2	2				
CM			17	139	1			
LOS			WB				90	
Delay			267				157	
v/c Ratio			Notes					
			55.8	Leg 4	68.2			

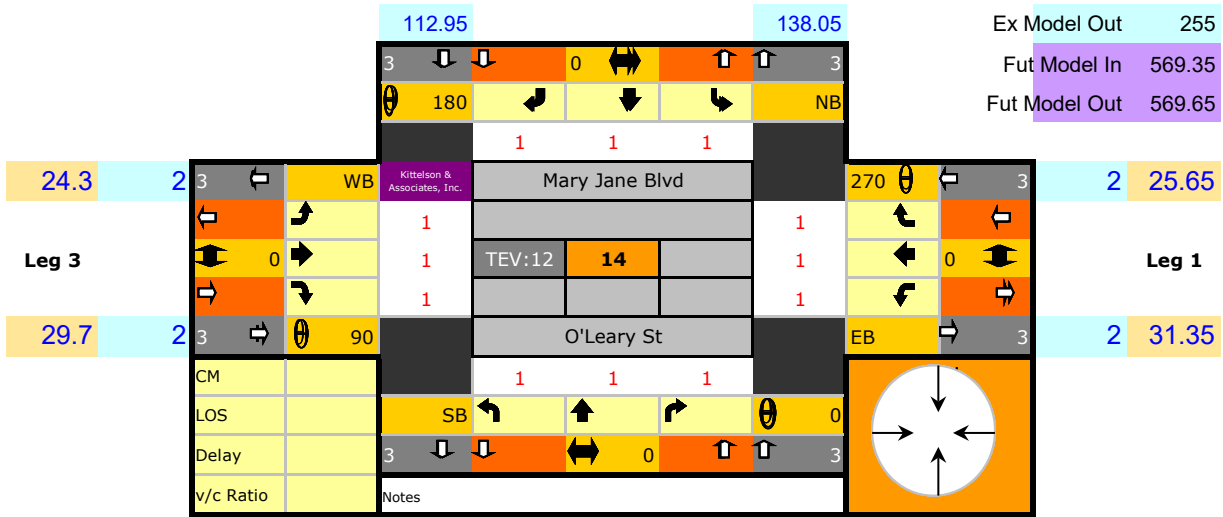
		72.45	Leg 2	88.55	Ex Model In	663
		113.85		139.15	Ex Model Out	809
					Fut Model In	1049.7
					Fut Model Out	1252.3

Leg 3	955	867	249	5:00 PM to 6:00 PM	86	1	1	Leg 1
	TEV: 1581	12	0.88	780	1	1	1	
	2020	3	3	1	1	1	1	
	1101	666.1	72.45	88.55				
Flynn Ln		270	2.2	74.8				
CM			65	396	86			
LOS			WB				90	
Delay			462				471	
v/c Ratio			Notes					
			2	Leg 4	2			

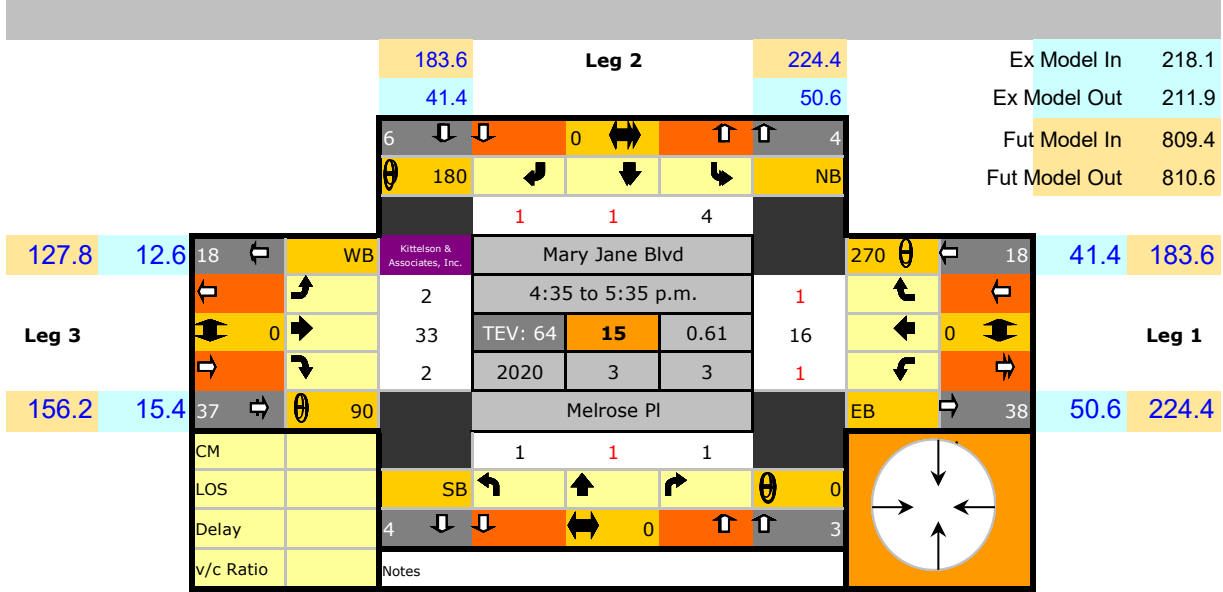
		231.3	Leg 2	282.7	Ex Model In	1565.25
		112.95		138.05	Ex Model Out	1591.75
					Fut Model In	2480.3
					Fut Model Out	2507.7

Leg 3	869	869	3	Mary Jane Blvd	270	270	869	794.2	1295
	TEV: 1348	13		867	1	1	1	Leg 1	
	2020	3	3	1	1	1	1		
	1163	801.9	231.3	282.7					
Mullan Rd		270	2.2	74.8					
CM			1	1	1				
LOS			WB				90		
Delay			473				473		
v/c Ratio			Notes						
			2	Leg 4	2				

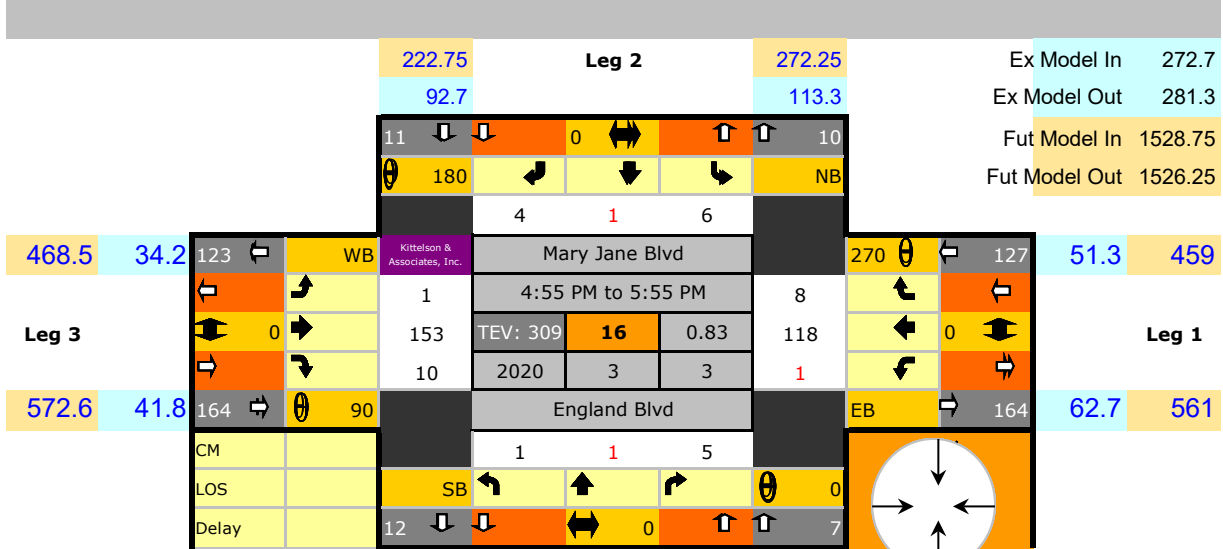
		231.3	Leg 2	282.7	Ex Model In	255
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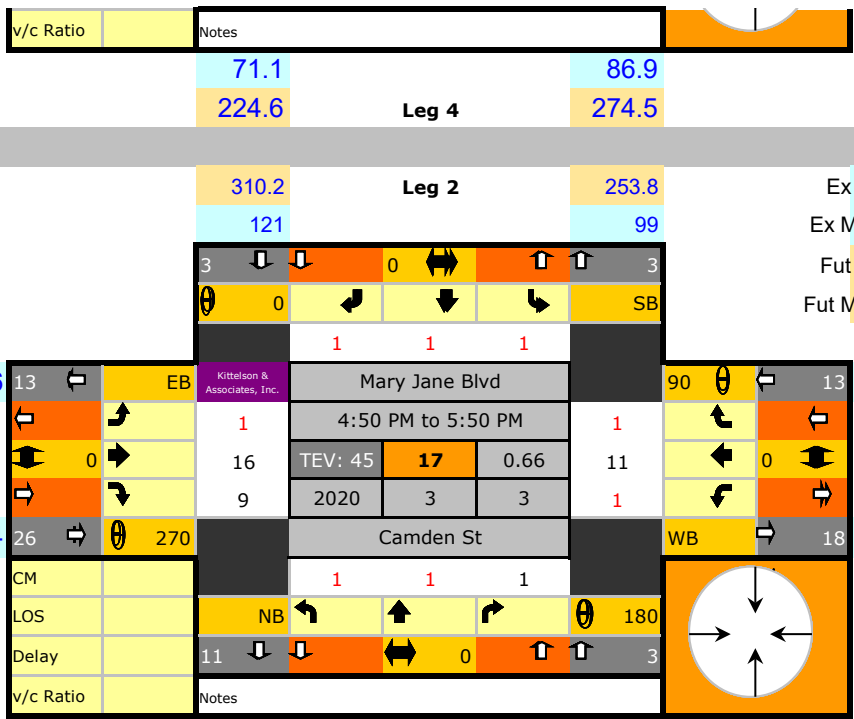


113 138.1
231.3 Leg 4 282.7



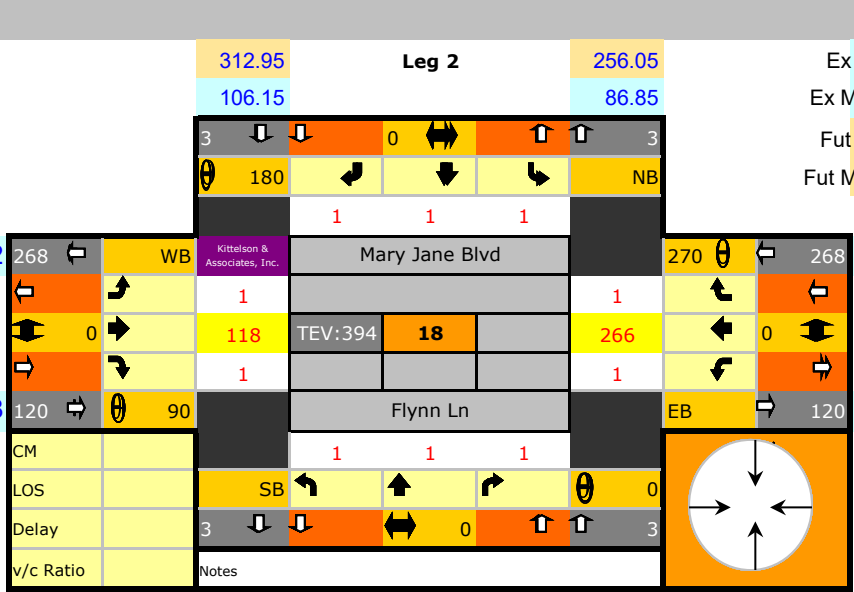
98.1 119.9
234 Leg 4 286





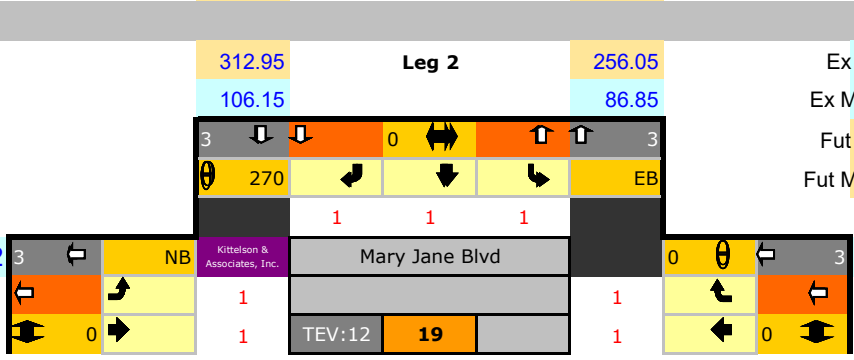
109.5		89.55
275	Leg 4	225

Ex Model In	220.35
Ex Model Out	218.65
Fut Model In	591.55
Fut Model Out	579.45

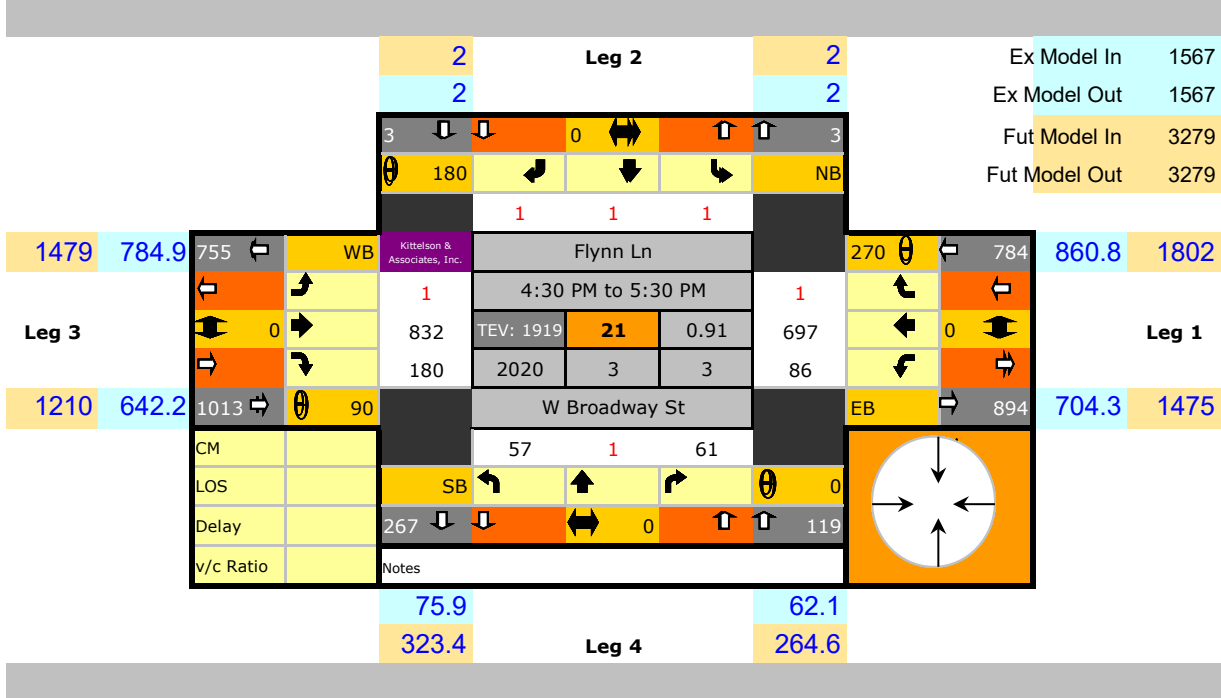
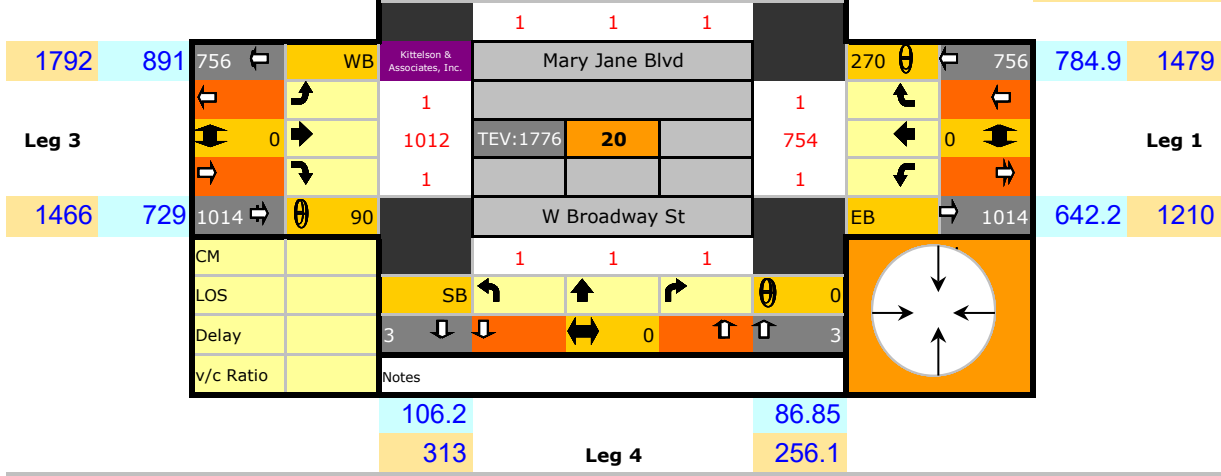
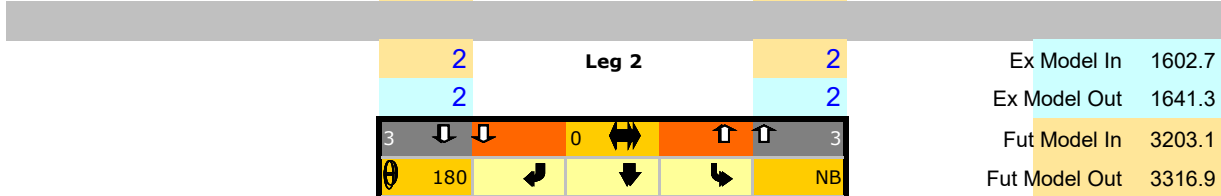
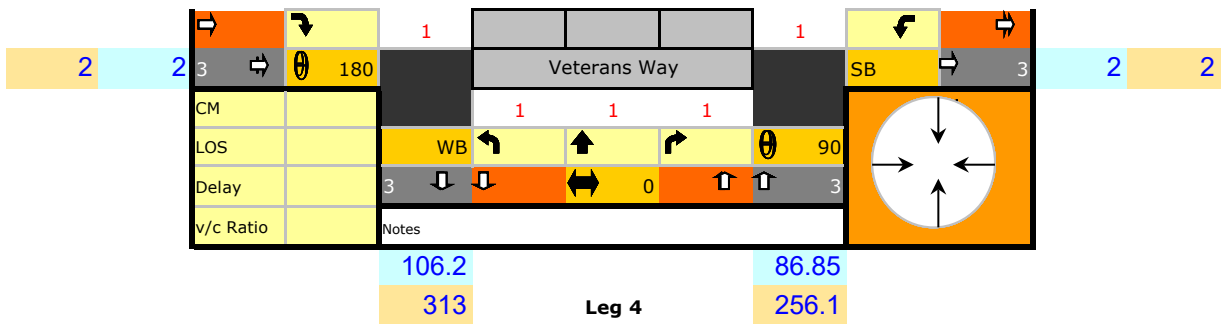


121		99
310.2	Leg 4	253.8

Ex Model In	284
Ex Model Out	284
Fut Model In	866.15
Fut Model Out	854.85



Ex Model In	197
Ex Model Out	197
Fut Model In	573
Fut Model Out	573





NCHRP 255 Post Processing Output (AM)

Step 2 - Analyze Output

		Leg 2												
		3	↓	↓	0%	0	↔	0%	↑	↑	3			
	Erase Block	180	↙	↘		↘					NB			
	Reset Block			0		3		0						
	1025	WB	Kittelson & Associates, Inc.	George Elmer Dr				270	↙	↘	830			
				12:00 AM										
Leg 3		0	↔	0%	↗	0	↔	0%	↘	0				
		0	↕	0%	↘	1066	TEV:2486	1	0.00	757				
		0	↕	0%	↘	149	0	0	0	72				
	1215	↙	↘	90	easy	W Broadway St				EB	↙	↘	1234	
	CM					268		3		168	Draw Alignment			
	LOS					SB	↔	↕	↗	↘	0			
	Delay					224	↓	↓	0%	↔	0	0%	↑	439
	v/c Ratio					Notes								
Leg 4														
		Leg 2												
		160	↓	↓	0%	0	↔	0%	↑	↑	235			
	Erase Block	180	↙	↘		↘					NB			
	Reset Block			160		0		1						
	400	WB	Kittelson & Associates, Inc.	George Elmer Dr				270	↙	↘	236			
				12:00 AM										
Leg 3		0	↔	0%	↗	234	TEV:1076	2	0.00	235				
		0	↕	0%	↘	351	0	0	0	0				
		0	↕	0%	↘	90	0	0	0	0				
	675	↙	↘	90	easy	England Blvd				EB	↙	↘	351	
	CM					4		0		0	Draw Alignment			
	LOS					SB	↔	↕	↗	↘	0			
	Delay					90	↓	↓	0%	↔	0	0%	↑	4
	v/c Ratio					Notes								
Leg 4														
		Leg 2												
		83	↓	↓	0%	0	↔	0%	↑	↑	43			
	Erase Block	180	↙	↘		↘					NB			
	Reset Block			19		59		5						
	49	WB	Kittelson & Associates, Inc.	George Elmer Dr				270	↙	↘	16			
				7:15 AM to 8:15 AM										
Leg 3		0	↔	0%	↗	21	TEV:248	3	0.84	1				
		0	↕	0%	↘	86	2020	3	3	6				
		0	↕	0%	↘	107								
	107	↙	↘	90	easy	Cattle Dr				EB	↙	↘	6	
	CM					30		12		1	Draw Alignment			
	LOS					SB	↔	↕	↗	↘	0			
	Delay					150	↓	↓	0%	↔	0	0%	↑	42
	v/c Ratio					Notes								

v/c Ratio	Notes									
Leg 4										
Leg 2										
	153	↓	↓	0%	0	↔	0%	↑	↑	54
Erase Block	180	↙	↘	↘	↙	↘	↙	↘	↙	NB
Reset Block		1		150		1				
3	WB	Kittelson & Associates, Inc.		George Elmer Dr				270	↔	3
↔ 0%	↙	1	12:00 AM		1	↘	0%	↔		
↕ 0	↔	1	TEV:212	4	0.00	1	↔	0	↕	
↔ 0%	↘	1	0	0	0	1	↙	0%	↔	
3	↔	90	easy		Heron's Landing		EB		↔	3
CM			1	51	1	Draw Alignment				
LOS			SB	↙	↕	↘	↔	0		
Delay			153	↓	↓	0%	↔	0	0%	↑
v/c Ratio	Notes									

Leg 4

Leg 2

	146	↓	↓	0%	0	↔	0%	↑	↑	46
Erase Block	180	↙	↘	↘	↙	↘	↙	↘	↙	NB
Reset Block		15		1		131				
421	WB	Kittelson & Associates, Inc.		George Elmer Dr				270	↔	448
↔ 0%	↙	3	7:15 AM to 8:15 AM		42	↘	0%	↔		
↕ 0	↔	1603	TEV:2205	5	0.94	405	↔	0	↕	
↔ 0%	↘	1	2020	3	3	1	↙	0%	↔	
1607	↔	90	easy		Mullan Rd		EB		↔	1735
CM			1	1	1	Draw Alignment				
LOS			SB	↙	↕	↘	↔	0		
Delay			3	↓	↓	0%	↔	0	0%	↑
v/c Ratio	Notes									

Leg 4

Leg 2

	205	↓	↓	0%	0	↔	0%	↑	↑	314
Erase Block	180	↙	↘	↘	↙	↘	↙	↘	↙	NB
Reset Block		205		0		0				
443	WB	Kittelson & Associates, Inc.		Dougherty Dr				270	↔	234
↔ 0%	↙	313	12:00 AM		0	↘	0%	↔		
↕ 0	↔	345	TEV:1105	6	0.00	234	↔	0	↕	
↔ 0%	↘	3	0	0	0	0	↙	0%	↔	
662	↔	90	easy		England Blvd		EB		↔	346
CM			5	0	0	Draw Alignment				
LOS			SB	↙	↕	↘	↔	0		
Delay			3	↓	↓	0%	↔	0	0%	↑
v/c Ratio	UN SIGNALIZED									

Leg 4

Leg 4

Leg 2

		4	↓	↓	0%	0	↔	0%	↑	↑	3	
	Erase Block	180	↙	↓	↘						NB	
	Reset Block		0			4				0		
	932	WB	Kittelson & Associates, Inc.		Dougherty Dr				270	↔	1350	
	0%	↙	↘	↙	↘	↙	↘	↙	↘	0%	↙	↘
Leg 3	0	↙	↘	↙	↘	↙	↘	↙	↘	0	↙	↘
	1139	TEV:3435	7	0.00	755							
	0%	↙	↘	↙	↘	↙	↘	↙	↘	0%	↙	↘
	405	0	0	0	594							
	1544	↔	90	easy		W Broadway St			EB	↔	1497	
	CM			176	3	358	Draw Alignment					
	LOS		SB	↙	↘	↙	↘	↙	↘	0		
	Delay		1003	↓	↓	0%	↔	0	0%	↑	↑	537
	v/c Ratio		UNSIGNALIZED									

Leg 4

Leg 2

		148	↓	↓	0%	0	↔	0%	↑	↑	278	
	Erase Block	180	↙	↓	↘						NB	
	Reset Block		1			140				6		
	3	WB	Kittelson & Associates, Inc.		Flynn Ln				270	↔	43	
	0%	↙	↘	↙	↘	↙	↘	↙	↘	0%	↙	↘
Leg 3	1	↙	↘	↙	↘	↙	↘	↙	↘	1	↙	↘
	1	TEV:450	8	0.82	31							
	0%	↙	↘	↙	↘	↙	↘	↙	↘	0%	↙	↘
	1	2020	3	3	11							
	3	↔	90	easy		Camden St			EB	↔	17	
	CM			1	246	10	Draw Alignment					
	LOS		SB	↙	↘	↙	↘	↙	↘	0		
	Delay		153	↓	↓	0%	↔	0	0%	↑	↑	257
	v/c Ratio		Notes									

Leg 4

Leg 2

		103	↓	↓	0%	0	↔	0%	↑	↑	256	
	Erase Block	180	↙	↓	↘						NB	
	Reset Block		19			29				55		
	154	WB	Kittelson & Associates, Inc.		Flynn Ln				270	↔	595	
	0%	↙	↘	↙	↘	↙	↘	↙	↘	0%	↙	↘
Leg 3	188	↙	↘	↙	↘	↙	↘	↙	↘	129	↙	↘
	13	TEV:1221	9	0.83	177							
	0%	↙	↘	↙	↘	↙	↘	↙	↘	0%	↙	↘
	235	↔	90	easy		England Blvd			EB	↔	480	
	CM			6	46	236	Draw Alignment					
	LOS		SB	↙	↘	↙	↘	↙	↘	0		
	Delay		331	↓	↓	0%	↔	0	0%	↑	↑	289
	v/c Ratio		Notes									

Leg 4

Leg 2

			324 ↓	↓ 0%	0	↔	0%	↑	↑ 340		
	Erase Block	θ	180	↓	↓	↓	↓		NB		
	Reset Block			40	230	54					
Leg 3	113	WB	Kittelson & Associates, Inc.	Flynn Ln			270	θ	←	209	
		↔ 0%	↕	26	7:25 AM to 8:25 AM	60	↖	0%	↗		
		↕ 0	↔	5	TEV: 981	10	0.91	18	↖	0	↗
		↔ 0%	↕	12	2020	3	3	131	↖	0%	↗
		43	θ	90	Chelsea Dr			EB	↔	155	
		CM		easy	55	253	97	Draw Alignment			
	LOS		SB	↖	↕	↗	θ	0			
	Delay		373 ↓	↓ 0%	↔	0	0%	↑	↑ 405		
	v/c Ratio		Notes								

Leg 4

Leg 2

			317 ↓	↓ 0%	0	↔	0%	↑	↑ 417		
	Erase Block	θ	180	↓	↓	↓	↓		NB		
	Reset Block			221	93	2					
Leg 3	268	WB	Kittelson & Associates, Inc.	Flynn Ln			270	θ	←	3	
		↔ 0%	↕	84	7:30 AM to 8:30 AM	2	↖	0%	↗		
		↕ 0	↔	1	TEV: 809	11	0.83	0	↖	0	↗
		↔ 0%	↕	28	2020	3	3	0	↖	0%	↗
		113	θ	90	Siren's Rd			EB	↔	3	
		CM		easy	46	330	0	Draw Alignment			
	LOS		SB	↖	↕	↗	θ	0			
	Delay		121 ↓	↓ 0%	↔	0	0%	↑	↑ 377		
	v/c Ratio		Notes								

Leg 4

Leg 2

			452						402			
	Erase Block	θ	180	↓	↓	↓	↓		NB			
	Reset Block			106	0	8						
Leg 3	1139	440	WB	Kittelson & Associates, Inc.	Flynn Ln			270	θ	←	366	918
		↔ 0%	↕	423	7:20 AM to 8:20 AM	32	↖	0%	↗			
		↕ 0	↔	913	TEV: 1830	12	0.92	331	↖	0	↗	
		↔ 0%	↕	10	2020	3	3	3	↖	0%	↗	
		1483	1345	θ	90	Mullan Rd			EB	↔	922	1386
		CM		easy	4	0	1	Draw Alignment				
	LOS		SB	↖	↕	↗	θ	0				
	Delay		13 ↓	↓ 0%	↔	0	0%	↑	↑ 5			
	v/c Ratio											

Leg 4

Leg 2

			116 ↓	↓ 0%	0	↔	0%	↑	↑ 53		
	Erase Block	θ	180	↓	↓	↓	↓		NB		

	Reset Block		33	3	80				
Leg 3	545 WB	Kittelson & Associates, Inc.	Mary Jane Blvd			270	547		
	0% ↶ ↷	16	12:00 AM			35	0% ↶ ↷		
	0 ↶ ↷	1311	TEV:1993	13	0.00	512	0 ↶ ↷		
	0% ↶ ↷	0	0	0	0	0	0% ↶ ↷		
	1327 90	easy	Mullan Rd			EB	1391		
CM		0	3	0	Draw Alignment				
LOS		SB	↶	↷	↶	0			
Delay		3	0%	0%	0%	3			
v/c Ratio		Notes							

Leg 4

Leg 2

	Erase Block		115	0%	0	0%	0	53
	180							NB
	Reset Block		26	76	13			
Leg 3	51 WB	Kittelson & Associates, Inc.	Mary Jane Blvd			270	54	
	0% ↶ ↷	8	12:00 AM			17	0% ↶ ↷	
	0 ↶ ↷	2	TEV:244	14	0.00	9	0 ↶ ↷	
	0% ↶ ↷	12	0	0	0	28	0% ↶ ↷	
	22 90	easy	O'Leary St			EB	24	
CM		16	28	8	Draw Alignment			
LOS		SB	↶	↷	↶	0		
Delay		116	0%	0%	0%	53		
v/c Ratio		Notes						

Leg 4

Leg 2

	Erase Block		185	0%	0	0%	0	68
	180							NB
	Reset Block		2	37	146			
Leg 3	120 WB	Kittelson & Associates, Inc.	Mary Jane Blvd			270	270	
	0% ↶ ↷	0	7:30 AM to 8:30 AM			61	0% ↶ ↷	
	0 ↶ ↷	34	TEV:567	15	0.72	115	0 ↶ ↷	
	0% ↶ ↷	0	2020	3	3	94	0% ↶ ↷	
	34 90	easy	Melrose Pl			EB	248	
CM		2	7	68	Draw Alignment			
LOS		SB	↶	↷	↶	0		
Delay		131	0%	0%	0%	78		
v/c Ratio		Notes						

Leg 4

Leg 2

	Erase Block		71	0%	0	0%	0	135
	180							NB
	Reset Block		30	22	19			
Leg 3	626 WB	Kittelson & Associates, Inc.	Mary Jane Blvd			270	446	
	0% ↶ ↷	87	7:30 AM to 8:30 AM			6	0% ↶ ↷	

Leg 3	0	687	TEV:1565	16	0.72	432	0	Leg 1
	0%	62	2020	3	3	8	0%	
	836	90	England Blvd			Draw Alignment	EB	712
CM		163	42	6				
LOS		SB						
Delay		92	0%	0	0%	212		
v/c Ratio		Notes						

Leg 4

Leg 2

		53	0%	0	0%	141		
Erase Block		180				NB		
Reset Block		13	36	4				
45	WB	Mary Jane Blvd			270	21		
		42	7:50 AM to 8:50 AM	6		0%		
Leg 3		12	TEV:265	17	0.80	13	0	Leg 1
		23	2020	3	3	2	0%	
	77	90	Camden St			Draw Alignment	EB	18
CM		19	92	3				
LOS		SB						
Delay		61	0%	0	0%	114		
v/c Ratio		Notes						

Leg 4

Leg 2

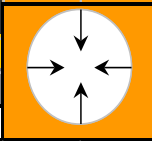
		796		724					
Erase Block		180				NB			
Reset Block		6	49	44					
3001	201	WB	Mary Jane Blvd			270	238	2218	
		7	12:00 AM	37		0%			
Leg 3		526	TEV:1048	18	0.00	190	0	Leg 1	
		2	0	0	0	12	0%		
	2764	535	90	Flynn Ln			Draw Alignment	EB	607
CM		5	133	37					
LOS		SB							
Delay		63	0%	0	0%	175			
v/c Ratio		Some Manual Adjustments Made							

Leg 4

Leg 2

		79	0%	0	0%	177		
Erase Block		180				NB		
Reset Block		1	77	1				
3	WB	Mary Jane Blvd			270	3		
		2	12:00 AM	2		0%		
Leg 3		0	TEV:262	19	0.00	0	0	Leg 1
		1	0	0	0	1	0%	

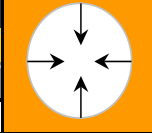
3	90	easy	veterans way			Draw Alignment	EB	3
CM			2	174	2			
LOS			SB	↶	↷	↷	0	
Delay			79	↓	0%	↔	0	0%
v/c Ratio							↑	178
Notes								



Leg 4

Leg 2

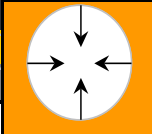
			3	↓	0%	0	↔	0%	↑	3
	Erase Block		180	↶	↷	↷				NB
	Reset Block		0			2			0	
	1087	WB	Mary Jane Blvd			270	971			
			0		12:00 AM	0	0%			
Leg 3			1231	TEV:2439	20	0.00	956	0		Leg 1
			62	0	0	0	15	0%		
	1293	90	W Broadway St			EB	1269			
	CM		easy	131	3	38	Draw Alignment			
	LOS		SB	↶	↷	↷	0			
	Delay		79	↓	0%	↔	0	0%		
	v/c Ratio						↑	172		
Notes										



Leg 4

Leg 2

			3	↓	0%	0	↔	0%	↑	3
	Erase Block		180	↶	↷	↷				NB
	Reset Block		1			1			1	
	962	WB	Flynn Ln			270	876			
			1		7:25 AM to 8:25 AM	1	0%			
Leg 3			1141	TEV:2941	21	0.79	748	0		Leg 1
			146	2020	3	3	127	0%		
	1288	90	W Broadway St			EB	1702			
	CM		easy	213	1	559	Draw Alignment			
	LOS		SB	↶	↷	↷	0			
	Delay		274	↓	0%	↔	0	0%		
	v/c Ratio						↑	774		
Notes										



Leg 4



NCHRP 255 Post Processing Output (PM)

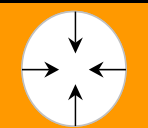
Step 2 - Analyze Output

		Leg 2											
		3	↓	↓	0%	0	↔	0%	↑	↑	3		
	Erase Block	180	↙	↘		↘		↙		NB			
	Reset Block		0	3	0								
	1463	WB	Kittelson & Associates, Inc.		George Elmer Dr			270	↻	1406			
			0	4:30 to 5:30 p.m.			0	↻	0%	↔			
Leg 3			0	TEV:3463	1	0.00	1269	↻	0	↕		Leg 1	
			0%	↔			0	↻	0%	↕			
			0%	↔			137	↻	0%	↕			
	1748	90	easy		W Broadway St			EB	↻	1637			
	CM		194	3	109			Draw Alignment					
	LOS		SB	↻	↕	↻	0						
	Delay		360	↓	↓	0%	↔	0	0%	↑	306		
	v/c Ratio		Notes										
			Leg 4										
			Leg 2										
			195	↓	↓	0%	0	↔	0%	↑	140		
	Erase Block	180	↙	↘		↘		↙		NB			
	Reset Block		184	4	7								
	711	WB	Kittelson & Associates, Inc.		George Elmer Dr			270	↻	367			
			130	12:00 AM			7	↻	0%	↔			
Leg 3			0	TEV:1285	2	0.00	352	↻	0	↕		Leg 1	
			0%	↔			0	↻	0%	↕			
			0%	↔			8	↻	0%	↕			
	539	90	easy		England Blvd			EB	↻	264			
	CM		175	3	6			Draw Alignment					
	LOS		SB	↻	↕	↻	0						
	Delay		171	↓	↓	0%	↔	0	0%	↑	185		
	v/c Ratio		Notes										
			Leg 4										
			Leg 2										
			118	↓	↓	0%	0	↔	0%	↑	153		
	Erase Block	180	↙	↘		↘		↙		NB			
	Reset Block		6	107	5								
	141	WB	Kittelson & Associates, Inc.		George Elmer Dr			270	↻	11			
			6	4:55 to 5:55 p.m.			4	↻	0%	↔			
Leg 3			0	TEV:467	3	0.73	0	↻	0	↕		Leg 1	
			0%	↔			0	↻	0%	↕			
			0%	↔			7	↻	0%	↕			
	39	90	easy		Cattle Dr			EB	↻	26			
	CM		135	143	21			Draw Alignment					
	LOS		SB	↻	↕	↻	0						
	Delay		147	↓	↓	0%	↔	0	0%	↑	299		

v/c Ratio		Notes					
Leg 4							
Leg 2							
		151 ↓	↓ 0%	0	↔ 0%	↑ 347	
Erase Block	180	↓	↓	↓	↓	NB	
Reset Block		1	148	1			
3	WB	Kittelson & Associates, Inc.		George Elmer Dr		270	3
				12:00 AM			
← 0%	↗	1	TEV: 503	4	0.00	1	↖ 0%
↕ 0	↔	1	0	0	0	1	↕ 0
↔ 0%	↘	1	0	0	0	1	↗ 0%
3	90	easy		Heron's Landing		EB	3
CM		1	344	1		Draw Alignment	
LOS		SB	↖	↗	↕	0	
Delay		151 ↓	↓ 0%	↔ 0	0%	↑ 346	
v/c Ratio		Notes					

Leg 3

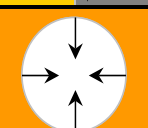
Leg 1



Leg 4							
Leg 2							
		157 ↓	↓ 0%	0	↔ 0%	↑ 342	
Erase Block	180	↓	↓	↓	↓	NB	
Reset Block		79	2	77			
1466	WB	Kittelson & Associates, Inc.		George Elmer Dr		270	1582
				5:00 to 6:00 p.m.			
← 0%	↗	144	TEV: 2524	5	0.94	196	↖ 0%
↕ 0	↔	637	1	2020	3	3	↕ 0
↔ 0%	↘	1	0	0	0	0	↗ 0%
782	90	easy		Mullan Rd		EB	714
CM		2	1	0		Draw Alignment	
LOS		SB	↖	↗	↕	0	
Delay		3 ↓	↓ 0%	↔ 0	0%	↑ 3	
v/c Ratio		Notes					

Leg 3

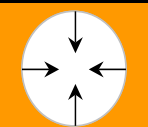
Leg 1



Leg 4							
Leg 2							
		319 ↓	↓ 0%	0	↔ 0%	↑ 267	
Erase Block	180	↓	↓	↓	↓	NB	
Reset Block		317	0	2			
755	WB	Kittelson & Associates, Inc.		Dougherty Dr		270	438
				12:00 AM			
← 0%	↗	264	TEV: 1277	6	0.00	435	↖ 0%
↕ 0	↔	249	3	0	0	0	↕ 0
↔ 0%	↘	3	0	0	0	0	↗ 0%
516	90	easy		England Blvd		EB	251
CM		4	0	0		Draw Alignment	
LOS		SB	↖	↗	↕	0	
Delay		3 ↓	↓ 0%	↔ 0	0%	↑ 4	
v/c Ratio		UN SIGNALIZED					

Leg 3

Leg 1



Leg 4

Leg 4

Leg 2

		3	↓	↓	0%	0	↔	0%	↑	↑	3	
	Erase Block	180	↙	↓	↘						NB	
	Reset Block		0	3	0							
	1345	WB	Kittelson & Associates, Inc.	Dougherty Dr		270	↙	↘	↔	↔	1638	
				12:00 AM		0	↙	↘	↔	↔	0%	↔
Leg 3		0	↙	↘	↔	↔	↔	↔	↔	↔	0	↙
		1458	TEV:4022	7	0.00	1120	↙	↘	↔	↔	0%	↔
		258	0	0	0	518	↙	↘	↔	↔	0%	↔
	1716	↙	↘	↔	↔	↔	↔	↔	↔	↔	1895	
	CM		easy	W Broadway St		EB						
	LOS		SB	225	3	437	↙	↘	↔	↔	0	
	Delay			779	↓	↓	0%	↔	↔	↔	0%	↑
	v/c Ratio			UN SIGNALIZED								

Leg 4

Leg 2

		311	↓	↓	0%	0	↔	0%	↑	↑	121	
	Erase Block	180	↙	↓	↘						NB	
	Reset Block		1	288	22							
	3	WB	Kittelson & Associates, Inc.	Flynn Ln		270	↙	↘	↔	↔	19	
				4:35 to 5:35 p.m.		13	↙	↘	↔	↔	0%	↔
Leg 3		1	↙	↘	↔	↔	↔	↔	↔	↔	0	↙
		1	TEV:448	8	0.85	1	↙	↘	↔	↔	0%	↔
		1	2020	3	3	5	↙	↘	↔	↔	0%	↔
	3	↙	↘	↔	↔	↔	↔	↔	↔	↔	30	
	CM		easy	Camden St		EB						
	LOS		SB	1	107	7	↙	↘	↔	↔	0	
	Delay			294	↓	↓	0%	↔	↔	↔	0%	↑
	v/c Ratio			Notes								

Leg 4

Leg 2

		229	↓	↓	0%	0	↔	0%	↑	↑	116	
	Erase Block	180	↙	↓	↘						NB	
	Reset Block		3	9	217							
	251	WB	Kittelson & Associates, Inc.	Flynn Ln		270	↙	↘	↔	↔	659	
				4:35 to 5:35 p.m.		105	↙	↘	↔	↔	0%	↔
Leg 3		6	↙	↘	↔	↔	↔	↔	↔	↔	0	↙
		224	TEV:1296	9	0.85	246	↙	↘	↔	↔	0%	↔
		5	2020	3	3	308	↙	↘	↔	↔	0%	↔
	235	↙	↘	↔	↔	↔	↔	↔	↔	↔	606	
	CM		easy	England Blvd		EB						
	LOS		SB	2	5	165	↙	↘	↔	↔	0	
	Delay			323	↓	↓	0%	↔	↔	↔	0%	↑
	v/c Ratio			Notes								

Leg 4

Leg 2

			323 ↓	↓ 0%	0	↔	0%	↑	228		
	Erase Block	θ	180	↓	↓	↓	↓		NB		
	Reset Block			14	242	67					
Leg 3	49	WB	Kittelson & Associates, Inc.	Flynn Ln			270	θ	102		
		↔ 0%	↗	25	4:30 to 5:30 p.m.			22	↖ 0%	↔	
		↕ 0	↔	26	TEV: 788	10	0.71	9	↖ 0	↕	
		↔ 0%	↗	31	2020	3	3	71	↖ 0%	↔	
		81	θ	90	Chelsea Dr			EB	↔	167	
		CM			26	181	74	Draw Alignment			
	LOS			SB	↖	↗	↖	θ	0		
	Delay			344 ↓	↓ 0%	↔	0	0%	↑	281	
	v/c Ratio			Notes							

Leg 4

Leg 2

			197 ↓	↓ 0%	0	↔	0%	↑	279		
	Erase Block	θ	180	↓	↓	↓	↓		NB		
	Reset Block			21	172	3					
Leg 3	21	WB	Kittelson & Associates, Inc.	Flynn Ln			270	θ	7		
		↔ 0%	↗	74	4:45 PM to 5:45 PM			7	↖ 0%	↔	
		↕ 0	↔	0	TEV: 475	11	0.73	0	↖ 0	↕	
		↔ 0%	↗	0	2020	3	3	0	↖ 0%	↔	
		74	θ	90	Siren's Rd			EB	↔	3	
		CM			0	198	0	Draw Alignment			
	LOS			SB	↖	↗	↖	θ	0		
	Delay			172 ↓	↓ 0%	↔	0	0%	↑	198	
	v/c Ratio			Notes							

Leg 4

Leg 2

			452					402				
			241 ↓	↓ 0%	0	↔	0%	↑	99			
	Erase Block	θ	180	↓	↓	↓	↓		NB			
	Reset Block			239	0	3						
Leg 3	1139	1484	WB	Kittelson & Associates, Inc.	Flynn Ln			270	θ	1246	918	
		↔ 0%	↗	95	5:00 PM to 6:00 PM			4	↖ 0%	↔		
		↕ 0	↔	528	TEV: 2116	12	0.88	1242	↖ 0	↕		
		↔ 0%	↗	3	2020	3	3	0	↖ 0%	↔		
		1483	625	θ	90	Mullan Rd			EB	↔	530	1386
		CM			4	0	0	Draw Alignment				
	LOS			SB	↖	↗	↖	θ	0			
	Delay			3 ↓	↓ 0%	↔	0	0%	↑	4		
	v/c Ratio			Notes								

Leg 4

Leg 2

			67 ↓	↓ 0%	0	↔	0%	↑	77		
	Erase Block	θ	180	↓	↓	↓	↓		NB		

	Reset Block		15	3	50			
Leg 3	1245 WB	Kittelson & Associates, Inc.	Mary Jane Blvd			270	1286	
	0%	19	12:00 AM			55	0%	
	0	777	TEV:2153	13	0.00	1231	0	
	0%	0	0	0	0	0	0%	
	796	90	Mullan Rd			EB	827	
CM		0	3	0	Draw Alignment			
LOS		SB				0		
Delay		3	0%	0%	0%	3		
v/c Ratio		Notes						

Leg 4

Leg 2

	Erase Block		64	0%	0	0%	77	
	180						NB	
	Reset Block		12	36	16			
Leg 3	31 WB	Kittelson & Associates, Inc.	Mary Jane Blvd			270	33	
	0%	17	12:00 AM			15	0%	
	0	6	TEV:211	14	0.00	5	0	
	0%	15	0	0	0	13	0%	
	38	90	O'Leary St			EB	40	
CM		14	45	18	Draw Alignment			
LOS		SB				0		
Delay		64	0%	0%	0%	77		
v/c Ratio		Notes						

Leg 4

Leg 2

	Erase Block		80	0%	0	0%	98	
	180						NB	
	Reset Block		27	27	25			
Leg 3	158 WB	Kittelson & Associates, Inc.	Mary Jane Blvd			270	112	
	0%	50	4:35 to 5:35 p.m.			8	0%	
	0	157	TEV:521	15	0.61	98	0	
	0%	41	2020	3	3	6	0%	
	248	90	Melrose Pl			EB	190	
CM		33	40	8	Draw Alignment			
LOS		SB				0		
Delay		75	0%	0%	0%	81		
v/c Ratio		Notes						

Leg 4

Leg 2

	Erase Block		103	0%	0	0%	96	
	180						NB	
	Reset Block		2	8	92			
Leg 3	557 WB	Kittelson & Associates, Inc.	Mary Jane Blvd			270	711	
	0%	1	4:55 PM to 5:55 PM			93	0%	

Leg 3	841	TEV:1820	16	0.83	554	0	Leg 1			
	30	2020	3	3	64	0%				
	871	England Blvd			EB	1065				
	CM	1	3	132	Draw Alignment					
	LOS	SB	←	↑	→	0				
	Delay	102 ↓	↓	0%	←	0		0%	↑	135
	v/c Ratio	Notes								

Leg 4

Leg 2

Leg 3	99 ↓	↓	0%	0	←	0%	↑	83	Leg 1		
	Erase Block	180	↓	↓	↓	↓	NB				
	Reset Block	26	61	13	Mary Jane Blvd		270	←		23	
	46	WB	Kittelson & Associates, Inc.			4:50 PM to 5:50 PM	8	←		0%	←
	13	TEV:262	17	0.66	12	←	0	↓		↓	
	39	2020	3	3	3	←	0%	←		←	
	66	90	Camden St			EB	31				
CM	8	61	4	Draw Alignment							
LOS	SB	←	↑	→	0						
Delay	102 ↓	↓	0%	←	0	0%	↑	74			
v/c Ratio	Notes										

Leg 4

Leg 2

Leg 3	796	724	134 ↓	↓	0%	0	←	0%	↑	91	Leg 1	
	Erase Block	180	↓	↓	↓	↓	NB					
	Reset Block	4	74	56	Mary Jane Blvd		270	←	408			
	3001	365	WB	Kittelson & Associates, Inc.			12:00 AM	28	←	0%		←
	255	TEV:903	18	0.00	358	←	0	↓	↓			
	3	0	0	0	23	←	0%	←	←			
	2764	261	90	Flynn Ln			EB	347	2392			
CM	3	59	37	Draw Alignment								
LOS	SB	←	↑	→	0							
Delay	100 ↓	↓	0%	←	0	0%	↑	99				
v/c Ratio	Some Manual Adjustments Made											

Leg 4

Leg 2

Leg 3	110 ↓	↓	0%	0	←	0%	↑	91	Leg 1		
	Erase Block	180	↓	↓	↓	↓	NB				
	Reset Block	2	106	2	Mary Jane Blvd		270	←		3	
	3	WB	Kittelson & Associates, Inc.			12:00 AM	1	←		0%	←
	0	TEV:206	19	0.00	0	←	0	↓		↓	
	2	0	0	0	2	←	0%	←		←	
	2	0	0	0	2	←	0%	←		←	

CM		1	88	1	Draw Alignment	EB
LOS		SB	↶	↷	⊖	0
Delay		109 ↓	0%	0%	↑	90
v/c Ratio		Notes				

Leg 4

Leg 2

Erase Block		3	↓	0%	0	↶	0%	↑	3	
Reset Block		180	↷	↶	↷				NB	
1589	WB	Mary Jane Blvd			270	↶	1556			
0%	↷	0	12:00 AM			0	↶	0%	↷	
0	↷	1721	TEV: 3447	20	0.00	1522	↶	0	↷	
0%	↷	73	0	0	0	34	↶	0%	↷	
1794	90	W Broadway St			EB	↶	1746			
CM		66	3	26	Draw Alignment	EB				
LOS		SB	↶	↷	⊖	0				
Delay		109 ↓	0%	0%	↑	94				
v/c Ratio		Notes								

Leg 3

Leg 1

Leg 4

Leg 2

Erase Block		3	↓	0%	0	↶	0%	↑	3	
Reset Block		180	↷	↶	↷				NB	
1436	WB	Flynn Ln			270	↶	1587			
0%	↷	1	4:30 PM to 5:30 PM			1	↶	0%	↷	
0	↷	1484	TEV: 3722	21	0.91	1315	↶	0	↷	
0%	↷	243	2020	3	3	271	↶	0%	↷	
1727	90	W Broadway St			EB	↶	1768			
CM		120	1	283	Draw Alignment	EB				
LOS		SB	↶	↷	⊖	0				
Delay		515 ↓	0%	0%	↑	405				
v/c Ratio		Notes								

Leg 3

Leg 1

Leg 4



2050 Balanced Turning Movement Counts From NCHRP 255 Post Processing Output (AM)

Step 3 - Balance Volumes

	0	0%	0%	0%	0%	0	SB	City:
	0							State:
1075	EB	Kittelson & Associates, Inc.	George Elmer Dr	0	90	0	830	
			12:00 AM	0				
		0	TEV: 2541	1	0.92	757		0%
		1066						5%
		125				72		10%
1191	270		W Broadway St		WB		1269	
			318	0	203	0		
			NB			180		
		197	5%	0%	5%	521		
Notes								



	200	0%	0%	12%	524	SB	City:	
	0						State:	
379	EB	Kittelson & Associates, Inc.	George Elmer Dr	0	90	0	399	
			12:00 AM	75				0%
		160	TEV: 1499	2	0.92	299		4%
		311						0%
		60				25		
531	270		England Blvd		WB		411	
			30	289	50	0		
			NB			180		
		185	12%	0%	0%	369		
Notes								



	185	0%	0%	0%	369	SB	City:	
	0						State:	
59	EB	Kittelson & Associates, Inc.	George Elmer Dr	0	90	0	17	
			7:15 AM to 8:15 AM	10				0%
		21	TEV: 689	3	0.84	1		0%
		1						0%
		86				6		
108	270		Cattle Dr		WB		8	
			39	338	3	0		
			NB			180		
		252	10%	0%	0%	379		
Notes								



	252	0%	0%	0%	379	SB	City:
	0						State:

		15	222	15		State:			
21	←	EB	Kittelson & Associates, Inc.	George Elmer Dr	0	90	⊖	←	51
↗ 0%				12:00 AM	25				↖ 0%
→ 0%				TEV: 694	4	0.92			← 0%
↘ 1%					1				↙ 0%
51	→	⊖ 270		Heron's Landing		WB		→	21
				5	329	5	0		
			NB				⊖ 180		
	272	↓	↖ 5%	↗ 0%	↘ 0%	↑	339		
Notes									

					272	↓	12%	↘	0%	↓	2%	↙	↑	339		City:
					⊖	0								SB		State:
					50	1	222									
456	←	EB	Kittelson & Associates, Inc.	George Elmer Dr	0	90	⊖	←	491							
↗ 50%				7:15 AM to 8:15 AM	85				↖ 9%							
→ 2%				TEV: 2280	5	0.94			← 11%							
↘ 0%					1				↙ 0%							
1513	→	⊖ 270		Mullan Rd		WB		→	1482							
				1	1	1	0									
			NB				⊖ 180									
	3	↓	↖ 0%	↗ 0%	↘ 0%	↑	3									
Notes																

					160	↓	0%	↘	0%	↓	12%	↙	↑	80		City:
					⊖	0								SB		State:
					75	0	85									
399	←	EB	Kittelson & Associates, Inc.	Dougherty Dr	0	90	⊖	←	354							
↗ 0%				12:00 AM	30				↖ 0%							
→ 8%				TEV: 925	6	0.92			← 4%							
↘ 0%					0				↙ 0%							
411	→	⊖ 270		England Blvd		WB		→	446							
				0	0	0	0									
			NB				⊖ 180									
	0	↓	↖ 12%	↗ 0%	↘ 0%	↑	0									
Notes																

					0	↓	0%	↘	0%	↓	0%	↙	↑	0		City:
					⊖	0								SB		State:
					0	0	0									
830	←	EB	Kittelson & Associates, Inc.	Dougherty Dr	0	90	⊖	←	863							
↗ 0%				12:00 AM	0				↖ 0%							
→ 8%				TEV: 2498	7	0.92			← 5%							
↘ 13%					130				↙ 10%							
1269	→	⊖ 270		W Broadway St		WB		→	1389							
				116	0	250	0									
			NB				⊖ 180									
	280	↓	↖ 5%	↗ 0%	↘ 5%	↑	366									
Notes																

	98 ↓ 0% ↓ 7% ↓ 0% ↓	↑ 201	City:
θ 0		SB	State:
0 ←	EB	Kittelson & Associates, Inc.	Flynn Ln
0	0	0	90 θ ← 42
↗ 0%	0	7:25 AM to 8:25 AM	0
→ 0%	0	TEV: 320	8
↘ 0%	0	0.82	0
0 ←	θ 270	Camden St	WB
0	0	170	10
	NB		θ 180
	103 ↓	0%	4%
		↑ 10%	↑ 180
Notes			

	103 ↓ 0% ↓ 7% ↓ 0% ↓	↑ 180	City:
θ 0		SB	State:
354 ←	EB	Kittelson & Associates, Inc.	Flynn Ln
0	0	0	90 θ ← 537
↗ 0%	33	7:25 AM to 8:25 AM	75
→ 0%	378	TEV: 1245	9
↘ 0%	34	0.83	320
446 ←	θ 270	England Blvd	WB
0	15	72	73
	NB		θ 180
	205 ↓	0%	5%
		↑ 9%	↑ 160
Notes			

	205 ↓ 28% ↓ 7% ↓ 0% ↓	↑ 160	City:
θ 0		SB	State:
113 ←	EB	Kittelson & Associates, Inc.	Flynn Ln
0	0	0	90 θ ← 40
↗ 65%	31	7:25 AM to 8:25 AM	13
→ 50%	2	TEV: 506	10
↘ 36%	11	0.91	5
44 ←	θ 270	Chelsea Dr	WB
0	68	116	33
	NB		θ 180
	183 ↓	19%	3%
		↑ 0%	↑ 217
Notes			

	183 ↓ 0% ↓ 15% ↓ 0% ↓	↑ 217	City:
θ 0		SB	State:
257 ←	EB	Kittelson & Associates, Inc.	Flynn Ln
0	0	0	90 θ ← 1
↗ 0%	42	7:30 AM to 8:30 AM	0
→ 0%	0	TEV: 637	11
		0.83	0

1%	82			0	0%	
124	270	Siren's Rd			WB	0
		154	175	0	0	
		NB			180	
		162	0%	5%	0%	
				329		
Notes						

easy	106	20%	0%	2%	367	City:	
	0				SB	State:	
		106	0	0			
500	EB	Flynn Ln			0	90	565
5%		200	7:20 AM to 8:20 AM		167		2%
1%		1272	TEV: 2153	12	0.92		5%
25%		10			3		0%
1482	270	Mullan Rd			WB	1273	
		0	0	1	0		
		NB			180		
		13	0%	0%	25%		
					1		
Notes							

easy	260	20%	0%	2%	330	City:	
	0				SB	State:	
		53	0	207			
565	EB	Mary Jane Blvd			0	90	612
5%		231	12:00 AM		100		2%
1%		1042	TEV: 2145	13	0.92		5%
25%		0			0		0%
1273	270	Mullan Rd			WB	1249	
		0	0	0	0		
		NB			180		
		0	0%	0%	25%		
					0		
Notes							

easy	212	0%	0%	0%	330	City:	
	0				SB	State:	
		35	164	13			
60	EB	Mary Jane Blvd			0	90	54
0%		8	12:00 AM		17		0%
2%		2	TEV: 674	14	0.92		5%
0%		68			28		0%
78	270	O'Leary St			WB	24	
		16	305	8	0		
		NB			180		
		260	0%	0%	0%		
					330		
Notes							

	231 ↓ 0% ↙ 0% ↓ 0% ↘ ↑ 325	City:
0	SB	State:
35 ← EB	Kittelson & Associates, Inc. Mary Jane Blvd	0 90 θ ← 70
↗ 00%	15 7:30 AM to 8:30 AM	20 0% ↗
→ 2%	47 TEV: 708 15 0.72	25 11% ←
↘ 0%	15	25 0% ↘
77 ← θ 270	Melrose Pl	WB ← 136
	5 290 35 0	
	NB θ 180	
	212 ↓ ↙ 0% ↗ 0% ↘ 0% ↑ 330	
	Notes	

	192 ↓ 0% ↙ 0% ↓ 12% ↘ ↑ 235	City:
0	SB	State:
537 ← EB	Kittelson & Associates, Inc. Mary Jane Blvd	0 90 θ ← 402
↗ 0%	87 7:30 AM to 8:30 AM	6 0% ↗
→ 8%	358 TEV: 1426 16 0.72	350 4% ←
↘ 0%	62	46 0% ↘
507 ← θ 270	England Blvd	WB ← 423
	136 142 46 0	
	NB θ 180	
	231 ↓ ↙ 12% ↗ 0% ↘ 0% ↑ 325	
	Notes	

	173 ↓ 0% ↙ 0% ↓ 0% ↘ ↑ 262	City:
0	SB	State:
50 ← EB	Kittelson & Associates, Inc. Mary Jane Blvd	0 90 θ ← 31
↗ 0%	42 7:50 AM to 8:50 AM	6 0% ↗
→ 10%	12 TEV: 526 17 0.80	13 0% ←
↘ 0%	33	12 0% ↘
87 ← θ 270	Camden St	WB ← 23
	19 213 3 0	
	NB θ 180	
	192 ↓ ↙ 0% ↗ 0% ↘ 0% ↑ 235	
	Notes	

	207 ↓ 0% ↙ 0% ↓ 12% ↘ ↑ 305	City:
0	SB	State:
118 ← EB	Kittelson & Associates, Inc. Mary Jane Blvd	0 90 θ ← 139
↗ 5%	75 12:00 AM	37 0% ↗
→ 3%	116 TEV: 810 18 0.92	73 4% ←
↘ 0%	10	30 0% ↘
201 ← θ 270	Flynn Ln	WB ← 215
	15 193 54 0	
	NB θ 180	
	Notes	

	173 ↓	0%	12%	0%	0%	↑ 262	
Notes							



	305 ↓	0%	12%	0%	0%	↑ 315	City:
	0					SB	State:
110 ←	EB	Kittelson & Associates, Inc.	Mary Jane Blvd	0	90	0	
↑ 2%		21	12:00 AM	0		0%	
→ 0%		0	TEV: 630	19	0.92	0	0%
↘ 0%		2				0	0%
23 →	θ 270		Veteran's Way	WB		0	
			9	294	0	0	
	NB					θ 180	
	206 ↓	0%	5%	0%	0%	↑ 303	
Notes							



	0 ↓	0%	0%	0%	0%	↑ 0	City:
	0					SB	State:
904 ←	EB	Kittelson & Associates, Inc.	Mary Jane Blvd	0	90	820	
↑ 0%		0	12:00 AM	0		0%	
→ 8%		1247	TEV: 2526	20	0.92	656	5%
↘ 13%		142				164	10%
1389 →	θ 270		W Broadway St	WB		1315	
			248	0	68	0	
	NB					θ 180	
	306 ↓	10%	0%	5%	0%	↑ 316	
Notes							



	0 ↓	0%	0%	0%	0%	↑ 0	City:
	0					SB	State:
819 ←	EB	Kittelson & Associates, Inc.	Flynn Ln	0	90	819	
↑ 0%		0	7:25 AM to 8:25 AM	0		0%	
→ 8%		1180	TEV: 2505	21	0.79	819	15%
↘ 13%		146				0	0%
1326 →	θ 270		W Broadway St	WB		1540	
			0	0	359	0	
	NB					θ 180	
	146 ↓	0%	0%	5%	0%	↑ 360	
Notes							

		30	340	30		State:
106	EB	Kittelson & Associates, Inc.	George Elmer Dr	0	90	51
0%		30	4:55 PM to 5:55 PM	30		0%
0%		1	TEV: 1035	4	0.92	0%
0%		20		20		0%
51	WB		Heron's Landing		WB	61
		75	429	30	0	
	NB				180	
		380	0%	0%	0%	534
Notes						



		380	0%	0%	2%	534	City:
		0				SB	State:
		275	2	104			
1462	EB	Kittelson & Associates, Inc.	George Elmer Dr	0	90	1539	
10%		179	4:55 PM to 5:55 PM	353		0%	
1%		637	TEV: 2741	5	0.91	1%	
0%		1		1		0%	
817	WB		Mullan Rd		WB	742	
		2	1	1	0		
	NB				180		
		4	0%	0%	0%	4	
Notes							



		211	0%	0%	0%	200	City:
		0				SB	State:
		100	0	111			
516	EB	Kittelson & Associates, Inc.	Dougherty Dr	0	90	466	
0%		150	4:55 PM to 5:55 PM	50		0%	
1%		249	TEV: 1075	6	0.92	2%	
0%		0		0		0%	
399	WB		England Blvd		WB	360	
		0	0	0	0		
	NB				180		
		0	0%	0%	0%	0	
Notes							



		0	0%	0%	0%	0	City:
		0				SB	State:
		0	0	0			
1235	EB	Kittelson & Associates, Inc.	Dougherty Dr	0	90	1314	
0%		0	4:55 PM to 5:55 PM	0		0%	
2%		1394	TEV: 3383	7	0.92	2%	
2%		200		254		0%	
1594	WB		W Broadway St		WB	1694	
		175	0	300	0		
	NB				180		
		454	0%	0%	0%	475	
Notes							

	116 ↓ 0%	↓ 1%	↓ 0%	↓ 0%	↑ 116	City:
0	θ 0				SB	State:
		0	94	22		
0	EB	Kittelson & Associates, Inc.	Flynn Ln	0	90 θ	← 18
↗ 0%		0	4:55 PM to 5:55 PM	13		↖ 0%
→ 0%		0	TEV: 244	8	0.85	← 0%
↘ 0%		0		5		↙ 0%
0	θ 270		Camden St		WB	→ 29
		0	103	7	0	
	NB				θ 180	
	99 ↓	↖ 0%	↗ 0%	↘ 0%	↑ 110	
Notes						

	99 ↓ 0%	↓ 0%	↓ 2%	↓ 0%	↑ 110	City:
466	θ 0				SB	State:
		3	79	17		
466	EB	Kittelson & Associates, Inc.	Flynn Ln	0	90 θ	← 534
↗ 0%		21	4:55 PM to 5:55 PM	15		↖ 0%
→ 0%		324	TEV: 1135	9	0.85	← 0%
↘ 0%		15		58		↙ 3%
360	θ 270		England Blvd		WB	→ 406
		2	74	65	0	
	NB				θ 180	
	153 ↓	↖ 0%	↗ 0%	↘ 0%	↑ 141	
Notes						

	153 ↓ 0%	↓ 1%	↓ 0%	↓ 0%	↑ 141	City:
49	θ 0				SB	State:
		18	114	21		
49	EB	Kittelson & Associates, Inc.	Flynn Ln	0	90 θ	← 22
↗ 4%		28	4:55 PM to 5:55 PM	4		↖ 0%
→ 0%		12	TEV: 412	10	0.71	← 0%
↘ 0%		40		15		↙ 7%
80	θ 270		Chelsea Dr		WB	→ 53
		28	109	20	0	
	NB				θ 180	
	169 ↓	↖ 0%	↗ 0%	↘ 5%	↑ 157	
Notes						

	169 ↓ 0%	↓ 2%	↓ 0%	↓ 0%	↑ 157	City:
30	θ 0				SB	State:
		13	156	0		
30	EB	Kittelson & Associates, Inc.	Flynn Ln	0	90 θ	← 0
↗ 5%		20	4:55 PM to 5:55 PM	0		↖ 0%
→ 0%		0	TEV: 367	11	0.73	← 0%
		0		0		

0%	24				0	0%
44	270	Siren's Rd			WB	0
	NB	17	137	0	0	180
	180	18%	0%	0%	154	
	Notes					

	138	2%	0%	0%	154	City: State:	
	0				SB		
		139	0	0			
1502	EB	Kittelson & Associates, Inc.	Flynn Ln		0	90	1464
2%	55		4:55 PM to 5:55 PM		99		1%
1%	685	TEV: 2345	12	0.88	1364		0%
0%	3				1		0%
742	270	Mullan Rd			WB	685	
	NB			1	0	180	
	4	0%	0%	0%	1		
	Notes						

	243	2%	0%	0%	244	City: State:	
	0				SB		
		135	0	109			
1464	EB	Kittelson & Associates, Inc.	Mary Jane Blvd		0	90	1455
2%	119		4:55 PM to 5:55 PM		125		1%
1%	565	TEV: 2383	13	0.92	1330		0%
0%	0				0		0%
684	270	Mullan Rd			WB	674	
	NB			0	0	180	
	0	0%	0%	0%	0		
	Notes						

	233	0%	0%	0%	244	City: State:	
	0				SB		
		27	175	31			
46	EB	Kittelson & Associates, Inc.	Mary Jane Blvd		0	90	33
0%	17		4:55 PM to 5:55 PM		15		0%
3%	6	TEV: 587	14	0.92	5		0%
0%	55				13		0%
78	270	O'Leary St			WB	55	
	NB	14	212	18	0	180	
	243	0%	0%	0%	244		
	Notes						

	253 ↓ 0%	0%	0%	0%	↑ 251	City:	
θ 0					SB	State:	
		37	180	35			
123 ←	EB	Kittelson & Associates, Inc.	Mary Jane Blvd	0	90 θ	← 67	
↗ 0%		50	4:55 PM to 5:55 PM	8		0% ↗	
→ 3%		57	TEV: 712	15	0.61	48	0% →
↘ 0%		41				11	0% ↘
148 →	θ 270		Melrose Pl		WB	→ 105	
		38	193	13	0		
		NB			θ 180		
	233 ↓	↖ 0%	↗ 0%	↘ 0%	↑ 244		
	Notes						

	263 ↓ 0%	0%	0%	0%	↑ 196	City:	
θ 0					SB	State:	
		14	156	92			
534 ←	EB	Kittelson & Associates, Inc.	Mary Jane Blvd	0	90 θ	← 609	
↗ 0%		26	4:55 PM to 5:55 PM	93		0% ↗	
→ 1%		348	TEV: 1529	16	0.83	452	2% →
↘ 0%		33				64	0% ↘
406 →	θ 270		England Blvd		WB	→ 546	
		68	78	106	0		
		NB			θ 180		
	253 ↓	↖ 0%	↗ 0%	↘ 0%	↑ 251		
	Notes						

	260 ↓ 0%	0%	0%	0%	↑ 205	City:	
θ 0					SB	State:	
		26	222	13			
46 ←	EB	Kittelson & Associates, Inc.	Mary Jane Blvd	0	90 θ	← 23	
↗ 0%		13	4:55 PM to 5:55 PM	8		0% ↗	
→ 0%		14	TEV: 545	17	0.66	12	0% →
↘ 0%		39				3	0% ↘
66 →	θ 270		Camden St		WB	→ 31	
		8	183	4	0		
		NB			θ 180		
	263 ↓	↖ 0%	↗ 0%	↘ 0%	↑ 196		
	Notes						

	327 ↓ 0%	0%	0%	0%	↑ 237	City:	
θ 0					SB	State:	
		55	219	53			
116 ←	EB	Kittelson & Associates, Inc.	Mary Jane Blvd	0	90 θ	← 108	
↗ 0%		43	4:55 PM to 5:55 PM	28		0% ↗	
→ 1%		55	TEV: 757	18	0.92	58	2% →
↘ 0%		18				23	0% ↘
116 →	θ 270		Flynn Ln		WB	→ 144	
		3	165	37	0		
		NB			θ 180		

	260	0%	0%	0%	0%	205	
Notes							



	405	0%	0%	0%	0%	316	City:
	0					SB	State:
	90	315	0				
94	EB	Kittelson & Associates, Inc.	Mary Jane Blvd	0	90	0	
	0%	84	4:55 PM to 5:55 PM	0		0%	
	0%	0	TEV: 735	19	0.92	0	
	0%	10				0%	
94	WB		Veteran's Way	WB		0	
	4	232	0				
	NB				180		
	325	0%	0%	0%	236		
Notes							



	0	0%	0%	0%	0%	0	City:
	0					SB	State:
	0	0	0				
1314	EB	Kittelson & Associates, Inc.	Mary Jane Blvd	0	90	1281	
	0%	0	4:55 PM to 5:55 PM	0		0%	
	2%	1471	TEV: 3292	20	0.92	1097	2%
	2%	223				184	0%
1694	WB		W Broadway St	WB		1571	
	216	0	101				
	NB				180		
	407	0%	0%	0%	317		
Notes							



	0	0%	0%	0%	0%	0	City:
	0					SB	State:
	0	0	0				
1280	EB	Kittelson & Associates, Inc.	Flynn Ln	0	90	1280	
	0%	0	4:55 PM to 5:55 PM	0		0%	
	2%	1397	TEV: 3103	21	0.91	1280	2%
	2%	143				0	0%
1539	WB		W Broadway St	WB		1680	
	0	0	283				
	NB				180		
	143	0%	0%	0%	283		
Notes							



C. 2050 Operational Analysis AM and PM



OPERATIONAL ANALYSIS DOCUMENTATION

SCENARIOS

Scenario 1: Existing Conditions (2020)

Existing roads and intersection controls, as well as turning movement counts.

Scenario 2: Future Conditions (2050)

- ▶ Manually entered TMCs from 2050 Network Tool for QC
- ▶ All intersections set to 'Unknown'
 - Except for Reserve St – signals retained
- ▶ Used as baseline scenario for control scenarios below
- ▶ Table 1 summarizes the posted speed limits for project roadways, Table 2 delineates the heavy vehicle percentages used for the AM analyses, and Table 3 summarizes the heavy vehicle percentages used for the PM analyses.

Table 1 Posted Speed Limit Parameter

ROADWAY	SPEED LIMIT
W Broadway St	55 mph
Mullan Rd	45 mph
George Elmer Dr	30 mph
Cattle Dr	25 mph
Heron's Landing	25 mph
England Blvd	30 mph
Dougherty Dr	30 mph
Flynn Ln	25 mph
Chelsea Dr	25 mph
Siren's Rd	25 mph
Mary Jane Blvd	30 mph
O'Leary St	25 mph
Melrose Pl	25 mph
Veteran's Way	25 mph
Camden St	25 mph

Table 2 AM Heavy Vehicle Percentages

#	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
	L	T	R	L	T	R	L	T	R	L	T	R
1	4	2	4	2	2	2	4	8	2	4	15	2
2	2	4	2	2	4	2	2	8	2	2	4	2
3	2	4	2	2	4	2	2	2	2	2	2	2
4	2	4	2	2	4	2	2	2	2	2	2	2
5	0	0	0	4	0	4	4	7	0	0	7	4
6	0	0	0	2	0	2	2	8	0	0	4	2
7	2	0	2	0	0	0	0	8	2	2	15	0
8	0	2	2	2	2	0	0	0	0	2	2	2
9	2	2	2	2	2	2	2	8	2	2	4	2
10	19	2	2	2	7	28	2	50	2	2	20	8
11	2	5	0	0	2	15	2	0	2	0	0	0
12	0	0	2	0	0	2	2	7	2	2	7	2
13	0	0	0	4	0	4	3	7	0	0	7	3
14	2	3	2	2	3	2	2	2	2	2	2	2
15	3	2	2	2	3	2	2	2	2	2	2	2
16	2	3	2	2	3	2	2	8	2	2	4	2
17	2	3	2	2	3	2	2	2	2	2	2	2
18	2	3	2	2	3	2	2	3	2	2	4	2
19	2	3	2	2	3	2	20	2	20	2	2	2
20	3	0	3	0	0	0	0	8	3	3	15	0
21	0	0	2	0	0	0	0	8	2	0	15	2

Table 3 PM Heavy Vehicle Percentages

#	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
	L	T	R	L	T	R	L	T	R	L	T	R
1	3	2	3	2	2	2	2	2	2	2	2	2
2	2	3	2	2	3	2	2	2	2	2	2	2
3	2	3	2	2	3	2	2	2	2	2	2	2
4	2	3	2	2	3	2	2	2	2	2	2	2
5	0	0	0	2	0	2	3	2	0	0	2	3
6	0	0	0	2	10	2	2	2	0	0	2	2
7	2	0	2	2	0	2	0	2	2	2	2	0
8	0	2	2	2	2	0	0	0	0	2	0	2
9	2	2	2	2	3	2	2	2	2	2	2	2
10	2	2	5	2	3	2	4	2	2	7	2	2
11	18	2	2	2	2	2	5	2	2	0	0	0
12	0	0	2	0	0	2	2	2	0	0	2	2
13	0	0	0	2	0	2	2	2	0	0	2	2
14	2	2	2	2	2	2	2	2	2	2	2	2
15	2	2	2	2	2	2	2	3	2	2	2	2
16	2	2	2	2	2	2	2	2	2	2	2	2
17	2	2	2	2	2	2	2	2	2	2	2	2
18	2	2	2	2	2	2	2	2	2	2	2	2
19	2	5	2	2	5	2	20	2	20	2	2	2
20	3	0	3	0	0	0	0	2	3	3	2	0
21	0	0	2	0	0	0	0	2	2	0	2	0

Scenario 3: Two Way Stop Control (2050)

- ▶ All intersections tested as Two Way Stop Control (TWSC)
- ▶ Turn Lane Warrants performed for intersections with failing movements, delineated in Table 2

Table 4 Turn Lane Warrants & Results

NUMBER	INTERSECTION	AGENCY	WARRANT	RESULT
1	George Elmer Dr & W Broadway St	MDT	Left Turn Lane	Yes
		MDT	Right Turn Lane	Yes
2	George Elmer Dr & England Blvd	ACHD	Left Turn Lane	Yes
3	George Elmer Dr & Cattle Dr	ACHD	Left Turn Lane	Yes
4	George Elmer Dr & Heron's Landing	ACHD	Left Turn Lane	Yes
5	George Elmer Dr & Mullan Rd	MDT	Left Turn Lane	Yes
6	Dougherty Dr & England Blvd	ACHD	Left Turn Lane	Yes
		ACHD	Right Turn Lane	No
7	Dougherty Dr & W Broadway St	MDT	Left Turn Lane	Yes
		MDT	Right Turn Lane	Yes
9	Flynn Ln & England Blvd	ACHD	Left Turn Lane	Yes
		ACHD	Right Turn Lane	No
15	Mary Jane Blvd & Melrose Pl	ACHD	Left Turn Lane	No
		ACHD	Right Turn Lane	No
16	Mary Jane Blvd & England Blvd	ACHD	Left Turn Lane	Yes
		ACHD	Right Turn Lane	No
20	Mary Jane Blvd & W Broadway St	MDT	Left Turn Lane	Yes
		MDT	Right Turn Lane	Yes
21	Flynn Ln & W Broadway St	MDT	Right Turn Lane	Yes

Table 5 TWSC Queue Lengths (ft) - AM Peak Period

#	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
	L	T	R	L	T	R	L	T	R	L	T	R
1	1,303	1,030	78	5	5	5	0	0	0	13	0	0
2	58	719	719	225	133	13	0	0	1	0	0	0
3	2	0	0	1	0	0	15	15	15	3	3	3
4	0	0	0	1	0	0	9	9	9	10	10	10
5	741	-	7	-	-	-	24	0	-	-	0	0
6	-	-	-	30	-	10	3	0	-	-	0	0
7	154	-	105	-	-	-	-	0	0	35	0	-
8	-	0	0	0	0	-	-	-	-	4	-	4
9	146	146	146	191	191	191	2	0	0	12	0	0
9M	12	106	106	114	23	23	2	0	0	12	0	0
10	4	4	4	0	0	0	8	8	8	6	6	6
11	10	0	-	-	0	0	10	-	8	-	-	-
12	-	-	0	-	-	16	22	0	0	0	0	0
13	-	-	-	671	-	9	27	0	-	-	0	0
14	0	0	0	0	0	0	9	9	9	11	11	11
15	0	0	0	3	3	3	19	19	19	17	17	17
16	385	189	189	44	159	159	6	0	0	3	0	0
17	1	1	1	0	0	0	14	14	14	5	5	5
18	0	0	0	2	2	2	84	84	84	38	38	38
19	0	0	0	0	0	0	5	5	5	0	0	0
20	586	-	17	-	-	-	-	0	0	49	0	-
21	-	-	262	-	-	-	-	0	0	-	0	-

Table 6 TWSC Queue Lengths (ft) - PM Peak Period

#	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
	L	T	R	L	T	R	L	T	R	L	T	R
1	746	746	98	21	21	21	0	0	0	56	0	0
2	547	465	465	198	674	674	10	0	0	3	0	0
3	10	0	0	0	0	0	21	21	21	8	8	8
4	5	0	0	2	0	0	23	23	23	17	17	17
5	352	-	460	-	-	-	41	0	-	-	0	0
6	-	-	-	82	-	16	13	0	-	-	0	0
7	540	-	241	-	-	-	-	0	0	154	0	-
8	-	0	0	1	1	-	-	-	-	1	-	1
9	65	65	65	77	77	77	1	0	0	4	0	0
9M	1	62	62	13	47	47	1	0	0	4	0	0
10	1	1	1	1	1	1	10	10	10	3	3	3
11	1	0	-	-	0	0	2	-	2	-	-	-
12	-	-	0	-	-	184	12	0	0	0	0	0
13	-	-	-	356	-	164	32	0	-	-	0	0
14	0	0	0	1	1	1	11	11	11	5	5	5
15	2	2	2	2	2	2	42	42	42	16	16	16
16	232	111	111	201	199	199	2	0	0	4	0	0
17	0	0	0	0	0	0	9	9	9	3	3	3
18	0	0	0	3	3	3	35	35	35	27	27	27
19	0	0	0	0	0	0	27	27	27	0	0	0
20	622	-	36	-	-	-	-	0	0	97	0	-
21	-	-	212	-	-	-	-	0	0	-	0	-

MITIGATIONS

- ▶ #9 Flynn Ln & England Blvd: NB and SB Left Turn Lanes (not warranted)

Scenario 4: Signal (2050)

- ▶ All intersections that met signal warrants from Scenario 3 tested as signals, delineated in Table 2.

Table 7 Intersections Analyzed & Signal Warrants Met

NUMBER	INTERSECTION	WARRANT #1	WARRANT #2	WARRANT #3
1	George Elmer Dr & W Broadway St	Yes	Yes	Yes
2	George Elmer Dr & England Blvd	No	No	Yes
3	George Elmer Dr & Cattle Dr	No	No	No
4	George Elmer Dr & Heron's Landing	No	No	No
5	George Elmer Dr & Mullan Rd	Yes	Yes	Yes
6	Dougherty Dr & England Blvd	No	No	No
7	Dougherty Dr & W Broadway St	Yes	Yes	Yes
8	Flynn Ln & Camden Ln	No	No	No
9	Flynn Ln & England Blvd	No	No	Yes
10	Flynn Ln & Chelsea Dr	No	No	No
11	Flynn Ln & Siren's Dr	No	No	No
12	Flynn Ln & Mullan Rd	Yes	Yes	Yes
13	Mary Jane Blvd & Mullan Rd	Yes	Yes	Yes
14	Mary Jane Blvd & O'Leary St	No	No	No
15	Mary Jane Blvd & Melrose Pl	No	No	No
16	Mary Jane Blvd & England Blvd	No	No	Yes
17	Mary Jane Blvd & Camden St	No	No	No
18	Mary Jane Blvd & Flynn Ln	No	No	No
19	Mary Jane Blvd & Veteran's Way	No	No	No
20	Mary Jane Blvd & W Broadway St	Yes	Yes	Yes
21	Flynn Ln & W Broadway St	Yes	Yes	Yes

Signal Groups:

- ▶ Controller ID 1:
 - George Elmer Dr & Mullan Rd
 - Flynn Ln & Mullan Rd
 - Mary Jane Blvd & Mullan Rd
- ▶ Controller 2:
 - George Elmer Dr & England Blvd
 - Mary Jane Blvd & England Blvd

- ▶ Controller ID 6:
 - Flynn Ln & W Broadway St
- ▶ Controller ID 7:
 - Dougherty Dr & W Broadway St
 - Mary Jane Blvd & W Broadway St
- ▶ Controller ID 8:
 - Flynn Ln & England Blvd
- ▶ Controller ID 9:
 - George Elmer Dr & W Broadway St

Table 8 Signal Queue Lengths (ft) - AM Peak Period

#	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
	L	T	R	L	T	R	L	T	R	L	T	R
1	477	-	214	2	2	2	0	504	101	43	305	0
2	27	310	310	56	124	124	123	199	199	15	200	200
5	837	-	0	-	-	-	786	135	-	-	41	6
5M	314	-	64	-	-	-	92	276	-	-	83	33
7	147	-	337	-	-	-	-	379	69	67	153	-
9	177	177	177	113	113	113	7	201	201	29	177	177
12	-	-	1	-	-	175	6	146	146	0	86	37
13	-	-	-	779	-	0	671	56	-	-	58	8
13M	-	-	-	293	-	70	78	204	-	-	140	50
16	146	167	167	18	152	152	54	214	214	30	172	172
20	335	-	86	-	-	-	-	405	71	72	122	-
21	-	-	187	-	-	-	-	157	25	-	72	-

Table 9 Signal Queue Lengths (ft) - PM Peak Period

#	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
	L	T	R	L	T	R	L	T	R	L	T	R
1	301	-	194	2	2	2	0	658	186	85	368	0
2	165	188	188	36	282	282	124	306	306	38	310	310
5	365	-	0	-	-	-	410	16	-	-	346	37
5M	128	-	406	-	-	-	106	144	-	-	370	214
7	212	-	392	-	-	-	-	637	145	204	280	-
9	157	157	157	105	105	105	4	141	141	10	203	203
12	-	-	1	-	-	219	4	18	18	0	1,513	21
13	-	-	-	384	-	0	130	13	-	-	624	10
13M	-	-	-	158	-	210	35	67	-	-	355	49
16	69	167	167	99	151	151	17	182	182	37	280	280
20	300	-	137	-	-	-	-	497	116	84	207	-
21	-	-	154	-	-	-	-	162	19	-	135	-

MITIGATIONS

- ▶ #5 George Elmer Dr & Mullan Rd: Dual through lanes on WB & EB approaches
- ▶ #13 Mary Jane Blvd & Mullan Rd: Dual through lanes on WB & EB approaches

Scenario 5: Roundabout (2050)

- ▶ All intersections tested as single lane roundabout
 - ICD 120'
 - Entry width 14'
 - Circulatory width 16'
 - Splitter island length at least 50' (longer if approach roadway speed is higher)
 - Circulatory speed 18 mph
- ▶ Minor street intersections were then downgraded to mini-roundabouts
 - ICD 90'
 - Entry width 13'
 - Circulatory width 15'
 - Splitter island length 25'
 - Circulatory speed 15 mph
 - All approaches have posted speed less than 30 mph
- ▶ Intersections operating at LOS D or worse were upgraded to multilane roundabouts
 - ICD 165'
 - Entry width 15'
 - Circulatory width 30'
 - Splitter island length at least 150'
 - Circulatory speed 25 mph

Table 10 Roundabout Queue Lengths (ft) - AM Peak Period

#	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
	L	T	R	L	T	R	L	T	R	L	T	R
1	202	-	62	0	0	0	-	72	90	64	82	-
2	85	85	85	23	23	23	83	83	83	89	89	89
3	35	35	35	14	14	14	8	8	8	1	1	1
4	30	30	30	20	20	20	4	4	4	4	4	4
5	27	-	4	-	-	-	25	1,23 3	-	-	54	7
5M	28	-	5	-	-	-	160	194	-	-	28	33
6	-	-	-	17	-	17	45	45	-	-	32	32
7	34	-	98	-	-	-	-	94	123	47	60	-
8	-	12	12	6	6	-	-	-	-	3	-	3
9	21	21	21	12	12	12	67	67	67	72	72	72
10	17	17	17	18	18	18	3	3	3	3	3	3
11	29	29	-	-	17	17	9	-	9	-	-	-
12	-	-	0	-	-	11	13	667	667	48	17	17
12M	-	-	0	-	-	11	92	123	123	28	33	33
13	-	-	-	29	-	5	21	618	-	-	80	8
13M	-	-	-	30	-	6	95	123	-	-	30	36
14	28	28	28	16	16	16	6	6	6	4	4	4
15	32	32	32	18	18	18	6	6	6	6	6	6
16	59	59	59	29	29	29	79	79	79	70	70	70
17	19	19	19	12	12	12	6	6	6	2	2	2
18	28	28	28	17	17	17	19	19	19	13	13	13
19	25	25	25	24	24	24	2	2	2	0	0	0
20	163	-	16	-	-	-	-	120	161	54	69	-
21	-	-	237	-	-	-	-	76	97	37	45	-

Table 11 Roundabout Queue Lengths (ft) - PM Peak Period

#	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
	L	T	R	L	T	R	L	T	R	L	T	R
1	134	-	64	0	0	0	-	161	232	89	117	-
2	78	78	78	115	115	115	114	114	114	147	147	147
3	51	51	51	40	40	40	5	5	5	4	4	4
4	63	63	63	41	41	41	5	5	5	6	6	6
5	29	-	115	-	-	-	13	88	-	-	785	37
5M	28	-	113	-	-	-	37	43	-	-	141	200
6	-	-	-	27	-	27	42	42	-	-	57	57
7	90	-	211	-	-	-	-	188	277	95	125	-
8	-	7	7	7	7	-	-	-	-	1	-	1
9	15	15	15	12	12	12	38	38	38	66	66	66
10	11	11	11	11	11	11	6	6	6	1	1	1
11	11	11	-	-	12	12	3	-	3	-	-	-
12	-	-	0	-	-	70	3	83	83	906	6	6
12M	-	-	0	-	-	70	27	32	32	93	123	123
13	-	-	-	34	-	47	8	70	-	-	998	9
13M	-	-	-	39	-	44	28	33	-	-	114	153
14	19	19	19	17	17	17	6	6	6	2	2	2
15	22	22	22	21	21	21	13	13	13	5	5	5
16	38	38	38	10	10	10	9	9	9	10	10	10
17	14	14	14	20	20	20	5	5	5	1	1	1
18	18	18	18	30	30	30	11	11	11	9	9	9
19	20	20	20	37	37	37	10	10	10	0	0	0
20	161	-	33	-	-	-	-	186	275	99	131	-
21	-	-	43	-	-	-	-	92	122	64	81	-

MITIGATIONS

- ▶ #5 George Elmer Dr & Mullan Rd: WB dual approach with through + through/right lanes and EB dual approach with through + through/left lanes
 - Two conflicting circulatory lanes for SB approach, one conflicting circulatory lane for WB/EB approaches
- ▶ #12 Flynn Ln & Mullan Rd: WB dual approach with through + through/right lanes and EB dual approach with through + through/left lanes
 - Two conflicting circulatory lanes for SB approach, one conflicting circulatory lane for WB/EB approaches

- ▶ #13 Mary Jane Blvd & Mullan Rd: WB dual approach with through + through/right lanes and EB dual approach with through + through/left lanes
 - Two conflicting circulatory lanes for SB approach, one conflicting circulatory lane for WB/EB approaches

Scenario 6: All Way Stop Control (2050)

All Way Stop Controls were tested at three intersections:

- ▶ #2 George Elmer Dr & England Blvd
- ▶ #9 Flynn Ln & England Blvd
- ▶ #15 Mary Jane Blvd & Melrose Pl

These intersections had failing movements where signal warrants were not met.

Table 12 AWSC Queue Lengths (ft) - AM Peak Period

#	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
	L	T	R	L	T	R	L	T	R	L	T	R
2	6	213	213	12	48	48	51	258	258	5	260	260
9	35	35	35	21	21	21	5	200	200	30	163	163
15	61	61	61	37	37	37	10	10	10	9	9	9

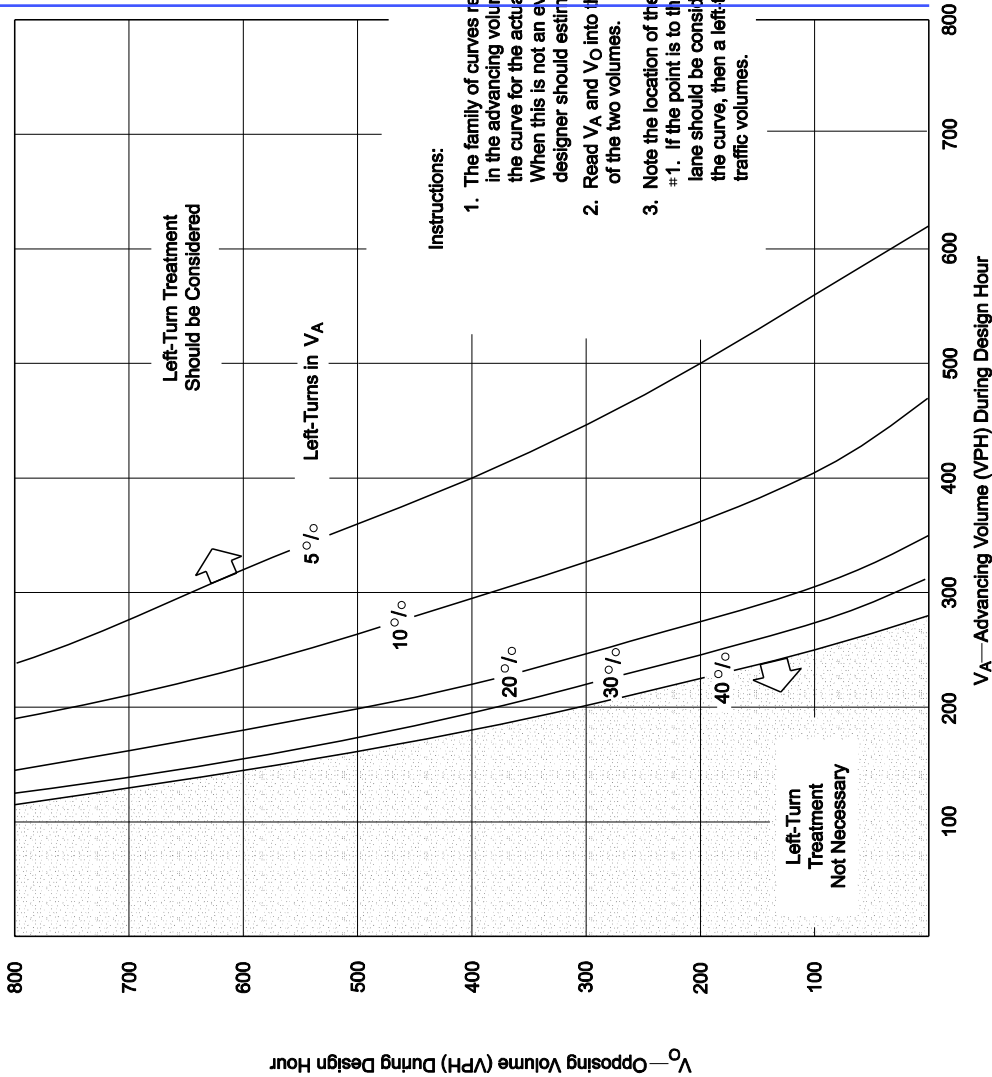
Table 13 AWSC Queue Lengths (ft) - PM Peak Period

#	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
	L	T	R	L	T	R	L	T	R	L	T	R
2	50	121	121	10	258	258	38	502	502	10	559	559
9	28	28	28	19	19	19	3	113	113	9	244	244
15	41	41	41	43	43	43	23	23	23	9	9	9

#1 George Elmer Drive & W Broadway St

V_A = Total advancing traffic volume which includes all turning traffic

V_O = Total opposing traffic volume which includes all turning traffic



PM W Broadway St WB:

T: 1,098
L: 137
L%: 11%
Va: 1,235
Vo: 1,685

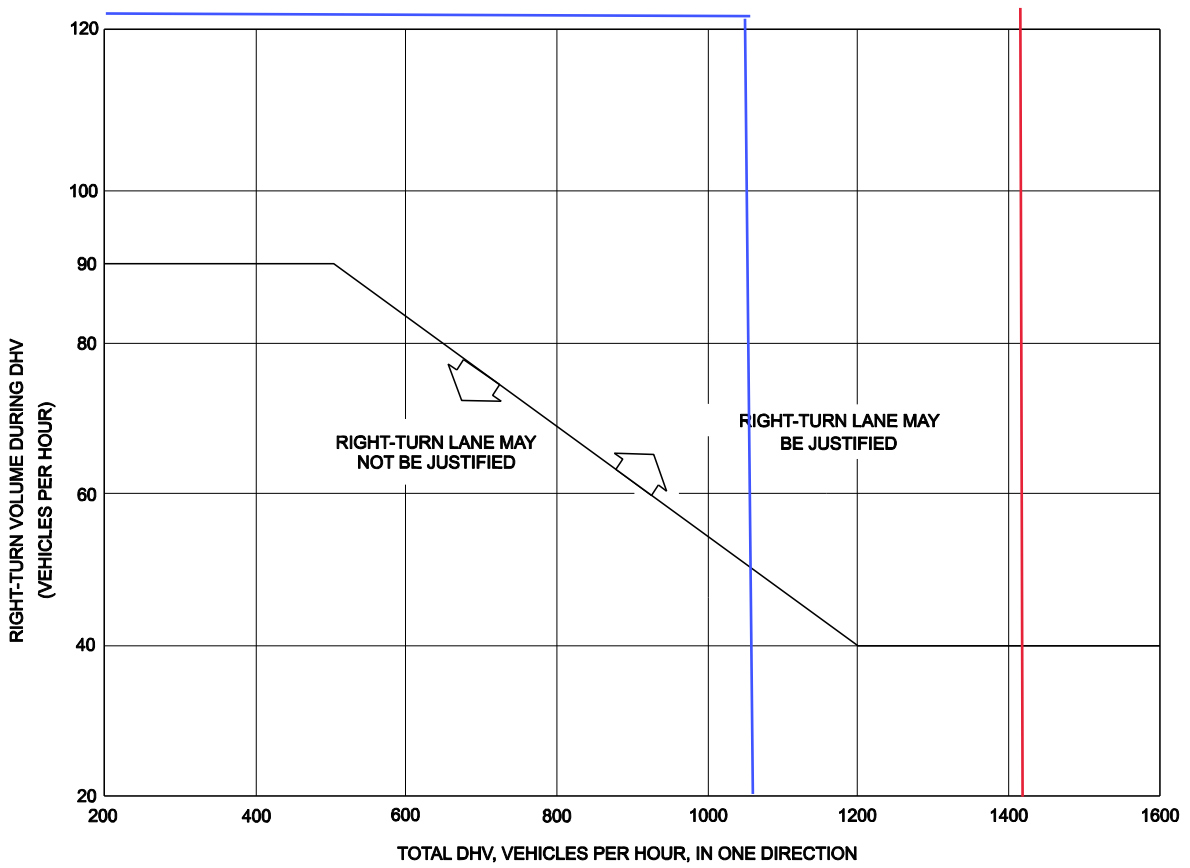
AM W Broadway St WB:

T: 757
L: 72
L%: 9%
Va: 829
Vo: 1,191

VOLUME GUIDELINES FOR LEFT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON 2-LANE HIGHWAYS (55 MPH) (US Customary)

Figure 28.4D

#1 George Elmer Drive & W Broadway Street



Note: Figure is only applicable on highways with a design speed of 50 mph (80 km/h) or greater.

W Broadway St EB:

T: 1,435

R: 250

AM W Broadway St EB:

T: 1,066

R: 125

PM George Elmer Dr NB:
 L: 142
 T/R: 245
 %L: 37%
 Va: 387
 Vo: 395

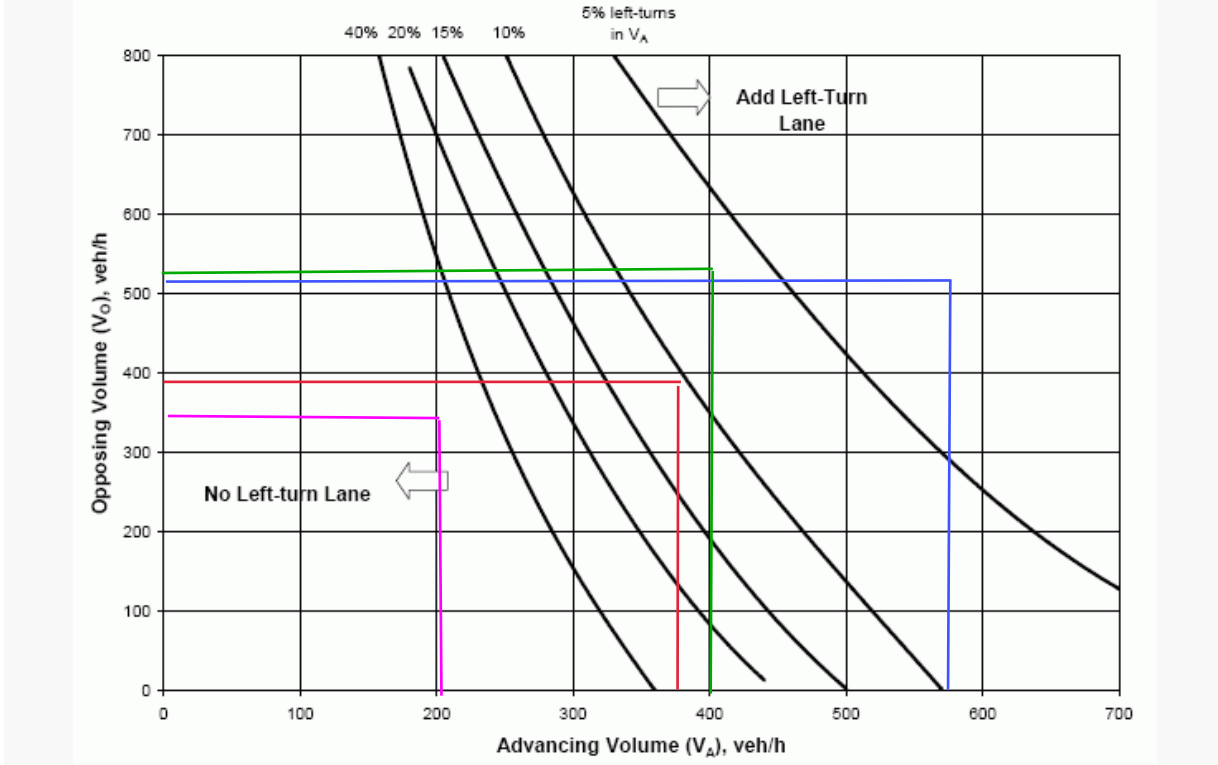
AM George Elmer Dr SB:
 L: 50
 T/R: 150
 %L: 25%
 Va: 200
 Vo: 369

PM England Blvd EB:
 L: 122
 T/R: 460
 %L: 21%
 Va: 582
 Vo: 516

AM England Blvd WB:
 L: 75
 T/R: 324
 %L: 23%
 Va: 399
 Vo: 531

#2 George Elmer Drive & England Boulevard

Figure 1 – Left-Turn Lane Guidelines for Two-Lane Roads less than or equal to 40 mph



The following data are required:

1. Opposing Volume (veh/hr) - VO - The opposing volume is to include only the right-turn and through movements in the opposite direction of the left turning vehicle.
2. Advancing Volume (veh/hr) - VA - The advancing volume is to include the right-turn, left-turn and through movements in the same direction as the left turning vehicle.
3. Operating Speed (mph) - The greatest of anticipated operating speed, measured 85th percentile speed or posted speed.
4. Percentage of left turns in VA

Left- turn lane is not needed for left turn volume less than 10 vph. However, criteria other than volume, such as crash experience, may be used to justify a left-turn lane.

The appropriate trend line is identified on the basis of the percentage of left-turns in the advancing volume, rounded up to the nearest percentage trend line. If the advancing and opposing volume combination intersects above or to the right of this trend line, a left-turn lane is appropriate.

Source: NCHRP Report 279 and 457

PM Cattle Dr EB:
 L: 26
 T/R: 34
 Va: 60
 Vo: 37
 L%: 43%

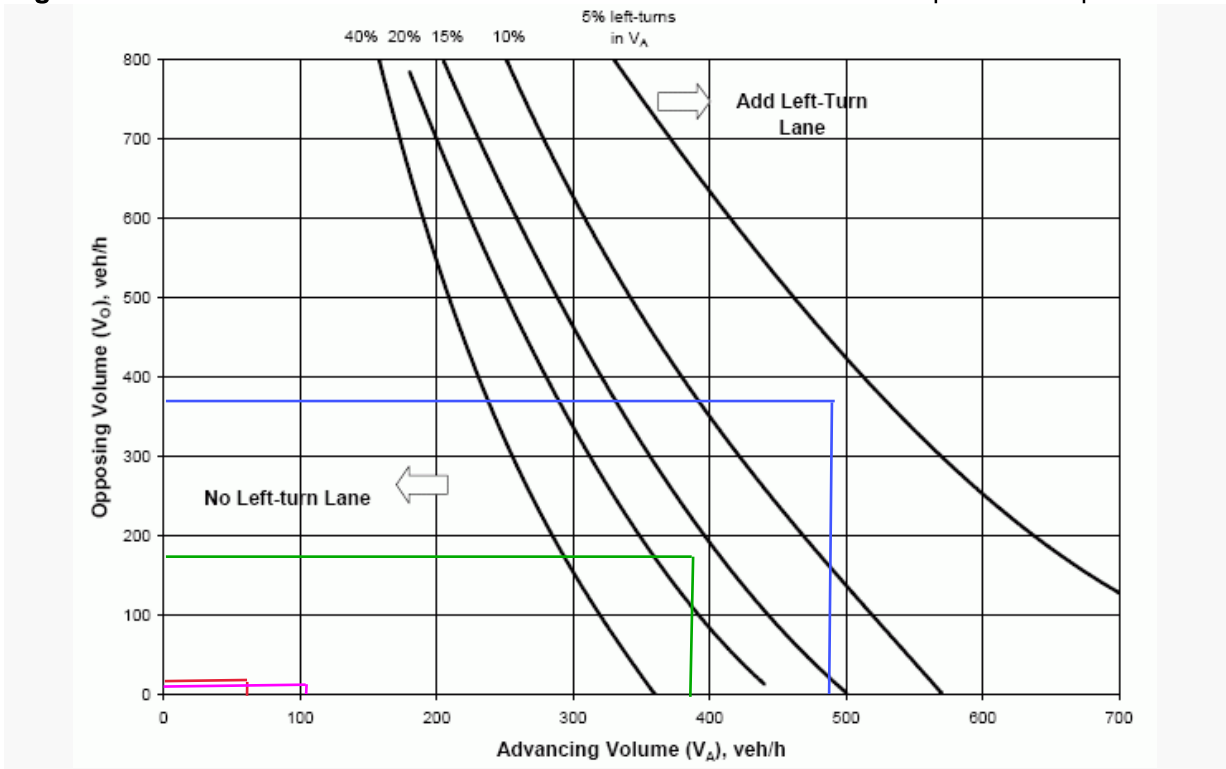
AM Cattle Dr EB:
 L: 21
 T/R: 87
 Va: 108
 Vo: 26
 L%: 19%

PM George Elmer Dr NB:
 L: 135
 T/R: 354
 Va: 489
 Vo: 371
 L%: 28%

AM George Elmer Dr NB:
 L: 39
 T/R: 342
 Va: 381
 Vo: 185
 L%: 10%

#3 George Elmer Drive & Cattle Drive

Figure 1 – Left-Turn Lane Guidelines for Two-Lane Roads less than or equal to 40 mph



The following data are required:

1. Opposing Volume (veh/hr) - V_O - The opposing volume is to include only the right-turn and through movements in the opposite direction of the left turning vehicle.
2. Advancing Volume (veh/hr) - V_A - The advancing volume is to include the right-turn, left-turn and through movements in the same direction as the left turning vehicle.
3. Operating Speed (mph) - The greatest of anticipated operating speed, measured 85th percentile speed or posted speed.
4. Percentage of left turns in V_A

Left- turn lane is not needed for left turn volume less than 10 vph. However, criteria other than volume, such as crash experience, may be used to justify a left-turn lane.

The appropriate trend line is identified on the basis of the percentage of left-turns in the advancing volume, rounded up to the nearest percentage trend line. If the advancing and opposing volume combination intersects above or to the right of this trend line, a left-turn lane is appropriate.

Source: NCHRP Report 279 and 457

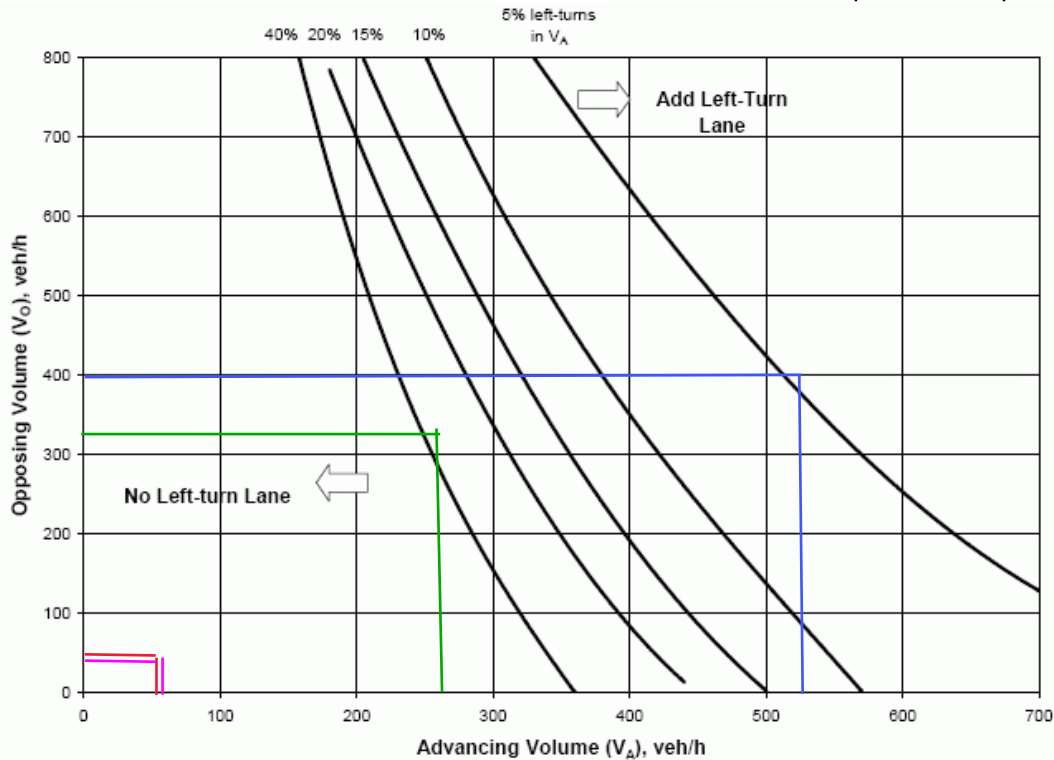
PM Heron's Landing EB:
 L: 30
 T/R: 21
 Va: 51
 Vo: 51
 L%: 58%

AM Heron's Landing EB:
 L: 25
 T/R: 26
 Va: 51
 Vo: 51
 L%: 49%

PM George Elmer Dr NB:
 L: 75
 T/R: 459
 Va: 534
 Vo: 400
 L%: 16%

AM George Elmer Dr SB:
 L: 15
 T/R: 252
 Va: 267
 Vo: 339
 L%: 6%

Figure 1 – Left-Turn Lane Guidelines for Two-Lane Roads less than or equal to 40 mph



The following data are required:

#4 George Elmer Drive & Heron's Landing

1. Opposing Volume (veh/hr) - VO - The opposing volume is to include only the right-turn and through movements in the opposite direction of the left turning vehicle.
2. Advancing Volume (veh/hr) - VA - The advancing volume is to include the right-turn, left-turn and through movements in the same direction as the left turning vehicle.
3. Operating Speed (mph) - The greatest of anticipated operating speed, measured 85th percentile speed or posted speed.
4. Percentage of left turns in VA

Left- turn lane is not needed for left turn volume less than 10 vph. However, criteria other than volume, such as crash experience, may be used to justify a left-turn lane.

The appropriate trend line is identified on the basis of the percentage of left-turns in the advancing volume, rounded up to the nearest percentage trend line. If the advancing and opposing volume combination intersects above or to the right of this trend line, a left-turn lane is appropriate.

Source: NCHRP Report 279 and 457

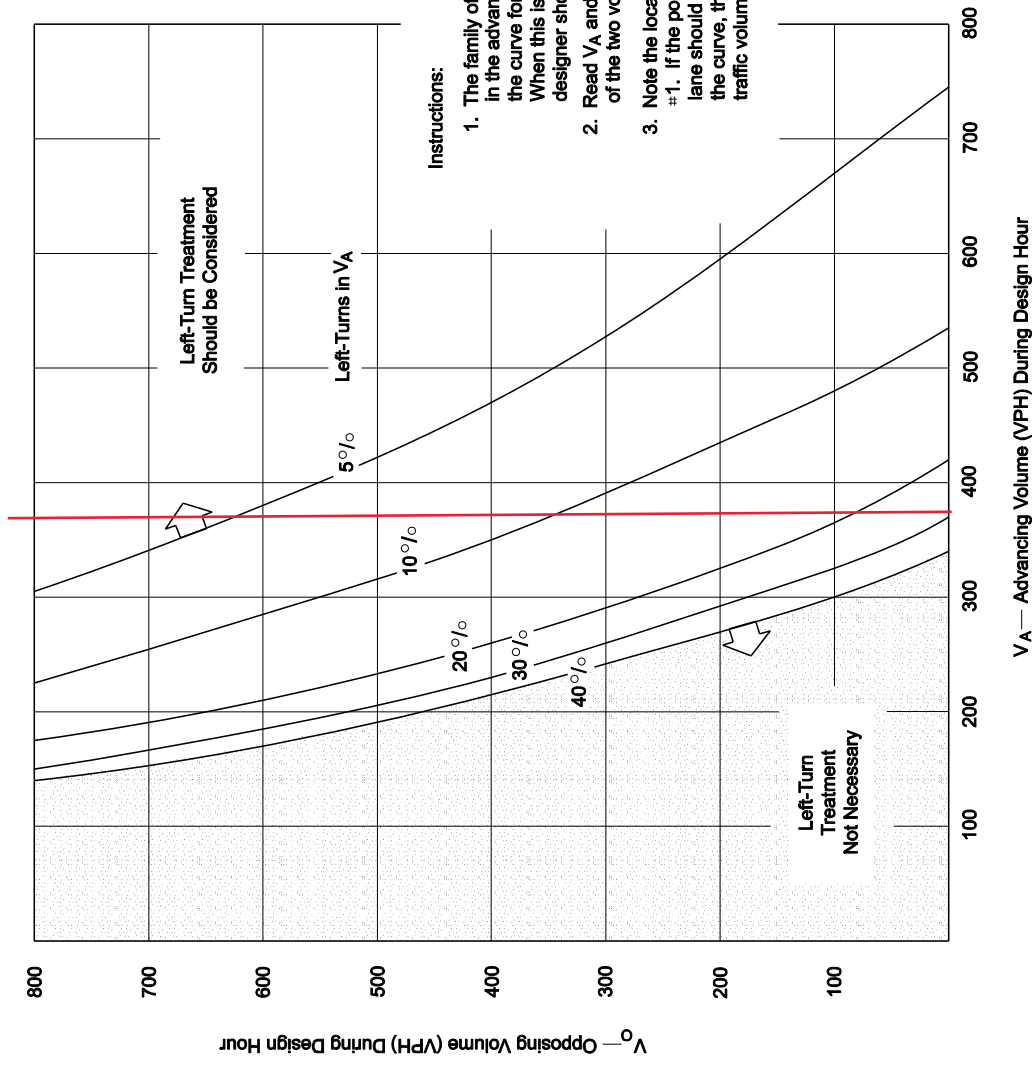
#5 George Elmer Drive & Mullan Road

PM Mullan Rd EB:
 L: 104
 T: 275
 Va: 379
 Vo: 1,538
 L%: 27%

V_A = Total advancing traffic volume which includes all turning traffic

V_O = Total opposing traffic volume which includes all turning traffic

AM Mullan Rd EB:
 L: 253
 T: 1,259
 Va: 1,512
 Vo: 490
 L%: 17%

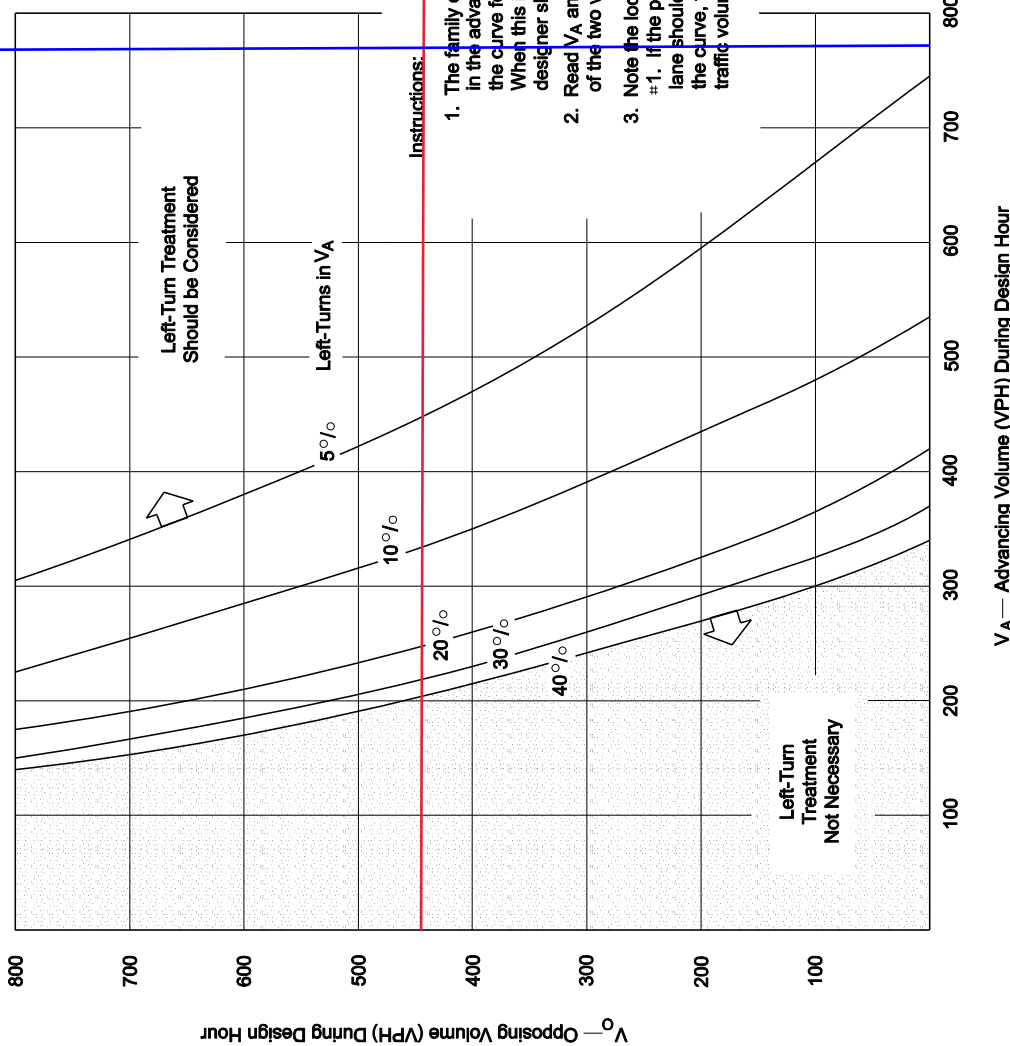


VOLUME GUIDELINES FOR LEFT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON 2-LANE HIGHWAYS (45 MPH) (US Customary)

Figure 28.4F

#5 George Elmer Drive & Mullan Road

V_A = Total advancing traffic volume which includes all turning traffic
 V_O = Total opposing traffic volume which includes all turning traffic



- Instructions:**
1. The family of curves represent the percent of left turns in the advancing volume (V_A). The designer should locate the curve for the actual percentage of left turns. When this is not an even increment of five, the designer should estimate where the curve lies.
 2. Read V_A and V_O into the chart and locate the intersection of the two volumes.
 3. Note the location of the point in #2 relative to the curve in #1. If the point is to the right of the curve, then a left-turn lane should be considered. If the point is to the left of the curve, then a left-turn lane is not warranted based on traffic volumes.

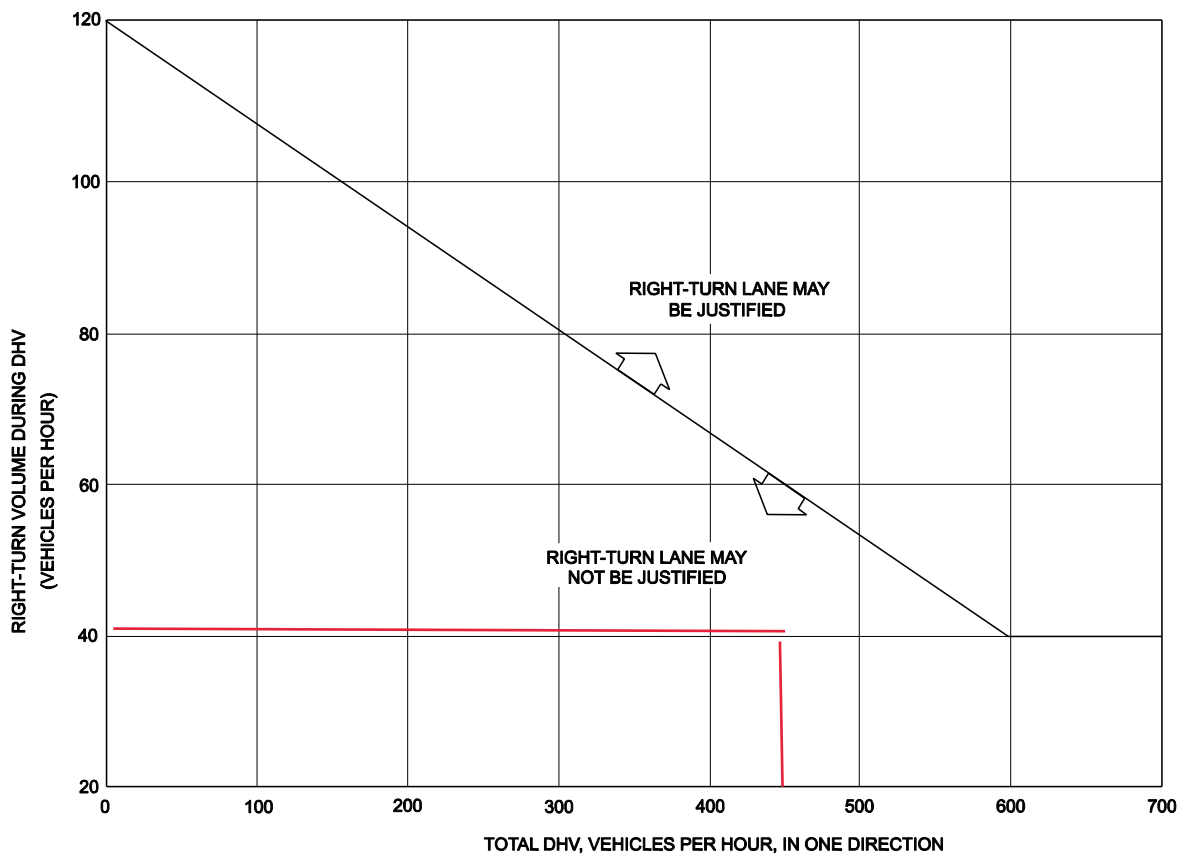
Mullan Rd EB (AM)
 V_A : 1,607
 V_O : 447
 % Lefts: 0.001%
 Lane: Yes

Mullan Rd EB (PM)
 V_A : 782
 V_O : 1,581
 % Lefts: 18%
 Lane: Yes

VOLUME GUIDELINES FOR LEFT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON 2-LANE HIGHWAYS (45 MPH)
 (US Customary)

Figure 28.4F

#5 George Elmer Drive & Mullan Road



Note: For highways with a design speed below 50 mph (80 km/h) with a DHV < 300 and where right turns are > 40, an adjustment should be used. To read the vertical axis of the chart, subtract 20 from the actual number of right turns.

Example

Given: Design Speed = 35 mph (60 km/h)
 DHV = 250 vph
 Right Turns = 100 vph

Problem: Determine if a right-turn lane is necessary.

Solution: To read the vertical axis, use $100 - 20 = 80$ vph. The figure indicates that a right-turn lane is not necessary, unless other factors (e.g., high crash rate) indicate a lane is needed.

GUIDELINES FOR RIGHT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON 2-LANE HIGHWAYS

Figure 28.4A

WB Mullan Rd (AM)
 DHV: 447
 Design Speed: 45 mph
 Right Turns: 42
 Turn Lane: No

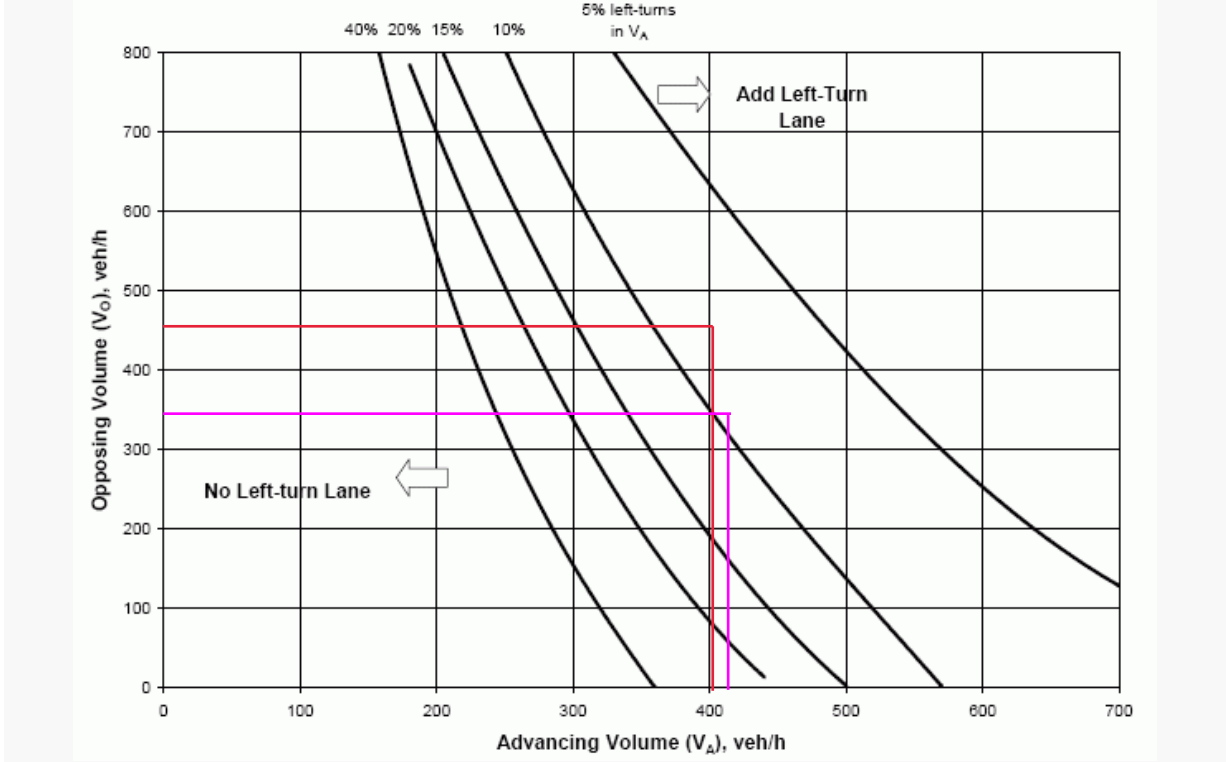
WB Mullan Rd (PM)
 DHV: 1,385
 Design Speed: 45 mph
 Right Turns: 196
 Turn Lane: Yes

#6 Dougherty Drive & England Boulevard

AM England Blvd EB:
L: 50
T: 361
Va: 411
Vo: 354
L%: 12%

PM England Blvd EB:
L: 150
T: 249
Va: 399
Vo: 466
L%: 38%

Figure 1 – Left-Turn Lane Guidelines for Two-Lane Roads less than or equal to 40 mph



The following data are required:

1. Opposing Volume (veh/hr) - VO - The opposing volume is to include only the right-turn and through movements in the opposite direction of the left turning vehicle.
2. Advancing Volume (veh/hr) - VA - The advancing volume is to include the right-turn, left-turn and through movements in the same direction as the left turning vehicle.
3. Operating Speed (mph) - The greatest of anticipated operating speed, measured 85th percentile speed or posted speed.
4. Percentage of left turns in VA

Left- turn lane is not needed for left turn volume less than 10 vph. However, criteria other than volume, such as crash experience, may be used to justify a left-turn lane.

The appropriate trend line is identified on the basis of the percentage of left-turns in the advancing volume, rounded up to the nearest percentage trend line. If the advancing and opposing volume combination intersects above or to the right of this trend line, a left-turn lane is appropriate.

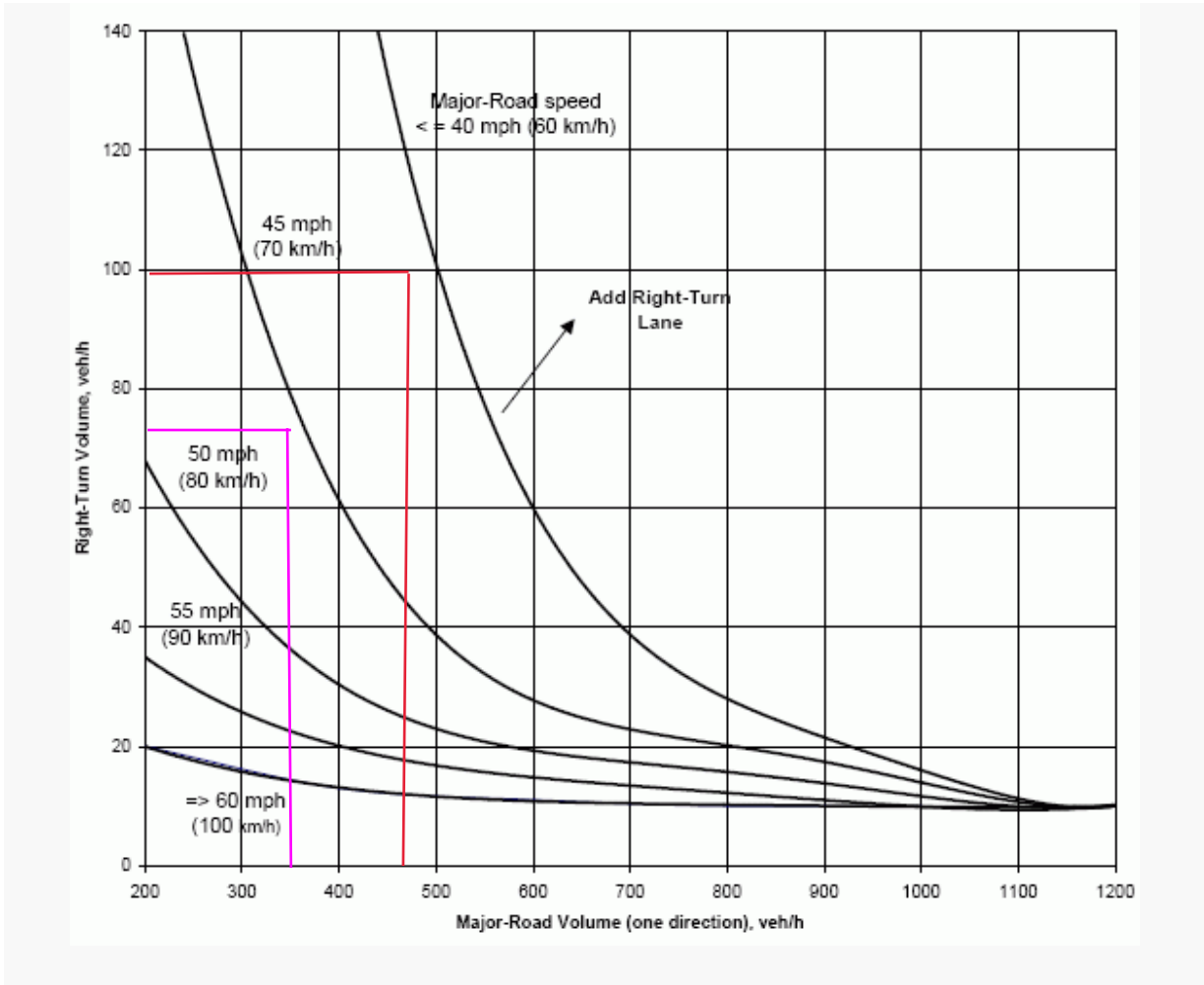
Source: NCHRP Report 279 and 457

#6 Dougherty Drive & England Boulevard

AM Dougherty Dr SB:
R: 75
Speed: 30 mph
England Blvd: 354

PM Dougherty Dr SB:
R: 100
Speed: 30 mph
England Blvd: 466

Figure 6 – Right-Turn Lane Guidelines for Two-Lane Roadways



The following data are required:

1. Advancing Volume (veh/hr) - The advancing volume is to include the right-turn, left-turn and through movements in the same direction as the right-turning vehicle.
2. Right-Turning Volume (veh/hr) - The right-turning volume is the number of advancing vehicles turning right.
3. Operating Speed (mph) - The greatest of anticipated operating speed, measured 85th percentile speed or posted speed.

Note: Right-turn lane is not needed for right-turn volume less than 10 vph. However, criteria other than volume, e.g. crash experience, may be used to justify a right-turn lane.

If the combination of major road approach volume and right-turn volume intersects above or to the right of the speed trend line corresponding to the major road operating speed, then a right-turn lane is appropriate.

Source: NCHRP Report 279 and 457

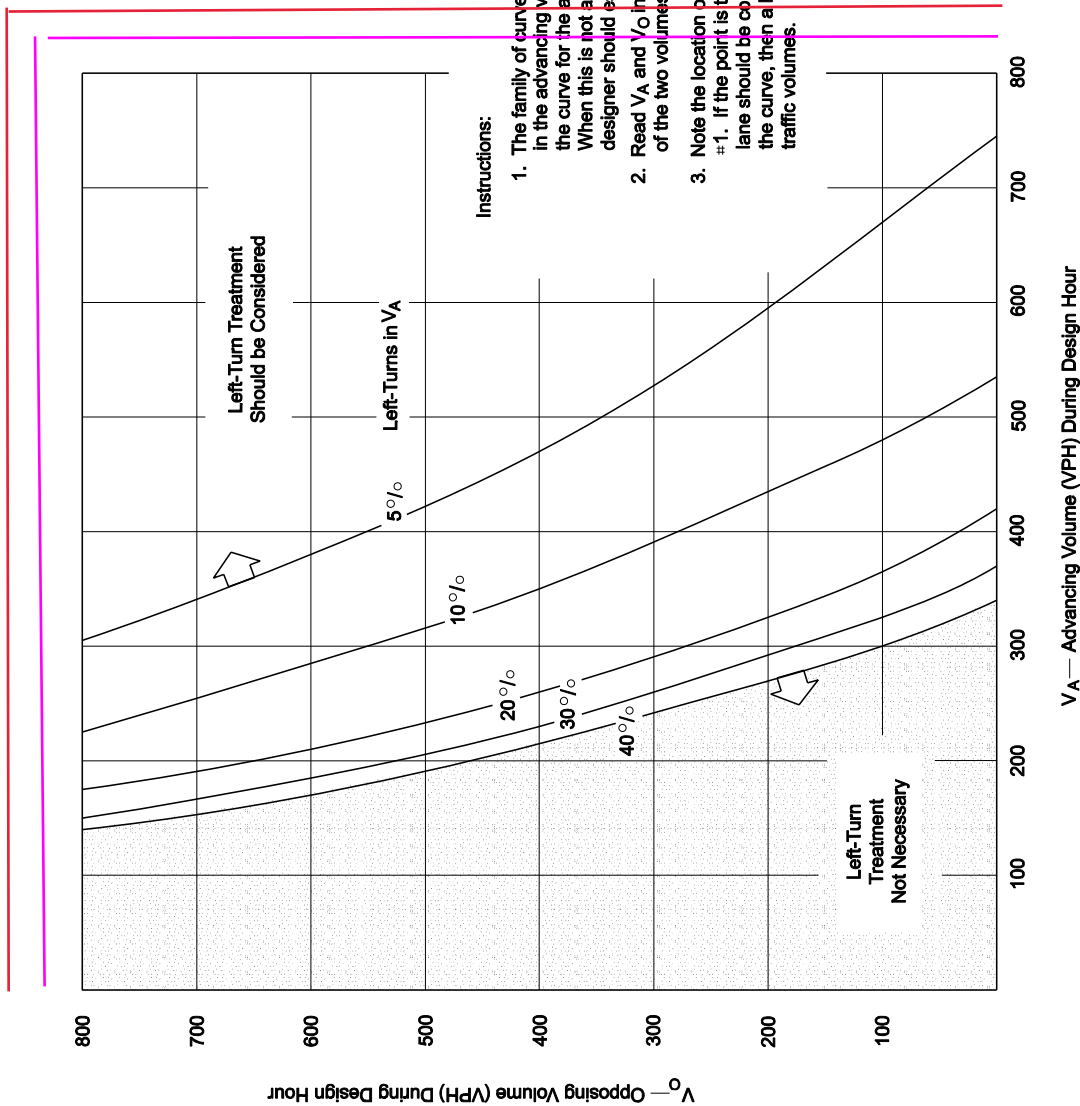
Adopted: Res. 469 (7/13/94)
Revised: Res. 675 (1/29/03); Res. 904 (8/19/09); Ord. 217 (9/14/11); Ord. 232 (12/7/16); Ord. 233 (1/25/17); Ord. 238 (12/12/18)

AM W Broadway St WB:
 L: 150
 T: 713
 Va: 863
 Vo: 1,269
 L%: 17%

V_A = Total advancing traffic volume which includes all turning traffic

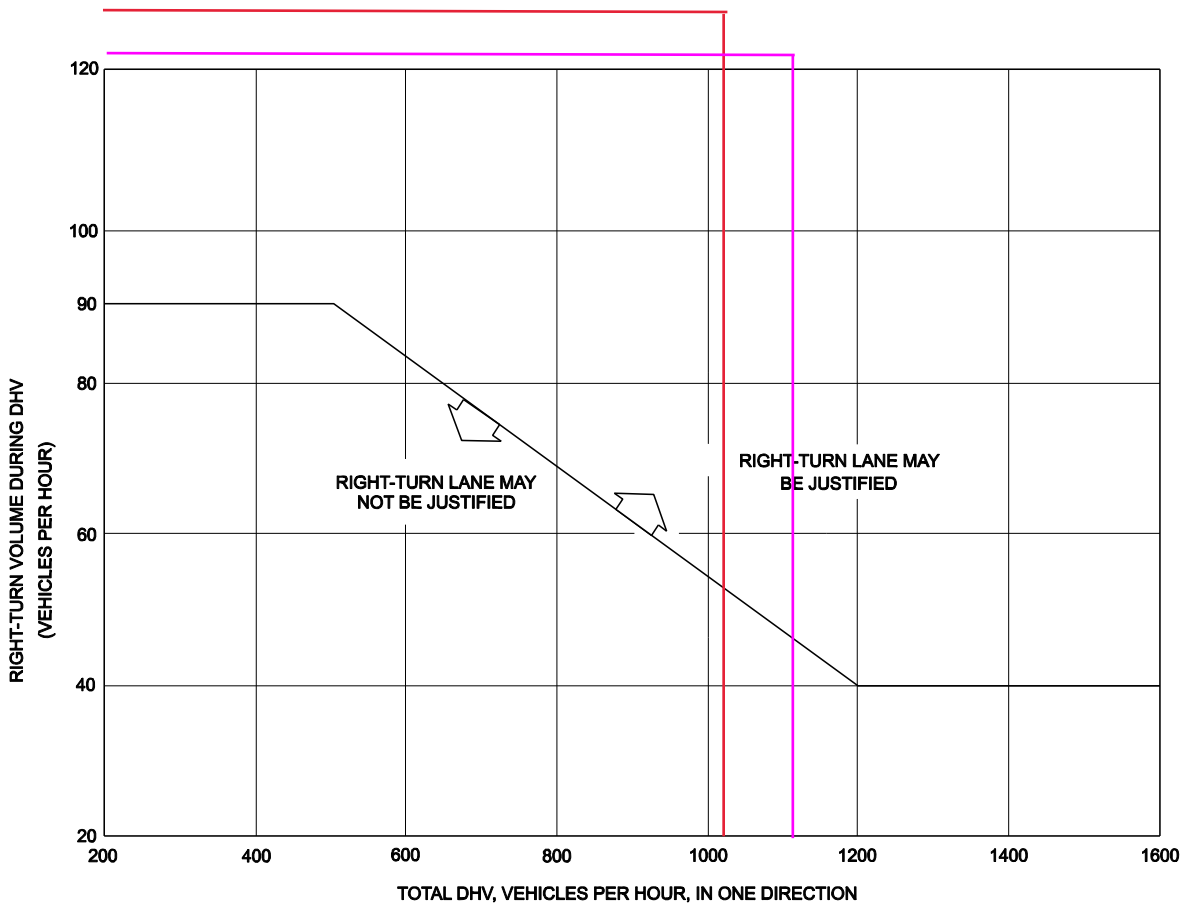
V_O = Total opposing traffic volume which includes all turning traffic

PM W Broadway St WB:
 L: 254
 T: 1,060
 Va: 1,314
 Vo: 1,594
 L%: 19%



VOLUME GUIDELINES FOR LEFT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON 2-LANE HIGHWAYS (45 MPH) (US Customary)

Figure 28.4F



Note: Figure is only applicable on highways with a design speed of 50 mph (80 km/h) or greater.

AM W Broadway St EB:
 R: 130
 Vo: 1,139

PM W Broadway St EB:
 R: 200
 Vo: 1,060

GUIDELINES FOR RIGHT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON 4-LANE HIGHWAYS

Figure 28.4B

#8 Flynn Lane & Camden Street

Flynn Ln SB (AM)

Va: 146

Vo: 257

%Lefts: 0.04%

Turn Lane: No

Flynn Ln SB (AM)

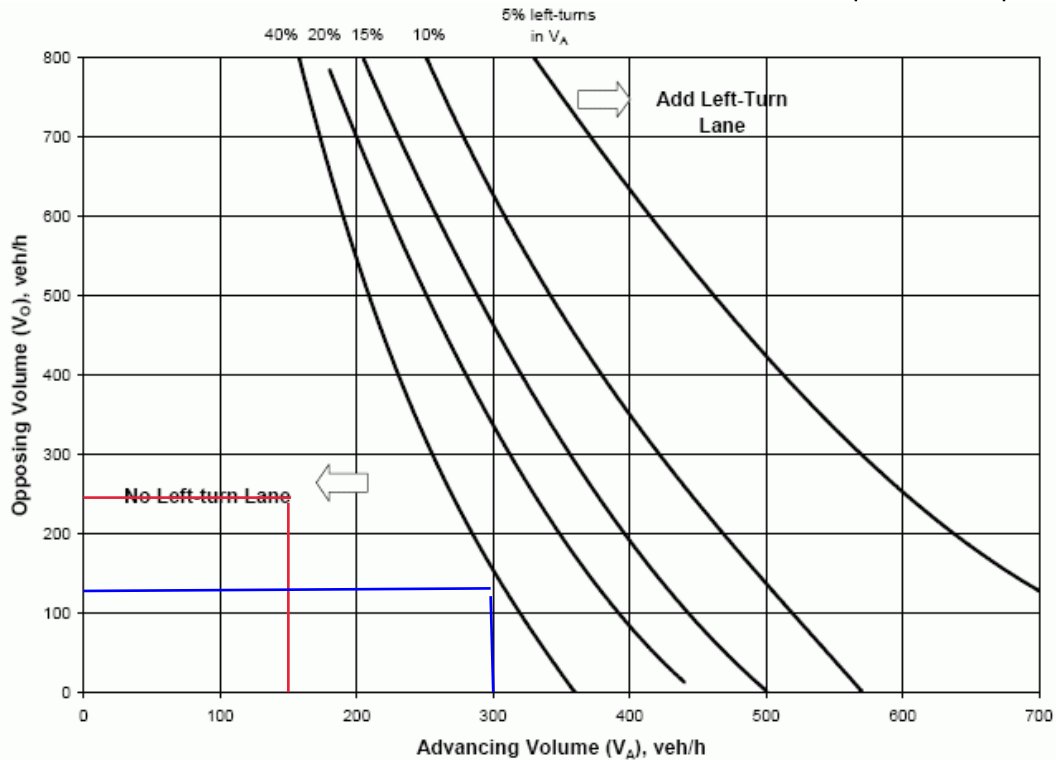
Va: 301

Vo: 114

%Lefts: 0.07%

Turn Lane: No

Figure 1 – Left-Turn Lane Guidelines for Two-Lane Roads less than or equal to 40 mph



The following data are required:

1. Opposing Volume (veh/hr) - VO - The opposing volume is to include only the right-turn and through movements in the opposite direction of the left turning vehicle.
2. Advancing Volume (veh/hr) - VA - The advancing volume is to include the right-turn, left-turn and through movements in the same direction as the left turning vehicle.
3. Operating Speed (mph) - The greatest of anticipated operating speed, measured 85th percentile speed or posted speed.
4. Percentage of left turns in VA

Left- turn lane is not needed for left turn volume less than 10 vph. However, criteria other than volume, such as crash experience, may be used to justify a left-turn lane.

The appropriate trend line is identified on the basis of the percentage of left-turns in the advancing volume, rounded up to the nearest percentage trend line. If the advancing and opposing volume combination intersects above or to the right of this trend line, a left-turn lane is appropriate.

Source: NCHRP Report 279 and 457

Adopted: Res. 469 (7/13/94)

Revised: Res. 675 (1/29/03); Res. 904 (8/19/09); Ord. 217 (9/14/11); Ord. 232 (12/7/16); Ord. 233 (1/25/17); Ord. 238 (12/12/18)

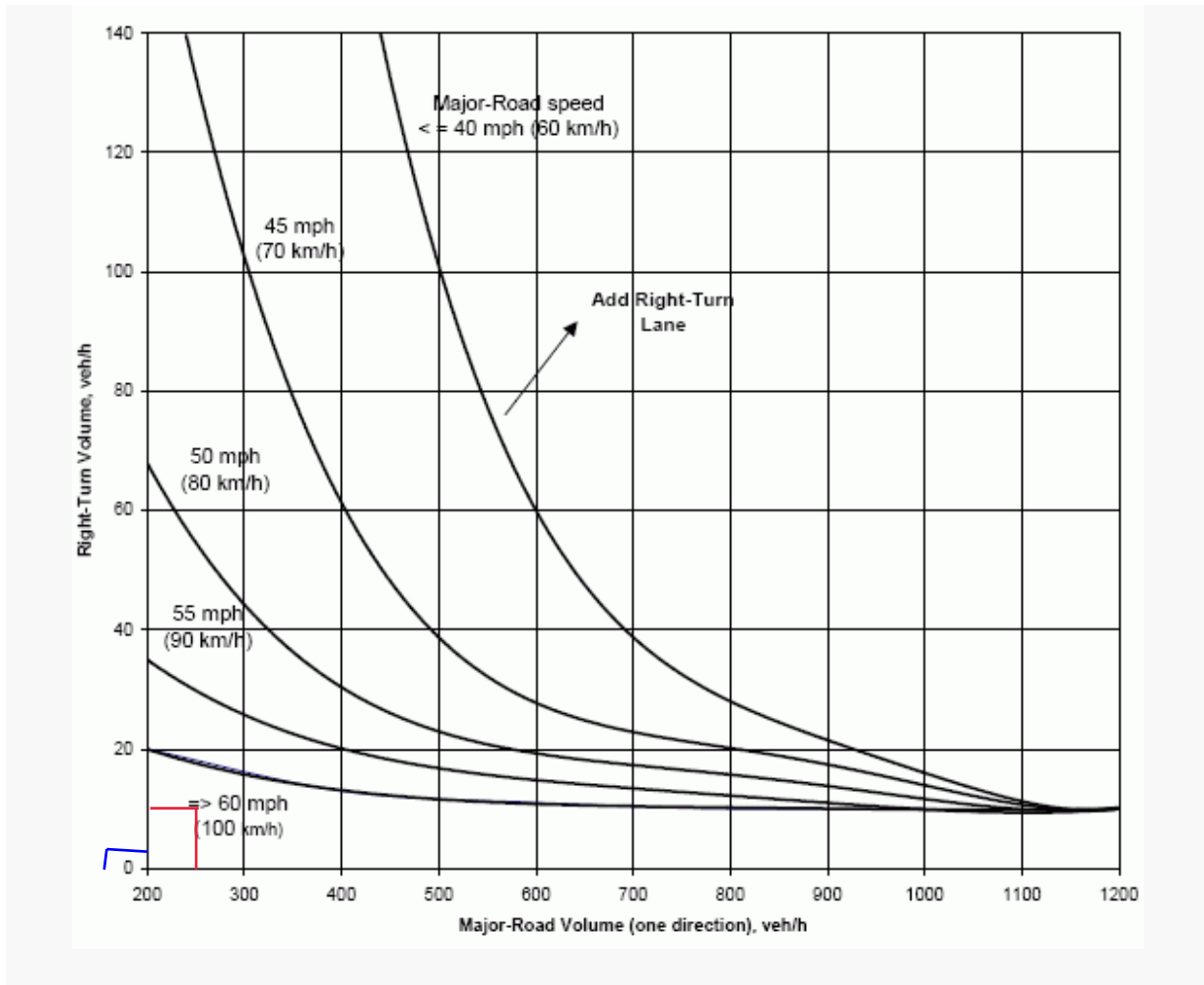
7100 - 35

#8 Flynn Lane & Camden Street

Flynn Lane NB (AM)
Volume: 256
Right Turn Volume: 10
Speed: 25 mph
Turn Lane: No

Flynn Lane NB (PM)
Volume: 114
Right Turn Volume: 7
Speed: 25 mph
Turn Lane: No

Figure 6 – Right-Turn Lane Guidelines for Two-Lane Roadways



The following data are required:

1. Advancing Volume (veh/hr) - The advancing volume is to include the right-turn, left-turn and through movements in the same direction as the right-turning vehicle.
2. Right-Turning Volume (veh/hr) - The right-turning volume is the number of advancing vehicles turning right.
3. Operating Speed (mph) - The greatest of anticipated operating speed, measured 85th percentile speed or posted speed.

Note: Right-turn lane is not needed for right-turn volume less than 10 vph. However, criteria other than volume, e.g. crash experience, may be used to justify a right-turn lane.

If the combination of major road approach volume and right-turn volume intersects above or to the right of the speed trend line corresponding to the major road operating speed, then a right-turn lane is appropriate.

Source: NCHRP Report 279 and 457

Adopted: Res. 469 (7/13/94)
Revised: Res. 675 (1/29/03); Res. 904 (8/19/09); Ord. 217 (9/14/11); Ord. 232 (12/7/16); Ord. 233 (1/25/17); Ord. 238 (12/12/18)

7100 - 40

#9 Flynn Lane & England Boulevard

AM Flynn Ln SB:

L: 55
T/R: 48
Va: 103
Vo: 160
L%: 53%

PM Flynn Ln SB:

L: 17
T/R: 82
Va: 99
Vo: 141
L%: 17%

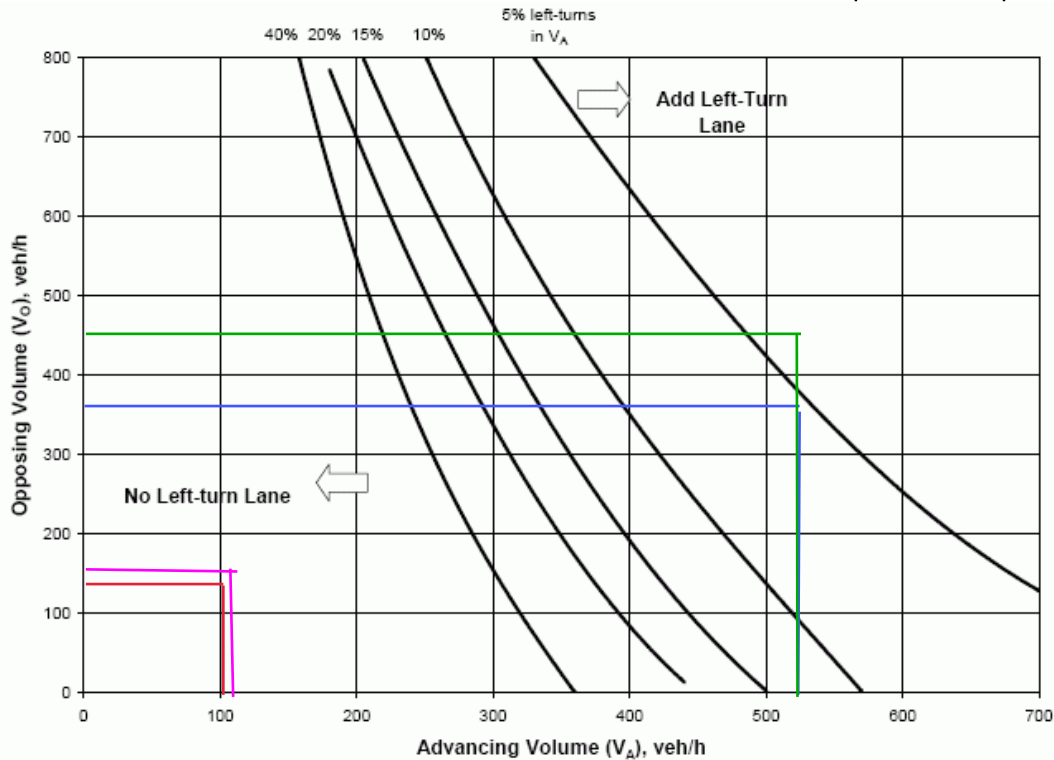
AM England Blvd WB:

L: 142
T/R: 395
Va: 537
Vo: 445
L%: 26%

PM England Blvd WB:

L: 58
T/R: 476
Va: 534
Vo: 360
L%: 11%

Figure 1 – Left-Turn Lane Guidelines for Two-Lane Roads less than or equal to 40 mph



The following data are required:

1. Opposing Volume (veh/hr) - VO - The opposing volume is to include only the right-turn and through movements in the opposite direction of the left turning vehicle.
2. Advancing Volume (veh/hr) - VA - The advancing volume is to include the right-turn, left-turn and through movements in the same direction as the left turning vehicle.
3. Operating Speed (mph) - The greatest of anticipated operating speed, measured 85th percentile speed or posted speed.
4. Percentage of left turns in VA

Left- turn lane is not needed for left turn volume less than 10 vph. However, criteria other than volume, such as crash experience, may be used to justify a left-turn lane.

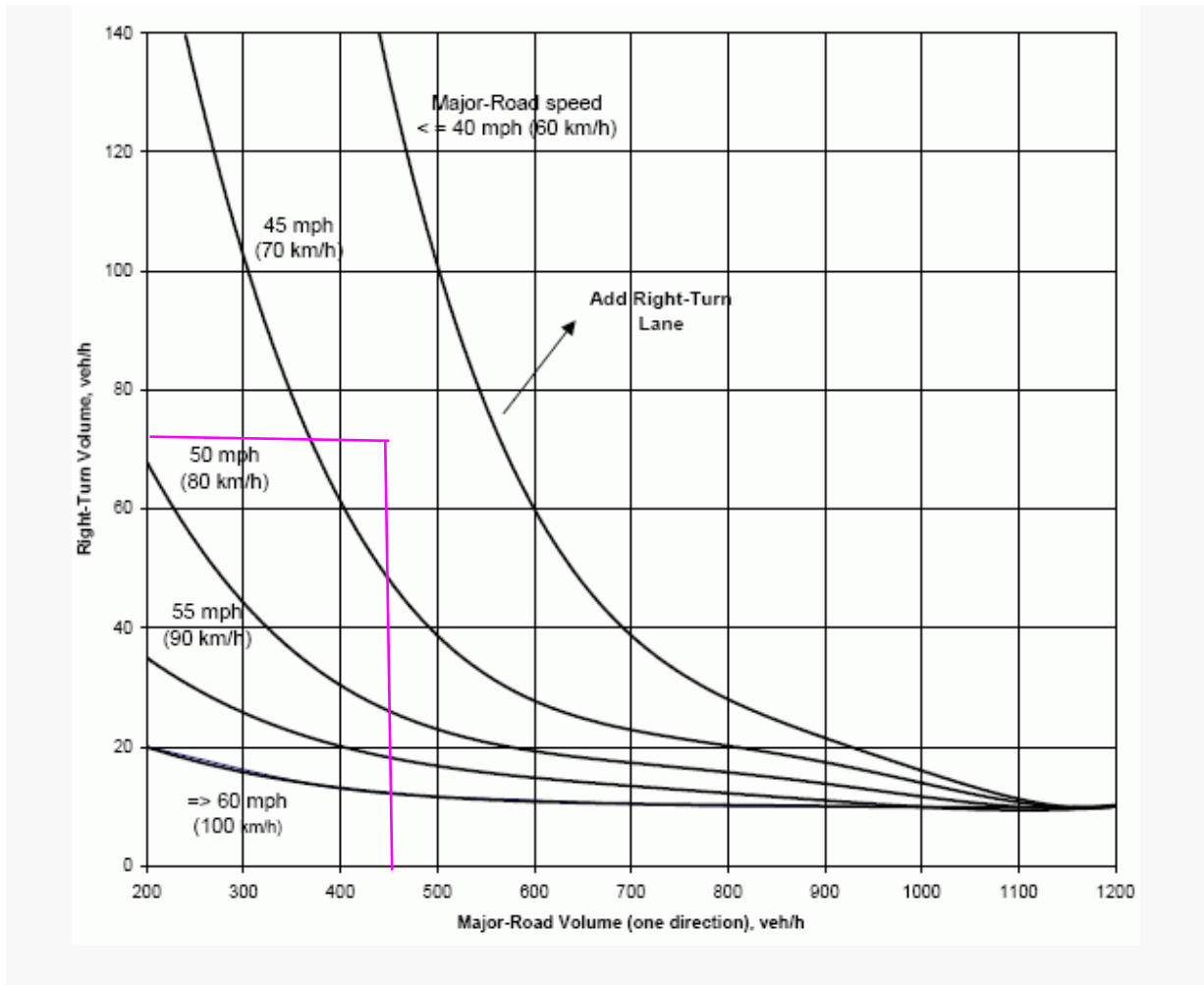
The appropriate trend line is identified on the basis of the percentage of left-turns in the advancing volume, rounded up to the nearest percentage trend line. If the advancing and opposing volume combination intersects above or to the right of this trend line, a left-turn lane is appropriate.

Source: NCHRP Report 279 and 457

AM Flynn Ln NB:
R: 73
Speed: 30 mph
England Blvd: 445

#9 Flynn Lane & England Boulevard

Figure 6 – Right-Turn Lane Guidelines for Two-Lane Roadways



The following data are required:

1. Advancing Volume (veh/hr) - The advancing volume is to include the right-turn, left-turn and through movements in the same direction as the right-turning vehicle.
2. Right-Turning Volume (veh/hr) - The right-turning volume is the number of advancing vehicles turning right.
3. Operating Speed (mph) - The greatest of anticipated operating speed, measured 85th percentile speed or posted speed.

Note: Right-turn lane is not needed for right-turn volume less than 10 vph. However, criteria other than volume, e.g. crash experience, may be used to justify a right-turn lane.

If the combination of major road approach volume and right-turn volume intersects above or to the right of the speed trend line corresponding to the major road operating speed, then a right-turn lane is appropriate.

Source: NCHRP Report 279 and 457

Adopted: Res. 469 (7/13/94)
Revised: Res. 675 (1/29/03); Res. 904 (8/19/09); Ord. 217 (9/14/11); Ord. 232 (12/7/16); Ord. 233 (1/25/17); Ord. 238 (12/12/18)

7100 - 40

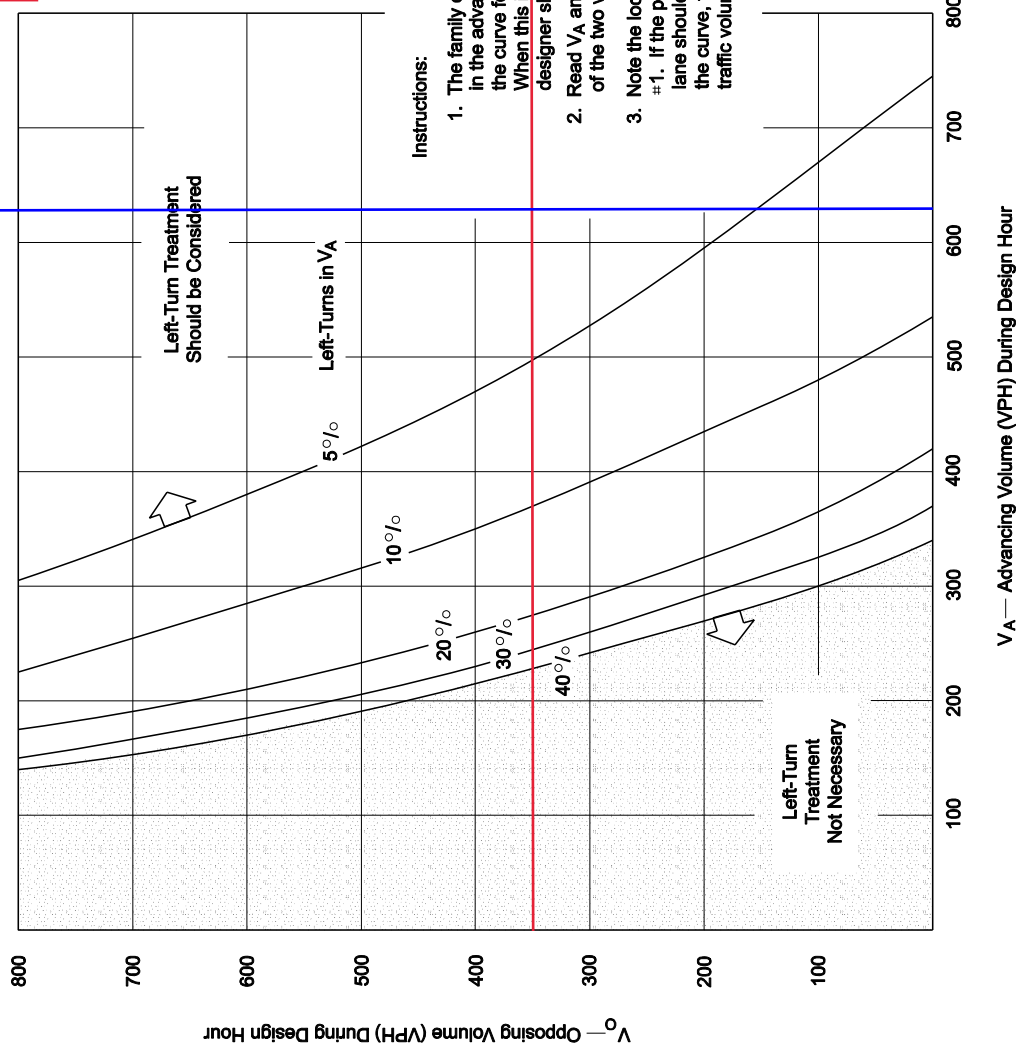
#12 Flynn Lane & Mullian Road

Mullian Rd EB (PM)
 Va: 626
 Vo: 1,246
 %L: 15%
 Turn Lane: Yes

Mullian Rd EB (AM)
 Va: 1,346
 Vo: 363
 %L: 31%
 Turn Lane: Yes

V_A = Total advancing traffic volume which includes all turning traffic

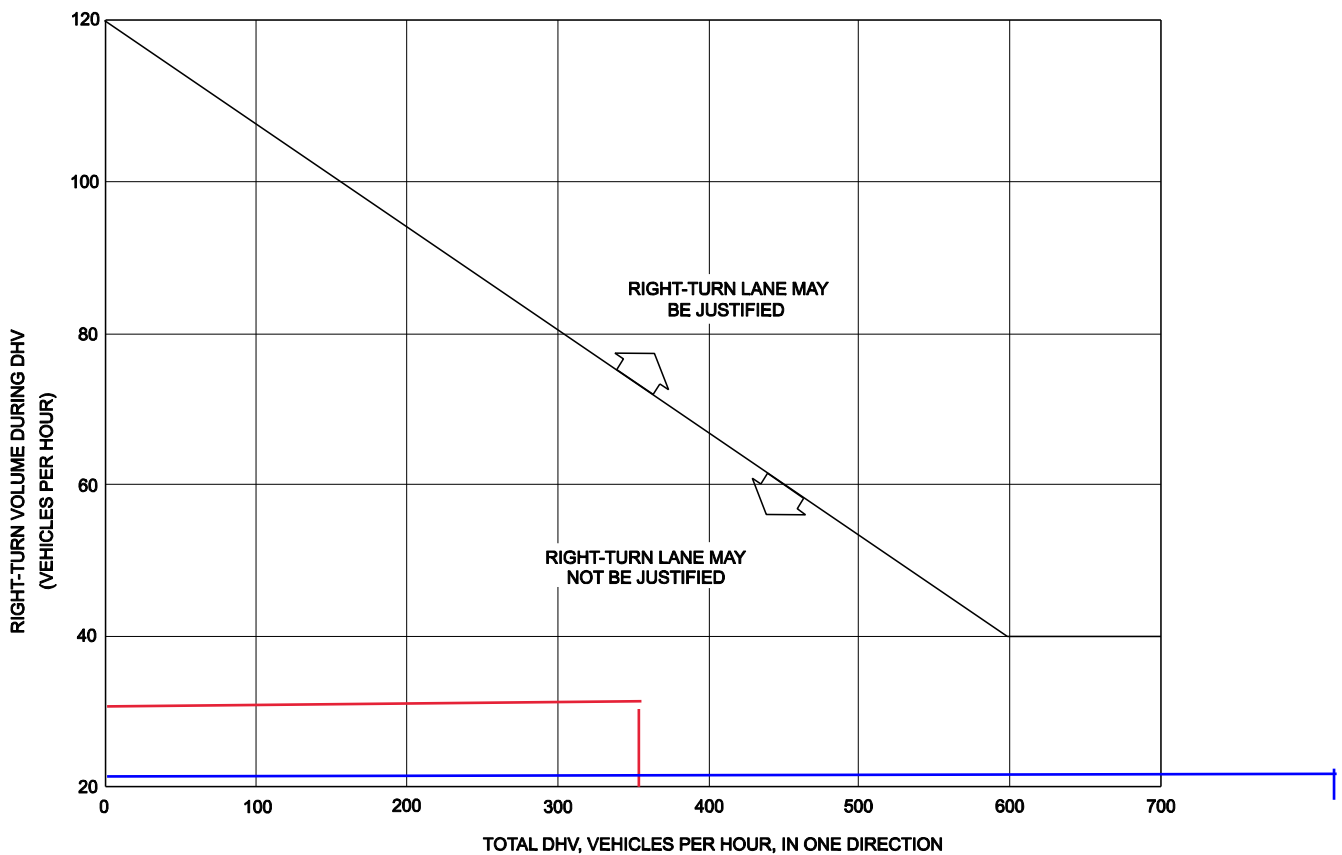
V_O = Total opposing traffic volume which includes all turning traffic



- Instructions:
1. The family of curves represent the percent of left turns in the advancing volume (V_A). The designer should locate the curve for the actual percentage of left turns. When this is not an even increment of five, the designer should estimate where the curve lies.
 2. Read V_A and V_O into the chart and locate the intersection of the two volumes.
 3. Note the location of the point in #2 relative to the curve in #1. If the point is to the right of the curve, then a left-turn lane should be considered. If the point is to the left of the curve, then a left-turn lane is not warranted based on traffic volumes.

VOLUME GUIDELINES FOR LEFT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON 2-LANE HIGHWAYS (45 MPH) (US Customary)

Figure 28.4F



Note: For highways with a design speed below 50 mph (80 km/h) with a DHV < 300 and where right turns are > 40, an adjustment should be used. To read the vertical axis of the chart, subtract 20 from the actual number of right turns.

Example

Given: Design Speed = 35 mph (60 km/h)
 DHV = 250 vph
 Right Turns = 100 vph

Problem: Determine if a right-turn lane is necessary.

Solution: To read the vertical axis, use $100 - 20 = 80$ vph. The figure indicates that a right-turn lane is not necessary, unless other factors (e.g., high crash rate) indicate a lane is needed.

GUIDELINES FOR RIGHT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON 2-LANE HIGHWAYS

Figure 28.4A

Mullan Rd WB (AM)
 DHV: 363
 Right Turns: 32
 Speed: 45 mph
 Turn Lane: No

Mullan Rd WB (PM)
 DHV: 1,246
 Right Turns: 4
 Speed: 45 mph
 Turn Lane: Yes

#13 Mary Jane Boulevard & Mullian Road

Mullian Rd EB (PM)
 Va: 796
 Vo: 1,286
 %L: 15%
 Turn Lane: Yes

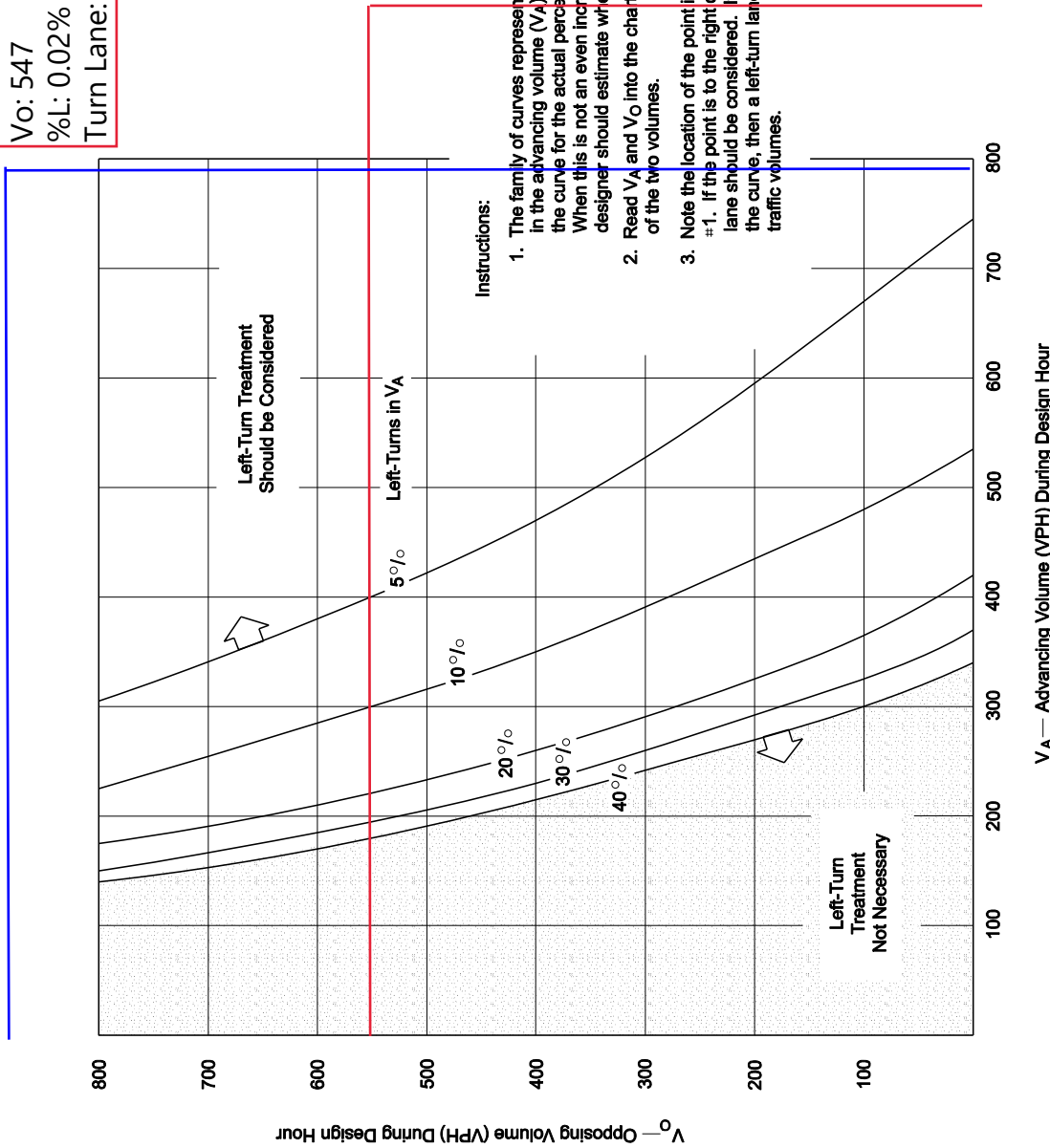
Mullian Rd EB (AM)
 Va: 1,327
 Vo: 547
 %L: 0.02%
 Turn Lane: Yes

V_A = Total advancing traffic volume which includes all turning traffic

V_O = Total opposing traffic volume which includes all turning traffic

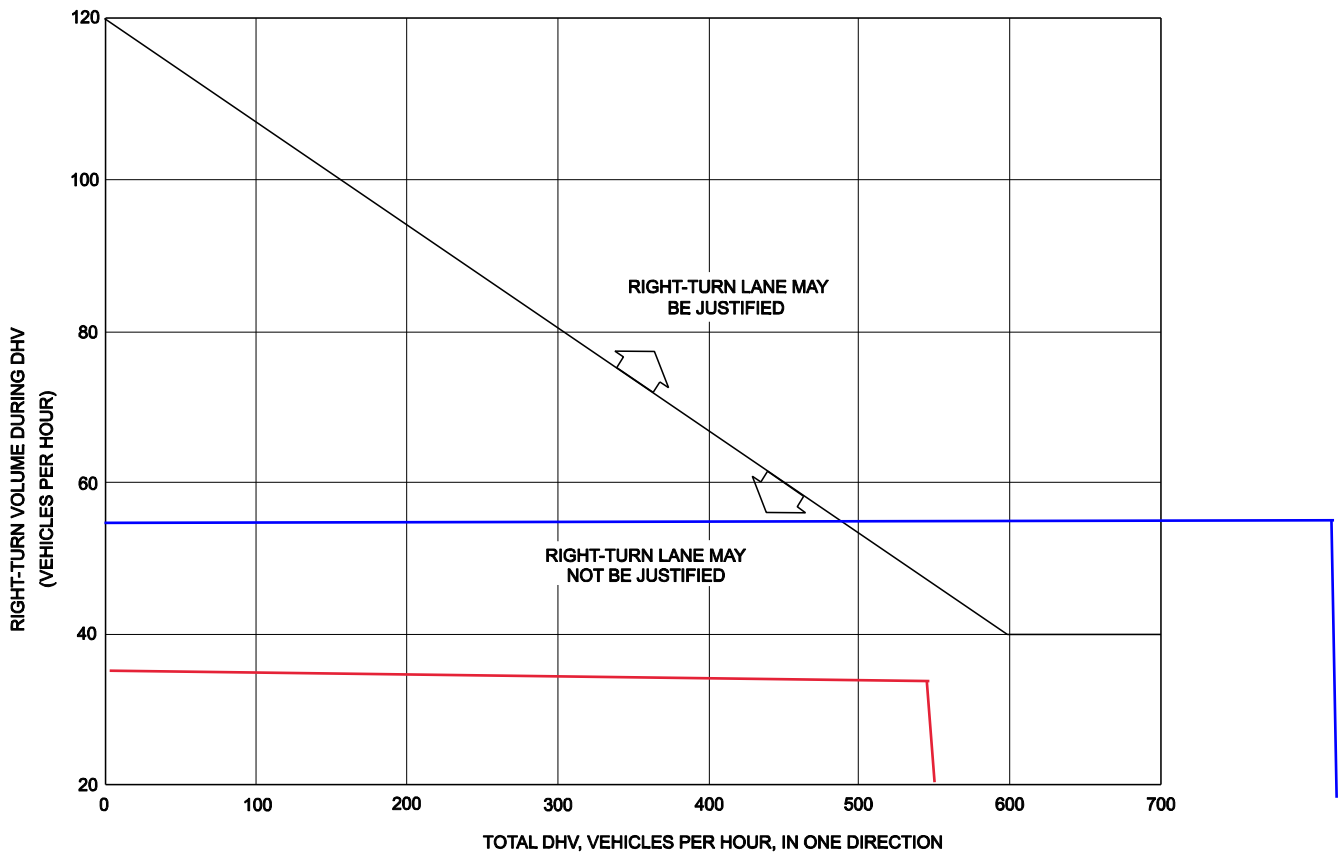
Instructions:

1. The family of curves represent the percent of left turns in the advancing volume (V_A). The designer should locate the curve for the actual percentage of left turns. When this is not an even increment of five, the designer should estimate where the curve lies.
2. Read V_A and V_O into the chart and locate the intersection of the two volumes.
3. Note the location of the point in #2 relative to the curve in #1. If the point is to the right of the curve, then a left-turn lane should be considered. If the point is to the left of the curve, then a left-turn lane is not warranted based on traffic volumes.



VOLUME GUIDELINES FOR LEFT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON 2-LANE HIGHWAYS (45 MPH) (US Customary)

Figure 28.4F



Note: For highways with a design speed below 50 mph (80 km/h) with a DHV < 300 and where right turns are > 40, an adjustment should be used. To read the vertical axis of the chart, subtract 20 from the actual number of right turns.

Example

Given: Design Speed = 35 mph (60 km/h)
 DHV = 250 vph
 Right Turns = 100 vph

Problem: Determine if a right-turn lane is necessary.

Solution: To read the vertical axis, use $100 - 20 = 80$ vph. The figure indicates that a right-turn lane is not necessary, unless other factors (e.g., high crash rate) indicate a lane is needed.

GUIDELINES FOR RIGHT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON 2-LANE HIGHWAYS

Figure 28.4A

Mullan Rd WB (AM)
 DHV: 547
 Right Turns: 35
 Speed: 45 mph
 Turn Lane: No

Mullan Rd WB (PM)
 DHV: 1,286
 Right Turns: 55
 Speed: 45 mph
 Turn Lane: Yes

#15 Mary Jane Boulevard & Melrose Place

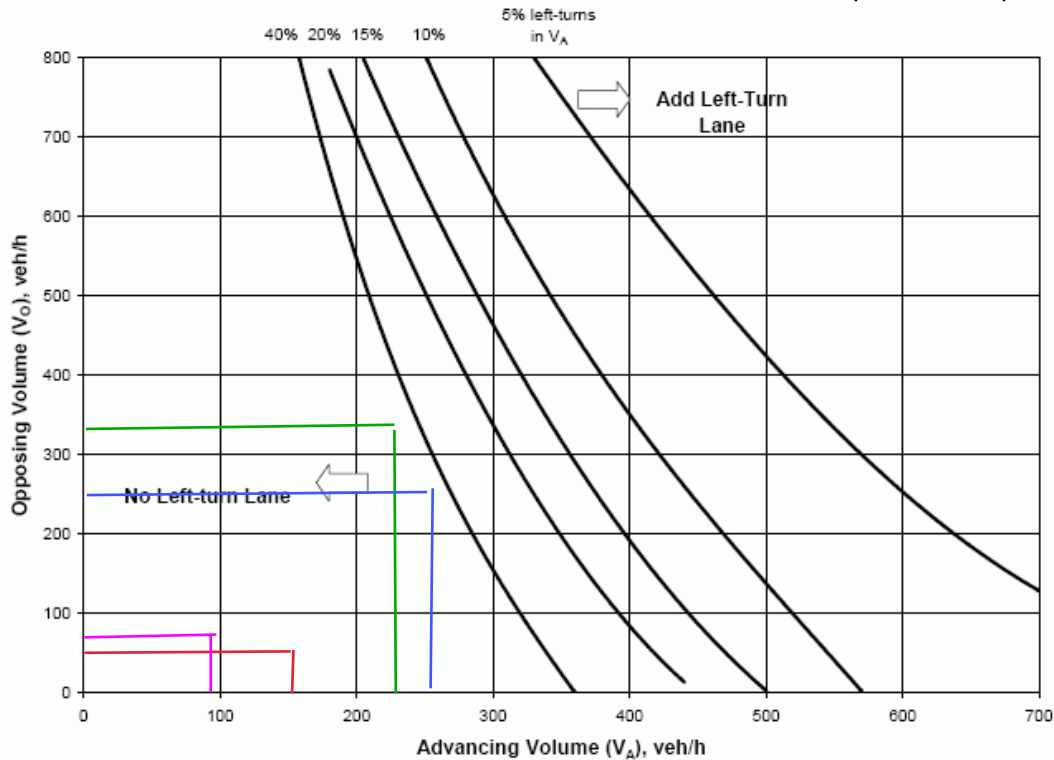
AM Melrose PI WB:
 L: 25
 T/R: 70
 Va: 95
 Vo: 77
 L%: 36%

PM Melrose PI EB:
 L: 50
 T/R: 98
 Va: 148
 Vo: 67
 L%: 34%

AM Mary Jane Blvd SB:
 L: 54
 T/R: 177
 Va: 231
 Vo: 330
 L%: 23%

PM Mary Jane Blvd SB:
 L: 38
 T/R: 206
 Va: 244
 Vo: 252
 L%: 16%

Figure 1 – Left-Turn Lane Guidelines for Two-Lane Roads less than or equal to 40 mph



The following data are required:

1. Opposing Volume (veh/hr) - VO - The opposing volume is to include only the right-turn and through movements in the opposite direction of the left turning vehicle.
2. Advancing Volume (veh/hr) - VA - The advancing volume is to include the right-turn, left-turn and through movements in the same direction as the left turning vehicle.
3. Operating Speed (mph) - The greatest of anticipated operating speed, measured 85th percentile speed or posted speed.
4. Percentage of left turns in VA

Left- turn lane is not needed for left turn volume less than 10 vph. However, criteria other than volume, such as crash experience, may be used to justify a left-turn lane.

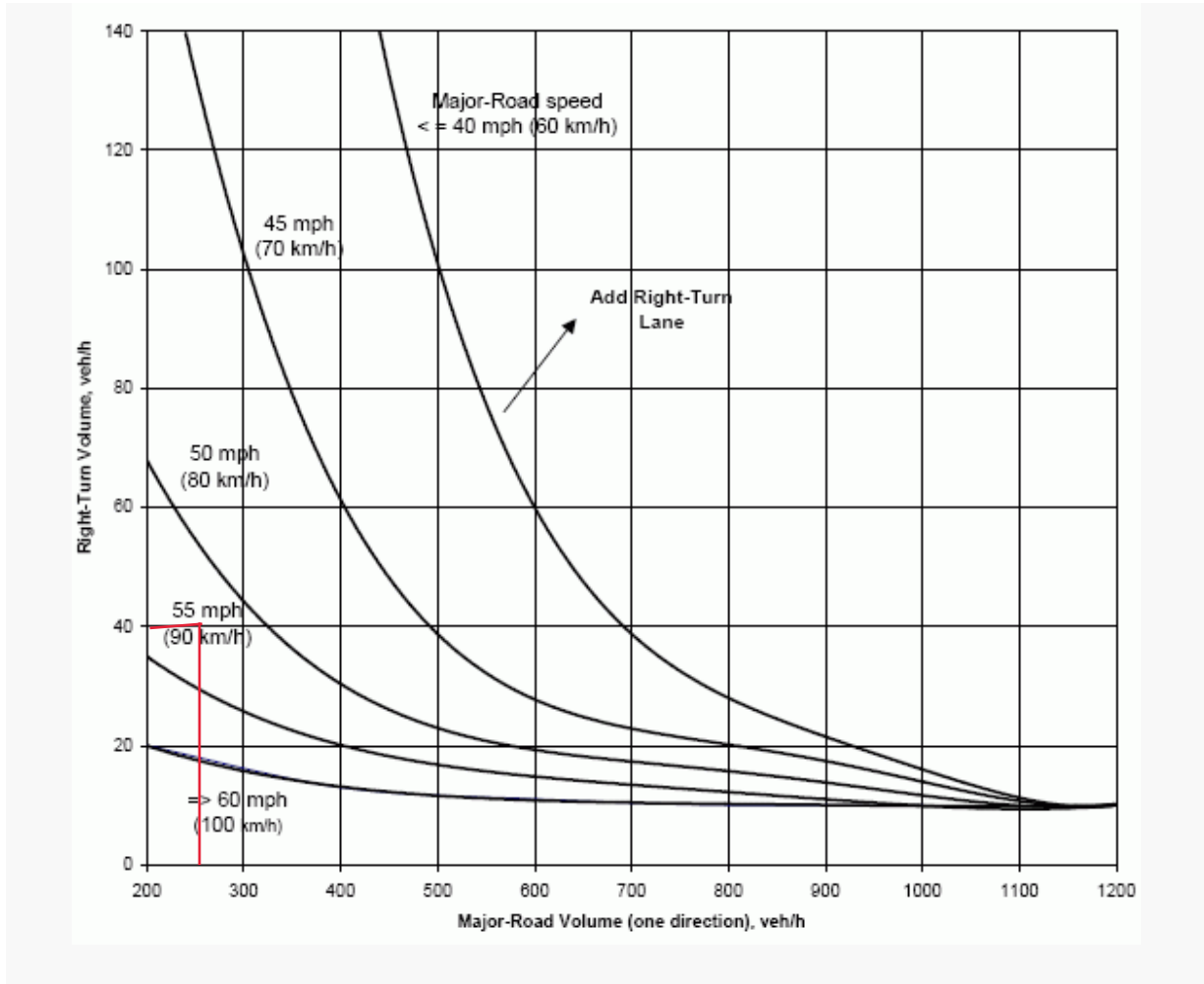
The appropriate trend line is identified on the basis of the percentage of left-turns in the advancing volume, rounded up to the nearest percentage trend line. If the advancing and opposing volume combination intersects above or to the right of this trend line, a left-turn lane is appropriate.

Source: NCHRP Report 279 and 457

PM Melrose PI EB:
 R: 41
 Mary Jane Blvd: 252
 Speed: 30 mph

#15 Mary Jane Boulevard & Melrose Place

Figure 6 – Right-Turn Lane Guidelines for Two-Lane Roadways



The following data are required:

1. Advancing Volume (veh/hr) - The advancing volume is to include the right-turn, left-turn and through movements in the same direction as the right-turning vehicle.
2. Right-Turning Volume (veh/hr) - The right-turning volume is the number of advancing vehicles turning right.
3. Operating Speed (mph) - The greatest of anticipated operating speed, measured 85th percentile speed or posted speed.

Note: Right-turn lane is not needed for right-turn volume less than 10 vph. However, criteria other than volume, e.g. crash experience, may be used to justify a right-turn lane.

If the combination of major road approach volume and right-turn volume intersects above or to the right of the speed trend line corresponding to the major road operating speed, then a right-turn lane is appropriate.

Source: NCHRP Report 279 and 457

Adopted: Res. 469 (7/13/94)
 Revised: Res. 675 (1/29/03); Res. 904 (8/19/09); Ord. 217 (9/14/11); Ord. 232 (12/7/16); Ord. 233 (1/25/17); Ord. 238 (12/12/18)

#16 Mary Jane Boulevard & England Boulevard

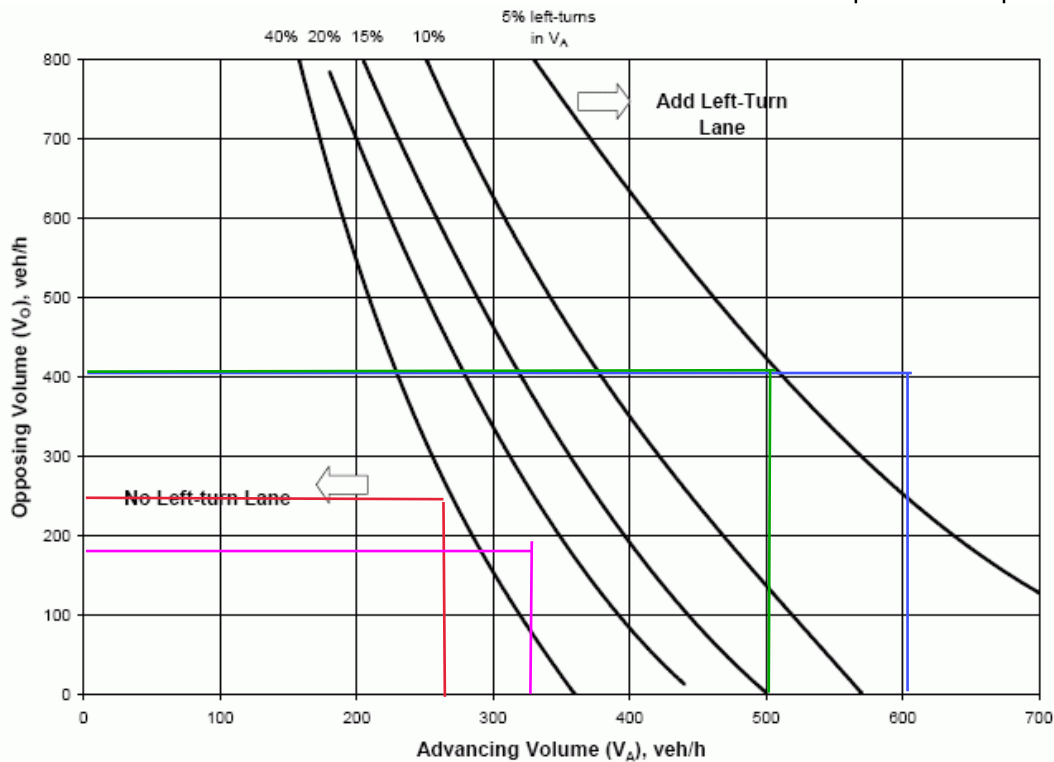
AM Mary Jane Blvd NB:
L: 136
T/R: 188
Va: 324
Vo: 192
L%: 42%

PM Mary Jane Blvd SB:
L: 92
T/R: 170
Va: 262
Vo: 252
L%: 35%

AM England Blvd EB:
L: 87
T/R: 420
Va: 507
Vo: 402
L%: 17%

PM England Blvd WB:
L: 64
T/R: 545
Va: 609
Vo: 407
L%: 11%

Figure 1 – Left-Turn Lane Guidelines for Two-Lane Roads less than or equal to 40 mph



The following data are required:

1. Opposing Volume (veh/hr) - VO - The opposing volume is to include only the right-turn and through movements in the opposite direction of the left turning vehicle.
2. Advancing Volume (veh/hr) - VA - The advancing volume is to include the right-turn, left-turn and through movements in the same direction as the left turning vehicle.
3. Operating Speed (mph) - The greatest of anticipated operating speed, measured 85th percentile speed or posted speed.
4. Percentage of left turns in VA

Left- turn lane is not needed for left turn volume less than 10 vph. However, criteria other than volume, such as crash experience, may be used to justify a left-turn lane.

The appropriate trend line is identified on the basis of the percentage of left-turns in the advancing volume, rounded up to the nearest percentage trend line. If the advancing and opposing volume combination intersects above or to the right of this trend line, a left-turn lane is appropriate.

Source: NCHRP Report 279 and 457

#16 Mary Jane Boulevard & England Boulevard

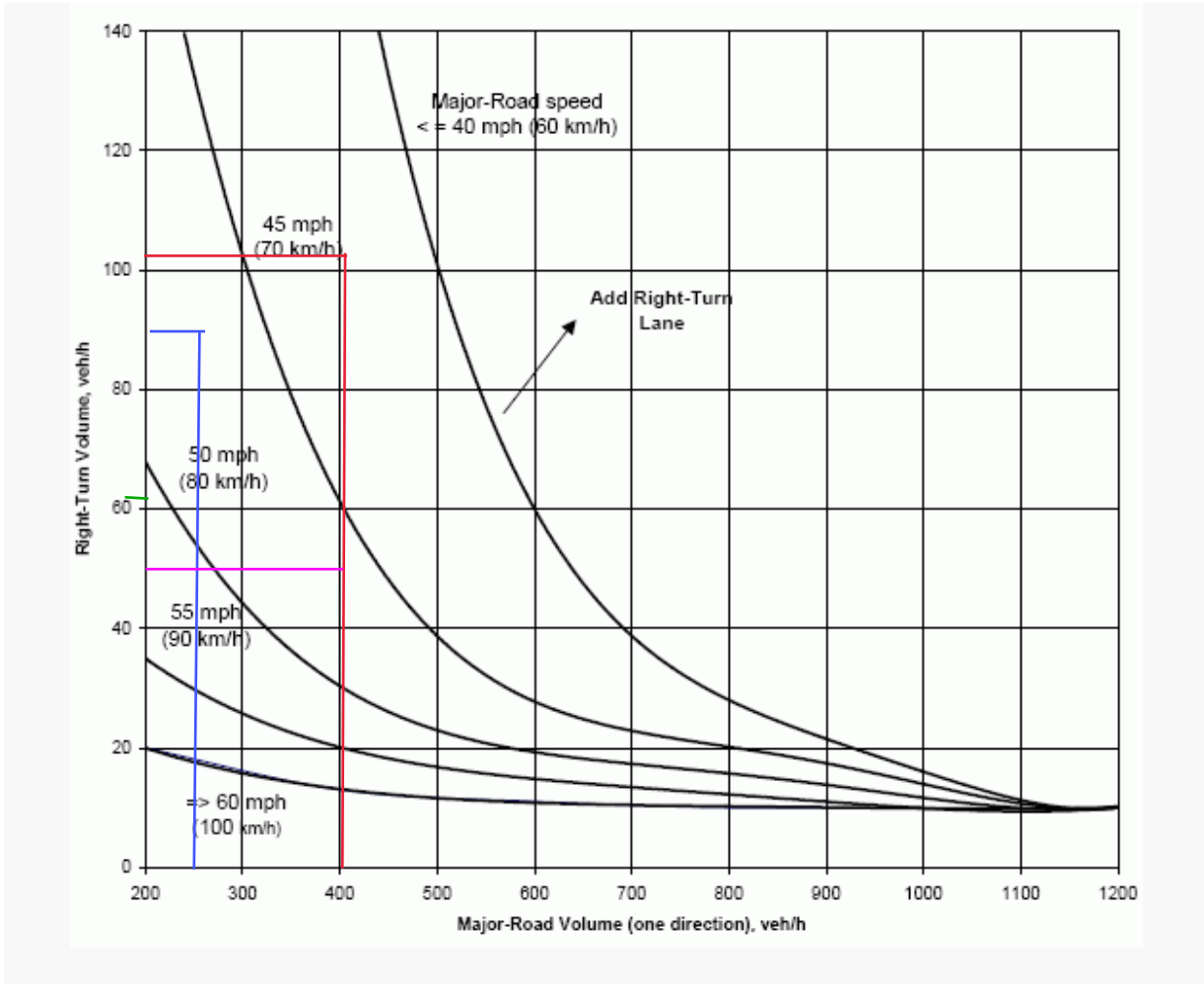
AM Mary Jane Blvd SB:
R: 50
Speed: 30 mph
England: 402

PM Mary Jane Blvd NB:
R: 106
Speed: 30 mph
England: 407

AM England Blvd EB:
R: 62
Speed: 30 mph
Mary Jane Blvd: 192

PM England Blvd WB:
R: 93
Speed: 30 mph
Mary Jane Blvd: 252

Figure 6 – Right-Turn Lane Guidelines for Two-Lane Roadways



The following data are required:

1. Advancing Volume (veh/hr) - The advancing volume is to include the right-turn, left-turn and through movements in the same direction as the right-turning vehicle.
2. Right-Turning Volume (veh/hr) - The right-turning volume is the number of advancing vehicles turning right.
3. Operating Speed (mph) - The greatest of anticipated operating speed, measured 85th percentile speed or posted speed.

Note: Right-turn lane is not needed for right-turn volume less than 10 vph. However, criteria other than volume, e.g. crash experience, may be used to justify a right-turn lane.

If the combination of major road approach volume and right-turn volume intersects above or to the right of the speed trend line corresponding to the major road operating speed, then a right-turn lane is appropriate.

Source: NCHRP Report 279 and 457

Adopted: Res. 469 (7/13/94)
Revised: Res. 675 (1/29/03); Res. 904 (8/19/09); Ord. 217 (9/14/11); Ord. 232 (12/7/16); Ord. 233 (1/25/17); Ord. 238 (12/12/18)

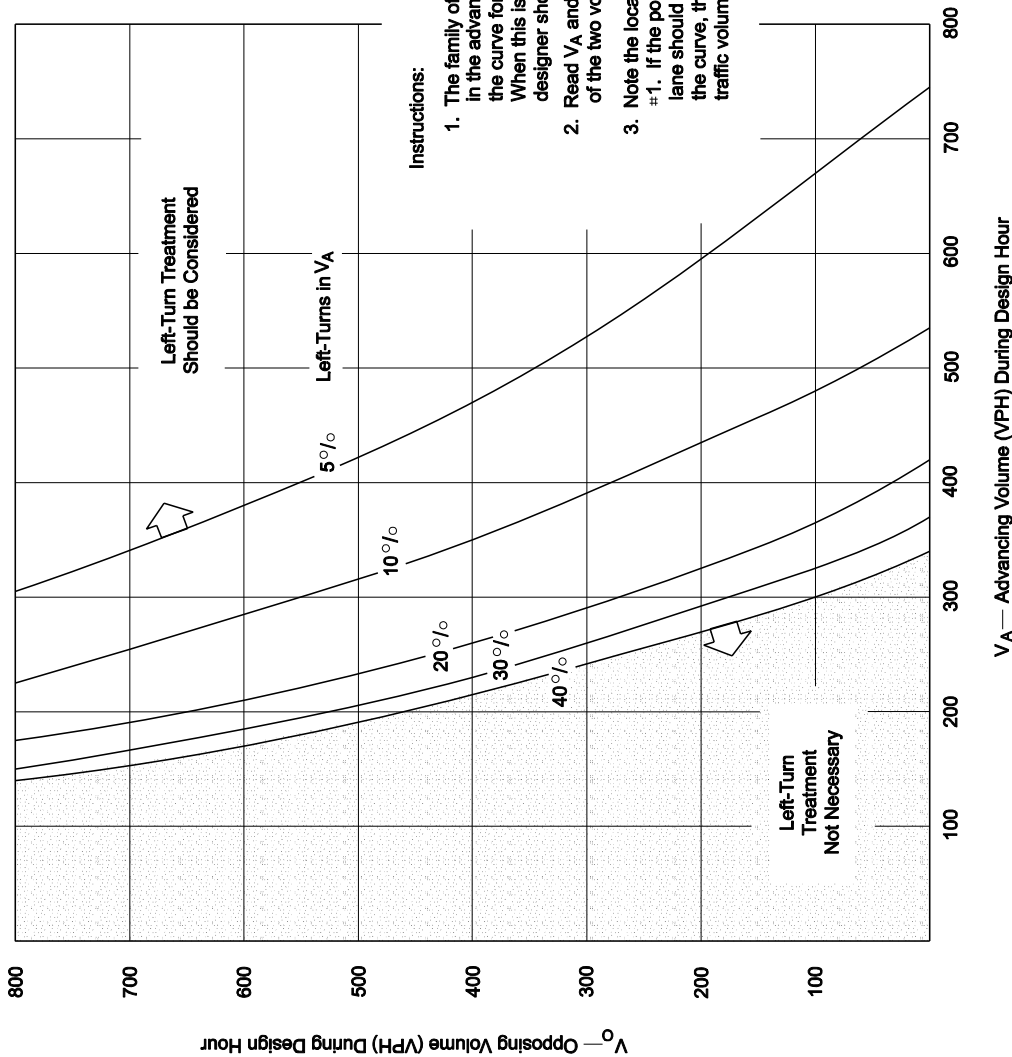
7100 - 40

V_A = Total advancing traffic volume which includes all turning traffic

V_O = Total opposing traffic volume which includes all turning traffic

Instructions:

1. The family of curves represent the percent of left turns in the advancing volume (V_A). The designer should locate the curve for the actual percentage of left turns. When this is not an even increment of five, the designer should estimate where the curve lies.
2. Read V_A and V_O into the chart and locate the intersection of the two volumes.
3. Note the location of the point in #2 relative to the curve in #1. If the point is to the right of the curve, then a left-turn lane should be considered. If the point is to the left of the curve, then a left-turn lane is not warranted based on traffic volumes.



AM W Broadway St WB:
 L: 164
 T: 656
 Va: 820
 Vo: 1,389
 L%: 20%

PM W Broadway St WB:
 L: 184
 T: 1,097
 Va: 1,281
 Vo: 1,694
 L%: 14%

VOLUME GUIDELINES FOR LEFT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON 2-LANE HIGHWAYS (45 MPH) (US Customary)

Figure 28.4F

#20 Mary Jane Boulevard & W Broadway Street

AM W Broadway St EB:

R: 142

T: 1,247

PM W Broadway St EB:

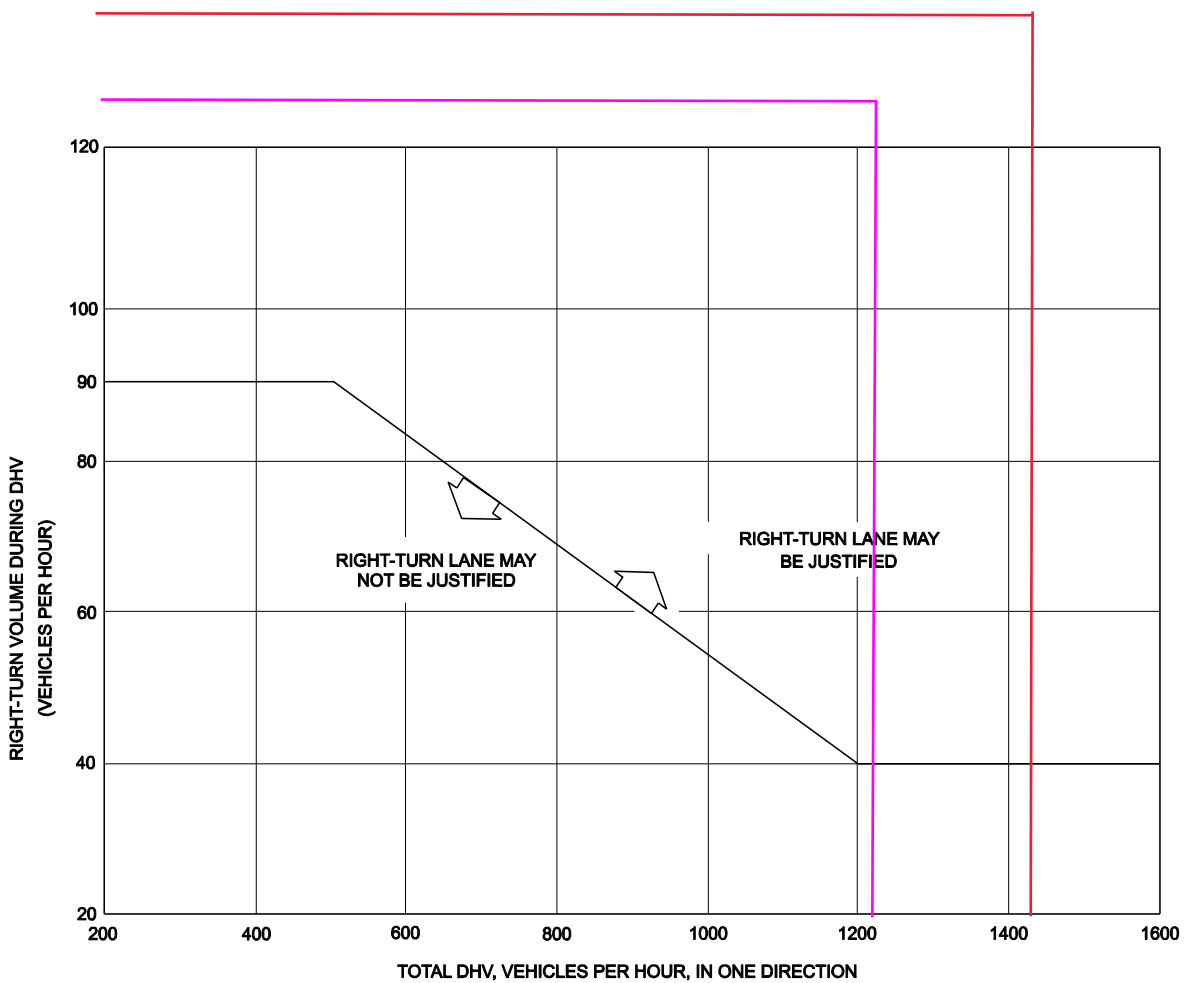
R: 223

T: 1,471

28.4(4)

INTERSECTIONS AT-GRADE

November 2007



Note: Figure is only applicable on highways with a design speed of 50 mph (80 km/h) or greater.

GUIDELINES FOR RIGHT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON 4-LANE HIGHWAYS

Figure 28.4B

AM W Broadway St EB:
R: 146
T: 1,180

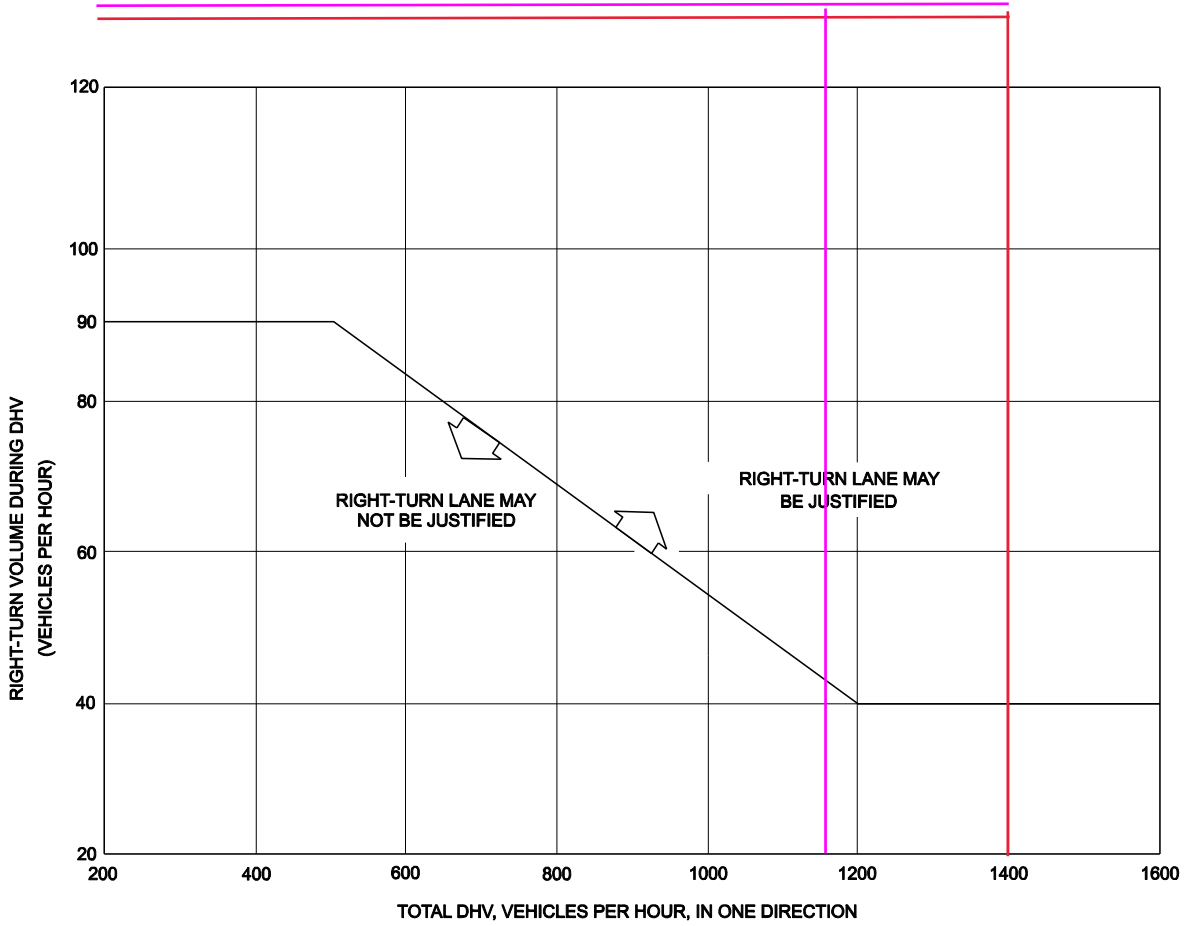
PM W Broadway St EB:
R: 143
T: 1,397

28.4(4)

INTERSECTIONS AT-GRADE

November 2007

#21 Flynn Lane & W Broadway Street



Note: Figure is only applicable on highways with a design speed of 50 mph (80 km/h) or greater.

GUIDELINES FOR RIGHT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON 4-LANE HIGHWAYS

Figure 28.4B

Scenario 3: Two Way Stop Control (2050)

		Scenario 3: Two Way Stop Control (2050)												
Intersection	Number	AM								PM				
		LOS	DELAY	VC	CRITICAL	SIGNAL WARRANT	GUIDANCE	LTL	RTL	LOS	DELAY	VC	CRITICAL	SIGNAL WARRANT
GEORGE ELMER DR / W BROADWAY ST	1	F	3148	0.027	NBT	ALL	MDT 28.4D; 28.4(4	WBL	EBR	F	10000	33.82	NBL	ALL
GEORGE ELMER DR / ENGLAND BLVD	2	F	10000	0	SBL	#3	ACHD FIG 1	WBL, NBL	-	F	10000	0	NBL	ALL
GEORGE ELMER DR / CATTLE DR	3	F	17	0.024	WBL	NO	ACHD FIG 1	-	-	D	30	0.17	EBL	NO
GEORGE ELMER DR / HERON'S LANDING	4	C	16	0.076	WBL	NO	ACHD FIG 1	-	-	D	32	0.206	EBL	NO
GEORGE ELMER DR / MULLAN RD	5	F	3693	8.602	SBL	ALL	MDT 28.4F	EBL	-	F	1957	4.632	SBL	ALL
DOUGHERTY DR / ENGLAND BLVD	6	C	21	0.299	SBL	NO	ACHD FIG 1	EBL	-	E	45	0.589	SBL	NO
DOUGHERTY DR / W BROADWAY ST	7	F	118	0.917	NBL	ALL	MDT 28.4F, 28.4(4	WBL	EBR	F	1704	4.369	NBL	ALL
FLYNN LN / CAMDEN ST	8	B	10	0.018	WBL	NO	-	-	-	B	10	0.007	WBL	NO
FLYNN LN / ENGLAND BLVD	9	F	248	0.935	SBL	#3	ACHD FIG 1	WBL	-	F	61	0.163	SBL	NO
FLYNN LN / CHELSEA DR	10	F	15	0.005	EBT	NO	-	-	-	B	12	0.025	EBT	NO
FLYNN LN / SIREN'S RD	11	C	16	0.124	EBL	NO	-	-	-	B	11	0.035	EBL	NO
FLYNN LN / MULLAN RD	12	D	25	0.006	NBR	ALL	-	-	-	F	126	0.984	SBR	ALL
MARY JANE BLVD / MULLAN RD	13	F	2633	6.359	SBL	ALL	-	-	-	F	1689	4.13	SBL	ALL
MARY JANE BLVD / O'LEARY ST	14	C	16	0.086	WBL	NO	-	-	-	B	15	0.037	WBL	NO
MARY JANE BLVD / MELROSE PL	15	C	19	0.089	WBL	NO	-	-	-	C	20	0.161	EBL	NO
MARY JANE BLVD / ENGLAND BLVD	16	F	964	2.773	NBL	#3	ACHD FIG 1	NBL, EBL	-	F	1324	3.171	NBL	#3
MARY JANE BLVD / CAMDEN ST	17	B	13	0.097	EBL	NO	-	-	-	B	14	0.007	WBL	NO
MARY JANE BLVD / FLYNN LN	18	D	27	0.25	EBL	NO	-	-	-	C	21	0.149	EBL	NO
MARY JANE BLVD / VETERAN'S WAY	19	C	15	0.061	EBL	NO	-	-	-	C	18	0.255	EBL	NO
MARY JANE BLVD / W BROADWAY ST	20	F	676	2.313	NBL	ALL	MDT 28.4F, 28.4(4	WBL	EBR	F	1331	3.662	NBL	ALL
FLYNN LN / W BROADWAY ST	21	F	61	0.935	NBT	ALL	MDT 28.4(4)	-	EBR	F	58	0.882	NBT	ALL

		Scenario 4: Signal (2050)									Scenario 5: Roundabouts (2050)						
LTL	RTL	Number	AM				PM				Number	Roundabout Type	AM			PM	
			LOS	DELAY	VC	CRITICAL	LOS	DELAY	VC	CRITICAL			LOS	DELAY	CRITICAL	LOS	DELAY
-	-	1	C	34	0.717	NBL	C	28	0.75	NBL	1	MULTILANE	B	14	NBL	C	15
NBL, EBL	-	2	C	21	0.522	SBL	C	24	0.607	NBL	2	SINGLE	B	11	NBT	B	14
NBL	-	3	-	-	-	-	-	-	-	-	3	SINGLE	A	5	NBT	A	6
NBL	-	4	-	-	-	-	-	-	-	-	4	SINGLE	A	5	NBT	A	7
EBL	-	5	F	207	0.919	SBL	D	42	0.841	SBL	5	SINGLE	F	88	EBT	E	40
EBL	-	6	-	-	-	-	-	-	-	-	6	SINGLE	A	6	EBT	A	7
WBL	EBR	7	B	19	0.689	NBR	C	29	0.847	WBL	7	MULTILANE	B	11	NBR	C	20
-	-	8	-	-	-	-	-	-	-	-	8	MINI	A	3	NBT	A	3
WBL	-	9	B	15	0.481	NBR	B	15	0.464	NBT	9	SINGLE	A	8	EBT	A	7
-	-	10	-	-	-	-	-	-	-	-	10	MINI	A	4	SBT	A	3
-	-	11	-	-	-	-	-	-	-	-	11	MINI	A	5	NBT	A	3
-	-	12	A	9	0.897	SBR	D	46	1.033	WBT	12	SINGLE	D	34	EBT	F	52
-	-	13	F	180	0.762	SBL	D	44	0.939	SBL	13	SINGLE	D	34	EBT	F	60
-	-	14	-	-	-	-	-	-	-	-	14	MINI	A	4	NBT	A	4
-	-	15	-	-	-	-	-	-	-	-	15	MINI	A	5	NBT	A	5
WBL	-	16	B	18	0.45	NBL	B	18	0.529	SBL	16	SINGLE	B	10	NBT	B	10
-	-	17	-	-	-	-	-	-	-	-	17	MINI	A	4	NBT	A	4
-	-	18	-	-	-	-	-	-	-	-	18	SINGLE	A	5	NBT	A	5
-	-	19	-	-	-	-	-	-	-	-	19	MINI	A	4	NBT	A	5
WBL	EBR	20	B	18	0.711	NBL	B	18	0.751	NBL	20	MULTILANE	C	15	NBL	C	18
-	EBR	21	B	11	0.758	NBT	B	11	0.843	NBT	21	MULTILANE	B	14	NBT	B	11

MITIGATION	Number	Mitigations: Signal (2050)										Number	Roundabout Type	Mitigations: Roundabouts (2050)					
		LOS	DELAY	AM VC	CRITICAL	MITIGATION	LOS	DELAY	PM VC	CRITICAL	MITIGATION			LOS	AM DELAY	CRITICAL	LOS	PM DELAY	CRITICAL
-	1	-	-	-	-	-	-	-	-	-	-	1	MULTILANE	-	-	-	-	-	-
-	2	-	-	-	-	-	-	-	-	-	-	2	SINGLE	-	-	-	-	-	-
-	3	-	-	-	-	-	-	-	-	-	-	3	SINGLE	-	-	-	-	-	-
-	4	-	-	-	-	-	-	-	-	-	-	4	SINGLE	-	-	-	-	-	-
-	5	B	14	0.649	SBR	EB DUAL THRO	C	20	0.663	SBR	EB DUAL THRO	5	MULTILANE	B	12	EBT	B	13	SBR
-	6	-	-	-	-	-	-	-	-	-	-	6	SINGLE	-	-	-	-	-	-
-	7	-	-	-	-	-	-	-	-	-	-	7	MULTILANE	-	-	-	-	-	-
-	8	-	-	-	-	-	-	-	-	-	-	8	MINI	-	-	-	-	-	-
ALL APPROACH	9	-	-	-	-	-	-	-	-	-	-	9	SINGLE	-	-	-	-	-	-
-	10	-	-	-	-	-	-	-	-	-	-	10	MINI	-	-	-	-	-	-
-	11	-	-	-	-	-	-	-	-	-	-	11	MINI	-	-	-	-	-	-
-	12	-	-	-	-	-	-	-	-	-	-	12	SINGLE	A	8	NBR	A	9	SBR
-	13	B	13	0.555	SBL	EB DUAL THRO	B	14	0.627	SBR	EB DUAL THRO	13	SINGLE	A	9	EBT	B	10	SBL
-	14	-	-	-	-	-	-	-	-	-	-	14	MINI	-	-	-	-	-	-
-	15	-	-	-	-	-	-	-	-	-	-	15	MINI	-	-	-	-	-	-
-	16	-	-	-	-	-	-	-	-	-	-	16	SINGLE	-	-	-	-	-	-
-	17	-	-	-	-	-	-	-	-	-	-	17	MINI	-	-	-	-	-	-
-	18	-	-	-	-	-	-	-	-	-	-	18	SINGLE	-	-	-	-	-	-
-	19	-	-	-	-	-	-	-	-	-	-	19	MINI	-	-	-	-	-	-
-	20	-	-	-	-	-	-	-	-	-	-	20	MULTILANE	-	-	-	-	-	-
-	21	-	-	-	-	-	-	-	-	-	-	21	MULTILANE	-	-	-	-	-	-

Number	Recommendation (Interim)	Recommendation (2050)	Options
1	ML RBT	ML RBT	SIGNAL/ML RBT
2	SL RBT	SL RBT	SIGNAL/SL RBT
3	SL RBT	SL RBT	SL RBT
4	TWSC	SL RBT	TWSC/SL RBT
5	SL RBT	ML RBT	SIGNAL/RBT
6	TWSC	SL RBT	TWSC/SL RBT
7	ML RBT	ML RBT	SIGNAL/ML RBT
8	TWSC	TWSC	TWSC/MINI RBT
9	AWSC	SL RBT	AWSC/SIGNAL/SL RBT
10	TWSC	TWSC	TWSC/MINI RBT
11	TWSC	TWSC	TWSC/MINI RBT
12	RIROLI (SC)	RIROLI (SC)	SIGNAL/RBT
13	SL RBT	SL RBT W MIT	SIGNAL W/ MIT / SL RBT W/ MIT
14	TWSC	TWSC	TWSC/MINI RBT
15	TWSC	AWSC	TWSC/MINI RBT
16	SL RBT	SL RBT	SIGNAL/SL RBT
17	TWSC	TWSC	TWSC/MINI RBT
18	TWSC	SL RBT	TWSC/SL RBT
19	TWSC	TWSC	TWSC/MINI RBT
20	ML RBT	ML RBT	SIGNAL/ML RBT
21	RIRO (SC)	RIRO (SC)	SIGNAL/ML RBT

Mullan BUILD - 2050 AM

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Scenario 3 Two Way Stop Control (2050)

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7/21/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	George Elmer Dr & W Broadway St	Two-way stop	HCM 6th Edition	NB Thru	0.027	3,418.8	F
2	George Elmer Dr & England Blvd	Two-way stop	HCM 6th Edition	SB Left	0.000	10,000.0	F
3	George Elmer Dr & Cattle Dr	Two-way stop	HCM 6th Edition	WB Left	0.024	17.6	C
4	George Elmer Dr & Heron's Landing	Two-way stop	HCM 6th Edition	WB Left	0.076	16.2	C
5	George Elmer Dr & Mullan Rd	Two-way stop	HCM 6th Edition	SB Left	8.602	3,693.9	F
6	Dougherty Dr & England Blvd	Two-way stop	HCM 6th Edition	SB Left	0.299	21.6	C
7	Dougherty Dr & W Broadway St	Two-way stop	HCM 6th Edition	NB Left	0.917	118.0	F
8	Flynn Ln & Camden St	Two-way stop	HCM 6th Edition	WB Left	0.018	10.5	B
9	Flynn Ln & England Blvd	Two-way stop	HCM 6th Edition	SB Left	0.935	248.4	F
10	Flynn Ln & Chelsea Dr	Two-way stop	HCM 6th Edition	EB Thru	0.005	15.7	C
11	Flynn Ln & Siren's Dr	Two-way stop	HCM 6th Edition	EB Left	0.124	16.0	C
12	Flynn Ln & Mullan Rd	Two-way stop	HCM 6th Edition	NB Right	0.006	25.6	D
13	Mary Jane Blvd & Mullan Rd	Two-way stop	HCM 6th Edition	SB Left	6.359	2,633.6	F
14	Mary Jane Blvd & O'Leary St	Two-way stop	HCM 6th Edition	WB Left	0.086	16.7	C
15	Mary Jane Blvd & Melrose Pl	Two-way stop	HCM 6th Edition	WB Left	0.089	19.1	C
16	Mary Jane Blvd & England Blvd	Two-way stop	HCM 6th Edition	NB Left	2.773	964.6	F
17	Mary Jane Blvd & Camden St	Two-way stop	HCM 6th Edition	EB Left	0.097	13.8	B
			HCM 6th				

18	Mary Jane Blvd & Flynn Ln	Two-way stop	HCM 6th Edition	EB Left	0.250	27.6	D
19	Mary Jane Blvd & Veteran's Way	Two-way stop	HCM 6th Edition	EB Left	0.061	15.2	C
20	Mary Jane Blvd & W Broadway St	Two-way stop	HCM 6th Edition	NB Left	2.313	676.8	F
21	Flynn Ln & W Broadway St	Two-way stop	HCM 6th Edition	NB Thru	0.935	61.0	F

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: George Elmer Dr & W Broadway St

Control Type:	Two-way stop	Delay (sec / veh):	3,418.8
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.027

Intersection Setup

Name	George Elmer Dr			Commercial Access			W Broadway St			W Broadway St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	⇌			+			⇌			⇌		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00
Speed [mph]	30.00			30.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name	George Elmer Dr			Commercial Access			W Broadway St			W Broadway St		
Base Volume Input [veh/h]	318	1	203	1	1	1	1	1066	125	72	757	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.00	2.00	4.00	2.00	2.00	2.00	4.00	8.00	2.00	4.00	15.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	318	1	203	1	1	1	1	1066	125	72	757	1
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	86	0	55	0	0	0	0	290	34	20	206	0
Total Analysis Volume [veh/h]	346	1	221	1	1	1	1	1159	136	78	823	1
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane		No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	8.13	0.03	0.54	0.03	0.03	0.00	0.00	0.01	0.00	0.15	0.01	0.00
d_M, Delay for Movement [s/veh]	3406.2	3418.7	23.72	129.73	117.60	16.41	9.57	0.00	0.00	13.13	0.00	0.00
Movement LOS	F	F	C	F	F	C	A	A	A	B	A	A
95th-Percentile Queue Length [veh/ln]	41.22	41.22	3.12	0.20	0.20	0.20	0.00	0.00	0.00	0.52	0.00	0.00
95th-Percentile Queue Length [ft/ln]	1030.4	1030.4	77.99	5.00	5.00	5.00	0.10	0.00	0.00	13.10	0.00	0.00
d_A, Approach Delay [s/veh]	2090.18			87.92			0.01			1.14		
Approach LOS	F			F			A			A		
d_I, Intersection Delay [s/veh]	429.22											
Intersection LOS	F											

**Intersection Level Of Service Report
Intersection 2: George Elmer Dr & England Blvd**

Control Type:	Two-way stop	Delay (sec / veh):	10,000.0
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	George Elmer Dr			George Elmer Dr			England Blvd			England Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵			↵			↵			↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	George Elmer Dr			George Elmer Dr			England Blvd			England Blvd		
Base Volume Input [veh/h]	30	289	50	50	100	50	160	311	60	25	299	75
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	4.00	2.00	2.00	4.00	2.00	2.00	8.00	2.00	2.00	4.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	30	289	50	50	100	50	160	311	60	25	299	75
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	79	14	14	27	14	43	85	16	7	81	20
Total Analysis Volume [veh/h]	33	314	54	54	109	54	174	338	65	27	325	82
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.58	2.01	0.08	0.00	0.69	0.08	0.15	0.00	0.00	0.02	0.00	0.00
d_M, Delay for Movement [s/veh]	133.64	553.77	536.09	10000.	68.25	50.80	8.68	0.00	0.00	8.19	0.00	0.00
Movement LOS	F	F	F	F	F	F	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	2.33	28.76	28.76	9.00	5.33	5.33	0.53	0.00	0.00	0.07	0.00	0.00
95th-Percentile Queue Length [ft/ln]	58.29	719.00	719.00	225.00	133.17	133.17	13.29	0.00	0.00	1.79	0.00	0.00
d_A, Approach Delay [s/veh]	516.81			2535.40			2.62			0.51		
Approach LOS	F			F			A			A		
d_I, Intersection Delay [s/veh]	466.03											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 3: George Elmer Dr & Cattle Dr

Control Type:	Two-way stop	Delay (sec / veh):	17.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.024

Intersection Setup

Name	George Elmer Dr			George Elmer Dr			Cattle Dr			Cattle Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵↵			↵↵			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	George Elmer Dr			George Elmer Dr			Cattle Dr			Cattle Dr		
Base Volume Input [veh/h]	39	338	3	19	161	5	21	1	86	6	1	10
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	4.00	2.00	2.00	4.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	39	338	3	19	161	5	21	1	86	6	1	10
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	92	1	5	44	1	6	0	23	2	0	3
Total Analysis Volume [veh/h]	42	367	3	21	175	5	23	1	93	7	1	11
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.00	0.00	0.02	0.00	0.00	0.07	0.00	0.11	0.02	0.00	0.02
d_M, Delay for Movement [s/veh]	7.66	0.00	0.00	8.08	0.00	0.00	16.55	16.20	10.32	17.56	15.41	10.68
Movement LOS	A	A	A	A	A	A	C	C	B	C	C	B
95th-Percentile Queue Length [veh/ln]	0.09	0.00	0.00	0.05	0.00	0.00	0.64	0.64	0.64	0.13	0.13	0.13
95th-Percentile Queue Length [ft/ln]	2.33	0.00	0.00	1.35	0.00	0.00	15.94	15.94	15.94	3.34	3.34	3.34
d_A, Approach Delay [s/veh]	0.78			0.84			11.60			13.47		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	2.81											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 4: George Elmer Dr & Heron's Landing

Control Type:	Two-way stop	Delay (sec / veh):	16.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.076

Intersection Setup

Name	George Elmer Dr			George Elmer Dr			Heron's Landing			Heron's Landing		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵↻			↵↻			⊕			⊕		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	George Elmer Dr			George Elmer Dr			Heron's Landing			Heron's Landing		
Base Volume Input [veh/h]	5	329	5	15	222	15	25	1	25	25	1	25
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	4.00	2.00	2.00	4.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	5	329	5	15	222	15	25	1	25	25	1	25
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	89	1	4	60	4	7	0	7	7	0	7
Total Analysis Volume [veh/h]	5	358	5	16	241	16	27	1	27	27	1	27
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.01	0.00	0.00	0.08	0.00	0.03	0.08	0.00	0.04
d_M, Delay for Movement [s/veh]	7.76	0.00	0.00	8.05	0.00	0.00	16.14	15.43	10.50	16.17	15.59	11.30
Movement LOS	A	A	A	A	A	A	C	C	B	C	C	B
95th-Percentile Queue Length [veh/ln]	0.01	0.00	0.00	0.04	0.00	0.00	0.38	0.38	0.38	0.40	0.40	0.40
95th-Percentile Queue Length [ft/ln]	0.29	0.00	0.00	1.02	0.00	0.00	9.52	9.52	9.52	9.97	9.97	9.97
d_A, Approach Delay [s/veh]	0.11			0.47			13.36			13.77		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	2.21											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 5: George Elmer Dr & Mullan Rd

Control Type:	Two-way stop	Delay (sec / veh):	3,693.9
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	8.602

Intersection Setup

Name	George Elmer Dr		Mullan Rd		Mullan Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration	↔↔		↔↑		↑↔	
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	325.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	George Elmer Dr		Mullan Rd		Mullan Rd	
Base Volume Input [veh/h]	222	50	253	1259	405	85
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.00	4.00	4.00	7.00	7.00	4.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	222	50	253	1259	405	85
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	60	14	69	342	110	23
Total Analysis Volume [veh/h]	241	54	275	1368	440	92
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	8.60	0.09	0.25	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	3693.94	11.44	9.31	0.00	0.00	0.00
Movement LOS	F	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	29.67	0.29	0.98	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	741.72	7.22	24.49	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	3019.85		1.56		0.00	
Approach LOS	F		A		A	
d_I, Intersection Delay [s/veh]	361.71					
Intersection LOS	F					

**Intersection Level Of Service Report
Intersection 6: Dougherty Dr & England Blvd**

Control Type:	Two-way stop	Delay (sec / veh):	21.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.299

Intersection Setup

Name	Dougherty Dr		England Blvd		England Blvd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Dougherty Dr		England Blvd		England Blvd	
Base Volume Input [veh/h]	85	75	50	361	324	30
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	8.00	4.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	85	75	50	361	324	30
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	20	14	98	88	8
Total Analysis Volume [veh/h]	92	82	54	392	352	33
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.30	0.12	0.05	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	21.61	11.05	8.22	0.00	0.00	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	1.22	0.41	0.14	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	30.59	10.28	3.61	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	16.63		0.99		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	3.32					
Intersection LOS	C					

**Intersection Level Of Service Report
Intersection 7: Dougherty Dr & W Broadway St**

Control Type:	Two-way stop	Delay (sec / veh):	118.0
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.917

Intersection Setup

Name	Dougherty Dr		W Broadway St		W Broadway St	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↵↵		↵↵↵		↵↵↵	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	100.00
Speed [mph]	30.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Dougherty Dr		W Broadway St		W Broadway St	
Base Volume Input [veh/h]	116	250	1139	130	150	713
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	8.00	2.00	2.00	15.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	116	250	1139	130	150	713
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	32	68	310	35	41	194
Total Analysis Volume [veh/h]	126	272	1238	141	163	775
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	Yes		
Number of Storage Spaces in Median	1	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.92	0.63	0.01	0.00	0.33	0.01
d_M, Delay for Movement [s/veh]	118.01	26.52	0.00	0.00	15.87	0.00
Movement LOS	F	D	A	A	C	A
95th-Percentile Queue Length [veh/ln]	6.19	4.22	0.00	0.00	1.43	0.00
95th-Percentile Queue Length [ft/ln]	154.85	105.54	0.00	0.00	35.80	0.00
d_A, Approach Delay [s/veh]	55.49		0.00		2.76	
Approach LOS	F		A		A	
d_I, Intersection Delay [s/veh]	9.09					
Intersection LOS	F					

**Intersection Level Of Service Report
Intersection 8: Flynn Ln & Camden St**

Control Type:	Two-way stop	Delay (sec / veh):	10.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.018

Intersection Setup

Name	Flynn Ln		Flynn Ln		Camden St	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Flynn Ln		Flynn Ln		Camden St	
Base Volume Input [veh/h]	170	10	6	92	11	31
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	170	10	6	92	11	31
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	46	3	2	25	3	8
Total Analysis Volume [veh/h]	185	11	7	100	12	34
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.02	0.04
d_M, Delay for Movement [s/veh]	0.00	0.00	7.63	0.00	10.54	9.50
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.02	0.02	0.18	0.18
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.38	0.38	4.57	4.57
d_A, Approach Delay [s/veh]	0.00		0.50		9.77	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.44					
Intersection LOS	B					

**Intersection Level Of Service Report
Intersection 9: Flynn Ln & England Blvd**

Control Type:	Two-way stop	Delay (sec / veh):	248.4
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.935

Intersection Setup

Name	Flynn Ln			Flynn Ln			England Blvd			England Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			T			T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			25.00			30.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Flynn Ln			Flynn Ln			England Blvd			England Blvd		
Base Volume Input [veh/h]	15	72	73	55	29	19	33	378	34	142	320	75
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	8.00	2.00	2.00	4.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	15	72	73	55	29	19	33	378	34	142	320	75
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	20	20	15	8	5	9	103	9	39	87	20
Total Analysis Volume [veh/h]	16	78	79	60	32	21	36	411	37	154	348	82
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.14	0.53	0.13	0.94	0.21	0.03	0.03	0.00	0.00	0.14	0.00	0.00
d_M, Delay for Movement [s/veh]	83.01	75.08	56.20	248.36	216.11	197.70	8.29	0.00	0.00	8.76	0.00	0.00
Movement LOS	F	F	F	F	F	F	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	5.85	5.85	5.85	7.67	7.67	7.67	0.10	0.00	0.00	0.48	0.00	0.00
95th-Percentile Queue Length [ft/ln]	146.15	146.15	146.15	191.80	191.80	191.80	2.47	0.00	0.00	12.00	0.00	0.00
d_A, Approach Delay [s/veh]	67.19			229.81			0.62			2.31		
Approach LOS	F			F			A			A		
d_I, Intersection Delay [s/veh]	28.98											
Intersection LOS	F											

**Intersection Level Of Service Report
Intersection 10: Flynn Ln & Chelsea Dr**

Control Type:	Two-way stop	Delay (sec / veh):	15.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.005

Intersection Setup

Name	Flynn Ln			Flynn Ln			Chelsea Dr			Chelsea Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Flynn Ln			Flynn Ln			Chelsea Dr			Chelsea Dr		
Base Volume Input [veh/h]	68	116	33	15	150	40	31	2	11	22	5	13
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	19.00	2.00	2.00	2.00	7.00	28.00	2.00	50.00	2.00	2.00	20.00	8.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	68	116	33	15	150	40	31	2	11	22	5	13
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	32	9	4	41	11	8	1	3	6	1	4
Total Analysis Volume [veh/h]	74	126	36	16	163	43	34	2	12	24	5	14
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.00	0.00	0.01	0.00	0.00	0.08	0.01	0.01	0.06	0.01	0.02
d_M, Delay for Movement [s/veh]	8.01	0.00	0.00	7.57	0.00	0.00	14.18	15.66	10.00	13.92	14.70	9.69
Movement LOS	A	A	A	A	A	A	B	C	B	B	B	A
95th-Percentile Queue Length [veh/ln]	0.19	0.19	0.19	0.03	0.03	0.03	0.33	0.33	0.33	0.27	0.27	0.27
95th-Percentile Queue Length [ft/ln]	4.63	4.63	4.63	0.86	0.86	0.86	8.15	8.15	8.15	6.81	6.81	6.81
d_A, Approach Delay [s/veh]	2.51			0.55			13.20			12.64		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	3.44											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 11: Flynn Ln & Siren's Dr

Control Type:	Two-way stop	Delay (sec / veh):	16.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.124

Intersection Setup

Name	Flynn Ln		Flynn Ln		Siren's Rd	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Flynn Ln		Flynn Ln		Siren's Rd	
Base Volume Input [veh/h]	154	175	80	103	42	82
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	5.00	2.00	15.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	154	175	80	103	42	82
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	42	48	22	28	11	22
Total Analysis Volume [veh/h]	167	190	87	112	46	89
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.12	0.00	0.00	0.00	0.12	0.10
d_M, Delay for Movement [s/veh]	7.98	0.00	0.00	0.00	16.03	9.41
Movement LOS	A	A	A	A	C	A
95th-Percentile Queue Length [veh/ln]	0.41	0.00	0.00	0.00	0.42	0.33
95th-Percentile Queue Length [ft/ln]	10.35	0.00	0.00	0.00	10.46	8.16
d_A, Approach Delay [s/veh]	3.73		0.00		11.67	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	4.21					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 12: Flynn Ln & Mullan Rd

Control Type: Two-way stop
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 25.6
 Level Of Service: D
 Volume to Capacity (v/c): 0.006

Intersection Setup

Name	Flynn Ln			Mullan Rd			Mullan Rd					
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↶			↷			↶↷			↷↶		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			25.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Flynn Ln			Mullan Rd			Mullan Rd					
Base Volume Input [veh/h]	0	0	1	0	0	106	200	1272	1	1	395	197
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	0.00	2.00	2.00	2.00	7.00	2.00	2.00	7.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	1	0	0	106	200	1272	1	1	395	197
Peak Hour Factor	1.0000	1.0000	0.9200	0.9200	1.0000	0.9200	0.9200	0.9200	1.0000	1.0000	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	0	0	29	54	346	0	0	107	54
Total Analysis Volume [veh/h]	0	0	1	0	0	115	217	1383	1	1	429	214
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.00	0.18	0.23	0.01	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	25.59	0.00	0.00	12.04	9.96	0.00	0.00	12.29	0.00	0.00
Movement LOS			D			B	A	A	A	B	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.02	0.00	0.00	0.67	0.89	0.00	0.00	0.01	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.43	0.00	0.00	16.70	22.24	0.00	0.00	0.15	0.00	0.00
d_A, Approach Delay [s/veh]	25.59			12.04			1.35			0.02		
Approach LOS	D			B			A			A		
d_I, Intersection Delay [s/veh]	1.52											
Intersection LOS	D											

Intersection Level Of Service Report
Intersection 13: Mary Jane Blvd & Mullan Rd

Control Type:	Two-way stop	Delay (sec / veh):	2,633.6
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	6.359

Intersection Setup

Name	Mary Jane Blvd		Mullan Rd		Mullan Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Mary Jane Blvd		Mullan Rd		Mullan Rd	
Base Volume Input [veh/h]	207	53	231	1042	512	100
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.00	4.00	3.00	7.00	7.00	3.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	207	53	231	1042	512	100
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	56	14	63	283	139	27
Total Analysis Volume [veh/h]	225	58	251	1133	557	109
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	6.36	0.11	0.27	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	2633.59	12.69	10.39	0.00	0.00	0.00
Movement LOS	F	B	B	A	A	A
95th-Percentile Queue Length [veh/ln]	26.85	0.37	1.11	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	671.13	9.24	27.82	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	2096.44		1.88		0.00	
Approach LOS	F		A		A	
d_I, Intersection Delay [s/veh]	255.42					
Intersection LOS	F					

**Intersection Level Of Service Report
Intersection 14: Mary Jane Blvd & O'Leary St**

Control Type:	Two-way stop	Delay (sec / veh):	16.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.086

Intersection Setup

Name	Mary Jane Blvd			Mary Jane Blvd			O'Leary St			O'Leary St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mary Jane Blvd			Mary Jane Blvd			O'Leary St			O'Leary St		
Base Volume Input [veh/h]	16	305	8	13	164	35	8	2	68	28	9	17
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	3.00	2.00	2.00	3.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	16	305	8	13	164	35	8	2	68	28	9	17
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	83	2	4	45	10	2	1	18	8	2	5
Total Analysis Volume [veh/h]	17	332	9	14	178	38	9	2	74	30	10	18
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.01	0.00	0.00	0.02	0.00	0.09	0.09	0.03	0.03
d_M, Delay for Movement [s/veh]	7.69	0.00	0.00	7.99	0.00	0.00	15.11	14.58	9.91	16.67	15.45	11.44
Movement LOS	A	A	A	A	A	A	C	B	A	C	C	B
95th-Percentile Queue Length [veh/ln]	0.04	0.04	0.04	0.03	0.03	0.03	0.39	0.39	0.39	0.47	0.47	0.47
95th-Percentile Queue Length [ft/ln]	0.95	0.95	0.95	0.87	0.87	0.87	9.82	9.82	9.82	11.77	11.77	11.77
d_A, Approach Delay [s/veh]	0.37			0.49			10.57			14.84		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	2.74											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 15: Mary Jane Blvd & Melrose PI

Control Type:	Two-way stop	Delay (sec / veh):	19.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.089

Intersection Setup

Name	Mary Jane Blvd			Mary Jane Blvd			Melrose PI			Melrose PI		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	⊕			⊕			⊕			⊕		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mary Jane Blvd			Mary Jane Blvd			Melrose PI			Melrose PI		
Base Volume Input [veh/h]	5	290	35	54	172	5	15	47	15	25	25	20
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.00	2.00	2.00	2.00	3.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	5	290	35	54	172	5	15	47	15	25	25	20
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	79	10	15	47	1	4	13	4	7	7	5
Total Analysis Volume [veh/h]	5	315	38	59	187	5	16	51	16	27	27	22
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.05	0.00	0.00	0.05	0.14	0.02	0.09	0.07	0.03
d_M, Delay for Movement [s/veh]	7.63	0.00	0.00	8.14	0.00	0.00	18.69	17.59	11.68	19.12	17.12	12.30
Movement LOS	A	A	A	A	A	A	C	C	B	C	C	B
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.01	0.15	0.15	0.15	0.79	0.79	0.79	0.71	0.71	0.71
95th-Percentile Queue Length [ft/ln]	0.27	0.27	0.27	3.85	3.85	3.85	19.79	19.79	19.79	17.81	17.81	17.81
d_A, Approach Delay [s/veh]	0.11			1.91			16.66			16.44		
Approach LOS	A			A			C			C		
d_I, Intersection Delay [s/veh]	4.10											
Intersection LOS	C											

**Intersection Level Of Service Report
Intersection 16: Mary Jane Blvd & England Blvd**

Control Type:	Two-way stop	Delay (sec / veh):	964.6
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	2.773

Intersection Setup

Name	Mary Jane Blvd			Mary Jane Blvd			England Blvd			England Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵			↵			↵			↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mary Jane Blvd			Mary Jane Blvd			England Blvd			England Blvd		
Base Volume Input [veh/h]	136	142	46	19	123	50	87	358	62	46	350	6
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	3.00	2.00	2.00	3.00	2.00	2.00	8.00	2.00	2.00	4.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	136	142	46	19	123	50	87	358	62	46	350	6
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	37	39	13	5	33	14	24	97	17	13	95	2
Total Analysis Volume [veh/h]	148	154	50	21	134	54	95	389	67	50	380	7
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	2.77	0.83	0.08	0.50	0.75	0.08	0.08	0.00	0.00	0.05	0.00	0.00
d_M, Delay for Movement [s/veh]	964.65	87.57	73.87	156.64	73.81	59.01	8.34	0.00	0.00	8.41	0.00	0.00
Movement LOS	F	F	F	F	F	F	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	15.43	7.57	7.57	1.78	6.38	6.38	0.26	0.00	0.00	0.14	0.00	0.00
95th-Percentile Queue Length [ft/ln]	385.66	189.18	189.18	44.59	159.41	159.41	6.61	0.00	0.00	3.55	0.00	0.00
d_A, Approach Delay [s/veh]	454.40			78.31			1.44			0.96		
Approach LOS	F			F			A			A		
d_I, Intersection Delay [s/veh]	114.61											
Intersection LOS	F											

**Intersection Level Of Service Report
Intersection 17: Mary Jane Blvd & Camden St**

Control Type:	Two-way stop	Delay (sec / veh):	13.8
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.097

Intersection Setup

Name	Mary Jane Blvd			Mary Jane Blvd			Camden St			Camden St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mary Jane Blvd			Mary Jane Blvd			Camden St			Camden St		
Base Volume Input [veh/h]	19	213	3	8	147	18	42	12	33	12	13	6
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	3.00	2.00	2.00	3.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	19	213	3	8	147	18	42	12	33	12	13	6
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	58	1	2	40	5	11	3	9	3	4	2
Total Analysis Volume [veh/h]	21	232	3	9	160	20	46	13	36	13	14	7
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.00	0.00	0.01	0.00	0.00	0.10	0.03	0.04	0.03	0.03	0.01
d_M, Delay for Movement [s/veh]	7.62	0.00	0.00	7.72	0.00	0.00	13.79	13.69	10.35	13.48	13.05	9.97
Movement LOS	A	A	A	A	A	A	B	B	B	B	B	A
95th-Percentile Queue Length [veh/ln]	0.05	0.05	0.05	0.02	0.02	0.02	0.59	0.59	0.59	0.21	0.21	0.21
95th-Percentile Queue Length [ft/ln]	1.15	1.15	1.15	0.51	0.51	0.51	14.65	14.65	14.65	5.35	5.35	5.35
d_A, Approach Delay [s/veh]	0.63			0.37			12.47			12.58		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	3.21											
Intersection LOS	B											

**Intersection Level Of Service Report
Intersection 18: Mary Jane Blvd & Flynn Ln**

Control Type:	Two-way stop	Delay (sec / veh):	27.6
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.250

Intersection Setup

Name	Mary Jane Blvd			Mary Jane Blvd			Flynn Ln			Flynn Ln		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mary Jane Blvd			Mary Jane Blvd			Flynn Ln			Flynn Ln		
Base Volume Input [veh/h]	15	193	54	44	133	30	75	116	10	30	73	37
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	3.00	2.00	2.00	3.00	2.00	2.00	3.00	2.00	2.00	4.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	15	193	54	44	133	30	75	116	10	30	73	37
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	52	15	12	36	8	20	32	3	8	20	10
Total Analysis Volume [veh/h]	16	210	59	48	145	33	82	126	11	33	79	40
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.04	0.00	0.00	0.25	0.31	0.01	0.11	0.19	0.05
d_M, Delay for Movement [s/veh]	7.61	0.00	0.00	7.89	0.00	0.00	27.58	25.31	20.66	21.34	17.96	13.86
Movement LOS	A	A	A	A	A	A	D	D	C	C	C	B
95th-Percentile Queue Length [veh/ln]	0.03	0.03	0.03	0.12	0.12	0.12	3.39	3.39	3.39	1.54	1.54	1.54
95th-Percentile Queue Length [ft/ln]	0.87	0.87	0.87	2.89	2.89	2.89	84.81	84.81	84.81	38.48	38.48	38.48
d_A, Approach Delay [s/veh]	0.43			1.68			25.93			17.61		
Approach LOS	A			A			D			C		
d_I, Intersection Delay [s/veh]	10.04											
Intersection LOS	D											

Intersection Level Of Service Report
Intersection 19: Mary Jane Blvd & Veteran's Way

Control Type:	Two-way stop	Delay (sec / veh):	15.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.061

Intersection Setup

Name	Mary Jane Blvd			Mary Jane Blvd			Veteran's Way			Veteran's Way		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mary Jane Blvd			Mary Jane Blvd			Veteran's Way			Veteran's Way		
Base Volume Input [veh/h]	9	294	0	0	204	101	21	0	2	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	3.00	2.00	2.00	3.00	2.00	20.00	2.00	20.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	9	294	0	0	204	101	21	0	2	0	0	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	80	0	0	55	27	6	0	1	0	0	0
Total Analysis Volume [veh/h]	10	320	0	0	222	110	23	0	2	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	7.96	0.00	0.00	7.90	0.00	0.00	15.24	14.60	10.63	14.06	14.64	9.99
Movement LOS	A	A	A	A	A	A	C	B	B	B	B	A
95th-Percentile Queue Length [veh/ln]	0.02	0.02	0.02	0.00	0.00	0.00	0.20	0.20	0.20	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.62	0.62	0.62	0.00	0.00	0.00	5.12	5.12	5.12	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.24			0.00			14.87			12.90		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	0.66											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 20: Mary Jane Blvd & W Broadway St

Control Type:	Two-way stop	Delay (sec / veh):	676.8
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	2.313

Intersection Setup

Name	Mary Jane Blvd		W Broadway St		W Broadway St	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Mary Jane Blvd		W Broadway St		W Broadway St	
Base Volume Input [veh/h]	248	68	1247	142	164	656
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.00	3.00	8.00	3.00	3.00	15.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	248	68	1247	142	164	656
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	67	18	339	39	45	178
Total Analysis Volume [veh/h]	270	74	1355	154	178	713
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	Yes		
Number of Storage Spaces in Median	1	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	2.31	0.19	0.01	0.00	0.41	0.01
d_M, Delay for Movement [s/veh]	676.77	16.29	0.00	0.00	18.92	0.00
Movement LOS	F	C	A	A	C	A
95th-Percentile Queue Length [veh/ln]	23.47	0.68	0.00	0.00	1.96	0.00
95th-Percentile Queue Length [ft/ln]	586.80	17.12	0.00	0.00	49.05	0.00
d_A, Approach Delay [s/veh]	534.69		0.00		3.78	
Approach LOS	F		A		A	
d_I, Intersection Delay [s/veh]	68.26					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 21: Flynn Ln & W Broadway St

Control Type:	Two-way stop	Delay (sec / veh):	61.0
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.935

Intersection Setup

Name	Flynn Ln		W Broadway St		W Broadway St	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↶		↷		↷	
Turning Movement	Left	Thru	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	1	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	49.21	0.00	0.00
Speed [mph]	25.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Flynn Ln		W Broadway St		W Broadway St	
Base Volume Input [veh/h]	0	359	1180	146	0	819
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	2.00	8.00	2.00	0.00	15.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	359	1180	146	0	819
Peak Hour Factor	0.7900	0.9200	0.9200	0.9200	0.7900	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	98	321	40	0	223
Total Analysis Volume [veh/h]	0	390	1283	159	0	890
Pedestrian Volume [ped/h]	0		0		0	

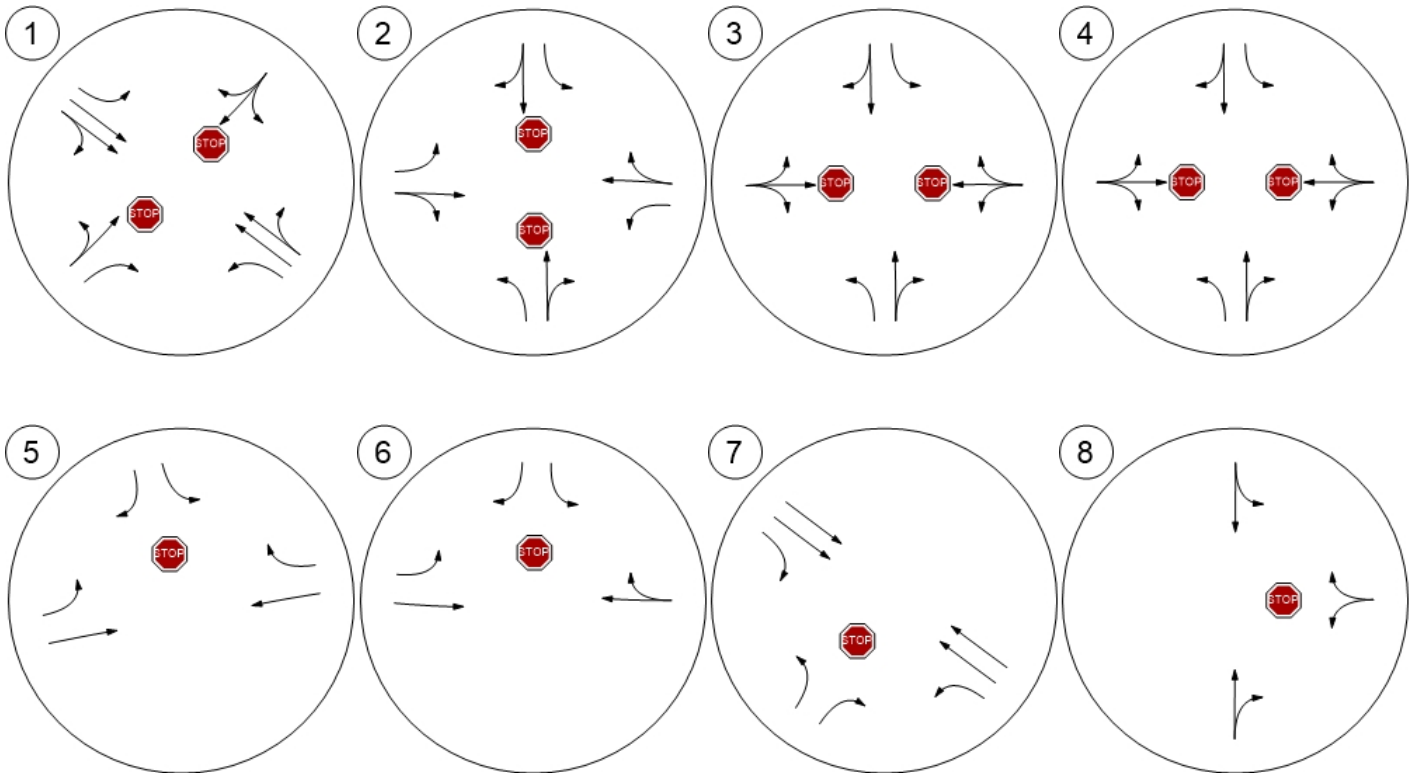
Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

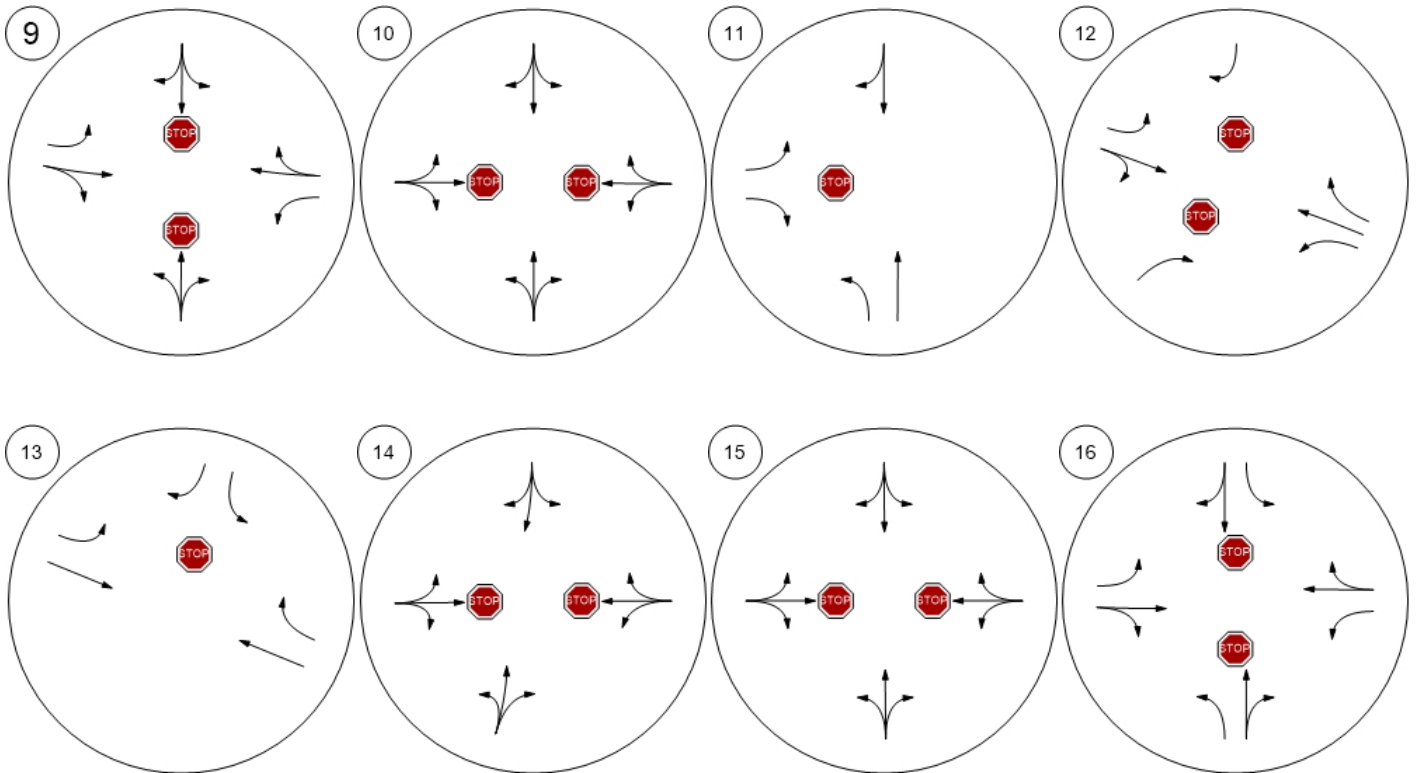
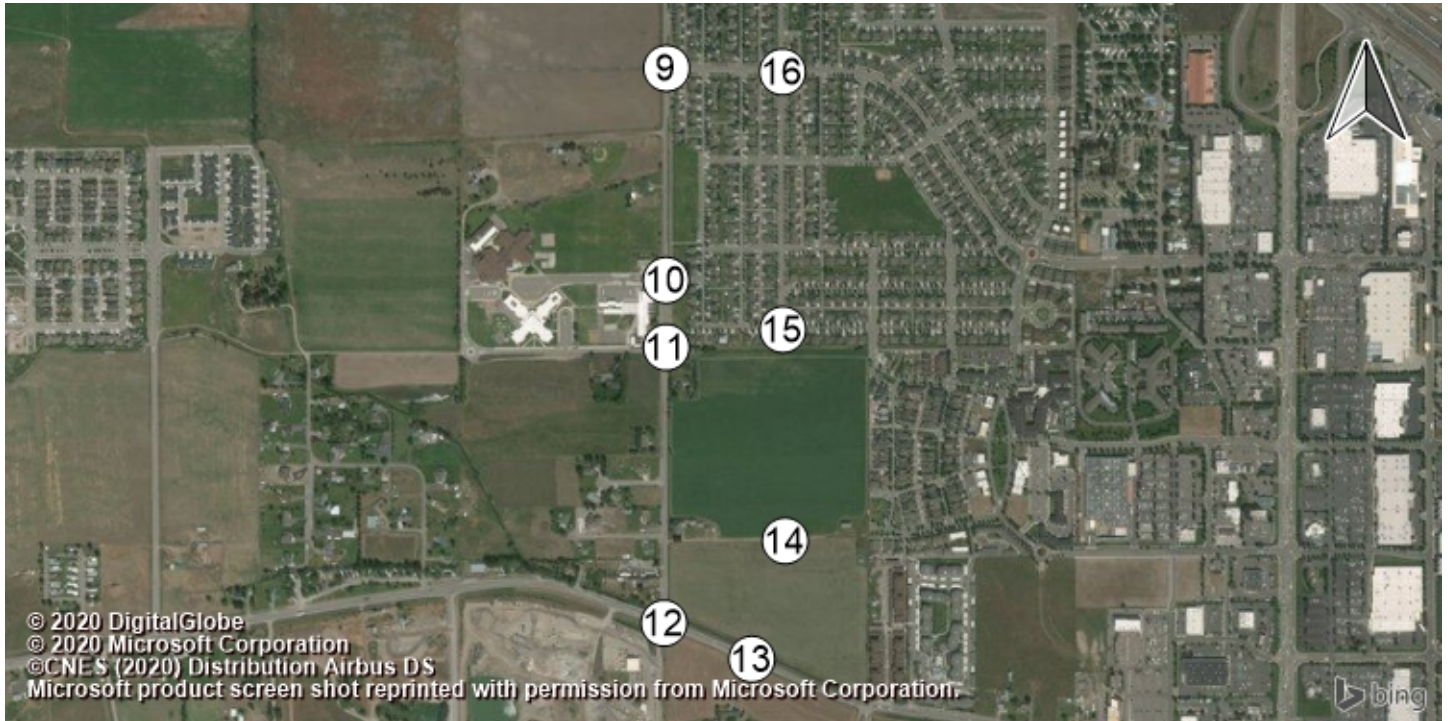
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.94	0.01	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	61.02	0.00	0.00	0.00	0.00
Movement LOS		F	A	A		A
95th-Percentile Queue Length [veh/ln]	0.00	10.52	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	262.95	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	61.02		0.00		0.00	
Approach LOS	F		A		A	
d_I, Intersection Delay [s/veh]	8.74					
Intersection LOS	F					

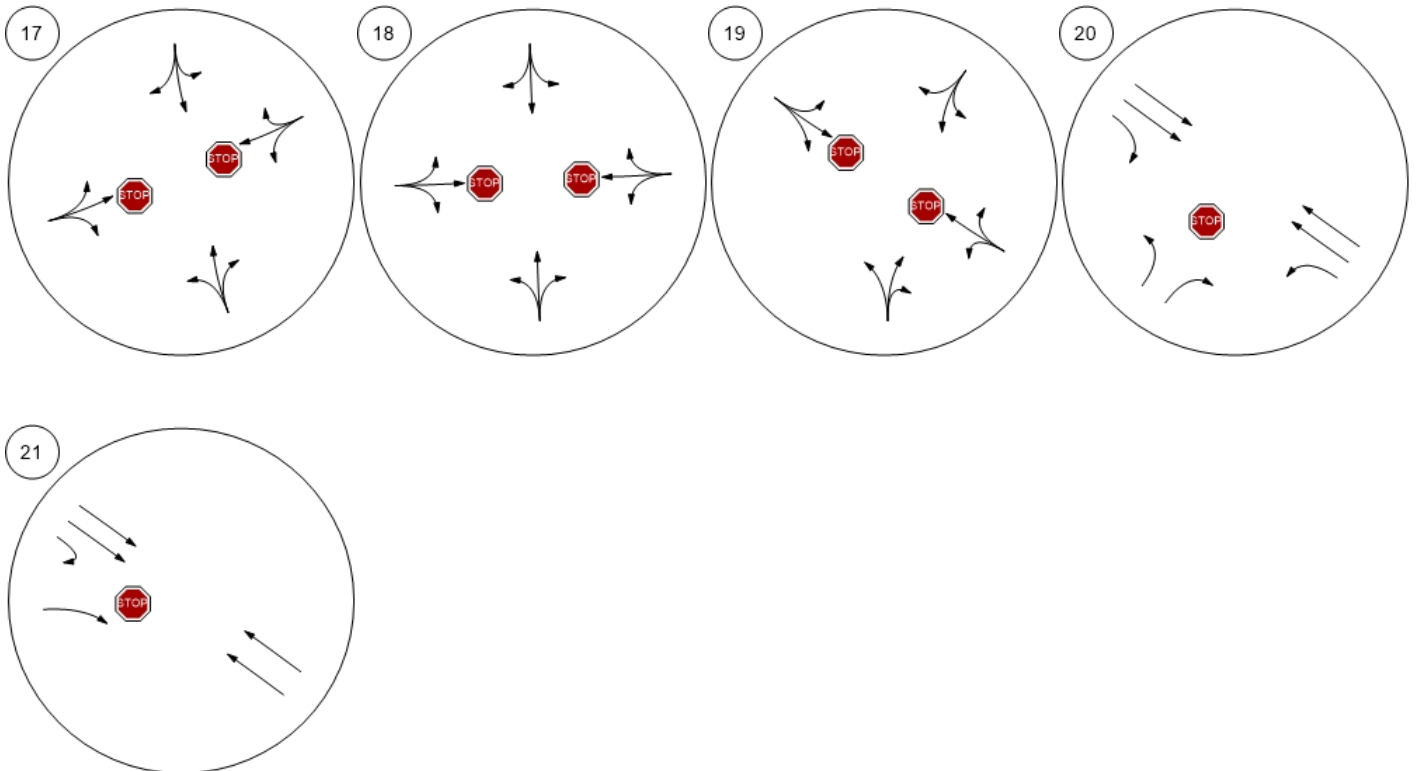
Lane Configuration and Traffic Control



Lane Configuration and Traffic Control



Lane Configuration and Traffic Control



Mullan BUILD - 2050 AM

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Scenario 3 Two Way Stop Control (2050)

Report File: H:\...\24667_AM2050_RIROLI_7.pdf

7/22/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
7	Doughtery Dr & W Broadway St	Two-way stop	HCM 6th Edition	NB Right	0.922	57.2	F

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

**Intersection Level Of Service Report
Intersection 7: Dougherty Dr & W Broadway St**

Control Type:	Two-way stop	Delay (sec / veh):	57.2
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.922

Intersection Setup

Name	Dougherty Dr		W Broadway St		W Broadway St	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	100.00
Speed [mph]	30.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Dougherty Dr		W Broadway St		W Broadway St	
Base Volume Input [veh/h]	116	366	1139	130	150	713
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	8.00	2.00	2.00	15.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	116	366	1139	130	150	713
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	32	99	310	35	41	194
Total Analysis Volume [veh/h]	126	398	1238	141	163	775
Pedestrian Volume [ped/h]	0		0		0	

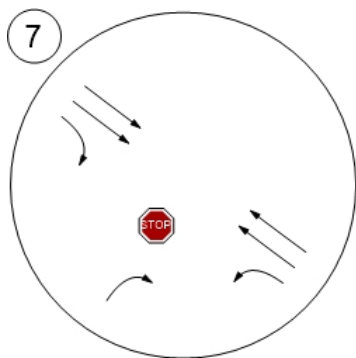
Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	1	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.92	0.01	0.00	0.33	0.01
d_M, Delay for Movement [s/veh]	0.00	57.25	0.00	0.00	15.87	0.00
Movement LOS		F	A	A	C	A
95th-Percentile Queue Length [veh/ln]	0.00	10.30	0.00	0.00	1.43	0.00
95th-Percentile Queue Length [ft/ln]	0.00	257.50	0.00	0.00	35.80	0.00
d_A, Approach Delay [s/veh]	57.25		0.00		2.76	
Approach LOS	F		A		A	
d_I, Intersection Delay [s/veh]	9.34					
Intersection LOS	F					

Lane Configuration and Traffic Control



Option 1: NB/SB Left Turn Lane

Number	9											
Intersection	Flynn Ln & England Blvd											
Control Type	Two-way stop											
Analysis Method	HCM 6th Edition											
Name	Flynn Ln			Flynn Ln			England Blvd			England Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Base Volume Input [veh/h]	15	72	73	55	29	19	33	378	34	142	320	75
Total Analysis Volume [veh/h]	16	78	79	60	32	21	36	411	37	154	348	82

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Capacity Analysis

Calculated Rank	4	3	2	4	3	2	2	1	1	2	1	1
v_c, Conflicting Flow Rate	1225	1240	430	1277	1217	389	430	0	0	448	0	0
v_c, Stage 1	502	502	430	697	697	389	430	0	0	448	0	0
v_c, Stage 2	724	738	0	580	520	0	0	0	0	0	0	0
c_p,x, Potential Capacity [veh/h]	156	173	611	143	177	659	1129	0	0	1081	0	0
c_p,x, Stage 1 [veh/h]	552	537	1280	431	435	1288	1843	0	0	1801	0	0
c_p,x, Stage 2 [veh/h]	417	420	1065	500	524	1085	1623	0	0	1585	0	0
c_m,x, Movement Capacity [veh/h]	110	144	611	63	147	659	1129	100000	100000	1081	100000	100000
c_m,x, Stage 1 [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
c_m,x, Stage 2 [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
c_T, Total Capacity [veh/h]	110	144	611	63	147	659	1129	100000	100000	1081	100000	100000

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.15	0.54	0.13	0.95	0.22	0.03	0.03	0.00	0.00	0.14	0.00	0.00
d_M, Delay for Movement [s/veh]	43.37	56.89	37.70	209.25	35.08	16.02	8.29	0.00	0.00	8.88	0.00	0.00
Movement LOS	E	F	E	F	E	C	A	A	A	A	A	A
Critical Movement	No	No	No	Yes	No	No	No	No	No	No	No	No
95th-Percentile Queue Length [veh/ln]	0.49	4.26	4.26	4.57	0.95	0.95	0.10	0.00	0.00	0.50	0.00	0.00
95th-Percentile Queue Length [ft/ln]	12.30	106.55	106.55	114.21	23.84	23.84	2.47	0.00	0.00	12.40	0.00	0.00
d_A, Approach Delay [s/veh]	46.88			124.02			0.62			2.34		
Approach LOS	E			F			A			A		
V/C_I, Worst Movement V/C Ratio	0.95											
d_I, Worst Movement Control Delay [s/veh]	209.25											
d_I, Intersection Delay [s/veh]	17.57											
Intersection LOS	F											

Mullan BUILD - 2050 AM

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Scenario 6 All Way Stop Control (2050)

Report File: H:\...\24667_AM2050_AWSC.pdf

7/17/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
2	George Elmer Dr & England Blvd	All-way stop	HCM 6th Edition	WB Thru	0.924	41.7	E
9	Flynn Ln & England Blvd	All-way stop	HCM 6th Edition	EB Thru	0.812	22.9	C
15	Mary Jane Blvd & Melrose Pl	All-way stop	HCM 6th Edition	NB Thru	0.461	10.7	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

**Intersection Level Of Service Report
Intersection 2: George Elmer Dr & England Blvd**

Control Type:	All-way stop	Delay (sec / veh):	41.7
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.924

Intersection Setup

Name	George Elmer Dr			George Elmer Dr			England Blvd			England Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵			↵			↵			↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	George Elmer Dr			George Elmer Dr			England Blvd			England Blvd		
Base Volume Input [veh/h]	30	289	50	50	100	50	160	311	60	25	299	75
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	4.00	2.00	2.00	4.00	2.00	2.00	8.00	2.00	2.00	4.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	30	289	50	50	100	50	160	311	60	25	299	75
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	79	14	14	27	14	43	85	16	7	81	20
Total Analysis Volume [veh/h]	33	314	54	54	109	54	174	338	65	27	325	82
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings**Lanes**

Capacity per Entry Lane [veh/h]	401	429	369	398	410	437	410	441
Degree of Utilization, x	0.08	0.86	0.15	0.41	0.42	0.92	0.07	0.92

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.27	8.55	0.51	1.95	2.06	10.33	0.21	10.43
95th-Percentile Queue Length [ft]	6.69	213.86	12.71	48.65	51.60	258.21	5.27	260.78
Approach Delay [s/veh]	41.89		16.91		43.26		51.83	
Approach LOS	E		C		E		F	
Intersection Delay [s/veh]	41.69							
Intersection LOS	E							

Intersection Level Of Service Report
Intersection 9: Flynn Ln & England Blvd

Control Type: All-way stop
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 22.9
 Level Of Service: C
 Volume to Capacity (v/c): 0.812

Intersection Setup

Name	Flynn Ln			Flynn Ln			England Blvd			England Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			T			T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			25.00			30.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Flynn Ln			Flynn Ln			England Blvd			England Blvd		
Base Volume Input [veh/h]	15	72	73	55	29	19	33	378	34	142	320	75
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	8.00	2.00	2.00	4.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	15	72	73	55	29	19	33	378	34	142	320	75
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	20	20	15	8	5	9	103	9	39	87	20
Total Analysis Volume [veh/h]	16	78	79	60	32	21	36	411	37	154	348	82
Pedestrian Volume [ped/h]	0			0			0			0		



Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	530	497	514	552	523	574
Degree of Utilization, x	0.33	0.23	0.07	0.81	0.29	0.75

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.41	0.87	0.22	8.01	1.22	6.56
95th-Percentile Queue Length [ft]	35.18	21.71	5.62	200.32	30.51	163.92
Approach Delay [s/veh]	13.03	12.38	29.96		21.90	
Approach LOS	B	B	D		C	
Intersection Delay [s/veh]	22.85					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 15: Mary Jane Blvd & Melrose PI

Control Type:	All-way stop	Delay (sec / veh):	10.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.461

Intersection Setup

Name	Mary Jane Blvd			Mary Jane Blvd			Melrose PI			Melrose PI		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mary Jane Blvd			Mary Jane Blvd			Melrose PI			Melrose PI		
Base Volume Input [veh/h]	5	290	35	54	172	5	15	47	15	25	25	20
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.00	2.00	2.00	2.00	3.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	5	290	35	54	172	5	15	47	15	25	25	20
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	79	10	15	47	1	4	13	4	7	7	5
Total Analysis Volume [veh/h]	5	315	38	59	187	5	16	51	16	27	27	22
Pedestrian Volume [ped/h]	0			0			0			0		



Intersection Settings

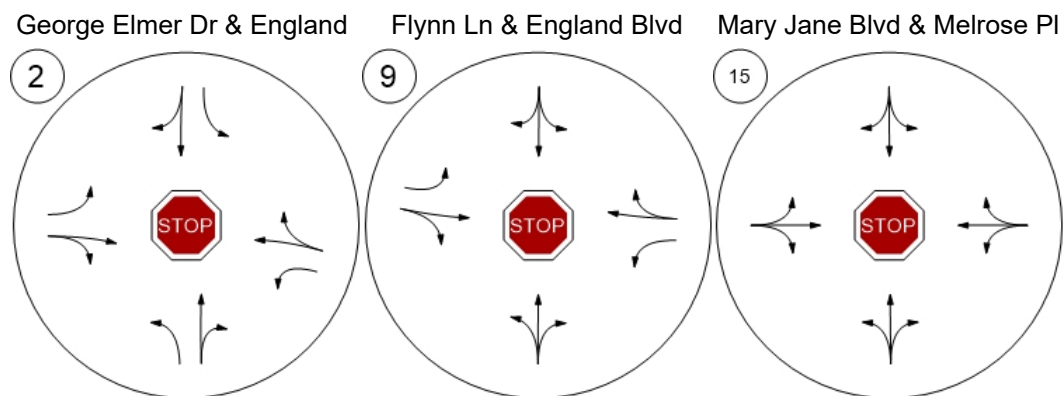
Lanes

Capacity per Entry Lane [veh/h]	776	741	662	664
Degree of Utilization, x	0.46	0.34	0.13	0.11

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	2.45	1.50	0.43	0.39
95th-Percentile Queue Length [ft]	61.31	37.53	10.69	9.65
Approach Delay [s/veh]	11.54	10.33	9.21	9.13
Approach LOS	B	B	A	A
Intersection Delay [s/veh]	10.66			
Intersection LOS	B			

Lane Configuration and Traffic Control



Mullan BUID - 2050 AM

Vistro File: H:\...\24667_AM2050.vistro

Scenario 5 Roundabout (2050)

Report File: H:\...\24667_AM2050_RBT.pdf

7/21/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	George Elmer Dr & W Broadway St	Roundabout	HCM 6th Edition	NB Left		14.8	B
2	George Elmer Dr & England Blvd	Roundabout	HCM 6th Edition	NB Thru		11.3	B
3	George Elmer Dr & Cattle Dr	Roundabout	HCM 6th Edition	NB Thru		5.1	A
4	George Elmer Dr & Heron's Landing	Roundabout	HCM 6th Edition	NB Thru		5.0	A
5	George Elmer Dr & Mullan Rd	Roundabout	HCM 6th Edition	EB Thru		88.7	F
6	Dougherty Dr & England Blvd	Roundabout	HCM 6th Edition	EB Thru		6.2	A
7	Dougherty Dr & W Broadway St	Roundabout	HCM 6th Edition	NB Right		11.3	B
8	Flynn Ln & Camden St	Roundabout	HCM 6th Edition	NB Thru		3.7	A
9	Flynn Ln & England Blvd	Roundabout	HCM 6th Edition	EB Thru		8.5	A
10	Flynn Ln & Chelsea Dr	Roundabout	HCM 6th Edition	SB Thru		4.7	A
11	Flynn Ln & Siren's Dr	Roundabout	HCM 6th Edition	NB Thru		5.0	A
12	Flynn Ln & Mullan Rd	Roundabout	HCM 6th Edition	EB Thru		34.4	D
13	Mary Jane Blvd & Mullan Rd	Roundabout	HCM 6th Edition	EB Thru		34.6	D
14	Mary Jane Blvd & O'Leary St	Roundabout	HCM 6th Edition	NB Thru		4.7	A
15	Mary Jane Blvd & Melrose Pl	Roundabout	HCM 6th Edition	NB Thru		5.1	A
16	Mary Jane Blvd & England Blvd	Roundabout	HCM 6th Edition	NB Thru		10.0	B
17	Mary Jane Blvd & Camden St	Roundabout	HCM 6th Edition	NB Thru		4.3	A
			HCM 6th				

18	Mary Jane Blvd & Flynn Ln	Roundabout	HCM 6th Edition	NB Thru		5.4	A
19	Mary Jane Blvd & Veteran's Way	Roundabout	HCM 6th Edition	NB Thru		4.9	A
20	Mary Jane Blvd & W Broadway St	Roundabout	HCM 6th Edition	NB Left		15.0	C
21	Flynn Ln & W Broadway St	Roundabout	HCM 6th Edition	NB Thru		14.0	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: George Elmer Dr & W Broadway St

Control Type:	Roundabout	Delay (sec / veh):	14.8
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes		

Intersection Setup

Name	George Elmer Dr			Commercial Access			W Broadway St			W Broadway St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.21
Speed [mph]	30.00			30.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	George Elmer Dr			Commercial Access			W Broadway St			W Broadway St		
Base Volume Input [veh/h]	318	1	203	1	1	1	1	1066	125	72	757	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.00	2.00	4.00	2.00	2.00	2.00	4.00	8.00	2.00	4.00	15.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	318	1	203	1	1	1	1	1066	125	72	757	1
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	86	0	55	0	0	0	0	290	34	20	206	0
Total Analysis Volume [veh/h]	346	1	221	1	1	1	1	1159	136	78	823	1
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	2			1			1			1		
Circulating Flow Rate [veh/h]	1254			1387			83			362		
Exiting Flow Rate [veh/h]	221			3			1307			1483		
Demand Flow Rate [veh/h]	318	1	203	1	1	1	1	1066	125	72	757	1
Adjusted Demand Flow Rate [veh/h]	346	1	221	1	1	1	1	1159	136	78	823	1

Lanes

Override Calculated Critical Headway	No	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1350.00	1420.00	1380.00	1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00092	0.00085	0.00102	0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	0.96	0.96	0.98	0.93	0.93	0.88	0.87
Entry Flow Rate [veh/h]	361	230	4	658	738	484	550
Capacity of Entry and Bypass Lanes [veh/h]	426	490	336	1317	1317	1022	1022
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	410	471	329	1220	1227	897	889
X, volume / capacity	0.85	0.47	0.01	0.50	0.56	0.47	0.54

Movement, Approach, & Intersection Results

Lane LOS	E	C	B	A	A	A	B
95th-Percentile Queue Length [veh]	8.15	2.46	0.03	2.89	3.62	2.58	3.28
95th-Percentile Queue Length [ft]	203.66	61.60	0.69	72.17	90.60	64.47	82.11
Approach Delay [s/veh]	34.54		11.10	8.91		10.69	
Approach LOS	D		B	A		B	
Intersection Delay [s/veh]	14.75						
Intersection LOS	B						

**Intersection Level Of Service Report
Intersection 2: George Elmer Dr & England Blvd**

Control Type: Roundabout
Analysis Method: HCM 6th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 11.3
Level Of Service: B

Intersection Setup

Name	George Elmer Dr			George Elmer Dr			England Blvd			England Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	George Elmer Dr			George Elmer Dr			England Blvd			England Blvd		
Base Volume Input [veh/h]	30	289	50	50	100	50	160	311	60	25	299	75
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	4.00	2.00	2.00	4.00	2.00	2.00	8.00	2.00	2.00	4.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	30	289	50	50	100	50	160	311	60	25	299	75
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	79	14	14	27	14	43	85	16	7	81	20
Total Analysis Volume [veh/h]	33	314	54	54	109	54	174	338	65	27	325	82
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	598			399			196			538		
Exiting Flow Rate [veh/h]	207			588			427			475		
Demand Flow Rate [veh/h]	30	289	50	50	100	50	160	311	60	25	299	75
Adjusted Demand Flow Rate [veh/h]	33	314	54	54	109	54	174	338	65	27	325	82

Lanes

Override Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.97	0.97	0.95	0.97
Entry Flow Rate [veh/h]	416	224	609	450
Capacity of Entry and Bypass Lanes [veh/h]	751	919	1130	798
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	725	892	1072	771
X, volume / capacity	0.55	0.24	0.54	0.56

Movement, Approach, & Intersection Results

Lane LOS	B	A	A	B
95th-Percentile Queue Length [veh]	3.43	0.95	3.32	3.57
95th-Percentile Queue Length [ft]	85.73	23.85	83.01	89.17
Approach Delay [s/veh]	13.72	6.55	9.90	13.34
Approach LOS	B	A	A	B
Intersection Delay [s/veh]	11.31			
Intersection LOS	B			

**Intersection Level Of Service Report
Intersection 3: George Elmer Dr & Cattle Dr**

Control Type:	Roundabout	Delay (sec / veh):	5.1
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	George Elmer Dr			George Elmer Dr			Cattle Dr			Cattle Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	George Elmer Dr			George Elmer Dr			Cattle Dr			Cattle Dr		
Base Volume Input [veh/h]	39	338	3	19	161	5	21	1	86	6	1	10
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	4.00	2.00	2.00	4.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	39	338	3	19	161	5	21	1	86	6	1	10
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	92	1	5	44	1	6	0	23	2	0	3
Total Analysis Volume [veh/h]	42	367	3	21	175	5	23	1	93	7	1	11
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	46			51			211			448		
Exiting Flow Rate [veh/h]	284			416			49			26		
Demand Flow Rate [veh/h]	39	338	3	19	161	5	21	1	86	6	1	10
Adjusted Demand Flow Rate [veh/h]	42	367	3	21	175	5	23	1	93	7	1	11

Lanes

Override Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.96	0.96	0.98	0.98
Entry Flow Rate [veh/h]	428	209	120	20
Capacity of Entry and Bypass Lanes [veh/h]	1317	1311	1114	874
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	1269	1263	1092	857
X, volume / capacity	0.32	0.16	0.11	0.02

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	1.42	0.57	0.36	0.07
95th-Percentile Queue Length [ft]	35.58	14.14	8.98	1.70
Approach Delay [s/veh]	5.82	4.19	4.23	4.41
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	5.10			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 4: George Elmer Dr & Heron's Landing

Control Type:	Roundabout	Delay (sec / veh):	5.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	George Elmer Dr			George Elmer Dr			Heron's Landing			Heron's Landing		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	George Elmer Dr			George Elmer Dr			Heron's Landing			Heron's Landing		
Base Volume Input [veh/h]	5	329	5	15	222	15	25	1	25	25	1	25
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	4.00	2.00	2.00	4.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	5	329	5	15	222	15	25	1	25	25	1	25
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	89	1	4	60	4	7	0	7	7	0	7
Total Analysis Volume [veh/h]	5	358	5	16	241	16	27	1	27	27	1	27
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	45			34			295			405		
Exiting Flow Rate [veh/h]	306			427			22			22		
Demand Flow Rate [veh/h]	5	329	5	15	222	15	25	1	25	25	1	25
Adjusted Demand Flow Rate [veh/h]	5	358	5	16	241	16	27	1	27	27	1	27

Lanes

Override Calculated Critical Headway	No			No			No			No		
User-Defined Critical Headway [s]	4.00			4.00			4.00			4.00		
Override Calculated Follow-Up Time	No			No			No			No		
User-Defined Follow-Up Time [s]	3.00			3.00			3.00			3.00		
A (intercept)	1380.00			1380.00			1380.00			1380.00		
B (coefficient)	0.00102			0.00102			0.00102			0.00102		
HV Adjustment Factor	0.96			0.96			0.98			0.98		
Entry Flow Rate [veh/h]	383			284			57			57		
Capacity of Entry and Bypass Lanes [veh/h]	1319			1334			1022			914		
Pedestrian Impedance	1.00			1.00			1.00			1.00		
Capacity per Entry Lane [veh/h]	1269			1286			1002			896		
X, volume / capacity	0.29			0.21			0.05			0.06		

Movement, Approach, & Intersection Results

Lane LOS	A			A			A			A		
95th-Percentile Queue Length [veh]	1.21			0.80			0.17			0.20		
95th-Percentile Queue Length [ft]	30.33			20.10			4.35			4.90		
Approach Delay [s/veh]	5.45			4.62			4.08			4.59		
Approach LOS	A			A			A			A		
Intersection Delay [s/veh]	4.98											
Intersection LOS	A											

**Intersection Level Of Service Report
Intersection 5: George Elmer Dr & Mullan Rd**

Control Type:	Roundabout	Delay (sec / veh):	88.7
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes		

Intersection Setup

Name	George Elmer Dr		Mullan Rd		Mullan Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	325.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	George Elmer Dr		Mullan Rd		Mullan Rd	
Base Volume Input [veh/h]	222	50	253	1259	405	85
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.00	4.00	4.00	7.00	7.00	4.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	222	50	253	1259	405	85
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	60	14	69	342	110	23
Total Analysis Volume [veh/h]	241	54	275	1368	440	92
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Number of Conflicting Circulating Lanes	1		1		1	
Circulating Flow Rate [veh/h]	471		251		286	
Exiting Flow Rate [veh/h]	382		527		1714	
Demand Flow Rate [veh/h]	222	50	253	1259	405	85
Adjusted Demand Flow Rate [veh/h]	241	54	275	1368	440	92

Lanes

Override Calculated Critical Headway	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1420.00	1420.00	1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00091	0.00091	0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	0.96	0.96	0.96	0.93	0.93	0.96
Entry Flow Rate [veh/h]	251	57	286	1464	471	96
Capacity of Entry and Bypass Lanes [veh/h]	926	926	1131	1131	1095	1095
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	890	890	1087	1057	1023	1053
X, volume / capacity	0.27	0.06	0.25	1.29	0.43	0.09

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	F	A	A
95th-Percentile Queue Length [veh]	1.10	0.19	1.01	49.34	2.20	0.29
95th-Percentile Queue Length [ft]	27.50	4.84	25.15	1233.52	54.95	7.17
Approach Delay [s/veh]	6.48		129.75		7.59	
Approach LOS	A		F		A	
Intersection Delay [s/veh]	88.72					
Intersection LOS	F					

**Intersection Level Of Service Report
Intersection 6: Dougherty Dr & England Blvd**

Control Type:	Roundabout	Delay (sec / veh):	6.2
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	Dougherty Dr		England Blvd		England Blvd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration	T		↑		↑	
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Dougherty Dr		England Blvd		England Blvd	
Base Volume Input [veh/h]	85	75	50	361	324	30
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	8.00	4.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	85	75	50	361	324	30
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	20	14	98	88	8
Total Analysis Volume [veh/h]	92	82	54	392	352	33
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Number of Conflicting Circulating Lanes	1		1		1	
Circulating Flow Rate [veh/h]	366		94		55	
Exiting Flow Rate [veh/h]	89		450		517	
Demand Flow Rate [veh/h]	85	75	50	361	324	30
Adjusted Demand Flow Rate [veh/h]	92	82	54	392	352	33

Lanes

Override Calculated Critical Headway	No		No		No	
User-Defined Critical Headway [s]	4.00		4.00		4.00	
Override Calculated Follow-Up Time	No		No		No	
User-Defined Follow-Up Time [s]	3.00		3.00		3.00	
A (intercept)	1380.00		1380.00		1380.00	
B (coefficient)	0.00102		0.00102		0.00102	
HV Adjustment Factor	0.98		0.93		0.96	
Entry Flow Rate [veh/h]	178		479		400	
Capacity of Entry and Bypass Lanes [veh/h]	950		1255		1305	
Pedestrian Impedance	1.00		1.00		1.00	
Capacity per Entry Lane [veh/h]	932		1170		1257	
X, volume / capacity	0.19		0.38		0.31	

Movement, Approach, & Intersection Results

Lane LOS	A		A		A	
95th-Percentile Queue Length [veh]	0.68		1.81		1.31	
95th-Percentile Queue Length [ft]	17.11		45.33		32.74	
Approach Delay [s/veh]	5.69		6.87		5.66	
Approach LOS	A		A		A	
Intersection Delay [s/veh]			6.20			
Intersection LOS			A			

**Intersection Level Of Service Report
Intersection 7: Dougherty Dr & W Broadway St**

Control Type:	Roundabout	Delay (sec / veh):	11.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes		

Intersection Setup

Name	Dougherty Dr		W Broadway St		W Broadway St	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	⇌		⇌		⇌	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		Yes	

Volumes

Name	Dougherty Dr		W Broadway St		W Broadway St	
Base Volume Input [veh/h]	116	250	1139	130	150	713
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	8.00	2.00	2.00	15.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	116	250	1139	130	150	713
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	32	68	310	35	41	194
Total Analysis Volume [veh/h]	126	272	1238	141	163	775
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Number of Conflicting Circulating Lanes	2		1		1	
Circulating Flow Rate [veh/h]	1337		166		129	
Exiting Flow Rate [veh/h]	310		1020		1614	
Demand Flow Rate [veh/h]	116	250	1139	130	150	713
Adjusted Demand Flow Rate [veh/h]	126	272	1238	141	163	775

Lanes

Override Calculated Critical Headway	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1350.00	1420.00	1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00092	0.00085	0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	0.98	0.98	0.93	0.93	0.89	0.87
Entry Flow Rate [veh/h]	129	278	700	785	497	572
Capacity of Entry and Bypass Lanes [veh/h]	395	456	1221	1221	1264	1264
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	387	447	1131	1138	1123	1099
X, volume / capacity	0.33	0.61	0.57	0.64	0.39	0.45

Movement, Approach, & Intersection Results

Lane LOS	C	C	B	B	A	A
95th-Percentile Queue Length [veh]	1.39	3.95	3.79	4.92	1.90	2.40
95th-Percentile Queue Length [ft]	34.75	98.82	94.86	123.04	47.43	60.08
Approach Delay [s/veh]	20.48		11.12		7.75	
Approach LOS	C		B		A	
Intersection Delay [s/veh]	11.33					
Intersection LOS	B					

**Intersection Level Of Service Report
Intersection 8: Flynn Ln & Camden St**

Control Type: Roundabout
Analysis Method: HCM 6th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 3.7
Level Of Service: A

Intersection Setup

Name	Flynn Ln		Flynn Ln		Camden St	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Flynn Ln		Flynn Ln		Camden St	
Base Volume Input [veh/h]	170	10	6	92	11	31
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	170	10	6	92	11	31
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	46	3	2	25	3	8
Total Analysis Volume [veh/h]	185	11	7	100	12	34
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Number of Conflicting Circulating Lanes	1		1		1	
Circulating Flow Rate [veh/h]	7		12		189	
Exiting Flow Rate [veh/h]	114		223		18	
Demand Flow Rate [veh/h]	170	10	6	92	11	31
Adjusted Demand Flow Rate [veh/h]	185	11	7	100	12	34

Lanes

Override Calculated Critical Headway	No		No		No	
User-Defined Critical Headway [s]	4.00		4.00		4.00	
Override Calculated Follow-Up Time	No		No		No	
User-Defined Follow-Up Time [s]	3.00		3.00		3.00	
A (intercept)	1380.00		1380.00		1380.00	
B (coefficient)	0.00102		0.00102		0.00102	
HV Adjustment Factor	0.98		0.98		0.98	
Entry Flow Rate [veh/h]	200		110		47	
Capacity of Entry and Bypass Lanes [veh/h]	1370		1363		1139	
Pedestrian Impedance	1.00		1.00		1.00	
Capacity per Entry Lane [veh/h]	1344		1337		1117	
X, volume / capacity	0.15		0.08		0.04	

Movement, Approach, & Intersection Results

Lane LOS	A		A		A	
95th-Percentile Queue Length [veh]	0.51		0.26		0.13	
95th-Percentile Queue Length [ft]	12.77		6.52		3.22	
Approach Delay [s/veh]	3.87		3.33		3.57	
Approach LOS	A		A		A	
Intersection Delay [s/veh]			3.66			
Intersection LOS			A			

**Intersection Level Of Service Report
Intersection 9: Flynn Ln & England Blvd**

Control Type: Roundabout
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 8.5
 Level Of Service: A

Intersection Setup

Name	Flynn Ln			Flynn Ln			England Blvd			England Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			25.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Flynn Ln			Flynn Ln			England Blvd			England Blvd		
Base Volume Input [veh/h]	15	72	73	55	29	19	33	378	34	142	320	75
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	8.00	2.00	2.00	4.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	15	72	73	55	29	19	33	378	34	142	320	75
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	20	20	15	8	5	9	103	9	39	87	20
Total Analysis Volume [veh/h]	16	78	79	60	32	21	36	411	37	154	348	82
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	542			535			251			133		
Exiting Flow Rate [veh/h]	227			200			400			586		
Demand Flow Rate [veh/h]	15	72	73	55	29	19	33	378	34	142	320	75
Adjusted Demand Flow Rate [veh/h]	16	78	79	60	32	21	36	411	37	154	348	82

Lanes

Override Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.98	0.98	0.93	0.97
Entry Flow Rate [veh/h]	177	116	519	603
Capacity of Entry and Bypass Lanes [veh/h]	795	800	1069	1206
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	779	784	999	1169
X, volume / capacity	0.22	0.14	0.48	0.50

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	0.85	0.50	2.71	2.88
95th-Percentile Queue Length [ft]	21.19	12.56	67.76	72.12
Approach Delay [s/veh]	7.05	6.09	9.38	8.62
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	8.48			
Intersection LOS	A			

**Intersection Level Of Service Report
Intersection 10: Flynn Ln & Chelsea Dr**

Control Type: Roundabout
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 4.7
 Level Of Service: A

Intersection Setup

Name	Flynn Ln			Flynn Ln			Chelsea Dr			Chelsea Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Flynn Ln			Flynn Ln			Chelsea Dr			Chelsea Dr		
Base Volume Input [veh/h]	68	116	33	15	150	40	31	2	11	22	5	13
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	19.00	2.00	2.00	2.00	7.00	28.00	2.00	50.00	2.00	2.00	20.00	8.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	68	116	33	15	150	40	31	2	11	22	5	13
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	32	9	4	41	11	8	1	3	6	1	4
Total Analysis Volume [veh/h]	74	126	36	16	163	43	34	2	12	24	5	14
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	54			119			215			251		
Exiting Flow Rate [veh/h]	211			178			149			56		
Demand Flow Rate [veh/h]	68	116	33	15	150	40	31	2	11	22	5	13
Adjusted Demand Flow Rate [veh/h]	74	126	36	16	163	43	34	2	12	24	5	14

Lanes

Override Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.94	0.91	0.97	0.94
Entry Flow Rate [veh/h]	253	245	50	46
Capacity of Entry and Bypass Lanes [veh/h]	1307	1223	1109	1069
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	1224	1111	1071	1009
X, volume / capacity	0.19	0.20	0.04	0.04

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	0.71	0.74	0.14	0.13
95th-Percentile Queue Length [ft]	17.83	18.62	3.52	3.34
Approach Delay [s/veh]	4.61	5.05	3.74	3.94
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	4.66			
Intersection LOS	A			

**Intersection Level Of Service Report
Intersection 11: Flynn Ln & Siren's Dr**

Control Type: Roundabout
Analysis Method: HCM 6th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 5.0
Level Of Service: A

Intersection Setup

Name	Flynn Ln		Flynn Ln		Siren's Rd	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration	←		→		↔	
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Flynn Ln		Flynn Ln		Siren's Rd	
Base Volume Input [veh/h]	154	175	80	103	42	82
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	5.00	2.00	15.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	154	175	80	103	42	82
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	42	48	22	28	11	22
Total Analysis Volume [veh/h]	167	190	87	112	46	89
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Number of Conflicting Circulating Lanes	1		1		1	
Circulating Flow Rate [veh/h]	47		170		89	
Exiting Flow Rate [veh/h]	180		246		299	
Demand Flow Rate [veh/h]	154	175	80	103	42	82
Adjusted Demand Flow Rate [veh/h]	167	190	87	112	46	89

Lanes

Override Calculated Critical Headway	No		No		No	
User-Defined Critical Headway [s]	4.00		4.00		4.00	
Override Calculated Follow-Up Time	No		No		No	
User-Defined Follow-Up Time [s]	3.00		3.00		3.00	
A (intercept)	1380.00		1380.00		1380.00	
B (coefficient)	0.00102		0.00102		0.00102	
HV Adjustment Factor	0.97		0.92		0.98	
Entry Flow Rate [veh/h]	370		217		138	
Capacity of Entry and Bypass Lanes [veh/h]	1316		1160		1261	
Pedestrian Impedance	1.00		1.00		1.00	
Capacity per Entry Lane [veh/h]	1271		1065		1236	
X, volume / capacity	0.28		0.19		0.11	

Movement, Approach, & Intersection Results

Lane LOS	A		A		A	
95th-Percentile Queue Length [veh]	1.16		0.69		0.37	
95th-Percentile Queue Length [ft]	29.03		17.13		9.17	
Approach Delay [s/veh]	5.34		5.09		3.82	
Approach LOS	A		A		A	
Intersection Delay [s/veh]			4.97			
Intersection LOS			A			

**Intersection Level Of Service Report
Intersection 12: Flynn Ln & Mullan Rd**

Control Type: Roundabout
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 34.4
 Level Of Service: D

Intersection Setup

Name	Northbound			Flynn Ln Southbound			Mullan Rd Eastbound			Mullan Rd Westbound		
Approach	Northbound			Flynn Ln Southbound			Mullan Rd Eastbound			Mullan Rd Westbound		
Lane Configuration	↶			↷			↶↷			↶↷		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	1	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00
Speed [mph]	30.00			25.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Northbound			Flynn Ln Southbound			Mullan Rd Eastbound			Mullan Rd Westbound		
Base Volume Input [veh/h]	0	0	1	0	0	106	200	1272	1	1	395	197
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	0.00	2.00	2.00	2.00	7.00	2.00	2.00	7.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	1	0	0	106	200	1272	1	1	395	197
Peak Hour Factor	1.0000	1.0000	0.9200	0.9200	1.0000	0.9200	0.9200	0.9200	1.0000	1.0000	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	0	0	29	54	346	0	0	107	54
Total Analysis Volume [veh/h]	0	0	1	0	0	115	217	1383	1	1	429	214
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	1701			460			1			221		
Exiting Flow Rate [veh/h]	2			440			576			1481		
Demand Flow Rate [veh/h]	0	0	1	0	0	106	200	1272	1	1	395	197
Adjusted Demand Flow Rate [veh/h]	0	0	1	0	0	115	217	1383	1	1	429	214

Lanes

Override Calculated Critical Headway	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00102	0.00102	0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	0.98	0.98	0.98	0.93	0.93	0.98
Entry Flow Rate [veh/h]	2	118	222	1481	461	219
Capacity of Entry and Bypass Lanes [veh/h]	244	864	1419	1419	1161	1161
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	239	847	1391	1326	1086	1139
X, volume / capacity	0.00	0.14	0.16	1.04	0.40	0.19




Movement, Approach, & Intersection Results

Lane LOS	C	A	A	F	A	A
95th-Percentile Queue Length [veh]	0.01	0.47	0.55	26.70	1.92	0.69
95th-Percentile Queue Length [ft]	0.32	11.74	13.81	667.47	48.10	17.26
Approach Delay [s/veh]	15.17	5.60	47.74		6.59	
Approach LOS	C	A	E		A	
Intersection Delay [s/veh]	34.45					
Intersection LOS	D					

**Intersection Level Of Service Report
Intersection 13: Mary Jane Blvd & Mullan Rd**

Control Type:	Roundabout	Delay (sec / veh):	34.6
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes		

Intersection Setup

Name	Mary Jane Blvd		Mullan Rd		Mullan Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Mary Jane Blvd		Mullan Rd		Mullan Rd	
Base Volume Input [veh/h]	207	53	231	1042	512	100
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.00	4.00	3.00	7.00	7.00	3.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	207	53	231	1042	512	100
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	56	14	63	283	139	27
Total Analysis Volume [veh/h]	225	58	251	1133	557	109
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Number of Conflicting Circulating Lanes	1		1		1	
Circulating Flow Rate [veh/h]	596		234		259	
Exiting Flow Rate [veh/h]	371		656		1446	
Demand Flow Rate [veh/h]	207	53	231	1042	512	100
Adjusted Demand Flow Rate [veh/h]	225	58	251	1133	557	109

Lanes

Override Calculated Critical Headway	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1420.00	1420.00	1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00091	0.00091	0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	0.96	0.96	0.97	0.93	0.93	0.97
Entry Flow Rate [veh/h]	234	61	259	1213	596	113
Capacity of Entry and Bypass Lanes [veh/h]	826	826	1148	1148	1123	1123
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	794	794	1115	1073	1049	1090
X, volume / capacity	0.28	0.07	0.23	1.06	0.53	0.10

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	F	A	A
95th-Percentile Queue Length [veh]	1.17	0.24	0.87	24.73	3.23	0.33
95th-Percentile Queue Length [ft]	29.19	5.90	21.63	618.31	80.69	8.31
Approach Delay [s/veh]	7.23		52.49		8.97	
Approach LOS	A		F		A	
Intersection Delay [s/veh]	34.57					
Intersection LOS	D					

**Intersection Level Of Service Report
Intersection 14: Mary Jane Blvd & O'Leary St**

Control Type: Roundabout
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 4.7
 Level Of Service: A

Intersection Setup

Name	Mary Jane Blvd			Mary Jane Blvd			O'Leary St			O'Leary St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mary Jane Blvd			Mary Jane Blvd			O'Leary St			O'Leary St		
Base Volume Input [veh/h]	16	305	8	13	164	35	8	2	68	28	9	17
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	3.00	2.00	2.00	3.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	16	305	8	13	164	35	8	2	68	28	9	17
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	83	2	4	45	10	2	1	18	8	2	5
Total Analysis Volume [veh/h]	17	332	9	14	178	38	9	2	74	30	10	18
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	26			58			228			368		
Exiting Flow Rate [veh/h]	289			370			66			26		
Demand Flow Rate [veh/h]	16	305	8	13	164	35	8	2	68	28	9	17
Adjusted Demand Flow Rate [veh/h]	17	332	9	14	178	38	9	2	74	30	10	18

Lanes

Override Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.97	0.97	0.98	0.98
Entry Flow Rate [veh/h]	369	237	87	60
Capacity of Entry and Bypass Lanes [veh/h]	1345	1301	1094	948
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	1307	1266	1072	930
X, volume / capacity	0.27	0.18	0.08	0.06

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	1.12	0.66	0.26	0.20
95th-Percentile Queue Length [ft]	28.05	16.57	6.45	4.98
Approach Delay [s/veh]	5.16	4.38	4.04	4.44
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	4.73			
Intersection LOS	A			

**Intersection Level Of Service Report
Intersection 15: Mary Jane Blvd & Melrose PI**

Control Type: Roundabout
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 5.1
 Level Of Service: A

Intersection Setup

Name	Mary Jane Blvd			Mary Jane Blvd			Melrose PI			Melrose PI		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	⊕			⊕			⊕			⊕		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mary Jane Blvd			Mary Jane Blvd			Melrose PI			Melrose PI		
Base Volume Input [veh/h]	5	290	35	54	172	5	15	47	15	25	25	20
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.00	2.00	2.00	2.00	3.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	5	290	35	54	172	5	15	47	15	25	25	20
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	79	10	15	47	1	4	13	4	7	7	5
Total Analysis Volume [veh/h]	5	315	38	59	187	5	16	51	16	27	27	22
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	129			60			280			343		
Exiting Flow Rate [veh/h]	236			360			38			151		
Demand Flow Rate [veh/h]	5	290	35	54	172	5	15	47	15	25	25	20
Adjusted Demand Flow Rate [veh/h]	5	315	38	59	187	5	16	51	16	27	27	22

Lanes

Override Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.98	0.97	0.98	0.98
Entry Flow Rate [veh/h]	366	258	85	78
Capacity of Entry and Bypass Lanes [veh/h]	1211	1298	1037	973
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	1187	1264	1017	954
X, volume / capacity	0.30	0.20	0.08	0.08

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	1.28	0.74	0.27	0.26
95th-Percentile Queue Length [ft]	32.01	18.49	6.65	6.48
Approach Delay [s/veh]	5.85	4.55	4.26	4.50
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	5.12			
Intersection LOS	A			

**Intersection Level Of Service Report
Intersection 16: Mary Jane Blvd & England Blvd**

Control Type:	Roundabout	Delay (sec / veh):	10.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes		

Intersection Setup

Name	Mary Jane Blvd			Mary Jane Blvd			England Blvd			England Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mary Jane Blvd			Mary Jane Blvd			England Blvd			England Blvd		
Base Volume Input [veh/h]	136	142	46	19	123	50	87	358	62	46	350	6
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	3.00	2.00	2.00	3.00	2.00	2.00	8.00	2.00	2.00	4.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	136	142	46	19	123	50	87	358	62	46	350	6
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	37	39	13	5	33	14	24	97	17	13	95	2
Total Analysis Volume [veh/h]	148	154	50	21	134	54	95	389	67	50	380	7
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	538			597			210			406		
Exiting Flow Rate [veh/h]	257			263			601			493		
Demand Flow Rate [veh/h]	136	142	46	19	123	50	87	358	62	46	350	6
Adjusted Demand Flow Rate [veh/h]	148	154	50	21	134	54	95	389	67	50	380	7

Lanes

Override Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.98	0.97	0.94	0.96
Entry Flow Rate [veh/h]	361	215	585	454
Capacity of Entry and Bypass Lanes [veh/h]	797	751	1114	912
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	778	732	1049	879
X, volume / capacity	0.45	0.29	0.53	0.50

Movement, Approach, & Intersection Results

Lane LOS	B	A	A	B
95th-Percentile Queue Length [veh]	2.37	1.18	3.16	2.82
95th-Percentile Queue Length [ft]	59.34	29.48	79.01	70.58
Approach Delay [s/veh]	10.66	8.31	9.79	10.57
Approach LOS	B	A	A	B
Intersection Delay [s/veh]	10.01			
Intersection LOS	B			

**Intersection Level Of Service Report
Intersection 17: Mary Jane Blvd & Camden St**

Control Type: Roundabout
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 4.3
 Level Of Service: A

Intersection Setup

Name	Mary Jane Blvd			Mary Jane Blvd			Camden St			Camden St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	⊕			⊕			⊕			⊕		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mary Jane Blvd			Mary Jane Blvd			Camden St			Camden St		
Base Volume Input [veh/h]	19	213	3	8	147	18	42	12	33	12	13	6
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	3.00	2.00	2.00	3.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	19	213	3	8	147	18	42	12	33	12	13	6
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	58	1	2	40	5	11	3	9	3	4	2
Total Analysis Volume [veh/h]	21	232	3	9	160	20	46	13	36	13	14	7
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	69			49			187			307		
Exiting Flow Rate [veh/h]	215			293			56			26		
Demand Flow Rate [veh/h]	19	213	3	8	147	18	42	12	33	12	13	6
Adjusted Demand Flow Rate [veh/h]	21	232	3	9	160	20	46	13	36	13	14	7

Lanes

Override Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.97	0.97	0.98	0.98
Entry Flow Rate [veh/h]	264	195	97	35
Capacity of Entry and Bypass Lanes [veh/h]	1286	1313	1141	1009
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	1250	1277	1118	989
X, volume / capacity	0.20	0.15	0.08	0.03

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	0.77	0.52	0.28	0.11
95th-Percentile Queue Length [ft]	19.21	12.99	6.95	2.67
Approach Delay [s/veh]	4.65	4.05	3.94	3.94
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	4.29			
Intersection LOS	A			

**Intersection Level Of Service Report
Intersection 18: Mary Jane Blvd & Flynn Ln**

Control Type: Roundabout
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 5.4
 Level Of Service: A

Intersection Setup

Name	Mary Jane Blvd			Mary Jane Blvd			Flynn Ln			Flynn Ln		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mary Jane Blvd			Mary Jane Blvd			Flynn Ln			Flynn Ln		
Base Volume Input [veh/h]	15	193	54	44	133	30	75	116	10	30	73	37
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	3.00	2.00	2.00	3.00	2.00	2.00	3.00	2.00	2.00	4.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	15	193	54	44	133	30	75	116	10	30	73	37
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	52	15	12	36	8	20	32	3	8	20	10
Total Analysis Volume [veh/h]	16	210	59	48	145	33	82	126	11	33	79	40
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	262			132			232			316		
Exiting Flow Rate [veh/h]	194			341			132			239		
Demand Flow Rate [veh/h]	15	193	54	44	133	30	75	116	10	30	73	37
Adjusted Demand Flow Rate [veh/h]	16	210	59	48	145	33	82	126	11	33	79	40

Lanes

Override Calculated Critical Headway	No			No			No			No		
User-Defined Critical Headway [s]	4.00			4.00			4.00			4.00		
Override Calculated Follow-Up Time	No			No			No			No		
User-Defined Follow-Up Time [s]	3.00			3.00			3.00			3.00		
A (intercept)	1380.00			1380.00			1380.00			1380.00		
B (coefficient)	0.00102			0.00102			0.00102			0.00102		
HV Adjustment Factor	0.97			0.97			0.97			0.97		
Entry Flow Rate [veh/h]	293			232			225			157		
Capacity of Entry and Bypass Lanes [veh/h]	1056			1206			1090			1000		
Pedestrian Impedance	1.00			1.00			1.00			1.00		
Capacity per Entry Lane [veh/h]	1028			1175			1062			971		
X, volume / capacity	0.28			0.19			0.21			0.16		

Movement, Approach, & Intersection Results

Lane LOS	A			A			A			A		
95th-Percentile Queue Length [veh]	1.14			0.71			0.77			0.55		
95th-Percentile Queue Length [ft]	28.43			17.76			19.34			13.86		
Approach Delay [s/veh]	6.23			4.75			5.30			5.18		
Approach LOS	A			A			A			A		
Intersection Delay [s/veh]	5.44											
Intersection LOS	A											

**Intersection Level Of Service Report
Intersection 19: Mary Jane Blvd & Veteran's Way**

Control Type:	Roundabout	Delay (sec / veh):	4.9
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	Mary Jane Blvd			Mary Jane Blvd			Veteran's Way			Veteran's Way		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mary Jane Blvd			Mary Jane Blvd			Veteran's Way			Veteran's Way		
Base Volume Input [veh/h]	9	294	0	0	204	101	21	0	2	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	3.00	2.00	2.00	3.00	2.00	20.00	2.00	20.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	9	294	0	0	204	101	21	0	2	0	0	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	80	0	0	55	27	6	0	1	0	0	0
Total Analysis Volume [veh/h]	10	320	0	0	222	110	23	0	2	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	28			10			229			367		
Exiting Flow Rate [veh/h]	231			357			122			0		
Demand Flow Rate [veh/h]	9	294	0	0	204	101	21	0	2	0	0	0
Adjusted Demand Flow Rate [veh/h]	10	320	0	0	222	110	23	0	2	0	0	0

Lanes

Override Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.97	0.97	0.83	0.98
Entry Flow Rate [veh/h]	340	341	30	0
Capacity of Entry and Bypass Lanes [veh/h]	1342	1366	1093	949
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	1303	1331	911	931
X, volume / capacity	0.25	0.25	0.03	0.00




Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	1.01	0.99	0.08	0.00
95th-Percentile Queue Length [ft]	25.23	24.75	2.12	0.00
Approach Delay [s/veh]	4.96	4.85	4.20	3.87
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	4.88			
Intersection LOS	A			

**Intersection Level Of Service Report
Intersection 20: Mary Jane Blvd & W Broadway St**

Control Type:	Roundabout	Delay (sec / veh):	15.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes		

Intersection Setup

Name	Mary Jane Blvd		W Broadway St		W Broadway St	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Mary Jane Blvd		W Broadway St		W Broadway St	
Base Volume Input [veh/h]	248	68	1247	142	164	656
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.00	3.00	8.00	3.00	3.00	15.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	248	68	1247	142	164	656
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	67	18	339	39	45	178
Total Analysis Volume [veh/h]	270	74	1355	154	178	713
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Number of Conflicting Circulating Lanes	2		1		1	
Circulating Flow Rate [veh/h]	1463		183		278	
Exiting Flow Rate [veh/h]	342		1098		1540	
Demand Flow Rate [veh/h]	248	68	1247	142	164	656
Adjusted Demand Flow Rate [veh/h]	270	74	1355	154	178	713

Lanes

Override Calculated Critical Headway	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1350.00	1420.00	1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00092	0.00085	0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	0.97	0.97	0.93	0.93	0.89	0.87
Entry Flow Rate [veh/h]	279	77	766	860	471	544
Capacity of Entry and Bypass Lanes [veh/h]	352	410	1202	1202	1103	1103
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	342	398	1113	1119	982	959
X, volume / capacity	0.79	0.19	0.64	0.72	0.43	0.49

Movement, Approach, & Intersection Results

Lane LOS	E	B	B	B	A	A
95th-Percentile Queue Length [veh]	6.56	0.68	4.81	6.48	2.17	2.78
95th-Percentile Queue Length [ft]	163.97	16.88	120.33	161.96	54.19	69.62
Approach Delay [s/veh]	37.78		13.25		9.20	
Approach LOS	E		B		A	
Intersection Delay [s/veh]	15.01					
Intersection LOS	C					

**Intersection Level Of Service Report
Intersection 21: Flynn Ln & W Broadway St**

Control Type:	Roundabout	Delay (sec / veh):	14.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes		

Intersection Setup

Name	Flynn Ln		W Broadway St		W Broadway St	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↻		↻		↻	
Turning Movement	Left	Thru	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	1	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	890.00	0.00	0.00
Speed [mph]	25.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Flynn Ln		W Broadway St		W Broadway St	
Base Volume Input [veh/h]	0	359	1180	146	0	819
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	8.00	2.00	0.00	15.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	359	1180	146	0	819
Peak Hour Factor	0.7900	0.9200	0.9200	0.9200	0.7900	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	98	321	40	0	223
Total Analysis Volume [veh/h]	0	390	1283	159	0	890
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Number of Conflicting Circulating Lanes	2		1		1	
Circulating Flow Rate [veh/h]	1386		0		0	
Exiting Flow Rate [veh/h]	162		1023		1776	
Demand Flow Rate [veh/h]	0	359	1180	146	0	819
Adjusted Demand Flow Rate [veh/h]	0	390	1283	159	0	890

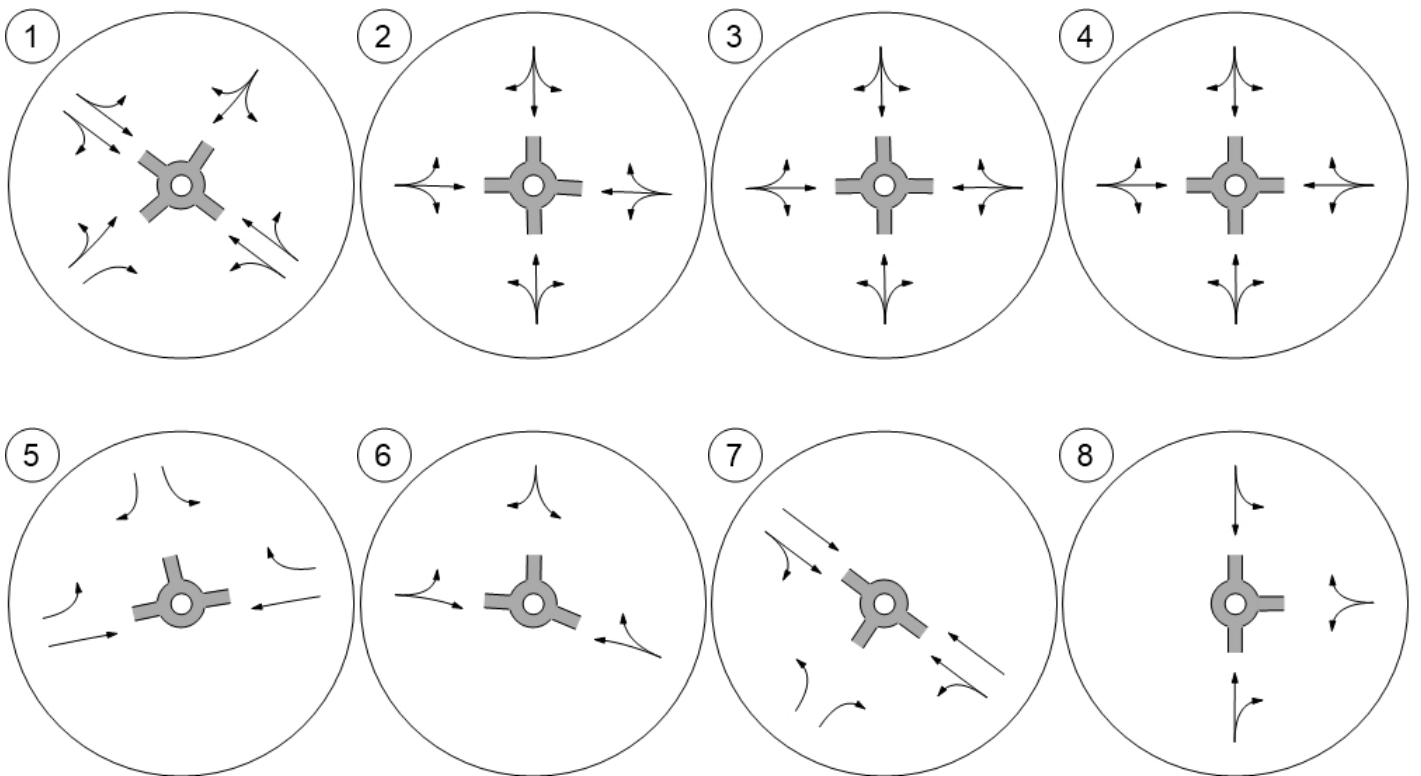
Lanes

Override Calculated Critical Headway	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00
A (intercept)	1420.00	1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00085	0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	1.00	0.93	0.93	0.87	0.87
Entry Flow Rate [veh/h]	390	732	821	482	543
Capacity of Entry and Bypass Lanes [veh/h]	438	1420	1420	1420	1420
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	438	1315	1324	1235	1235
X, volume / capacity	0.89	0.52	0.58	0.34	0.38

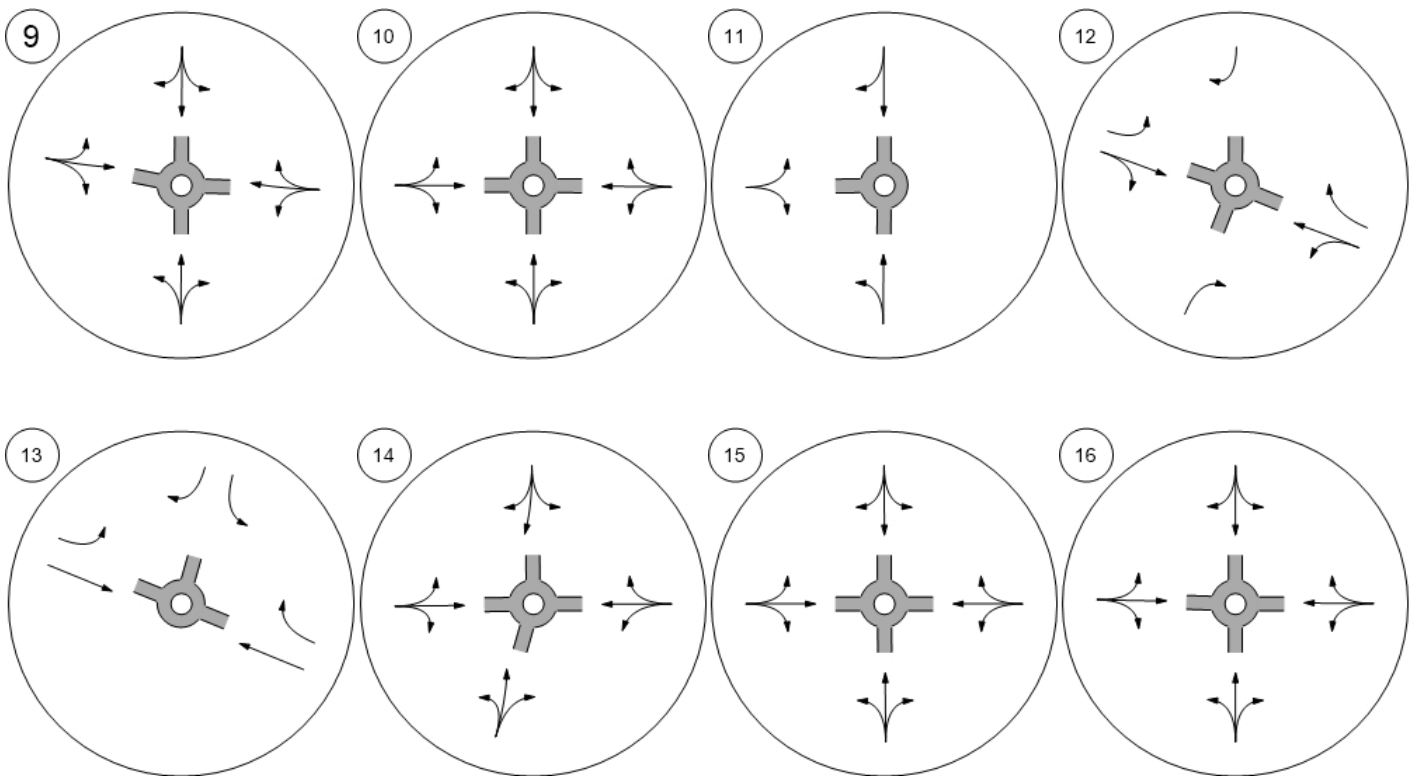
Movement, Approach, & Intersection Results

Lane LOS	F	A	A	A	A
95th-Percentile Queue Length [veh]	9.49	3.07	3.89	1.51	1.82
95th-Percentile Queue Length [ft]	237.33	76.82	97.13	37.86	45.49
Approach Delay [s/veh]	50.77	8.76		6.37	
Approach LOS	F	A		A	
Intersection Delay [s/veh]	14.00				
Intersection LOS	B				

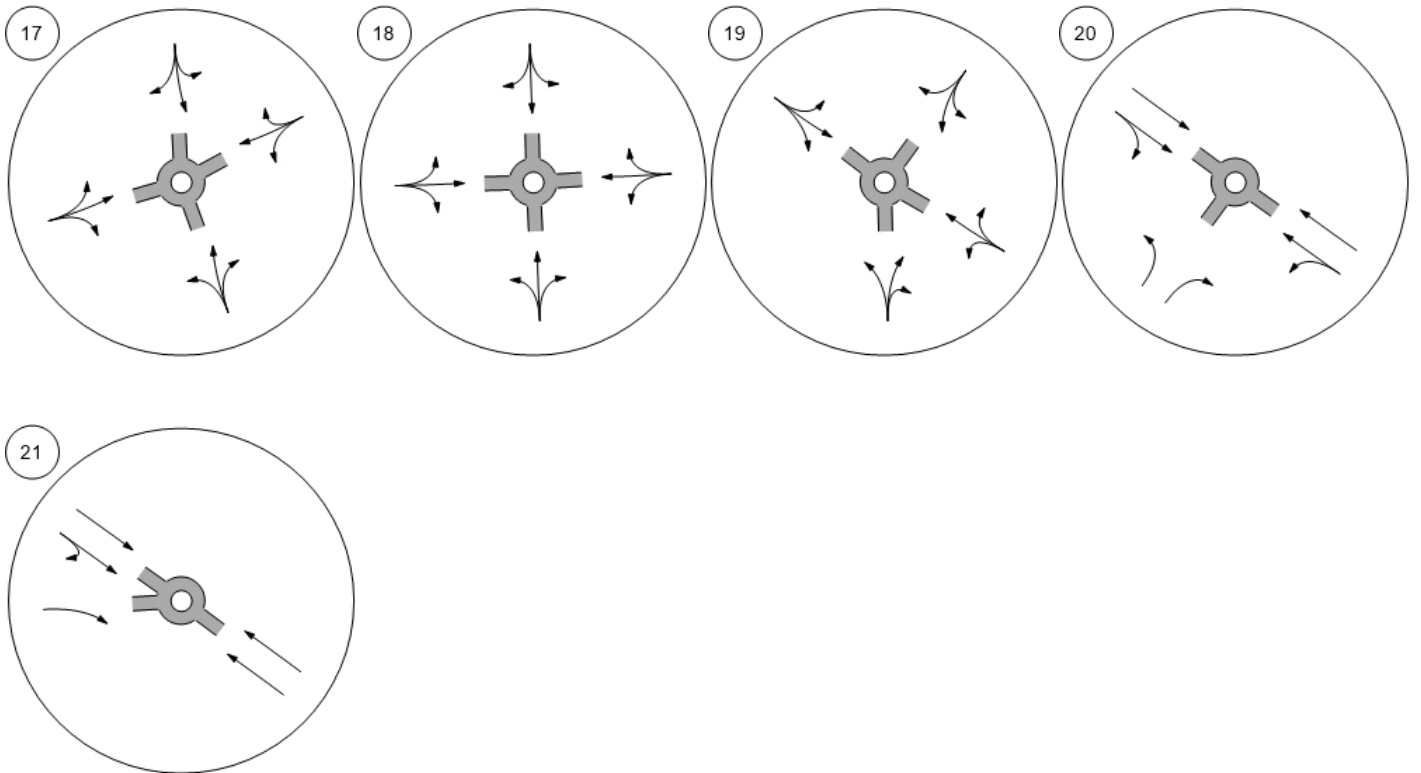
Lane Configuration and Traffic Control



Lane Configuration and Traffic Control



Lane Configuration and Traffic Control





Option 1: WB T/L & EB T/R

Number	5					
Intersection	George Elmer Dr & Mullan Rd					
Control Type	Roundabout					
Analysis Method	HCM 6th Edition					
Name	George Elmer Dr		Mullan Rd		Mullan Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Base Volume Input [veh/h]	222	50	253	1259	405	85
Total Analysis Volume [veh/h]	236	53	269	1339	431	90

Intersection Settings

Number of Conflicting Circulating Lanes	2		1		1	
Circulating Flow Rate [veh/h]	478		241		404	
Exiting Flow Rate [veh/h]	502		538		1607	
Demand Flow Rate [veh/h]	222	50	253	1259	405	85
Adjusted Demand Flow Rate [veh/h]	236	53	269	1339	431	90

Lanes

Overwrite Calculated Critical Headway	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1350.00	1420.00	1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00092	0.00085	0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	0.98	0.89	0.93	0.98	0.90	0.90
Entry Flow Rate [veh/h]	241	60	815	870	272	306
Capacity of Entry and Bypass Lanes [veh/h]	870	946	1141	1141	984	984
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	853	845	1059	1119	887	889
X, volume / capacity	0.28	0.06	0.71	0.76	0.28	0.31

Movement, Approach, & Intersection Results

Average Lane Delay [s/veh]	7.22	4.86	14.97	16.50	6.99	7.42
Lane LOS	A	A	B	C	A	A
95th-Percentile Queue Length [veh]	1.13	0.20	6.41	7.79	1.13	1.33
95th-Percentile Queue Length [ft]	28.30	5.01	160.16	194.67	28.24	33.22
Approach Delay [s/veh]	6.79		15.78		7.22	
Approach LOS	A		C		A	
Intersection Delay [s/veh]	12.86					
Intersection LOS	B					

Option 1: Dual Through Lanes WB & EB

Number	12											
Intersection	Flynn Ln & Mullan Rd											
Control Type	Roundabout											
Analysis Method	HCM 6th Edition											
Name				Flynn Ln			Mullan Rd			Mullan Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↱			↱			⬆️⬆️			⬆️⬆️		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Base Volume Input [veh/h]	0	0	1	0	0	106	200	1272	1	1	395	197
Total Analysis Volume [veh/h]	0	0	1	0	0	115	217	1383	1	1	429	214

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	1701			460			1			221		
Exiting Flow Rate [veh/h]	2			440			576			1481		
Demand Flow Rate [veh/h]	0	0	1	0	0	106	200	1272	1	1	395	197
Adjusted Demand Flow Rate [veh/h]	0	0	1	0	0	115	217	1383	1	1	429	214

Lanes

Override Calculated Critical Headway	No			No			No	No	No	No
User-Defined Critical Headway [s]	4.00			4.00			4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No			No			No	No	No	No
User-Defined Follow-Up Time [s]	3.00			3.00			3.00	3.00	3.00	3.00
A (intercept)	1380.00			1380.00			1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00102			0.00102			0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	0.98			0.98			0.94	0.93	0.93	0.95
Entry Flow Rate [veh/h]	2			118			800	908	324	360
Capacity of Entry and Bypass Lanes [veh/h]	244			864			1419	1419	1161	1161
Pedestrian Impedance	1.00			1.00			1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	239			847			1335	1326	1086	1103
X, volume / capacity	0.00			0.14			0.56	0.64	0.28	0.31

Movement, Approach, & Intersection Results

Average Lane Delay [s/veh]	15.17			5.60			8.94	10.60	5.99	6.27		
Lane LOS	C			A			A	B	A	A		
95th-Percentile Queue Length [veh]	0.01			0.47			3.69	4.93	1.15	1.33		
95th-Percentile Queue Length [ft]	0.32			11.74			92.25	123.14	28.68	33.16		
Approach Delay [s/veh]	15.17			5.60			9.82		6.14			
Approach LOS	C			A			A		A			
Intersection Delay [s/veh]	8.61											
Intersection LOS	A											



Option 1: WB T/R & EB T/L

Number	13					
Intersection	Mary Jane Blvd & Mullan Rd					
Control Type	Roundabout					
Analysis Method	HCM 6th Edition					
Name	Mary Jane Blvd		Mullan Rd		Mullan Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Base Volume Input [veh/h]	207	53	231	1042	512	100
Total Analysis Volume [veh/h]	225	58	251	1133	557	109

Intersection Settings

Number of Conflicting Circulating Lanes	2		1		1	
Circulating Flow Rate [veh/h]	585		230		264	
Exiting Flow Rate [veh/h]	375		654		1374	
Demand Flow Rate [veh/h]	207	53	231	1042	512	100
Adjusted Demand Flow Rate [veh/h]	225	58	251	1133	557	109

Lanes

Override Calculated Critical Headway	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1350.00	1420.00	1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00092	0.00085	0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	0.98	0.83	0.98	0.99	0.95	0.96
Entry Flow Rate [veh/h]	230	70	662	741	329	369
Capacity of Entry and Bypass Lanes [veh/h]	789	864	1153	1153	1118	1118
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	773	720	1134	1141	1065	1070
X, volume / capacity	0.29	0.08	0.57	0.64	0.29	0.33

Movement, Approach, & Intersection Results

Average Lane Delay [s/veh]	8.02	5.84	10.24	11.86	6.26	6.67
Lane LOS	A	A	B	B	A	A
95th-Percentile Queue Length [veh]	1.21	0.26	3.80	4.92	1.23	1.46
95th-Percentile Queue Length [ft]	30.27	6.55	95.10	123.12	30.86	36.38
Approach Delay [s/veh]	7.57		11.10		6.48	
Approach LOS	A		B		A	
Intersection Delay [s/veh]	9.35					
Intersection LOS	A					

Mullan BUILD - 2050 AM

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Scenario 4 Signal (2050)

Report File: H:\...\24667_AM2050_SIGNAL.pdf

7/21/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	George Elmer Dr & W Broadway St	Signalized	HCM 6th Edition	NB Left	0.717	34.3	C
2	George Elmer Dr & England Blvd	Signalized	HCM 6th Edition	SB Left	0.522	21.1	C
5	George Elmer Dr & Mullan Rd	Signalized	HCM 6th Edition	SB Left	0.919	207.1	F
7	Doughtery Dr & W Broadway St	Signalized	HCM 6th Edition	NB Right	0.689	19.5	B
9	Flynn Ln & England Blvd	Signalized	HCM 6th Edition	NB Right	0.481	15.8	B
12	Flynn Ln & Mullan Rd	Signalized	HCM 6th Edition	SB Right	0.897	9.2	A
13	Mary Jane Blvd & Mullan Rd	Signalized	HCM 6th Edition	SB Left	0.762	180.2	F
16	Mary Jane Blvd & England Blvd	Signalized	HCM 6th Edition	NB Left	0.450	18.9	B
20	Mary Jane Blvd & W Broadway St	Signalized	HCM 6th Edition	NB Left	0.711	18.9	B
21	Flynn Ln & W Broadway St	Signalized	HCM 6th Edition	NB Thru	0.758	11.9	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: George Elmer Dr & W Broadway St

Control Type:	Signalized	Delay (sec / veh):	34.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.717

Intersection Setup

Name	George Elmer Dr			Commercial Access			W Broadway St			W Broadway St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00
Speed [mph]	30.00			30.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	George Elmer Dr			Commercial Access			W Broadway St			W Broadway St		
Base Volume Input [veh/h]	318	1	203	1	1	1	1	1066	125	72	757	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.00	2.00	4.00	2.00	2.00	2.00	4.00	8.00	2.00	4.00	15.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	318	1	203	1	1	1	1	1066	125	72	757	1
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	86	0	55	0	0	0	0	290	34	20	206	0
Total Analysis Volume [veh/h]	346	1	221	1	1	1	1	1159	136	78	823	1
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	ProtPer	Permis	Permis	ProtPer	Permis	Permis
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	4.0	0.0	0.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
All red [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Split [s]	0	54	0	0	54	0	11	33	0	33	55	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	5	7	0	7	7	0
Pedestrian Clearance [s]	0	20	0	0	20	0	10	20	0	20	20	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	4.0	0.0	0.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	4.00	0.00	4.00	4.00	0.00	4.00	4.00
g_i, Effective Green Time [s]	43	43	43	65	55	55	65	59	59
g / C, Green / Cycle	0.36	0.36	0.36	0.54	0.46	0.46	0.54	0.49	0.49
(v / s)_i Volume / Saturation Flow Rate	0.25	0.15	0.00	0.00	0.37	0.09	0.12	0.28	0.00
s, saturation flow rate [veh/h]	1392	1465	1028	715	3121	1464	627	2937	1464
c, Capacity [veh/h]	338	519	404	351	1428	670	278	1453	724
d1, Uniform Delay [s]	42.19	29.51	25.70	14.62	28.10	19.47	20.18	21.29	15.34
k, delay calibration	0.17	0.11	0.11	0.50	0.50	0.50	0.11	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	34.06	0.56	0.01	0.01	5.13	0.68	0.54	1.61	0.00
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.02	0.43	0.01	0.00	0.81	0.20	0.28	0.57	0.00
d, Delay for Lane Group [s/veh]	76.25	30.07	25.71	14.64	33.22	20.16	20.72	22.90	15.34
Lane Group LOS	F	C	C	B	C	C	C	C	B
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	12.93	4.94	0.06	0.01	14.04	2.24	0.96	7.69	0.01
50th-Percentile Queue Length [ft/ln]	323.26	123.61	1.42	0.32	350.91	56.12	23.94	192.26	0.34
95th-Percentile Queue Length [veh/ln]	19.10	8.59	0.10	0.02	20.18	4.04	1.72	12.24	0.02
95th-Percentile Queue Length [ft/ln]	477.60	214.78	2.55	0.57	504.52	101.02	43.10	305.96	0.61

Movement, Approach, & Intersection Results

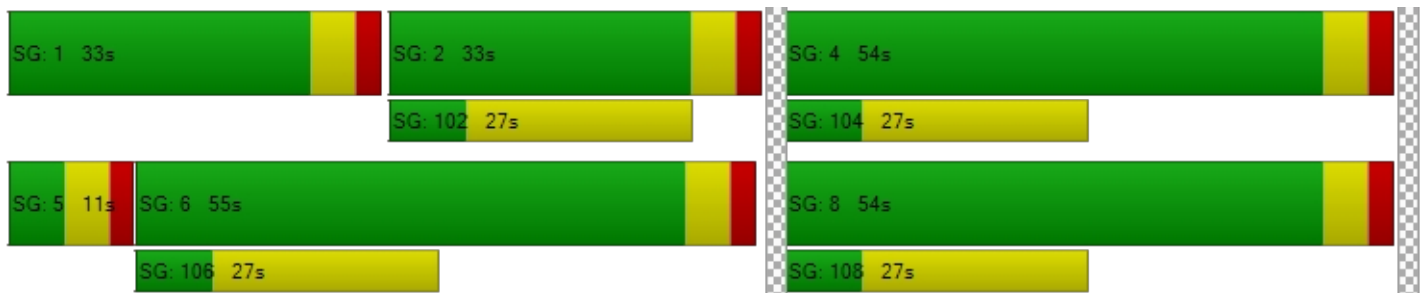
d_M, Delay for Movement [s/veh]	76.25	30.07	30.07	25.71	25.71	25.71	14.64	33.22	20.16	20.72	22.90	15.34
Movement LOS	F	C	C	C	C	C	B	C	C	C	C	B
d_A, Approach Delay [s/veh]	58.20			25.71			31.84			22.70		
Approach LOS	E			C			C			C		
d_I, Intersection Delay [s/veh]	34.26											
Intersection LOS	C											
Intersection V/C	0.717											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	49.50			49.50			49.50			49.50		
I_p,int, Pedestrian LOS Score for Intersection	2.261			1.732			3.693			3.192		
Crosswalk LOS	B			A			D			C		
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	800			800			450			817		
d_b, Bicycle Delay [s]	21.60			21.60			36.04			21.00		
I_b,int, Bicycle LOS Score for Intersection	2.497			1.565			2.629			2.304		
Bicycle LOS	B			A			B			B		

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report
Intersection 2: George Elmer Dr & England Blvd**

Control Type:	Signalized	Delay (sec / veh):	21.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.522

Intersection Setup

Name	George Elmer Dr			George Elmer Dr			England Blvd			England Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	⇌			⇌			⇌			⇌		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	George Elmer Dr			George Elmer Dr			England Blvd			England Blvd		
Base Volume Input [veh/h]	30	289	50	50	100	50	160	311	60	25	299	75
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	4.00	2.00	2.00	4.00	2.00	2.00	8.00	2.00	2.00	4.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	30	289	50	50	100	50	160	311	60	25	299	75
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	79	14	14	27	14	43	85	16	7	81	20
Total Analysis Volume [veh/h]	33	314	54	54	109	54	174	338	65	27	325	82
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lag	-	-	Lead	-	-	Lag	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	15	20	0	15	20	0	15	20	0	15	20	0
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
All red [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Split [s]	96	32	0	96	32	0	96	58	0	96	58	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	7	7	0	7	7	0	0	7	0	7	7	0
Pedestrian Clearance [s]	10	10	0	15	10	0	0	10	0	10	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	L	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
g_i, Effective Green Time [s]	26	26	26	26	52	52	52	52
g / C, Green / Cycle	0.29	0.29	0.29	0.29	0.58	0.58	0.58	0.58
(v / s)_i Volume / Saturation Flow Rate	0.03	0.22	0.05	0.10	0.18	0.25	0.03	0.25
s, saturation flow rate [veh/h]	1223	1652	1014	1601	978	1594	982	1637
c, Capacity [veh/h]	301	475	139	460	490	923	489	948
d1, Uniform Delay [s]	30.99	29.36	42.14	25.40	18.44	10.65	15.75	10.59
k, delay calibration	0.11	0.24	0.11	0.11	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.16	5.91	1.78	0.46	2.01	1.50	0.22	1.42
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.11	0.78	0.39	0.35	0.36	0.44	0.06	0.43
d, Delay for Lane Group [s/veh]	31.15	35.27	43.92	25.87	20.45	12.15	15.97	12.01
Lane Group LOS	C	D	D	C	C	B	B	B
Critical Lane Group	No	Yes	No	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.61	7.83	1.25	2.76	2.74	4.51	0.35	4.52
50th-Percentile Queue Length [ft/ln]	15.22	195.84	31.13	69.07	68.43	112.73	8.86	112.91
95th-Percentile Queue Length [veh/ln]	1.10	12.42	2.24	4.97	4.93	7.99	0.64	8.00
95th-Percentile Queue Length [ft/ln]	27.40	310.59	56.03	124.33	123.17	199.79	15.95	200.04

Movement, Approach, & Intersection Results

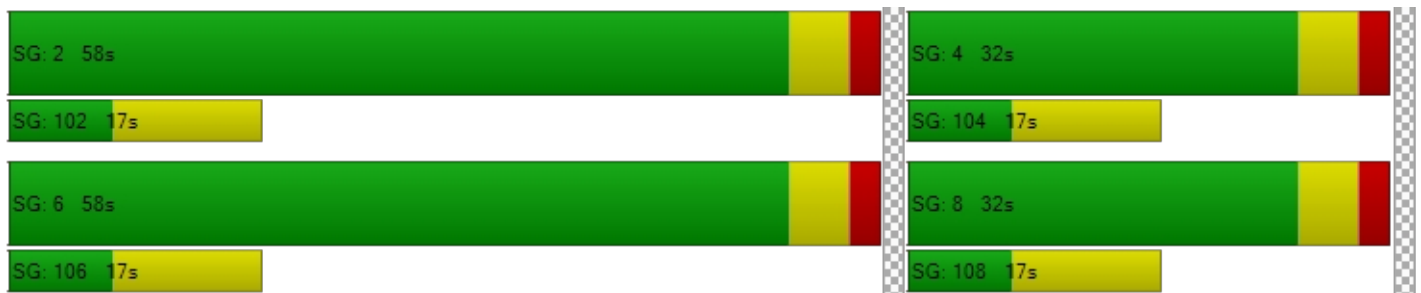
d_M, Delay for Movement [s/veh]	31.15	35.27	35.27	43.92	25.87	25.87	20.45	12.15	12.15	15.97	12.01	12.01
Movement LOS	C	D	D	D	C	C	C	B	B	B	B	B
d_A, Approach Delay [s/veh]	34.93			30.36			14.66			12.26		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]	21.10											
Intersection LOS	C											
Intersection V/C	0.522											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	34.67			34.67			34.67			34.67		
I_p,int, Pedestrian LOS Score for Intersection	2.174			2.443			2.308			2.303		
Crosswalk LOS	B			B			B			B		
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	578			578			1156			1156		
d_b, Bicycle Delay [s]	22.76			22.76			8.02			8.02		
I_b,int, Bicycle LOS Score for Intersection	2.221			1.918			2.512			2.276		
Bicycle LOS	B			A			B			B		

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 5: George Elmer Dr & Mullan Rd

Control Type:	Signalized	Delay (sec / veh):	207.1
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.919

Intersection Setup

Name	George Elmer Dr		Mullan Rd		Mullan Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration	↔↔		↔↑		↑↔	
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	325.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	George Elmer Dr		Mullan Rd		Mullan Rd	
Base Volume Input [veh/h]	222	50	253	1259	405	85
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.00	4.00	4.00	7.00	7.00	4.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	222	50	253	1259	405	85
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	60	14	69	342	110	23
Total Analysis Volume [veh/h]	241	54	275	1368	440	92
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0		0		0	
v_di, Inbound Pedestrian Volume crossing major street	0		0		0	
v_co, Outbound Pedestrian Volume crossing minor street	0		0		0	
v_ci, Inbound Pedestrian Volume crossing minor street	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	ProtPerm	Permissive	Permissive	Permissive
Signal Group	8	8	5	2	6	6
Auxiliary Signal Groups						
Lead / Lag	Lead	-	Lag	-	-	-
Minimum Green [s]	5	5	5	5	5	5
Maximum Green [s]	30	30	30	30	30	30
Amber [s]	4.0	4.0	4.0	4.0	4.0	4.0
All red [s]	2.0	2.0	2.0	2.0	2.0	2.0
Split [s]	113	113	87	120	33	33
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	7	7	0	7	7	7
Pedestrian Clearance [s]	20	20	0	20	20	20
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Recall	No		No	No	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	L	C	C	R
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	0.00	0.00	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	2.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	0.00	0.00	4.00	4.00	4.00
g_i, Effective Green Time [s]	0	0	9	114	103	103
g / C, Green / Cycle	0.00	0.00	0.08	0.95	0.86	0.86
(v / s)_i Volume / Saturation Flow Rate	0.94	0.04	0.51	0.83	0.27	0.06
s, saturation flow rate [veh/h]	256	1440	544	1653	1653	1440
c, Capacity [veh/h]	60	0	128	1570	1418	1236
d1, Uniform Delay [s]	59.95	0.00	0.31	0.87	1.65	1.29
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1394.90	0.00	541.89	6.92	0.57	0.12
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	4.01	10000.00	2.15	0.87	0.31	0.07
d, Delay for Lane Group [s/veh]	1454.85	0.00	542.21	7.79	2.22	1.41
Lane Group LOS	F	F	F	A	A	A
Critical Lane Group	No	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	25.27	0.00	19.27	3.02	0.92	0.15
50th-Percentile Queue Length [ft/ln]	631.68	0.00	481.68	75.45	23.06	3.86
95th-Percentile Queue Length [veh/ln]	33.51	0.00	31.45	5.43	1.66	0.28
95th-Percentile Queue Length [ft/ln]	837.78	0.00	786.28	135.81	41.50	6.96

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	1454.85	0.00	542.21	7.79	2.22	1.41
Movement LOS	F	A	F	A	A	A
d_A, Approach Delay [s/veh]	1188.54		97.24		2.08	
Approach LOS	F		F		A	
d_I, Intersection Delay [s/veh]	207.08					
Intersection LOS	F					
Intersection V/C	0.919					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.50	49.50	49.50
I_p,int, Pedestrian LOS Score for Intersection	2.189	2.996	3.341
Crosswalk LOS	B	C	C
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	1900	450
d_b, Bicycle Delay [s]	60.00	0.15	36.04
I_b,int, Bicycle LOS Score for Intersection	1.560	4.271	2.437
Bicycle LOS	A	E	B

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 7: Dougherty Dr & W Broadway St

Control Type:	Signalized	Delay (sec / veh):	19.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.689

Intersection Setup

Name	Dougherty Dr		W Broadway St		W Broadway St	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↔↔		↑↑↔		↔↑↑	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	100.00
Speed [mph]	30.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		No	

Volumes

Name	Dougherty Dr		W Broadway St		W Broadway St	
Base Volume Input [veh/h]	116	250	1139	130	150	713
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	8.00	2.00	2.00	15.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	116	250	1139	130	150	713
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	32	68	310	35	41	194
Total Analysis Volume [veh/h]	126	272	1238	141	163	775
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0		0		0	
v_di, Inbound Pedestrian Volume crossing major street [	0		0		0	
v_co, Outbound Pedestrian Volume crossing minor street	0		0		0	
v_ci, Inbound Pedestrian Volume crossing minor street [	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Permissive	Permissive	ProtPerm	Permissive
Signal Group	8	8	2	2	1	6
Auxiliary Signal Groups						
Lead / Lag	Lag	-	-	-	Lead	-
Minimum Green [s]	5	5	5	5	5	5
Maximum Green [s]	30	30	30	30	30	30
Amber [s]	4.0	4.0	4.0	4.0	4.0	4.0
All red [s]	2.0	2.0	2.0	2.0	2.0	2.0
Split [s]	78	78	31	31	11	42
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	4.00	4.00	0.00	4.00
g_i, Effective Green Time [s]	25	25	72	72	83	83
g / C, Green / Cycle	0.21	0.21	0.60	0.60	0.69	0.69
(v / s)_i Volume / Saturation Flow Rate	0.08	0.19	0.40	0.10	0.28	0.26
s, saturation flow rate [veh/h]	1640	1464	3121	1464	580	2937
c, Capacity [veh/h]	339	302	1876	880	369	2037
d1, Uniform Delay [s]	40.92	46.39	15.82	10.56	13.03	7.65
k, delay calibration	0.11	0.11	0.50	0.50	0.49	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.68	9.56	1.84	0.39	3.76	0.54
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.37	0.90	0.66	0.16	0.44	0.38
d, Delay for Lane Group [s/veh]	41.59	55.95	17.66	10.95	16.79	8.19
Lane Group LOS	D	E	B	B	B	A
Critical Lane Group	No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	3.28	8.67	9.98	1.54	1.51	3.41
50th-Percentile Queue Length [ft/ln]	81.98	216.83	249.61	38.52	37.66	85.37
95th-Percentile Queue Length [veh/ln]	5.90	13.50	15.17	2.77	2.71	6.15
95th-Percentile Queue Length [ft/ln]	147.57	337.57	379.16	69.34	67.80	153.67

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	41.59	55.95	17.66	10.95	16.79	8.19
Movement LOS	D	E	B	B	B	A
d_A, Approach Delay [s/veh]	51.41		16.98		9.69	
Approach LOS	D		B		A	
d_I, Intersection Delay [s/veh]	19.51					
Intersection LOS	B					
Intersection V/C	0.689					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000
Crosswalk LOS	F	F	F
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1200	417	600
d_b, Bicycle Delay [s]	9.60	37.60	29.40
I_b,int, Bicycle LOS Score for Intersection	1.560	2.697	2.333
Bicycle LOS	A	B	B

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report
Intersection 9: Flynn Ln & England Blvd**

Control Type:	Signalized	Delay (sec / veh):	15.8
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.481

Intersection Setup

Name	Flynn Ln			Flynn Ln			England Blvd			England Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			T			T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			25.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Flynn Ln			Flynn Ln			England Blvd			England Blvd		
Base Volume Input [veh/h]	15	72	73	55	29	19	33	378	34	142	320	75
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	8.00	2.00	2.00	4.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	15	72	73	55	29	19	33	378	34	142	320	75
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	20	20	15	8	5	9	103	9	39	87	20
Total Analysis Volume [veh/h]	16	78	79	60	32	21	36	411	37	154	348	82
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	ProtPer	Permis	Permis	ProtPer	Permis	Permis
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	4.0	0.0	0.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
All red [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Split [s]	0	33	0	0	33	0	17	80	0	7	70	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	20	0	0	20	0	0	20	0	0	20	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	4.0	0.0	0.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	C	L	C
C, Cycle Length [s]	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	0.00	4.00	0.00	4.00
g_i, Effective Green Time [s]	12	12	67	56	67	57
g / C, Green / Cycle	0.13	0.13	0.74	0.62	0.74	0.64
(v / s)_i Volume / Saturation Flow Rate	0.11	0.10	0.04	0.28	0.15	0.26
s, saturation flow rate [veh/h]	1629	1118	821	1616	1036	1640
c, Capacity [veh/h]	253	205	697	996	734	1045
d1, Uniform Delay [s]	38.32	37.60	4.10	9.18	4.72	8.03
k, delay calibration	0.11	0.11	0.50	0.50	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.25	2.31	0.14	1.47	0.14	1.20
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.68	0.55	0.05	0.45	0.21	0.41
d, Delay for Lane Group [s/veh]	41.56	39.91	4.24	10.65	4.86	9.22
Lane Group LOS	D	D	A	B	A	A
Critical Lane Group	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	3.93	2.53	0.16	4.55	0.65	3.94
50th-Percentile Queue Length [ft/ln]	98.37	63.26	4.04	113.86	16.23	98.45
95th-Percentile Queue Length [veh/ln]	7.08	4.55	0.29	8.05	1.17	7.09
95th-Percentile Queue Length [ft/ln]	177.06	113.87	7.27	201.36	29.22	177.21

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	41.56	41.56	41.56	39.91	39.91	39.91	4.24	10.65	10.65	4.86	9.22	9.22
Movement LOS	D	D	D	D	D	D	A	B	B	A	A	A
d_A, Approach Delay [s/veh]	41.56			39.91			10.17			8.07		
Approach LOS	D			D			B			A		
d_I, Intersection Delay [s/veh]	15.76											
Intersection LOS	B											
Intersection V/C	0.481											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.67	34.67	34.67	34.67
I_p,int, Pedestrian LOS Score for Intersection	2.015	1.874	2.245	2.394
Crosswalk LOS	B	A	B	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	600	600	1644	1422
d_b, Bicycle Delay [s]	22.05	22.05	1.42	3.76
I_b,int, Bicycle LOS Score for Intersection	1.845	1.746	2.358	2.523
Bicycle LOS	A	A	B	B

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 12: Flynn Ln & Mullan Rd

Control Type:	Signalized	Delay (sec / veh):	9.2
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.897

Intersection Setup

Name	Flynn Ln			Mullan Rd			Mullan Rd					
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↶			↷			↶↷			↶↷		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			25.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name				Flynn Ln			Mullan Rd			Mullan Rd		
Base Volume Input [veh/h]	0	0	1	0	0	106	200	1272	1	1	395	197
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	0.00	2.00	2.00	2.00	7.00	2.00	2.00	7.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	1	0	0	106	200	1272	1	1	395	197
Peak Hour Factor	1.0000	1.0000	0.9200	0.9200	1.0000	0.9200	0.9200	0.9200	1.0000	1.0000	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	0	0	29	54	346	0	0	107	54
Total Analysis Volume [veh/h]	0	0	1	0	0	115	217	1383	1	1	429	214
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor stree	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permis	Permis	Overla	Split	Permis	Overla	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	0	5	0	0	5	0	2	0	0	6	6
Auxiliary Signal Groups			5			5						
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	5	0	0	5	0	5	0	0	5	5
Maximum Green [s]	0	0	30	0	0	30	0	30	0	0	30	30
Amber [s]	0.0	0.0	4.0	0.0	0.0	4.0	0.0	4.0	0.0	0.0	4.0	4.0
All red [s]	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0
Split [s]	0	0	87	0	0	87	0	120	0	0	33	33
Vehicle Extension [s]	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	3.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	0	0	0	0	0	0	20	0	0	20	20
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk			No			No		No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	0.0	4.0	0.0	0.0	4.0	0.0	4.0	0.0	0.0	4.0	4.0
Minimum Recall			No			No		No			No	
Maximum Recall			No			No		No			No	
Pedestrian Recall			No			No		No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	R	R	L	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	0.00	4.00	4.00	4.00	4.00
g_i, Effective Green Time [s]	11	11	114	114	97	97	97
g / C, Green / Cycle	0.09	0.09	0.95	0.95	0.81	0.81	0.81
(v / s)_i Volume / Saturation Flow Rate	0.00	0.08	0.21	0.84	0.00	0.26	0.15
s, saturation flow rate [veh/h]	1464	1464	1050	1653	391	1653	1464
c, Capacity [veh/h]	138	138	1016	1570	266	1332	1179
d1, Uniform Delay [s]	49.22	53.38	0.58	0.92	13.40	3.06	2.65
k, delay calibration	0.11	0.11	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.02	12.13	0.48	7.47	0.03	0.64	0.34
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.01	0.83	0.21	0.88	0.00	0.32	0.18
d, Delay for Lane Group [s/veh]	49.24	65.50	1.06	8.39	13.43	3.70	2.99
Lane Group LOS	D	E	A	A	B	A	A
Critical Lane Group	No	No	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	0.03	3.90	0.14	3.26	0.01	1.92	0.84
50th-Percentile Queue Length [ft/ln]	0.70	97.48	3.39	81.46	0.35	48.11	21.02
95th-Percentile Queue Length [veh/ln]	0.05	7.02	0.24	5.87	0.03	3.46	1.51
95th-Percentile Queue Length [ft/ln]	1.26	175.46	6.11	146.63	0.63	86.60	37.83

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	49.24	0.00	0.00	65.50	1.06	8.39	8.39	13.43	3.70	2.99
Movement LOS			D			E	A	A	A	B	A	A
d_A, Approach Delay [s/veh]	49.24			65.50			7.40			3.48		
Approach LOS	D			E			A			A		
d_I, Intersection Delay [s/veh]	9.18											
Intersection LOS	A											
Intersection V/C	0.897											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	81.0	81.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.50	49.50	6.34	6.34
I_p,int, Pedestrian LOS Score for Intersection	1.732	2.204	2.917	2.804
Crosswalk LOS	A	B	C	C
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1350	1350	1900	450
d_b, Bicycle Delay [s]	6.34	6.34	0.15	36.04
I_b,int, Bicycle LOS Score for Intersection	1.560	1.560	4.201	2.622
Bicycle LOS	A	A	D	B

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 13: Mary Jane Blvd & Mullan Rd

Control Type:	Signalized	Delay (sec / veh):	180.2
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.762

Intersection Setup

Name	Mary Jane Blvd		Mullan Rd		Mullan Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration	↵↵		↵↑		↑↵	
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Mary Jane Blvd		Mullan Rd		Mullan Rd	
Base Volume Input [veh/h]	207	53	231	1042	512	100
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.00	4.00	3.00	7.00	7.00	3.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	207	53	231	1042	512	100
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	56	14	63	283	139	27
Total Analysis Volume [veh/h]	225	58	251	1133	557	109
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0		0		0	
v_di, Inbound Pedestrian Volume crossing major street	0		0		0	
v_co, Outbound Pedestrian Volume crossing minor street	0		0		0	
v_ci, Inbound Pedestrian Volume crossing minor street	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	ProtPerm	Permissive	Permissive	Permissive
Signal Group	8	8	5	2	6	6
Auxiliary Signal Groups						
Lead / Lag	Lead	-	Lag	-	-	-
Minimum Green [s]	5	5	5	5	5	5
Maximum Green [s]	30	30	30	30	30	30
Amber [s]	4.0	4.0	4.0	4.0	4.0	4.0
All red [s]	2.0	2.0	2.0	2.0	2.0	2.0
Split [s]	113	113	87	120	33	33
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	7	7	0	7	7	7
Pedestrian Clearance [s]	20	20	0	20	20	20
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Recall	No		No	No	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	L	C	C	R
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	0.00	0.00	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	2.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	0.00	0.00	4.00	4.00	4.00
g_i, Effective Green Time [s]	0	0	9	114	103	103
g / C, Green / Cycle	0.00	0.00	0.08	0.95	0.86	0.86
(v / s)_i Volume / Saturation Flow Rate	0.79	0.04	0.46	0.69	0.34	0.08
s, saturation flow rate [veh/h]	287	1440	548	1653	1653	1452
c, Capacity [veh/h]	60	0	129	1570	1418	1246
d1, Uniform Delay [s]	59.95	0.00	0.31	0.48	1.83	1.31
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1275.80	0.00	455.69	2.90	0.82	0.14
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	3.75	10000.00	1.95	0.72	0.39	0.09
d, Delay for Lane Group [s/veh]	1335.75	0.00	456.00	3.38	2.65	1.45
Lane Group LOS	F	F	F	A	A	A
Critical Lane Group	No	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	23.28	0.00	16.27	1.27	1.30	0.19
50th-Percentile Queue Length [ft/ln]	582.02	0.00	406.78	31.64	32.50	4.63
95th-Percentile Queue Length [veh/ln]	31.19	0.00	26.87	2.28	2.34	0.33
95th-Percentile Queue Length [ft/ln]	779.84	0.00	671.77	56.95	58.49	8.33

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	1335.75	0.00	456.00	3.38	2.65	1.45
Movement LOS	F	A	F	A	A	A
d_A, Approach Delay [s/veh]	1062.00		85.46		2.45	
Approach LOS	F		F		A	
d_I, Intersection Delay [s/veh]	180.22					
Intersection LOS	F					
Intersection V/C	0.762					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.50	49.50	49.50
I_p,int, Pedestrian LOS Score for Intersection	2.181	2.928	3.261
Crosswalk LOS	B	C	C
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	1900	450
d_b, Bicycle Delay [s]	60.00	0.15	36.04
I_b,int, Bicycle LOS Score for Intersection	1.560	3.843	2.659
Bicycle LOS	A	D	B

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 16: Mary Jane Blvd & England Blvd

Control Type:	Signalized	Delay (sec / veh):	18.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.450

Intersection Setup

Name	Mary Jane Blvd			Mary Jane Blvd			England Blvd			England Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵			↵			↵			↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mary Jane Blvd			Mary Jane Blvd			England Blvd			England Blvd		
Base Volume Input [veh/h]	136	142	46	19	123	50	87	358	62	46	350	6
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	3.00	2.00	2.00	3.00	2.00	2.00	8.00	2.00	2.00	4.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	136	142	46	19	123	50	87	358	62	46	350	6
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	37	39	13	5	33	14	24	97	17	13	95	2
Total Analysis Volume [veh/h]	148	154	50	21	134	54	95	389	67	50	380	7
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lag	-	-	Lead	-	-	Lag	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	15	20	0	15	20	0	15	20	0	15	20	0
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
All red [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Split [s]	96	32	0	96	32	0	96	58	0	96	58	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	7	7	0	7	7	0	0	7	0	7	7	0
Pedestrian Clearance [s]	10	10	0	15	10	0	0	10	0	10	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	L	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
g_i, Effective Green Time [s]	24	24	24	24	54	54	54	54
g / C, Green / Cycle	0.26	0.26	0.26	0.26	0.60	0.60	0.60	0.60
(v / s)_i Volume / Saturation Flow Rate	0.12	0.12	0.02	0.12	0.10	0.29	0.05	0.23
s, saturation flow rate [veh/h]	1195	1638	1178	1626	996	1598	935	1689
c, Capacity [veh/h]	255	432	243	429	539	964	473	1019
d1, Uniform Delay [s]	37.39	27.87	34.02	27.59	14.47	9.92	16.00	9.20
k, delay calibration	0.11	0.11	0.11	0.11	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.08	0.80	0.15	0.71	0.71	1.67	0.45	1.08
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.58	0.47	0.09	0.44	0.18	0.47	0.11	0.38
d, Delay for Lane Group [s/veh]	39.47	28.68	34.18	28.30	15.18	11.59	16.45	10.28
Lane Group LOS	D	C	C	C	B	B	B	B
Critical Lane Group	No	Yes	No	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.27	3.72	0.41	3.39	1.22	4.93	0.67	3.83
50th-Percentile Queue Length [ft/ln]	81.63	92.92	10.24	84.67	30.46	123.27	16.80	95.83
95th-Percentile Queue Length [veh/ln]	5.88	6.69	0.74	6.10	2.19	8.57	1.21	6.90
95th-Percentile Queue Length [ft/ln]	146.94	167.25	18.42	152.40	54.83	214.31	30.25	172.50

Movement, Approach, & Intersection Results

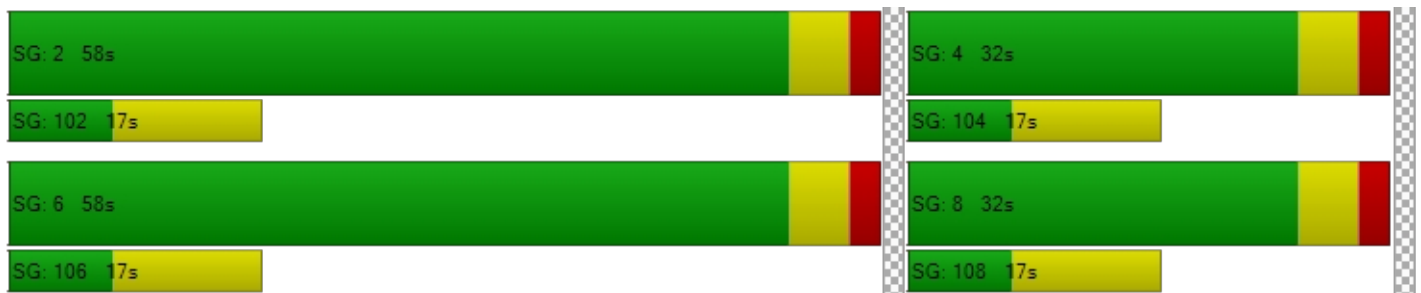
d_M, Delay for Movement [s/veh]	39.47	28.68	28.68	34.18	28.30	28.30	15.18	11.59	11.59	16.45	10.28	10.28
Movement LOS	D	C	C	C	C	C	B	B	B	B	B	B
d_A, Approach Delay [s/veh]	33.21			28.89			12.21			10.98		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]	18.89											
Intersection LOS	B											
Intersection V/C	0.450											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	34.67			34.67			34.67			34.67		
I_p,int, Pedestrian LOS Score for Intersection	2.207			2.226			2.518			2.261		
Crosswalk LOS	B			B			B			B		
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	578			578			1156			1156		
d_b, Bicycle Delay [s]	22.76			22.76			8.02			8.02		
I_b,int, Bicycle LOS Score for Intersection	2.140			1.904			2.469			2.281		
Bicycle LOS	B			A			B			B		

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 20: Mary Jane Blvd & W Broadway St

Control Type:	Signalized	Delay (sec / veh):	18.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.711

Intersection Setup

Name	Mary Jane Blvd		W Broadway St		W Broadway St	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↔↔		↑↑↔		↔↑↑	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		No	

Volumes

Name	Mary Jane Blvd		W Broadway St		W Broadway St	
Base Volume Input [veh/h]	248	68	1247	142	164	656
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.00	3.00	8.00	3.00	3.00	15.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	248	68	1247	142	164	656
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	67	18	339	39	45	178
Total Analysis Volume [veh/h]	270	74	1355	154	178	713
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0	0	0	0	0	0
v_di, Inbound Pedestrian Volume crossing major street	0	0	0	0	0	0
v_co, Outbound Pedestrian Volume crossing minor street	0	0	0	0	0	0
v_ci, Inbound Pedestrian Volume crossing minor street	0	0	0	0	0	0
v_ab, Corner Pedestrian Volume [ped/h]	0	0	0	0	0	0
Bicycle Volume [bicycles/h]	0	0	0	0	0	0

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Permissive	Permissive	ProtPerm	Permissive
Signal Group	8	8	2	2	1	6
Auxiliary Signal Groups						
Lead / Lag	Lag	-	-	-	Lead	-
Minimum Green [s]	5	5	5	5	5	5
Maximum Green [s]	30	30	30	30	30	30
Amber [s]	4.0	4.0	4.0	4.0	4.0	4.0
All red [s]	2.0	2.0	2.0	2.0	2.0	2.0
Split [s]	78	78	31	31	11	42
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	4.00	4.00	0.00	4.00
g_i, Effective Green Time [s]	22	22	75	75	86	86
g / C, Green / Cycle	0.19	0.19	0.62	0.62	0.71	0.71
(v / s)_i Volume / Saturation Flow Rate	0.17	0.05	0.43	0.11	0.34	0.24
s, saturation flow rate [veh/h]	1627	1452	3121	1452	529	2937
c, Capacity [veh/h]	302	269	1941	903	347	2098
d1, Uniform Delay [s]	47.70	41.92	15.15	9.59	15.05	6.46
k, delay calibration	0.11	0.11	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.15	0.55	2.11	0.41	5.34	0.44
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.89	0.27	0.70	0.17	0.51	0.34
d, Delay for Lane Group [s/veh]	56.85	42.47	17.26	10.00	20.39	6.90
Lane Group LOS	E	D	B	A	C	A
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	8.62	1.93	10.83	1.58	1.61	2.72
50th-Percentile Queue Length [ft/ln]	215.48	48.30	270.68	39.47	40.35	67.94
95th-Percentile Queue Length [veh/ln]	13.43	3.48	16.22	2.84	2.90	4.89
95th-Percentile Queue Length [ft/ln]	335.85	86.95	405.59	71.04	72.62	122.29

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	56.85	42.47	17.26	10.00	20.39	6.90
Movement LOS	E	D	B	A	C	A
d_A, Approach Delay [s/veh]	53.76		16.52		9.59	
Approach LOS	D		B		A	
d_I, Intersection Delay [s/veh]	18.94					
Intersection LOS	B					
Intersection V/C	0.711					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000
Crosswalk LOS	F	F	F
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1200	417	600
d_b, Bicycle Delay [s]	9.60	37.60	29.40
I_b,int, Bicycle LOS Score for Intersection	1.560	2.805	2.295
Bicycle LOS	A	C	B

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report
Intersection 21: Flynn Ln & W Broadway St**

Control Type:	Signalized	Delay (sec / veh):	11.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.758

Intersection Setup

Name	Flynn Ln		W Broadway St		W Broadway St	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↗		↕↗		↕	
Turning Movement	Left	Thru	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		No	

Volumes

Name	Flynn Ln		W Broadway St		W Broadway St	
Base Volume Input [veh/h]	0	359	1180	146	0	819
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	8.00	2.00	0.00	15.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	359	1180	146	0	819
Peak Hour Factor	0.7900	0.9200	0.9200	0.9200	0.7900	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	98	321	40	0	223
Total Analysis Volume [veh/h]	0	390	1283	159	0	890
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	0		0		0	
v_di, Inbound Pedestrian Volume crossing major street [	0		0		0	
v_co, Outbound Pedestrian Volume crossing minor stree	0		0		0	
v_ci, Inbound Pedestrian Volume crossing minor street [	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Version 2020 (SP 0-4)

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Split	Split	Permissive	Permissive	Permissive	Permissive
Signal Group	0	8	2	2	0	6
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	-	-
Minimum Green [s]	0	5	5	5	0	5
Maximum Green [s]	0	30	30	30	0	30
Amber [s]	0.0	4.0	4.0	4.0	0.0	3.0
All red [s]	0.0	2.0	2.0	2.0	0.0	1.0
Split [s]	0	30	90	90	0	90
Vehicle Extension [s]	0.0	3.0	3.0	3.0	0.0	3.0
Walk [s]	0	0	0	0	0	5
Pedestrian Clearance [s]	0	0	0	0	0	10
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No	No			No
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	0.0	2.0
I2, Clearance Lost Time [s]	0.0	4.0	4.0	4.0	0.0	2.0
Minimum Recall		No	No			No
Maximum Recall		No	No			No
Pedestrian Recall		No	No			No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	R	C
C, Cycle Length [s]	49	49	49	49
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	4.00	2.00
g_i, Effective Green Time [s]	13	24	24	26
g / C, Green / Cycle	0.27	0.49	0.49	0.53
(v / s)_i Volume / Saturation Flow Rate	0.22	0.41	0.11	0.30
s, saturation flow rate [veh/h]	1750	3121	1464	2937
c, Capacity [veh/h]	470	1519	713	1550
d1, Uniform Delay [s]	16.88	10.97	7.25	7.85
k, delay calibration	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.84	1.36	0.16	0.34
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.83	0.84	0.22	0.57
d, Delay for Lane Group [s/veh]	20.73	12.33	7.40	8.19
Lane Group LOS	C	B	A	A
Critical Lane Group	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.16	3.51	0.56	1.61
50th-Percentile Queue Length [ft/ln]	103.97	87.70	13.96	40.14
95th-Percentile Queue Length [veh/ln]	7.49	6.31	1.01	2.89
95th-Percentile Queue Length [ft/ln]	187.15	157.85	25.13	72.26

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	20.73	12.33	7.40	0.00	8.19
Movement LOS		C	B	A		A
d_A, Approach Delay [s/veh]	20.73		11.79		8.19	
Approach LOS	C		B		A	
d_I, Intersection Delay [s/veh]	11.89					
Intersection LOS	B					
Intersection V/C	0.758					

Other Modes

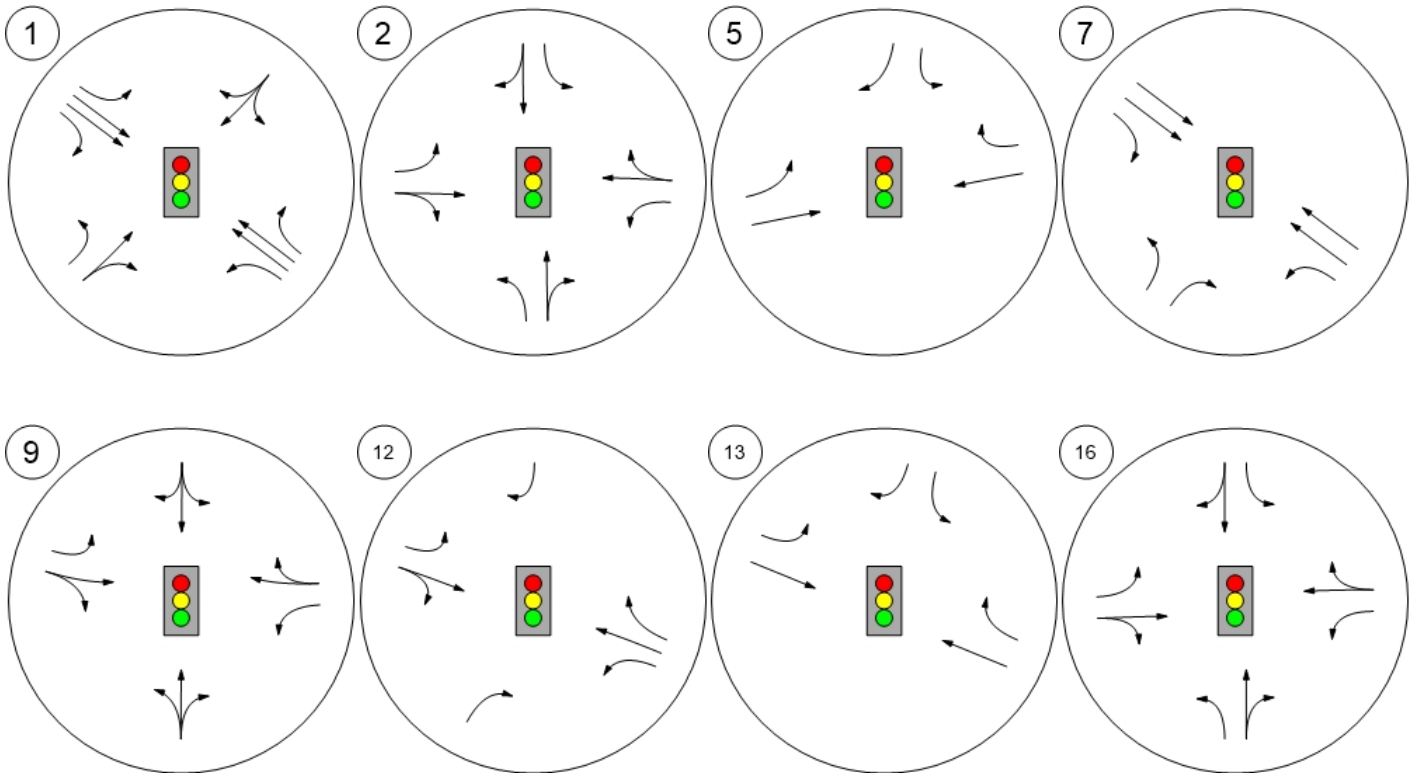
g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000
Crosswalk LOS	F	F	F
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	400	1400	1433
d_b, Bicycle Delay [s]	38.40	5.40	4.82
I_b,int, Bicycle LOS Score for Intersection	2.203	2.749	2.294
Bicycle LOS	B	B	B

Sequence

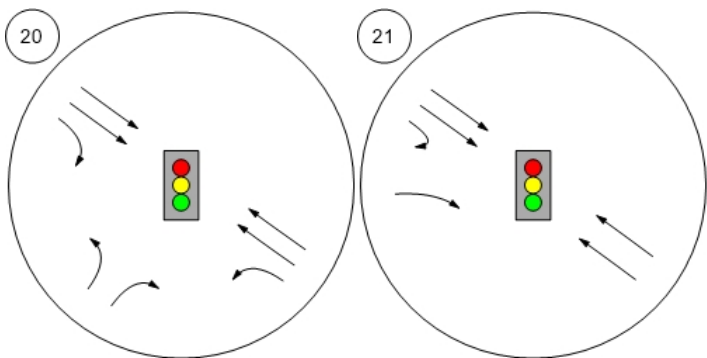
Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Lane Configuration and Traffic Control



Lane Configuration and Traffic Control





Option 1: Dual Through Lanes EB & WB

Number	5					
Intersection	George Elmer Dr & Mullan Rd					
Control Type	Signalized					
Analysis Method	HCM 6th Edition					
Name	George Elmer Dr		Mullan Rd		Mullan Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Base Volume Input [veh/h]	222	50	253	1259	405	85
Total Analysis Volume [veh/h]	241	54	275	1368	440	92

Intersection Settings

Cycle Length [s]	120					
Coordination Type	Time of Day Pattern Coordinated					
Actuation Type	Fully actuated					
Lost time [s]	12.00					
Control Type	Split	Split	Permissive	Permissive	Permissive	Permissive
Signal Group	8	8	0	2	6	6
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	5
Maximum Green [s]	30	30	0	30	30	30
Amber [s]	4.0	4.0	0.0	4.0	4.0	4.0
All red [s]	2.0	2.0	0.0	2.0	2.0	2.0
Split [s]	33	33	0	87	33	33
Walk [s]	7	7	0	7	7	7
Pedestrian Clearance [s]	20	20	0	20	20	20
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
l1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	No			No	No	
Maximum Recall	No			No	No	
Pedestrian Recall	No			No	No	
Pedestrian Signal Group	0					
Pedestrian Walk [s]	0					
Pedestrian Clearance [s]	0					

Lane Group Calculations

g / C, Green / Cycle	0.17	0.17	0.73	0.73	0.68	0.68
(v / s)_i Volume / Saturation Flow Rate	0.15	0.04	0.28	0.43	0.14	0.06
so, Base Saturation Flow per Lane [pc/h/ln]	1750	1750	1750	1750	1750	1750
Arrival type	3		3		3	
s, saturation flow rate [veh/h]	1614	1440	966	3148	3148	1440
c, Capacity [veh/h]	269	240	740	2309	2148	983
X, volume / capacity	0.90	0.23	0.37	0.59	0.20	0.09
d, Delay for Lane Group [s/veh]	60.95	43.76	7.99	8.66	7.24	6.65
Lane Group LOS	E	D	A	A	A	A



Critical Lane Group	Yes	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	7.95	1.43	2.06	6.79	1.85	0.74
50th-Percentile Queue Length [ft/ln]	198.63	35.70	51.43	169.87	46.37	18.49
95th-Percentile Queue Length [veh/ln]	12.57	2.57	3.70	11.07	3.34	1.33
95th-Percentile Queue Length [ft/ln]	314.19	64.26	92.57	276.75	83.47	33.28

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	60.95	43.76	7.99	8.66	7.24	6.65
Movement LOS	E	D	A	A	A	A
Critical Movement	Yes	No	No	No	No	No
d_A, Approach Delay [s/veh]	57.80		8.55		7.14	
Approach LOS	E		A		A	
d_I, Intersection Delay [s/veh]	14.13					
Intersection LOS	B					
Intersection V/C	0.649					

Option 1: Dual Through Lanes EB & WB

Number	13					
Intersection	Mary Jane Blvd & Mullan Rd					
Control Type	Signalized					
Analysis Method	HCM 6th Edition					
Name	Mary Jane Blvd		Mullan Rd		Mullan Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Base Volume Input [veh/h]	207	53	231	1042	512	100
Total Analysis Volume [veh/h]	225	58	251	1133	557	109

Intersection Settings

Cycle Length [s]	120					
Coordination Type	Time of Day Pattern Coordinated					
Actuation Type	Fully actuated					
Lost time [s]	12.00					
Control Type	Split	Split	ProtPerm	Permissive	Permissive	Permissive
Signal Group	8	8	5	2	6	6
Auxiliary Signal Groups						
Lead / Lag	Lead	-	Lag	-	-	-
Minimum Green [s]	5	5	5	5	5	5
Maximum Green [s]	30	30	30	30	30	30
Amber [s]	4.0	4.0	4.0	4.0	4.0	4.0
All red [s]	2.0	2.0	2.0	2.0	2.0	2.0
Split [s]	33	33	54	87	33	33
Walk [s]	7	7	0	7	7	7
Pedestrian Clearance [s]	20	20	0	20	20	20
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
l1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
Minimum Recall	No		No	No	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	
Pedestrian Signal Group	0					
Pedestrian Walk [s]	0					
Pedestrian Clearance [s]	0					

Lane Group Calculations

g / C, Green / Cycle	0.16	0.16	0.74	0.74	0.62	0.62
(v / s)_i Volume / Saturation Flow Rate	0.14	0.04	0.26	0.36	0.18	0.08
so, Base Saturation Flow per Lane [pc/h/ln]	1750	1750	1750	1750	1750	1750
Arrival type	3		3		3	
s, saturation flow rate [veh/h]	1614	1440	953	3148	3148	1452
c, Capacity [veh/h]	253	226	721	2339	1964	906
X, volume / capacity	0.89	0.26	0.35	0.48	0.28	0.12
d, Delay for Lane Group [s/veh]	59.72	45.02	6.68	6.91	10.67	9.45
Lane Group LOS	E	D	A	A	B	A



Critical Lane Group	Yes	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	7.31	1.56	1.75	4.66	3.13	1.12
50th-Percentile Queue Length [ft/ln]	182.70	39.02	43.73	116.45	78.23	28.09
95th-Percentile Queue Length [veh/ln]	11.74	2.81	3.15	8.20	5.63	2.02
95th-Percentile Queue Length [ft/ln]	293.53	70.24	78.72	204.93	140.81	50.57

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	59.72	45.02	6.68	6.91	10.67	9.45
Movement LOS	E	D	A	A	B	A
Critical Movement	Yes	No	No	No	No	No
d_A, Approach Delay [s/veh]	56.71		6.86		10.47	
Approach LOS	E		A		B	
d_I, Intersection Delay [s/veh]	13.94					
Intersection LOS	B					
Intersection V/C	0.555					

Mullan BUILD - 2050 PM

Vistro File: H:\...\24667_PM2050.vistro

Scenario 3 Two Way Stop Control (2050)

Report File: H:\...\24667_PM2050_TWSC.pdf

7/21/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	George Elmer Dr & W Broadway St	Two-way stop	HCM 6th Edition	NB Left	33.820	10,000.0	F
2	George Elmer Dr & England Blvd	Two-way stop	HCM 6th Edition	NB Left	0.000	10,000.0	F
3	George Elmer Dr & Cattle Dr	Two-way stop	HCM 6th Edition	EB Left	0.170	30.6	D
4	George Elmer Dr & Heron's Landing	Two-way stop	HCM 6th Edition	EB Left	0.206	32.4	D
5	George Elmer Dr & Mullan Rd	Two-way stop	HCM 6th Edition	SB Left	4.632	1,957.5	F
6	Dougherty Dr & England Blvd	Two-way stop	HCM 6th Edition	SB Left	0.589	44.9	E
7	Dougherty Dr & W Broadway St	Two-way stop	HCM 6th Edition	NB Left	4.369	1,704.3	F
8	Flynn Ln & Camden St	Two-way stop	HCM 6th Edition	WB Left	0.007	10.2	B
9	Flynn Ln & England Blvd	Two-way stop	HCM 6th Edition	SB Left	0.163	61.2	F
10	Flynn Ln & Chelsea Dr	Two-way stop	HCM 6th Edition	EB Thru	0.025	12.5	B
11	Flynn Ln & Siren's Dr	Two-way stop	HCM 6th Edition	EB Left	0.035	11.0	B
12	Flynn Ln & Mullan Rd	Two-way stop	HCM 6th Edition	SB Right	0.984	126.7	F
13	Mary Jane Blvd & Mullan Rd	Two-way stop	HCM 6th Edition	SB Left	4.130	1,689.6	F
14	Mary Jane Blvd & O'Leary St	Two-way stop	HCM 6th Edition	WB Left	0.037	15.0	B
15	Mary Jane Blvd & Melrose Pl	Two-way stop	HCM 6th Edition	EB Left	0.161	20.7	C
16	Mary Jane Blvd & England Blvd	Two-way stop	HCM 6th Edition	NB Left	3.171	1,324.9	F
17	Mary Jane Blvd & Camden St	Two-way stop	HCM 6th Edition	WB Left	0.007	14.0	B
			HCM 6th				

18	Mary Jane Blvd & Flynn Ln	Two-way stop	HCM 6th Edition	EB Left	0.149	20.9	C
19	Mary Jane Blvd & Veteran's Way	Two-way stop	HCM 6th Edition	EB Left	0.255	18.7	C
20	Mary Jane Blvd & W Broadway St	Two-way stop	HCM 6th Edition	NB Left	3.662	1,331.9	F
21	Flynn Ln & W Broadway St	Two-way stop	HCM 6th Edition	NB Thru	0.882	58.1	F

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: George Elmer Dr & W Broadway St

Control Type:	Two-way stop	Delay (sec / veh):	10,000.0
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	33.820

Intersection Setup

Name	George Elmer Dr			Commercial Access			W Broadway St			W Broadway St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↕↔			⊕			↔↕			↔↕		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00
Speed [mph]	30.00			30.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	George Elmer Dr			Commercial Access			W Broadway St			W Broadway St		
Base Volume Input [veh/h]	204	1	159	1	1	1	1	1435	250	137	1098	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.00	2.00	3.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	204	1	159	1	1	1	1	1435	250	137	1098	1
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	55	0	43	0	0	0	0	390	68	37	298	0
Total Analysis Volume [veh/h]	222	1	173	1	1	1	1	1560	272	149	1193	1
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane		No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	33.82	0.18	0.63	0.22	0.23	0.00	0.00	0.02	0.00	0.45	0.01	0.00
d_M, Delay for Movement [s/veh]	10000.	10000.	38.56	1040.6	1048.5	243.76	11.21	0.00	0.00	24.67	0.00	0.00
Movement LOS	F	F	E	F	F	F	B	A	A	C	A	A
95th-Percentile Queue Length [veh/ln]	29.86	29.86	3.95	0.86	0.86	0.86	0.01	0.00	0.00	2.25	0.00	0.00
95th-Percentile Queue Length [ft/ln]	746.40	746.40	98.75	21.43	21.43	21.43	0.13	0.00	0.00	56.37	0.00	0.00
d_A, Approach Delay [s/veh]	5648.16			777.65			0.01			2.74		
Approach LOS	F			F			A			A		
d_I, Intersection Delay [s/veh]	627.33											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 2: George Elmer Dr & England Blvd

Control Type:	Two-way stop	Delay (sec / veh):	10,000.0
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	George Elmer Dr			George Elmer Dr			England Blvd			England Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵			↵			↵			↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	George Elmer Dr			George Elmer Dr			England Blvd			England Blvd		
Base Volume Input [veh/h]	142	199	46	42	169	184	122	301	159	43	431	42
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	3.00	2.00	2.00	3.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	142	199	46	42	169	184	122	301	159	43	431	42
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	39	54	13	11	46	50	33	82	43	12	117	11
Total Analysis Volume [veh/h]	154	216	50	46	184	200	133	327	173	47	468	46
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	1.58	0.08	0.00	1.47	0.35	0.13	0.00	0.00	0.04	0.00	0.00
d_M, Delay for Movement [s/veh]	10000.	378.23	357.46	10000.	437.65	415.04	8.92	0.00	0.00	8.54	0.00	0.00
Movement LOS	F	F	F	F	F	F	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	21.89	18.61	18.61	7.93	26.97	26.97	0.43	0.00	0.00	0.14	0.00	0.00
95th-Percentile Queue Length [ft/ln]	547.21	465.33	465.33	198.16	674.28	674.28	10.82	0.00	0.00	3.46	0.00	0.00
d_A, Approach Delay [s/veh]	3903.74			1450.08			1.87			0.72		
Approach LOS	F			F			A			A		
d_I, Intersection Delay [s/veh]	1107.97											
Intersection LOS	F											

**Intersection Level Of Service Report
Intersection 3: George Elmer Dr & Cattle Dr**

Control Type:	Two-way stop	Delay (sec / veh):	30.6
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.170

Intersection Setup

Name	George Elmer Dr			George Elmer Dr			Cattle Dr			Cattle Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵			↵			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	George Elmer Dr			George Elmer Dr			Cattle Dr			Cattle Dr		
Base Volume Input [veh/h]	135	333	21	5	360	6	26	1	33	7	1	29
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	3.00	2.00	2.00	3.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	135	333	21	5	360	6	26	1	33	7	1	29
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	37	90	6	1	98	2	7	0	9	2	0	8
Total Analysis Volume [veh/h]	147	362	23	5	391	7	28	1	36	8	1	32
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.13	0.00	0.00	0.00	0.00	0.00	0.17	0.01	0.05	0.05	0.01	0.05
d_M, Delay for Movement [s/veh]	8.55	0.00	0.00	8.08	0.00	0.00	30.60	27.84	14.27	28.09	24.88	11.36
Movement LOS	A	A	A	A	A	A	D	D	B	D	C	B
95th-Percentile Queue Length [veh/ln]	0.43	0.00	0.00	0.01	0.00	0.00	0.87	0.87	0.87	0.34	0.34	0.34
95th-Percentile Queue Length [ft/ln]	10.84	0.00	0.00	0.32	0.00	0.00	21.72	21.72	21.72	8.44	8.44	8.44
d_A, Approach Delay [s/veh]	2.36			0.10			21.51			14.96		
Approach LOS	A			A			C			B		
d_I, Intersection Delay [s/veh]	3.18											
Intersection LOS	D											

Intersection Level Of Service Report
Intersection 4: George Elmer Dr & Heron's Landing

Control Type:	Two-way stop	Delay (sec / veh):	32.4
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.206

Intersection Setup

Name	George Elmer Dr			George Elmer Dr			Heron's Landing			Heron's Landing		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵↵			↵↵			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	George Elmer Dr			George Elmer Dr			Heron's Landing			Heron's Landing		
Base Volume Input [veh/h]	75	429	30	30	340	30	30	1	20	20	1	30
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	3.00	2.00	2.00	3.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	75	429	30	30	340	30	30	1	20	20	1	30
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	20	117	8	8	92	8	8	0	5	5	0	8
Total Analysis Volume [veh/h]	82	466	33	33	370	33	33	1	22	22	1	33
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.00	0.00	0.03	0.00	0.00	0.21	0.01	0.03	0.13	0.01	0.06
d_M, Delay for Movement [s/veh]	8.35	0.00	0.00	8.49	0.00	0.00	32.43	29.25	15.44	29.70	27.24	14.16
Movement LOS	A	A	A	A	A	A	D	D	C	D	D	B
95th-Percentile Queue Length [veh/ln]	0.23	0.00	0.00	0.10	0.00	0.00	0.93	0.93	0.93	0.71	0.71	0.71
95th-Percentile Queue Length [ft/ln]	5.72	0.00	0.00	2.40	0.00	0.00	23.24	23.24	23.24	17.68	17.68	17.68
d_A, Approach Delay [s/veh]	1.18			0.64			25.70			20.50		
Approach LOS	A			A			D			C		
d_I, Intersection Delay [s/veh]	3.15											
Intersection LOS	D											

Intersection Level Of Service Report
Intersection 5: George Elmer Dr & Mullan Rd

Control Type:	Two-way stop	Delay (sec / veh):	1,957.5
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	4.632

Intersection Setup

Name	George Elmer Dr		Mullan Rd		Mullan Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration	↵↵		↵↑		↑↵	
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	325.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	George Elmer Dr		Mullan Rd		Mullan Rd	
Base Volume Input [veh/h]	104	275	179	637	1185	353
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	3.00	2.00	2.00	3.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	104	275	179	637	1185	353
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	75	49	173	322	96
Total Analysis Volume [veh/h]	113	299	195	692	1288	384
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	4.63	1.49	0.36	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	1957.46	290.18	15.53	0.00	0.00	0.00
Movement LOS	F	F	C	A	A	A
95th-Percentile Queue Length [veh/ln]	14.08	18.43	1.66	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	352.11	460.75	41.39	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	747.47		3.42		0.00	
Approach LOS	F		A		A	
d_I, Intersection Delay [s/veh]	104.67					
Intersection LOS	F					

**Intersection Level Of Service Report
Intersection 6: Dougherty Dr & England Blvd**

Control Type:	Two-way stop	Delay (sec / veh):	44.9
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.589

Intersection Setup

Name	Dougherty Dr		England Blvd		England Blvd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Dougherty Dr		England Blvd		England Blvd	
Base Volume Input [veh/h]	111	100	150	249	416	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	111	100	150	249	416	50
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	30	27	41	68	113	14
Total Analysis Volume [veh/h]	121	109	163	271	452	54
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.59	0.19	0.15	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	44.95	12.53	9.02	0.00	0.00	0.00
Movement LOS	E	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	3.28	0.68	0.54	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	82.03	16.92	13.58	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	29.59		3.39		0.00	
Approach LOS	D		A		A	
d_I, Intersection Delay [s/veh]	7.07					
Intersection LOS	E					

**Intersection Level Of Service Report
Intersection 7: Dougherty Dr & W Broadway St**

Control Type:	Two-way stop	Delay (sec / veh):	1,704.3
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	4.369

Intersection Setup

Name	Dougherty Dr		W Broadway St		W Broadway St	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↵↵		↑↑↵		↵↑↑	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	100.00
Speed [mph]	30.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Dougherty Dr		W Broadway St		W Broadway St	
Base Volume Input [veh/h]	175	300	1394	200	254	1060
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	175	300	1394	200	254	1060
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	48	82	379	54	69	288
Total Analysis Volume [veh/h]	190	326	1515	217	276	1152
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	Yes		
Number of Storage Spaces in Median	1	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	4.37	0.93	0.02	0.00	0.77	0.01
d_M, Delay for Movement [s/veh]	1704.33	67.41	0.00	0.00	41.25	0.00
Movement LOS	F	F	A	A	E	A
95th-Percentile Queue Length [veh/ln]	21.61	9.67	0.00	0.00	6.20	0.00
95th-Percentile Queue Length [ft/ln]	540.26	241.67	0.00	0.00	154.89	0.00
d_A, Approach Delay [s/veh]	670.16		0.00		7.97	
Approach LOS	F		A		A	
d_I, Intersection Delay [s/veh]	97.17					
Intersection LOS	F					

**Intersection Level Of Service Report
Intersection 8: Flynn Ln & Camden St**

Control Type:	Two-way stop	Delay (sec / veh):	10.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.007

Intersection Setup

Name	Flynn Ln		Flynn Ln		Camden St	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Flynn Ln		Flynn Ln		Camden St	
Base Volume Input [veh/h]	103	7	22	94	5	13
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	103	7	22	94	5	13
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	2	6	26	1	4
Total Analysis Volume [veh/h]	112	8	24	102	5	14
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.02	0.00	0.01	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	7.49	0.00	10.16	8.94
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.05	0.05	0.07	0.07
95th-Percentile Queue Length [ft/ln]	0.00	0.00	1.25	1.25	1.69	1.69
d_A, Approach Delay [s/veh]	0.00		1.43		9.26	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.34					
Intersection LOS	B					

**Intersection Level Of Service Report
Intersection 9: Flynn Ln & England Blvd**

Control Type: Two-way stop
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 61.2
 Level Of Service: F
 Volume to Capacity (v/c): 0.163

Intersection Setup

Name	Flynn Ln			Flynn Ln			England Blvd			England Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			T			T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			25.00			30.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Flynn Ln			Flynn Ln			England Blvd			England Blvd		
Base Volume Input [veh/h]	2	74	65	17	79	3	21	324	15	58	461	15
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	3.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	74	65	17	79	3	21	324	15	58	461	15
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	20	18	5	21	1	6	88	4	16	125	4
Total Analysis Volume [veh/h]	2	80	71	18	86	3	23	352	16	63	501	16
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.38	0.10	0.16	0.41	0.01	0.02	0.00	0.00	0.05	0.01	0.00
d_M, Delay for Movement [s/veh]	45.11	33.26	21.43	61.25	45.84	35.06	8.51	0.00	0.00	8.19	0.00	0.00
Movement LOS	E	D	C	F	E	E	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	2.63	2.63	2.63	3.12	3.12	3.12	0.07	0.00	0.00	0.17	0.00	0.00
95th-Percentile Queue Length [ft/ln]	65.81	65.81	65.81	77.88	77.88	77.88	1.68	0.00	0.00	4.19	0.00	0.00
d_A, Approach Delay [s/veh]	27.93			48.13			0.50			0.89		
Approach LOS	D			E			A			A		
d_I, Intersection Delay [s/veh]	8.23											
Intersection LOS	F											

**Intersection Level Of Service Report
Intersection 10: Flynn Ln & Chelsea Dr**

Control Type: Two-way stop
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 12.5
 Level Of Service: B
 Volume to Capacity (v/c): 0.025

Intersection Setup

Name	Flynn Ln			Flynn Ln			Chelsea Dr			Chelsea Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Flynn Ln			Flynn Ln			Chelsea Dr			Chelsea Dr		
Base Volume Input [veh/h]	28	109	20	21	114	18	28	12	40	15	3	4
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	5.00	2.00	3.00	2.00	4.00	2.00	2.00	7.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	28	109	20	21	114	18	28	12	40	15	3	4
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	30	5	6	31	5	8	3	11	4	1	1
Total Analysis Volume [veh/h]	30	118	22	23	124	20	30	13	43	16	3	4
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.00	0.00	0.02	0.00	0.00	0.05	0.02	0.05	0.03	0.01	0.00
d_M, Delay for Movement [s/veh]	7.56	0.00	0.00	7.53	0.00	0.00	12.20	12.54	9.68	12.45	12.06	9.19
Movement LOS	A	A	A	A	A	A	B	B	A	B	B	A
95th-Percentile Queue Length [veh/ln]	0.06	0.06	0.06	0.05	0.05	0.05	0.43	0.43	0.43	0.13	0.13	0.13
95th-Percentile Queue Length [ft/ln]	1.60	1.60	1.60	1.21	1.21	1.21	10.68	10.68	10.68	3.27	3.27	3.27
d_A, Approach Delay [s/veh]	1.33			1.04			10.99			11.83		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	3.63											
Intersection LOS	B											

**Intersection Level Of Service Report
Intersection 11: Flynn Ln & Siren's Dr**

Control Type:	Two-way stop	Delay (sec / veh):	11.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.035

Intersection Setup

Name	Flynn Ln		Flynn Ln		Siren's Rd	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Flynn Ln		Flynn Ln		Siren's Rd	
Base Volume Input [veh/h]	17	137	156	13	20	24
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	18.00	2.00	2.00	2.00	5.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	17	137	156	13	20	24
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	37	42	4	5	7
Total Analysis Volume [veh/h]	18	149	170	14	22	26
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.04	0.03
d_M, Delay for Movement [s/veh]	7.81	0.00	0.00	0.00	11.00	9.29
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.04	0.00	0.00	0.00	0.11	0.09
95th-Percentile Queue Length [ft/ln]	1.05	0.00	0.00	0.00	2.74	2.32
d_A, Approach Delay [s/veh]	0.84		0.00		10.07	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	1.56					
Intersection LOS	B					

**Intersection Level Of Service Report
Intersection 12: Flynn Ln & Mullan Rd**

Control Type: Two-way stop
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 126.7
 Level Of Service: F
 Volume to Capacity (v/c): 0.984

Intersection Setup

Name	Flynn Ln			Mullan Rd			Mullan Rd					
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↶			↷			↶↷			↷↶		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			25.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Flynn Ln			Mullan Rd			Mullan Rd					
Base Volume Input [veh/h]	0	0	1	0	0	139	55	685	1	1	1364	99
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	1	0	0	139	55	685	1	1	1364	99
Peak Hour Factor	1.0000	1.0000	0.9200	0.9200	1.0000	0.9200	0.9200	0.9200	1.0000	1.0000	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	0	0	38	15	186	0	0	371	27
Total Analysis Volume [veh/h]	0	0	1	0	0	151	60	745	1	1	1483	108
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.98	0.15	0.01	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	13.72	0.00	0.00	126.72	15.21	0.00	0.00	9.18	0.00	0.00
Movement LOS			B			F	C	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.01	0.00	0.00	7.37	0.51	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.18	0.00	0.00	184.24	12.63	0.00	0.00	0.09	0.00	0.00
d_A, Approach Delay [s/veh]	13.72		126.72				1.13		0.01			
Approach LOS	B		F				A		A			
d_I, Intersection Delay [s/veh]	7.87											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 13: Mary Jane Blvd & Mullan Rd

Control Type:	Two-way stop	Delay (sec / veh):	1,689.6
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	4.130

Intersection Setup

Name	Mary Jane Blvd		Mullan Rd		Mullan Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Mary Jane Blvd		Mullan Rd		Mullan Rd	
Base Volume Input [veh/h]	109	135	119	565	1330	125
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	109	135	119	565	1330	125
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	30	37	32	154	361	34
Total Analysis Volume [veh/h]	118	147	129	614	1446	136
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	4.13	0.91	0.31	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	1689.62	104.79	17.51	0.00	0.00	0.00
Movement LOS	F	F	C	A	A	A
95th-Percentile Queue Length [veh/ln]	14.28	6.57	1.30	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	356.94	164.36	32.58	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	810.49		3.04		0.00	
Approach LOS	F		A		A	
d_I, Intersection Delay [s/veh]	83.80					
Intersection LOS	F					

**Intersection Level Of Service Report
Intersection 14: Mary Jane Blvd & O'Leary St**

Control Type:	Two-way stop	Delay (sec / veh):	15.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.037

Intersection Setup

Name	Mary Jane Blvd			Mary Jane Blvd			O'Leary St			O'Leary St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mary Jane Blvd			Mary Jane Blvd			O'Leary St			O'Leary St		
Base Volume Input [veh/h]	14	212	18	31	175	27	17	6	55	13	5	15
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	212	18	31	175	27	17	6	55	13	5	15
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	58	5	8	48	7	5	2	15	4	1	4
Total Analysis Volume [veh/h]	15	230	20	34	190	29	18	7	60	14	5	16
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.03	0.00	0.00	0.04	0.02	0.07	0.04	0.01	0.02
d_M, Delay for Movement [s/veh]	7.70	0.00	0.00	7.81	0.00	0.00	14.47	14.36	10.15	15.00	14.09	10.03
Movement LOS	A	A	A	A	A	A	B	B	B	B	B	B
95th-Percentile Queue Length [veh/ln]	0.03	0.03	0.03	0.08	0.08	0.08	0.45	0.45	0.45	0.22	0.22	0.22
95th-Percentile Queue Length [ft/ln]	0.84	0.84	0.84	1.99	1.99	1.99	11.28	11.28	11.28	5.52	5.52	5.52
d_A, Approach Delay [s/veh]	0.44			1.05			11.41			12.60		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	2.81											
Intersection LOS	B											

Intersection Level Of Service Report
Intersection 15: Mary Jane Blvd & Melrose PI

Control Type:	Two-way stop	Delay (sec / veh):	20.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.161

Intersection Setup

Name	Mary Jane Blvd			Mary Jane Blvd			Melrose PI			Melrose PI		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mary Jane Blvd			Mary Jane Blvd			Melrose PI			Melrose PI		
Base Volume Input [veh/h]	38	193	13	35	180	37	50	57	41	11	48	8
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	3.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	38	193	13	35	180	37	50	57	41	11	48	8
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	52	4	10	49	10	14	15	11	3	13	2
Total Analysis Volume [veh/h]	41	210	14	38	196	40	54	62	45	12	52	9
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.00	0.00	0.03	0.00	0.00	0.16	0.16	0.05	0.04	0.14	0.01
d_M, Delay for Movement [s/veh]	7.79	0.00	0.00	7.75	0.00	0.00	20.68	19.27	14.33	18.96	16.54	11.48
Movement LOS	A	A	A	A	A	A	C	C	B	C	C	B
95th-Percentile Queue Length [veh/ln]	0.10	0.10	0.10	0.09	0.09	0.09	1.72	1.72	1.72	0.68	0.68	0.68
95th-Percentile Queue Length [ft/ln]	2.38	2.38	2.38	2.18	2.18	2.18	42.92	42.92	42.92	16.94	16.94	16.94
d_A, Approach Delay [s/veh]	1.21			1.08			18.36			16.31		
Approach LOS	A			A			C			C		
d_I, Intersection Delay [s/veh]	6.16											
Intersection LOS	C											

**Intersection Level Of Service Report
Intersection 16: Mary Jane Blvd & England Blvd**

Control Type:	Two-way stop	Delay (sec / veh):	1,324.9
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	3.171

Intersection Setup

Name	Mary Jane Blvd			Mary Jane Blvd			England Blvd			England Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵			↵			↵			↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mary Jane Blvd			Mary Jane Blvd			England Blvd			England Blvd		
Base Volume Input [veh/h]	68	78	106	92	156	14	26	348	33	64	452	93
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	68	78	106	92	156	14	26	348	33	64	452	93
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	21	29	25	42	4	7	95	9	17	123	25
Total Analysis Volume [veh/h]	74	85	115	100	170	15	28	378	36	70	491	101
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	3.17	0.49	0.18	1.37	0.94	0.03	0.03	0.00	0.00	0.06	0.00	0.00
d_M, Delay for Movement [s/veh]	1324.9	47.13	31.77	332.58	109.27	95.97	8.77	0.00	0.00	8.35	0.00	0.00
Movement LOS	F	E	D	F	F	F	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	9.31	4.45	4.45	8.06	7.98	7.98	0.09	0.00	0.00	0.20	0.00	0.00
95th-Percentile Queue Length [ft/ln]	232.82	111.34	111.34	201.40	199.52	199.52	2.20	0.00	0.00	4.88	0.00	0.00
d_A, Approach Delay [s/veh]	385.79			186.92			0.56			0.88		
Approach LOS	F			F			A			A		
d_I, Intersection Delay [s/veh]	96.10											
Intersection LOS	F											

**Intersection Level Of Service Report
Intersection 17: Mary Jane Blvd & Camden St**

Control Type:	Two-way stop	Delay (sec / veh):	14.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.007

Intersection Setup

Name	Mary Jane Blvd			Mary Jane Blvd			Camden St			Camden St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mary Jane Blvd			Mary Jane Blvd			Camden St			Camden St		
Base Volume Input [veh/h]	8	183	4	13	222	26	13	14	39	3	12	8
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	8	183	4	13	222	26	13	14	39	3	12	8
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	50	1	4	60	7	4	4	11	1	3	2
Total Analysis Volume [veh/h]	9	199	4	14	241	28	14	15	42	3	13	9
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.01	0.00	0.00	0.03	0.03	0.05	0.01	0.03	0.01
d_M, Delay for Movement [s/veh]	7.80	0.00	0.00	7.66	0.00	0.00	13.80	13.60	10.38	13.95	13.26	9.61
Movement LOS	A	A	A	A	A	A	B	B	B	B	B	A
95th-Percentile Queue Length [veh/ln]	0.02	0.02	0.02	0.03	0.03	0.03	0.40	0.40	0.40	0.15	0.15	0.15
95th-Percentile Queue Length [ft/ln]	0.52	0.52	0.52	0.77	0.77	0.77	9.91	9.91	9.91	3.65	3.65	3.65
d_A, Approach Delay [s/veh]	0.33			0.38			11.74			12.03		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	2.22											
Intersection LOS	B											

**Intersection Level Of Service Report
Intersection 18: Mary Jane Blvd & Flynn Ln**

Control Type:	Two-way stop	Delay (sec / veh):	20.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.149

Intersection Setup

Name	Mary Jane Blvd			Mary Jane Blvd			Flynn Ln			Flynn Ln		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	⊕			⊕			⊕			⊕		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mary Jane Blvd			Mary Jane Blvd			Flynn Ln			Flynn Ln		
Base Volume Input [veh/h]	3	165	37	53	219	55	43	55	18	23	58	28
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	165	37	53	219	55	43	55	18	23	58	28
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	45	10	14	60	15	12	15	5	6	16	8
Total Analysis Volume [veh/h]	3	179	40	58	238	60	47	60	20	25	63	30
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.04	0.00	0.00	0.15	0.15	0.03	0.08	0.16	0.04
d_M, Delay for Movement [s/veh]	7.86	0.00	0.00	7.79	0.00	0.00	20.92	18.82	14.20	19.29	17.63	12.49
Movement LOS	A	A	A	A	A	A	C	C	B	C	C	B
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.01	0.13	0.13	0.13	1.41	1.41	1.41	1.12	1.12	1.12
95th-Percentile Queue Length [ft/ln]	0.18	0.18	0.18	3.36	3.36	3.36	35.32	35.32	35.32	27.96	27.96	27.96
d_A, Approach Delay [s/veh]	0.11			1.27			18.87			16.67		
Approach LOS	A			A			C			C		
d_I, Intersection Delay [s/veh]	5.88											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 19: Mary Jane Blvd & Veteran's Way

Control Type:	Two-way stop	Delay (sec / veh):	18.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.255

Intersection Setup

Name	Mary Jane Blvd			Mary Jane Blvd			Veteran's Way			Veteran's Way		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mary Jane Blvd			Mary Jane Blvd			Veteran's Way			Veteran's Way		
Base Volume Input [veh/h]	4	232	0	0	315	90	84	0	10	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	5.00	2.00	2.00	5.00	2.00	20.00	2.00	20.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	4	232	0	0	315	90	84	0	10	0	0	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	63	0	0	86	24	23	0	3	0	0	0
Total Analysis Volume [veh/h]	4	252	0	0	342	98	91	0	11	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.00	0.02	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	8.23	0.00	0.00	7.74	0.00	0.00	18.67	17.90	14.38	14.72	14.95	9.58
Movement LOS	A	A	A	A	A	A	C	C	B	B	B	A
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.01	0.00	0.00	0.00	1.09	1.09	1.09	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.27	0.27	0.27	0.00	0.00	0.00	27.27	27.27	27.27	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.13			0.00			18.21			13.08		
Approach LOS	A			A			C			B		
d_I, Intersection Delay [s/veh]	2.37											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 20: Mary Jane Blvd & W Broadway St

Control Type:	Two-way stop	Delay (sec / veh):	1,331.9
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	3.662

Intersection Setup

Name	Mary Jane Blvd		W Broadway St		W Broadway St	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↵↵		↵↵↵		↵↵↵	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Mary Jane Blvd		W Broadway St		W Broadway St	
Base Volume Input [veh/h]	216	101	1471	223	184	1097
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.00	3.00	2.00	3.00	3.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	216	101	1471	223	184	1097
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	59	27	400	61	50	298
Total Analysis Volume [veh/h]	235	110	1599	242	200	1192
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	Yes		
Number of Storage Spaces in Median	1	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	3.66	0.34	0.02	0.00	0.62	0.01
d_M, Delay for Movement [s/veh]	1331.86	21.56	0.00	0.00	32.79	0.00
Movement LOS	F	C	A	A	D	A
95th-Percentile Queue Length [veh/ln]	24.89	1.45	0.00	0.00	3.90	0.00
95th-Percentile Queue Length [ft/ln]	622.35	36.24	0.00	0.00	97.61	0.00
d_A, Approach Delay [s/veh]	914.08		0.00		4.71	
Approach LOS	F		A		A	
d_I, Intersection Delay [s/veh]	89.97					
Intersection LOS	F					

**Intersection Level Of Service Report
Intersection 21: Flynn Ln & W Broadway St**

Control Type:	Two-way stop	Delay (sec / veh):	58.1
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.882

Intersection Setup

Name	Flynn Ln		W Broadway St		W Broadway St	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↶		↷		↷	
Turning Movement	Left	Thru	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	1	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	49.21	0.00	0.00
Speed [mph]	25.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Flynn Ln		W Broadway St		W Broadway St	
Base Volume Input [veh/h]	0	283	1397	143	0	1280
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	2.00	2.00	2.00	0.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	283	1397	143	0	1280
Peak Hour Factor	0.7900	0.9200	0.9200	0.9200	0.7900	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	77	380	39	0	348
Total Analysis Volume [veh/h]	0	308	1518	155	0	1391
Pedestrian Volume [ped/h]	0		0		0	

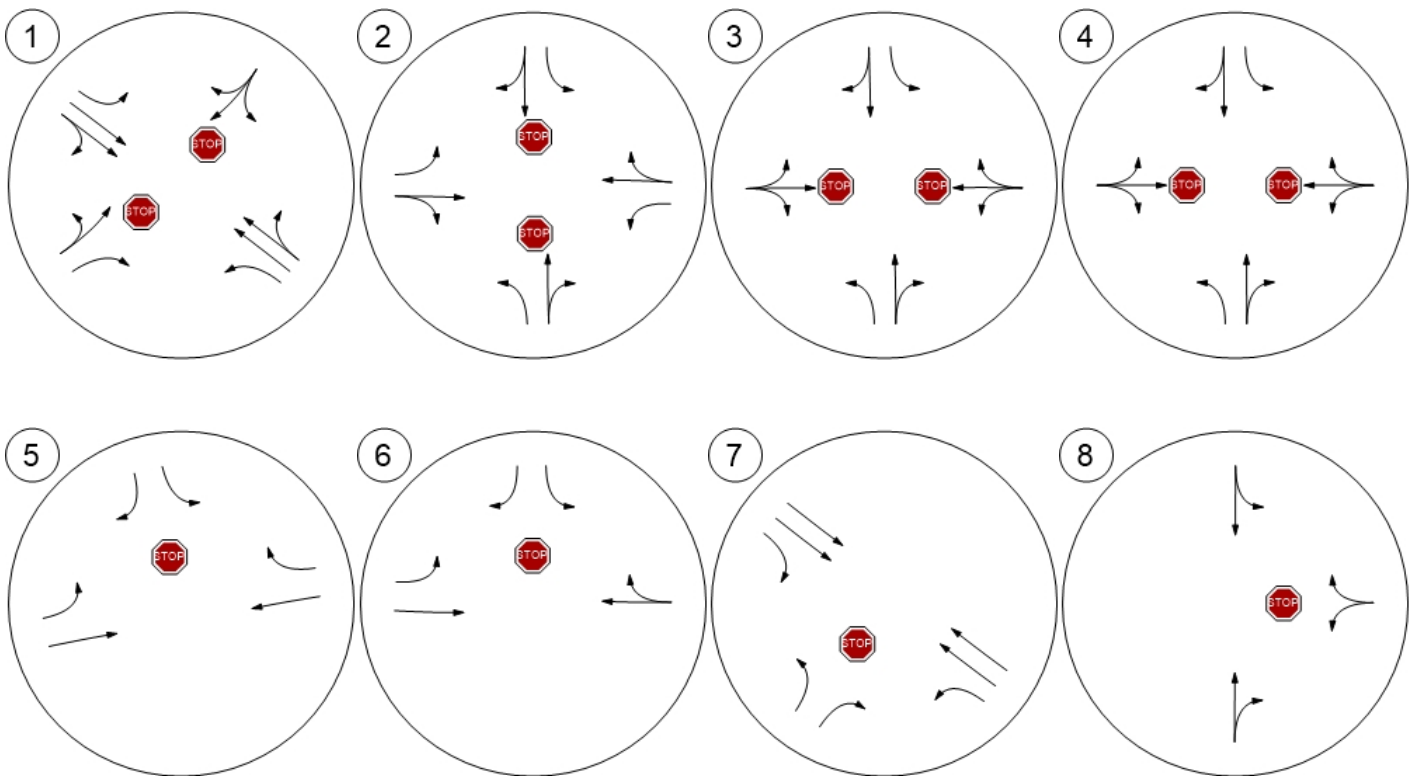
Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

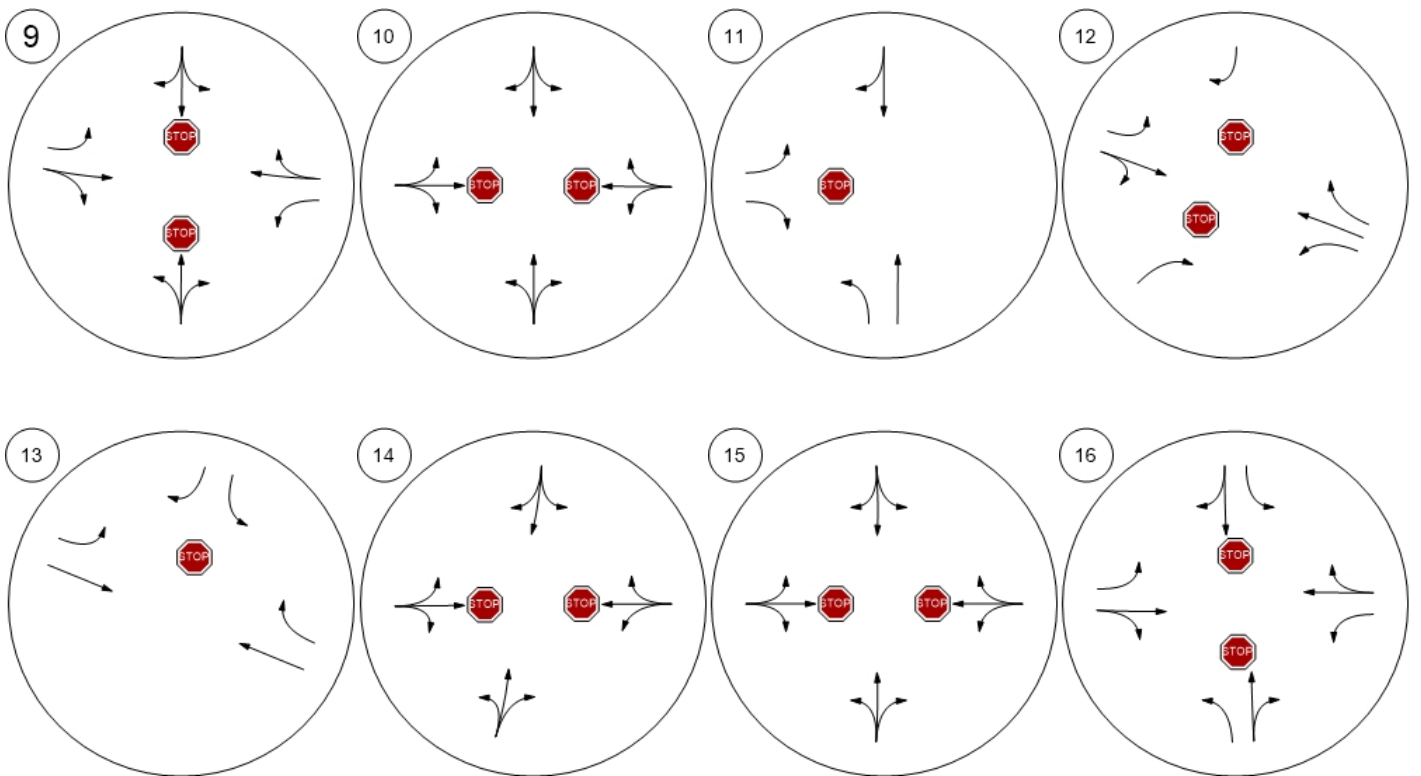
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.88	0.02	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	58.11	0.00	0.00	0.00	0.00
Movement LOS		F	A	A		A
95th-Percentile Queue Length [veh/ln]	0.00	8.48	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	212.10	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	58.11		0.00		0.00	
Approach LOS	F		A		A	
d_I, Intersection Delay [s/veh]	5.31					
Intersection LOS	F					

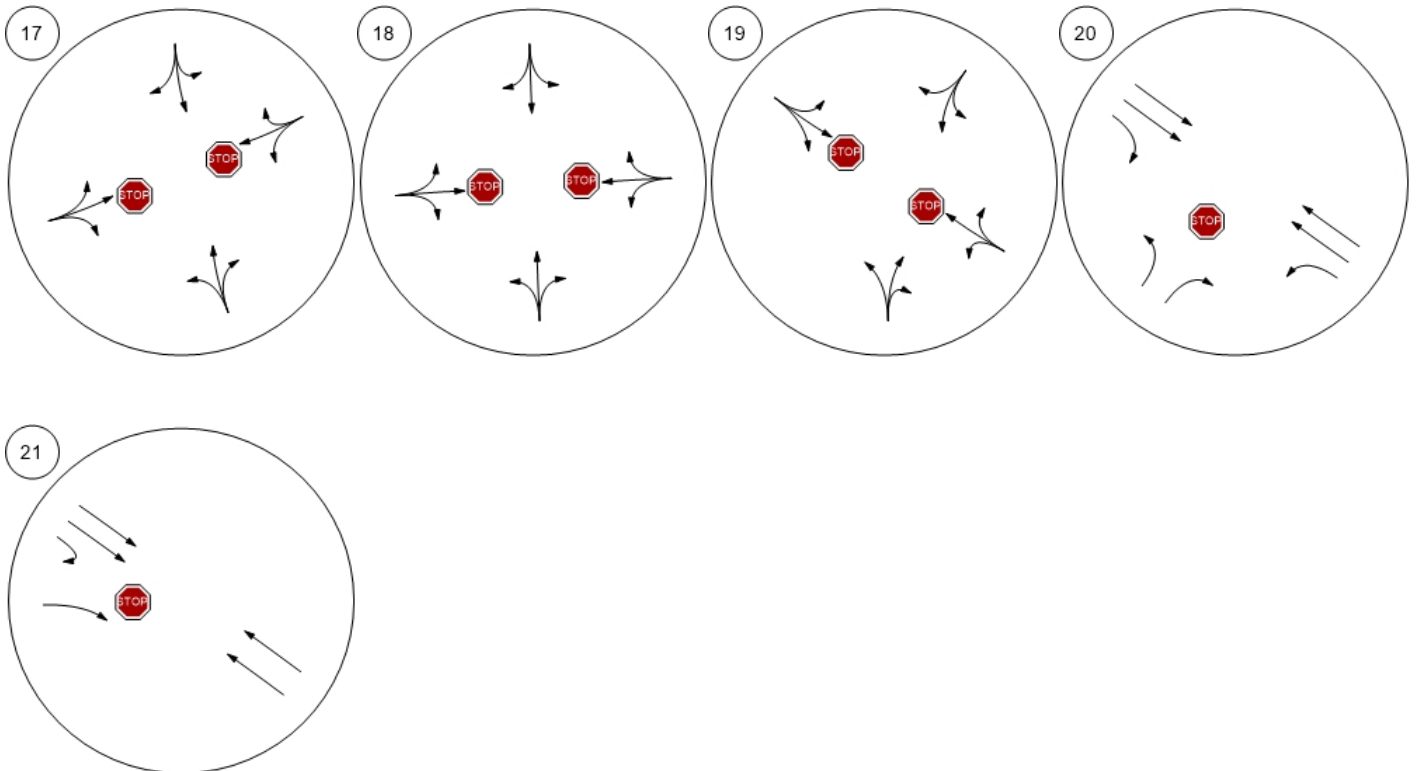
Lane Configuration and Traffic Control



Lane Configuration and Traffic Control



Lane Configuration and Traffic Control



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Scenario 3 Two Way Stop Control (2050)

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7/22/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
7	Dougherty Dr & W Broadway St	Two-way stop	HCM 6th Edition	NB Right	1.475	257.3	F

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

**Intersection Level Of Service Report
Intersection 7: Dougherty Dr & W Broadway St**

Control Type:	Two-way stop	Delay (sec / veh):	257.3
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.475

Intersection Setup

Name	Dougherty Dr		W Broadway St		W Broadway St	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	100.00
Speed [mph]	30.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Dougherty Dr		W Broadway St		W Broadway St	
Base Volume Input [veh/h]	175	475	1394	200	254	1060
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	175	475	1394	200	254	1060
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	48	129	379	54	69	288
Total Analysis Volume [veh/h]	190	516	1515	217	276	1152
Pedestrian Volume [ped/h]	0		0		0	

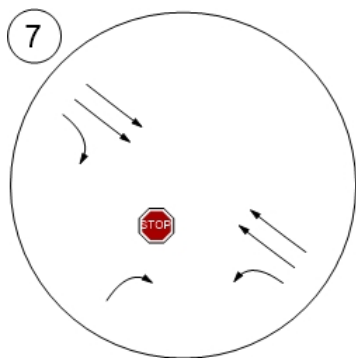
Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	1	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	1.47	0.02	0.00	0.77	0.01
d_M, Delay for Movement [s/veh]	0.00	257.25	0.00	0.00	41.25	0.00
Movement LOS		F	A	A	E	A
95th-Percentile Queue Length [veh/ln]	0.00	27.74	0.00	0.00	6.20	0.00
95th-Percentile Queue Length [ft/ln]	0.00	693.61	0.00	0.00	154.89	0.00
d_A, Approach Delay [s/veh]	257.25		0.00		7.97	
Approach LOS	F		A		A	
d_I, Intersection Delay [s/veh]	39.21					
Intersection LOS	F					

Lane Configuration and Traffic Control





Option 1: NB/SB Left Turn Lane

Number	9											
Intersection	Flynn Ln & England Blvd											
Control Type	Two-way stop											
Analysis Method	HCM 6th Edition											
Name	Flynn Ln			Flynn Ln			England Blvd			England Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Base Volume Input [veh/h]	2	74	65	17	79	3	21	324	15	58	461	15
Total Analysis Volume [veh/h]	2	80	71	18	86	3	23	352	16	63	501	16

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Capacity Analysis

Calculated Rank	4	3	2	4	3	2	2	1	1	2	1	1
v_c, Conflicting Flow Rate	1086	1049	360	1117	1049	509	517	0	0	368	0	0
v_c, Stage 1	406	406	360	635	635	509	517	0	0	368	0	0
v_c, Stage 2	680	643	0	482	414	0	0	0	0	0	0	0
c_p,x, Potential Capacity [veh/h]	194	227	684	185	227	564	1049	0	0	1185	0	0
c_p,x, Stage 1 [veh/h]	622	598	1272	467	472	1355	1890	0	0	1802	0	0
c_p,x, Stage 2 [veh/h]	441	468	1085	566	593	1085	1623	0	0	1617	0	0
c_m,x, Movement Capacity [veh/h]	125	211	684	111	211	564	1049	100000	100000	1185	100000	100000
c_m,x, Stage 1 [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
c_m,x, Stage 2 [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
c_T, Total Capacity [veh/h]	125	211	684	111	211	564	1049	100000	100000	1185	100000	100000

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.38	0.10	0.16	0.41	0.01	0.02	0.00	0.00	0.05	0.01	0.00
d_M, Delay for Movement [s/veh]	34.35	32.42	20.59	43.81	33.40	22.70	8.51	0.00	0.00	8.21	0.00	0.00
Movement LOS	D	D	C	E	D	C	A	A	A	A	A	A
Critical Movement	No	No	No	Yes	No	No	No	No	No	No	No	No
95th-Percentile Queue Length [veh/ln]	0.05	2.50	2.50	0.56	1.89	1.89	0.07	0.00	0.00	0.17	0.00	0.00
95th-Percentile Queue Length [ft/ln]	1.22	62.47	62.47	13.92	47.24	47.24	1.68	0.00	0.00	4.21	0.00	0.00
d_A, Approach Delay [s/veh]	26.96			34.86			0.50			0.89		
Approach LOS	D			D			A			A		
V/C_I, Worst Movement V/C Ratio	0.16											
d_I, Worst Movement Control Delay [s/veh]	43.81											
d_I, Intersection Delay [s/veh]	6.96											
Intersection LOS	E											

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Scenario 6 All Way Stop Control (2050)

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7/17/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
2	George Elmer Dr & England Blvd	All-way stop	HCM 6th Edition	WB Thru	1.273	94.6	F
9	Flynn Ln & England Blvd	All-way stop	HCM 6th Edition	WB Thru	0.866	24.0	C
15	Mary Jane Blvd & Melrose Pl	All-way stop	HCM 6th Edition	NB Thru	0.373	10.5	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 2: George Elmer Dr & England Blvd

Control Type:	All-way stop	Delay (sec / veh):	94.6
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.273

Intersection Setup

Name	George Elmer Dr			George Elmer Dr			England Blvd			England Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵			↵			↵			↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	George Elmer Dr			George Elmer Dr			England Blvd			England Blvd		
Base Volume Input [veh/h]	142	199	46	42	169	184	122	301	159	43	431	42
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	3.00	2.00	2.00	3.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	142	199	46	42	169	184	122	301	159	43	431	42
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	39	54	13	11	46	50	33	82	43	12	117	11
Total Analysis Volume [veh/h]	154	216	50	46	184	200	133	327	173	47	468	46
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	368	392	377	413	382	500	381	514
Degree of Utilization, x	0.42	0.68	0.12	0.93	0.35	1.21	0.12	1.27

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	2.01	4.85	0.41	10.33	1.53	20.10	0.42	22.38
95th-Percentile Queue Length [ft]	50.21	121.17	10.31	258.26	38.18	502.45	10.47	559.61
Approach Delay [s/veh]	25.60		53.35		115.31		154.34	
Approach LOS	D		F		F		F	
Intersection Delay [s/veh]	94.55							
Intersection LOS	F							

Intersection Level Of Service Report
Intersection 9: Flynn Ln & England Blvd

Control Type:	All-way stop	Delay (sec / veh):	24.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.866

Intersection Setup

Name	Flynn Ln			Flynn Ln			England Blvd			England Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			T			T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			25.00			30.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Flynn Ln			Flynn Ln			England Blvd			England Blvd		
Base Volume Input [veh/h]	2	74	65	17	79	3	21	324	15	58	461	15
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	3.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	74	65	17	79	3	21	324	15	58	461	15
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	20	18	5	21	1	6	88	4	16	125	4
Total Analysis Volume [veh/h]	2	80	71	18	86	3	23	352	16	63	501	16
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	548	513	529	574	549	597
Degree of Utilization, x	0.28	0.21	0.04	0.64	0.11	0.87

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.14	0.78	0.14	4.55	0.39	9.78
95th-Percentile Queue Length [ft]	28.40	19.48	3.40	113.76	9.66	244.58
Approach Delay [s/veh]	12.09	11.87	18.91		32.83	
Approach LOS	B	B	C		D	
Intersection Delay [s/veh]	24.01					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 15: Mary Jane Blvd & Melrose PI

Control Type:	All-way stop	Delay (sec / veh):	10.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.373

Intersection Setup

Name	Mary Jane Blvd			Mary Jane Blvd			Melrose PI			Melrose PI		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mary Jane Blvd			Mary Jane Blvd			Melrose PI			Melrose PI		
Base Volume Input [veh/h]	38	193	13	35	180	37	50	57	41	11	48	8
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	3.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	38	193	13	35	180	37	50	57	41	11	48	8
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	52	4	10	49	10	14	15	11	3	13	2
Total Analysis Volume [veh/h]	41	210	14	38	196	40	54	62	45	12	52	9
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	725	735	677	651
Degree of Utilization, x	0.37	0.37	0.24	0.11

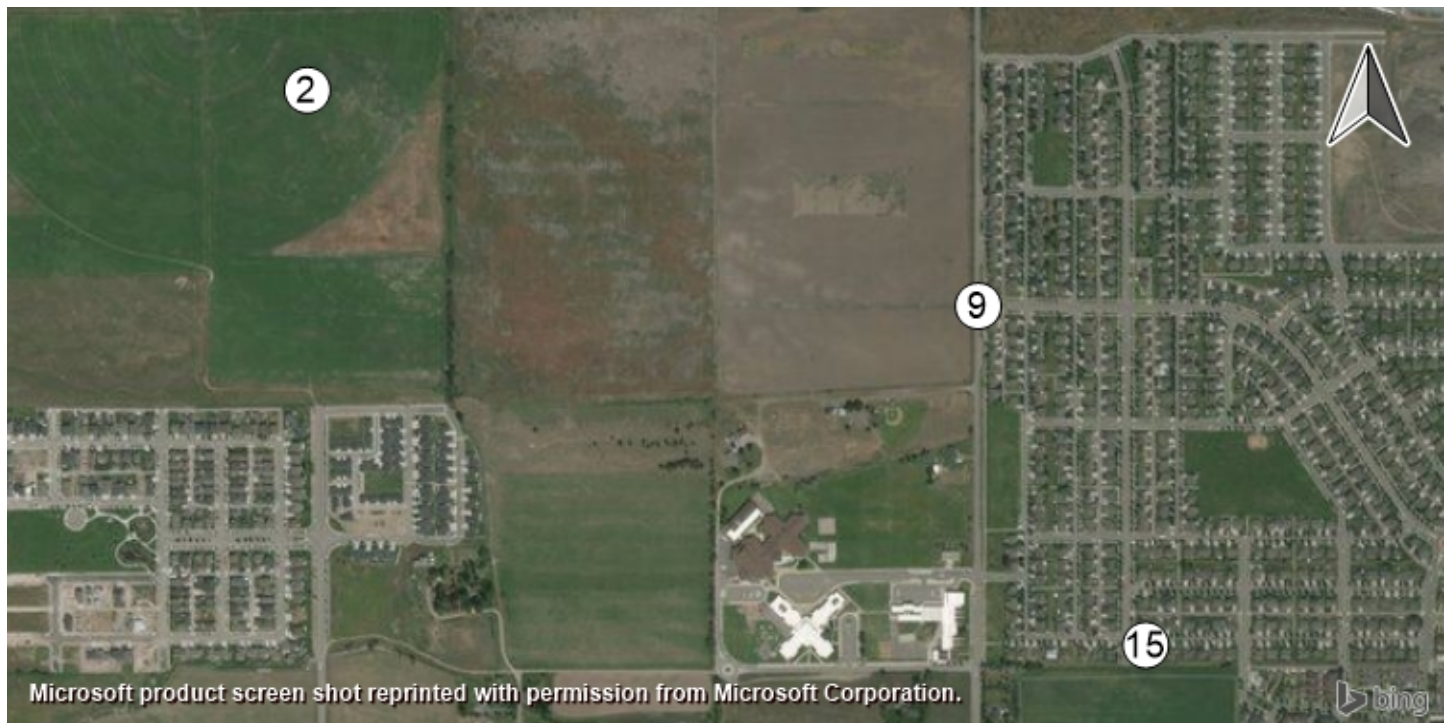
Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.68	1.73	0.92	0.38
95th-Percentile Queue Length [ft]	41.98	43.29	23.08	9.43
Approach Delay [s/veh]	10.80	10.78	9.97	9.23
Approach LOS	B	B	A	A
Intersection Delay [s/veh]	10.47			
Intersection LOS	B			

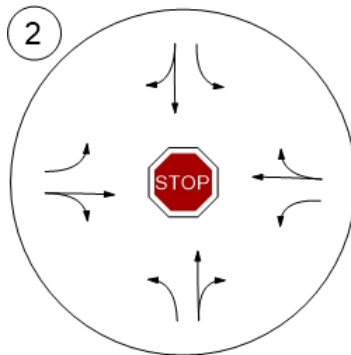
Study Intersections



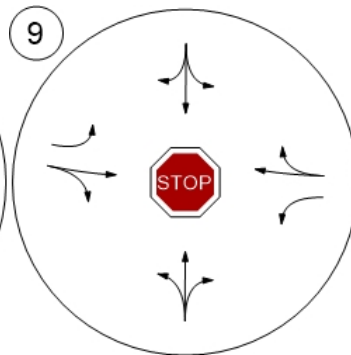
Lane Configuration and Traffic Control



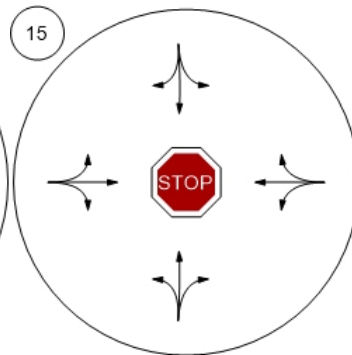
George Elmer Dr & England



Flynn Ln & England Blvd



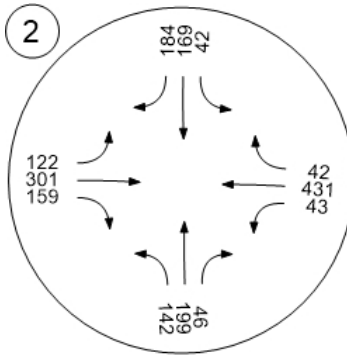
Mary Jane Blvd & Melrose Pl



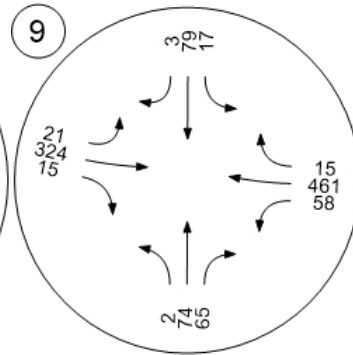
Traffic Volume - Base Volume



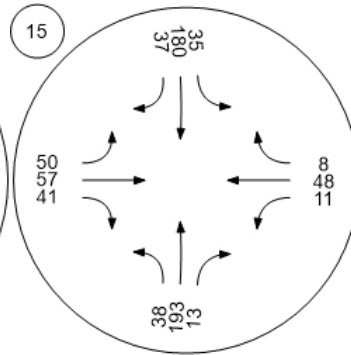
George Elmer Dr & England



Flynn Ln & England Blvd



Mary Jane Blvd & Melrose Pl



Mullan BUILD - 2050 PM

Vistro File: H:\...\24667_PM2050.vistro

Scenario 5 Roundabout (2050)

Report File: H:\...\24667_PM2050_RBT.pdf

7/21/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	George Elmer Dr & W Broadway St	Roundabout	HCM 6th Edition	NB Left		15.9	C
2	George Elmer Dr & England Blvd	Roundabout	HCM 6th Edition	WB Thru		14.9	B
3	George Elmer Dr & Cattle Dr	Roundabout	HCM 6th Edition	NB Thru		6.5	A
4	George Elmer Dr & Heron's Landing	Roundabout	HCM 6th Edition	NB Thru		7.0	A
5	George Elmer Dr & Mullan Rd	Roundabout	HCM 6th Edition	WB Thru		40.8	E
6	Dougherty Dr & England Blvd	Roundabout	HCM 6th Edition	WB Thru		7.2	A
7	Dougherty Dr & W Broadway St	Roundabout	HCM 6th Edition	NB Right		20.0	C
8	Flynn Ln & Camden St	Roundabout	HCM 6th Edition	NB Thru		3.4	A
9	Flynn Ln & England Blvd	Roundabout	HCM 6th Edition	WB Thru		7.1	A
10	Flynn Ln & Chelsea Dr	Roundabout	HCM 6th Edition	NB Thru		3.9	A
11	Flynn Ln & Siren's Dr	Roundabout	HCM 6th Edition	SB Thru		3.8	A
12	Flynn Ln & Mullan Rd	Roundabout	HCM 6th Edition	WB Thru		52.7	F
13	Mary Jane Blvd & Mullan Rd	Roundabout	HCM 6th Edition	WB Thru		60.6	F
14	Mary Jane Blvd & O'Leary St	Roundabout	HCM 6th Edition	NB Thru		4.4	A
15	Mary Jane Blvd & Melrose Pl	Roundabout	HCM 6th Edition	NB Thru		5.0	A
16	Mary Jane Blvd & England Blvd	Roundabout	HCM 6th Edition	WB Thru		10.0	B
17	Mary Jane Blvd & Camden St	Roundabout	HCM 6th Edition	SB Thru		4.3	A
			HCM 6th				

18	Mary Jane Blvd & Flynn Ln	Roundabout	HCM 6th Edition	SB Thru		5.1	A
19	Mary Jane Blvd & Veteran's Way	Roundabout	HCM 6th Edition	EB Left		5.5	A
20	Mary Jane Blvd & W Broadway St	Roundabout	HCM 6th Edition	NB Left		18.1	C
21	Flynn Ln & W Broadway St	Roundabout	HCM 6th Edition	NB Thru		11.8	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: George Elmer Dr & W Broadway St

Control Type:	Roundabout	Delay (sec / veh):	15.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes		

Intersection Setup

Name	George Elmer Dr			Commerical Access			W Broadway St			W Broadway St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	⇌			+			⇌			⇌		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.21
Speed [mph]	30.00			30.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	George Elmer Dr			Commerical Access			W Broadway St			W Broadway St		
Base Volume Input [veh/h]	204	1	159	1	1	1	1	1435	250	137	1098	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.00	2.00	3.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	204	1	159	1	1	1	1	1435	250	137	1098	1
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	55	0	43	0	0	0	0	390	68	37	298	0
Total Analysis Volume [veh/h]	222	1	173	1	1	1	1	1560	272	149	1193	1
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	2			1			1			1		
Circulating Flow Rate [veh/h]	1593			1598			154			231		
Exiting Flow Rate [veh/h]	430			3			1447			1770		
Demand Flow Rate [veh/h]	204	1	159	1	1	1	1	1435	250	137	1098	1
Adjusted Demand Flow Rate [veh/h]	222	1	173	1	1	1	1	1560	272	149	1193	1

Lanes

Override Calculated Critical Headway	No	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1350.00	1420.00	1380.00	1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00092	0.00085	0.00102	0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	0.97	0.97	0.98	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	230	179	4	879	991	644	727
Capacity of Entry and Bypass Lanes [veh/h]	312	367	271	1235	1235	1152	1152
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	303	356	266	1211	1211	1129	1129
X, volume / capacity	0.74	0.49	0.01	0.71	0.80	0.56	0.63

Movement, Approach, & Intersection Results

Lane LOS	E	C	B	B	C	A	B
95th-Percentile Queue Length [veh]	5.43	2.55	0.03	6.46	9.31	3.60	4.70
95th-Percentile Queue Length [ft]	135.85	63.82	0.86	161.44	232.73	89.98	117.50
Approach Delay [s/veh]	33.54		13.79	15.78		10.84	
Approach LOS	D		B	C		B	
Intersection Delay [s/veh]	15.89						
Intersection LOS	C						

**Intersection Level Of Service Report
Intersection 2: George Elmer Dr & England Blvd**

Control Type:	Roundabout	Delay (sec / veh):	14.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes		

Intersection Setup

Name	George Elmer Dr			George Elmer Dr			England Blvd			England Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	George Elmer Dr			George Elmer Dr			England Blvd			England Blvd		
Base Volume Input [veh/h]	142	199	46	42	169	184	122	301	159	43	431	42
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	3.00	2.00	2.00	3.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	142	199	46	42	169	184	122	301	159	43	431	42
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	39	54	13	11	46	50	33	82	43	12	117	11
Total Analysis Volume [veh/h]	154	216	50	46	184	200	133	327	173	47	468	46
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	516			682			284			515		
Exiting Flow Rate [veh/h]	414			405			838			431		
Demand Flow Rate [veh/h]	142	199	46	42	169	184	122	301	159	43	431	42
Adjusted Demand Flow Rate [veh/h]	154	216	50	46	184	200	133	327	173	47	468	46

Lanes

Override Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	431	441	646	573
Capacity of Entry and Bypass Lanes [veh/h]	816	689	1033	816
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	796	672	1013	800
X, volume / capacity	0.53	0.64	0.63	0.70

Movement, Approach, & Intersection Results

Lane LOS	B	C	B	C
95th-Percentile Queue Length [veh]	3.15	4.63	4.57	5.88
95th-Percentile Queue Length [ft]	78.68	115.70	114.17	147.12
Approach Delay [s/veh]	12.12	17.59	12.42	17.85
Approach LOS	B	C	B	C
Intersection Delay [s/veh]	14.94			
Intersection LOS	B			

**Intersection Level Of Service Report
Intersection 3: George Elmer Dr & Cattle Dr**

Control Type:	Roundabout	Delay (sec / veh):	6.5
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	George Elmer Dr			George Elmer Dr			Cattle Dr			Cattle Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	George Elmer Dr			George Elmer Dr			Cattle Dr			Cattle Dr		
Base Volume Input [veh/h]	135	333	21	5	360	6	26	1	33	7	1	29
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	3.00	2.00	2.00	3.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	135	333	21	5	360	6	26	1	33	7	1	29
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	37	90	6	1	98	2	7	0	9	2	0	8
Total Analysis Volume [veh/h]	147	362	23	5	391	7	28	1	36	8	1	32
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	35			159			416			551		
Exiting Flow Rate [veh/h]	448			434			158			30		
Demand Flow Rate [veh/h]	135	333	21	5	360	6	26	1	33	7	1	29
Adjusted Demand Flow Rate [veh/h]	147	362	23	5	391	7	28	1	36	8	1	32

Lanes

Override Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.97	0.97	0.98	0.98
Entry Flow Rate [veh/h]	547	415	67	42
Capacity of Entry and Bypass Lanes [veh/h]	1333	1174	903	787
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	1298	1140	886	771
X, volume / capacity	0.41	0.35	0.07	0.05

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	2.04	1.61	0.24	0.17
95th-Percentile Queue Length [ft]	51.05	40.34	5.93	4.20
Approach Delay [s/veh]	6.74	6.65	4.76	5.20
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	6.52			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 4: George Elmer Dr & Heron's Landing

Control Type:	Roundabout	Delay (sec / veh):	7.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	George Elmer Dr			George Elmer Dr			Heron's Landing			Heron's Landing		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	George Elmer Dr			George Elmer Dr			Heron's Landing			Heron's Landing		
Base Volume Input [veh/h]	75	429	30	30	340	30	30	1	20	20	1	30
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	3.00	2.00	2.00	3.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	75	429	30	30	340	30	30	1	20	20	1	30
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	20	117	8	8	92	8	8	0	5	5	0	8
Total Analysis Volume [veh/h]	82	466	33	33	370	33	33	1	22	22	1	33
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	68			107			437			597		
Exiting Flow Rate [veh/h]	426			547			118			68		
Demand Flow Rate [veh/h]	75	429	30	30	340	30	30	1	20	20	1	30
Adjusted Demand Flow Rate [veh/h]	82	466	33	33	370	33	33	1	22	22	1	33

Lanes

Override Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.97	0.97	0.98	0.98
Entry Flow Rate [veh/h]	598	449	58	58
Capacity of Entry and Bypass Lanes [veh/h]	1288	1238	884	751
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	1253	1203	867	736
X, volume / capacity	0.46	0.36	0.06	0.08

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	2.52	1.68	0.21	0.25
95th-Percentile Queue Length [ft]	63.04	41.91	5.17	6.16
Approach Delay [s/veh]	7.66	6.50	4.77	5.68
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	6.97			
Intersection LOS	A			

**Intersection Level Of Service Report
Intersection 5: George Elmer Dr & Mullan Rd**

Control Type:	Roundabout	Delay (sec / veh):	40.8
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes		

Intersection Setup

Name	George Elmer Dr		Mullan Rd		Mullan Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	325.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	100.00
Speed [mph]	30.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	George Elmer Dr		Mullan Rd		Mullan Rd	
Base Volume Input [veh/h]	104	275	179	637	1185	353
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	3.00	2.00	2.00	3.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	104	275	179	637	1185	353
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	75	49	173	322	96
Total Analysis Volume [veh/h]	113	299	195	692	1288	384
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Number of Conflicting Circulating Lanes	2		1		1	
Circulating Flow Rate [veh/h]	1314		115		201	
Exiting Flow Rate [veh/h]	596		1619		821	
Demand Flow Rate [veh/h]	104	275	179	637	1185	353
Adjusted Demand Flow Rate [veh/h]	113	299	195	692	1288	384

Lanes

Override Calculated Critical Headway	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1350.00	1420.00	1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00092	0.00085	0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	0.98	0.98	0.97	0.98	0.98	0.97
Entry Flow Rate [veh/h]	116	305	201	706	1314	396
Capacity of Entry and Bypass Lanes [veh/h]	404	465	1279	1279	1183	1183
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	396	456	1242	1254	1160	1149
X, volume / capacity	0.29	0.66	0.16	0.55	1.11	0.33

Movement, Approach, & Intersection Results

Lane LOS	B	D	A	A	F	A
95th-Percentile Queue Length [veh]	1.16	4.63	0.56	3.52	31.42	1.48
95th-Percentile Queue Length [ft]	29.07	115.73	13.92	88.01	785.53	37.10
Approach Delay [s/veh]	22.03		8.04		62.80	
Approach LOS	C		A		F	
Intersection Delay [s/veh]	40.80					
Intersection LOS	E					

**Intersection Level Of Service Report
Intersection 6: Dougherty Dr & England Blvd**

Control Type:	Roundabout	Delay (sec / veh):	7.2
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	Dougherty Dr		England Blvd		England Blvd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration	T		↑		↑	
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Dougherty Dr		England Blvd		England Blvd	
Base Volume Input [veh/h]	111	100	150	249	416	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	111	100	150	249	416	50
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	30	27	41	68	113	14
Total Analysis Volume [veh/h]	121	109	163	271	452	54
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Number of Conflicting Circulating Lanes	1		1		1	
Circulating Flow Rate [veh/h]	461		123		166	
Exiting Flow Rate [veh/h]	221		572		400	
Demand Flow Rate [veh/h]	111	100	150	249	416	50
Adjusted Demand Flow Rate [veh/h]	121	109	163	271	452	54

Lanes

Override Calculated Critical Headway	No		No		No	
User-Defined Critical Headway [s]	4.00		4.00		4.00	
Override Calculated Follow-Up Time	No		No		No	
User-Defined Follow-Up Time [s]	3.00		3.00		3.00	
A (intercept)	1380.00		1380.00		1380.00	
B (coefficient)	0.00102		0.00102		0.00102	
HV Adjustment Factor	0.98		0.98		0.98	
Entry Flow Rate [veh/h]	235		443		517	
Capacity of Entry and Bypass Lanes [veh/h]	863		1217		1165	
Pedestrian Impedance	1.00		1.00		1.00	
Capacity per Entry Lane [veh/h]	846		1193		1142	
X, volume / capacity	0.27		0.36		0.44	




Movement, Approach, & Intersection Results

Lane LOS	A		A		A	
95th-Percentile Queue Length [veh]	1.11		1.69		2.32	
95th-Percentile Queue Length [ft]	27.63		42.14		57.99	
Approach Delay [s/veh]	7.20		6.55		7.85	
Approach LOS	A		A		A	
Intersection Delay [s/veh]			7.24			
Intersection LOS			A			

**Intersection Level Of Service Report
Intersection 7: Dougherty Dr & W Broadway St**

Control Type:	Roundabout	Delay (sec / veh):	20.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes		

Intersection Setup

Name	Dougherty Dr		W Broadway St		W Broadway St	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		Yes	

Volumes

Name	Dougherty Dr		W Broadway St		W Broadway St	
Base Volume Input [veh/h]	175	300	1394	200	254	1060
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	175	300	1394	200	254	1060
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	48	82	379	54	69	288
Total Analysis Volume [veh/h]	190	326	1515	217	276	1152
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Number of Conflicting Circulating Lanes	2		1		1	
Circulating Flow Rate [veh/h]	1545		282		194	
Exiting Flow Rate [veh/h]	503		1369		1878	
Demand Flow Rate [veh/h]	175	300	1394	200	254	1060
Adjusted Demand Flow Rate [veh/h]	190	326	1515	217	276	1152

Lanes

Override Calculated Critical Headway	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1350.00	1420.00	1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00092	0.00085	0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	0.98	0.98	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	194	333	831	937	685	772
Capacity of Entry and Bypass Lanes [veh/h]	326	382	1100	1100	1191	1191
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	320	375	1078	1078	1168	1168
X, volume / capacity	0.59	0.87	0.76	0.85	0.58	0.65

Movement, Approach, & Intersection Results

Lane LOS	D	F	C	C	B	B
95th-Percentile Queue Length [veh]	3.60	8.44	7.54	11.09	3.82	5.04
95th-Percentile Queue Length [ft]	90.07	211.05	188.54	277.28	95.61	125.99
Approach Delay [s/veh]	44.26		20.10		10.99	
Approach LOS	E		C		B	
Intersection Delay [s/veh]	19.95					
Intersection LOS	C					

**Intersection Level Of Service Report
Intersection 8: Flynn Ln & Camden St**

Control Type: Roundabout
Analysis Method: HCM 6th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 3.4
Level Of Service: A

Intersection Setup

Name	Flynn Ln		Flynn Ln		Camden St	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Flynn Ln		Flynn Ln		Camden St	
Base Volume Input [veh/h]	103	7	22	94	5	13
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	103	7	22	94	5	13
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	2	6	26	1	4
Total Analysis Volume [veh/h]	112	8	24	102	5	14
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Number of Conflicting Circulating Lanes	1		1		1	
Circulating Flow Rate [veh/h]	24		5		114	
Exiting Flow Rate [veh/h]	109		129		33	
Demand Flow Rate [veh/h]	103	7	22	94	5	13
Adjusted Demand Flow Rate [veh/h]	112	8	24	102	5	14

Lanes

Override Calculated Critical Headway	No		No		No	
User-Defined Critical Headway [s]	4.00		4.00		4.00	
Override Calculated Follow-Up Time	No		No		No	
User-Defined Follow-Up Time [s]	3.00		3.00		3.00	
A (intercept)	1380.00		1380.00		1380.00	
B (coefficient)	0.00102		0.00102		0.00102	
HV Adjustment Factor	0.98		0.98		0.98	
Entry Flow Rate [veh/h]	123		129		20	
Capacity of Entry and Bypass Lanes [veh/h]	1346		1373		1229	
Pedestrian Impedance	1.00		1.00		1.00	
Capacity per Entry Lane [veh/h]	1320		1346		1205	
X, volume / capacity	0.09		0.09		0.02	

Movement, Approach, & Intersection Results

Lane LOS	A		A		A	
95th-Percentile Queue Length [veh]	0.30		0.31		0.05	
95th-Percentile Queue Length [ft]	7.49		7.73		1.20	
Approach Delay [s/veh]	3.46		3.42		3.12	
Approach LOS	A		A		A	
Intersection Delay [s/veh]			3.41			
Intersection LOS			A			

**Intersection Level Of Service Report
Intersection 9: Flynn Ln & England Blvd**

Control Type: Roundabout
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 7.1
 Level Of Service: A

Intersection Setup

Name	Flynn Ln			Flynn Ln			England Blvd			England Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			25.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Flynn Ln			Flynn Ln			England Blvd			England Blvd		
Base Volume Input [veh/h]	2	74	65	17	79	3	21	324	15	58	461	15
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	3.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	74	65	17	79	3	21	324	15	58	461	15
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	20	18	5	21	1	6	88	4	16	125	4
Total Analysis Volume [veh/h]	2	80	71	18	86	3	23	352	16	63	501	16
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	401			577			171			107		
Exiting Flow Rate [veh/h]	169			121			516			450		
Demand Flow Rate [veh/h]	2	74	65	17	79	3	21	324	15	58	461	15
Adjusted Demand Flow Rate [veh/h]	2	80	71	18	86	3	23	352	16	63	501	16

Lanes

Override Calculated Critical Headway	No			No			No			No		
User-Defined Critical Headway [s]	4.00			4.00			4.00			4.00		
Override Calculated Follow-Up Time	No			No			No			No		
User-Defined Follow-Up Time [s]	3.00			3.00			3.00			3.00		
A (intercept)	1380.00			1380.00			1380.00			1380.00		
B (coefficient)	0.00102			0.00102			0.00102			0.00102		
HV Adjustment Factor	0.98			0.97			0.98			0.98		
Entry Flow Rate [veh/h]	157			110			399			592		
Capacity of Entry and Bypass Lanes [veh/h]	917			766			1159			1238		
Pedestrian Impedance	1.00			1.00			1.00			1.00		
Capacity per Entry Lane [veh/h]	899			746			1137			1213		
X, volume / capacity	0.17			0.14			0.34			0.48		

Movement, Approach, & Intersection Results

Lane LOS	A			A			A			A		
95th-Percentile Queue Length [veh]	0.61			0.50			1.55			2.66		
95th-Percentile Queue Length [ft]	15.28			12.50			38.71			66.49		
Approach Delay [s/veh]	5.68			6.36			6.54			8.05		
Approach LOS	A			A			A			A		
Intersection Delay [s/veh]	7.13											
Intersection LOS	A											

**Intersection Level Of Service Report
Intersection 10: Flynn Ln & Chelsea Dr**

Control Type: Roundabout
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 3.9
 Level Of Service: A

Intersection Setup

Name	Flynn Ln			Flynn Ln			Chelsea Dr			Chelsea Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Flynn Ln			Flynn Ln			Chelsea Dr			Chelsea Dr		
Base Volume Input [veh/h]	28	109	20	21	114	18	28	12	40	15	3	4
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	5.00	2.00	3.00	2.00	4.00	2.00	2.00	7.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	28	109	20	21	114	18	28	12	40	15	3	4
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	30	5	6	31	5	8	3	11	4	1	1
Total Analysis Volume [veh/h]	30	118	22	23	124	20	30	13	43	16	3	4
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	68			51			168			182		
Exiting Flow Rate [veh/h]	189			156			54			60		
Demand Flow Rate [veh/h]	28	109	20	21	114	18	28	12	40	15	3	4
Adjusted Demand Flow Rate [veh/h]	30	118	22	23	124	20	30	13	43	16	3	4

Lanes

Override Calculated Critical Headway	No			No			No			No		
User-Defined Critical Headway [s]	4.00			4.00			4.00			4.00		
Override Calculated Follow-Up Time	No			No			No			No		
User-Defined Follow-Up Time [s]	3.00			3.00			3.00			3.00		
A (intercept)	1380.00			1380.00			1380.00			1380.00		
B (coefficient)	0.00102			0.00102			0.00102			0.00102		
HV Adjustment Factor	0.98			0.97			0.97			0.95		
Entry Flow Rate [veh/h]	175			172			89			25		
Capacity of Entry and Bypass Lanes [veh/h]	1288			1311			1163			1147		
Pedestrian Impedance	1.00			1.00			1.00			1.00		
Capacity per Entry Lane [veh/h]	1258			1276			1132			1088		
X, volume / capacity	0.14			0.13			0.08			0.02		

Movement, Approach, & Intersection Results




Lane LOS	A			A			A			A		
95th-Percentile Queue Length [veh]	0.47			0.45			0.25			0.06		
95th-Percentile Queue Length [ft]	11.68			11.26			6.16			1.62		
Approach Delay [s/veh]	3.98			3.90			3.82			3.49		
Approach LOS	A			A			A			A		
Intersection Delay [s/veh]	3.90											
Intersection LOS	A											

**Intersection Level Of Service Report
Intersection 11: Flynn Ln & Siren's Dr**

Control Type: Roundabout
Analysis Method: HCM 6th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 3.8
Level Of Service: A

Intersection Setup

Name	Flynn Ln		Flynn Ln		Siren's Rd	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Flynn Ln		Flynn Ln		Siren's Rd	
Base Volume Input [veh/h]	17	137	156	13	20	24
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	18.00	2.00	2.00	2.00	5.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	17	137	156	13	20	24
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	37	42	4	5	7
Total Analysis Volume [veh/h]	18	149	170	14	22	26
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Number of Conflicting Circulating Lanes	1		1		1	
Circulating Flow Rate [veh/h]	23		21		173	
Exiting Flow Rate [veh/h]	200		175		36	
Demand Flow Rate [veh/h]	17	137	156	13	20	24
Adjusted Demand Flow Rate [veh/h]	18	149	170	14	22	26

Lanes

Override Calculated Critical Headway	No		No		No	
User-Defined Critical Headway [s]	4.00		4.00		4.00	
Override Calculated Follow-Up Time	No		No		No	
User-Defined Follow-Up Time [s]	3.00		3.00		3.00	
A (intercept)	1380.00		1380.00		1380.00	
B (coefficient)	0.00102		0.00102		0.00102	
HV Adjustment Factor	0.97		0.98		0.97	
Entry Flow Rate [veh/h]	173		188		50	
Capacity of Entry and Bypass Lanes [veh/h]	1348		1351		1157	
Pedestrian Impedance	1.00		1.00		1.00	
Capacity per Entry Lane [veh/h]	1302		1324		1119	
X, volume / capacity	0.13		0.14		0.04	

Movement, Approach, & Intersection Results

Lane LOS	A		A		A	
95th-Percentile Queue Length [veh]	0.44		0.48		0.13	
95th-Percentile Queue Length [ft]	11.00		12.06		3.36	
Approach Delay [s/veh]	3.81		3.85		3.58	
Approach LOS	A		A		A	
Intersection Delay [s/veh]			3.80			
Intersection LOS			A			

**Intersection Level Of Service Report
Intersection 12: Flynn Ln & Mullan Rd**

Control Type: Roundabout
Analysis Method: HCM 6th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 52.7
Level Of Service: F

Intersection Setup

Name	Flynn Ln			Mullan Rd			Mullan Rd					
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↶			↷			↶↷			↷↶		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	1	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00
Speed [mph]	30.00			25.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Flynn Ln			Mullan Rd			Mullan Rd					
Base Volume Input [veh/h]	0	0	1	0	0	139	55	685	1	1	1364	99
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	1	0	0	139	55	685	1	1	1364	99
Peak Hour Factor	1.0000	1.0000	0.9200	0.9200	1.0000	0.9200	0.9200	0.9200	1.0000	1.0000	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	0	0	38	15	186	0	0	371	27
Total Analysis Volume [veh/h]	0	0	1	0	0	151	60	745	1	1	1483	108
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	821			1514			1			61		
Exiting Flow Rate [veh/h]	2			171			1667			761		
Demand Flow Rate [veh/h]	0	0	1	0	0	139	55	685	1	1	1364	99
Adjusted Demand Flow Rate [veh/h]	0	0	1	0	0	151	60	745	1	1	1483	108

Lanes

Override Calculated Critical Headway	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00102	0.00102	0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	0.98	0.98	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	2	155	62	761	1514	111
Capacity of Entry and Bypass Lanes [veh/h]	598	295	1419	1419	1344	1344
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	586	289	1391	1391	1317	1317
X, volume / capacity	0.00	0.52	0.04	0.54	1.13	0.08

Movement, Approach, & Intersection Results

Lane LOS	A	D	A	A	F	A
95th-Percentile Queue Length [veh]	0.01	2.82	0.14	3.33	36.26	0.27
95th-Percentile Queue Length [ft]	0.13	70.57	3.38	83.32	906.40	6.69
Approach Delay [s/veh]	6.17	27.95	7.83		77.84	
Approach LOS	A	D	A		F	
Intersection Delay [s/veh]	52.73					
Intersection LOS	F					

**Intersection Level Of Service Report
Intersection 13: Mary Jane Blvd & Mullan Rd**

Control Type:	Roundabout	Delay (sec / veh):	60.6
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes		

Intersection Setup

Name	Mary Jane Blvd		Mullan Rd		Mullan Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	1	0	1	0	1
Exit Pocket Length [ft]	0.00	100.00	0.00	100.00	0.00	100.00
Speed [mph]	30.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Mary Jane Blvd		Mullan Rd		Mullan Rd	
Base Volume Input [veh/h]	109	135	119	565	1330	125
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	109	135	119	565	1330	125
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	30	37	32	154	361	34
Total Analysis Volume [veh/h]	118	147	129	614	1446	136
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Number of Conflicting Circulating Lanes	1		1		1	
Circulating Flow Rate [veh/h]	1475		120		132	
Exiting Flow Rate [veh/h]	270		1625		747	
Demand Flow Rate [veh/h]	109	135	119	565	1330	125
Adjusted Demand Flow Rate [veh/h]	118	147	129	614	1446	136

Lanes

Override Calculated Critical Headway	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1420.00	1420.00	1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00091	0.00091	0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	0.98	0.98	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	121	150	132	627	1475	139
Capacity of Entry and Bypass Lanes [veh/h]	372	372	1273	1273	1260	1260
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	364	364	1248	1248	1236	1236
X, volume / capacity	0.32	0.40	0.10	0.49	1.17	0.11

Movement, Approach, & Intersection Results

Lane LOS	C	C	A	A	F	A
95th-Percentile Queue Length [veh]	1.38	1.90	0.35	2.81	39.94	0.37
95th-Percentile Queue Length [ft]	34.47	47.53	8.63	70.18	998.59	9.26
Approach Delay [s/veh]	17.46		7.35		92.86	
Approach LOS	C		A		F	
Intersection Delay [s/veh]	60.61					
Intersection LOS	F					

**Intersection Level Of Service Report
Intersection 14: Mary Jane Blvd & O'Leary St**

Control Type:	Roundabout	Delay (sec / veh):	4.4
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	Mary Jane Blvd			Mary Jane Blvd			O'Leary St			O'Leary St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mary Jane Blvd			Mary Jane Blvd			O'Leary St			O'Leary St		
Base Volume Input [veh/h]	14	212	18	31	175	27	17	6	55	13	5	15
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	212	18	31	175	27	17	6	55	13	5	15
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	58	5	8	48	7	5	2	15	4	1	4
Total Analysis Volume [veh/h]	15	230	20	34	190	29	18	7	60	14	5	16
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	60			35			243			268		
Exiting Flow Rate [veh/h]	269			269			50			62		
Demand Flow Rate [veh/h]	14	212	18	31	175	27	17	6	55	13	5	15
Adjusted Demand Flow Rate [veh/h]	15	230	20	34	190	29	18	7	60	14	5	16

Lanes

Override Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	271	259	87	36
Capacity of Entry and Bypass Lanes [veh/h]	1298	1333	1078	1050
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	1273	1306	1057	1030
X, volume / capacity	0.21	0.19	0.08	0.03

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	0.78	0.72	0.26	0.11
95th-Percentile Queue Length [ft]	19.61	17.92	6.55	2.64
Approach Delay [s/veh]	4.61	4.39	4.11	3.79
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	4.41			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 15: Mary Jane Blvd & Melrose PI

Control Type:	Roundabout	Delay (sec / veh):	5.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	Mary Jane Blvd			Mary Jane Blvd			Melrose PI			Melrose PI		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mary Jane Blvd			Mary Jane Blvd			Melrose PI			Melrose PI		
Base Volume Input [veh/h]	38	193	13	35	180	37	50	57	41	11	48	8
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	3.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	38	193	13	35	180	37	50	57	41	11	48	8
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	52	4	10	49	10	14	15	11	3	13	2
Total Analysis Volume [veh/h]	41	210	14	38	196	40	54	62	45	12	52	9
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	158			107			251			311		
Exiting Flow Rate [veh/h]	258			278			136			117		
Demand Flow Rate [veh/h]	38	193	13	35	180	37	50	57	41	11	48	8
Adjusted Demand Flow Rate [veh/h]	41	210	14	38	196	40	54	62	45	12	52	9

Lanes

Override Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	271	280	165	75
Capacity of Entry and Bypass Lanes [veh/h]	1175	1238	1069	1005
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	1152	1213	1044	986
X, volume / capacity	0.23	0.23	0.15	0.07

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	0.89	0.87	0.54	0.24
95th-Percentile Queue Length [ft]	22.23	21.73	13.62	5.99
Approach Delay [s/veh]	5.21	4.96	4.85	4.32
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	4.96			
Intersection LOS	A			

**Intersection Level Of Service Report
Intersection 16: Mary Jane Blvd & England Blvd**

Control Type:	Roundabout	Delay (sec / veh):	10.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes		

Intersection Setup

Name	Mary Jane Blvd			Mary Jane Blvd			England Blvd			England Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mary Jane Blvd			Mary Jane Blvd			England Blvd			England Blvd		
Base Volume Input [veh/h]	68	78	106	92	156	14	26	348	33	64	452	93
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	68	78	106	92	156	14	26	348	33	64	452	93
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	21	29	25	42	4	7	95	9	17	123	25
Total Analysis Volume [veh/h]	74	85	115	100	170	15	28	378	36	70	491	101
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	516			648			347			191		
Exiting Flow Rate [veh/h]	282			218			592			605		
Demand Flow Rate [veh/h]	68	78	106	92	156	14	26	348	33	64	452	93
Adjusted Demand Flow Rate [veh/h]	74	85	115	100	170	15	28	378	36	70	491	101

Lanes

Override Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	280	291	451	676
Capacity of Entry and Bypass Lanes [veh/h]	816	713	969	1137
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	800	699	950	1114
X, volume / capacity	0.34	0.41	0.47	0.59

Movement, Approach, & Intersection Results

Lane LOS	A	B	A	B
95th-Percentile Queue Length [veh]	1.53	1.99	2.51	4.10
95th-Percentile Queue Length [ft]	38.24	49.74	62.79	102.47
Approach Delay [s/veh]	8.55	10.69	9.37	10.82
Approach LOS	A	B	A	B
Intersection Delay [s/veh]	10.04			
Intersection LOS	B			

**Intersection Level Of Service Report
Intersection 17: Mary Jane Blvd & Camden St**

Control Type:	Roundabout	Delay (sec / veh):	4.3
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	Mary Jane Blvd			Mary Jane Blvd			Camden St			Camden St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mary Jane Blvd			Mary Jane Blvd			Camden St			Camden St		
Base Volume Input [veh/h]	8	183	4	13	222	26	13	14	39	3	12	8
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	8	183	4	13	222	26	13	14	39	3	12	8
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	50	1	4	60	7	4	4	11	1	3	2
Total Analysis Volume [veh/h]	9	199	4	14	241	28	14	15	42	3	13	9
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	44			26			263			226		
Exiting Flow Rate [veh/h]	292			226			51			34		
Demand Flow Rate [veh/h]	8	183	4	13	222	26	13	14	39	3	12	8
Adjusted Demand Flow Rate [veh/h]	9	199	4	14	241	28	14	15	42	3	13	9

Lanes

Override Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	217	289	73	26
Capacity of Entry and Bypass Lanes [veh/h]	1320	1345	1056	1096
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	1294	1319	1035	1074
X, volume / capacity	0.16	0.21	0.07	0.02

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	0.59	0.81	0.22	0.07
95th-Percentile Queue Length [ft]	14.64	20.37	5.52	1.79
Approach Delay [s/veh]	4.15	4.55	4.08	3.55
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	4.31			
Intersection LOS	A			

**Intersection Level Of Service Report
Intersection 18: Mary Jane Blvd & Flynn Ln**

Control Type: Roundabout
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 5.1
 Level Of Service: A

Intersection Setup

Name	Mary Jane Blvd			Mary Jane Blvd			Flynn Ln			Flynn Ln		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mary Jane Blvd			Mary Jane Blvd			Flynn Ln			Flynn Ln		
Base Volume Input [veh/h]	3	165	37	53	219	55	43	55	18	23	58	28
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	165	37	53	219	55	43	55	18	23	58	28
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	45	10	14	60	15	12	15	5	6	16	8
Total Analysis Volume [veh/h]	3	179	40	58	238	60	47	60	20	25	63	30
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	168			93			327			234		
Exiting Flow Rate [veh/h]	289			261			129			161		
Demand Flow Rate [veh/h]	3	165	37	53	219	55	43	55	18	23	58	28
Adjusted Demand Flow Rate [veh/h]	3	179	40	58	238	60	47	60	20	25	63	30

Lanes

Override Calculated Critical Headway	No			No			No			No		
User-Defined Critical Headway [s]	4.00			4.00			4.00			4.00		
Override Calculated Follow-Up Time	No			No			No			No		
User-Defined Follow-Up Time [s]	3.00			3.00			3.00			3.00		
A (intercept)	1380.00			1380.00			1380.00			1380.00		
B (coefficient)	0.00102			0.00102			0.00102			0.00102		
HV Adjustment Factor	0.98			0.98			0.98			0.98		
Entry Flow Rate [veh/h]	227			364			130			121		
Capacity of Entry and Bypass Lanes [veh/h]	1163			1256			989			1088		
Pedestrian Impedance	1.00			1.00			1.00			1.00		
Capacity per Entry Lane [veh/h]	1140			1231			969			1067		
X, volume / capacity	0.19			0.29			0.13			0.11		

Movement, Approach, & Intersection Results

Lane LOS	A			A			A			A		
95th-Percentile Queue Length [veh]	0.72			1.21			0.45			0.37		
95th-Percentile Queue Length [ft]	18.03			30.19			11.27			9.31		
Approach Delay [s/veh]	4.90			5.56			4.93			4.35		
Approach LOS	A			A			A			A		
Intersection Delay [s/veh]	5.11											
Intersection LOS	A											

Intersection Level Of Service Report
Intersection 19: Mary Jane Blvd & Veteran's Way

Control Type:	Roundabout	Delay (sec / veh):	5.5
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	Mary Jane Blvd			Mary Jane Blvd			Veteran's Way			Veteran's Way		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mary Jane Blvd			Mary Jane Blvd			Veteran's Way			Veteran's Way		
Base Volume Input [veh/h]	4	232	0	0	315	90	84	0	10	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	5.00	2.00	2.00	5.00	2.00	20.00	2.00	20.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	4	232	0	0	315	90	84	0	10	0	0	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	63	0	0	86	24	23	0	3	0	0	0
Total Analysis Volume [veh/h]	4	252	0	0	342	98	91	0	11	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	109			4			359			378		
Exiting Flow Rate [veh/h]	372			374			104			0		
Demand Flow Rate [veh/h]	4	232	0	0	315	90	84	0	10	0	0	0
Adjusted Demand Flow Rate [veh/h]	4	252	0	0	342	98	91	0	11	0	0	0

Lanes

Override Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.95	0.96	0.83	0.98
Entry Flow Rate [veh/h]	269	459	123	0
Capacity of Entry and Bypass Lanes [veh/h]	1235	1375	957	939
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	1177	1318	798	921
X, volume / capacity	0.22	0.33	0.13	0.00

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	0.83	1.48	0.44	0.00
95th-Percentile Queue Length [ft]	20.71	37.11	10.95	0.00
Approach Delay [s/veh]	5.00	5.77	5.82	3.91
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	5.53			
Intersection LOS	A			

**Intersection Level Of Service Report
Intersection 20: Mary Jane Blvd & W Broadway St**

Control Type:	Roundabout	Delay (sec / veh):	18.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes		

Intersection Setup

Name	Mary Jane Blvd		W Broadway St		W Broadway St	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	1	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	49.21	0.00	0.00
Speed [mph]	30.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Mary Jane Blvd		W Broadway St		W Broadway St	
Base Volume Input [veh/h]	216	101	1471	223	184	1097
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.00	3.00	2.00	3.00	3.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	216	101	1471	223	184	1097
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	59	27	400	61	50	298
Total Analysis Volume [veh/h]	235	110	1599	242	200	1192
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Number of Conflicting Circulating Lanes	2		1		1	
Circulating Flow Rate [veh/h]	1631		206		242	
Exiting Flow Rate [veh/h]	455		1458		1744	
Demand Flow Rate [veh/h]	216	101	1471	223	184	1097
Adjusted Demand Flow Rate [veh/h]	235	110	1599	242	200	1192

Lanes

Override Calculated Critical Headway	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1350.00	1420.00	1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00092	0.00085	0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	0.97	0.97	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	243	114	883	997	669	753
Capacity of Entry and Bypass Lanes [veh/h]	302	355	1178	1178	1140	1140
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	293	345	1155	1153	1116	1117
X, volume / capacity	0.80	0.32	0.75	0.85	0.59	0.66

Movement, Approach, & Intersection Results

Lane LOS	F	C	C	C	B	B
95th-Percentile Queue Length [veh]	6.47	1.34	7.45	11.04	3.98	5.25
95th-Percentile Queue Length [ft]	161.65	33.62	186.21	275.88	99.53	131.36
Approach Delay [s/veh]	40.96		18.77		11.65	
Approach LOS	E		C		B	
Intersection Delay [s/veh]	18.14					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 21: Flynn Ln & W Broadway St

Control Type:	Roundabout	Delay (sec / veh):	11.8
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes		

Intersection Setup

Name	Flynn Ln		W Broadway St		W Broadway St	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↗		↘		↕	
Turning Movement	Left	Thru	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	1	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	890.00	0.00	0.00
Speed [mph]	25.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Flynn Ln		W Broadway St		W Broadway St	
Base Volume Input [veh/h]	0	283	1397	143	0	1280
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	2.00	2.00	0.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	283	1397	143	0	1280
Peak Hour Factor	0.7900	0.9200	0.9200	0.9200	0.7900	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	77	380	39	0	348
Total Analysis Volume [veh/h]	0	308	1518	155	0	1391
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Number of Conflicting Circulating Lanes	2		1		1	
Circulating Flow Rate [veh/h]	1548		0		0	
Exiting Flow Rate [veh/h]	158		1419		1856	
Demand Flow Rate [veh/h]	0	283	1397	143	0	1280
Adjusted Demand Flow Rate [veh/h]	0	308	1518	155	0	1391

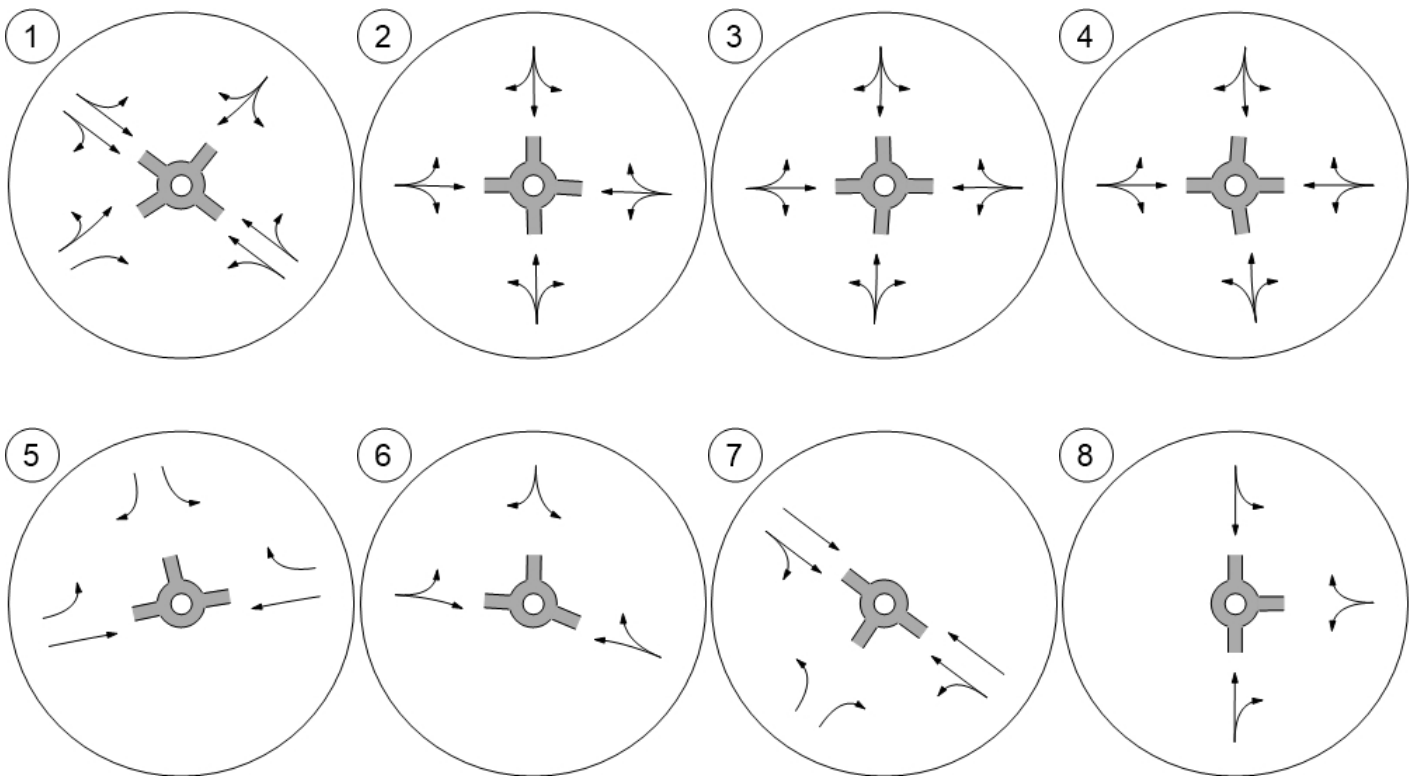
Lanes

Override Calculated Critical Headway	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00
A (intercept)	1420.00	1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00085	0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	1.00	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	308	803	905	667	752
Capacity of Entry and Bypass Lanes [veh/h]	381	1420	1420	1420	1420
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	381	1393	1393	1393	1393
X, volume / capacity	0.81	0.56	0.64	0.47	0.53

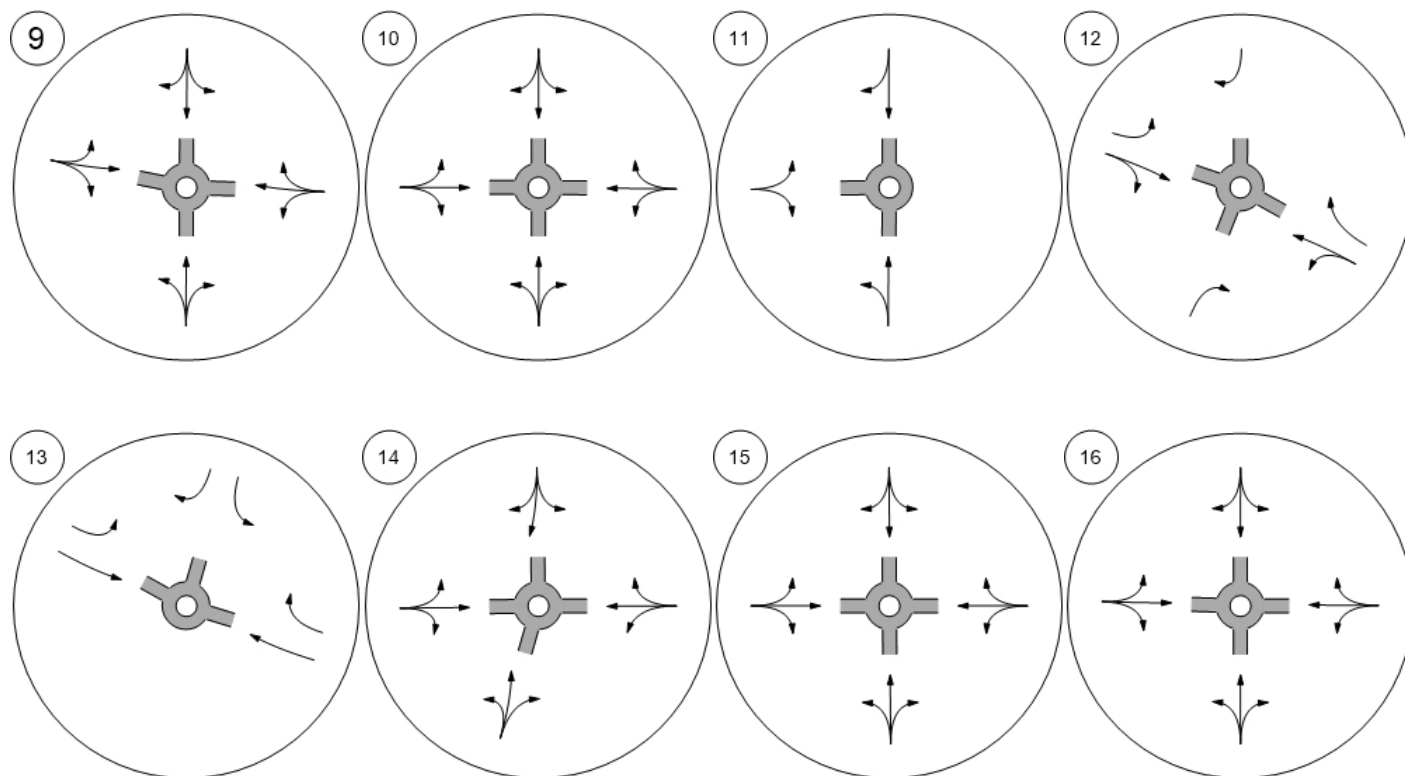
Movement, Approach, & Intersection Results

Lane LOS	E	A	B	A	A
95th-Percentile Queue Length [veh]	7.12	3.71	4.88	2.58	3.25
95th-Percentile Queue Length [ft]	178.00	92.79	122.12	64.60	81.20
Approach Delay [s/veh]	43.22	9.49		7.68	
Approach LOS	E	A		A	
Intersection Delay [s/veh]	11.83				
Intersection LOS	B				

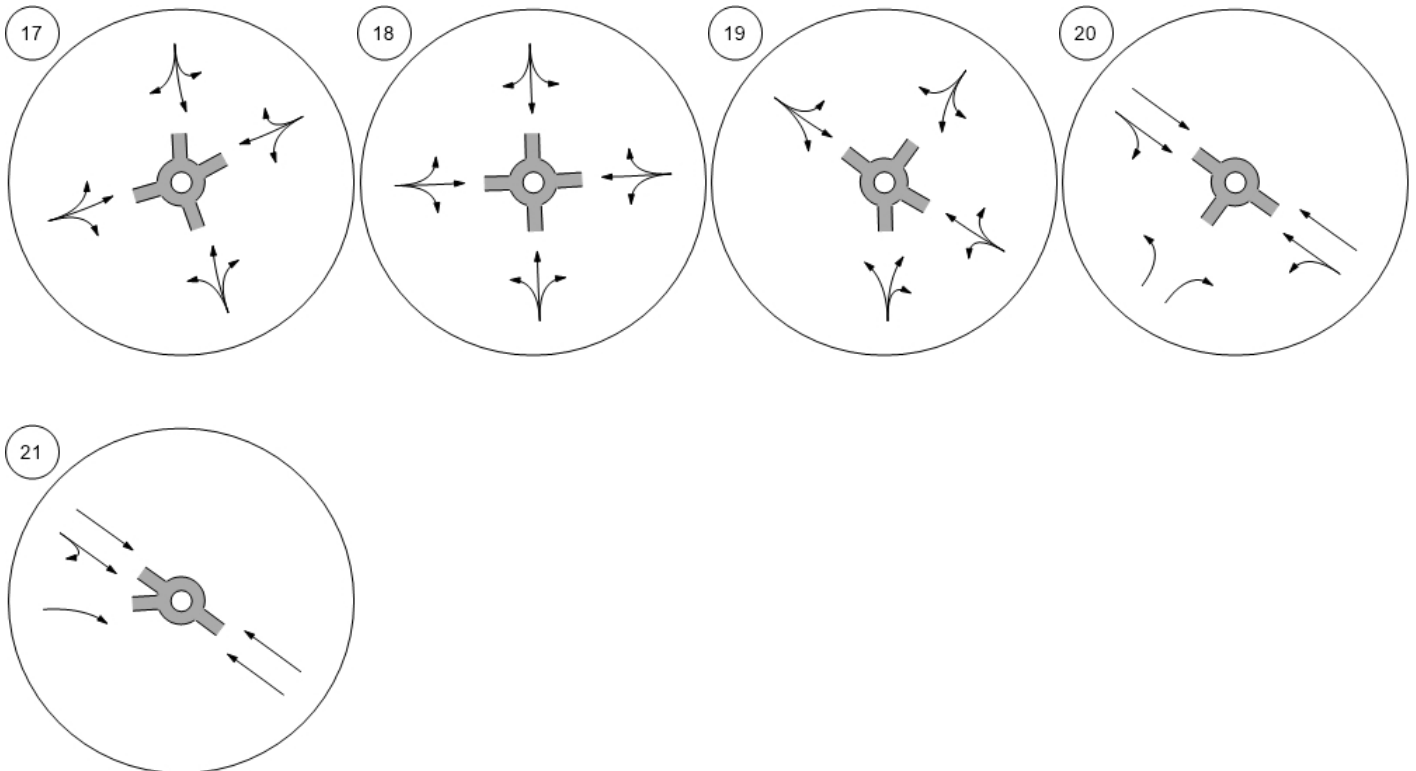
Lane Configuration and Traffic Control



Lane Configuration and Traffic Control



Lane Configuration and Traffic Control



Option 1: WB T/L & EB T/R

Number	5					
Intersection	George Elmer Dr & Mullan Rd					
Control Type	Roundabout					
Analysis Method	HCM 6th Edition					
Name	George Elmer Dr		Mullan Rd		Mullan Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Base Volume Input [veh/h]	104	275	179	637	1185	353
Total Analysis Volume [veh/h]	113	299	195	692	1288	384

Intersection Settings

Number of Conflicting Circulating Lanes	2		1		1	
Circulating Flow Rate [veh/h]	1301		115		215	
Exiting Flow Rate [veh/h]	606		1606		814	
Demand Flow Rate [veh/h]	104	275	179	637	1185	353
Adjusted Demand Flow Rate [veh/h]	113	299	195	692	1288	384

Lanes

Override Calculated Critical Headway	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1350.00	1420.00	1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00092	0.00085	0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	0.98	0.98	0.97	0.99	0.99	0.99
Entry Flow Rate [veh/h]	116	305	429	475	794	898
Capacity of Entry and Bypass Lanes [veh/h]	408	470	1279	1279	1169	1169
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	400	461	1244	1266	1157	1155
X, volume / capacity	0.28	0.65	0.34	0.37	0.68	0.77

Movement, Approach, & Intersection Results

Average Lane Delay [s/veh]	13.92	24.38	6.03	6.37	12.83	16.42
Lane LOS	B	C	A	A	B	C
95th-Percentile Queue Length [veh]	1.14	4.53	1.49	1.74	5.67	8.01
95th-Percentile Queue Length [ft]	28.62	113.26	37.30	43.54	141.64	200.22
Approach Delay [s/veh]	21.51		6.21		14.73	
Approach LOS	C		A		B	
Intersection Delay [s/veh]	13.13					
Intersection LOS	B					

Option 1: Dual Through Lanes WB & EB

Number	12											
Intersection	Flynn Ln & Mullan Rd											
Control Type	Roundabout											
Analysis Method	HCM 6th Edition											
Name				Flynn Ln			Mullan Rd			Mullan Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↗			↗			↕			↕		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Base Volume Input [veh/h]	0	0	1	0	0	139	55	685	1	1	1364	99
Total Analysis Volume [veh/h]	0	0	1	0	0	151	60	745	1	1	1483	108

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	821			1514			1			61		
Exiting Flow Rate [veh/h]	2			171			1667			761		
Demand Flow Rate [veh/h]	0	0	1	0	0	139	55	685	1	1	1364	99
Adjusted Demand Flow Rate [veh/h]	0	0	1	0	0	151	60	745	1	1	1483	108




Lanes

Override Calculated Critical Headway	No			No			No	No	No	No
User-Defined Critical Headway [s]	4.00			4.00			4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No			No			No	No	No	No
User-Defined Follow-Up Time [s]	3.00			3.00			3.00	3.00	3.00	3.00
A (intercept)	1380.00			1380.00			1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00102			0.00102			0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	0.98			0.98			0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	2			155			387	436	764	861
Capacity of Entry and Bypass Lanes [veh/h]	598			295			1419	1419	1344	1344
Pedestrian Impedance	1.00			1.00			1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	586			289			1391	1391	1317	1317
X, volume / capacity	0.00			0.52			0.27	0.31	0.57	0.64

Movement, Approach, & Intersection Results

Average Lane Delay [s/veh]	6.17			27.95			4.92	5.27	9.11	10.68		
Lane LOS	A			D			A	A	A	B		
95th-Percentile Queue Length [veh]	0.01			2.82			1.11	1.32	3.75	4.94		
95th-Percentile Queue Length [ft]	0.13			70.57			27.83	32.89	93.76	123.48		
Approach Delay [s/veh]	6.17			27.95			5.10		9.94			
Approach LOS	A			D			A		A			
Intersection Delay [s/veh]	9.48											
Intersection LOS	A											

Option 1: WB T/R & EB T/L

Number	13					
Intersection	Mary Jane Blvd & Mullan Rd					
Control Type	Roundabout					
Analysis Method	HCM 6th Edition					
Name	Mary Jane Blvd		Mullan Rd		Mullan Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Base Volume Input [veh/h]	109	135	119	565	1330	125
Total Analysis Volume [veh/h]	118	147	129	614	1446	136

Intersection Settings

Number of Conflicting Circulating Lanes	2		1		1	
Circulating Flow Rate [veh/h]	1518		120		135	
Exiting Flow Rate [veh/h]	274		1668		741	
Demand Flow Rate [veh/h]	109	135	119	565	1330	125
Adjusted Demand Flow Rate [veh/h]	118	147	129	614	1446	136

Lanes

Override Calculated Critical Headway	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1350.00	1420.00	1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00092	0.00085	0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	0.98	0.98	0.98	0.99	0.95	0.95
Entry Flow Rate [veh/h]	121	150	356	398	781	879
Capacity of Entry and Bypass Lanes [veh/h]	334	391	1273	1273	1256	1256
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	328	384	1252	1261	1196	1199
X, volume / capacity	0.36	0.38	0.28	0.31	0.62	0.70

Movement, Approach, & Intersection Results

Average Lane Delay [s/veh]	18.87	17.05	5.38	5.71	10.94	13.17
Lane LOS	C	C	A	A	B	B
95th-Percentile Queue Length [veh]	1.59	1.76	1.15	1.35	4.57	6.15
95th-Percentile Queue Length [ft]	39.84	44.08	28.73	33.67	114.15	153.65
Approach Delay [s/veh]	17.86		5.56		12.12	
Approach LOS	C		A		B	
Intersection Delay [s/veh]	10.82					
Intersection LOS	B					

Mullan BUILD - 2050 PM

Vistro File: H:\...\24667_PM2050.vistro

Scenario 4 Signal (2050)

Report File: H:\...\24667_PM2050_SIGNAL.pdf

7/21/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	George Elmer Dr & W Broadway St	Signalized	HCM 6th Edition	NB Left	0.750	28.8	C
2	George Elmer Dr & England Blvd	Signalized	HCM 6th Edition	NB Left	0.607	24.2	C
5	George Elmer Dr & Mullan Rd	Signalized	HCM 6th Edition	SB Left	0.841	42.9	D
7	Doughtery Dr & W Broadway St	Signalized	HCM 6th Edition	WB Left	0.847	29.4	C
9	Flynn Ln & England Blvd	Signalized	HCM 6th Edition	NB Thru	0.464	15.2	B
12	Flynn Ln & Mullan Rd	Signalized	HCM 6th Edition	WB Thru	1.033	46.4	D
13	Mary Jane Blvd & Mullan Rd	Signalized	HCM 6th Edition	SB Left	0.939	44.0	D
16	Mary Jane Blvd & England Blvd	Signalized	HCM 6th Edition	SB Left	0.529	18.8	B
20	Mary Jane Blvd & W Broadway St	Signalized	HCM 6th Edition	NB Left	0.751	18.6	B
21	Flynn Ln & W Broadway St	Signalized	HCM 6th Edition	NB Thru	0.843	11.4	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: George Elmer Dr & W Broadway St

Control Type:	Signalized	Delay (sec / veh):	28.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.750

Intersection Setup

Name	George Elmer Dr			Commercial Access			W Broadway St			W Broadway St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00
Speed [mph]	30.00			30.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

Volumes

Name	George Elmer Dr			Commercial Access			W Broadway St			W Broadway St		
Base Volume Input [veh/h]	204	1	159	1	1	1	1	1435	250	137	1098	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.00	2.00	3.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	204	1	159	1	1	1	1	1435	250	137	1098	1
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	55	0	43	0	0	0	0	390	68	37	298	0
Total Analysis Volume [veh/h]	222	1	173	1	1	1	1	1560	272	149	1193	1
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street		0			0			0			0	
v_di, Inbound Pedestrian Volume crossing major street		0			0			0			0	
v_co, Outbound Pedestrian Volume crossing minor street		0			0			0			0	
v_ci, Inbound Pedestrian Volume crossing minor street		0			0			0			0	
v_ab, Corner Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	ProtPer	Permis	Permis	ProtPer	Permis	Permis
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	4.0	0.0	0.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
All red [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Split [s]	0	54	0	0	54	0	11	33	0	33	55	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	7	7	0
Pedestrian Clearance [s]	0	20	0	0	20	0	0	20	0	20	20	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	4.0	0.0	0.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	4.00	0.00	4.00	4.00	0.00	4.00	4.00
g_i, Effective Green Time [s]	32	32	32	76	64	64	76	70	70
g / C, Green / Cycle	0.26	0.26	0.26	0.64	0.53	0.53	0.64	0.58	0.58
(v / s)_i Volume / Saturation Flow Rate	0.16	0.12	0.00	0.00	0.48	0.19	0.29	0.36	0.00
s, saturation flow rate [veh/h]	1403	1465	998	533	3279	1464	512	3279	1464
c, Capacity [veh/h]	235	388	305	316	1739	776	274	1914	854
d1, Uniform Delay [s]	46.17	36.77	32.90	11.28	25.25	16.26	24.57	16.36	10.41
k, delay calibration	0.11	0.11	0.11	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	16.77	0.81	0.01	0.02	7.73	1.25	7.56	1.54	0.00
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.94	0.45	0.01	0.00	0.90	0.35	0.54	0.62	0.00
d, Delay for Lane Group [s/veh]	62.94	37.58	32.91	11.30	32.99	17.51	32.13	17.90	10.42
Lane Group LOS	E	D	C	B	C	B	C	B	B
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	7.55	4.36	0.07	0.01	19.16	4.15	1.91	9.63	0.01
50th-Percentile Queue Length [ft/ln]	188.77	108.98	1.65	0.24	478.93	103.77	47.68	240.86	0.26
95th-Percentile Queue Length [veh/ln]	12.06	7.78	0.12	0.02	26.34	7.47	3.43	14.72	0.02
95th-Percentile Queue Length [ft/ln]	301.43	194.58	2.97	0.44	658.38	186.79	85.82	368.12	0.47

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	62.94	37.58	37.58	32.91	32.91	32.91	11.30	32.99	17.51	32.13	17.90	10.42
Movement LOS	E	D	D	C	C	C	B	C	B	C	B	B
d_A, Approach Delay [s/veh]	51.80			32.91			30.68			19.47		
Approach LOS	D			C			C			B		
d_I, Intersection Delay [s/veh]	28.81											
Intersection LOS	C											
Intersection V/C	0.750											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0			0.0			0.0			0.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	0.00			0.00			0.00			0.00		
I_p,int, Pedestrian LOS Score for Intersection	0.000			0.000			0.000			0.000		
Crosswalk LOS	F			F			F			F		
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	800			800			450			817		
d_b, Bicycle Delay [s]	21.60			21.60			36.04			21.00		
I_b,int, Bicycle LOS Score for Intersection	2.213			1.565			3.072			2.668		
Bicycle LOS	B			A			C			B		

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: George Elmer Dr & England Blvd

Control Type:	Signalized	Delay (sec / veh):	24.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.607

Intersection Setup

Name	George Elmer Dr			George Elmer Dr			England Blvd			England Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	George Elmer Dr			George Elmer Dr			England Blvd			England Blvd		
Base Volume Input [veh/h]	142	199	46	42	169	184	122	301	159	43	431	42
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	3.00	2.00	2.00	3.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	142	199	46	42	169	184	122	301	159	43	431	42
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	39	54	13	11	46	50	33	82	43	12	117	11
Total Analysis Volume [veh/h]	154	216	50	46	184	200	133	327	173	47	468	46
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lag	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	15	20	0	15	20	0	15	20	0	15	20	0
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
All red [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Split [s]	96	39	0	96	39	0	96	51	0	96	51	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	7	7	0	5	7	0	0	7	0	7	7	0
Pedestrian Clearance [s]	10	10	0	10	10	0	0	10	0	10	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	L	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
g_i, Effective Green Time [s]	33	33	33	33	45	45	45	45
g / C, Green / Cycle	0.37	0.37	0.37	0.37	0.50	0.50	0.50	0.50
(v / s)_i Volume / Saturation Flow Rate	0.15	0.16	0.04	0.25	0.15	0.31	0.05	0.30
s, saturation flow rate [veh/h]	999	1654	1113	1565	886	1623	898	1696
c, Capacity [veh/h]	212	604	322	572	316	813	315	850
d1, Uniform Delay [s]	39.85	21.58	28.72	24.00	28.48	16.18	25.89	16.07
k, delay calibration	0.11	0.11	0.11	0.18	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.65	0.50	0.20	2.33	4.07	3.46	1.00	3.19
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.72	0.44	0.14	0.67	0.42	0.61	0.15	0.60
d, Delay for Lane Group [s/veh]	44.50	22.09	28.92	26.33	32.55	19.64	26.89	19.25
Lane Group LOS	D	C	C	C	C	B	C	B
Critical Lane Group	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.68	4.19	0.82	6.97	2.78	7.72	0.86	7.83
50th-Percentile Queue Length [ft/ln]	91.98	104.83	20.43	174.13	69.43	192.95	21.51	195.81
95th-Percentile Queue Length [veh/ln]	6.62	7.55	1.47	11.29	5.00	12.27	1.55	12.42
95th-Percentile Queue Length [ft/ln]	165.57	188.69	36.77	282.34	124.97	306.86	38.73	310.56

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	44.50	22.09	22.09	28.92	26.33	26.33	32.55	19.64	19.64	26.89	19.25	19.25
Movement LOS	D	C	C	C	C	C	C	B	B	C	B	B
d_A, Approach Delay [s/veh]	30.31			26.60			22.35			19.89		
Approach LOS	C			C			C			B		
d_I, Intersection Delay [s/veh]	24.21											
Intersection LOS	C											
Intersection V/C	0.607											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	34.67			34.67			34.67			34.67		
I_p,int, Pedestrian LOS Score for Intersection	2.274			2.397			2.632			2.325		
Crosswalk LOS	B			B			B			B		
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	733			733			1000			1000		
d_b, Bicycle Delay [s]	18.05			18.05			11.25			11.25		
I_b,int, Bicycle LOS Score for Intersection	2.253			2.269			2.604			2.485		
Bicycle LOS	B			B			B			B		

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 5: George Elmer Dr & Mullan Rd

Control Type:	Signalized	Delay (sec / veh):	42.9
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.841

Intersection Setup

Name	George Elmer Dr		Mullan Rd		Mullan Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	325.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	George Elmer Dr		Mullan Rd		Mullan Rd	
Base Volume Input [veh/h]	104	275	179	637	1185	353
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	3.00	2.00	2.00	3.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	104	275	179	637	1185	353
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	75	49	173	322	96
Total Analysis Volume [veh/h]	113	299	195	692	1288	384
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0		0		0	
v_di, Inbound Pedestrian Volume crossing major street	0		0		0	
v_co, Outbound Pedestrian Volume crossing minor street	0		0		0	
v_ci, Inbound Pedestrian Volume crossing minor street	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	ProtPerm	Permissive	Permissive	Permissive
Signal Group	8	8	5	2	6	6
Auxiliary Signal Groups						
Lead / Lag	Lead	-	Lag	-	-	-
Minimum Green [s]	5	5	5	5	5	5
Maximum Green [s]	30	30	30	30	30	30
Amber [s]	4.0	4.0	4.0	4.0	4.0	4.0
All red [s]	2.0	2.0	2.0	2.0	2.0	2.0
Split [s]	61	61	30	120	90	90
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	7	7	0	7	7	7
Pedestrian Clearance [s]	20	20	0	20	20	20
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Recall	No		No	No	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	L	C	C	R
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	0.00	0.00	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	2.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	0.00	0.00	4.00	4.00	4.00
g_i, Effective Green Time [s]	0	0	9	114	103	103
g / C, Green / Cycle	0.00	0.00	0.08	0.95	0.86	0.86
(v / s)_i Volume / Saturation Flow Rate	0.51	0.20	0.36	0.40	0.75	0.26
s, saturation flow rate [veh/h]	220	1464	548	1722	1722	1452
c, Capacity [veh/h]	60	0	129	1636	1477	1246
d1, Uniform Delay [s]	59.95	0.00	0.31	0.25	4.81	1.65
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	452.89	0.00	268.08	0.80	7.35	0.64
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.88	10000.00	1.52	0.42	0.87	0.31
d, Delay for Lane Group [s/veh]	512.84	0.00	268.39	1.05	12.15	2.29
Lane Group LOS	F	F	F	A	B	A
Critical Lane Group	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	9.55	0.00	9.58	0.37	8.96	0.83
50th-Percentile Queue Length [ft/ln]	238.87	0.00	239.38	9.13	223.90	20.74
95th-Percentile Queue Length [veh/ln]	14.62	0.00	16.42	0.66	13.86	1.49
95th-Percentile Queue Length [ft/ln]	365.61	0.00	410.60	16.44	346.59	37.33

Movement, Approach, & Intersection Results

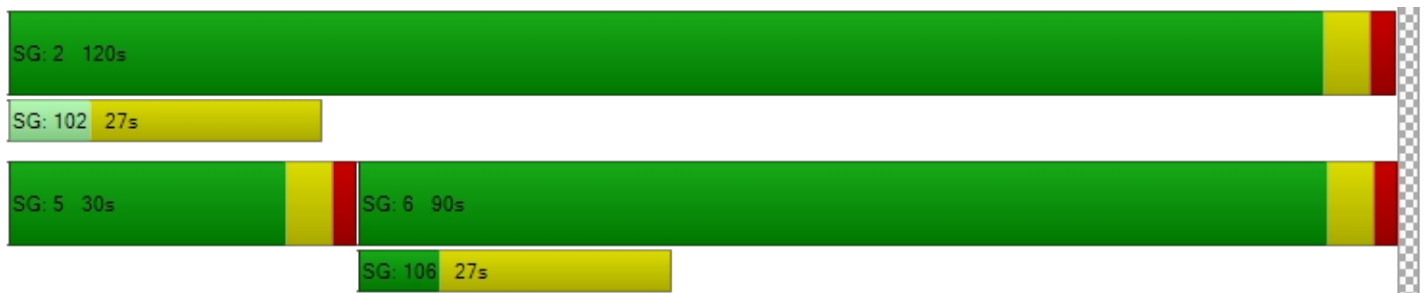
d_M, Delay for Movement [s/veh]	512.84	0.00	268.39	1.05	12.15	2.29
Movement LOS	F	A	F	A	B	A
d_A, Approach Delay [s/veh]	140.66		59.83		9.89	
Approach LOS	F		E		A	
d_I, Intersection Delay [s/veh]	42.93					
Intersection LOS	D					
Intersection V/C	0.841					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.50	49.50	49.50
I_p,int, Pedestrian LOS Score for Intersection	2.290	3.160	3.322
Crosswalk LOS	B	C	C
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	1900	1400
d_b, Bicycle Delay [s]	60.00	0.15	5.40
I_b,int, Bicycle LOS Score for Intersection	1.560	3.023	4.318
Bicycle LOS	A	C	E

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report
Intersection 7: Dougherty Dr & W Broadway St**

Control Type:	Signalized	Delay (sec / veh):	29.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.847

Intersection Setup

Name	Dougherty Dr		W Broadway St		W Broadway St	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	100.00
Speed [mph]	30.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		No	

Volumes

Name	Dougherty Dr		W Broadway St		W Broadway St	
Base Volume Input [veh/h]	175	300	1394	200	254	1060
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	175	300	1394	200	254	1060
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	48	82	379	54	69	288
Total Analysis Volume [veh/h]	190	326	1515	217	276	1152
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0		0		0	
v_di, Inbound Pedestrian Volume crossing major street	0		0		0	
v_co, Outbound Pedestrian Volume crossing minor street	0		0		0	
v_ci, Inbound Pedestrian Volume crossing minor street	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Permissive	Permissive	ProtPerm	Permissive
Signal Group	8	8	2	2	1	6
Auxiliary Signal Groups						
Lead / Lag	Lag	-	-	-	Lead	-
Minimum Green [s]	5	5	5	5	5	5
Maximum Green [s]	30	30	30	30	30	30
Amber [s]	4.0	4.0	4.0	4.0	4.0	4.0
All red [s]	2.0	2.0	2.0	2.0	2.0	2.0
Split [s]	53	53	51	51	16	67
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	4.00	4.00	0.00	4.00
g_i, Effective Green Time [s]	29	29	63	63	79	79
g / C, Green / Cycle	0.24	0.24	0.52	0.52	0.66	0.66
(v / s)_i Volume / Saturation Flow Rate	0.12	0.22	0.46	0.15	0.48	0.35
s, saturation flow rate [veh/h]	1640	1464	3279	1464	577	3279
c, Capacity [veh/h]	400	357	1712	764	323	2151
d1, Uniform Delay [s]	38.77	44.10	25.48	16.09	33.38	10.94
k, delay calibration	0.11	0.13	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.88	10.52	7.12	0.93	24.11	0.96
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.47	0.91	0.89	0.28	0.86	0.54
d, Delay for Lane Group [s/veh]	39.65	54.62	32.60	17.02	57.48	11.90
Lane Group LOS	D	D	C	B	E	B
Critical Lane Group	No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	4.89	10.40	18.45	3.23	4.63	6.90
50th-Percentile Queue Length [ft/ln]	122.27	259.98	461.32	80.76	115.80	172.51
95th-Percentile Queue Length [veh/ln]	8.52	15.69	25.50	5.81	8.16	11.21
95th-Percentile Queue Length [ft/ln]	212.94	392.19	637.44	145.36	204.04	280.21

Movement, Approach, & Intersection Results

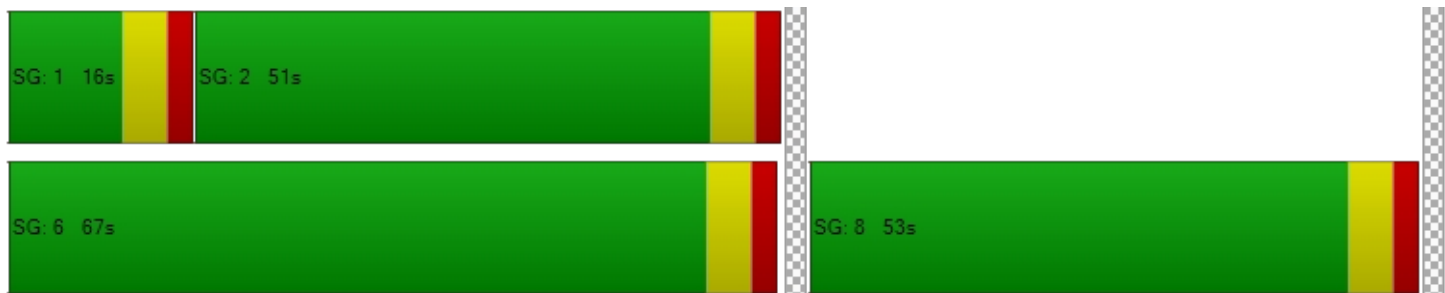
d_M, Delay for Movement [s/veh]	39.65	54.62	32.60	17.02	57.48	11.90
Movement LOS	D	D	C	B	E	B
d_A, Approach Delay [s/veh]	49.11		30.65		20.71	
Approach LOS	D		C		C	
d_I, Intersection Delay [s/veh]	29.38					
Intersection LOS	C					
Intersection V/C	0.847					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000
Crosswalk LOS	F	F	F
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	783	750	1017
d_b, Bicycle Delay [s]	22.20	23.44	14.50
I_b,int, Bicycle LOS Score for Intersection	1.560	2.989	2.738
Bicycle LOS	A	C	B

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report
Intersection 9: Flynn Ln & England Blvd**

Control Type:	Signalized	Delay (sec / veh):	15.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.464

Intersection Setup

Name	Flynn Ln			Flynn Ln			England Blvd			England Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			25.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Flynn Ln			Flynn Ln			England Blvd			England Blvd		
Base Volume Input [veh/h]	2	74	65	17	79	3	21	324	15	58	461	15
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	3.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	74	65	17	79	3	21	324	15	58	461	15
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	20	18	5	21	1	6	88	4	16	125	4
Total Analysis Volume [veh/h]	2	80	71	18	86	3	23	352	16	63	501	16
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	ProtPer	Permis	Permis	ProtPer	Permis	Permis
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	4.0	0.0	0.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
All red [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Split [s]	0	33	0	0	33	0	24	46	0	11	33	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	4.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	20	0	0	20	0	0	20	0	0	20	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	4.0	0.0	0.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	C	L	C
C, Cycle Length [s]	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	0.00	4.00	0.00	4.00
g_i, Effective Green Time [s]	11	11	68	57	68	59
g / C, Green / Cycle	0.12	0.12	0.75	0.64	0.75	0.66
(v / s)_i Volume / Saturation Flow Rate	0.10	0.07	0.02	0.22	0.06	0.30
s, saturation flow rate [veh/h]	1593	1611	955	1709	1089	1713
c, Capacity [veh/h]	227	236	691	1090	824	1126
d1, Uniform Delay [s]	38.83	37.46	4.04	7.53	3.49	7.57
k, delay calibration	0.11	0.15	0.50	0.50	0.04	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.45	1.94	0.09	0.84	0.01	1.35
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.67	0.45	0.03	0.34	0.08	0.46
d, Delay for Lane Group [s/veh]	42.27	39.41	4.13	8.37	3.50	8.92
Lane Group LOS	D	D	A	A	A	A
Critical Lane Group	Yes	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	3.51	2.35	0.10	3.14	0.22	4.62
50th-Percentile Queue Length [ft/ln]	87.64	58.67	2.40	78.54	5.61	115.41
95th-Percentile Queue Length [veh/ln]	6.31	4.22	0.17	5.65	0.40	8.14
95th-Percentile Queue Length [ft/ln]	157.74	105.61	4.32	141.37	10.10	203.50

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	42.27	42.27	42.27	39.41	39.41	39.41	4.13	8.37	8.37	3.50	8.92	8.92
Movement LOS	D	D	D	D	D	D	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	42.27			39.41			8.12			8.33		
Approach LOS	D			D			A			A		
d_I, Intersection Delay [s/veh]	15.19											
Intersection LOS	B											
Intersection V/C	0.464											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	34.67			34.67			34.67			34.67		
I_p,int, Pedestrian LOS Score for Intersection	1.903			1.828			2.234			2.297		
Crosswalk LOS	A			A			B			B		
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	600			600			889			600		
d_b, Bicycle Delay [s]	22.05			22.05			13.89			22.05		
I_b,int, Bicycle LOS Score for Intersection	1.812			1.736			2.205			2.517		
Bicycle LOS	A			A			B			B		

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report
Intersection 12: Flynn Ln & Mullan Rd**

Control Type:	Signalized	Delay (sec / veh):	46.4
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.033

Intersection Setup

Name	Flynn Ln			Mullan Rd			Mullan Rd					
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↱			↰			↔			↔		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			25.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name				Flynn Ln			Mullan Rd			Mullan Rd		
Base Volume Input [veh/h]	0	0	1	0	0	139	55	685	1	1	1364	99
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	1	0	0	139	55	685	1	1	1364	99
Peak Hour Factor	1.0000	1.0000	0.9200	0.9200	1.0000	0.9200	0.9200	0.9200	1.0000	1.0000	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	0	0	38	15	186	0	0	371	27
Total Analysis Volume [veh/h]	0	0	1	0	0	151	60	745	1	1	1483	108
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor stree	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permis	Permis	Overla	Permis	Permis	Overla	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	0	5	0	0	5	0	2	0	0	6	6
Auxiliary Signal Groups			5			5						
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	5	0	0	5	0	5	0	0	5	5
Maximum Green [s]	0	0	30	0	0	30	0	30	0	0	30	30
Amber [s]	0.0	0.0	4.0	0.0	0.0	4.0	0.0	4.0	0.0	0.0	4.0	4.0
All red [s]	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0
Split [s]	0	0	30	0	0	30	0	120	0	0	90	90
Vehicle Extension [s]	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	3.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	0	0	0	0	0	0	20	0	0	20	20
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk			No			No		No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	0.0	4.0	0.0	0.0	4.0	0.0	4.0	0.0	0.0	4.0	4.0
Minimum Recall			No			No		No			No	
Maximum Recall			No			No		No			No	
Pedestrian Recall			No			No		No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	R	R	L	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	0.00	4.00	4.00	4.00	4.00
g_i, Effective Green Time [s]	14	14	114	114	94	94	94
g / C, Green / Cycle	0.12	0.12	0.95	0.95	0.78	0.78	0.78
(v / s)_i Volume / Saturation Flow Rate	0.00	0.10	0.11	0.43	0.00	0.86	0.07
s, saturation flow rate [veh/h]	1464	1464	562	1722	715	1722	1464
c, Capacity [veh/h]	174	174	344	1636	577	1345	1143
d1, Uniform Delay [s]	46.57	51.89	38.16	0.26	4.60	13.13	3.11
k, delay calibration	0.11	0.11	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.01	12.12	1.10	0.92	0.01	57.65	0.16
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.01	0.87	0.17	0.46	0.00	1.10	0.09
d, Delay for Lane Group [s/veh]	46.58	64.01	39.26	1.18	4.61	70.78	3.27
Lane Group LOS	D	E	D	A	A	F	A
Critical Lane Group	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.03	5.08	0.11	0.42	0.01	44.48	0.49
50th-Percentile Queue Length [ft/ln]	0.68	127.01	2.63	10.44	0.16	1112.1	12.19
95th-Percentile Queue Length [veh/ln]	0.05	8.78	0.19	0.75	0.01	60.56	0.88
95th-Percentile Queue Length [ft/ln]	1.22	219.43	4.74	18.79	0.29	1513.9	21.95

Movement, Approach, & Intersection Results

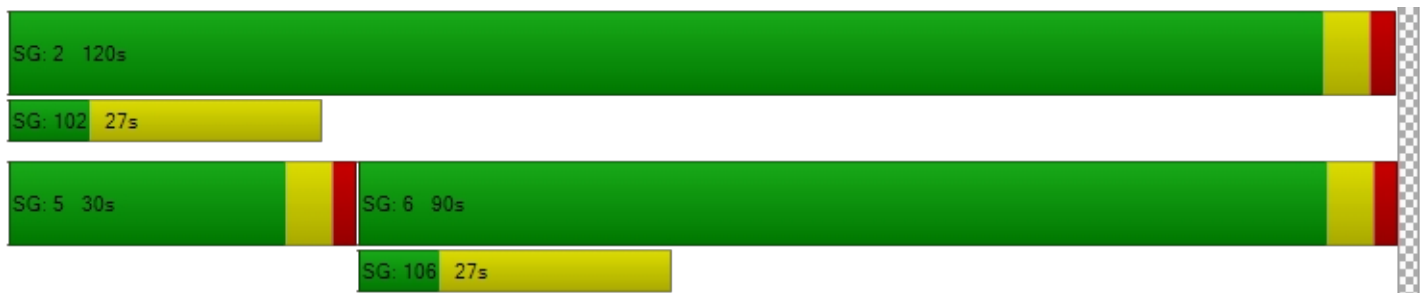
d_M, Delay for Movement [s/veh]	0.00	0.00	46.58	0.00	0.00	64.01	39.26	1.18	1.18	4.61	70.78	3.27
Movement LOS			D			E	D	A	A	A	F	A
d_A, Approach Delay [s/veh]	46.58			64.01			4.02			66.16		
Approach LOS	D			E			A			E		
d_I, Intersection Delay [s/veh]	46.38											
Intersection LOS	D											
Intersection V/C	1.033											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	24.0	24.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.50	49.50	38.40	38.40
I_p,int, Pedestrian LOS Score for Intersection	1.732	1.926	3.133	2.990
Crosswalk LOS	A	A	C	C
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	400	400	1900	1400
d_b, Bicycle Delay [s]	38.40	38.40	0.15	5.40
I_b,int, Bicycle LOS Score for Intersection	1.560	1.560	2.890	4.186
Bicycle LOS	A	A	C	D

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 13: Mary Jane Blvd & Mullan Rd

Control Type:	Signalized	Delay (sec / veh):	44.0
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.939

Intersection Setup

Name	Mary Jane Blvd		Mullan Rd		Mullan Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration	↔		↔		↔	
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Mary Jane Blvd		Mullan Rd		Mullan Rd	
Base Volume Input [veh/h]	109	135	119	565	1330	125
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	109	135	119	565	1330	125
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	30	37	32	154	361	34
Total Analysis Volume [veh/h]	118	147	129	614	1446	136
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0		0		0	
v_di, Inbound Pedestrian Volume crossing major street	0		0		0	
v_co, Outbound Pedestrian Volume crossing minor street	0		0		0	
v_ci, Inbound Pedestrian Volume crossing minor street	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	ProtPerm	Permissive	Permissive	Permissive
Signal Group	8	8	5	2	6	6
Auxiliary Signal Groups						
Lead / Lag	Lead	-	Lag	-	-	-
Minimum Green [s]	5	5	5	5	5	5
Maximum Green [s]	30	30	30	30	30	30
Amber [s]	4.0	4.0	4.0	4.0	4.0	4.0
All red [s]	2.0	2.0	2.0	2.0	2.0	2.0
Split [s]	61	61	30	120	90	90
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	7	7	0	7	7	7
Pedestrian Clearance [s]	20	20	0	20	20	20
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Recall	No		No	No	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	L	C	C	R
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	0.00	0.00	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	2.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	0.00	0.00	4.00	4.00	4.00
g_i, Effective Green Time [s]	0	0	9	114	103	103
g / C, Green / Cycle	0.00	0.00	0.07	0.95	0.86	0.86
(v / s)_i Volume / Saturation Flow Rate	0.58	0.10	0.24	0.36	0.84	0.09
s, saturation flow rate [veh/h]	203	1464	544	1722	1722	1464
c, Capacity [veh/h]	60	0	128	1636	1478	1257
d1, Uniform Delay [s]	59.95	0.00	0.31	0.23	7.49	1.33
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	488.57	0.00	81.23	0.66	18.73	0.17
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.97	10000.00	1.01	0.38	0.98	0.11
d, Delay for Lane Group [s/veh]	548.52	0.00	81.54	0.89	26.22	1.50
Lane Group LOS	F	F	F	A	C	A
Critical Lane Group	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	10.15	0.00	2.89	0.30	18.01	0.23
50th-Percentile Queue Length [ft/ln]	253.75	0.00	72.30	7.49	450.25	5.81
95th-Percentile Queue Length [veh/ln]	15.37	0.00	5.21	0.54	24.97	0.42
95th-Percentile Queue Length [ft/ln]	384.37	0.00	130.13	13.48	624.24	10.45

Movement, Approach, & Intersection Results

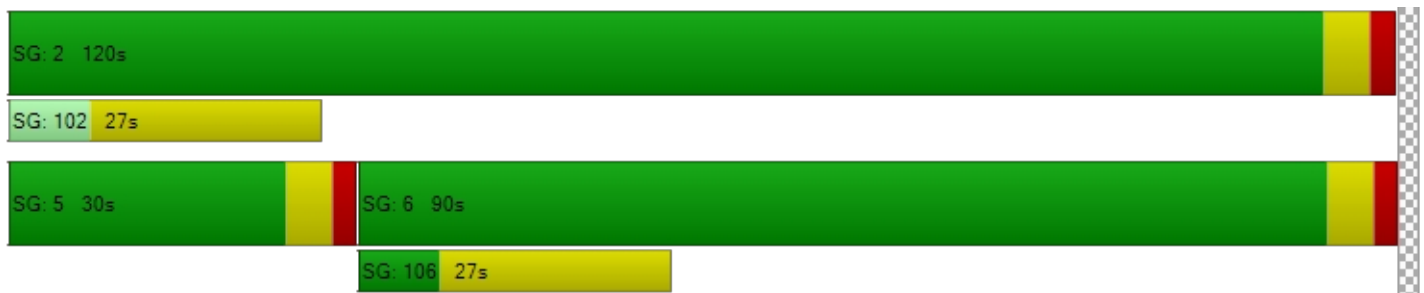
d_M, Delay for Movement [s/veh]	548.52	0.00	81.54	0.89	26.22	1.50
Movement LOS	F	A	F	A	C	A
d_A, Approach Delay [s/veh]	244.25		14.89		24.10	
Approach LOS	F		B		C	
d_I, Intersection Delay [s/veh]	43.98					
Intersection LOS	D					
Intersection V/C	0.939					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.50	49.50	49.50
I_p,int, Pedestrian LOS Score for Intersection	2.135	3.093	3.250
Crosswalk LOS	B	C	C
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	1900	1400
d_b, Bicycle Delay [s]	60.00	0.15	5.40
I_b,int, Bicycle LOS Score for Intersection	1.560	2.786	4.170
Bicycle LOS	A	C	D

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 16: Mary Jane Blvd & England Blvd

Control Type:	Signalized	Delay (sec / veh):	18.8
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.529

Intersection Setup

Name	Mary Jane Blvd			Mary Jane Blvd			England Blvd			England Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵			↵			↵			↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mary Jane Blvd			Mary Jane Blvd			England Blvd			England Blvd		
Base Volume Input [veh/h]	68	78	106	92	156	14	26	348	33	64	452	93
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	68	78	106	92	156	14	26	348	33	64	452	93
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	21	29	25	42	4	7	95	9	17	123	25
Total Analysis Volume [veh/h]	74	85	115	100	170	15	28	378	36	70	491	101
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lag	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	15	20	0	15	20	0	15	20	0	15	20	0
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
All red [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Split [s]	96	39	0	96	39	0	96	51	0	96	51	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	7	7	0	5	7	0	0	7	0	7	7	0
Pedestrian Clearance [s]	10	10	0	10	10	0	0	10	0	10	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	L	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
g_i, Effective Green Time [s]	23	23	23	23	55	55	55	55
g / C, Green / Cycle	0.25	0.25	0.25	0.25	0.61	0.61	0.61	0.61
(v / s)_i Volume / Saturation Flow Rate	0.06	0.13	0.08	0.11	0.03	0.24	0.07	0.35
s, saturation flow rate [veh/h]	1198	1564	1182	1698	825	1696	972	1672
c, Capacity [veh/h]	236	398	212	432	406	1039	545	1024
d1, Uniform Delay [s]	36.26	28.68	38.77	28.07	17.05	8.95	13.20	10.47
k, delay calibration	0.11	0.11	0.11	0.11	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.75	0.98	1.62	0.67	0.33	1.14	0.49	2.38
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.31	0.50	0.47	0.43	0.07	0.40	0.13	0.58
d, Delay for Lane Group [s/veh]	37.01	29.66	40.40	28.74	17.38	10.09	13.68	12.86
Lane Group LOS	D	C	D	C	B	B	B	B
Critical Lane Group	No	Yes	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.54	3.73	2.21	3.36	0.39	4.05	0.84	6.90
50th-Percentile Queue Length [ft/ln]	38.45	93.17	55.21	83.91	9.78	101.15	20.95	172.39
95th-Percentile Queue Length [veh/ln]	2.77	6.71	3.98	6.04	0.70	7.28	1.51	11.20
95th-Percentile Queue Length [ft/ln]	69.21	167.71	99.39	151.04	17.60	182.07	37.71	280.06

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	37.01	29.66	29.66	40.40	28.74	28.74	17.38	10.09	10.09	13.68	12.86	12.86
Movement LOS	D	C	C	D	C	C	B	B	B	B	B	B
d_A, Approach Delay [s/veh]	31.65			32.83			10.56			12.94		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]	18.80											
Intersection LOS	B											
Intersection V/C	0.529											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	34.67			34.67			34.67			34.67		
I_p,int, Pedestrian LOS Score for Intersection	2.218			2.142			2.377			2.490		
Crosswalk LOS	B			B			B			B		
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	733			733			1000			1000		
d_b, Bicycle Delay [s]	18.05			18.05			11.25			11.25		
I_b,int, Bicycle LOS Score for Intersection	2.012			2.030			2.289			2.652		
Bicycle LOS	B			B			B			B		

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 20: Mary Jane Blvd & W Broadway St

Control Type:	Signalized	Delay (sec / veh):	18.6
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.751

Intersection Setup

Name	Mary Jane Blvd		W Broadway St		W Broadway St	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↵↵		↑↑↵		↵↑↑	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Mary Jane Blvd		W Broadway St		W Broadway St	
Base Volume Input [veh/h]	216	101	1471	223	184	1097
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.00	3.00	2.00	3.00	3.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	216	101	1471	223	184	1097
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	59	27	400	61	50	298
Total Analysis Volume [veh/h]	235	110	1599	242	200	1192
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0		0		0	
v_di, Inbound Pedestrian Volume crossing major street	0		0		0	
v_co, Outbound Pedestrian Volume crossing minor street	0		0		0	
v_ci, Inbound Pedestrian Volume crossing minor street	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Permissive	Permissive	ProtPerm	Permissive
Signal Group	8	8	2	2	1	6
Auxiliary Signal Groups						
Lead / Lag	Lag	-	-	-	Lead	-
Minimum Green [s]	5	5	5	5	5	5
Maximum Green [s]	30	30	30	30	30	30
Amber [s]	4.0	4.0	4.0	4.0	4.0	4.0
All red [s]	2.0	2.0	2.0	2.0	2.0	2.0
Split [s]	53	53	51	51	16	67
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	4.00	4.00	0.00	4.00
g_i, Effective Green Time [s]	20	20	76	76	88	88
g / C, Green / Cycle	0.16	0.16	0.63	0.63	0.74	0.74
(v / s)_i Volume / Saturation Flow Rate	0.14	0.08	0.49	0.17	0.42	0.36
s, saturation flow rate [veh/h]	1627	1452	3279	1452	475	3279
c, Capacity [veh/h]	268	239	2064	914	322	2412
d1, Uniform Delay [s]	48.93	45.29	16.07	9.88	22.17	6.60
k, delay calibration	0.11	0.11	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.94	1.38	2.91	0.71	8.71	0.73
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.88	0.46	0.77	0.26	0.62	0.49
d, Delay for Lane Group [s/veh]	57.87	46.67	18.98	10.59	30.88	7.33
Lane Group LOS	E	D	B	B	C	A
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	7.52	3.06	13.80	2.59	1.87	4.74
50th-Percentile Queue Length [ft/ln]	188.00	76.55	345.10	64.83	46.85	118.47
95th-Percentile Queue Length [veh/ln]	12.02	5.51	19.90	4.67	3.37	8.31
95th-Percentile Queue Length [ft/ln]	300.44	137.79	497.43	116.70	84.33	207.72

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	57.87	46.67	18.98	10.59	30.88	7.33
Movement LOS	E	D	B	B	C	A
d_A, Approach Delay [s/veh]	54.30		17.88		10.71	
Approach LOS	D		B		B	
d_I, Intersection Delay [s/veh]	18.60					
Intersection LOS	B					
Intersection V/C	0.751					

Other Modes

g_Walk,mi, Effective Walk Time [s]	45.0	47.0	47.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	23.44	22.20	22.20
I_p,int, Pedestrian LOS Score for Intersection	2.364	3.450	3.390
Crosswalk LOS	B	C	C
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	783	750	1017
d_b, Bicycle Delay [s]	22.20	23.44	14.50
I_b,int, Bicycle LOS Score for Intersection	1.560	3.078	2.708
Bicycle LOS	A	C	B

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 21: Flynn Ln & W Broadway St

Control Type:	Signalized	Delay (sec / veh):	11.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.843

Intersection Setup

Name	Flynn Ln		W Broadway St		W Broadway St	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↗		↕↗		↕	
Turning Movement	Left	Thru	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	1	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	49.21	0.00	0.00
Speed [mph]	25.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		No	

Volumes

Name	Flynn Ln		W Broadway St		W Broadway St	
Base Volume Input [veh/h]	0	283	1397	143	0	1280
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	2.00	2.00	0.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	283	1397	143	0	1280
Peak Hour Factor	0.7900	0.9200	0.9200	0.9200	0.7900	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	77	380	39	0	348
Total Analysis Volume [veh/h]	0	308	1518	155	0	1391
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	0		0		0	
v_di, Inbound Pedestrian Volume crossing major street [	0		0		0	
v_co, Outbound Pedestrian Volume crossing minor stree	0		0		0	
v_ci, Inbound Pedestrian Volume crossing minor street [	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Permissive	Permissive	Permissive	Permissive
Signal Group	0	8	2	2	0	6
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	-	-
Minimum Green [s]	0	5	5	5	0	5
Maximum Green [s]	0	30	30	30	0	30
Amber [s]	0.0	4.0	4.0	4.0	0.0	4.0
All red [s]	0.0	2.0	2.0	2.0	0.0	2.0
Split [s]	0	30	90	90	0	90
Vehicle Extension [s]	0.0	3.0	3.0	3.0	0.0	3.0
Walk [s]	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No	No			No
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	0.0	2.0
I2, Clearance Lost Time [s]	0.0	4.0	4.0	4.0	0.0	4.0
Minimum Recall		No	No			No
Maximum Recall		No	No			No
Pedestrian Recall		No	No			No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	R	C
C, Cycle Length [s]	50	50	50	50
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	4.00	4.00
g_i, Effective Green Time [s]	11	27	27	27
g / C, Green / Cycle	0.22	0.54	0.54	0.54
(v / s)_i Volume / Saturation Flow Rate	0.18	0.46	0.11	0.42
s, saturation flow rate [veh/h]	1750	3279	1464	3279
c, Capacity [veh/h]	384	1768	789	1768
d1, Uniform Delay [s]	18.38	9.83	5.91	9.17
k, delay calibration	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.92	1.31	0.12	0.81
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.80	0.86	0.20	0.79
d, Delay for Lane Group [s/veh]	22.30	11.14	6.03	9.98
Lane Group LOS	C	B	A	A
Critical Lane Group	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.44	3.61	0.43	3.01
50th-Percentile Queue Length [ft/ln]	86.09	90.20	10.74	75.17
95th-Percentile Queue Length [veh/ln]	6.20	6.49	0.77	5.41
95th-Percentile Queue Length [ft/ln]	154.96	162.37	19.33	135.31

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	22.30	11.14	6.03	0.00	9.98
Movement LOS		C	B	A		A
d_A, Approach Delay [s/veh]	22.30		10.67		9.98	
Approach LOS	C		B		A	
d_I, Intersection Delay [s/veh]	11.44					
Intersection LOS	B					
Intersection V/C	0.843					

Other Modes

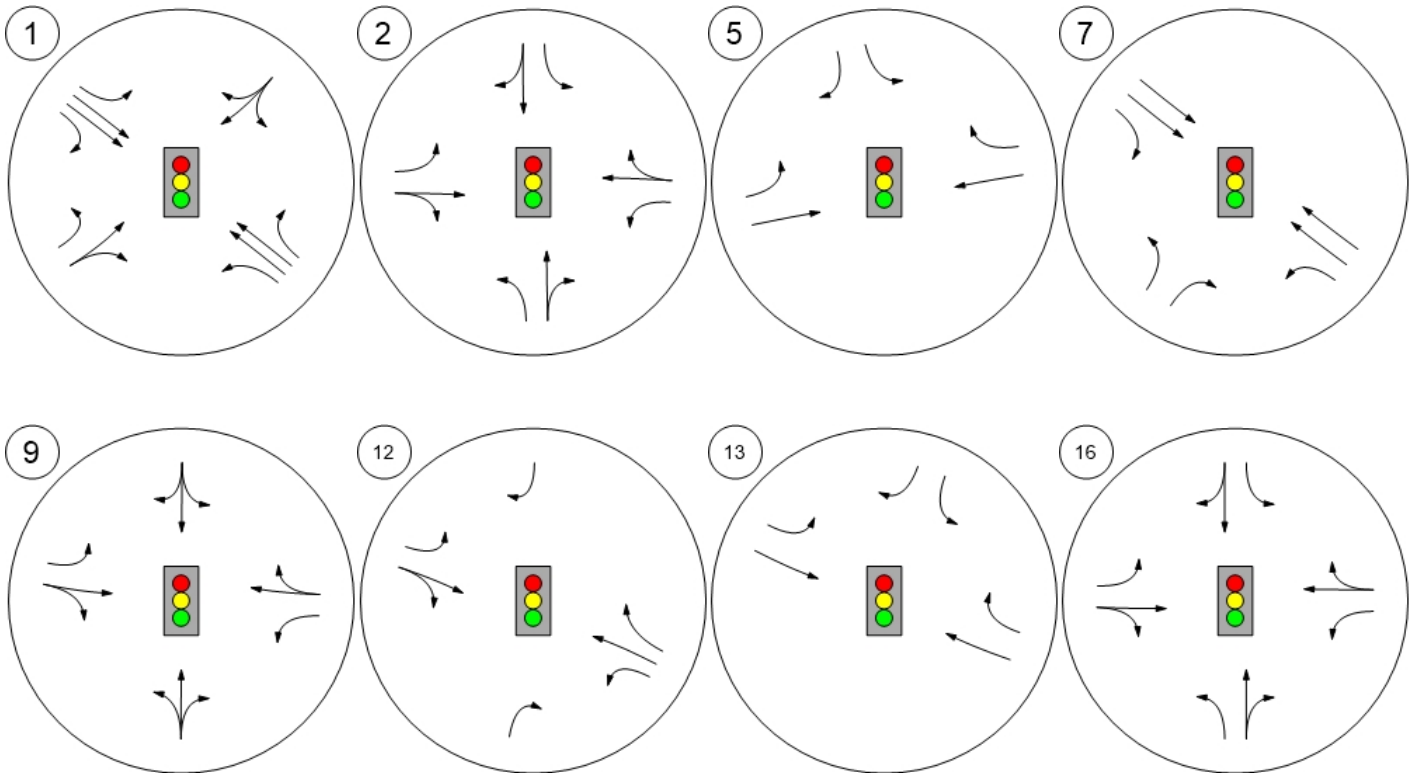
g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000
Crosswalk LOS	F	F	F
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	400	1400	1400
d_b, Bicycle Delay [s]	38.40	5.40	5.40
I_b,int, Bicycle LOS Score for Intersection	2.068	2.940	2.707
Bicycle LOS	B	C	B

Sequence

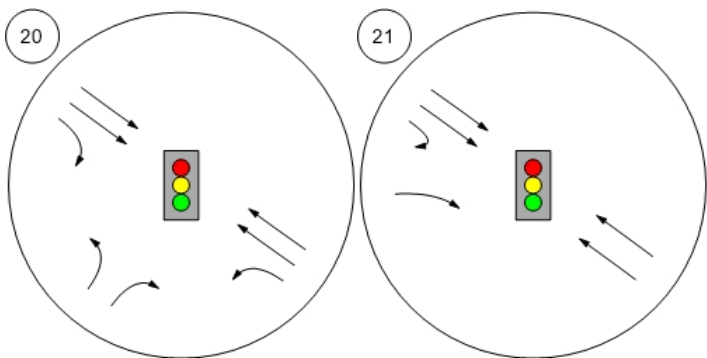
Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Lane Configuration and Traffic Control



Lane Configuration and Traffic Control





Option 1: Dual Through Lanes EB & WB

Number	5					
Intersection	George Elmer Dr & Mullan Rd					
Control Type	Signalized					
Analysis Method	HCM 6th Edition					
Name	George Elmer Dr		Mullan Rd		Mullan Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Base Volume Input [veh/h]	104	275	179	637	1185	353
Total Analysis Volume [veh/h]	113	299	195	692	1288	384

Intersection Settings

Cycle Length [s]	120					
Coordination Type	Time of Day Pattern Coordinated					
Actuation Type	Fully actuated					
Lost time [s]	12.00					
Control Type	Split	Split	Permissive	Permissive	Permissive	Permissive
Signal Group	8	8	0	2	6	6
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	5
Maximum Green [s]	30	30	0	30	30	30
Amber [s]	4.0	4.0	0.0	4.0	4.0	4.0
All red [s]	2.0	2.0	0.0	2.0	2.0	2.0
Split [s]	34	34	0	86	53	53
Walk [s]	7	7	0	7	7	7
Pedestrian Clearance [s]	20	20	0	20	20	20
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
l1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	No			No	No	
Maximum Recall	No			No	No	
Pedestrian Recall	No			No	No	
Pedestrian Signal Group	0					
Pedestrian Walk [s]	0					
Pedestrian Clearance [s]	0					

Lane Group Calculations

g / C, Green / Cycle	0.22	0.22	0.68	0.68	0.63	0.63
(v / s)_i Volume / Saturation Flow Rate	0.07	0.20	0.40	0.21	0.39	0.26
so, Base Saturation Flow per Lane [pc/h/ln]	1750	1750	1750	1750	1750	1750
Arrival type	3		3		3	
s, saturation flow rate [veh/h]	1640	1464	486	3279	3279	1452
c, Capacity [veh/h]	359	321	312	2233	2066	915
X, volume / capacity	0.31	0.93	0.62	0.31	0.62	0.42
d, Delay for Lane Group [s/veh]	39.78	70.18	26.77	8.10	14.96	12.58
Lane Group LOS	D	E	C	A	B	B



Critical Lane Group	No	Yes	No	NO	Yes	No
50th-Percentile Queue Length [veh/ln]	2.86	10.85	2.36	3.21	9.70	4.93
50th-Percentile Queue Length [ft/ln]	71.44	271.28	58.90	80.34	242.38	123.25
95th-Percentile Queue Length [veh/ln]	5.14	16.25	4.24	5.78	14.80	8.57
95th-Percentile Queue Length [ft/ln]	128.59	406.34	106.03	144.60	370.05	214.29

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	39.78	70.18	26.77	8.10	14.96	12.58
Movement LOS	D	E	C	A	B	B
Critical Movement	No	Yes	No	No	No	No
d_A, Approach Delay [s/veh]	61.84		12.21		14.41	
Approach LOS	E		B		B	
d_I, Intersection Delay [s/veh]	20.33					
Intersection LOS	C					
Intersection V/C	0.663					



Option 1: Dual Through Lanes EB & WB

Number	13					
Intersection	Mary Jane Blvd & Mullan Rd					
Control Type	Signalized					
Analysis Method	HCM 6th Edition					
Name	Mary Jane Blvd		Mullan Rd		Mullan Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Base Volume Input [veh/h]	109	135	119	565	1330	125
Total Analysis Volume [veh/h]	118	147	129	614	1446	136

Intersection Settings

Cycle Length [s]	120					
Coordination Type	Time of Day Pattern Coordinated					
Actuation Type	Fully actuated					
Lost time [s]	12.00					
Control Type	Split	Split	ProtPerm	Permissive	Permissive	Permissive
Signal Group	8	8	5	2	6	6
Auxiliary Signal Groups						
Lead / Lag	Lead	-	Lag	-	-	-
Minimum Green [s]	5	5	5	5	5	5
Maximum Green [s]	30	30	30	30	30	30
Amber [s]	4.0	4.0	4.0	4.0	4.0	4.0
All red [s]	2.0	2.0	2.0	2.0	2.0	2.0
Split [s]	33	33	33	87	54	54
Walk [s]	7	7	0	7	7	7
Pedestrian Clearance [s]	20	20	0	20	20	20
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
l1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
Minimum Recall	No		No	No	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	
Pedestrian Signal Group	0					
Pedestrian Walk [s]	0					
Pedestrian Clearance [s]	0					

Lane Group Calculations

g / C, Green / Cycle	0.12	0.12	0.78	0.78	0.69	0.69
(v / s)_i Volume / Saturation Flow Rate	0.07	0.10	0.26	0.19	0.44	0.09
so, Base Saturation Flow per Lane [pc/h/ln]	1750	1750	1750	1750	1750	1750
Arrival type	3		3		3	
s, saturation flow rate [veh/h]	1640	1464	491	3279	3279	1464
c, Capacity [veh/h]	196	175	376	2560	2258	1008
X, volume / capacity	0.60	0.84	0.34	0.24	0.64	0.13
d, Delay for Lane Group [s/veh]	53.06	61.95	11.75	3.78	11.81	6.69
Lane Group LOS	D	E	B	A	B	A

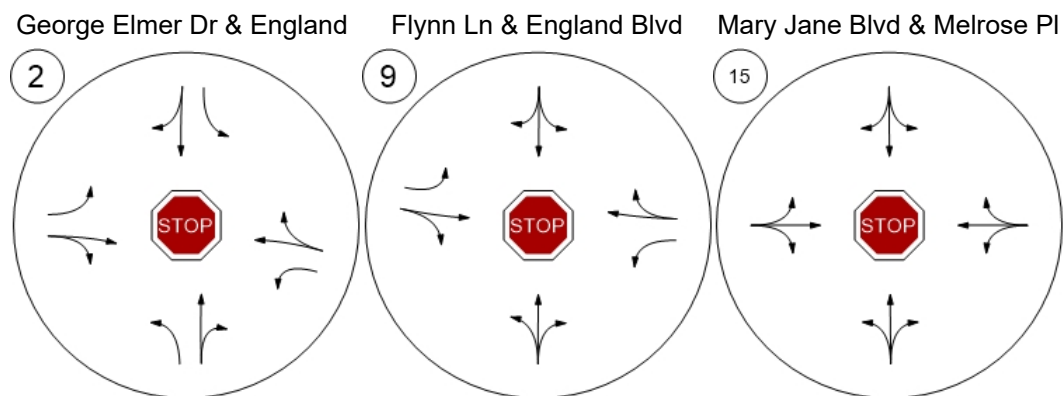


Critical Lane Group	NO	Yes	Yes	NO	Yes	NO
50th-Percentile Queue Length [veh/ln]	3.53	4.82	0.78	1.49	9.23	1.10
50th-Percentile Queue Length [ft/ln]	88.14	120.56	19.60	37.36	230.84	27.43
95th-Percentile Queue Length [veh/ln]	6.35	8.42	1.41	2.69	14.22	1.97
95th-Percentile Queue Length [ft/ln]	158.65	210.60	35.28	67.25	355.43	49.37

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	53.06	61.95	11.75	3.78	11.81	6.69
Movement LOS	D	E	B	A	B	A
Critical Movement	No	Yes	No	No	No	No
d_A, Approach Delay [s/veh]	57.99		5.16		11.37	
Approach LOS	E		A		B	
d_I, Intersection Delay [s/veh]	14.36					
Intersection LOS	B					
Intersection V/C	0.627					

Lane Configuration and Traffic Control



Mullan BUILD - 2050 AM

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Scenario 5 Roundabout (2050)

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7/17/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	George Elmer Dr & W Broadway St	Roundabout	HCM 6th Edition	NB Left		14.7	B
2	George Elmer Dr & England Blvd	Roundabout	HCM 6th Edition	NB Thru		11.3	B
3	George Elmer Dr & Cattle Dr	Roundabout	HCM 6th Edition	NB Thru		5.1	A
4	George Elmer Dr & Heron's Landing	Roundabout	HCM 6th Edition	NB Thru		5.0	A
5	George Elmer Dr & Mullan Rd	Roundabout	HCM 6th Edition	EB Thru		88.7	F
6	Dougherty Dr & England Blvd	Roundabout	HCM 6th Edition	EB Thru		6.2	A
7	Dougherty Dr & W Broadway St	Roundabout	HCM 6th Edition	NB Right		11.3	B
8	Flynn Ln & Camden St	Roundabout	HCM 6th Edition	NB Thru		3.7	A
9	Flynn Ln & England Blvd	Roundabout	HCM 6th Edition	EB Thru		8.5	A
10	Flynn Ln & Chelsea Dr	Roundabout	HCM 6th Edition	SB Thru		4.7	A
11	Flynn Ln & Siren's Dr	Roundabout	HCM 6th Edition	NB Thru		5.0	A
12	Flynn Ln & Mullan Rd	Roundabout	HCM 6th Edition	EB Thru		34.4	D
13	Mary Jane Blvd & Mullan Rd	Roundabout	HCM 6th Edition	EB Thru		34.6	D
14	Mary Jane Blvd & O'Leary St	Roundabout	HCM 6th Edition	NB Thru		4.7	A
15	Mary Jane Blvd & Melrose Pl	Roundabout	HCM 6th Edition	NB Thru		5.1	A
16	Mary Jane Blvd & England Blvd	Roundabout	HCM 6th Edition	NB Thru		10.0	B
17	Mary Jane Blvd & Camden St	Roundabout	HCM 6th Edition	NB Thru		4.3	A
			HCM 6th				

18	Mary Jane Blvd & Flynn Ln	Roundabout	HCM 6th Edition	NB Thru		5.4	A
19	Mary Jane Blvd & Veteran's Way	Roundabout	HCM 6th Edition	NB Thru		4.9	A
20	Mary Jane Blvd & W Broadway St	Roundabout	HCM 6th Edition	NB Left		15.0	C
21	Flynn Ln & W Broadway St	Roundabout	HCM 6th Edition	NB Thru		14.0	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: George Elmer Dr & W Broadway St

Control Type:	Roundabout	Delay (sec / veh):	14.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes		

Intersection Setup

Name	George Elmer Dr			Commercial Access			W Broadway St			W Broadway St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵↶			↶			↶↵			↶↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.21
Speed [mph]	30.00			30.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	George Elmer Dr			Commercial Access			W Broadway St			W Broadway St		
Base Volume Input [veh/h]	318	1	203	1	1	1	1	1066	125	72	757	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.00	2.00	4.00	2.00	2.00	2.00	4.00	8.00	2.00	4.00	15.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	318	1	203	1	1	1	1	1066	125	72	757	1
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	86	0	55	0	0	0	0	290	34	20	206	0
Total Analysis Volume [veh/h]	346	1	221	1	1	1	1	1159	136	78	823	1
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	2			1			1			1		
Circulating Flow Rate [veh/h]	1254			1387			83			362		
Exiting Flow Rate [veh/h]	221			3			1307			1483		
Demand Flow Rate [veh/h]	318	1	203	1	1	1	1	1066	125	72	757	1
Adjusted Demand Flow Rate [veh/h]	346	1	221	1	1	1	1	1159	136	78	823	1

Lanes

Override Calculated Critical Headway	No	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1350.00	1420.00	1380.00	1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00092	0.00085	0.00102	0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	0.96	0.96	0.98	0.93	0.93	0.88	0.87
Entry Flow Rate [veh/h]	360	231	4	658	738	484	550
Capacity of Entry and Bypass Lanes [veh/h]	426	490	336	1317	1317	1022	1022
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	410	471	329	1220	1227	897	889
X, volume / capacity	0.84	0.47	0.01	0.50	0.56	0.47	0.54

Movement, Approach, & Intersection Results

Lane LOS	E	C	B	A	A	A	B
95th-Percentile Queue Length [veh]	8.09	2.48	0.03	2.89	3.62	2.58	3.28
95th-Percentile Queue Length [ft]	202.24	62.07	0.69	72.17	90.60	64.47	82.11
Approach Delay [s/veh]	34.30		11.10	8.91		10.69	
Approach LOS	D		B	A		B	
Intersection Delay [s/veh]	14.70						
Intersection LOS	B						

Intersection Level Of Service Report
Intersection 2: George Elmer Dr & England Blvd

Control Type: Roundabout
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 11.3
 Level Of Service: B

Intersection Setup

Name	George Elmer Dr			George Elmer Dr			England Blvd			England Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	George Elmer Dr			George Elmer Dr			England Blvd			England Blvd		
Base Volume Input [veh/h]	30	289	50	50	100	50	160	311	60	25	299	75
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	4.00	2.00	2.00	4.00	2.00	2.00	8.00	2.00	2.00	4.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	30	289	50	50	100	50	160	311	60	25	299	75
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	79	14	14	27	14	43	85	16	7	81	20
Total Analysis Volume [veh/h]	33	314	54	54	109	54	174	338	65	27	325	82
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	598			399			196			538		
Exiting Flow Rate [veh/h]	207			588			427			475		
Demand Flow Rate [veh/h]	30	289	50	50	100	50	160	311	60	25	299	75
Adjusted Demand Flow Rate [veh/h]	33	314	54	54	109	54	174	338	65	27	325	82

Lanes

Override Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.97	0.97	0.95	0.97
Entry Flow Rate [veh/h]	416	224	609	450
Capacity of Entry and Bypass Lanes [veh/h]	751	919	1130	798
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	725	892	1072	771
X, volume / capacity	0.55	0.24	0.54	0.56

Movement, Approach, & Intersection Results

Lane LOS	B	A	A	B
95th-Percentile Queue Length [veh]	3.43	0.95	3.32	3.57
95th-Percentile Queue Length [ft]	85.73	23.85	83.01	89.17
Approach Delay [s/veh]	13.72	6.55	9.90	13.34
Approach LOS	B	A	A	B
Intersection Delay [s/veh]	11.31			
Intersection LOS	B			

**Intersection Level Of Service Report
Intersection 3: George Elmer Dr & Cattle Dr**

Control Type: Roundabout
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 5.1
 Level Of Service: A

Intersection Setup

Name	George Elmer Dr			George Elmer Dr			Cattle Dr			Cattle Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	George Elmer Dr			George Elmer Dr			Cattle Dr			Cattle Dr		
Base Volume Input [veh/h]	39	338	3	19	161	5	21	1	86	6	1	10
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	4.00	2.00	2.00	4.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	39	338	3	19	161	5	21	1	86	6	1	10
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	92	1	5	44	1	6	0	23	2	0	3
Total Analysis Volume [veh/h]	42	367	3	21	175	5	23	1	93	7	1	11
Pedestrian Volume [ped/h]	0			0			0			0		



Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	46			51			211			448		
Exiting Flow Rate [veh/h]	284			416			49			26		
Demand Flow Rate [veh/h]	39	338	3	19	161	5	21	1	86	6	1	10
Adjusted Demand Flow Rate [veh/h]	42	367	3	21	175	5	23	1	93	7	1	11

Lanes

Override Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.96	0.96	0.98	0.98
Entry Flow Rate [veh/h]	428	209	120	20
Capacity of Entry and Bypass Lanes [veh/h]	1317	1311	1114	874
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	1269	1263	1092	857
X, volume / capacity	0.32	0.16	0.11	0.02

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	1.42	0.57	0.36	0.07
95th-Percentile Queue Length [ft]	35.58	14.14	8.98	1.70
Approach Delay [s/veh]	5.82	4.19	4.23	4.41
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	5.10			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 4: George Elmer Dr & Heron's Landing

Control Type:	Roundabout	Delay (sec / veh):	5.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	George Elmer Dr			George Elmer Dr			Heron's Landing			Heron's Landing		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	George Elmer Dr			George Elmer Dr			Heron's Landing			Heron's Landing		
Base Volume Input [veh/h]	5	329	5	15	222	15	25	1	25	25	1	25
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	4.00	2.00	2.00	4.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	5	329	5	15	222	15	25	1	25	25	1	25
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	89	1	4	60	4	7	0	7	7	0	7
Total Analysis Volume [veh/h]	5	358	5	16	241	16	27	1	27	27	1	27
Pedestrian Volume [ped/h]	0			0			0			0		



Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	45			34			295			405		
Exiting Flow Rate [veh/h]	306			427			22			22		
Demand Flow Rate [veh/h]	5	329	5	15	222	15	25	1	25	25	1	25
Adjusted Demand Flow Rate [veh/h]	5	358	5	16	241	16	27	1	27	27	1	27

Lanes

Override Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.96	0.96	0.98	0.98
Entry Flow Rate [veh/h]	383	284	57	57
Capacity of Entry and Bypass Lanes [veh/h]	1319	1334	1022	914
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	1269	1286	1002	896
X, volume / capacity	0.29	0.21	0.05	0.06

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	1.21	0.80	0.17	0.20
95th-Percentile Queue Length [ft]	30.33	20.10	4.35	4.90
Approach Delay [s/veh]	5.45	4.62	4.08	4.59
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	4.98			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 5: George Elmer Dr & Mullan Rd

Control Type:	Roundabout	Delay (sec / veh):	88.7
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes		

Intersection Setup

Name	George Elmer Dr		Mullan Rd		Mullan Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	325.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	George Elmer Dr		Mullan Rd		Mullan Rd	
Base Volume Input [veh/h]	222	50	253	1259	405	85
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.00	4.00	4.00	7.00	7.00	4.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	222	50	253	1259	405	85
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	60	14	69	342	110	23
Total Analysis Volume [veh/h]	241	54	275	1368	440	92
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Number of Conflicting Circulating Lanes	1		1		1	
Circulating Flow Rate [veh/h]	471		251		286	
Exiting Flow Rate [veh/h]	382		527		1714	
Demand Flow Rate [veh/h]	222	50	253	1259	405	85
Adjusted Demand Flow Rate [veh/h]	241	54	275	1368	440	92

Lanes

Override Calculated Critical Headway	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1420.00	1420.00	1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00091	0.00091	0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	0.96	0.96	0.96	0.93	0.93	0.96
Entry Flow Rate [veh/h]	251	57	286	1464	471	96
Capacity of Entry and Bypass Lanes [veh/h]	926	926	1131	1131	1095	1095
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	890	890	1087	1057	1023	1053
X, volume / capacity	0.27	0.06	0.25	1.29	0.43	0.09

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	F	A	A
95th-Percentile Queue Length [veh]	1.10	0.19	1.01	49.34	2.20	0.29
95th-Percentile Queue Length [ft]	27.50	4.84	25.15	1233.52	54.95	7.17
Approach Delay [s/veh]	6.48		129.75		7.59	
Approach LOS	A		F		A	
Intersection Delay [s/veh]	88.72					
Intersection LOS	F					

**Intersection Level Of Service Report
Intersection 6: Dougherty Dr & England Blvd**

Control Type:	Roundabout	Delay (sec / veh):	6.2
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	Dougherty Dr		England Blvd		England Blvd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration	T		↑		↑	
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Dougherty Dr		England Blvd		England Blvd	
Base Volume Input [veh/h]	85	75	50	361	324	30
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	8.00	4.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	85	75	50	361	324	30
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	20	14	98	88	8
Total Analysis Volume [veh/h]	92	82	54	392	352	33
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Number of Conflicting Circulating Lanes	1		1		1	
Circulating Flow Rate [veh/h]	366		94		55	
Exiting Flow Rate [veh/h]	89		450		517	
Demand Flow Rate [veh/h]	85	75	50	361	324	30
Adjusted Demand Flow Rate [veh/h]	92	82	54	392	352	33

Lanes

Override Calculated Critical Headway	No		No		No	
User-Defined Critical Headway [s]	4.00		4.00		4.00	
Override Calculated Follow-Up Time	No		No		No	
User-Defined Follow-Up Time [s]	3.00		3.00		3.00	
A (intercept)	1380.00		1380.00		1380.00	
B (coefficient)	0.00102		0.00102		0.00102	
HV Adjustment Factor	0.98		0.93		0.96	
Entry Flow Rate [veh/h]	178		479		400	
Capacity of Entry and Bypass Lanes [veh/h]	950		1255		1305	
Pedestrian Impedance	1.00		1.00		1.00	
Capacity per Entry Lane [veh/h]	932		1170		1257	
X, volume / capacity	0.19		0.38		0.31	

Movement, Approach, & Intersection Results

Lane LOS	A		A		A	
95th-Percentile Queue Length [veh]	0.68		1.81		1.31	
95th-Percentile Queue Length [ft]	17.11		45.33		32.74	
Approach Delay [s/veh]	5.69		6.87		5.66	
Approach LOS	A		A		A	
Intersection Delay [s/veh]			6.20			
Intersection LOS			A			

Intersection Level Of Service Report
Intersection 7: Dougherty Dr & W Broadway St

Control Type: Roundabout
Analysis Method: HCM 6th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 11.3
Level Of Service: B

Intersection Setup

Name	Dougherty Dr		W Broadway St		W Broadway St	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	⇌		⇌		⇌	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		Yes	

Volumes

Name	Dougherty Dr		W Broadway St		W Broadway St	
Base Volume Input [veh/h]	116	250	1139	130	150	713
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	8.00	2.00	2.00	15.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	116	250	1139	130	150	713
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	32	68	310	35	41	194
Total Analysis Volume [veh/h]	126	272	1238	141	163	775
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Number of Conflicting Circulating Lanes	2		1		1	
Circulating Flow Rate [veh/h]	1337		166		129	
Exiting Flow Rate [veh/h]	310		1020		1614	
Demand Flow Rate [veh/h]	116	250	1139	130	150	713
Adjusted Demand Flow Rate [veh/h]	126	272	1238	141	163	775

Lanes

Override Calculated Critical Headway	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1350.00	1420.00	1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00092	0.00085	0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	0.98	0.98	0.93	0.93	0.89	0.87
Entry Flow Rate [veh/h]	129	278	700	785	497	572
Capacity of Entry and Bypass Lanes [veh/h]	395	456	1221	1221	1264	1264
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	387	447	1131	1138	1123	1099
X, volume / capacity	0.33	0.61	0.57	0.64	0.39	0.45

Movement, Approach, & Intersection Results

Lane LOS	C	C	B	B	A	A
95th-Percentile Queue Length [veh]	1.39	3.95	3.79	4.92	1.90	2.40
95th-Percentile Queue Length [ft]	34.75	98.82	94.86	123.04	47.43	60.08
Approach Delay [s/veh]	20.48		11.12		7.75	
Approach LOS	C		B		A	
Intersection Delay [s/veh]	11.33					
Intersection LOS	B					

**Intersection Level Of Service Report
Intersection 8: Flynn Ln & Camden St**

Control Type: Roundabout
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 3.7
 Level Of Service: A

Intersection Setup

Name	Flynn Ln		Flynn Ln		Camden St	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Flynn Ln		Flynn Ln		Camden St	
Base Volume Input [veh/h]	170	10	6	92	11	31
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	170	10	6	92	11	31
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	46	3	2	25	3	8
Total Analysis Volume [veh/h]	185	11	7	100	12	34
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Number of Conflicting Circulating Lanes	1		1		1	
Circulating Flow Rate [veh/h]	7		12		189	
Exiting Flow Rate [veh/h]	114		223		18	
Demand Flow Rate [veh/h]	170	10	6	92	11	31
Adjusted Demand Flow Rate [veh/h]	185	11	7	100	12	34

Lanes

Override Calculated Critical Headway	No		No		No	
User-Defined Critical Headway [s]	4.00		4.00		4.00	
Override Calculated Follow-Up Time	No		No		No	
User-Defined Follow-Up Time [s]	3.00		3.00		3.00	
A (intercept)	1380.00		1380.00		1380.00	
B (coefficient)	0.00102		0.00102		0.00102	
HV Adjustment Factor	0.98		0.98		0.98	
Entry Flow Rate [veh/h]	200		110		47	
Capacity of Entry and Bypass Lanes [veh/h]	1370		1363		1139	
Pedestrian Impedance	1.00		1.00		1.00	
Capacity per Entry Lane [veh/h]	1344		1337		1117	
X, volume / capacity	0.15		0.08		0.04	

Movement, Approach, & Intersection Results

Lane LOS	A		A		A	
95th-Percentile Queue Length [veh]	0.51		0.26		0.13	
95th-Percentile Queue Length [ft]	12.77		6.52		3.22	
Approach Delay [s/veh]	3.87		3.33		3.57	
Approach LOS	A		A		A	
Intersection Delay [s/veh]			3.66			
Intersection LOS			A			

**Intersection Level Of Service Report
Intersection 9: Flynn Ln & England Blvd**

Control Type: Roundabout
Analysis Method: HCM 6th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 8.5
Level Of Service: A

Intersection Setup

Name	Flynn Ln			Flynn Ln			England Blvd			England Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			25.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Flynn Ln			Flynn Ln			England Blvd			England Blvd		
Base Volume Input [veh/h]	15	72	73	55	29	19	33	378	34	142	320	75
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	8.00	2.00	2.00	4.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	15	72	73	55	29	19	33	378	34	142	320	75
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	20	20	15	8	5	9	103	9	39	87	20
Total Analysis Volume [veh/h]	16	78	79	60	32	21	36	411	37	154	348	82
Pedestrian Volume [ped/h]	0			0			0			0		



Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	542			535			251			133		
Exiting Flow Rate [veh/h]	227			200			400			586		
Demand Flow Rate [veh/h]	15	72	73	55	29	19	33	378	34	142	320	75
Adjusted Demand Flow Rate [veh/h]	16	78	79	60	32	21	36	411	37	154	348	82

Lanes

Override Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.98	0.98	0.93	0.97
Entry Flow Rate [veh/h]	177	116	519	603
Capacity of Entry and Bypass Lanes [veh/h]	795	800	1069	1206
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	779	784	999	1169
X, volume / capacity	0.22	0.14	0.48	0.50

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	0.85	0.50	2.71	2.88
95th-Percentile Queue Length [ft]	21.19	12.56	67.76	72.12
Approach Delay [s/veh]	7.05	6.09	9.38	8.62
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	8.48			
Intersection LOS	A			

**Intersection Level Of Service Report
Intersection 10: Flynn Ln & Chelsea Dr**

Control Type: Roundabout
Analysis Method: HCM 6th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 4.7
Level Of Service: A

Intersection Setup

Name	Flynn Ln			Flynn Ln			Chelsea Dr			Chelsea Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Flynn Ln			Flynn Ln			Chelsea Dr			Chelsea Dr		
Base Volume Input [veh/h]	68	116	33	15	150	40	31	2	11	22	5	13
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	19.00	2.00	2.00	2.00	7.00	28.00	2.00	50.00	2.00	2.00	20.00	8.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	68	116	33	15	150	40	31	2	11	22	5	13
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	32	9	4	41	11	8	1	3	6	1	4
Total Analysis Volume [veh/h]	74	126	36	16	163	43	34	2	12	24	5	14
Pedestrian Volume [ped/h]	0			0			0			0		



Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	54			119			215			251		
Exiting Flow Rate [veh/h]	211			178			149			56		
Demand Flow Rate [veh/h]	68	116	33	15	150	40	31	2	11	22	5	13
Adjusted Demand Flow Rate [veh/h]	74	126	36	16	163	43	34	2	12	24	5	14

Lanes

Override Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.94	0.91	0.97	0.94
Entry Flow Rate [veh/h]	253	245	50	46
Capacity of Entry and Bypass Lanes [veh/h]	1307	1223	1109	1069
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	1224	1111	1071	1009
X, volume / capacity	0.19	0.20	0.04	0.04

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	0.71	0.74	0.14	0.13
95th-Percentile Queue Length [ft]	17.83	18.62	3.52	3.34
Approach Delay [s/veh]	4.61	5.05	3.74	3.94
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	4.66			
Intersection LOS	A			

**Intersection Level Of Service Report
Intersection 11: Flynn Ln & Siren's Dr**

Control Type: Roundabout
Analysis Method: HCM 6th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 5.0
Level Of Service: A

Intersection Setup

Name	Flynn Ln		Flynn Ln		Siren's Rd	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration	←		→		↔	
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Flynn Ln		Flynn Ln		Siren's Rd	
Base Volume Input [veh/h]	154	175	80	103	42	82
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	5.00	2.00	15.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	154	175	80	103	42	82
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	42	48	22	28	11	22
Total Analysis Volume [veh/h]	167	190	87	112	46	89
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Number of Conflicting Circulating Lanes	1		1		1	
Circulating Flow Rate [veh/h]	47		170		89	
Exiting Flow Rate [veh/h]	180		246		299	
Demand Flow Rate [veh/h]	154	175	80	103	42	82
Adjusted Demand Flow Rate [veh/h]	167	190	87	112	46	89

Lanes

Override Calculated Critical Headway	No		No		No	
User-Defined Critical Headway [s]	4.00		4.00		4.00	
Override Calculated Follow-Up Time	No		No		No	
User-Defined Follow-Up Time [s]	3.00		3.00		3.00	
A (intercept)	1380.00		1380.00		1380.00	
B (coefficient)	0.00102		0.00102		0.00102	
HV Adjustment Factor	0.97		0.92		0.98	
Entry Flow Rate [veh/h]	370		217		138	
Capacity of Entry and Bypass Lanes [veh/h]	1316		1160		1261	
Pedestrian Impedance	1.00		1.00		1.00	
Capacity per Entry Lane [veh/h]	1271		1065		1236	
X, volume / capacity	0.28		0.19		0.11	

Movement, Approach, & Intersection Results

Lane LOS	A		A		A	
95th-Percentile Queue Length [veh]	1.16		0.69		0.37	
95th-Percentile Queue Length [ft]	29.03		17.13		9.17	
Approach Delay [s/veh]	5.34		5.09		3.82	
Approach LOS	A		A		A	
Intersection Delay [s/veh]			4.97			
Intersection LOS			A			

**Intersection Level Of Service Report
Intersection 12: Flynn Ln & Mullan Rd**

Control Type: Roundabout
Analysis Method: HCM 6th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 34.4
Level Of Service: D

Intersection Setup

Name	Flynn Ln			Mullan Rd			Mullan Rd					
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↶			↷			↶↷			↶↷		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	1	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00
Speed [mph]	30.00			25.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Flynn Ln			Mullan Rd			Mullan Rd					
Base Volume Input [veh/h]	0	0	1	0	0	106	200	1272	1	1	395	197
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	0.00	2.00	2.00	2.00	7.00	2.00	2.00	7.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	1	0	0	106	200	1272	1	1	395	197
Peak Hour Factor	1.0000	1.0000	0.9200	0.9200	1.0000	0.9200	0.9200	0.9200	1.0000	1.0000	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	0	0	29	54	346	0	0	107	54
Total Analysis Volume [veh/h]	0	0	1	0	0	115	217	1383	1	1	429	214
Pedestrian Volume [ped/h]	0			0			0			0		



Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	1701			460			1			221		
Exiting Flow Rate [veh/h]	2			440			576			1481		
Demand Flow Rate [veh/h]	0	0	1	0	0	106	200	1272	1	1	395	197
Adjusted Demand Flow Rate [veh/h]	0	0	1	0	0	115	217	1383	1	1	429	214

Lanes

Override Calculated Critical Headway	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00102	0.00102	0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	0.98	0.98	0.98	0.93	0.93	0.98
Entry Flow Rate [veh/h]	2	118	222	1481	461	219
Capacity of Entry and Bypass Lanes [veh/h]	244	864	1419	1419	1161	1161
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	239	847	1391	1326	1086	1139
X, volume / capacity	0.00	0.14	0.16	1.04	0.40	0.19

Movement, Approach, & Intersection Results

Lane LOS	C	A	A	F	A	A
95th-Percentile Queue Length [veh]	0.01	0.47	0.55	26.70	1.92	0.69
95th-Percentile Queue Length [ft]	0.32	11.74	13.81	667.47	48.10	17.26
Approach Delay [s/veh]	15.17	5.60	47.74		6.59	
Approach LOS	C	A	E		A	
Intersection Delay [s/veh]	34.45					
Intersection LOS	D					

**Intersection Level Of Service Report
Intersection 13: Mary Jane Blvd & Mullan Rd**

Control Type:	Roundabout	Delay (sec / veh):	34.6
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes		

Intersection Setup

Name	Mary Jane Blvd		Mullan Rd		Mullan Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Mary Jane Blvd		Mullan Rd		Mullan Rd	
Base Volume Input [veh/h]	207	53	231	1042	512	100
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.00	4.00	3.00	7.00	7.00	3.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	207	53	231	1042	512	100
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	56	14	63	283	139	27
Total Analysis Volume [veh/h]	225	58	251	1133	557	109
Pedestrian Volume [ped/h]	0		0		0	



Intersection Settings

Number of Conflicting Circulating Lanes	1		1		1	
Circulating Flow Rate [veh/h]	596		234		259	
Exiting Flow Rate [veh/h]	371		656		1446	
Demand Flow Rate [veh/h]	207	53	231	1042	512	100
Adjusted Demand Flow Rate [veh/h]	225	58	251	1133	557	109

Lanes

Override Calculated Critical Headway	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1420.00	1420.00	1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00091	0.00091	0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	0.96	0.96	0.97	0.93	0.93	0.97
Entry Flow Rate [veh/h]	234	61	259	1213	596	113
Capacity of Entry and Bypass Lanes [veh/h]	826	826	1148	1148	1123	1123
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	794	794	1115	1073	1049	1090
X, volume / capacity	0.28	0.07	0.23	1.06	0.53	0.10

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	F	A	A
95th-Percentile Queue Length [veh]	1.17	0.24	0.87	24.73	3.23	0.33
95th-Percentile Queue Length [ft]	29.19	5.90	21.63	618.31	80.69	8.31
Approach Delay [s/veh]	7.23		52.49		8.97	
Approach LOS	A		F		A	
Intersection Delay [s/veh]	34.57					
Intersection LOS	D					

**Intersection Level Of Service Report
Intersection 14: Mary Jane Blvd & O'Leary St**

Control Type: Roundabout
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 4.7
 Level Of Service: A

Intersection Setup

Name	Mary Jane Blvd			Mary Jane Blvd			O'Leary St			O'Leary St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mary Jane Blvd			Mary Jane Blvd			O'Leary St			O'Leary St		
Base Volume Input [veh/h]	16	305	8	13	164	35	8	2	68	28	9	17
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	3.00	2.00	2.00	3.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	16	305	8	13	164	35	8	2	68	28	9	17
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	83	2	4	45	10	2	1	18	8	2	5
Total Analysis Volume [veh/h]	17	332	9	14	178	38	9	2	74	30	10	18
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	26			58			228			368		
Exiting Flow Rate [veh/h]	289			370			66			26		
Demand Flow Rate [veh/h]	16	305	8	13	164	35	8	2	68	28	9	17
Adjusted Demand Flow Rate [veh/h]	17	332	9	14	178	38	9	2	74	30	10	18

Lanes

Override Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.97	0.97	0.98	0.98
Entry Flow Rate [veh/h]	369	237	87	60
Capacity of Entry and Bypass Lanes [veh/h]	1345	1301	1094	948
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	1307	1266	1072	930
X, volume / capacity	0.27	0.18	0.08	0.06

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	1.12	0.66	0.26	0.20
95th-Percentile Queue Length [ft]	28.05	16.57	6.45	4.98
Approach Delay [s/veh]	5.16	4.38	4.04	4.44
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	4.73			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 15: Mary Jane Blvd & Melrose PI

Control Type:	Roundabout	Delay (sec / veh):	5.1
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	Mary Jane Blvd			Mary Jane Blvd			Melrose PI			Melrose PI		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mary Jane Blvd			Mary Jane Blvd			Melrose PI			Melrose PI		
Base Volume Input [veh/h]	5	290	35	54	172	5	15	47	15	25	25	20
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.00	2.00	2.00	2.00	3.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	5	290	35	54	172	5	15	47	15	25	25	20
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	79	10	15	47	1	4	13	4	7	7	5
Total Analysis Volume [veh/h]	5	315	38	59	187	5	16	51	16	27	27	22
Pedestrian Volume [ped/h]	0			0			0			0		



Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	129			60			280			343		
Exiting Flow Rate [veh/h]	236			360			38			151		
Demand Flow Rate [veh/h]	5	290	35	54	172	5	15	47	15	25	25	20
Adjusted Demand Flow Rate [veh/h]	5	315	38	59	187	5	16	51	16	27	27	22

Lanes

Override Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.98	0.97	0.98	0.98
Entry Flow Rate [veh/h]	366	258	85	78
Capacity of Entry and Bypass Lanes [veh/h]	1211	1298	1037	973
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	1187	1264	1017	954
X, volume / capacity	0.30	0.20	0.08	0.08

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	1.28	0.74	0.27	0.26
95th-Percentile Queue Length [ft]	32.01	18.49	6.65	6.48
Approach Delay [s/veh]	5.85	4.55	4.26	4.50
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	5.12			
Intersection LOS	A			

**Intersection Level Of Service Report
Intersection 16: Mary Jane Blvd & England Blvd**

Control Type:	Roundabout	Delay (sec / veh):	10.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes		

Intersection Setup

Name	Mary Jane Blvd			Mary Jane Blvd			England Blvd			England Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mary Jane Blvd			Mary Jane Blvd			England Blvd			England Blvd		
Base Volume Input [veh/h]	136	142	46	19	123	50	87	358	62	46	350	6
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	3.00	2.00	2.00	3.00	2.00	2.00	8.00	2.00	2.00	4.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	136	142	46	19	123	50	87	358	62	46	350	6
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	37	39	13	5	33	14	24	97	17	13	95	2
Total Analysis Volume [veh/h]	148	154	50	21	134	54	95	389	67	50	380	7
Pedestrian Volume [ped/h]	0			0			0			0		



Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	538			597			210			406		
Exiting Flow Rate [veh/h]	257			263			601			493		
Demand Flow Rate [veh/h]	136	142	46	19	123	50	87	358	62	46	350	6
Adjusted Demand Flow Rate [veh/h]	148	154	50	21	134	54	95	389	67	50	380	7

Lanes

Override Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.98	0.97	0.94	0.96
Entry Flow Rate [veh/h]	361	215	585	454
Capacity of Entry and Bypass Lanes [veh/h]	797	751	1114	912
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	778	732	1049	879
X, volume / capacity	0.45	0.29	0.53	0.50

Movement, Approach, & Intersection Results

Lane LOS	B	A	A	B
95th-Percentile Queue Length [veh]	2.37	1.18	3.16	2.82
95th-Percentile Queue Length [ft]	59.34	29.48	79.01	70.58
Approach Delay [s/veh]	10.66	8.31	9.79	10.57
Approach LOS	B	A	A	B
Intersection Delay [s/veh]	10.01			
Intersection LOS	B			

**Intersection Level Of Service Report
Intersection 17: Mary Jane Blvd & Camden St**

Control Type:	Roundabout	Delay (sec / veh):	4.3
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	Mary Jane Blvd			Mary Jane Blvd			Camden St			Camden St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mary Jane Blvd			Mary Jane Blvd			Camden St			Camden St		
Base Volume Input [veh/h]	19	213	3	8	147	18	42	12	33	12	13	6
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	3.00	2.00	2.00	3.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	19	213	3	8	147	18	42	12	33	12	13	6
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	58	1	2	40	5	11	3	9	3	4	2
Total Analysis Volume [veh/h]	21	232	3	9	160	20	46	13	36	13	14	7
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	69			49			187			307		
Exiting Flow Rate [veh/h]	215			293			56			26		
Demand Flow Rate [veh/h]	19	213	3	8	147	18	42	12	33	12	13	6
Adjusted Demand Flow Rate [veh/h]	21	232	3	9	160	20	46	13	36	13	14	7

Lanes

Override Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.97	0.97	0.98	0.98
Entry Flow Rate [veh/h]	264	195	97	35
Capacity of Entry and Bypass Lanes [veh/h]	1286	1313	1141	1009
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	1250	1277	1118	989
X, volume / capacity	0.20	0.15	0.08	0.03

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	0.77	0.52	0.28	0.11
95th-Percentile Queue Length [ft]	19.21	12.99	6.95	2.67
Approach Delay [s/veh]	4.65	4.05	3.94	3.94
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	4.29			
Intersection LOS	A			

**Intersection Level Of Service Report
Intersection 18: Mary Jane Blvd & Flynn Ln**

Control Type: Roundabout
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 5.4
 Level Of Service: A

Intersection Setup

Name	Mary Jane Blvd			Mary Jane Blvd			Flynn Ln			Flynn Ln		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mary Jane Blvd			Mary Jane Blvd			Flynn Ln			Flynn Ln		
Base Volume Input [veh/h]	15	193	54	44	133	30	75	116	10	30	73	37
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	3.00	2.00	2.00	3.00	2.00	2.00	3.00	2.00	2.00	4.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	15	193	54	44	133	30	75	116	10	30	73	37
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	52	15	12	36	8	20	32	3	8	20	10
Total Analysis Volume [veh/h]	16	210	59	48	145	33	82	126	11	33	79	40
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	262			132			232			316		
Exiting Flow Rate [veh/h]	194			341			132			239		
Demand Flow Rate [veh/h]	15	193	54	44	133	30	75	116	10	30	73	37
Adjusted Demand Flow Rate [veh/h]	16	210	59	48	145	33	82	126	11	33	79	40

Lanes

Override Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.97	0.97	0.97	0.97
Entry Flow Rate [veh/h]	293	232	225	157
Capacity of Entry and Bypass Lanes [veh/h]	1056	1206	1090	1000
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	1028	1175	1062	971
X, volume / capacity	0.28	0.19	0.21	0.16

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	1.14	0.71	0.77	0.55
95th-Percentile Queue Length [ft]	28.43	17.76	19.34	13.86
Approach Delay [s/veh]	6.23	4.75	5.30	5.18
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	5.44			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 19: Mary Jane Blvd & Veteran's Way

Control Type:	Roundabout	Delay (sec / veh):	4.9
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	Mary Jane Blvd			Mary Jane Blvd			Veteran's Way			Veteran's Way		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mary Jane Blvd			Mary Jane Blvd			Veteran's Way			Veteran's Way		
Base Volume Input [veh/h]	9	294	0	0	204	101	21	0	2	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	3.00	2.00	2.00	3.00	2.00	20.00	2.00	20.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	9	294	0	0	204	101	21	0	2	0	0	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	80	0	0	55	27	6	0	1	0	0	0
Total Analysis Volume [veh/h]	10	320	0	0	222	110	23	0	2	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		



Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	28			10			229			367		
Exiting Flow Rate [veh/h]	231			357			122			0		
Demand Flow Rate [veh/h]	9	294	0	0	204	101	21	0	2	0	0	0
Adjusted Demand Flow Rate [veh/h]	10	320	0	0	222	110	23	0	2	0	0	0

Lanes

Override Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.97	0.97	0.83	0.98
Entry Flow Rate [veh/h]	340	341	30	0
Capacity of Entry and Bypass Lanes [veh/h]	1342	1366	1093	949
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	1303	1331	911	931
X, volume / capacity	0.25	0.25	0.03	0.00

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	1.01	0.99	0.08	0.00
95th-Percentile Queue Length [ft]	25.23	24.75	2.12	0.00
Approach Delay [s/veh]	4.96	4.85	4.20	3.87
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	4.88			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 20: Mary Jane Blvd & W Broadway St

Control Type:	Roundabout	Delay (sec / veh):	15.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes		

Intersection Setup

Name	Mary Jane Blvd		W Broadway St		W Broadway St	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	⇌		⇌		⇌	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Mary Jane Blvd		W Broadway St		W Broadway St	
Base Volume Input [veh/h]	248	68	1247	142	164	656
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.00	3.00	8.00	3.00	3.00	15.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	248	68	1247	142	164	656
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	67	18	339	39	45	178
Total Analysis Volume [veh/h]	270	74	1355	154	178	713
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Number of Conflicting Circulating Lanes	2		1		1	
Circulating Flow Rate [veh/h]	1463		183		278	
Exiting Flow Rate [veh/h]	342		1098		1540	
Demand Flow Rate [veh/h]	248	68	1247	142	164	656
Adjusted Demand Flow Rate [veh/h]	270	74	1355	154	178	713

Lanes

Override Calculated Critical Headway	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1350.00	1420.00	1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00092	0.00085	0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	0.97	0.97	0.93	0.93	0.89	0.87
Entry Flow Rate [veh/h]	279	77	766	860	471	544
Capacity of Entry and Bypass Lanes [veh/h]	352	410	1202	1202	1103	1103
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	342	398	1113	1119	982	959
X, volume / capacity	0.79	0.19	0.64	0.72	0.43	0.49

Movement, Approach, & Intersection Results

Lane LOS	E	B	B	B	A	A
95th-Percentile Queue Length [veh]	6.56	0.68	4.81	6.48	2.17	2.78
95th-Percentile Queue Length [ft]	163.97	16.88	120.33	161.96	54.19	69.62
Approach Delay [s/veh]	37.78		13.25		9.20	
Approach LOS	E		B		A	
Intersection Delay [s/veh]	15.01					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 21: Flynn Ln & W Broadway St

Control Type:	Roundabout	Delay (sec / veh):	14.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes		

Intersection Setup

Name	Flynn Ln		W Broadway St		W Broadway St	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↗		↘		↕	
Turning Movement	Left	Thru	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	1	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	890.00	0.00	0.00
Speed [mph]	25.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Flynn Ln		W Broadway St		W Broadway St	
Base Volume Input [veh/h]	0	359	1180	146	0	819
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	8.00	2.00	0.00	15.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	359	1180	146	0	819
Peak Hour Factor	0.7900	0.9200	0.9200	0.9200	0.7900	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	98	321	40	0	223
Total Analysis Volume [veh/h]	0	390	1283	159	0	890
Pedestrian Volume [ped/h]	0		0		0	



Intersection Settings

Number of Conflicting Circulating Lanes	2		1		1	
Circulating Flow Rate [veh/h]	1386		0		0	
Exiting Flow Rate [veh/h]	162		1023		1776	
Demand Flow Rate [veh/h]	0	359	1180	146	0	819
Adjusted Demand Flow Rate [veh/h]	0	390	1283	159	0	890

Lanes

Override Calculated Critical Headway	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00
A (intercept)	1420.00	1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00085	0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	1.00	0.93	0.93	0.87	0.87
Entry Flow Rate [veh/h]	390	732	821	482	543
Capacity of Entry and Bypass Lanes [veh/h]	438	1420	1420	1420	1420
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	438	1315	1324	1235	1235
X, volume / capacity	0.89	0.52	0.58	0.34	0.38

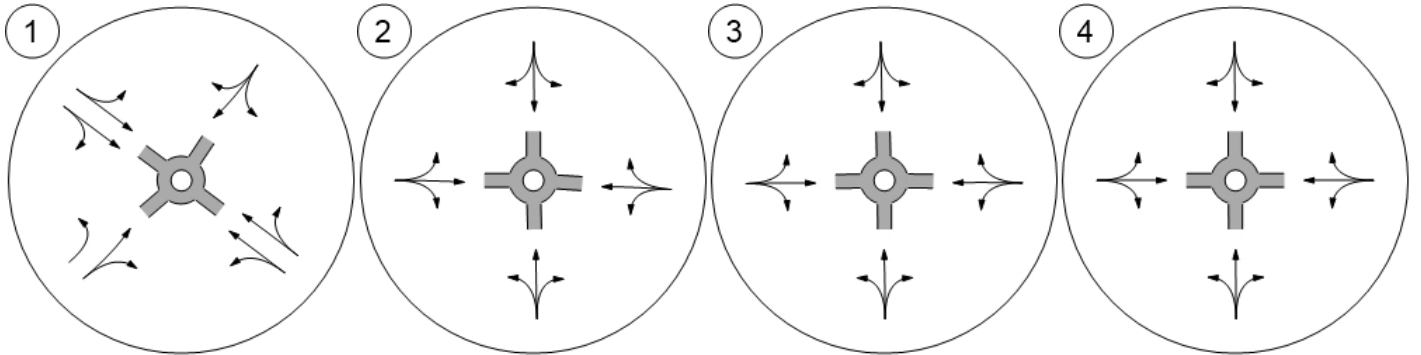
Movement, Approach, & Intersection Results

Lane LOS	F	A	A	A	A
95th-Percentile Queue Length [veh]	9.49	3.07	3.89	1.51	1.82
95th-Percentile Queue Length [ft]	237.33	76.82	97.13	37.86	45.49
Approach Delay [s/veh]	50.77	8.76		6.37	
Approach LOS	F	A		A	
Intersection Delay [s/veh]	14.00				
Intersection LOS	B				

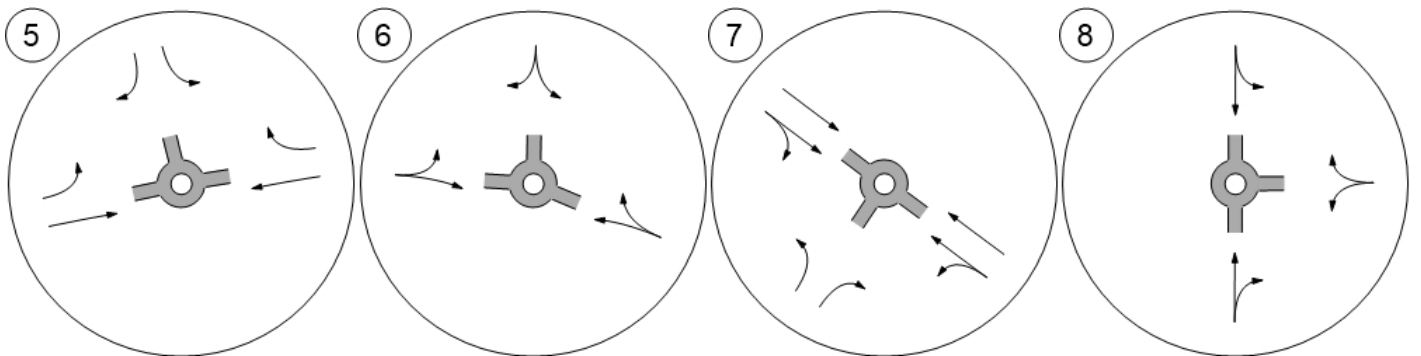
Lane Configuration and Traffic Control



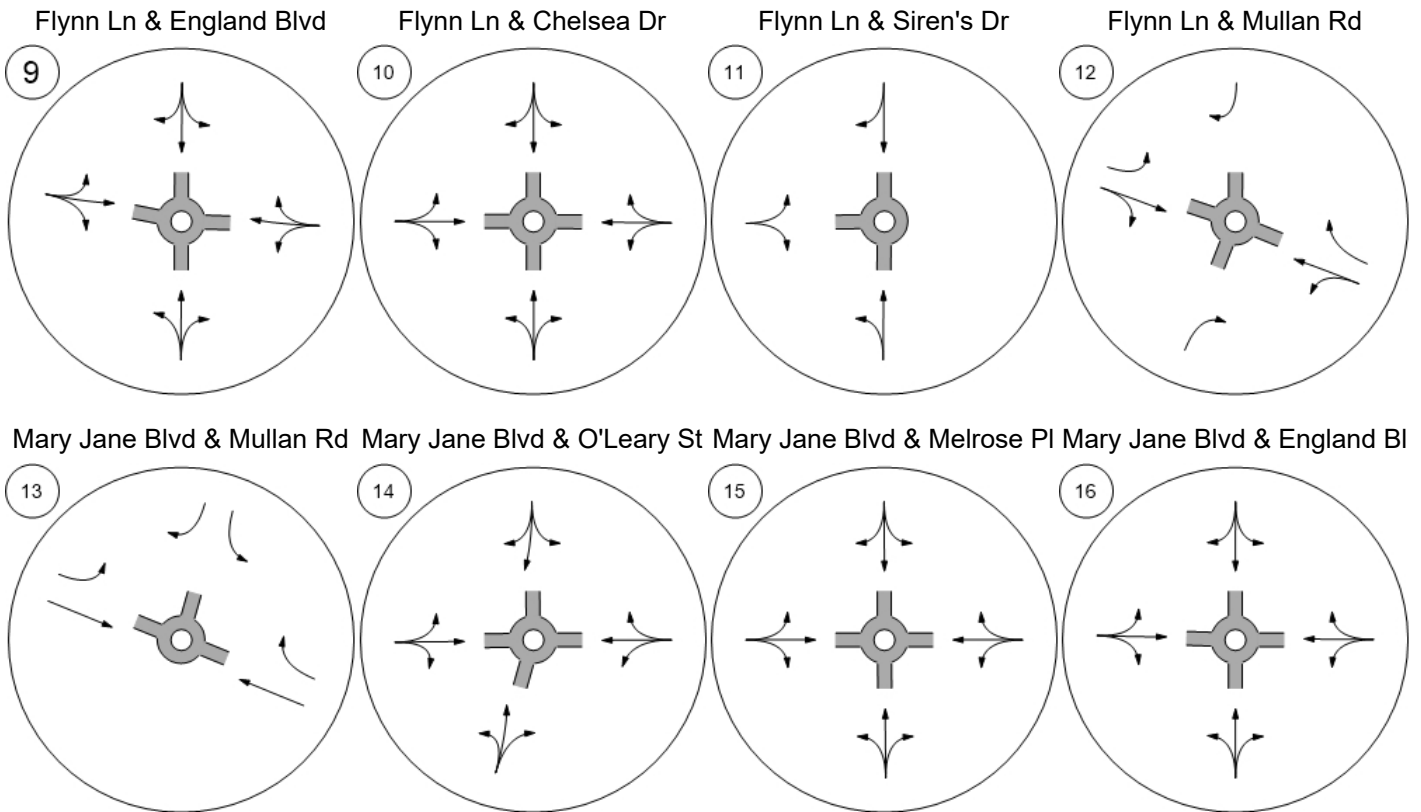
George Elmer Dr & W Broad George Elmer Dr & England George Elmer Dr & Cattle Dr George Elmer Dr & Heron's L



George Elmer Dr & Mullan R Dougherty Dr & England Blvd Dougherty Dr & W Broadway Flynn Ln & Camden St



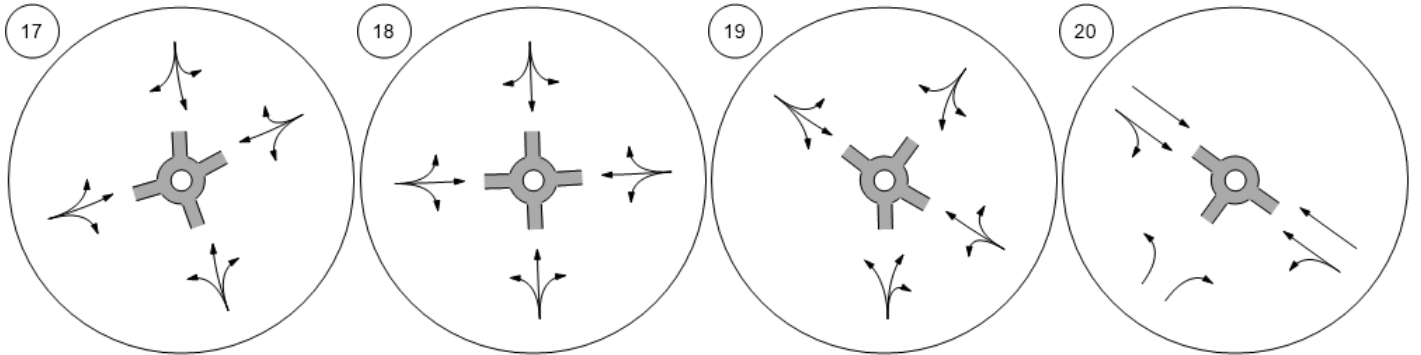
Lane Configuration and Traffic Control



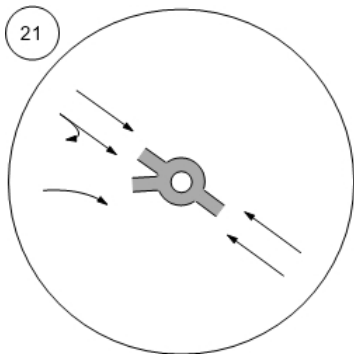
Lane Configuration and Traffic Control



Mary Jane Blvd & Camden St Mary Jane Blvd & Flynn Ln Mary Jane Blvd & Veteran's Mary Jane Blvd & W Broadw



Flynn Ln & W Broadway St



Option 1: WB T/L & EB T/R

Number	5					
Intersection	George Elmer Dr & Mullan Rd					
Control Type	Roundabout					
Analysis Method	HCM 6th Edition					
Name	George Elmer Dr		Mullan Rd		Mullan Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Base Volume Input [veh/h]	222	50	253	1259	405	85
Total Analysis Volume [veh/h]	236	53	269	1339	431	90

Intersection Settings

Number of Conflicting Circulating Lanes	2		1		1	
Circulating Flow Rate [veh/h]	478		241		404	
Exiting Flow Rate [veh/h]	502		538		1607	
Demand Flow Rate [veh/h]	222	50	253	1259	405	85
Adjusted Demand Flow Rate [veh/h]	236	53	269	1339	431	90

Lanes

Override Calculated Critical Headway	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1350.00	1420.00	1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00092	0.00085	0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	0.98	0.89	0.93	0.98	0.90	0.90
Entry Flow Rate [veh/h]	241	60	815	870	272	306
Capacity of Entry and Bypass Lanes [veh/h]	870	946	1141	1141	984	984
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	853	845	1059	1119	887	889
X, volume / capacity	0.28	0.06	0.71	0.76	0.28	0.31

Movement, Approach, & Intersection Results

Average Lane Delay [s/veh]	7.22	4.86	14.97	16.50	6.99	7.42
Lane LOS	A	A	B	C	A	A
95th-Percentile Queue Length [veh]	1.13	0.20	6.41	7.79	1.13	1.33
95th-Percentile Queue Length [ft]	28.30	5.01	160.16	194.67	28.24	33.22
Approach Delay [s/veh]	6.79		15.78		7.22	
Approach LOS	A		C		A	
Intersection Delay [s/veh]	12.86					
Intersection LOS	B					

Option 1: Dual Through Lanes WB & EB

Number	12											
Intersection	Flynn Ln & Mullan Rd											
Control Type	Roundabout											
Analysis Method	HCM 6th Edition											
Name				Flynn Ln			Mullan Rd			Mullan Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↗			↖			↕			↕		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Base Volume Input [veh/h]	0	0	1	0	0	106	200	1272	1	1	395	197
Total Analysis Volume [veh/h]	0	0	1	0	0	115	217	1383	1	1	429	214

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	1701			460			1			221		
Exiting Flow Rate [veh/h]	2			440			576			1481		
Demand Flow Rate [veh/h]	0	0	1	0	0	106	200	1272	1	1	395	197
Adjusted Demand Flow Rate [veh/h]	0	0	1	0	0	115	217	1383	1	1	429	214

Lanes

Override Calculated Critical Headway	No			No			No	No	No	No
User-Defined Critical Headway [s]	4.00			4.00			4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No			No			No	No	No	No
User-Defined Follow-Up Time [s]	3.00			3.00			3.00	3.00	3.00	3.00
A (intercept)	1380.00			1380.00			1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00102			0.00102			0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	0.98			0.98			0.94	0.93	0.93	0.95
Entry Flow Rate [veh/h]	2			118			800	908	324	360
Capacity of Entry and Bypass Lanes [veh/h]	244			864			1419	1419	1161	1161
Pedestrian Impedance	1.00			1.00			1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	239			847			1335	1326	1086	1103
X, volume / capacity	0.00			0.14			0.56	0.64	0.28	0.31

Movement, Approach, & Intersection Results

Average Lane Delay [s/veh]	15.17			5.60			8.94	10.60	5.99	6.27		
Lane LOS	C			A			A	B	A	A		
95th-Percentile Queue Length [veh]	0.01			0.47			3.69	4.93	1.15	1.33		
95th-Percentile Queue Length [ft]	0.32			11.74			92.25	123.14	28.68	33.16		
Approach Delay [s/veh]	15.17			5.60			9.82		6.14			
Approach LOS	C			A			A		A			
Intersection Delay [s/veh]	8.61											
Intersection LOS	A											



Option 1: WB T/R & EB T/L

Number	13					
Intersection	Mary Jane Blvd & Mullan Rd					
Control Type	Roundabout					
Analysis Method	HCM 6th Edition					
Name	Mary Jane Blvd		Mullan Rd		Mullan Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Base Volume Input [veh/h]	207	53	231	1042	512	100
Total Analysis Volume [veh/h]	225	58	251	1133	557	109

Intersection Settings

Number of Conflicting Circulating Lanes	2		1		1	
Circulating Flow Rate [veh/h]	585		230		264	
Exiting Flow Rate [veh/h]	375		654		1374	
Demand Flow Rate [veh/h]	207	53	231	1042	512	100
Adjusted Demand Flow Rate [veh/h]	225	58	251	1133	557	109

Lanes

Override Calculated Critical Headway	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1350.00	1420.00	1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00092	0.00085	0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	0.98	0.83	0.98	0.99	0.95	0.96
Entry Flow Rate [veh/h]	230	70	662	741	329	369
Capacity of Entry and Bypass Lanes [veh/h]	789	864	1153	1153	1118	1118
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	773	720	1134	1141	1065	1070
X, volume / capacity	0.29	0.08	0.57	0.64	0.29	0.33

Movement, Approach, & Intersection Results

Average Lane Delay [s/veh]	8.02	5.84	10.24	11.86	6.26	6.67
Lane LOS	A	A	B	B	A	A
95th-Percentile Queue Length [veh]	1.21	0.26	3.80	4.92	1.23	1.46
95th-Percentile Queue Length [ft]	30.27	6.55	95.10	123.12	30.86	36.38
Approach Delay [s/veh]	7.57		11.10		6.48	
Approach LOS	A		B		A	
Intersection Delay [s/veh]	9.35					
Intersection LOS	A					

Mullan BUILD - 2050 AM

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Scenario 4 Signal (2050)

Report File: H:\...\24667_AM2050_SIGNAL.pdf

7/16/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	George Elmer Dr & W Broadway St	Signalized	HCM 6th Edition	NB Left	0.717	34.3	C
2	George Elmer Dr & England Blvd	Signalized	HCM 6th Edition	SB Left	0.522	21.1	C
5	George Elmer Dr & Mullan Rd	Signalized	HCM 6th Edition	SB Left	0.919	207.1	F
7	Doughtery Dr & W Broadway St	Signalized	HCM 6th Edition	NB Right	0.689	19.5	B
9	Flynn Ln & England Blvd	Signalized	HCM 6th Edition	NB Right	0.481	15.8	B
12	Flynn Ln & Mullan Rd	Signalized	HCM 6th Edition	SB Right	0.897	9.2	A
13	Mary Jane Blvd & Mullan Rd	Signalized	HCM 6th Edition	SB Left	0.762	180.2	F
16	Mary Jane Blvd & England Blvd	Signalized	HCM 6th Edition	NB Left	0.450	18.9	B
20	Mary Jane Blvd & W Broadway St	Signalized	HCM 6th Edition	NB Left	0.711	18.9	B
21	Flynn Ln & W Broadway St	Signalized	HCM 6th Edition	NB Thru	0.758	11.9	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: George Elmer Dr & W Broadway St

Control Type:	Signalized	Delay (sec / veh):	34.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.717

Intersection Setup

Name	George Elmer Dr			Commercial Access			W Broadway St			W Broadway St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00
Speed [mph]	30.00			30.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		



Volumes

Name	George Elmer Dr			Commercial Access			W Broadway St			W Broadway St		
Base Volume Input [veh/h]	318	1	203	1	1	1	1	1066	125	72	757	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.00	2.00	4.00	2.00	2.00	2.00	4.00	8.00	2.00	4.00	15.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	318	1	203	1	1	1	1	1066	125	72	757	1
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	86	0	55	0	0	0	0	290	34	20	206	0
Total Analysis Volume [veh/h]	346	1	221	1	1	1	1	1159	136	78	823	1
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	ProtPer	Permis	Permis	ProtPer	Permis	Permis
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	4.0	0.0	0.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
All red [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Split [s]	0	54	0	0	54	0	11	33	0	33	55	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	5	7	0	7	7	0
Pedestrian Clearance [s]	0	20	0	0	20	0	10	20	0	20	20	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	4.0	0.0	0.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	4.00	0.00	4.00	4.00	0.00	4.00	4.00
g_i, Effective Green Time [s]	43	43	43	65	55	55	65	59	59
g / C, Green / Cycle	0.36	0.36	0.36	0.54	0.46	0.46	0.54	0.49	0.49
(v / s)_i Volume / Saturation Flow Rate	0.25	0.15	0.00	0.00	0.37	0.09	0.12	0.28	0.00
s, saturation flow rate [veh/h]	1392	1465	1028	715	3121	1464	627	2937	1464
c, Capacity [veh/h]	338	519	404	351	1428	670	278	1453	724
d1, Uniform Delay [s]	42.19	29.51	25.70	14.62	28.10	19.47	20.18	21.29	15.34
k, delay calibration	0.17	0.11	0.11	0.50	0.50	0.50	0.11	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	34.06	0.56	0.01	0.01	5.13	0.68	0.54	1.61	0.00
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.02	0.43	0.01	0.00	0.81	0.20	0.28	0.57	0.00
d, Delay for Lane Group [s/veh]	76.25	30.07	25.71	14.64	33.22	20.16	20.72	22.90	15.34
Lane Group LOS	F	C	C	B	C	C	C	C	B
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	12.93	4.94	0.06	0.01	14.04	2.24	0.96	7.69	0.01
50th-Percentile Queue Length [ft/ln]	323.26	123.61	1.42	0.32	350.91	56.12	23.94	192.26	0.34
95th-Percentile Queue Length [veh/ln]	19.10	8.59	0.10	0.02	20.18	4.04	1.72	12.24	0.02
95th-Percentile Queue Length [ft/ln]	477.60	214.78	2.55	0.57	504.52	101.02	43.10	305.96	0.61



Movement, Approach, & Intersection Results

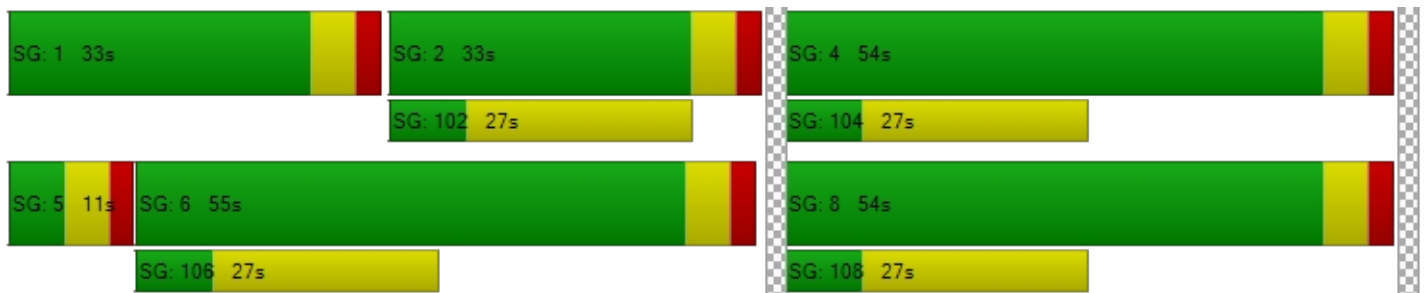
d_M, Delay for Movement [s/veh]	76.25	30.07	30.07	25.71	25.71	25.71	14.64	33.22	20.16	20.72	22.90	15.34
Movement LOS	F	C	C	C	C	C	B	C	C	C	C	B
d_A, Approach Delay [s/veh]	58.20			25.71			31.84			22.70		
Approach LOS	E			C			C			C		
d_I, Intersection Delay [s/veh]	34.26											
Intersection LOS	C											
Intersection V/C	0.717											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	49.50			49.50			49.50			49.50		
I_p,int, Pedestrian LOS Score for Intersection	2.261			1.732			3.693			3.192		
Crosswalk LOS	B			A			D			C		
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	800			800			450			817		
d_b, Bicycle Delay [s]	21.60			21.60			36.04			21.00		
I_b,int, Bicycle LOS Score for Intersection	2.497			1.565			2.629			2.304		
Bicycle LOS	B			A			B			B		

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: George Elmer Dr & England Blvd

Control Type:	Signalized	Delay (sec / veh):	21.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.522

Intersection Setup

Name	George Elmer Dr			George Elmer Dr			England Blvd			England Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵			↵			↵			↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		



Volumes

Name	George Elmer Dr			George Elmer Dr			England Blvd			England Blvd		
Base Volume Input [veh/h]	30	289	50	50	100	50	160	311	60	25	299	75
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	4.00	2.00	2.00	4.00	2.00	2.00	8.00	2.00	2.00	4.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	30	289	50	50	100	50	160	311	60	25	299	75
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	79	14	14	27	14	43	85	16	7	81	20
Total Analysis Volume [veh/h]	33	314	54	54	109	54	174	338	65	27	325	82
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lag	-	-	Lead	-	-	Lag	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	15	20	0	15	20	0	15	20	0	15	20	0
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
All red [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Split [s]	96	32	0	96	32	0	96	58	0	96	58	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	7	7	0	7	7	0	0	7	0	7	7	0
Pedestrian Clearance [s]	10	10	0	15	10	0	0	10	0	10	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	L	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
g_i, Effective Green Time [s]	26	26	26	26	52	52	52	52
g / C, Green / Cycle	0.29	0.29	0.29	0.29	0.58	0.58	0.58	0.58
(v / s)_i Volume / Saturation Flow Rate	0.03	0.22	0.05	0.10	0.18	0.25	0.03	0.25
s, saturation flow rate [veh/h]	1223	1652	1014	1601	978	1594	982	1637
c, Capacity [veh/h]	301	475	139	460	490	923	489	948
d1, Uniform Delay [s]	30.99	29.36	42.14	25.40	18.44	10.65	15.75	10.59
k, delay calibration	0.11	0.24	0.11	0.11	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.16	5.91	1.78	0.46	2.01	1.50	0.22	1.42
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.11	0.78	0.39	0.35	0.36	0.44	0.06	0.43
d, Delay for Lane Group [s/veh]	31.15	35.27	43.92	25.87	20.45	12.15	15.97	12.01
Lane Group LOS	C	D	D	C	C	B	B	B
Critical Lane Group	No	Yes	No	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.61	7.83	1.25	2.76	2.74	4.51	0.35	4.52
50th-Percentile Queue Length [ft/ln]	15.22	195.84	31.13	69.07	68.43	112.73	8.86	112.91
95th-Percentile Queue Length [veh/ln]	1.10	12.42	2.24	4.97	4.93	7.99	0.64	8.00
95th-Percentile Queue Length [ft/ln]	27.40	310.59	56.03	124.33	123.17	199.79	15.95	200.04



Movement, Approach, & Intersection Results

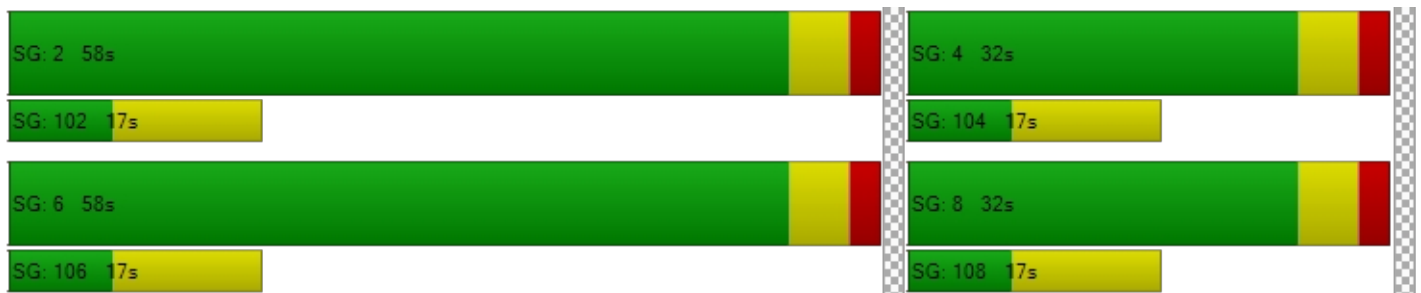
d_M, Delay for Movement [s/veh]	31.15	35.27	35.27	43.92	25.87	25.87	20.45	12.15	12.15	15.97	12.01	12.01
Movement LOS	C	D	D	D	C	C	C	B	B	B	B	B
d_A, Approach Delay [s/veh]	34.93			30.36			14.66			12.26		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]	21.10											
Intersection LOS	C											
Intersection V/C	0.522											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	34.67			34.67			34.67			34.67		
I_p,int, Pedestrian LOS Score for Intersection	2.174			2.443			2.308			2.303		
Crosswalk LOS	B			B			B			B		
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	578			578			1156			1156		
d_b, Bicycle Delay [s]	22.76			22.76			8.02			8.02		
I_b,int, Bicycle LOS Score for Intersection	2.221			1.918			2.512			2.276		
Bicycle LOS	B			A			B			B		

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-





Intersection Level Of Service Report
Intersection 5: George Elmer Dr & Mullan Rd

Control Type:	Signalized	Delay (sec / veh):	207.1
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.919

Intersection Setup

Name	George Elmer Dr		Mullan Rd		Mullan Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration	↵↵		↵↑		↑↵	
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	325.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	



Volumes

Name	George Elmer Dr		Mullan Rd		Mullan Rd	
Base Volume Input [veh/h]	222	50	253	1259	405	85
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.00	4.00	4.00	7.00	7.00	4.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	222	50	253	1259	405	85
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	60	14	69	342	110	23
Total Analysis Volume [veh/h]	241	54	275	1368	440	92
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0		0		0	
v_di, Inbound Pedestrian Volume crossing major street	0		0		0	
v_co, Outbound Pedestrian Volume crossing minor street	0		0		0	
v_ci, Inbound Pedestrian Volume crossing minor street	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	ProtPerm	Permissive	Permissive	Permissive
Signal Group	8	8	5	2	6	6
Auxiliary Signal Groups						
Lead / Lag	Lead	-	Lag	-	-	-
Minimum Green [s]	5	5	5	5	5	5
Maximum Green [s]	30	30	30	30	30	30
Amber [s]	4.0	4.0	4.0	4.0	4.0	4.0
All red [s]	2.0	2.0	2.0	2.0	2.0	2.0
Split [s]	113	113	87	120	33	33
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	7	7	0	7	7	7
Pedestrian Clearance [s]	20	20	0	20	20	20
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Recall	No		No	No	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	L	C	C	R
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	0.00	0.00	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	2.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	0.00	0.00	4.00	4.00	4.00
g_i, Effective Green Time [s]	0	0	9	114	103	103
g / C, Green / Cycle	0.00	0.00	0.08	0.95	0.86	0.86
(v / s)_i Volume / Saturation Flow Rate	0.94	0.04	0.51	0.83	0.27	0.06
s, saturation flow rate [veh/h]	256	1440	544	1653	1653	1440
c, Capacity [veh/h]	60	0	128	1570	1418	1236
d1, Uniform Delay [s]	59.95	0.00	0.31	0.87	1.65	1.29
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1394.90	0.00	541.89	6.92	0.57	0.12
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	4.01	10000.00	2.15	0.87	0.31	0.07
d, Delay for Lane Group [s/veh]	1454.85	0.00	542.21	7.79	2.22	1.41
Lane Group LOS	F	F	F	A	A	A
Critical Lane Group	No	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	25.27	0.00	19.27	3.02	0.92	0.15
50th-Percentile Queue Length [ft/ln]	631.68	0.00	481.68	75.45	23.06	3.86
95th-Percentile Queue Length [veh/ln]	33.51	0.00	31.45	5.43	1.66	0.28
95th-Percentile Queue Length [ft/ln]	837.78	0.00	786.28	135.81	41.50	6.96

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	1454.85	0.00	542.21	7.79	2.22	1.41
Movement LOS	F	A	F	A	A	A
d_A, Approach Delay [s/veh]	1188.54		97.24		2.08	
Approach LOS	F		F		A	
d_I, Intersection Delay [s/veh]	207.08					
Intersection LOS	F					
Intersection V/C	0.919					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.50	49.50	49.50
I_p,int, Pedestrian LOS Score for Intersection	2.189	2.996	3.341
Crosswalk LOS	B	C	C
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	1900	450
d_b, Bicycle Delay [s]	60.00	0.15	36.04
I_b,int, Bicycle LOS Score for Intersection	1.560	4.271	2.437
Bicycle LOS	A	E	B

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-





Intersection Level Of Service Report
Intersection 7: Dougherty Dr & W Broadway St

Control Type:	Signalized	Delay (sec / veh):	19.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.689

Intersection Setup

Name	Dougherty Dr		W Broadway St		W Broadway St	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↔↔		↑↑↔		↔↑↑	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	100.00
Speed [mph]	30.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		No	



Volumes

Name	Dougherty Dr		W Broadway St		W Broadway St	
Base Volume Input [veh/h]	116	250	1139	130	150	713
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	8.00	2.00	2.00	15.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	116	250	1139	130	150	713
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	32	68	310	35	41	194
Total Analysis Volume [veh/h]	126	272	1238	141	163	775
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0		0		0	
v_di, Inbound Pedestrian Volume crossing major street	0		0		0	
v_co, Outbound Pedestrian Volume crossing minor street	0		0		0	
v_ci, Inbound Pedestrian Volume crossing minor street	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Permissive	Permissive	ProtPerm	Permissive
Signal Group	8	8	2	2	1	6
Auxiliary Signal Groups						
Lead / Lag	Lag	-	-	-	Lead	-
Minimum Green [s]	5	5	5	5	5	5
Maximum Green [s]	30	30	30	30	30	30
Amber [s]	4.0	4.0	4.0	4.0	4.0	4.0
All red [s]	2.0	2.0	2.0	2.0	2.0	2.0
Split [s]	78	78	31	31	11	42
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	4.00	4.00	0.00	4.00
g_i, Effective Green Time [s]	25	25	72	72	83	83
g / C, Green / Cycle	0.21	0.21	0.60	0.60	0.69	0.69
(v / s)_i Volume / Saturation Flow Rate	0.08	0.19	0.40	0.10	0.28	0.26
s, saturation flow rate [veh/h]	1640	1464	3121	1464	580	2937
c, Capacity [veh/h]	339	302	1876	880	369	2037
d1, Uniform Delay [s]	40.92	46.39	15.82	10.56	13.03	7.65
k, delay calibration	0.11	0.11	0.50	0.50	0.49	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.68	9.56	1.84	0.39	3.76	0.54
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.37	0.90	0.66	0.16	0.44	0.38
d, Delay for Lane Group [s/veh]	41.59	55.95	17.66	10.95	16.79	8.19
Lane Group LOS	D	E	B	B	B	A
Critical Lane Group	No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	3.28	8.67	9.98	1.54	1.51	3.41
50th-Percentile Queue Length [ft/ln]	81.98	216.83	249.61	38.52	37.66	85.37
95th-Percentile Queue Length [veh/ln]	5.90	13.50	15.17	2.77	2.71	6.15
95th-Percentile Queue Length [ft/ln]	147.57	337.57	379.16	69.34	67.80	153.67

Movement, Approach, & Intersection Results

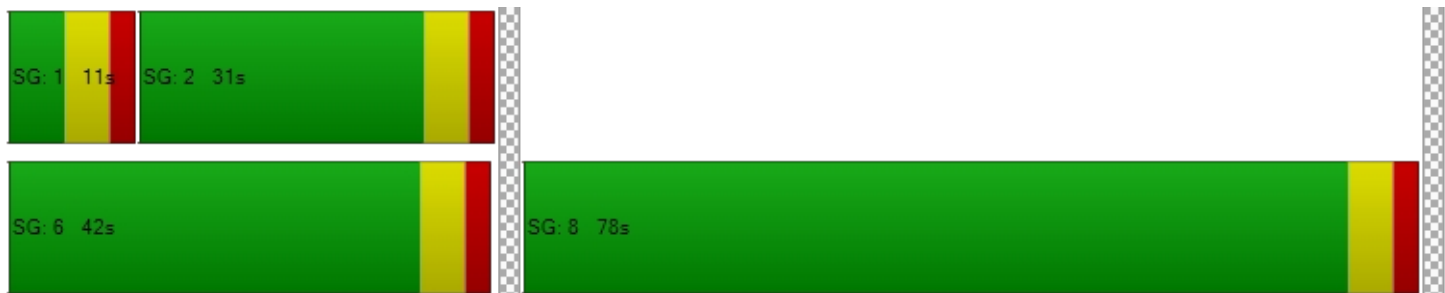
d_M, Delay for Movement [s/veh]	41.59	55.95	17.66	10.95	16.79	8.19
Movement LOS	D	E	B	B	B	A
d_A, Approach Delay [s/veh]	51.41		16.98		9.69	
Approach LOS	D		B		A	
d_I, Intersection Delay [s/veh]	19.51					
Intersection LOS	B					
Intersection V/C	0.689					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000
Crosswalk LOS	F	F	F
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1200	417	600
d_b, Bicycle Delay [s]	9.60	37.60	29.40
I_b,int, Bicycle LOS Score for Intersection	1.560	2.697	2.333
Bicycle LOS	A	B	B

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-





**Intersection Level Of Service Report
Intersection 9: Flynn Ln & England Blvd**

Control Type:	Signalized	Delay (sec / veh):	15.8
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.481

Intersection Setup

Name	Flynn Ln			Flynn Ln			England Blvd			England Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			T			T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			25.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		



Volumes

Name	Flynn Ln			Flynn Ln			England Blvd			England Blvd		
Base Volume Input [veh/h]	15	72	73	55	29	19	33	378	34	142	320	75
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	8.00	2.00	2.00	4.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	15	72	73	55	29	19	33	378	34	142	320	75
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	20	20	15	8	5	9	103	9	39	87	20
Total Analysis Volume [veh/h]	16	78	79	60	32	21	36	411	37	154	348	82
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	ProtPer	Permis	Permis	ProtPer	Permis	Permis
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	4.0	0.0	0.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
All red [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Split [s]	0	33	0	0	33	0	17	80	0	7	70	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	20	0	0	20	0	0	20	0	0	20	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	4.0	0.0	0.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	C	L	C
C, Cycle Length [s]	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	0.00	4.00	0.00	4.00
g_i, Effective Green Time [s]	12	12	67	56	67	57
g / C, Green / Cycle	0.13	0.13	0.74	0.62	0.74	0.64
(v / s)_i Volume / Saturation Flow Rate	0.11	0.10	0.04	0.28	0.15	0.26
s, saturation flow rate [veh/h]	1629	1118	821	1616	1036	1640
c, Capacity [veh/h]	253	205	697	996	734	1045
d1, Uniform Delay [s]	38.32	37.60	4.10	9.18	4.72	8.03
k, delay calibration	0.11	0.11	0.50	0.50	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.25	2.31	0.14	1.47	0.14	1.20
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.68	0.55	0.05	0.45	0.21	0.41
d, Delay for Lane Group [s/veh]	41.56	39.91	4.24	10.65	4.86	9.22
Lane Group LOS	D	D	A	B	A	A
Critical Lane Group	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	3.93	2.53	0.16	4.55	0.65	3.94
50th-Percentile Queue Length [ft/ln]	98.37	63.26	4.04	113.86	16.23	98.45
95th-Percentile Queue Length [veh/ln]	7.08	4.55	0.29	8.05	1.17	7.09
95th-Percentile Queue Length [ft/ln]	177.06	113.87	7.27	201.36	29.22	177.21



Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	41.56	41.56	41.56	39.91	39.91	39.91	4.24	10.65	10.65	4.86	9.22	9.22
Movement LOS	D	D	D	D	D	D	A	B	B	A	A	A
d_A, Approach Delay [s/veh]	41.56			39.91			10.17			8.07		
Approach LOS	D			D			B			A		
d_I, Intersection Delay [s/veh]	15.76											
Intersection LOS	B											
Intersection V/C	0.481											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.67	34.67	34.67	34.67
I_p,int, Pedestrian LOS Score for Intersection	2.015	1.874	2.245	2.394
Crosswalk LOS	B	A	B	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	600	600	1644	1422
d_b, Bicycle Delay [s]	22.05	22.05	1.42	3.76
I_b,int, Bicycle LOS Score for Intersection	1.845	1.746	2.358	2.523
Bicycle LOS	A	A	B	B

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-





**Intersection Level Of Service Report
Intersection 12: Flynn Ln & Mullan Rd**

Control Type:	Signalized	Delay (sec / veh):	9.2
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.897

Intersection Setup

Name	Flynn Ln			Mullan Rd			Mullan Rd					
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↱			↰			↔			↔		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			25.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		



Volumes

Name	Flynn Ln						Mullan Rd			Mullan Rd		
Base Volume Input [veh/h]	0	0	1	0	0	106	200	1272	1	1	395	197
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	0.00	2.00	2.00	2.00	7.00	2.00	2.00	7.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	1	0	0	106	200	1272	1	1	395	197
Peak Hour Factor	1.0000	1.0000	0.9200	0.9200	1.0000	0.9200	0.9200	0.9200	1.0000	1.0000	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	0	0	29	54	346	0	0	107	54
Total Analysis Volume [veh/h]	0	0	1	0	0	115	217	1383	1	1	429	214
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permis	Permis	Overla	Split	Permis	Overla	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	0	5	0	0	5	0	2	0	0	6	6
Auxiliary Signal Groups			5			5						
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	5	0	0	5	0	5	0	0	5	5
Maximum Green [s]	0	0	30	0	0	30	0	30	0	0	30	30
Amber [s]	0.0	0.0	4.0	0.0	0.0	4.0	0.0	4.0	0.0	0.0	4.0	4.0
All red [s]	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0
Split [s]	0	0	87	0	0	87	0	120	0	0	33	33
Vehicle Extension [s]	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	3.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	0	0	0	0	0	0	20	0	0	20	20
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk			No			No		No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	0.0	4.0	0.0	0.0	4.0	0.0	4.0	0.0	0.0	4.0	4.0
Minimum Recall			No			No		No			No	
Maximum Recall			No			No		No			No	
Pedestrian Recall			No			No		No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	R	R	L	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	0.00	4.00	4.00	4.00	4.00
g_i, Effective Green Time [s]	11	11	114	114	97	97	97
g / C, Green / Cycle	0.09	0.09	0.95	0.95	0.81	0.81	0.81
(v / s)_i Volume / Saturation Flow Rate	0.00	0.08	0.21	0.84	0.00	0.26	0.15
s, saturation flow rate [veh/h]	1464	1464	1050	1653	391	1653	1464
c, Capacity [veh/h]	138	138	1016	1570	266	1332	1179
d1, Uniform Delay [s]	49.22	53.38	0.58	0.92	13.40	3.06	2.65
k, delay calibration	0.11	0.11	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.02	12.13	0.48	7.47	0.03	0.64	0.34
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.01	0.83	0.21	0.88	0.00	0.32	0.18
d, Delay for Lane Group [s/veh]	49.24	65.50	1.06	8.39	13.43	3.70	2.99
Lane Group LOS	D	E	A	A	B	A	A
Critical Lane Group	No	No	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	0.03	3.90	0.14	3.26	0.01	1.92	0.84
50th-Percentile Queue Length [ft/ln]	0.70	97.48	3.39	81.46	0.35	48.11	21.02
95th-Percentile Queue Length [veh/ln]	0.05	7.02	0.24	5.87	0.03	3.46	1.51
95th-Percentile Queue Length [ft/ln]	1.26	175.46	6.11	146.63	0.63	86.60	37.83



Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	49.24	0.00	0.00	65.50	1.06	8.39	8.39	13.43	3.70	2.99
Movement LOS			D			E	A	A	A	B	A	A
d_A, Approach Delay [s/veh]	49.24			65.50			7.40			3.48		
Approach LOS	D			E			A			A		
d_I, Intersection Delay [s/veh]	9.18											
Intersection LOS	A											
Intersection V/C	0.897											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			81.0			81.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	49.50			49.50			6.34			6.34		
I_p,int, Pedestrian LOS Score for Intersection	1.732			2.204			2.917			2.804		
Crosswalk LOS	A			B			C			C		
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	1350			1350			1900			450		
d_b, Bicycle Delay [s]	6.34			6.34			0.15			36.04		
I_b,int, Bicycle LOS Score for Intersection	1.560			1.560			4.201			2.622		
Bicycle LOS	A			A			D			B		

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-





**Intersection Level Of Service Report
Intersection 13: Mary Jane Blvd & Mullan Rd**

Control Type:	Signalized	Delay (sec / veh):	180.2
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.762

Intersection Setup

Name	Mary Jane Blvd		Mullan Rd		Mullan Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration	↵↵		↵↑		↑↵	
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	



Volumes

Name	Mary Jane Blvd		Mullan Rd		Mullan Rd	
Base Volume Input [veh/h]	207	53	231	1042	512	100
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.00	4.00	3.00	7.00	7.00	3.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	207	53	231	1042	512	100
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	56	14	63	283	139	27
Total Analysis Volume [veh/h]	225	58	251	1133	557	109
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0		0		0	
v_di, Inbound Pedestrian Volume crossing major street	0		0		0	
v_co, Outbound Pedestrian Volume crossing minor street	0		0		0	
v_ci, Inbound Pedestrian Volume crossing minor street	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	ProtPerm	Permissive	Permissive	Permissive
Signal Group	8	8	5	2	6	6
Auxiliary Signal Groups						
Lead / Lag	Lead	-	Lag	-	-	-
Minimum Green [s]	5	5	5	5	5	5
Maximum Green [s]	30	30	30	30	30	30
Amber [s]	4.0	4.0	4.0	4.0	4.0	4.0
All red [s]	2.0	2.0	2.0	2.0	2.0	2.0
Split [s]	113	113	87	120	33	33
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	7	7	0	7	7	7
Pedestrian Clearance [s]	20	20	0	20	20	20
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Recall	No		No	No	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	L	C	C	R
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	0.00	0.00	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	2.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	0.00	0.00	4.00	4.00	4.00
g_i, Effective Green Time [s]	0	0	9	114	103	103
g / C, Green / Cycle	0.00	0.00	0.08	0.95	0.86	0.86
(v / s)_i Volume / Saturation Flow Rate	0.79	0.04	0.46	0.69	0.34	0.08
s, saturation flow rate [veh/h]	287	1440	548	1653	1653	1452
c, Capacity [veh/h]	60	0	129	1570	1418	1246
d1, Uniform Delay [s]	59.95	0.00	0.31	0.48	1.83	1.31
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1275.80	0.00	455.69	2.90	0.82	0.14
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	3.75	10000.00	1.95	0.72	0.39	0.09
d, Delay for Lane Group [s/veh]	1335.75	0.00	456.00	3.38	2.65	1.45
Lane Group LOS	F	F	F	A	A	A
Critical Lane Group	No	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	23.28	0.00	16.27	1.27	1.30	0.19
50th-Percentile Queue Length [ft/ln]	582.02	0.00	406.78	31.64	32.50	4.63
95th-Percentile Queue Length [veh/ln]	31.19	0.00	26.87	2.28	2.34	0.33
95th-Percentile Queue Length [ft/ln]	779.84	0.00	671.77	56.95	58.49	8.33



Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	1335.75	0.00	456.00	3.38	2.65	1.45
Movement LOS	F	A	F	A	A	A
d_A, Approach Delay [s/veh]	1062.00		85.46		2.45	
Approach LOS	F		F		A	
d_I, Intersection Delay [s/veh]	180.22					
Intersection LOS	F					
Intersection V/C	0.762					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.50	49.50	49.50
I_p,int, Pedestrian LOS Score for Intersection	2.181	2.928	3.261
Crosswalk LOS	B	C	C
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	1900	450
d_b, Bicycle Delay [s]	60.00	0.15	36.04
I_b,int, Bicycle LOS Score for Intersection	1.560	3.843	2.659
Bicycle LOS	A	D	B

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-





Intersection Level Of Service Report
Intersection 16: Mary Jane Blvd & England Blvd

Control Type:	Signalized	Delay (sec / veh):	18.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.450

Intersection Setup

Name	Mary Jane Blvd			Mary Jane Blvd			England Blvd			England Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵			↵			↵			↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mary Jane Blvd			Mary Jane Blvd			England Blvd			England Blvd		
Base Volume Input [veh/h]	136	142	46	19	123	50	87	358	62	46	350	6
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	3.00	2.00	2.00	3.00	2.00	2.00	8.00	2.00	2.00	4.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	136	142	46	19	123	50	87	358	62	46	350	6
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	37	39	13	5	33	14	24	97	17	13	95	2
Total Analysis Volume [veh/h]	148	154	50	21	134	54	95	389	67	50	380	7
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lag	-	-	Lead	-	-	Lag	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	15	20	0	15	20	0	15	20	0	15	20	0
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
All red [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Split [s]	96	32	0	96	32	0	96	58	0	96	58	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	7	7	0	7	7	0	0	7	0	7	7	0
Pedestrian Clearance [s]	10	10	0	15	10	0	0	10	0	10	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	L	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
g_i, Effective Green Time [s]	24	24	24	24	54	54	54	54
g / C, Green / Cycle	0.26	0.26	0.26	0.26	0.60	0.60	0.60	0.60
(v / s)_i Volume / Saturation Flow Rate	0.12	0.12	0.02	0.12	0.10	0.29	0.05	0.23
s, saturation flow rate [veh/h]	1195	1638	1178	1626	996	1598	935	1689
c, Capacity [veh/h]	255	432	243	429	539	964	473	1019
d1, Uniform Delay [s]	37.39	27.87	34.02	27.59	14.47	9.92	16.00	9.20
k, delay calibration	0.11	0.11	0.11	0.11	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.08	0.80	0.15	0.71	0.71	1.67	0.45	1.08
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.58	0.47	0.09	0.44	0.18	0.47	0.11	0.38
d, Delay for Lane Group [s/veh]	39.47	28.68	34.18	28.30	15.18	11.59	16.45	10.28
Lane Group LOS	D	C	C	C	B	B	B	B
Critical Lane Group	No	Yes	No	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.27	3.72	0.41	3.39	1.22	4.93	0.67	3.83
50th-Percentile Queue Length [ft/ln]	81.63	92.92	10.24	84.67	30.46	123.27	16.80	95.83
95th-Percentile Queue Length [veh/ln]	5.88	6.69	0.74	6.10	2.19	8.57	1.21	6.90
95th-Percentile Queue Length [ft/ln]	146.94	167.25	18.42	152.40	54.83	214.31	30.25	172.50



Movement, Approach, & Intersection Results

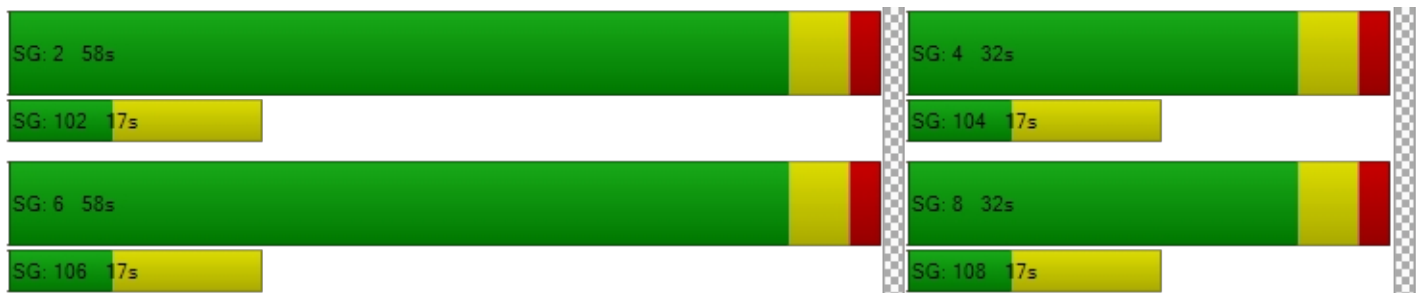
d_M, Delay for Movement [s/veh]	39.47	28.68	28.68	34.18	28.30	28.30	15.18	11.59	11.59	16.45	10.28	10.28
Movement LOS	D	C	C	C	C	C	B	B	B	B	B	B
d_A, Approach Delay [s/veh]	33.21			28.89			12.21			10.98		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]	18.89											
Intersection LOS	B											
Intersection V/C	0.450											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	34.67			34.67			34.67			34.67		
I_p,int, Pedestrian LOS Score for Intersection	2.207			2.226			2.518			2.261		
Crosswalk LOS	B			B			B			B		
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	578			578			1156			1156		
d_b, Bicycle Delay [s]	22.76			22.76			8.02			8.02		
I_b,int, Bicycle LOS Score for Intersection	2.140			1.904			2.469			2.281		
Bicycle LOS	B			A			B			B		

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-





Intersection Level Of Service Report
Intersection 20: Mary Jane Blvd & W Broadway St

Control Type:	Signalized	Delay (sec / veh):	18.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.711

Intersection Setup

Name	Mary Jane Blvd		W Broadway St		W Broadway St	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		No	



Volumes

Name	Mary Jane Blvd		W Broadway St		W Broadway St	
Base Volume Input [veh/h]	248	68	1247	142	164	656
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.00	3.00	8.00	3.00	3.00	15.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	248	68	1247	142	164	656
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	67	18	339	39	45	178
Total Analysis Volume [veh/h]	270	74	1355	154	178	713
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0		0		0	
v_di, Inbound Pedestrian Volume crossing major street	0		0		0	
v_co, Outbound Pedestrian Volume crossing minor street	0		0		0	
v_ci, Inbound Pedestrian Volume crossing minor street	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Permissive	Permissive	ProtPerm	Permissive
Signal Group	8	8	2	2	1	6
Auxiliary Signal Groups						
Lead / Lag	Lag	-	-	-	Lead	-
Minimum Green [s]	5	5	5	5	5	5
Maximum Green [s]	30	30	30	30	30	30
Amber [s]	4.0	4.0	4.0	4.0	4.0	4.0
All red [s]	2.0	2.0	2.0	2.0	2.0	2.0
Split [s]	78	78	31	31	11	42
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	4.00	4.00	0.00	4.00
g_i, Effective Green Time [s]	22	22	75	75	86	86
g / C, Green / Cycle	0.19	0.19	0.62	0.62	0.71	0.71
(v / s)_i Volume / Saturation Flow Rate	0.17	0.05	0.43	0.11	0.34	0.24
s, saturation flow rate [veh/h]	1627	1452	3121	1452	529	2937
c, Capacity [veh/h]	302	269	1941	903	347	2098
d1, Uniform Delay [s]	47.70	41.92	15.15	9.59	15.05	6.46
k, delay calibration	0.11	0.11	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.15	0.55	2.11	0.41	5.34	0.44
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.89	0.27	0.70	0.17	0.51	0.34
d, Delay for Lane Group [s/veh]	56.85	42.47	17.26	10.00	20.39	6.90
Lane Group LOS	E	D	B	A	C	A
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	8.62	1.93	10.83	1.58	1.61	2.72
50th-Percentile Queue Length [ft/ln]	215.48	48.30	270.68	39.47	40.35	67.94
95th-Percentile Queue Length [veh/ln]	13.43	3.48	16.22	2.84	2.90	4.89
95th-Percentile Queue Length [ft/ln]	335.85	86.95	405.59	71.04	72.62	122.29

Movement, Approach, & Intersection Results

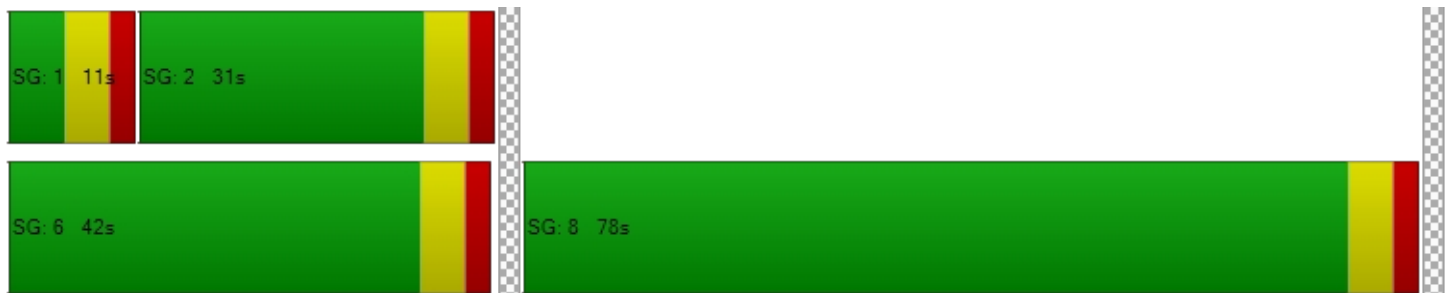
d_M, Delay for Movement [s/veh]	56.85	42.47	17.26	10.00	20.39	6.90
Movement LOS	E	D	B	A	C	A
d_A, Approach Delay [s/veh]	53.76		16.52		9.59	
Approach LOS	D		B		A	
d_I, Intersection Delay [s/veh]	18.94					
Intersection LOS	B					
Intersection V/C	0.711					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000
Crosswalk LOS	F	F	F
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1200	417	600
d_b, Bicycle Delay [s]	9.60	37.60	29.40
I_b,int, Bicycle LOS Score for Intersection	1.560	2.805	2.295
Bicycle LOS	A	C	B

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-





Intersection Level Of Service Report
Intersection 21: Flynn Ln & W Broadway St

Control Type:	Signalized	Delay (sec / veh):	11.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.758

Intersection Setup

Name	Flynn Ln		W Broadway St		W Broadway St	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↗		↕↗		↕	
Turning Movement	Left	Thru	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		No	



Volumes

Name	Flynn Ln		W Broadway St		W Broadway St	
Base Volume Input [veh/h]	0	359	1180	146	0	819
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	8.00	2.00	0.00	15.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	359	1180	146	0	819
Peak Hour Factor	0.7900	0.9200	0.9200	0.9200	0.7900	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	98	321	40	0	223
Total Analysis Volume [veh/h]	0	390	1283	159	0	890
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	0		0		0	
v_di, Inbound Pedestrian Volume crossing major street [	0		0		0	
v_co, Outbound Pedestrian Volume crossing minor stree	0		0		0	
v_ci, Inbound Pedestrian Volume crossing minor street [	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Split	Split	Permissive	Permissive	Permissive	Permissive
Signal Group	0	8	2	2	0	6
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	-	-
Minimum Green [s]	0	5	5	5	0	5
Maximum Green [s]	0	30	30	30	0	30
Amber [s]	0.0	4.0	4.0	4.0	0.0	3.0
All red [s]	0.0	2.0	2.0	2.0	0.0	1.0
Split [s]	0	30	90	90	0	90
Vehicle Extension [s]	0.0	3.0	3.0	3.0	0.0	3.0
Walk [s]	0	0	0	0	0	5
Pedestrian Clearance [s]	0	0	0	0	0	10
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No	No			No
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	0.0	2.0
I2, Clearance Lost Time [s]	0.0	4.0	4.0	4.0	0.0	2.0
Minimum Recall		No	No			No
Maximum Recall		No	No			No
Pedestrian Recall		No	No			No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	R	C
C, Cycle Length [s]	49	49	49	49
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	4.00	2.00
g_i, Effective Green Time [s]	13	24	24	26
g / C, Green / Cycle	0.27	0.49	0.49	0.53
(v / s)_i Volume / Saturation Flow Rate	0.22	0.41	0.11	0.30
s, saturation flow rate [veh/h]	1750	3121	1464	2937
c, Capacity [veh/h]	470	1519	713	1550
d1, Uniform Delay [s]	16.88	10.97	7.25	7.85
k, delay calibration	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.84	1.36	0.16	0.34
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.83	0.84	0.22	0.57
d, Delay for Lane Group [s/veh]	20.73	12.33	7.40	8.19
Lane Group LOS	C	B	A	A
Critical Lane Group	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.16	3.51	0.56	1.61
50th-Percentile Queue Length [ft/ln]	103.97	87.70	13.96	40.14
95th-Percentile Queue Length [veh/ln]	7.49	6.31	1.01	2.89
95th-Percentile Queue Length [ft/ln]	187.15	157.85	25.13	72.26

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	20.73	12.33	7.40	0.00	8.19
Movement LOS		C	B	A		A
d_A, Approach Delay [s/veh]	20.73		11.79		8.19	
Approach LOS	C		B		A	
d_I, Intersection Delay [s/veh]	11.89					
Intersection LOS	B					
Intersection V/C	0.758					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000
Crosswalk LOS	F	F	F
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	400	1400	1433
d_b, Bicycle Delay [s]	38.40	5.40	4.82
I_b,int, Bicycle LOS Score for Intersection	2.203	2.749	2.294
Bicycle LOS	B	B	B

Sequence

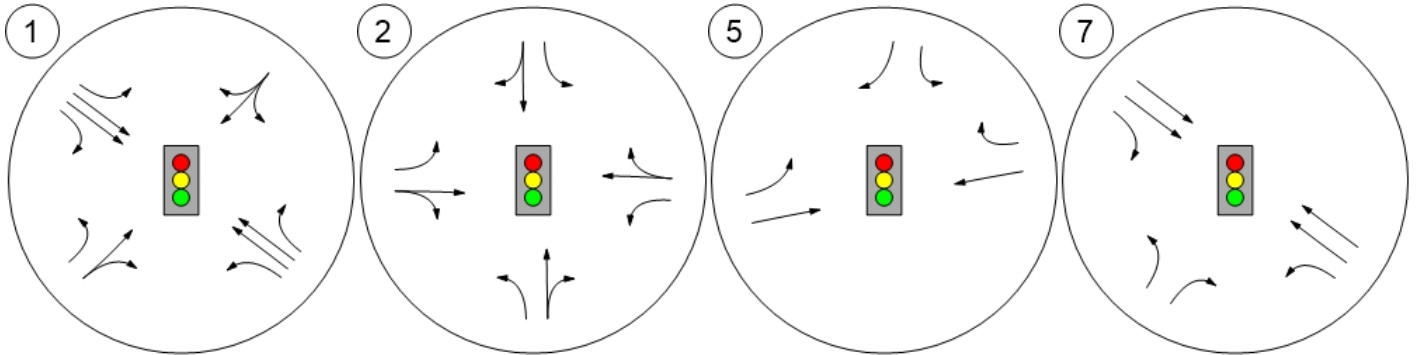
Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Lane Configuration and Traffic Control



George Elmer Dr & W Broad George Elmer Dr & England George Elmer Dr & Mullan R Dougherty Dr & W Broadway

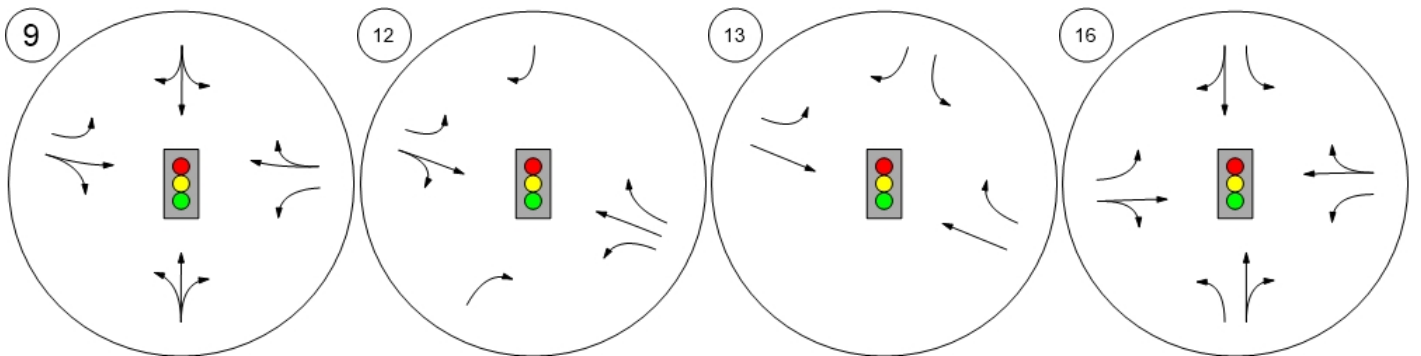


Flynn Ln & England Blvd

Flynn Ln & Mullan Rd

Mary Jane Blvd & Mullan Rd

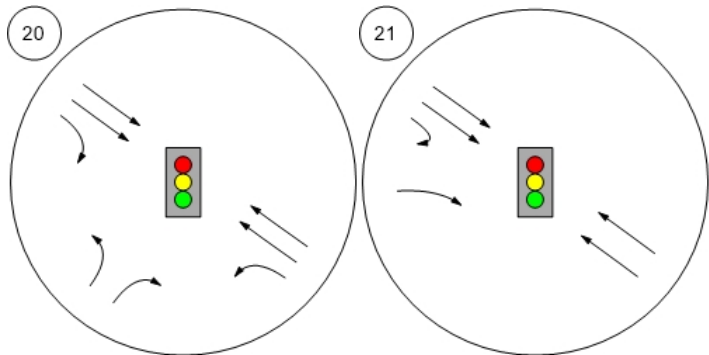
Mary Jane Blvd & England Blvd



Lane Configuration and Traffic Control



Mary Jane Blvd & W Broadw Flynn Ln & W Broadway St





Option 1: Dual Through Lanes EB & WB

Number	5					
Intersection	George Elmer Dr & Mullan Rd					
Control Type	Signalized					
Analysis Method	HCM 6th Edition					
Name	George Elmer Dr		Mullan Rd		Mullan Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Base Volume Input [veh/h]	222	50	253	1259	405	85
Total Analysis Volume [veh/h]	241	54	275	1368	440	92

Intersection Settings

Cycle Length [s]	120					
Coordination Type	Time of Day Pattern Coordinated					
Actuation Type	Fully actuated					
Lost time [s]	12.00					
Control Type	Split	Split	Permissive	Permissive	Permissive	Permissive
Signal Group	8	8	0	2	6	6
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	5
Maximum Green [s]	30	30	0	30	30	30
Amber [s]	4.0	4.0	0.0	4.0	4.0	4.0
All red [s]	2.0	2.0	0.0	2.0	2.0	2.0
Split [s]	33	33	0	87	33	33
Walk [s]	7	7	0	7	7	7
Pedestrian Clearance [s]	20	20	0	20	20	20
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
l1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	No			No	No	
Maximum Recall	No			No	No	
Pedestrian Recall	No			No	No	
Pedestrian Signal Group	0					
Pedestrian Walk [s]	0					
Pedestrian Clearance [s]	0					

Lane Group Calculations

g / C, Green / Cycle	0.17	0.17	0.73	0.73	0.68	0.68
(v / s)_i Volume / Saturation Flow Rate	0.15	0.04	0.28	0.43	0.14	0.06
so, Base Saturation Flow per Lane [pc/h/ln]	1750	1750	1750	1750	1750	1750
Arrival type	3		3		3	
s, saturation flow rate [veh/h]	1614	1440	966	3148	3148	1440
c, Capacity [veh/h]	269	240	740	2309	2148	983
X, volume / capacity	0.90	0.23	0.37	0.59	0.20	0.09
d, Delay for Lane Group [s/veh]	60.95	43.76	7.99	8.66	7.24	6.65
Lane Group LOS	E	D	A	A	A	A

Critical Lane Group	Yes	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	7.95	1.43	2.06	6.79	1.85	0.74
50th-Percentile Queue Length [ft/ln]	198.63	35.70	51.43	169.87	46.37	18.49
95th-Percentile Queue Length [veh/ln]	12.57	2.57	3.70	11.07	3.34	1.33
95th-Percentile Queue Length [ft/ln]	314.19	64.26	92.57	276.75	83.47	33.28

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	60.95	43.76	7.99	8.66	7.24	6.65
Movement LOS	E	D	A	A	A	A
Critical Movement	Yes	No	No	No	No	No
d_A, Approach Delay [s/veh]	57.80		8.55		7.14	
Approach LOS	E		A		A	
d_I, Intersection Delay [s/veh]	14.13					
Intersection LOS	B					
Intersection V/C	0.649					

Option 1: Dual Through Lanes EB & WB

Number	13					
Intersection	Mary Jane Blvd & Mullan Rd					
Control Type	Signalized					
Analysis Method	HCM 6th Edition					
Name	Mary Jane Blvd		Mullan Rd		Mullan Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Base Volume Input [veh/h]	207	53	231	1042	512	100
Total Analysis Volume [veh/h]	225	58	251	1133	557	109

Intersection Settings

Cycle Length [s]	120					
Coordination Type	Time of Day Pattern Coordinated					
Actuation Type	Fully actuated					
Lost time [s]	12.00					
Control Type	Split	Split	ProtPerm	Permissive	Permissive	Permissive
Signal Group	8	8	5	2	6	6
Auxiliary Signal Groups						
Lead / Lag	Lead	-	Lag	-	-	-
Minimum Green [s]	5	5	5	5	5	5
Maximum Green [s]	30	30	30	30	30	30
Amber [s]	4.0	4.0	4.0	4.0	4.0	4.0
All red [s]	2.0	2.0	2.0	2.0	2.0	2.0
Split [s]	33	33	54	87	33	33
Walk [s]	7	7	0	7	7	7
Pedestrian Clearance [s]	20	20	0	20	20	20
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
l1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
Minimum Recall	No		No	No	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	
Pedestrian Signal Group	0					
Pedestrian Walk [s]	0					
Pedestrian Clearance [s]	0					

Lane Group Calculations

g / C, Green / Cycle	0.16	0.16	0.74	0.74	0.62	0.62
(v / s)_i Volume / Saturation Flow Rate	0.14	0.04	0.26	0.36	0.18	0.08
so, Base Saturation Flow per Lane [pc/h/ln]	1750	1750	1750	1750	1750	1750
Arrival type	3		3		3	
s, saturation flow rate [veh/h]	1614	1440	953	3148	3148	1452
c, Capacity [veh/h]	253	226	721	2339	1964	906
X, volume / capacity	0.89	0.26	0.35	0.48	0.28	0.12
d, Delay for Lane Group [s/veh]	59.72	45.02	6.68	6.91	10.67	9.45
Lane Group LOS	E	D	A	A	B	A



Critical Lane Group	Yes	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	7.31	1.56	1.75	4.66	3.13	1.12
50th-Percentile Queue Length [ft/ln]	182.70	39.02	43.73	116.45	78.23	28.09
95th-Percentile Queue Length [veh/ln]	11.74	2.81	3.15	8.20	5.63	2.02
95th-Percentile Queue Length [ft/ln]	293.53	70.24	78.72	204.93	140.81	50.57

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	59.72	45.02	6.68	6.91	10.67	9.45
Movement LOS	E	D	A	A	B	A
Critical Movement	Yes	No	No	No	No	No
d_A, Approach Delay [s/veh]	56.71		6.86		10.47	
Approach LOS	E		A		B	
d_I, Intersection Delay [s/veh]	13.94					
Intersection LOS	B					
Intersection V/C	0.555					

Mullan BUILD - 2050 AM

Vistro File: H:\...\24667_PM2050.vistro

Scenario 3 Two Way Stop Control (2050)

Report File: H:\...\24667_PM2050_TWSC.pdf

7/17/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	George Elmer Dr & W Broadway St	Two-way stop	HCM 6th Edition	NB Left	33.820	10,000.0	F
2	George Elmer Dr & England Blvd	Two-way stop	HCM 6th Edition	NB Left	0.000	10,000.0	F
3	George Elmer Dr & Cattle Dr	Two-way stop	HCM 6th Edition	EB Left	0.170	30.6	D
4	George Elmer Dr & Heron's Landing	Two-way stop	HCM 6th Edition	EB Left	0.206	32.4	D
5	George Elmer Dr & Mullan Rd	Two-way stop	HCM 6th Edition	SB Left	4.632	1,957.5	F
6	Dougherty Dr & England Blvd	Two-way stop	HCM 6th Edition	SB Left	0.589	44.9	E
7	Dougherty Dr & W Broadway St	Two-way stop	HCM 6th Edition	NB Left	4.369	1,704.3	F
8	Flynn Ln & Camden St	Two-way stop	HCM 6th Edition	WB Left	0.007	10.2	B
9	Flynn Ln & England Blvd	Two-way stop	HCM 6th Edition	SB Left	0.163	61.2	F
10	Flynn Ln & Chelsea Dr	Two-way stop	HCM 6th Edition	EB Thru	0.025	12.5	B
11	Flynn Ln & Siren's Dr	Two-way stop	HCM 6th Edition	EB Left	0.035	11.0	B
12	Flynn Ln & Mullan Rd	Two-way stop	HCM 6th Edition	SB Right	0.984	126.7	F
13	Mary Jane Blvd & Mullan Rd	Two-way stop	HCM 6th Edition	SB Left	4.130	1,689.6	F
14	Mary Jane Blvd & O'Leary St	Two-way stop	HCM 6th Edition	WB Left	0.037	15.0	B
15	Mary Jane Blvd & Melrose Pl	Two-way stop	HCM 6th Edition	EB Left	0.161	20.7	C
16	Mary Jane Blvd & England Blvd	Two-way stop	HCM 6th Edition	NB Left	3.171	1,324.9	F
17	Mary Jane Blvd & Camden St	Two-way stop	HCM 6th Edition	WB Left	0.007	14.0	B
			HCM 6th				

18	Mary Jane Blvd & Flynn Ln	Two-way stop	HCM 6th Edition	EB Left	0.149	20.9	C
19	Mary Jane Blvd & Veteran's Way	Two-way stop	HCM 6th Edition	EB Left	0.255	18.7	C
20	Mary Jane Blvd & W Broadway St	Two-way stop	HCM 6th Edition	NB Left	3.662	1,331.9	F
21	Flynn Ln & W Broadway St	Two-way stop	HCM 6th Edition	NB Thru	0.882	58.1	F

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: George Elmer Dr & W Broadway St

Control Type:	Two-way stop	Delay (sec / veh):	10,000.0
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	33.820

Intersection Setup

Name	George Elmer Dr			Commercial Access			W Broadway St			W Broadway St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00
Speed [mph]	30.00			30.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	George Elmer Dr			Commercial Access			W Broadway St			W Broadway St		
Base Volume Input [veh/h]	204	1	159	1	1	1	1	1435	250	137	1098	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.00	2.00	3.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	204	1	159	1	1	1	1	1435	250	137	1098	1
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	55	0	43	0	0	0	0	390	68	37	298	0
Total Analysis Volume [veh/h]	222	1	173	1	1	1	1	1560	272	149	1193	1
Pedestrian Volume [ped/h]	0			0			0			0		



Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane		No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	33.82	0.18	0.63	0.22	0.23	0.00	0.00	0.02	0.00	0.45	0.01	0.00
d_M, Delay for Movement [s/veh]	10000.	10000.	38.56	1040.6	1048.5	243.76	11.21	0.00	0.00	24.67	0.00	0.00
Movement LOS	F	F	E	F	F	F	B	A	A	C	A	A
95th-Percentile Queue Length [veh/ln]	29.86	29.86	3.95	0.86	0.86	0.86	0.01	0.00	0.00	2.25	0.00	0.00
95th-Percentile Queue Length [ft/ln]	746.40	746.40	98.75	21.43	21.43	21.43	0.13	0.00	0.00	56.37	0.00	0.00
d_A, Approach Delay [s/veh]	5648.16			777.65			0.01			2.74		
Approach LOS	F			F			A			A		
d_I, Intersection Delay [s/veh]	627.33											
Intersection LOS	F											

**Intersection Level Of Service Report
Intersection 2: George Elmer Dr & England Blvd**

Control Type:	Two-way stop	Delay (sec / veh):	10,000.0
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	George Elmer Dr			George Elmer Dr			England Blvd			England Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↔			↔			↔			↔		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	George Elmer Dr			George Elmer Dr			England Blvd			England Blvd		
Base Volume Input [veh/h]	142	199	46	42	169	184	122	301	159	43	431	42
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	3.00	2.00	2.00	3.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	142	199	46	42	169	184	122	301	159	43	431	42
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	39	54	13	11	46	50	33	82	43	12	117	11
Total Analysis Volume [veh/h]	154	216	50	46	184	200	133	327	173	47	468	46
Pedestrian Volume [ped/h]	0			0			0			0		



Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	1.58	0.08	0.00	1.47	0.35	0.13	0.00	0.00	0.04	0.00	0.00
d_M, Delay for Movement [s/veh]	10000.	378.23	357.46	10000.	437.65	415.04	8.92	0.00	0.00	8.54	0.00	0.00
Movement LOS	F	F	F	F	F	F	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	21.89	18.61	18.61	7.93	26.97	26.97	0.43	0.00	0.00	0.14	0.00	0.00
95th-Percentile Queue Length [ft/ln]	547.21	465.33	465.33	198.16	674.28	674.28	10.82	0.00	0.00	3.46	0.00	0.00
d_A, Approach Delay [s/veh]	3903.74			1450.08			1.87			0.72		
Approach LOS	F			F			A			A		
d_I, Intersection Delay [s/veh]	1107.97											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 3: George Elmer Dr & Cattle Dr

Control Type:	Two-way stop	Delay (sec / veh):	30.6
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.170

Intersection Setup

Name	George Elmer Dr			George Elmer Dr			Cattle Dr			Cattle Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵			↵			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	George Elmer Dr			George Elmer Dr			Cattle Dr			Cattle Dr		
Base Volume Input [veh/h]	135	333	21	5	360	6	26	1	33	7	1	29
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	3.00	2.00	2.00	3.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	135	333	21	5	360	6	26	1	33	7	1	29
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	37	90	6	1	98	2	7	0	9	2	0	8
Total Analysis Volume [veh/h]	147	362	23	5	391	7	28	1	36	8	1	32
Pedestrian Volume [ped/h]	0			0			0			0		



Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.13	0.00	0.00	0.00	0.00	0.00	0.17	0.01	0.05	0.05	0.01	0.05
d_M, Delay for Movement [s/veh]	8.55	0.00	0.00	8.08	0.00	0.00	30.60	27.84	14.27	28.09	24.88	11.36
Movement LOS	A	A	A	A	A	A	D	D	B	D	C	B
95th-Percentile Queue Length [veh/ln]	0.43	0.00	0.00	0.01	0.00	0.00	0.87	0.87	0.87	0.34	0.34	0.34
95th-Percentile Queue Length [ft/ln]	10.84	0.00	0.00	0.32	0.00	0.00	21.72	21.72	21.72	8.44	8.44	8.44
d_A, Approach Delay [s/veh]	2.36			0.10			21.51			14.96		
Approach LOS	A			A			C			B		
d_I, Intersection Delay [s/veh]	3.18											
Intersection LOS	D											

Intersection Level Of Service Report
Intersection 4: George Elmer Dr & Heron's Landing

Control Type:	Two-way stop	Delay (sec / veh):	32.4
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.206

Intersection Setup

Name	George Elmer Dr			George Elmer Dr			Heron's Landing			Heron's Landing		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	George Elmer Dr			George Elmer Dr			Heron's Landing			Heron's Landing		
Base Volume Input [veh/h]	75	429	30	30	340	30	30	1	20	20	1	30
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	3.00	2.00	2.00	3.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	75	429	30	30	340	30	30	1	20	20	1	30
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	20	117	8	8	92	8	8	0	5	5	0	8
Total Analysis Volume [veh/h]	82	466	33	33	370	33	33	1	22	22	1	33
Pedestrian Volume [ped/h]	0			0			0			0		



Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.00	0.00	0.03	0.00	0.00	0.21	0.01	0.03	0.13	0.01	0.06
d_M, Delay for Movement [s/veh]	8.35	0.00	0.00	8.49	0.00	0.00	32.43	29.25	15.44	29.70	27.24	14.16
Movement LOS	A	A	A	A	A	A	D	D	C	D	D	B
95th-Percentile Queue Length [veh/ln]	0.23	0.00	0.00	0.10	0.00	0.00	0.93	0.93	0.93	0.71	0.71	0.71
95th-Percentile Queue Length [ft/ln]	5.72	0.00	0.00	2.40	0.00	0.00	23.24	23.24	23.24	17.68	17.68	17.68
d_A, Approach Delay [s/veh]	1.18			0.64			25.70			20.50		
Approach LOS	A			A			D			C		
d_I, Intersection Delay [s/veh]	3.15											
Intersection LOS	D											

**Intersection Level Of Service Report
Intersection 5: George Elmer Dr & Mullan Rd**

Control Type:	Two-way stop	Delay (sec / veh):	1,957.5
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	4.632

Intersection Setup

Name	George Elmer Dr		Mullan Rd		Mullan Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	325.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	George Elmer Dr		Mullan Rd		Mullan Rd	
Base Volume Input [veh/h]	104	275	179	637	1185	353
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	3.00	2.00	2.00	3.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	104	275	179	637	1185	353
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	75	49	173	322	96
Total Analysis Volume [veh/h]	113	299	195	692	1288	384
Pedestrian Volume [ped/h]	0		0		0	



Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	4.63	1.49	0.36	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	1957.46	290.18	15.53	0.00	0.00	0.00
Movement LOS	F	F	C	A	A	A
95th-Percentile Queue Length [veh/ln]	14.08	18.43	1.66	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	352.11	460.75	41.39	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	747.47		3.42		0.00	
Approach LOS	F		A		A	
d_I, Intersection Delay [s/veh]	104.67					
Intersection LOS	F					



Intersection Level Of Service Report
Intersection 6: Dougherty Dr & England Blvd

Control Type:	Two-way stop	Delay (sec / veh):	44.9
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.589

Intersection Setup

Name	Dougherty Dr		England Blvd		England Blvd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Dougherty Dr		England Blvd		England Blvd	
Base Volume Input [veh/h]	111	100	150	249	416	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	111	100	150	249	416	50
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	30	27	41	68	113	14
Total Analysis Volume [veh/h]	121	109	163	271	452	54
Pedestrian Volume [ped/h]	0		0		0	



Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.59	0.19	0.15	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	44.95	12.53	9.02	0.00	0.00	0.00
Movement LOS	E	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	3.28	0.68	0.54	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	82.03	16.92	13.58	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	29.59		3.39		0.00	
Approach LOS	D		A		A	
d_I, Intersection Delay [s/veh]	7.07					
Intersection LOS	E					

**Intersection Level Of Service Report
Intersection 7: Dougherty Dr & W Broadway St**

Control Type:	Two-way stop	Delay (sec / veh):	1,704.3
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	4.369

Intersection Setup

Name	Dougherty Dr		W Broadway St		W Broadway St	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	100.00
Speed [mph]	30.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Dougherty Dr		W Broadway St		W Broadway St	
Base Volume Input [veh/h]	175	300	1394	200	254	1060
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	175	300	1394	200	254	1060
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	48	82	379	54	69	288
Total Analysis Volume [veh/h]	190	326	1515	217	276	1152
Pedestrian Volume [ped/h]	0		0		0	



Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	Yes		
Number of Storage Spaces in Median	1	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	4.37	0.93	0.02	0.00	0.77	0.01
d_M, Delay for Movement [s/veh]	1704.33	67.41	0.00	0.00	41.25	0.00
Movement LOS	F	F	A	A	E	A
95th-Percentile Queue Length [veh/ln]	21.61	9.67	0.00	0.00	6.20	0.00
95th-Percentile Queue Length [ft/ln]	540.26	241.67	0.00	0.00	154.89	0.00
d_A, Approach Delay [s/veh]	670.16		0.00		7.97	
Approach LOS	F		A		A	
d_I, Intersection Delay [s/veh]	97.17					
Intersection LOS	F					

**Intersection Level Of Service Report
Intersection 8: Flynn Ln & Camden St**

Control Type:	Two-way stop	Delay (sec / veh):	10.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.007

Intersection Setup

Name	Flynn Ln		Flynn Ln		Camden St	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Flynn Ln		Flynn Ln		Camden St	
Base Volume Input [veh/h]	103	7	22	94	5	13
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	103	7	22	94	5	13
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	2	6	26	1	4
Total Analysis Volume [veh/h]	112	8	24	102	5	14
Pedestrian Volume [ped/h]	0		0		0	



Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.02	0.00	0.01	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	7.49	0.00	10.16	8.94
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.05	0.05	0.07	0.07
95th-Percentile Queue Length [ft/ln]	0.00	0.00	1.25	1.25	1.69	1.69
d_A, Approach Delay [s/veh]	0.00		1.43		9.26	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.34					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 9: Flynn Ln & England Blvd

Control Type: Two-way stop
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 61.2
 Level Of Service: F
 Volume to Capacity (v/c): 0.163

Intersection Setup

Name	Flynn Ln			Flynn Ln			England Blvd			England Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			T			T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			25.00			30.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Flynn Ln			Flynn Ln			England Blvd			England Blvd		
Base Volume Input [veh/h]	2	74	65	17	79	3	21	324	15	58	461	15
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	3.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	74	65	17	79	3	21	324	15	58	461	15
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	20	18	5	21	1	6	88	4	16	125	4
Total Analysis Volume [veh/h]	2	80	71	18	86	3	23	352	16	63	501	16
Pedestrian Volume [ped/h]	0			0			0			0		



Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.38	0.10	0.16	0.41	0.01	0.02	0.00	0.00	0.05	0.01	0.00
d_M, Delay for Movement [s/veh]	45.11	33.26	21.43	61.25	45.84	35.06	8.51	0.00	0.00	8.19	0.00	0.00
Movement LOS	E	D	C	F	E	E	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	2.63	2.63	2.63	3.12	3.12	3.12	0.07	0.00	0.00	0.17	0.00	0.00
95th-Percentile Queue Length [ft/ln]	65.81	65.81	65.81	77.88	77.88	77.88	1.68	0.00	0.00	4.19	0.00	0.00
d_A, Approach Delay [s/veh]	27.93			48.13			0.50			0.89		
Approach LOS	D			E			A			A		
d_I, Intersection Delay [s/veh]	8.23											
Intersection LOS	F											

**Intersection Level Of Service Report
Intersection 10: Flynn Ln & Chelsea Dr**

Control Type: Two-way stop
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 12.5
 Level Of Service: B
 Volume to Capacity (v/c): 0.025

Intersection Setup

Name	Flynn Ln			Flynn Ln			Chelsea Dr			Chelsea Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Flynn Ln			Flynn Ln			Chelsea Dr			Chelsea Dr		
Base Volume Input [veh/h]	28	109	20	21	114	18	28	12	40	15	3	4
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	5.00	2.00	3.00	2.00	4.00	2.00	2.00	7.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	28	109	20	21	114	18	28	12	40	15	3	4
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	30	5	6	31	5	8	3	11	4	1	1
Total Analysis Volume [veh/h]	30	118	22	23	124	20	30	13	43	16	3	4
Pedestrian Volume [ped/h]	0			0			0			0		



Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.00	0.00	0.02	0.00	0.00	0.05	0.02	0.05	0.03	0.01	0.00
d_M, Delay for Movement [s/veh]	7.56	0.00	0.00	7.53	0.00	0.00	12.20	12.54	9.68	12.45	12.06	9.19
Movement LOS	A	A	A	A	A	A	B	B	A	B	B	A
95th-Percentile Queue Length [veh/ln]	0.06	0.06	0.06	0.05	0.05	0.05	0.43	0.43	0.43	0.13	0.13	0.13
95th-Percentile Queue Length [ft/ln]	1.60	1.60	1.60	1.21	1.21	1.21	10.68	10.68	10.68	3.27	3.27	3.27
d_A, Approach Delay [s/veh]	1.33			1.04			10.99			11.83		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	3.63											
Intersection LOS	B											

**Intersection Level Of Service Report
Intersection 11: Flynn Ln & Siren's Dr**

Control Type: Two-way stop
Analysis Method: HCM 6th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 11.0
Level Of Service: B
Volume to Capacity (v/c): 0.035

Intersection Setup

Name	Flynn Ln		Flynn Ln		Siren's Rd	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Flynn Ln		Flynn Ln		Siren's Rd	
Base Volume Input [veh/h]	17	137	156	13	20	24
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	18.00	2.00	2.00	2.00	5.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	17	137	156	13	20	24
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	37	42	4	5	7
Total Analysis Volume [veh/h]	18	149	170	14	22	26
Pedestrian Volume [ped/h]	0		0		0	



Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.04	0.03
d_M, Delay for Movement [s/veh]	7.81	0.00	0.00	0.00	11.00	9.29
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.04	0.00	0.00	0.00	0.11	0.09
95th-Percentile Queue Length [ft/ln]	1.05	0.00	0.00	0.00	2.74	2.32
d_A, Approach Delay [s/veh]	0.84		0.00		10.07	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	1.56					
Intersection LOS	B					

**Intersection Level Of Service Report
Intersection 12: Flynn Ln & Mullan Rd**

Control Type: Two-way stop
Analysis Method: HCM 6th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 126.7
Level Of Service: F
Volume to Capacity (v/c): 0.984

Intersection Setup

Name	Flynn Ln			Mullan Rd			Mullan Rd					
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↶			↷			↶↷			↷↶		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			25.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Flynn Ln			Mullan Rd			Mullan Rd					
Base Volume Input [veh/h]	0	0	1	0	0	139	55	685	1	1	1364	99
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	1	0	0	139	55	685	1	1	1364	99
Peak Hour Factor	1.0000	1.0000	0.9200	0.9200	1.0000	0.9200	0.9200	0.9200	1.0000	1.0000	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	0	0	38	15	186	0	0	371	27
Total Analysis Volume [veh/h]	0	0	1	0	0	151	60	745	1	1	1483	108
Pedestrian Volume [ped/h]	0			0			0			0		



Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.98	0.15	0.01	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	13.72	0.00	0.00	126.72	15.21	0.00	0.00	9.18	0.00	0.00
Movement LOS			B			F	C	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.01	0.00	0.00	7.37	0.51	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.18	0.00	0.00	184.24	12.63	0.00	0.00	0.09	0.00	0.00
d_A, Approach Delay [s/veh]	13.72		126.72			1.13			0.01			
Approach LOS	B		F			A			A			
d_I, Intersection Delay [s/veh]	7.87											
Intersection LOS	F											



Intersection Level Of Service Report
Intersection 13: Mary Jane Blvd & Mullan Rd

Control Type:	Two-way stop	Delay (sec / veh):	1,689.6
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	4.130

Intersection Setup

Name	Mary Jane Blvd		Mullan Rd		Mullan Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Mary Jane Blvd		Mullan Rd		Mullan Rd	
Base Volume Input [veh/h]	109	135	119	565	1330	125
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	109	135	119	565	1330	125
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	30	37	32	154	361	34
Total Analysis Volume [veh/h]	118	147	129	614	1446	136
Pedestrian Volume [ped/h]	0		0		0	



Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	4.13	0.91	0.31	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	1689.62	104.79	17.51	0.00	0.00	0.00
Movement LOS	F	F	C	A	A	A
95th-Percentile Queue Length [veh/ln]	14.28	6.57	1.30	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	356.94	164.36	32.58	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	810.49		3.04		0.00	
Approach LOS	F		A		A	
d_I, Intersection Delay [s/veh]	83.80					
Intersection LOS	F					

**Intersection Level Of Service Report
Intersection 14: Mary Jane Blvd & O'Leary St**

Control Type:	Two-way stop	Delay (sec / veh):	15.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.037

Intersection Setup

Name	Mary Jane Blvd			Mary Jane Blvd			O'Leary St			O'Leary St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mary Jane Blvd			Mary Jane Blvd			O'Leary St			O'Leary St		
Base Volume Input [veh/h]	14	212	18	31	175	27	17	6	55	13	5	15
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	212	18	31	175	27	17	6	55	13	5	15
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	58	5	8	48	7	5	2	15	4	1	4
Total Analysis Volume [veh/h]	15	230	20	34	190	29	18	7	60	14	5	16
Pedestrian Volume [ped/h]	0			0			0			0		



Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.03	0.00	0.00	0.04	0.02	0.07	0.04	0.01	0.02
d_M, Delay for Movement [s/veh]	7.70	0.00	0.00	7.81	0.00	0.00	14.47	14.36	10.15	15.00	14.09	10.03
Movement LOS	A	A	A	A	A	A	B	B	B	B	B	B
95th-Percentile Queue Length [veh/ln]	0.03	0.03	0.03	0.08	0.08	0.08	0.45	0.45	0.45	0.22	0.22	0.22
95th-Percentile Queue Length [ft/ln]	0.84	0.84	0.84	1.99	1.99	1.99	11.28	11.28	11.28	5.52	5.52	5.52
d_A, Approach Delay [s/veh]	0.44			1.05			11.41			12.60		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	2.81											
Intersection LOS	B											

**Intersection Level Of Service Report
Intersection 15: Mary Jane Blvd & Melrose PI**

Control Type:	Two-way stop	Delay (sec / veh):	20.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.161

Intersection Setup

Name	Mary Jane Blvd			Mary Jane Blvd			Melrose PI			Melrose PI		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mary Jane Blvd			Mary Jane Blvd			Melrose PI			Melrose PI		
Base Volume Input [veh/h]	38	193	13	35	180	37	50	57	41	11	48	8
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	3.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	38	193	13	35	180	37	50	57	41	11	48	8
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	52	4	10	49	10	14	15	11	3	13	2
Total Analysis Volume [veh/h]	41	210	14	38	196	40	54	62	45	12	52	9
Pedestrian Volume [ped/h]	0			0			0			0		



Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.00	0.00	0.03	0.00	0.00	0.16	0.16	0.05	0.04	0.14	0.01
d_M, Delay for Movement [s/veh]	7.79	0.00	0.00	7.75	0.00	0.00	20.68	19.27	14.33	18.96	16.54	11.48
Movement LOS	A	A	A	A	A	A	C	C	B	C	C	B
95th-Percentile Queue Length [veh/ln]	0.10	0.10	0.10	0.09	0.09	0.09	1.72	1.72	1.72	0.68	0.68	0.68
95th-Percentile Queue Length [ft/ln]	2.38	2.38	2.38	2.18	2.18	2.18	42.92	42.92	42.92	16.94	16.94	16.94
d_A, Approach Delay [s/veh]	1.21			1.08			18.36			16.31		
Approach LOS	A			A			C			C		
d_I, Intersection Delay [s/veh]	6.16											
Intersection LOS	C											

**Intersection Level Of Service Report
Intersection 16: Mary Jane Blvd & England Blvd**

Control Type:	Two-way stop	Delay (sec / veh):	1,324.9
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	3.171

Intersection Setup

Name	Mary Jane Blvd			Mary Jane Blvd			England Blvd			England Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵			↵			↵			↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mary Jane Blvd			Mary Jane Blvd			England Blvd			England Blvd		
Base Volume Input [veh/h]	68	78	106	92	156	14	26	348	33	64	452	93
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	68	78	106	92	156	14	26	348	33	64	452	93
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	21	29	25	42	4	7	95	9	17	123	25
Total Analysis Volume [veh/h]	74	85	115	100	170	15	28	378	36	70	491	101
Pedestrian Volume [ped/h]	0			0			0			0		



Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	3.17	0.49	0.18	1.37	0.94	0.03	0.03	0.00	0.00	0.06	0.00	0.00
d_M, Delay for Movement [s/veh]	1324.9	47.13	31.77	332.58	109.27	95.97	8.77	0.00	0.00	8.35	0.00	0.00
Movement LOS	F	E	D	F	F	F	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	9.31	4.45	4.45	8.06	7.98	7.98	0.09	0.00	0.00	0.20	0.00	0.00
95th-Percentile Queue Length [ft/ln]	232.82	111.34	111.34	201.40	199.52	199.52	2.20	0.00	0.00	4.88	0.00	0.00
d_A, Approach Delay [s/veh]	385.79			186.92			0.56			0.88		
Approach LOS	F			F			A			A		
d_I, Intersection Delay [s/veh]	96.10											
Intersection LOS	F											

**Intersection Level Of Service Report
Intersection 17: Mary Jane Blvd & Camden St**

Control Type:	Two-way stop	Delay (sec / veh):	14.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.007

Intersection Setup

Name	Mary Jane Blvd			Mary Jane Blvd			Camden St			Camden St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mary Jane Blvd			Mary Jane Blvd			Camden St			Camden St		
Base Volume Input [veh/h]	8	183	4	13	222	26	13	14	39	3	12	8
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	8	183	4	13	222	26	13	14	39	3	12	8
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	50	1	4	60	7	4	4	11	1	3	2
Total Analysis Volume [veh/h]	9	199	4	14	241	28	14	15	42	3	13	9
Pedestrian Volume [ped/h]	0			0			0			0		



Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.01	0.00	0.00	0.03	0.03	0.05	0.01	0.03	0.01
d_M, Delay for Movement [s/veh]	7.80	0.00	0.00	7.66	0.00	0.00	13.80	13.60	10.38	13.95	13.26	9.61
Movement LOS	A	A	A	A	A	A	B	B	B	B	B	A
95th-Percentile Queue Length [veh/ln]	0.02	0.02	0.02	0.03	0.03	0.03	0.40	0.40	0.40	0.15	0.15	0.15
95th-Percentile Queue Length [ft/ln]	0.52	0.52	0.52	0.77	0.77	0.77	9.91	9.91	9.91	3.65	3.65	3.65
d_A, Approach Delay [s/veh]	0.33			0.38			11.74			12.03		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	2.22											
Intersection LOS	B											

**Intersection Level Of Service Report
Intersection 18: Mary Jane Blvd & Flynn Ln**

Control Type:	Two-way stop	Delay (sec / veh):	20.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.149

Intersection Setup

Name	Mary Jane Blvd			Mary Jane Blvd			Flynn Ln			Flynn Ln		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mary Jane Blvd			Mary Jane Blvd			Flynn Ln			Flynn Ln		
Base Volume Input [veh/h]	3	165	37	53	219	55	43	55	18	23	58	28
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	165	37	53	219	55	43	55	18	23	58	28
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	45	10	14	60	15	12	15	5	6	16	8
Total Analysis Volume [veh/h]	3	179	40	58	238	60	47	60	20	25	63	30
Pedestrian Volume [ped/h]	0			0			0			0		



Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.04	0.00	0.00	0.15	0.15	0.03	0.08	0.16	0.04
d_M, Delay for Movement [s/veh]	7.86	0.00	0.00	7.79	0.00	0.00	20.92	18.82	14.20	19.29	17.63	12.49
Movement LOS	A	A	A	A	A	A	C	C	B	C	C	B
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.01	0.13	0.13	0.13	1.41	1.41	1.41	1.12	1.12	1.12
95th-Percentile Queue Length [ft/ln]	0.18	0.18	0.18	3.36	3.36	3.36	35.32	35.32	35.32	27.96	27.96	27.96
d_A, Approach Delay [s/veh]	0.11			1.27			18.87			16.67		
Approach LOS	A			A			C			C		
d_I, Intersection Delay [s/veh]	5.88											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 19: Mary Jane Blvd & Veteran's Way

Control Type:	Two-way stop	Delay (sec / veh):	18.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.255

Intersection Setup

Name	Mary Jane Blvd			Mary Jane Blvd			Veteran's Way			Veteran's Way		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mary Jane Blvd			Mary Jane Blvd			Veteran's Way			Veteran's Way		
Base Volume Input [veh/h]	4	232	0	0	315	90	84	0	10	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	5.00	2.00	2.00	5.00	2.00	20.00	2.00	20.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	4	232	0	0	315	90	84	0	10	0	0	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	63	0	0	86	24	23	0	3	0	0	0
Total Analysis Volume [veh/h]	4	252	0	0	342	98	91	0	11	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		



Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.00	0.02	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	8.23	0.00	0.00	7.74	0.00	0.00	18.67	17.90	14.38	14.72	14.95	9.58
Movement LOS	A	A	A	A	A	A	C	C	B	B	B	A
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.01	0.00	0.00	0.00	1.09	1.09	1.09	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.27	0.27	0.27	0.00	0.00	0.00	27.27	27.27	27.27	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.13			0.00			18.21			13.08		
Approach LOS	A			A			C			B		
d_I, Intersection Delay [s/veh]	2.37											
Intersection LOS	C											



Intersection Level Of Service Report
Intersection 20: Mary Jane Blvd & W Broadway St

Control Type:	Two-way stop	Delay (sec / veh):	1,331.9
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	3.662

Intersection Setup

Name	Mary Jane Blvd		W Broadway St		W Broadway St	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Mary Jane Blvd		W Broadway St		W Broadway St	
Base Volume Input [veh/h]	216	101	1471	223	184	1097
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.00	3.00	2.00	3.00	3.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	216	101	1471	223	184	1097
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	59	27	400	61	50	298
Total Analysis Volume [veh/h]	235	110	1599	242	200	1192
Pedestrian Volume [ped/h]	0		0		0	



Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	Yes		
Number of Storage Spaces in Median	1	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	3.66	0.34	0.02	0.00	0.62	0.01
d_M, Delay for Movement [s/veh]	1331.86	21.56	0.00	0.00	32.79	0.00
Movement LOS	F	C	A	A	D	A
95th-Percentile Queue Length [veh/ln]	24.89	1.45	0.00	0.00	3.90	0.00
95th-Percentile Queue Length [ft/ln]	622.35	36.24	0.00	0.00	97.61	0.00
d_A, Approach Delay [s/veh]	914.08		0.00		4.71	
Approach LOS	F		A		A	
d_I, Intersection Delay [s/veh]	89.97					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 21: Flynn Ln & W Broadway St

Control Type:	Two-way stop	Delay (sec / veh):	58.1
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.882

Intersection Setup

Name	Flynn Ln		W Broadway St		W Broadway St	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↶		↷		↷	
Turning Movement	Left	Thru	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	1	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	49.21	0.00	0.00
Speed [mph]	25.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Flynn Ln		W Broadway St		W Broadway St	
Base Volume Input [veh/h]	0	283	1397	143	0	1280
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	2.00	2.00	2.00	0.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	283	1397	143	0	1280
Peak Hour Factor	0.7900	0.9200	0.9200	0.9200	0.7900	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	77	380	39	0	348
Total Analysis Volume [veh/h]	0	308	1518	155	0	1391
Pedestrian Volume [ped/h]	0		0		0	



Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.88	0.02	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	58.11	0.00	0.00	0.00	0.00
Movement LOS		F	A	A		A
95th-Percentile Queue Length [veh/ln]	0.00	8.48	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	212.10	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	58.11		0.00		0.00	
Approach LOS	F		A		A	
d_I, Intersection Delay [s/veh]	5.31					
Intersection LOS	F					

Signal Warrants Report For Intersection 1: George Elmer Dr & W Broadway St

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	Yes
#2	Four Hour Vehicular Volume	Yes
#3	Peak Hour	Yes

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N, S
Speed > 40mph	Yes
Population < 10,000	No
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	E	W	N	S
1	1236	1686	3	364
2	1187	1619	3	349
3	1162	1585	3	342
4	989	1349	2	291
5	939	1281	2	277
6	840	1146	2	248
7	779	1062	2	229
8	742	1012	2	218
9	593	809	1	175
10	556	759	1	164
11	556	759	1	164
12	531	725	1	157
13	482	658	1	142
14	445	607	1	131
15	445	607	1	131
16	433	590	1	127
17	247	337	1	73
18	136	185	0	40
19	124	169	0	36
20	49	67	0	15
21	37	51	0	11
22	37	51	0	11
23	25	34	0	7
24	25	34	0	7

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3 Condition B
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		
1	6	2922	3	367	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2	6	2806	3	352	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3	6	2747	3	345	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4	6	2338	3	293	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5	6	2220	3	279	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
6	6	1986	3	250	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
7	6	1841	3	231	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
8	6	1754	3	220	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
9	6	1402	3	176	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
10	6	1315	3	165	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
11	6	1315	3	165	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
12	6	1256	3	158	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
13	6	1140	3	143	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
14	6	1052	3	132	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No
15	6	1052	3	132	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No
16	6	1023	3	128	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No
17	6	584	3	74	No	No	No	No	No	No	No	Yes	No	No
18	6	321	3	40	No	No	No	No	No	No	No	No	No	No
19	6	293	3	36	No	No	No	No	No	No	No	No	No	No
20	6	116	3	15	No	No	No	No	No	No	No	No	No	No
21	6	88	3	11	No	No	No	No	No	No	No	No	No	No
22	6	88	3	11	No	No	No	No	No	No	No	No	No	No
23	6	59	3	7	No	No	No	No	No	No	No	No	No	No
24	6	59	3	7	No	No	No	No	No	No	No	No	No	No
Hours Met					8	11	13	16	16	16	16	17	16	13

Warrant 3 Condition A

Orientation	N	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	777.7	5648.2
Number of Lanes on Minor Street Approach	1	2
VehicleHours of Stopped Delay on Minor Approach (h:mm)	0:38	571:05
Delay Condition Met	No	Yes
Volume on Minor Street Approach During Same Hour	3	364
High Minor Volume Condition Met	No	Yes
Total Entering Volume on All Approaches During Same Hour	3289	3289
Number of Approaches on Intersection	4	4
Total Volume Condition Met	Yes	Yes
Warrant Met for Approach	No	Yes
Warrant Met for Intersection	Yes	

Signal Warrants Report For Intersection 2: George Elmer Dr & England Blvd

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	Yes
#2	Four Hour Vehicular Volume	Yes
#3	Peak Hour	Yes

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	S, N
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	E	W	S	N
1	516	582	387	395
2	495	559	372	379
3	485	547	364	371
4	413	466	310	316
5	392	442	294	300
6	351	396	263	269
7	325	367	244	249
8	310	349	232	237
9	248	279	186	190
10	232	262	174	178
11	232	262	174	178
12	222	250	166	170
13	201	227	151	154
14	186	210	139	142
15	186	210	139	142
16	181	204	135	138
17	103	116	77	79
18	57	64	43	43
19	52	58	39	40
20	21	23	15	16
21	15	17	12	12
22	15	17	12	12
23	10	12	8	8
24	10	12	8	8

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3 Condition B
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		
1	4	1098	4	782	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2	4	1054	4	751	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3	4	1032	4	735	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4	4	879	4	626	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No
5	4	834	4	594	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No
6	4	747	4	532	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No
7	4	692	4	493	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No
8	4	659	4	469	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No
9	4	527	4	376	No	Yes	Yes	Yes	No	No	No	Yes	No	No
10	4	494	4	352	No	Yes	Yes	Yes	No	No	No	No	No	No
11	4	494	4	352	No	Yes	Yes	Yes	No	No	No	No	No	No
12	4	472	4	336	No	No	Yes	Yes	No	No	No	No	No	No
13	4	428	4	305	No	No	Yes	Yes	No	No	No	No	No	No
14	4	396	4	281	No	No	No	Yes	No	No	No	No	No	No
15	4	396	4	281	No	No	No	Yes	No	No	No	No	No	No
16	4	385	4	273	No	No	No	Yes	No	No	No	No	No	No
17	4	219	4	156	No	No	No	No	No	No	No	No	No	No
18	4	121	4	86	No	No	No	No	No	No	No	No	No	No
19	4	110	4	79	No	No	No	No	No	No	No	No	No	No
20	4	44	4	31	No	No	No	No	No	No	No	No	No	No
21	4	32	4	24	No	No	No	No	No	No	No	No	No	No
22	4	32	4	24	No	No	No	No	No	No	No	No	No	No
23	4	22	4	16	No	No	No	No	No	No	No	No	No	No
24	4	22	4	16	No	No	No	No	No	No	No	No	No	No
Hours Met					8	11	13	16	3	6	8	9	5	3

Warrant 3 Condition A

Orientation	S	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	3903.7	1450.1
Number of Lanes on Minor Street Approach	2	2
VehicleHours of Stopped Delay on Minor Approach (h:mm)	419:39	159:06
Delay Condition Met	Yes	Yes
Volume on Minor Street Approach During Same Hour	387	395
High Minor Volume Condition Met	Yes	Yes
Total Entering Volume on All Approaches During Same Hour	1880	1880
Number of Approaches on Intersection	4	4
Total Volume Condition Met	Yes	Yes
Warrant Met for Approach	Yes	Yes
Warrant Met for Intersection	Yes	

Signal Warrants Report For Intersection 3: George Elmer Dr & Cattle Dr

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	E, W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	S	N	E	W
1	489	371	37	60
2	469	356	36	58
3	460	349	35	56
4	391	297	30	48
5	372	282	28	46
6	333	252	25	41
7	308	234	23	38
8	293	223	22	36
9	235	178	18	29
10	220	167	17	27
11	220	167	17	27
12	210	160	16	26
13	191	145	14	23
14	176	134	13	22
15	176	134	13	22
16	171	130	13	21
17	98	74	7	12
18	54	41	4	7
19	49	37	4	6
20	20	15	1	2
21	15	11	1	2
22	15	11	1	2
23	10	7	1	1
24	10	7	1	1

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3 Condition B
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		
1	4	860	2	97	No	No	No	No	No	Yes	Yes	Yes	No	No
2	4	825	2	94	No	No	No	No	No	No	Yes	Yes	No	No
3	4	809	2	91	No	No	No	No	No	No	Yes	Yes	No	No
4	4	688	2	78	No	No	No	No	No	No	No	Yes	No	No
5	4	654	2	74	No	No	No	No	No	No	No	Yes	No	No
6	4	585	2	66	No	No	No	No	No	No	No	No	No	No
7	4	542	2	61	No	No	No	No	No	No	No	No	No	No
8	4	516	2	58	No	No	No	No	No	No	No	No	No	No
9	4	413	2	47	No	No	No	No	No	No	No	No	No	No
10	4	387	2	44	No	No	No	No	No	No	No	No	No	No
11	4	387	2	44	No	No	No	No	No	No	No	No	No	No
12	4	370	2	42	No	No	No	No	No	No	No	No	No	No
13	4	336	2	37	No	No	No	No	No	No	No	No	No	No
14	4	310	2	35	No	No	No	No	No	No	No	No	No	No
15	4	310	2	35	No	No	No	No	No	No	No	No	No	No
16	4	301	2	34	No	No	No	No	No	No	No	No	No	No
17	4	172	2	19	No	No	No	No	No	No	No	No	No	No
18	4	95	2	11	No	No	No	No	No	No	No	No	No	No
19	4	86	2	10	No	No	No	No	No	No	No	No	No	No
20	4	35	2	3	No	No	No	No	No	No	No	No	No	No
21	4	26	2	3	No	No	No	No	No	No	No	No	No	No
22	4	26	2	3	No	No	No	No	No	No	No	No	No	No
23	4	17	2	2	No	No	No	No	No	No	No	No	No	No
24	4	17	2	2	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	1	3	5	0	0

Warrant 3 Condition A

Orientation	E	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	15	21.5
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach (h:mm)	0:09	0:21
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	37	60
High Minor Volume Condition Met	No	No
Total Entering Volume on All Approaches During Same Hour	957	957
Number of Approaches on Intersection	4	4
Total Volume Condition Met	Yes	Yes
Warrant Met for Approach	No	No
Warrant Met for Intersection	No	

Signal Warrants Report For Intersection 4: George Elmer Dr & Heron's Landing

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	E, W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	S	N	E	W
1	534	400	51	51
2	513	384	49	49
3	502	376	48	48
4	427	320	41	41
5	406	304	39	39
6	363	272	35	35
7	336	252	32	32
8	320	240	31	31
9	256	192	24	24
10	240	180	23	23
11	240	180	23	23
12	230	172	22	22
13	208	156	20	20
14	192	144	18	18
15	192	144	18	18
16	187	140	18	18
17	107	80	10	10
18	59	44	6	6
19	53	40	5	5
20	21	16	2	2
21	16	12	2	2
22	16	12	2	2
23	11	8	1	1
24	11	8	1	1

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3 Condition B
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		
1	4	934	2	102	No	No	No	No	No	No	No	Yes	No	No
2	4	897	2	98	No	No	No	No	No	No	No	Yes	No	No
3	4	878	2	96	No	No	No	No	No	No	No	Yes	No	No
4	4	747	2	82	No	No	No	No	No	No	No	No	No	No
5	4	710	2	78	No	No	No	No	No	No	No	No	No	No
6	4	635	2	70	No	No	No	No	No	No	No	No	No	No
7	4	588	2	64	No	No	No	No	No	No	No	No	No	No
8	4	560	2	62	No	No	No	No	No	No	No	No	No	No
9	4	448	2	48	No	No	No	No	No	No	No	No	No	No
10	4	420	2	46	No	No	No	No	No	No	No	No	No	No
11	4	420	2	46	No	No	No	No	No	No	No	No	No	No
12	4	402	2	44	No	No	No	No	No	No	No	No	No	No
13	4	364	2	40	No	No	No	No	No	No	No	No	No	No
14	4	336	2	36	No	No	No	No	No	No	No	No	No	No
15	4	336	2	36	No	No	No	No	No	No	No	No	No	No
16	4	327	2	36	No	No	No	No	No	No	No	No	No	No
17	4	187	2	20	No	No	No	No	No	No	No	No	No	No
18	4	103	2	12	No	No	No	No	No	No	No	No	No	No
19	4	93	2	10	No	No	No	No	No	No	No	No	No	No
20	4	37	2	4	No	No	No	No	No	No	No	No	No	No
21	4	28	2	4	No	No	No	No	No	No	No	No	No	No
22	4	28	2	4	No	No	No	No	No	No	No	No	No	No
23	4	19	2	2	No	No	No	No	No	No	No	No	No	No
24	4	19	2	2	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	3	0	0

Warrant 3 Condition A

Orientation	E	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	20.5	25.7
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach (h:mm)	0:17	0:21
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	51	51
High Minor Volume Condition Met	No	No
Total Entering Volume on All Approaches During Same Hour	1036	1036
Number of Approaches on Intersection	4	4
Total Volume Condition Met	Yes	Yes
Warrant Met for Approach	No	No
Warrant Met for Intersection	No	

Signal Warrants Report For Intersection 5: George Elmer Dr & Mullan Rd

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	Yes
#2	Four Hour Vehicular Volume	Yes
#3	Peak Hour	Yes

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N
Speed > 40mph	Yes
Population < 10,000	No
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	N
1	1538	816	379
2	1476	783	364
3	1446	767	356
4	1230	653	303
5	1169	620	288
6	1046	555	258
7	969	514	239
8	923	490	227
9	738	392	182
10	692	367	171
11	692	367	171
12	661	351	163
13	600	318	148
14	554	294	136
15	554	294	136
16	538	286	133
17	308	163	76
18	169	90	42
19	154	82	38
20	62	33	15
21	46	24	11
22	46	24	11
23	31	16	8
24	31	16	8

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3 Condition B
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		
1	4	2354	2	379	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2	4	2259	2	364	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3	4	2213	2	356	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4	4	1883	2	303	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5	4	1789	2	288	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
6	4	1601	2	258	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
7	4	1483	2	239	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
8	4	1413	2	227	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
9	4	1130	2	182	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
10	4	1059	2	171	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
11	4	1059	2	171	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
12	4	1012	2	163	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
13	4	918	2	148	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
14	4	848	2	136	No	No	No	Yes	No	Yes	Yes	Yes	Yes	No
15	4	848	2	136	No	No	No	Yes	No	Yes	Yes	Yes	Yes	No
16	4	824	2	133	No	No	No	Yes	No	Yes	Yes	Yes	Yes	No
17	4	471	2	76	No	No	No	No	No	No	No	No	No	No
18	4	259	2	42	No	No	No	No	No	No	No	No	No	No
19	4	236	2	38	No	No	No	No	No	No	No	No	No	No
20	4	95	2	15	No	No	No	No	No	No	No	No	No	No
21	4	70	2	11	No	No	No	No	No	No	No	No	No	No
22	4	70	2	11	No	No	No	No	No	No	No	No	No	No
23	4	47	2	8	No	No	No	No	No	No	No	No	No	No
24	4	47	2	8	No	No	No	No	No	No	No	No	No	No
Hours Met					8	12	13	16	13	16	16	16	16	12

Warrant 3 Condition A

Orientation	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	747.5
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach (h:mm)	78:41
Delay Condition Met	Yes
Volume on Minor Street Approach During Same Hour	379
High Minor Volume Condition Met	Yes
Total Entering Volume on All Approaches During Same Hour	2733
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	Yes
Warrant Met for Intersection	Yes

Signal Warrants Report For Intersection 6: Dougherty Dr & England Blvd

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	N
1	466	399	211
2	447	383	203
3	438	375	198
4	373	319	169
5	354	303	160
6	317	271	143
7	294	251	133
8	280	239	127
9	224	192	101
10	210	180	95
11	210	180	95
12	200	172	91
13	182	156	82
14	168	144	76
15	168	144	76
16	163	140	74
17	93	80	42
18	51	44	23
19	47	40	21
20	19	16	8
21	14	12	6
22	14	12	6
23	9	8	4
24	9	8	4

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3 Condition B
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		
1	3	865	2	211	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No
2	3	830	2	203	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No
3	3	813	2	198	No	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No
4	3	692	2	169	No	Yes	Yes	Yes	No	No	Yes	Yes	No	No
5	3	657	2	160	No	Yes	Yes	Yes	No	No	Yes	Yes	No	No
6	3	588	2	143	No	No	Yes	Yes	No	No	No	Yes	No	No
7	3	545	2	133	No	No	No	Yes	No	No	No	Yes	No	No
8	3	519	2	127	No	No	No	Yes	No	No	No	Yes	No	No
9	3	416	2	101	No	No	No	No	No	No	No	No	No	No
10	3	390	2	95	No	No	No	No	No	No	No	No	No	No
11	3	390	2	95	No	No	No	No	No	No	No	No	No	No
12	3	372	2	91	No	No	No	No	No	No	No	No	No	No
13	3	338	2	82	No	No	No	No	No	No	No	No	No	No
14	3	312	2	76	No	No	No	No	No	No	No	No	No	No
15	3	312	2	76	No	No	No	No	No	No	No	No	No	No
16	3	303	2	74	No	No	No	No	No	No	No	No	No	No
17	3	173	2	42	No	No	No	No	No	No	No	No	No	No
18	3	95	2	23	No	No	No	No	No	No	No	No	No	No
19	3	87	2	21	No	No	No	No	No	No	No	No	No	No
20	3	35	2	8	No	No	No	No	No	No	No	No	No	No
21	3	26	2	6	No	No	No	No	No	No	No	No	No	No
22	3	26	2	6	No	No	No	No	No	No	No	No	No	No
23	3	17	2	4	No	No	No	No	No	No	No	No	No	No
24	3	17	2	4	No	No	No	No	No	No	No	No	No	No
Hours Met					2	5	6	8	0	3	5	8	0	0

Warrant 3 Condition A

Orientation	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	29.6
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach ([h]:mm)	1:44
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	211
High Minor Volume Condition Met	Yes
Total Entering Volume on All Approaches During Same Hour	1076
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	No
Warrant Met for Intersection	No

Signal Warrants Report For Intersection 7: Dougherty Dr & W Broadway St

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	Yes
#2	Four Hour Vehicular Volume	Yes
#3	Peak Hour	Yes

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	S
Speed > 40mph	Yes
Population < 10,000	No
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	S
1	1314	1594	475
2	1261	1530	456
3	1235	1498	447
4	1051	1275	380
5	999	1211	361
6	894	1084	323
7	828	1004	299
8	788	956	285
9	631	765	228
10	591	717	214
11	591	717	214
12	565	685	204
13	512	622	185
14	473	574	171
15	473	574	171
16	460	558	166
17	263	319	95
18	145	175	52
19	131	159	48
20	53	64	19
21	39	48	14
22	39	48	14
23	26	32	10
24	26	32	10

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3 Condition B
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		
1	6	2908	2	475	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2	6	2791	2	456	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3	6	2733	2	447	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4	6	2326	2	380	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5	6	2210	2	361	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
6	6	1978	2	323	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
7	6	1832	2	299	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
8	6	1744	2	285	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
9	6	1396	2	228	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
10	6	1308	2	214	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
11	6	1308	2	214	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
12	6	1250	2	204	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
13	6	1134	2	185	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
14	6	1047	2	171	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
15	6	1047	2	171	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
16	6	1018	2	166	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
17	6	582	2	95	No	No	No	No	No	No	No	Yes	No	No
18	6	320	2	52	No	No	No	No	No	No	No	No	No	No
19	6	290	2	48	No	No	No	No	No	No	No	No	No	No
20	6	117	2	19	No	No	No	No	No	No	No	No	No	No
21	6	87	2	14	No	No	No	No	No	No	No	No	No	No
22	6	87	2	14	No	No	No	No	No	No	No	No	No	No
23	6	58	2	10	No	No	No	No	No	No	No	No	No	No
24	6	58	2	10	No	No	No	No	No	No	No	No	No	No
Hours Met					12	16	16	16	16	16	16	17	16	16

Warrant 3 Condition A

Orientation	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	670.2
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach (h:mm)	88:25
Delay Condition Met	Yes
Volume on Minor Street Approach During Same Hour	475
High Minor Volume Condition Met	Yes
Total Entering Volume on All Approaches During Same Hour	3383
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	Yes
Warrant Met for Intersection	Yes

Signal Warrants Report For Intersection 8: Flynn Ln & Camden St

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	N	S	E
1	116	110	18
2	111	106	17
3	109	103	17
4	93	88	14
5	88	84	14
6	79	75	12
7	73	69	11
8	70	66	11
9	56	53	9
10	52	50	8
11	52	50	8
12	50	47	8
13	45	43	7
14	42	40	6
15	42	40	6
16	41	39	6
17	23	22	4
18	13	12	2
19	12	11	2
20	5	4	1
21	3	3	1
22	3	3	1
23	2	2	0
24	2	2	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3 Condition B
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		
1	2	226	1	18	No	No	No	No	No	No	No	No	No	No
2	2	217	1	17	No	No	No	No	No	No	No	No	No	No
3	2	212	1	17	No	No	No	No	No	No	No	No	No	No
4	2	181	1	14	No	No	No	No	No	No	No	No	No	No
5	2	172	1	14	No	No	No	No	No	No	No	No	No	No
6	2	154	1	12	No	No	No	No	No	No	No	No	No	No
7	2	142	1	11	No	No	No	No	No	No	No	No	No	No
8	2	136	1	11	No	No	No	No	No	No	No	No	No	No
9	2	109	1	9	No	No	No	No	No	No	No	No	No	No
10	2	102	1	8	No	No	No	No	No	No	No	No	No	No
11	2	102	1	8	No	No	No	No	No	No	No	No	No	No
12	2	97	1	8	No	No	No	No	No	No	No	No	No	No
13	2	88	1	7	No	No	No	No	No	No	No	No	No	No
14	2	82	1	6	No	No	No	No	No	No	No	No	No	No
15	2	82	1	6	No	No	No	No	No	No	No	No	No	No
16	2	80	1	6	No	No	No	No	No	No	No	No	No	No
17	2	45	1	4	No	No	No	No	No	No	No	No	No	No
18	2	25	1	2	No	No	No	No	No	No	No	No	No	No
19	2	23	1	2	No	No	No	No	No	No	No	No	No	No
20	2	9	1	1	No	No	No	No	No	No	No	No	No	No
21	2	6	1	1	No	No	No	No	No	No	No	No	No	No
22	2	6	1	1	No	No	No	No	No	No	No	No	No	No
23	2	4	1	0	No	No	No	No	No	No	No	No	No	No
24	2	4	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	9.3
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach (h:mm)	0:02
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	18
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	244
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	No

Signal Warrants Report For Intersection 9: Flynn Ln & England Blvd

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N, S
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	E	W	N	S
1	534	360	99	141
2	513	346	95	135
3	502	338	93	133
4	427	288	79	113
5	406	274	75	107
6	363	245	67	96
7	336	227	62	89
8	320	216	59	85
9	256	173	48	68
10	240	162	45	63
11	240	162	45	63
12	230	155	43	61
13	208	140	39	55
14	192	130	36	51
15	192	130	36	51
16	187	126	35	49
17	107	72	20	28
18	59	40	11	16
19	53	36	10	14
20	21	14	4	6
21	16	11	3	4
22	16	11	3	4
23	11	7	2	3
24	11	7	2	3

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3 Condition B
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		
1	4	894	2	240	No	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No
2	4	859	2	230	No	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No
3	4	840	2	226	No	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No
4	4	715	2	192	No	No	Yes	Yes	No	No	Yes	Yes	No	No
5	4	680	2	182	No	No	Yes	Yes	No	No	Yes	Yes	No	No
6	4	608	2	163	No	No	No	Yes	No	No	No	Yes	No	No
7	4	563	2	151	No	No	No	Yes	No	No	No	Yes	No	No
8	4	536	2	144	No	No	No	Yes	No	No	No	Yes	No	No
9	4	429	2	116	No	No	No	No	No	No	No	No	No	No
10	4	402	2	108	No	No	No	No	No	No	No	No	No	No
11	4	402	2	108	No	No	No	No	No	No	No	No	No	No
12	4	385	2	104	No	No	No	No	No	No	No	No	No	No
13	4	348	2	94	No	No	No	No	No	No	No	No	No	No
14	4	322	2	87	No	No	No	No	No	No	No	No	No	No
15	4	322	2	87	No	No	No	No	No	No	No	No	No	No
16	4	313	2	84	No	No	No	No	No	No	No	No	No	No
17	4	179	2	48	No	No	No	No	No	No	No	No	No	No
18	4	99	2	27	No	No	No	No	No	No	No	No	No	No
19	4	89	2	24	No	No	No	No	No	No	No	No	No	No
20	4	35	2	10	No	No	No	No	No	No	No	No	No	No
21	4	27	2	7	No	No	No	No	No	No	No	No	No	No
22	4	27	2	7	No	No	No	No	No	No	No	No	No	No
23	4	18	2	5	No	No	No	No	No	No	No	No	No	No
24	4	18	2	5	No	No	No	No	No	No	No	No	No	No
Hours Met					0	3	5	8	0	3	5	8	0	0

Warrant 3 Condition A

Orientation	N	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	48.1	27.9
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach (h:mm)	1:19	1:05
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	99	141
High Minor Volume Condition Met	No	Yes
Total Entering Volume on All Approaches During Same Hour	1134	1134
Number of Approaches on Intersection	4	4
Total Volume Condition Met	Yes	Yes
Warrant Met for Approach	No	No
Warrant Met for Intersection	No	

Signal Warrants Report For Intersection 10: Flynn Ln & Chelsea Dr

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	E, W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	S	N	E	W
1	157	153	22	80
2	151	147	21	77
3	148	144	21	75
4	126	122	18	64
5	119	116	17	61
6	107	104	15	54
7	99	96	14	50
8	94	92	13	48
9	75	73	11	38
10	71	69	10	36
11	71	69	10	36
12	68	66	9	34
13	61	60	9	31
14	57	55	8	29
15	57	55	8	29
16	55	54	8	28
17	31	31	4	16
18	17	17	2	9
19	16	15	2	8
20	6	6	1	3
21	5	5	1	2
22	5	5	1	2
23	3	3	0	2
24	3	3	0	2

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3 Condition B
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		
1	2	310	2	102	No	No	No	No	No	No	No	No	No	No
2	2	298	2	98	No	No	No	No	No	No	No	No	No	No
3	2	292	2	96	No	No	No	No	No	No	No	No	No	No
4	2	248	2	82	No	No	No	No	No	No	No	No	No	No
5	2	235	2	78	No	No	No	No	No	No	No	No	No	No
6	2	211	2	69	No	No	No	No	No	No	No	No	No	No
7	2	195	2	64	No	No	No	No	No	No	No	No	No	No
8	2	186	2	61	No	No	No	No	No	No	No	No	No	No
9	2	148	2	49	No	No	No	No	No	No	No	No	No	No
10	2	140	2	46	No	No	No	No	No	No	No	No	No	No
11	2	140	2	46	No	No	No	No	No	No	No	No	No	No
12	2	134	2	43	No	No	No	No	No	No	No	No	No	No
13	2	121	2	40	No	No	No	No	No	No	No	No	No	No
14	2	112	2	37	No	No	No	No	No	No	No	No	No	No
15	2	112	2	37	No	No	No	No	No	No	No	No	No	No
16	2	109	2	36	No	No	No	No	No	No	No	No	No	No
17	2	62	2	20	No	No	No	No	No	No	No	No	No	No
18	2	34	2	11	No	No	No	No	No	No	No	No	No	No
19	2	31	2	10	No	No	No	No	No	No	No	No	No	No
20	2	12	2	4	No	No	No	No	No	No	No	No	No	No
21	2	10	2	3	No	No	No	No	No	No	No	No	No	No
22	2	10	2	3	No	No	No	No	No	No	No	No	No	No
23	2	6	2	2	No	No	No	No	No	No	No	No	No	No
24	2	6	2	2	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	11.8	11
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach (h:mm)	0:04	0:14
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	22	80
High Minor Volume Condition Met	No	No
Total Entering Volume on All Approaches During Same Hour	412	412
Number of Approaches on Intersection	4	4
Total Volume Condition Met	No	No
Warrant Met for Approach	No	No
Warrant Met for Intersection	No	

Signal Warrants Report For Intersection 11: Flynn Ln & Siren's Dr

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	N	S	W
1	169	154	44
2	162	148	42
3	159	145	41
4	135	123	35
5	128	117	33
6	115	105	30
7	106	97	28
8	101	92	26
9	81	74	21
10	76	69	20
11	76	69	20
12	73	66	19
13	66	60	17
14	61	55	16
15	61	55	16
16	59	54	15
17	34	31	9
18	19	17	5
19	17	15	4
20	7	6	2
21	5	5	1
22	5	5	1
23	3	3	1
24	3	3	1

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3 Condition B
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		
1	3	323	2	44	No	No	No	No	No	No	No	No	No	No
2	3	310	2	42	No	No	No	No	No	No	No	No	No	No
3	3	304	2	41	No	No	No	No	No	No	No	No	No	No
4	3	258	2	35	No	No	No	No	No	No	No	No	No	No
5	3	245	2	33	No	No	No	No	No	No	No	No	No	No
6	3	220	2	30	No	No	No	No	No	No	No	No	No	No
7	3	203	2	28	No	No	No	No	No	No	No	No	No	No
8	3	193	2	26	No	No	No	No	No	No	No	No	No	No
9	3	155	2	21	No	No	No	No	No	No	No	No	No	No
10	3	145	2	20	No	No	No	No	No	No	No	No	No	No
11	3	145	2	20	No	No	No	No	No	No	No	No	No	No
12	3	139	2	19	No	No	No	No	No	No	No	No	No	No
13	3	126	2	17	No	No	No	No	No	No	No	No	No	No
14	3	116	2	16	No	No	No	No	No	No	No	No	No	No
15	3	116	2	16	No	No	No	No	No	No	No	No	No	No
16	3	113	2	15	No	No	No	No	No	No	No	No	No	No
17	3	65	2	9	No	No	No	No	No	No	No	No	No	No
18	3	36	2	5	No	No	No	No	No	No	No	No	No	No
19	3	32	2	4	No	No	No	No	No	No	No	No	No	No
20	3	13	2	2	No	No	No	No	No	No	No	No	No	No
21	3	10	2	1	No	No	No	No	No	No	No	No	No	No
22	3	10	2	1	No	No	No	No	No	No	No	No	No	No
23	3	6	2	1	No	No	No	No	No	No	No	No	No	No
24	3	6	2	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	10.1
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach (h:mm)	0:07
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	44
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	367
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	No

Signal Warrants Report For Intersection 12: Flynn Ln & Mullan Rd

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	Yes
#2	Four Hour Vehicular Volume	Yes
#3	Peak Hour	Yes

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N, S
Speed > 40mph	Yes
Population < 10,000	No
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	E	W	N	S
1	1464	741	139	1
2	1405	711	133	1
3	1376	697	131	1
4	1171	593	111	1
5	1113	563	106	1
6	996	504	95	1
7	922	467	88	1
8	878	445	83	1
9	703	356	67	0
10	659	333	63	0
11	659	333	63	0
12	630	319	60	0
13	571	289	54	0
14	527	267	50	0
15	527	267	50	0
16	512	259	49	0
17	293	148	28	0
18	161	82	15	0
19	146	74	14	0
20	59	30	6	0
21	44	22	4	0
22	44	22	4	0
23	29	15	3	0
24	29	15	3	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3 Condition B
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		
1	5	2205	2	140	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2	5	2116	2	134	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3	5	2073	2	132	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4	5	1764	2	112	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5	5	1676	2	107	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
6	5	1500	2	96	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
7	5	1389	2	89	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
8	5	1323	2	84	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
9	5	1059	2	67	No	No	No	No	No	Yes	Yes	Yes	Yes	No
10	5	992	2	63	No	No	No	No	No	Yes	Yes	Yes	Yes	No
11	5	992	2	63	No	No	No	No	No	Yes	Yes	Yes	Yes	No
12	5	949	2	60	No	No	No	No	No	Yes	Yes	Yes	No	No
13	5	860	2	54	No	No	No	No	No	No	Yes	Yes	No	No
14	5	794	2	50	No	No	No	No	No	No	No	Yes	No	No
15	5	794	2	50	No	No	No	No	No	No	No	Yes	No	No
16	5	771	2	49	No	No	No	No	No	No	No	Yes	No	No
17	5	441	2	28	No	No	No	No	No	No	No	No	No	No
18	5	243	2	15	No	No	No	No	No	No	No	No	No	No
19	5	220	2	14	No	No	No	No	No	No	No	No	No	No
20	5	89	2	6	No	No	No	No	No	No	No	No	No	No
21	5	66	2	4	No	No	No	No	No	No	No	No	No	No
22	5	66	2	4	No	No	No	No	No	No	No	No	No	No
23	5	44	2	3	No	No	No	No	No	No	No	No	No	No
24	5	44	2	3	No	No	No	No	No	No	No	No	No	No
Hours Met					0	3	5	7	8	12	13	16	11	8

Warrant 3 Condition A

Orientation	N	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	126.7	13.7
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach (h:mm)	4:53	0:00
Delay Condition Met	Yes	No
Volume on Minor Street Approach During Same Hour	139	1
High Minor Volume Condition Met	Yes	No
Total Entering Volume on All Approaches During Same Hour	2345	2345
Number of Approaches on Intersection	4	4
Total Volume Condition Met	Yes	Yes
Warrant Met for Approach	Yes	No
Warrant Met for Intersection	Yes	

Signal Warrants Report For Intersection 13: Mary Jane Blvd & Mullan Rd

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	Yes
#2	Four Hour Vehicular Volume	Yes
#3	Peak Hour	Yes

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N
Speed > 40mph	Yes
Population < 10,000	No
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	N
1	1455	684	244
2	1397	657	234
3	1368	643	229
4	1164	547	195
5	1106	520	185
6	989	465	166
7	917	431	154
8	873	410	146
9	698	328	117
10	655	308	110
11	655	308	110
12	626	294	105
13	567	267	95
14	524	246	88
15	524	246	88
16	509	239	85
17	291	137	49
18	160	75	27
19	146	68	24
20	58	27	10
21	44	21	7
22	44	21	7
23	29	14	5
24	29	14	5

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3 Condition B
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		
1	4	2139	2	244	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2	4	2054	2	234	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3	4	2011	2	229	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4	4	1711	2	195	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5	4	1626	2	185	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
6	4	1454	2	166	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
7	4	1348	2	154	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
8	4	1283	2	146	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
9	4	1026	2	117	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No
10	4	963	2	110	No	No	No	No	Yes	Yes	Yes	Yes	Yes	No
11	4	963	2	110	No	No	No	No	Yes	Yes	Yes	Yes	Yes	No
12	4	920	2	105	No	No	No	No	Yes	Yes	Yes	Yes	Yes	No
13	4	834	2	95	No	No	No	No	No	Yes	Yes	Yes	No	No
14	4	770	2	88	No	No	No	No	No	Yes	Yes	Yes	No	No
15	4	770	2	88	No	No	No	No	No	Yes	Yes	Yes	No	No
16	4	748	2	85	No	No	No	No	No	Yes	Yes	Yes	No	No
17	4	428	2	49	No	No	No	No	No	No	No	No	No	No
18	4	235	2	27	No	No	No	No	No	No	No	No	No	No
19	4	214	2	24	No	No	No	No	No	No	No	No	No	No
20	4	85	2	10	No	No	No	No	No	No	No	No	No	No
21	4	65	2	7	No	No	No	No	No	No	No	No	No	No
22	4	65	2	7	No	No	No	No	No	No	No	No	No	No
23	4	43	2	5	No	No	No	No	No	No	No	No	No	No
24	4	43	2	5	No	No	No	No	No	No	No	No	No	No
Hours Met					3	6	8	9	12	16	16	16	12	8

Warrant 3 Condition A

Orientation	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	810.5
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach (h:mm)	54:55
Delay Condition Met	Yes
Volume on Minor Street Approach During Same Hour	244
High Minor Volume Condition Met	Yes
Total Entering Volume on All Approaches During Same Hour	2383
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	Yes
Warrant Met for Intersection	Yes

Signal Warrants Report For Intersection 14: Mary Jane Blvd & O'Leary St

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E, W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	N	S	E	W
1	233	244	33	78
2	224	234	32	75
3	219	229	31	73
4	186	195	26	62
5	177	185	25	59
6	158	166	22	53
7	147	154	21	49
8	140	146	20	47
9	112	117	16	37
10	105	110	15	35
11	105	110	15	35
12	100	105	14	34
13	91	95	13	30
14	84	88	12	28
15	84	88	12	28
16	82	85	12	27
17	47	49	7	16
18	26	27	4	9
19	23	24	3	8
20	9	10	1	3
21	7	7	1	2
22	7	7	1	2
23	5	5	1	2
24	5	5	1	2

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3 Condition B
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		
1	2	477	2	111	No	No	No	No	No	No	No	No	No	No
2	2	458	2	107	No	No	No	No	No	No	No	No	No	No
3	2	448	2	104	No	No	No	No	No	No	No	No	No	No
4	2	381	2	88	No	No	No	No	No	No	No	No	No	No
5	2	362	2	84	No	No	No	No	No	No	No	No	No	No
6	2	324	2	75	No	No	No	No	No	No	No	No	No	No
7	2	301	2	70	No	No	No	No	No	No	No	No	No	No
8	2	286	2	67	No	No	No	No	No	No	No	No	No	No
9	2	229	2	53	No	No	No	No	No	No	No	No	No	No
10	2	215	2	50	No	No	No	No	No	No	No	No	No	No
11	2	215	2	50	No	No	No	No	No	No	No	No	No	No
12	2	205	2	48	No	No	No	No	No	No	No	No	No	No
13	2	186	2	43	No	No	No	No	No	No	No	No	No	No
14	2	172	2	40	No	No	No	No	No	No	No	No	No	No
15	2	172	2	40	No	No	No	No	No	No	No	No	No	No
16	2	167	2	39	No	No	No	No	No	No	No	No	No	No
17	2	96	2	23	No	No	No	No	No	No	No	No	No	No
18	2	53	2	13	No	No	No	No	No	No	No	No	No	No
19	2	47	2	11	No	No	No	No	No	No	No	No	No	No
20	2	19	2	4	No	No	No	No	No	No	No	No	No	No
21	2	14	2	3	No	No	No	No	No	No	No	No	No	No
22	2	14	2	3	No	No	No	No	No	No	No	No	No	No
23	2	10	2	3	No	No	No	No	No	No	No	No	No	No
24	2	10	2	3	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	12.6	11.4
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach (h:mm)	0:06	0:14
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	33	78
High Minor Volume Condition Met	No	No
Total Entering Volume on All Approaches During Same Hour	588	588
Number of Approaches on Intersection	4	4
Total Volume Condition Met	No	No
Warrant Met for Approach	No	No
Warrant Met for Intersection	No	

Signal Warrants Report For Intersection 15: Mary Jane Blvd & Melrose Pl

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E, W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	N	S	E	W
1	252	244	67	148
2	242	234	64	142
3	237	229	63	139
4	202	195	54	118
5	192	185	51	112
6	171	166	46	101
7	159	154	42	93
8	151	146	40	89
9	121	117	32	71
10	113	110	30	67
11	113	110	30	67
12	108	105	29	64
13	98	95	26	58
14	91	88	24	53
15	91	88	24	53
16	88	85	23	52
17	50	49	13	30
18	28	27	7	16
19	25	24	7	15
20	10	10	3	6
21	8	7	2	4
22	8	7	2	4
23	5	5	1	3
24	5	5	1	3



Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3 Condition B
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		
1	2	496	2	215	No	Yes	Yes	Yes	No	No	No	No	No	No
2	2	476	2	206	No	No	Yes	Yes	No	No	No	No	No	No
3	2	466	2	202	No	No	Yes	Yes	No	No	No	No	No	No
4	2	397	2	172	No	No	No	Yes	No	No	No	No	No	No
5	2	377	2	163	No	No	No	Yes	No	No	No	No	No	No
6	2	337	2	147	No	No	No	Yes	No	No	No	No	No	No
7	2	313	2	135	No	No	No	No	No	No	No	No	No	No
8	2	297	2	129	No	No	No	No	No	No	No	No	No	No
9	2	238	2	103	No	No	No	No	No	No	No	No	No	No
10	2	223	2	97	No	No	No	No	No	No	No	No	No	No
11	2	223	2	97	No	No	No	No	No	No	No	No	No	No
12	2	213	2	93	No	No	No	No	No	No	No	No	No	No
13	2	193	2	84	No	No	No	No	No	No	No	No	No	No
14	2	179	2	77	No	No	No	No	No	No	No	No	No	No
15	2	179	2	77	No	No	No	No	No	No	No	No	No	No
16	2	173	2	75	No	No	No	No	No	No	No	No	No	No
17	2	99	2	43	No	No	No	No	No	No	No	No	No	No
18	2	55	2	23	No	No	No	No	No	No	No	No	No	No
19	2	49	2	22	No	No	No	No	No	No	No	No	No	No
20	2	20	2	9	No	No	No	No	No	No	No	No	No	No
21	2	15	2	6	No	No	No	No	No	No	No	No	No	No
22	2	15	2	6	No	No	No	No	No	No	No	No	No	No
23	2	10	2	4	No	No	No	No	No	No	No	No	No	No
24	2	10	2	4	No	No	No	No	No	No	No	No	No	No
Hours Met					0	1	3	6	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	16.3	18.4
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach (h:mm)	0:18	0:45
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	67	148
High Minor Volume Condition Met	No	Yes
Total Entering Volume on All Approaches During Same Hour	711	711
Number of Approaches on Intersection	4	4
Total Volume Condition Met	No	No
Warrant Met for Approach	No	No
Warrant Met for Intersection	No	

Signal Warrants Report For Intersection 16: Mary Jane Blvd & England Blvd

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	Yes

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	S, N
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	E	W	S	N
1	609	407	252	262
2	585	391	242	252
3	572	383	237	246
4	487	326	202	210
5	463	309	192	199
6	414	277	171	178
7	384	256	159	165
8	365	244	151	157
9	292	195	121	126
10	274	183	113	118
11	274	183	113	118
12	262	175	108	113
13	238	159	98	102
14	219	147	91	94
15	219	147	91	94
16	213	142	88	92
17	122	81	50	52
18	67	45	28	29
19	61	41	25	26
20	24	16	10	10
21	18	12	8	8
22	18	12	8	8
23	12	8	5	5
24	12	8	5	5

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3 Condition B
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		
1	4	1016	4	514	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
2	4	976	4	494	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
3	4	955	4	483	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
4	4	813	4	412	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No
5	4	772	4	391	No	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No
6	4	691	4	349	No	Yes	Yes	Yes	No	No	Yes	Yes	No	No
7	4	640	4	324	No	Yes	Yes	Yes	No	No	Yes	Yes	No	No
8	4	609	4	308	No	No	Yes	Yes	No	No	No	Yes	No	No
9	4	487	4	247	No	No	No	Yes	No	No	No	No	No	No
10	4	457	4	231	No	No	No	Yes	No	No	No	No	No	No
11	4	457	4	231	No	No	No	Yes	No	No	No	No	No	No
12	4	437	4	221	No	No	No	Yes	No	No	No	No	No	No
13	4	397	4	200	No	No	No	No	No	No	No	No	No	No
14	4	366	4	185	No	No	No	No	No	No	No	No	No	No
15	4	366	4	185	No	No	No	No	No	No	No	No	No	No
16	4	355	4	180	No	No	No	No	No	No	No	No	No	No
17	4	203	4	102	No	No	No	No	No	No	No	No	No	No
18	4	112	4	57	No	No	No	No	No	No	No	No	No	No
19	4	102	4	51	No	No	No	No	No	No	No	No	No	No
20	4	40	4	20	No	No	No	No	No	No	No	No	No	No
21	4	30	4	16	No	No	No	No	No	No	No	No	No	No
22	4	30	4	16	No	No	No	No	No	No	No	No	No	No
23	4	20	4	10	No	No	No	No	No	No	No	No	No	No
24	4	20	4	10	No	No	No	No	No	No	No	No	No	No
Hours Met					4	7	8	12	3	5	7	8	3	0

Warrant 3 Condition A

Orientation	S	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	385.8	186.9
Number of Lanes on Minor Street Approach	2	2
VehicleHours of Stopped Delay on Minor Approach ([h]:mm)	27:00	13:36
Delay Condition Met	Yes	Yes
Volume on Minor Street Approach During Same Hour	252	262
High Minor Volume Condition Met	Yes	Yes
Total Entering Volume on All Approaches During Same Hour	1530	1530
Number of Approaches on Intersection	4	4
Total Volume Condition Met	Yes	Yes
Warrant Met for Approach	Yes	Yes
Warrant Met for Intersection	Yes	

Signal Warrants Report For Intersection 17: Mary Jane Blvd & Camden St

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	E, W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	S	N	E	W
1	195	261	23	66
2	187	251	22	63
3	183	245	22	62
4	156	209	18	53
5	148	198	17	50
6	133	177	16	45
7	123	164	14	42
8	117	157	14	40
9	94	125	11	32
10	88	117	10	30
11	88	117	10	30
12	84	112	10	28
13	76	102	9	26
14	70	94	8	24
15	70	94	8	24
16	68	91	8	23
17	39	52	5	13
18	21	29	3	7
19	20	26	2	7
20	8	10	1	3
21	6	8	1	2
22	6	8	1	2
23	4	5	0	1
24	4	5	0	1

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3 Condition B
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		
1	2	456	2	89	No	No	No	No	No	No	No	No	No	No
2	2	438	2	85	No	No	No	No	No	No	No	No	No	No
3	2	428	2	84	No	No	No	No	No	No	No	No	No	No
4	2	365	2	71	No	No	No	No	No	No	No	No	No	No
5	2	346	2	67	No	No	No	No	No	No	No	No	No	No
6	2	310	2	61	No	No	No	No	No	No	No	No	No	No
7	2	287	2	56	No	No	No	No	No	No	No	No	No	No
8	2	274	2	54	No	No	No	No	No	No	No	No	No	No
9	2	219	2	43	No	No	No	No	No	No	No	No	No	No
10	2	205	2	40	No	No	No	No	No	No	No	No	No	No
11	2	205	2	40	No	No	No	No	No	No	No	No	No	No
12	2	196	2	38	No	No	No	No	No	No	No	No	No	No
13	2	178	2	35	No	No	No	No	No	No	No	No	No	No
14	2	164	2	32	No	No	No	No	No	No	No	No	No	No
15	2	164	2	32	No	No	No	No	No	No	No	No	No	No
16	2	159	2	31	No	No	No	No	No	No	No	No	No	No
17	2	91	2	18	No	No	No	No	No	No	No	No	No	No
18	2	50	2	10	No	No	No	No	No	No	No	No	No	No
19	2	46	2	9	No	No	No	No	No	No	No	No	No	No
20	2	18	2	4	No	No	No	No	No	No	No	No	No	No
21	2	14	2	3	No	No	No	No	No	No	No	No	No	No
22	2	14	2	3	No	No	No	No	No	No	No	No	No	No
23	2	9	2	1	No	No	No	No	No	No	No	No	No	No
24	2	9	2	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	12	11.7
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach (h:mm)	0:04	0:12
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	23	66
High Minor Volume Condition Met	No	No
Total Entering Volume on All Approaches During Same Hour	545	545
Number of Approaches on Intersection	4	4
Total Volume Condition Met	No	No
Warrant Met for Approach	No	No
Warrant Met for Intersection	No	

Signal Warrants Report For Intersection 18: Mary Jane Blvd & Flynn Ln

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	E, W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	S	N	E	W
1	205	327	109	116
2	197	314	105	111
3	193	307	102	109
4	164	262	87	93
5	156	249	83	88
6	139	222	74	79
7	129	206	69	73
8	123	196	65	70
9	98	157	52	56
10	92	147	49	52
11	92	147	49	52
12	88	141	47	50
13	80	128	43	45
14	74	118	39	42
15	74	118	39	42
16	72	114	38	41
17	41	65	22	23
18	23	36	12	13
19	21	33	11	12
20	8	13	4	5
21	6	10	3	3
22	6	10	3	3
23	4	7	2	2
24	4	7	2	2

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3 Condition B
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		
1	2	532	2	225	No	No	Yes	Yes	No	No	No	Yes	No	No
2	2	511	2	216	No	No	Yes	Yes	No	No	No	Yes	No	No
3	2	500	2	211	No	No	Yes	Yes	No	No	No	No	No	No
4	2	426	2	180	No	No	No	Yes	No	No	No	No	No	No
5	2	405	2	171	No	No	No	Yes	No	No	No	No	No	No
6	2	361	2	153	No	No	No	No	No	No	No	No	No	No
7	2	335	2	142	No	No	No	No	No	No	No	No	No	No
8	2	319	2	135	No	No	No	No	No	No	No	No	No	No
9	2	255	2	108	No	No	No	No	No	No	No	No	No	No
10	2	239	2	101	No	No	No	No	No	No	No	No	No	No
11	2	239	2	101	No	No	No	No	No	No	No	No	No	No
12	2	229	2	97	No	No	No	No	No	No	No	No	No	No
13	2	208	2	88	No	No	No	No	No	No	No	No	No	No
14	2	192	2	81	No	No	No	No	No	No	No	No	No	No
15	2	192	2	81	No	No	No	No	No	No	No	No	No	No
16	2	186	2	79	No	No	No	No	No	No	No	No	No	No
17	2	106	2	45	No	No	No	No	No	No	No	No	No	No
18	2	59	2	25	No	No	No	No	No	No	No	No	No	No
19	2	54	2	23	No	No	No	No	No	No	No	No	No	No
20	2	21	2	9	No	No	No	No	No	No	No	No	No	No
21	2	16	2	6	No	No	No	No	No	No	No	No	No	No
22	2	16	2	6	No	No	No	No	No	No	No	No	No	No
23	2	11	2	4	No	No	No	No	No	No	No	No	No	No
24	2	11	2	4	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	3	5	0	0	0	2	0	0

Warrant 3 Condition A

Orientation	E	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	16.7	18.9
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach (h:mm)	0:30	0:36
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	109	116
High Minor Volume Condition Met	Yes	Yes
Total Entering Volume on All Approaches During Same Hour	757	757
Number of Approaches on Intersection	4	4
Total Volume Condition Met	No	No
Warrant Met for Approach	No	No
Warrant Met for Intersection	No	

Signal Warrants Report For Intersection 19: Mary Jane Blvd & Veteran's Way

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	E, W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	S	N	E	W
1	236	405	0	94
2	227	389	0	90
3	222	381	0	88
4	189	324	0	75
5	179	308	0	71
6	160	275	0	64
7	149	255	0	59
8	142	243	0	56
9	113	194	0	45
10	106	182	0	42
11	106	182	0	42
12	101	174	0	40
13	92	158	0	37
14	85	146	0	34
15	85	146	0	34
16	83	142	0	33
17	47	81	0	19
18	26	45	0	10
19	24	41	0	9
20	9	16	0	4
21	7	12	0	3
22	7	12	0	3
23	5	8	0	2
24	5	8	0	2

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3 Condition B
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		
1	2	641	2	94	No	No	No	Yes	No	No	Yes	Yes	No	No
2	2	616	2	90	No	No	No	Yes	No	No	No	Yes	No	No
3	2	603	2	88	No	No	No	Yes	No	No	No	Yes	No	No
4	2	513	2	75	No	No	No	No	No	No	No	Yes	No	No
5	2	487	2	71	No	No	No	No	No	No	No	No	No	No
6	2	435	2	64	No	No	No	No	No	No	No	No	No	No
7	2	404	2	59	No	No	No	No	No	No	No	No	No	No
8	2	385	2	56	No	No	No	No	No	No	No	No	No	No
9	2	307	2	45	No	No	No	No	No	No	No	No	No	No
10	2	288	2	42	No	No	No	No	No	No	No	No	No	No
11	2	288	2	42	No	No	No	No	No	No	No	No	No	No
12	2	275	2	40	No	No	No	No	No	No	No	No	No	No
13	2	250	2	37	No	No	No	No	No	No	No	No	No	No
14	2	231	2	34	No	No	No	No	No	No	No	No	No	No
15	2	231	2	34	No	No	No	No	No	No	No	No	No	No
16	2	225	2	33	No	No	No	No	No	No	No	No	No	No
17	2	128	2	19	No	No	No	No	No	No	No	No	No	No
18	2	71	2	10	No	No	No	No	No	No	No	No	No	No
19	2	65	2	9	No	No	No	No	No	No	No	No	No	No
20	2	25	2	4	No	No	No	No	No	No	No	No	No	No
21	2	19	2	3	No	No	No	No	No	No	No	No	No	No
22	2	19	2	3	No	No	No	No	No	No	No	No	No	No
23	2	13	2	2	No	No	No	No	No	No	No	No	No	No
24	2	13	2	2	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	3	0	0	1	4	0	0

Warrant 3 Condition A

Orientation	E	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	13.1	18.2
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach (h:mm)	0:00	0:28
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	0	94
High Minor Volume Condition Met	No	No
Total Entering Volume on All Approaches During Same Hour	735	735
Number of Approaches on Intersection	4	4
Total Volume Condition Met	No	No
Warrant Met for Approach	No	No
Warrant Met for Intersection	No	

Signal Warrants Report For Intersection 20: Mary Jane Blvd & W Broadway St

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	Yes
#2	Four Hour Vehicular Volume	Yes
#3	Peak Hour	Yes

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	S
Speed > 40mph	Yes
Population < 10,000	No
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	S
1	1281	1694	317
2	1230	1626	304
3	1204	1592	298
4	1025	1355	254
5	974	1287	241
6	871	1152	216
7	807	1067	200
8	769	1016	190
9	615	813	152
10	576	762	143
11	576	762	143
12	551	728	136
13	500	661	124
14	461	610	114
15	461	610	114
16	448	593	111
17	256	339	63
18	141	186	35
19	128	169	32
20	51	68	13
21	38	51	10
22	38	51	10
23	26	34	6
24	26	34	6

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3 Condition B
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		
1	6	2975	2	317	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2	6	2856	2	304	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3	6	2796	2	298	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4	6	2380	2	254	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5	6	2261	2	241	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
6	6	2023	2	216	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
7	6	1874	2	200	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
8	6	1785	2	190	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
9	6	1428	2	152	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
10	6	1338	2	143	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
11	6	1338	2	143	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
12	6	1279	2	136	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
13	6	1161	2	124	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
14	6	1071	2	114	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No
15	6	1071	2	114	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No
16	6	1041	2	111	No	No	No	No	Yes	Yes	Yes	Yes	Yes	No
17	6	595	2	63	No	No	No	No	No	No	No	Yes	No	No
18	6	327	2	35	No	No	No	No	No	No	No	No	No	No
19	6	297	2	32	No	No	No	No	No	No	No	No	No	No
20	6	119	2	13	No	No	No	No	No	No	No	No	No	No
21	6	89	2	10	No	No	No	No	No	No	No	No	No	No
22	6	89	2	10	No	No	No	No	No	No	No	No	No	No
23	6	60	2	6	No	No	No	No	No	No	No	No	No	No
24	6	60	2	6	No	No	No	No	No	No	No	No	No	No
Hours Met					7	8	11	15	16	16	16	17	16	13

Warrant 3 Condition A

Orientation	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	914.1
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach (h:mm)	80:29
Delay Condition Met	Yes
Volume on Minor Street Approach During Same Hour	317
High Minor Volume Condition Met	Yes
Total Entering Volume on All Approaches During Same Hour	3292
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	Yes
Warrant Met for Intersection	Yes

Signal Warrants Report For Intersection 21: Flynn Ln & W Broadway St

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	Yes
#2	Four Hour Vehicular Volume	Yes
#3	Peak Hour	Yes

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	S
Speed > 40mph	Yes
Population < 10,000	No
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	S
1	1280	1540	283
2	1229	1478	272
3	1203	1448	266
4	1024	1232	226
5	973	1170	215
6	870	1047	192
7	806	970	178
8	768	924	170
9	614	739	136
10	576	693	127
11	576	693	127
12	550	662	122
13	499	601	110
14	461	554	102
15	461	554	102
16	448	539	99
17	256	308	57
18	141	169	31
19	128	154	28
20	51	62	11
21	38	46	8
22	38	46	8
23	26	31	6
24	26	31	6

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3 Condition B
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		
1	5	2820	1	283	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2	5	2707	1	272	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3	5	2651	1	266	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4	5	2256	1	226	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5	5	2143	1	215	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
6	5	1917	1	192	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
7	5	1776	1	178	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
8	5	1692	1	170	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
9	5	1353	1	136	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
10	5	1269	1	127	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
11	5	1269	1	127	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
12	5	1212	1	122	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
13	5	1100	1	110	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
14	5	1015	1	102	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No
15	5	1015	1	102	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No
16	5	987	1	99	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No
17	5	564	1	57	No	No	No	No	No	No	No	Yes	No	No
18	5	310	1	31	No	No	No	No	No	No	No	No	No	No
19	5	282	1	28	No	No	No	No	No	No	No	No	No	No
20	5	113	1	11	No	No	No	No	No	No	No	No	No	No
21	5	84	1	8	No	No	No	No	No	No	No	No	No	No
22	5	84	1	8	No	No	No	No	No	No	No	No	No	No
23	5	57	1	6	No	No	No	No	No	No	No	No	No	No
24	5	57	1	6	No	No	No	No	No	No	No	No	No	No
Hours Met					8	12	13	16	16	16	16	17	16	13

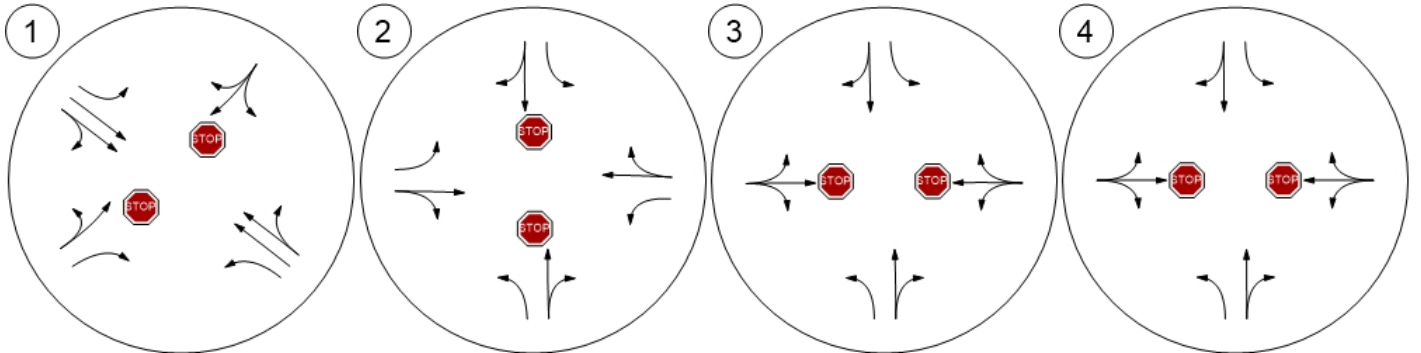
Warrant 3 Condition A

Orientation	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	58.1
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach (h:mm)	4:34
Delay Condition Met	Yes
Volume on Minor Street Approach During Same Hour	283
High Minor Volume Condition Met	Yes
Total Entering Volume on All Approaches During Same Hour	3103
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	Yes
Warrant Met for Intersection	Yes

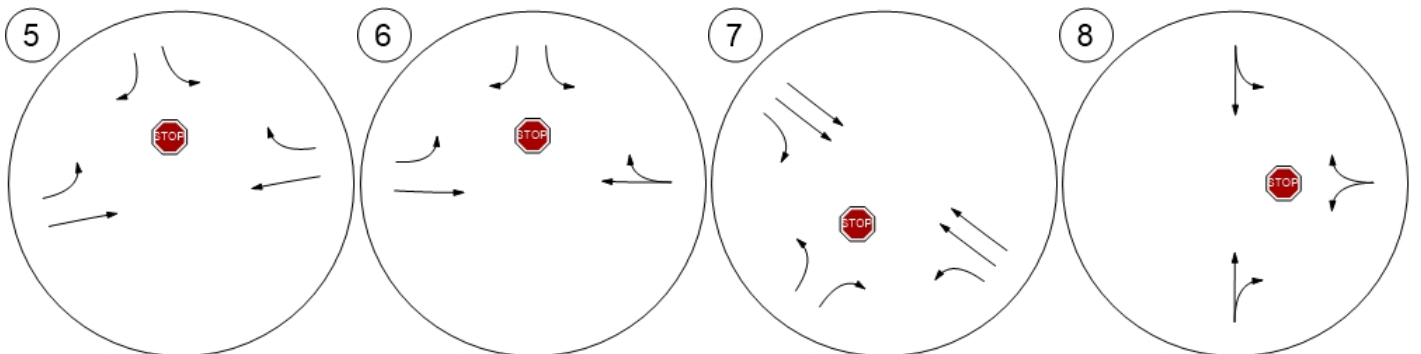
Lane Configuration and Traffic Control



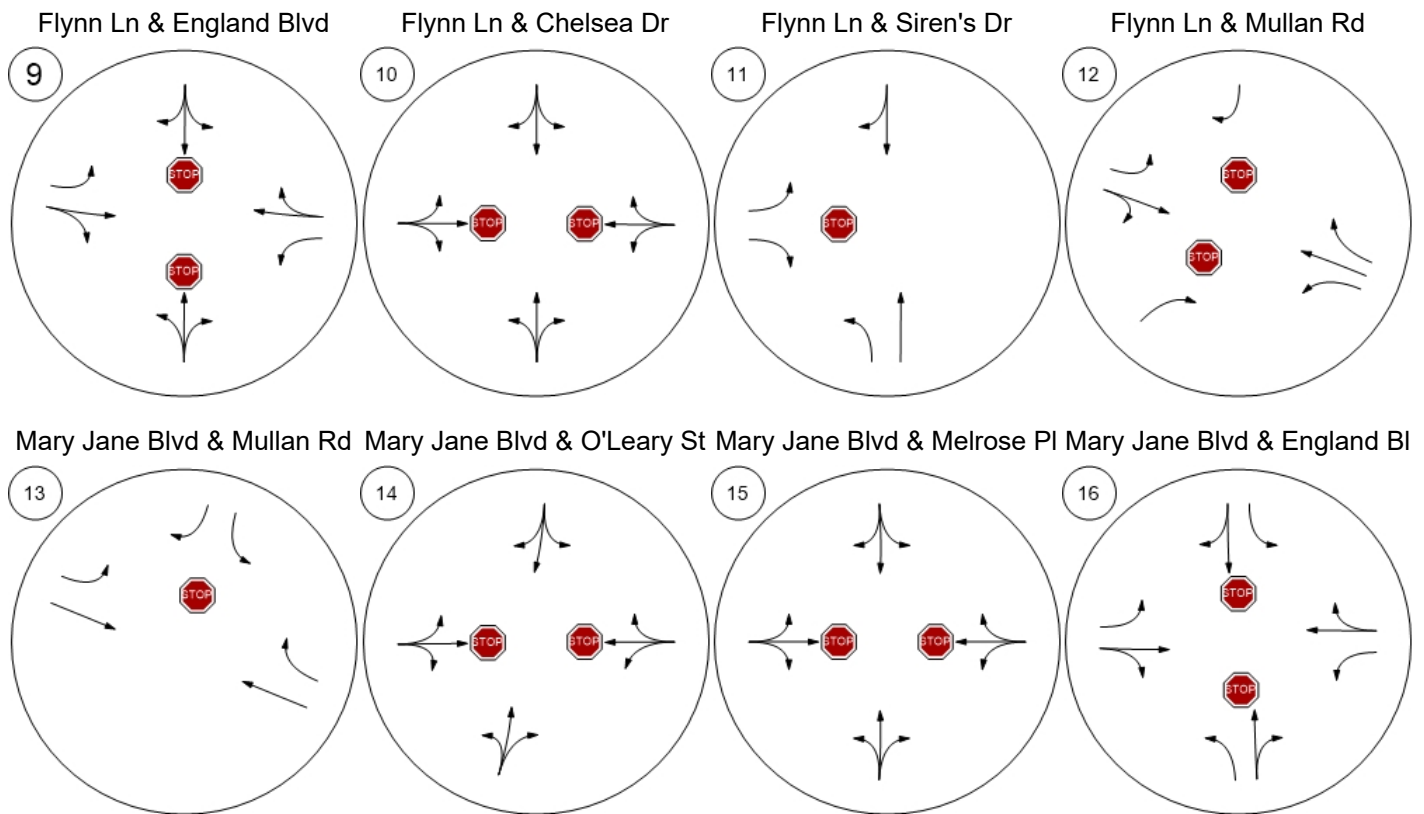
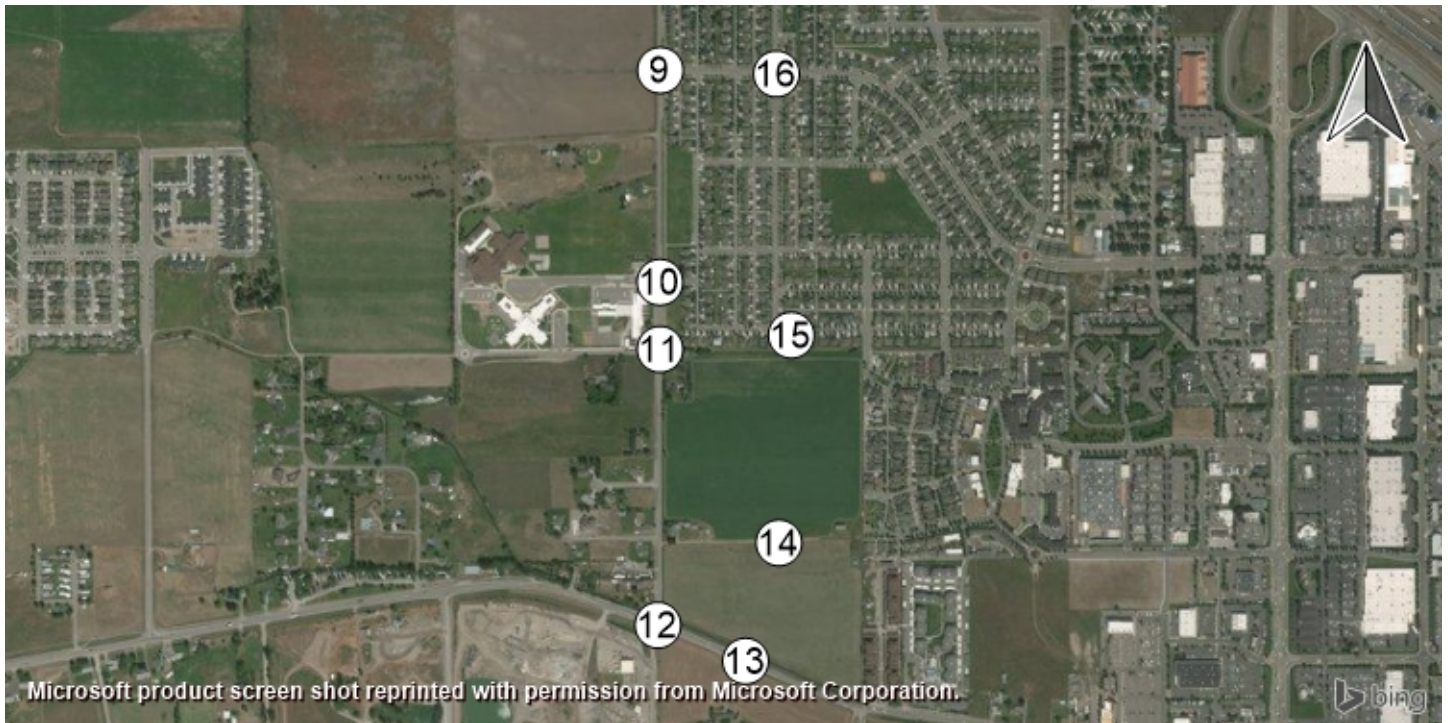
George Elmer Dr & W Broad George Elmer Dr & England George Elmer Dr & Cattle Dr George Elmer Dr & Heron's L



George Elmer Dr & Mullan R Dougherty Dr & England Blvd Dougherty Dr & W Broadway Flynn Ln & Camden St



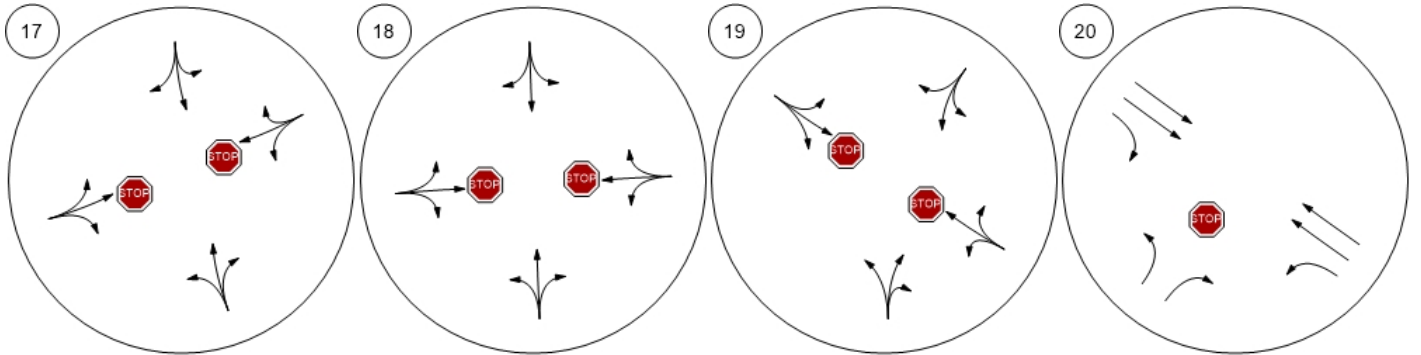
Lane Configuration and Traffic Control



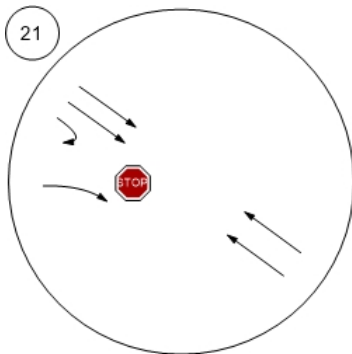
Lane Configuration and Traffic Control



Mary Jane Blvd & Camden St Mary Jane Blvd & Flynn Ln Mary Jane Blvd & Veteran's Mary Jane Blvd & W Broadw



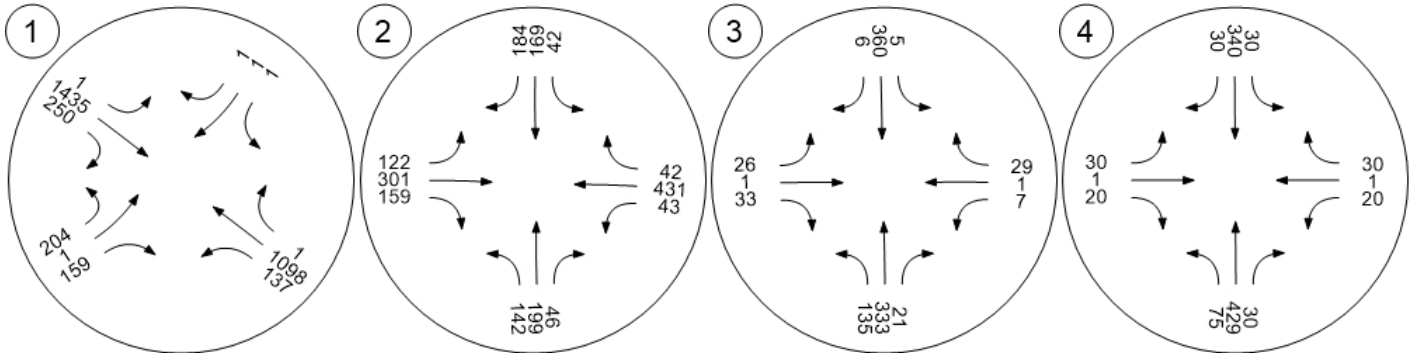
Flynn Ln & W Broadway St



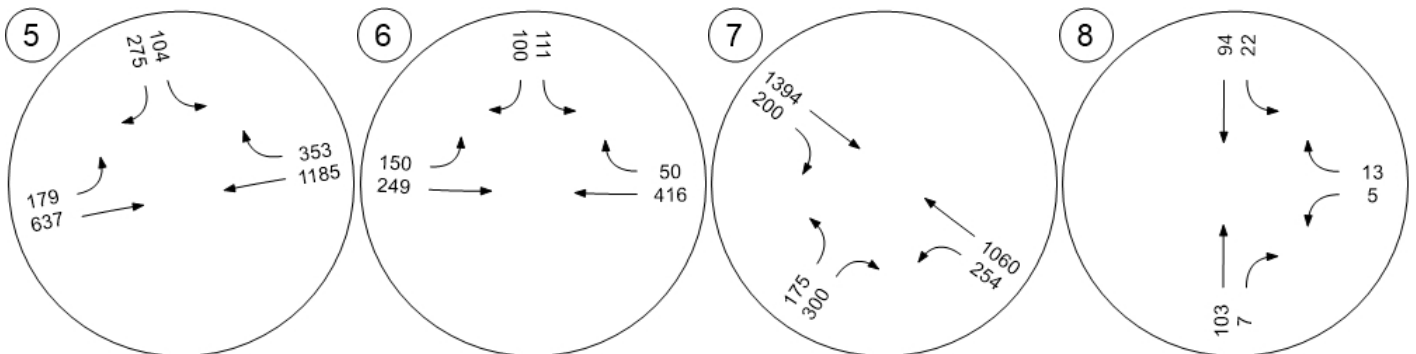
Traffic Volume - Future Total Volume



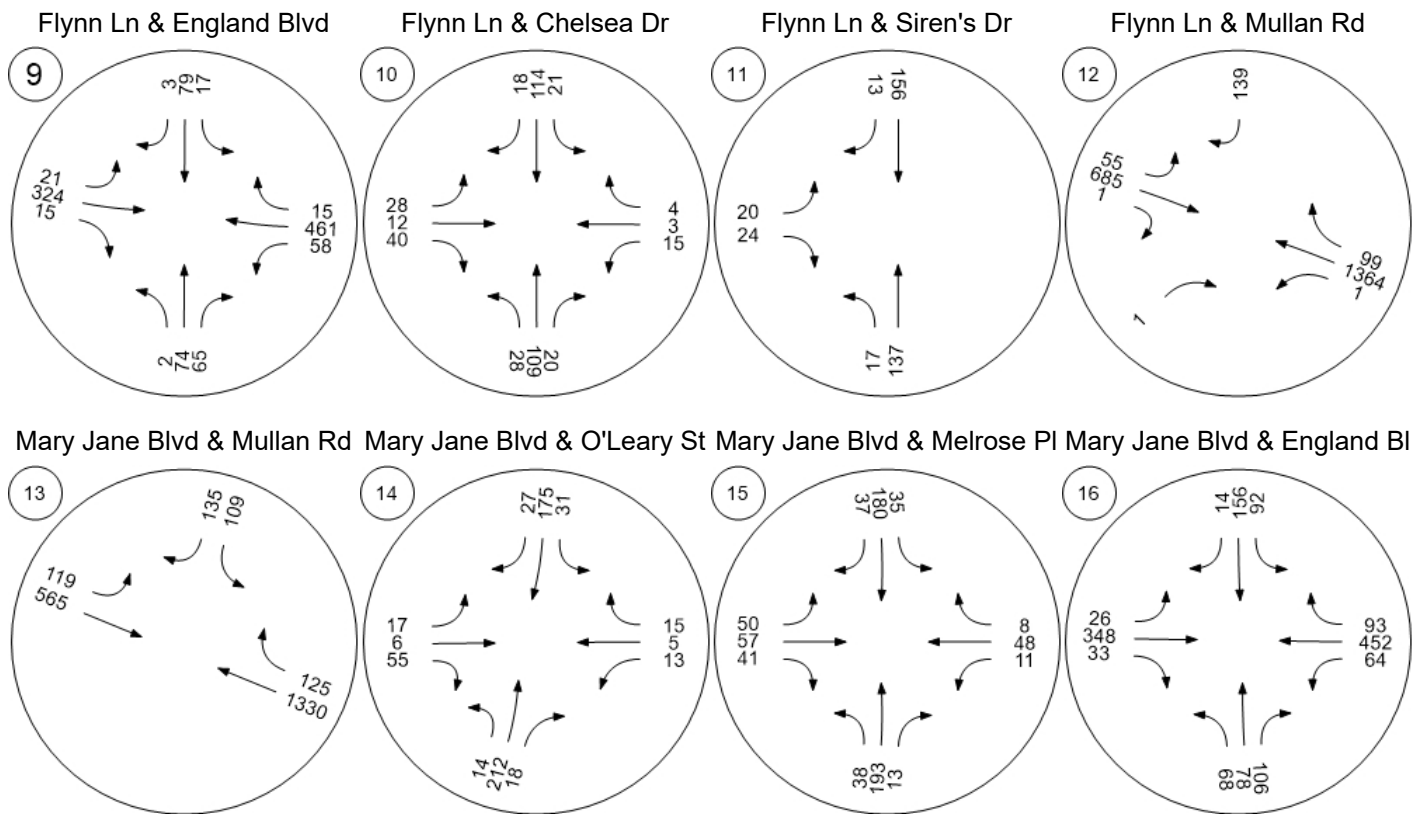
George Elmer Dr & W Broad George Elmer Dr & England George Elmer Dr & Cattle Dr George Elmer Dr & Heron's L



George Elmer Dr & Mullan R Dougherty Dr & England Blvd Dougherty Dr & W Broadway Flynn Ln & Camden St



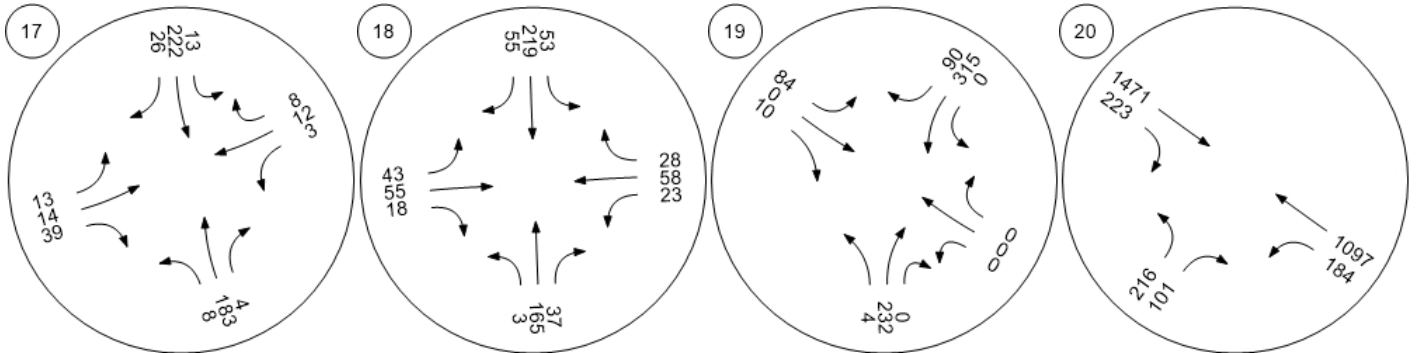
Traffic Volume - Future Total Volume



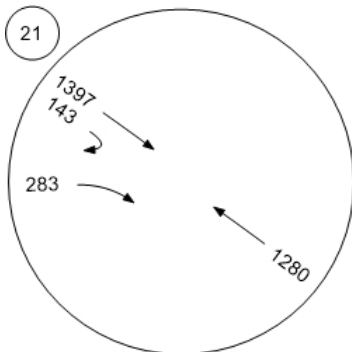
Traffic Volume - Future Total Volume



Mary Jane Blvd & Camden St Mary Jane Blvd & Flynn Ln Mary Jane Blvd & Veteran's Mary Jane Blvd & W Broadw



Flynn Ln & W Broadway St





Option 1: NB/SB Left Turn Lane

Number	9											
Intersection	Flynn Ln & England Blvd											
Control Type	Two-way stop											
Analysis Method	HCM 6th Edition											
Name	Flynn Ln			Flynn Ln			England Blvd			England Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Base Volume Input [veh/h]	2	74	65	17	79	3	21	324	15	58	461	15
Total Analysis Volume [veh/h]	2	80	71	18	86	3	23	352	16	63	501	16

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Capacity Analysis

Calculated Rank	4	3	2	4	3	2	2	1	1	2	1	1
v_c, Conflicting Flow Rate	1086	1049	360	1117	1049	509	517	0	0	368	0	0
v_c, Stage 1	406	406	360	635	635	509	517	0	0	368	0	0
v_c, Stage 2	680	643	0	482	414	0	0	0	0	0	0	0
c_p,x, Potential Capacity [veh/h]	194	227	684	185	227	564	1049	0	0	1185	0	0
c_p,x, Stage 1 [veh/h]	622	598	1272	467	472	1355	1890	0	0	1802	0	0
c_p,x, Stage 2 [veh/h]	441	468	1085	566	593	1085	1623	0	0	1617	0	0
c_m,x, Movement Capacity [veh/h]	125	211	684	111	211	564	1049	100000	100000	1185	100000	100000
c_m,x, Stage 1 [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
c_m,x, Stage 2 [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
c_T, Total Capacity [veh/h]	125	211	684	111	211	564	1049	100000	100000	1185	100000	100000

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.38	0.10	0.16	0.41	0.01	0.02	0.00	0.00	0.05	0.01	0.00
d_M, Delay for Movement [s/veh]	34.35	32.42	20.59	43.81	33.40	22.70	8.51	0.00	0.00	8.21	0.00	0.00
Movement LOS	D	D	C	E	D	C	A	A	A	A	A	A
Critical Movement	No	No	No	Yes	No	No	No	No	No	No	No	No
95th-Percentile Queue Length [veh/ln]	0.05	2.50	2.50	0.56	1.89	1.89	0.07	0.00	0.00	0.17	0.00	0.00
95th-Percentile Queue Length [ft/ln]	1.22	62.47	62.47	13.92	47.24	47.24	1.68	0.00	0.00	4.21	0.00	0.00
d_A, Approach Delay [s/veh]	26.96			34.86			0.50			0.89		
Approach LOS	D			D			A			A		
V/C_I, Worst Movement V/C Ratio	0.16											
d_I, Worst Movement Control Delay [s/veh]	43.81											
d_I, Intersection Delay [s/veh]	6.96											
Intersection LOS	E											

Mullan BUILD - 2050 PM

Vistro File: H:\...\24667_PM2050.vistro

Scenario 6 All Way Stop Control (2050)

Report File: H:\...\24667_PM2050_AWSC.pdf

7/17/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
2	George Elmer Dr & England Blvd	All-way stop	HCM 6th Edition	WB Thru	1.273	94.6	F
9	Flynn Ln & England Blvd	All-way stop	HCM 6th Edition	WB Thru	0.866	24.0	C
15	Mary Jane Blvd & Melrose Pl	All-way stop	HCM 6th Edition	NB Thru	0.373	10.5	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 2: George Elmer Dr & England Blvd

Control Type:	All-way stop	Delay (sec / veh):	94.6
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.273

Intersection Setup

Name	George Elmer Dr			George Elmer Dr			England Blvd			England Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵			↵			↵			↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	George Elmer Dr			George Elmer Dr			England Blvd			England Blvd		
Base Volume Input [veh/h]	142	199	46	42	169	184	122	301	159	43	431	42
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	3.00	2.00	2.00	3.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	142	199	46	42	169	184	122	301	159	43	431	42
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	39	54	13	11	46	50	33	82	43	12	117	11
Total Analysis Volume [veh/h]	154	216	50	46	184	200	133	327	173	47	468	46
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	368	392	377	413	382	500	381	514
Degree of Utilization, x	0.42	0.68	0.12	0.93	0.35	1.21	0.12	1.27

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	2.01	4.85	0.41	10.33	1.53	20.10	0.42	22.38
95th-Percentile Queue Length [ft]	50.21	121.17	10.31	258.26	38.18	502.45	10.47	559.61
Approach Delay [s/veh]	25.60		53.35		115.31		154.34	
Approach LOS	D		F		F		F	
Intersection Delay [s/veh]	94.55							
Intersection LOS	F							

Intersection Level Of Service Report
Intersection 9: Flynn Ln & England Blvd

Control Type:	All-way stop	Delay (sec / veh):	24.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.866

Intersection Setup

Name	Flynn Ln			Flynn Ln			England Blvd			England Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			T			T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			25.00			30.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Flynn Ln			Flynn Ln			England Blvd			England Blvd		
Base Volume Input [veh/h]	2	74	65	17	79	3	21	324	15	58	461	15
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	3.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	74	65	17	79	3	21	324	15	58	461	15
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	20	18	5	21	1	6	88	4	16	125	4
Total Analysis Volume [veh/h]	2	80	71	18	86	3	23	352	16	63	501	16
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	548	513	529	574	549	597
Degree of Utilization, x	0.28	0.21	0.04	0.64	0.11	0.87

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.14	0.78	0.14	4.55	0.39	9.78
95th-Percentile Queue Length [ft]	28.40	19.48	3.40	113.76	9.66	244.58
Approach Delay [s/veh]	12.09	11.87	18.91		32.83	
Approach LOS	B	B	C		D	
Intersection Delay [s/veh]	24.01					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 15: Mary Jane Blvd & Melrose PI

Control Type:	All-way stop	Delay (sec / veh):	10.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.373

Intersection Setup

Name	Mary Jane Blvd			Mary Jane Blvd			Melrose PI			Melrose PI		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	⊕			⊕			⊕			⊕		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mary Jane Blvd			Mary Jane Blvd			Melrose PI			Melrose PI		
Base Volume Input [veh/h]	38	193	13	35	180	37	50	57	41	11	48	8
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	3.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	38	193	13	35	180	37	50	57	41	11	48	8
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	52	4	10	49	10	14	15	11	3	13	2
Total Analysis Volume [veh/h]	41	210	14	38	196	40	54	62	45	12	52	9
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	725	735	677	651
Degree of Utilization, x	0.37	0.37	0.24	0.11

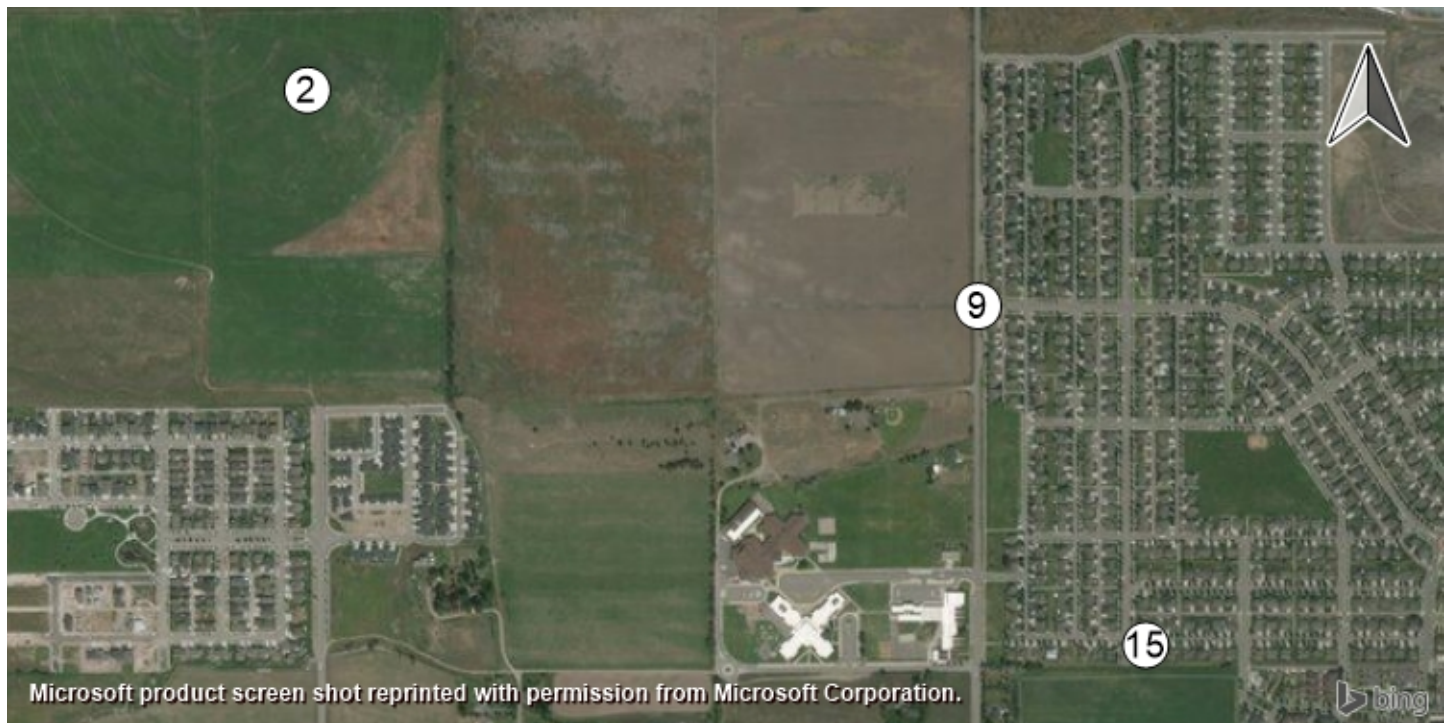
Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.68	1.73	0.92	0.38
95th-Percentile Queue Length [ft]	41.98	43.29	23.08	9.43
Approach Delay [s/veh]	10.80	10.78	9.97	9.23
Approach LOS	B	B	A	A
Intersection Delay [s/veh]	10.47			
Intersection LOS	B			

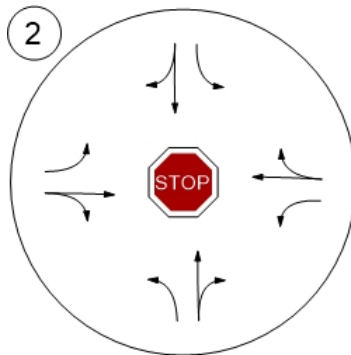
Study Intersections



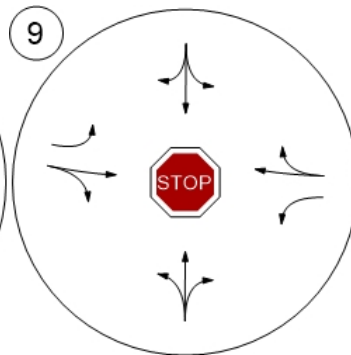
Lane Configuration and Traffic Control



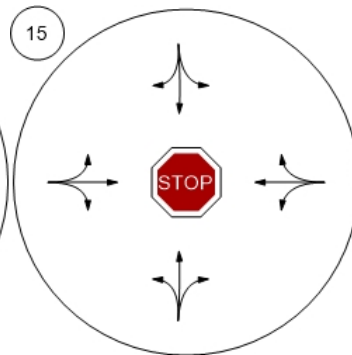
George Elmer Dr & England



Flynn Ln & England Blvd



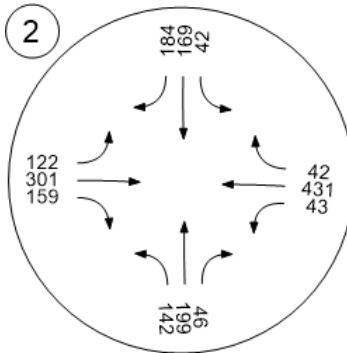
Mary Jane Blvd & Melrose Pl



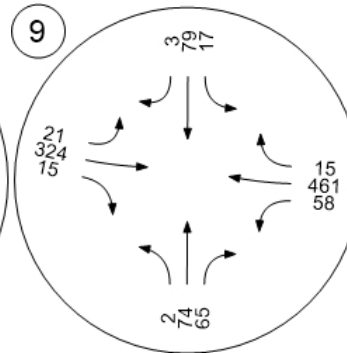
Traffic Volume - Base Volume



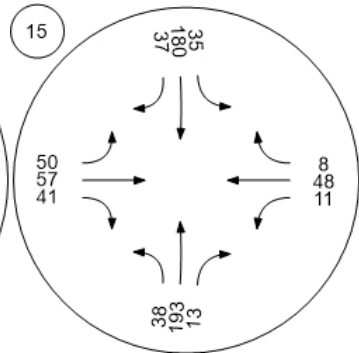
George Elmer Dr & England



Flynn Ln & England Blvd



Mary Jane Blvd & Melrose Pl



Mullan BUILD - 2050 PM

Vistro File: H:\...\24667_PM2050.vistro

Scenario 5 Roundabout (2050)

Report File: H:\...\24667_PM2050_RBT.pdf

7/17/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	George Elmer Dr & W Broadway St	Roundabout	HCM 6th Edition	NB Left		15.9	C
2	George Elmer Dr & England Blvd	Roundabout	HCM 6th Edition	WB Thru		14.9	B
3	George Elmer Dr & Cattle Dr	Roundabout	HCM 6th Edition	NB Thru		6.5	A
4	George Elmer Dr & Heron's Landing	Roundabout	HCM 6th Edition	NB Thru		7.0	A
5	George Elmer Dr & Mullan Rd	Roundabout	HCM 6th Edition	WB Thru		40.8	E
6	Dougherty Dr & England Blvd	Roundabout	HCM 6th Edition	WB Thru		7.2	A
7	Dougherty Dr & W Broadway St	Roundabout	HCM 6th Edition	NB Right		20.0	C
8	Flynn Ln & Camden St	Roundabout	HCM 6th Edition	NB Thru		3.4	A
9	Flynn Ln & England Blvd	Roundabout	HCM 6th Edition	WB Thru		7.1	A
10	Flynn Ln & Chelsea Dr	Roundabout	HCM 6th Edition	NB Thru		3.9	A
11	Flynn Ln & Siren's Dr	Roundabout	HCM 6th Edition	SB Thru		3.8	A
12	Flynn Ln & Mullan Rd	Roundabout	HCM 6th Edition	WB Thru		52.7	F
13	Mary Jane Blvd & Mullan Rd	Roundabout	HCM 6th Edition	WB Thru		60.6	F
14	Mary Jane Blvd & O'Leary St	Roundabout	HCM 6th Edition	NB Thru		4.4	A
15	Mary Jane Blvd & Melrose Pl	Roundabout	HCM 6th Edition	NB Thru		5.0	A
16	Mary Jane Blvd & England Blvd	Roundabout	HCM 6th Edition	WB Thru		10.0	B
17	Mary Jane Blvd & Camden St	Roundabout	HCM 6th Edition	SB Thru		4.3	A
			HCM 6th				

18	Mary Jane Blvd & Flynn Ln	Roundabout	HCM 6th Edition	SB Thru		5.1	A
19	Mary Jane Blvd & Veteran's Way	Roundabout	HCM 6th Edition	EB Left		5.5	A
20	Mary Jane Blvd & W Broadway St	Roundabout	HCM 6th Edition	NB Left		18.1	C
21	Flynn Ln & W Broadway St	Roundabout	HCM 6th Edition	NB Thru		11.8	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: George Elmer Dr & W Broadway St

Control Type:	Roundabout	Delay (sec / veh):	15.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes		

Intersection Setup

Name	George Elmer Dr			Commerical Access			W Broadway St			W Broadway St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵↵			⊕			↵↵			↵↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.21
Speed [mph]	30.00			30.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	George Elmer Dr			Commerical Access			W Broadway St			W Broadway St		
Base Volume Input [veh/h]	204	1	159	1	1	1	1	1435	250	137	1098	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.00	2.00	3.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	204	1	159	1	1	1	1	1435	250	137	1098	1
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	55	0	43	0	0	0	0	390	68	37	298	0
Total Analysis Volume [veh/h]	222	1	173	1	1	1	1	1560	272	149	1193	1
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	2			1			1			1		
Circulating Flow Rate [veh/h]	1593			1598			154			231		
Exiting Flow Rate [veh/h]	430			3			1447			1770		
Demand Flow Rate [veh/h]	204	1	159	1	1	1	1	1435	250	137	1098	1
Adjusted Demand Flow Rate [veh/h]	222	1	173	1	1	1	1	1560	272	149	1193	1

Lanes

Override Calculated Critical Headway	No	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1350.00	1420.00	1380.00	1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00092	0.00085	0.00102	0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	0.97	0.97	0.98	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	229	180	4	879	991	644	727
Capacity of Entry and Bypass Lanes [veh/h]	312	367	271	1235	1235	1152	1152
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	303	356	266	1211	1211	1129	1129
X, volume / capacity	0.73	0.49	0.01	0.71	0.80	0.56	0.63

Movement, Approach, & Intersection Results

Lane LOS	E	C	B	B	C	A	B
95th-Percentile Queue Length [veh]	5.38	2.58	0.03	6.46	9.31	3.60	4.70
95th-Percentile Queue Length [ft]	134.60	64.44	0.86	161.44	232.73	89.98	117.50
Approach Delay [s/veh]	33.34		13.79	15.78		10.84	
Approach LOS	D		B	C		B	
Intersection Delay [s/veh]	15.87						
Intersection LOS	C						

**Intersection Level Of Service Report
Intersection 2: George Elmer Dr & England Blvd**

Control Type: Roundabout
Analysis Method: HCM 6th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 14.9
Level Of Service: B

Intersection Setup

Name	George Elmer Dr			George Elmer Dr			England Blvd			England Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	George Elmer Dr			George Elmer Dr			England Blvd			England Blvd		
Base Volume Input [veh/h]	142	199	46	42	169	184	122	301	159	43	431	42
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	3.00	2.00	2.00	3.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	142	199	46	42	169	184	122	301	159	43	431	42
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	39	54	13	11	46	50	33	82	43	12	117	11
Total Analysis Volume [veh/h]	154	216	50	46	184	200	133	327	173	47	468	46
Pedestrian Volume [ped/h]	0			0			0			0		



Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	516			682			284			515		
Exiting Flow Rate [veh/h]	414			405			838			431		
Demand Flow Rate [veh/h]	142	199	46	42	169	184	122	301	159	43	431	42
Adjusted Demand Flow Rate [veh/h]	154	216	50	46	184	200	133	327	173	47	468	46

Lanes

Override Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	431	441	646	573
Capacity of Entry and Bypass Lanes [veh/h]	816	689	1033	816
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	796	672	1013	800
X, volume / capacity	0.53	0.64	0.63	0.70

Movement, Approach, & Intersection Results

Lane LOS	B	C	B	C
95th-Percentile Queue Length [veh]	3.15	4.63	4.57	5.88
95th-Percentile Queue Length [ft]	78.68	115.70	114.17	147.12
Approach Delay [s/veh]	12.12	17.59	12.42	17.85
Approach LOS	B	C	B	C
Intersection Delay [s/veh]	14.94			
Intersection LOS	B			

Intersection Level Of Service Report
Intersection 3: George Elmer Dr & Cattle Dr

Control Type: Roundabout
Analysis Method: HCM 6th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 6.5
Level Of Service: A

Intersection Setup

Name	George Elmer Dr			George Elmer Dr			Cattle Dr			Cattle Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	George Elmer Dr			George Elmer Dr			Cattle Dr			Cattle Dr		
Base Volume Input [veh/h]	135	333	21	5	360	6	26	1	33	7	1	29
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	3.00	2.00	2.00	3.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	135	333	21	5	360	6	26	1	33	7	1	29
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	37	90	6	1	98	2	7	0	9	2	0	8
Total Analysis Volume [veh/h]	147	362	23	5	391	7	28	1	36	8	1	32
Pedestrian Volume [ped/h]	0			0			0			0		



Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	35			159			416			551		
Exiting Flow Rate [veh/h]	448			434			158			30		
Demand Flow Rate [veh/h]	135	333	21	5	360	6	26	1	33	7	1	29
Adjusted Demand Flow Rate [veh/h]	147	362	23	5	391	7	28	1	36	8	1	32

Lanes

Override Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.97	0.97	0.98	0.98
Entry Flow Rate [veh/h]	547	415	67	42
Capacity of Entry and Bypass Lanes [veh/h]	1333	1174	903	787
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	1298	1140	886	771
X, volume / capacity	0.41	0.35	0.07	0.05

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	2.04	1.61	0.24	0.17
95th-Percentile Queue Length [ft]	51.05	40.34	5.93	4.20
Approach Delay [s/veh]	6.74	6.65	4.76	5.20
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	6.52			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 4: George Elmer Dr & Heron's Landing

Control Type:	Roundabout	Delay (sec / veh):	7.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	George Elmer Dr			George Elmer Dr			Heron's Landing			Heron's Landing		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	George Elmer Dr			George Elmer Dr			Heron's Landing			Heron's Landing		
Base Volume Input [veh/h]	75	429	30	30	340	30	30	1	20	20	1	30
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	3.00	2.00	2.00	3.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	75	429	30	30	340	30	30	1	20	20	1	30
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	20	117	8	8	92	8	8	0	5	5	0	8
Total Analysis Volume [veh/h]	82	466	33	33	370	33	33	1	22	22	1	33
Pedestrian Volume [ped/h]	0			0			0			0		



Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	68			107			437			597		
Exiting Flow Rate [veh/h]	426			547			118			68		
Demand Flow Rate [veh/h]	75	429	30	30	340	30	30	1	20	20	1	30
Adjusted Demand Flow Rate [veh/h]	82	466	33	33	370	33	33	1	22	22	1	33

Lanes

Override Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.97	0.97	0.98	0.98
Entry Flow Rate [veh/h]	598	449	58	58
Capacity of Entry and Bypass Lanes [veh/h]	1288	1238	884	751
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	1253	1203	867	736
X, volume / capacity	0.46	0.36	0.06	0.08

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	2.52	1.68	0.21	0.25
95th-Percentile Queue Length [ft]	63.04	41.91	5.17	6.16
Approach Delay [s/veh]	7.66	6.50	4.77	5.68
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	6.97			
Intersection LOS	A			

**Intersection Level Of Service Report
Intersection 5: George Elmer Dr & Mullan Rd**

Control Type:	Roundabout	Delay (sec / veh):	40.8
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes		

Intersection Setup

Name	George Elmer Dr		Mullan Rd		Mullan Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	325.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	100.00
Speed [mph]	30.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	George Elmer Dr		Mullan Rd		Mullan Rd	
Base Volume Input [veh/h]	104	275	179	637	1185	353
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	3.00	2.00	2.00	3.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	104	275	179	637	1185	353
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	75	49	173	322	96
Total Analysis Volume [veh/h]	113	299	195	692	1288	384
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Number of Conflicting Circulating Lanes	2		1		1	
Circulating Flow Rate [veh/h]	1314		115		201	
Exiting Flow Rate [veh/h]	596		1619		821	
Demand Flow Rate [veh/h]	104	275	179	637	1185	353
Adjusted Demand Flow Rate [veh/h]	113	299	195	692	1288	384

Lanes

Override Calculated Critical Headway	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1350.00	1420.00	1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00092	0.00085	0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	0.98	0.98	0.97	0.98	0.98	0.97
Entry Flow Rate [veh/h]	116	305	201	706	1314	396
Capacity of Entry and Bypass Lanes [veh/h]	404	465	1279	1279	1183	1183
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	396	456	1242	1254	1160	1149
X, volume / capacity	0.29	0.66	0.16	0.55	1.11	0.33

Movement, Approach, & Intersection Results

Lane LOS	B	D	A	A	F	A
95th-Percentile Queue Length [veh]	1.16	4.63	0.56	3.52	31.42	1.48
95th-Percentile Queue Length [ft]	29.07	115.73	13.92	88.01	785.53	37.10
Approach Delay [s/veh]	22.03		8.04		62.80	
Approach LOS	C		A		F	
Intersection Delay [s/veh]	40.80					
Intersection LOS	E					

**Intersection Level Of Service Report
Intersection 6: Dougherty Dr & England Blvd**

Control Type:	Roundabout	Delay (sec / veh):	7.2
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	Dougherty Dr		England Blvd		England Blvd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration	T		↑		↑	
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Dougherty Dr		England Blvd		England Blvd	
Base Volume Input [veh/h]	111	100	150	249	416	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	111	100	150	249	416	50
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	30	27	41	68	113	14
Total Analysis Volume [veh/h]	121	109	163	271	452	54
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Number of Conflicting Circulating Lanes	1		1		1	
Circulating Flow Rate [veh/h]	461		123		166	
Exiting Flow Rate [veh/h]	221		572		400	
Demand Flow Rate [veh/h]	111	100	150	249	416	50
Adjusted Demand Flow Rate [veh/h]	121	109	163	271	452	54

Lanes

Override Calculated Critical Headway	No		No		No	
User-Defined Critical Headway [s]	4.00		4.00		4.00	
Override Calculated Follow-Up Time	No		No		No	
User-Defined Follow-Up Time [s]	3.00		3.00		3.00	
A (intercept)	1380.00		1380.00		1380.00	
B (coefficient)	0.00102		0.00102		0.00102	
HV Adjustment Factor	0.98		0.98		0.98	
Entry Flow Rate [veh/h]	235		443		517	
Capacity of Entry and Bypass Lanes [veh/h]	863		1217		1165	
Pedestrian Impedance	1.00		1.00		1.00	
Capacity per Entry Lane [veh/h]	846		1193		1142	
X, volume / capacity	0.27		0.36		0.44	

Movement, Approach, & Intersection Results

Lane LOS	A		A		A	
95th-Percentile Queue Length [veh]	1.11		1.69		2.32	
95th-Percentile Queue Length [ft]	27.63		42.14		57.99	
Approach Delay [s/veh]	7.20		6.55		7.85	
Approach LOS	A		A		A	
Intersection Delay [s/veh]			7.24			
Intersection LOS			A			

**Intersection Level Of Service Report
Intersection 7: Dougherty Dr & W Broadway St**

Control Type:	Roundabout	Delay (sec / veh):	20.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes		

Intersection Setup

Name	Dougherty Dr		W Broadway St		W Broadway St	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		Yes	

Volumes

Name	Dougherty Dr		W Broadway St		W Broadway St	
Base Volume Input [veh/h]	175	300	1394	200	254	1060
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	175	300	1394	200	254	1060
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	48	82	379	54	69	288
Total Analysis Volume [veh/h]	190	326	1515	217	276	1152
Pedestrian Volume [ped/h]	0		0		0	



Intersection Settings

Number of Conflicting Circulating Lanes	2		1		1	
Circulating Flow Rate [veh/h]	1545		282		194	
Exiting Flow Rate [veh/h]	503		1369		1878	
Demand Flow Rate [veh/h]	175	300	1394	200	254	1060
Adjusted Demand Flow Rate [veh/h]	190	326	1515	217	276	1152

Lanes

Override Calculated Critical Headway	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1350.00	1420.00	1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00092	0.00085	0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	0.98	0.98	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	194	333	831	937	685	772
Capacity of Entry and Bypass Lanes [veh/h]	326	382	1100	1100	1191	1191
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	320	375	1078	1078	1168	1168
X, volume / capacity	0.59	0.87	0.76	0.85	0.58	0.65

Movement, Approach, & Intersection Results

Lane LOS	D	F	C	C	B	B
95th-Percentile Queue Length [veh]	3.60	8.44	7.54	11.09	3.82	5.04
95th-Percentile Queue Length [ft]	90.07	211.05	188.54	277.28	95.61	125.99
Approach Delay [s/veh]	44.26		20.10		10.99	
Approach LOS	E		C		B	
Intersection Delay [s/veh]	19.95					
Intersection LOS	C					

**Intersection Level Of Service Report
Intersection 8: Flynn Ln & Camden St**

Control Type: Roundabout
Analysis Method: HCM 6th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 3.4
Level Of Service: A

Intersection Setup

Name	Flynn Ln		Flynn Ln		Camden St	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Flynn Ln		Flynn Ln		Camden St	
Base Volume Input [veh/h]	103	7	22	94	5	13
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	103	7	22	94	5	13
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	2	6	26	1	4
Total Analysis Volume [veh/h]	112	8	24	102	5	14
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Number of Conflicting Circulating Lanes	1		1		1	
Circulating Flow Rate [veh/h]	24		5		114	
Exiting Flow Rate [veh/h]	109		129		33	
Demand Flow Rate [veh/h]	103	7	22	94	5	13
Adjusted Demand Flow Rate [veh/h]	112	8	24	102	5	14

Lanes

Override Calculated Critical Headway	No		No		No	
User-Defined Critical Headway [s]	4.00		4.00		4.00	
Override Calculated Follow-Up Time	No		No		No	
User-Defined Follow-Up Time [s]	3.00		3.00		3.00	
A (intercept)	1380.00		1380.00		1380.00	
B (coefficient)	0.00102		0.00102		0.00102	
HV Adjustment Factor	0.98		0.98		0.98	
Entry Flow Rate [veh/h]	123		129		20	
Capacity of Entry and Bypass Lanes [veh/h]	1346		1373		1229	
Pedestrian Impedance	1.00		1.00		1.00	
Capacity per Entry Lane [veh/h]	1320		1346		1205	
X, volume / capacity	0.09		0.09		0.02	

Movement, Approach, & Intersection Results

Lane LOS	A		A		A	
95th-Percentile Queue Length [veh]	0.30		0.31		0.05	
95th-Percentile Queue Length [ft]	7.49		7.73		1.20	
Approach Delay [s/veh]	3.46		3.42		3.12	
Approach LOS	A		A		A	
Intersection Delay [s/veh]			3.41			
Intersection LOS			A			

**Intersection Level Of Service Report
Intersection 9: Flynn Ln & England Blvd**

Control Type: Roundabout
Analysis Method: HCM 6th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 7.1
Level Of Service: A

Intersection Setup

Name	Flynn Ln			Flynn Ln			England Blvd			England Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			25.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Flynn Ln			Flynn Ln			England Blvd			England Blvd		
Base Volume Input [veh/h]	2	74	65	17	79	3	21	324	15	58	461	15
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	3.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	74	65	17	79	3	21	324	15	58	461	15
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	20	18	5	21	1	6	88	4	16	125	4
Total Analysis Volume [veh/h]	2	80	71	18	86	3	23	352	16	63	501	16
Pedestrian Volume [ped/h]	0			0			0			0		



Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	401			577			171			107		
Exiting Flow Rate [veh/h]	169			121			516			450		
Demand Flow Rate [veh/h]	2	74	65	17	79	3	21	324	15	58	461	15
Adjusted Demand Flow Rate [veh/h]	2	80	71	18	86	3	23	352	16	63	501	16

Lanes

Override Calculated Critical Headway	No			No			No			No		
User-Defined Critical Headway [s]	4.00			4.00			4.00			4.00		
Override Calculated Follow-Up Time	No			No			No			No		
User-Defined Follow-Up Time [s]	3.00			3.00			3.00			3.00		
A (intercept)	1380.00			1380.00			1380.00			1380.00		
B (coefficient)	0.00102			0.00102			0.00102			0.00102		
HV Adjustment Factor	0.98			0.97			0.98			0.98		
Entry Flow Rate [veh/h]	157			110			399			592		
Capacity of Entry and Bypass Lanes [veh/h]	917			766			1159			1238		
Pedestrian Impedance	1.00			1.00			1.00			1.00		
Capacity per Entry Lane [veh/h]	899			746			1137			1213		
X, volume / capacity	0.17			0.14			0.34			0.48		

Movement, Approach, & Intersection Results

Lane LOS	A			A			A			A		
95th-Percentile Queue Length [veh]	0.61			0.50			1.55			2.66		
95th-Percentile Queue Length [ft]	15.28			12.50			38.71			66.49		
Approach Delay [s/veh]	5.68			6.36			6.54			8.05		
Approach LOS	A			A			A			A		
Intersection Delay [s/veh]	7.13											
Intersection LOS	A											

**Intersection Level Of Service Report
Intersection 10: Flynn Ln & Chelsea Dr**

Control Type: Roundabout
Analysis Method: HCM 6th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 3.9
Level Of Service: A

Intersection Setup

Name	Flynn Ln			Flynn Ln			Chelsea Dr			Chelsea Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Flynn Ln			Flynn Ln			Chelsea Dr			Chelsea Dr		
Base Volume Input [veh/h]	28	109	20	21	114	18	28	12	40	15	3	4
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	5.00	2.00	3.00	2.00	4.00	2.00	2.00	7.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	28	109	20	21	114	18	28	12	40	15	3	4
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	30	5	6	31	5	8	3	11	4	1	1
Total Analysis Volume [veh/h]	30	118	22	23	124	20	30	13	43	16	3	4
Pedestrian Volume [ped/h]	0			0			0			0		



Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	68			51			168			182		
Exiting Flow Rate [veh/h]	189			156			54			60		
Demand Flow Rate [veh/h]	28	109	20	21	114	18	28	12	40	15	3	4
Adjusted Demand Flow Rate [veh/h]	30	118	22	23	124	20	30	13	43	16	3	4

Lanes

Override Calculated Critical Headway	No			No			No			No		
User-Defined Critical Headway [s]	4.00			4.00			4.00			4.00		
Override Calculated Follow-Up Time	No			No			No			No		
User-Defined Follow-Up Time [s]	3.00			3.00			3.00			3.00		
A (intercept)	1380.00			1380.00			1380.00			1380.00		
B (coefficient)	0.00102			0.00102			0.00102			0.00102		
HV Adjustment Factor	0.98			0.97			0.97			0.95		
Entry Flow Rate [veh/h]	175			172			89			25		
Capacity of Entry and Bypass Lanes [veh/h]	1288			1311			1163			1147		
Pedestrian Impedance	1.00			1.00			1.00			1.00		
Capacity per Entry Lane [veh/h]	1258			1276			1132			1088		
X, volume / capacity	0.14			0.13			0.08			0.02		

Movement, Approach, & Intersection Results




Lane LOS	A			A			A			A		
95th-Percentile Queue Length [veh]	0.47			0.45			0.25			0.06		
95th-Percentile Queue Length [ft]	11.68			11.26			6.16			1.62		
Approach Delay [s/veh]	3.98			3.90			3.82			3.49		
Approach LOS	A			A			A			A		
Intersection Delay [s/veh]	3.90											
Intersection LOS	A											

**Intersection Level Of Service Report
Intersection 11: Flynn Ln & Siren's Dr**

Control Type: Roundabout
Analysis Method: HCM 6th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 3.8
Level Of Service: A

Intersection Setup

Name	Flynn Ln		Flynn Ln		Siren's Rd	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Flynn Ln		Flynn Ln		Siren's Rd	
Base Volume Input [veh/h]	17	137	156	13	20	24
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	18.00	2.00	2.00	2.00	5.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	17	137	156	13	20	24
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	37	42	4	5	7
Total Analysis Volume [veh/h]	18	149	170	14	22	26
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Number of Conflicting Circulating Lanes	1		1		1	
Circulating Flow Rate [veh/h]	23		21		173	
Exiting Flow Rate [veh/h]	200		175		36	
Demand Flow Rate [veh/h]	17	137	156	13	20	24
Adjusted Demand Flow Rate [veh/h]	18	149	170	14	22	26

Lanes

Override Calculated Critical Headway	No		No		No	
User-Defined Critical Headway [s]	4.00		4.00		4.00	
Override Calculated Follow-Up Time	No		No		No	
User-Defined Follow-Up Time [s]	3.00		3.00		3.00	
A (intercept)	1380.00		1380.00		1380.00	
B (coefficient)	0.00102		0.00102		0.00102	
HV Adjustment Factor	0.97		0.98		0.97	
Entry Flow Rate [veh/h]	173		188		50	
Capacity of Entry and Bypass Lanes [veh/h]	1348		1351		1157	
Pedestrian Impedance	1.00		1.00		1.00	
Capacity per Entry Lane [veh/h]	1302		1324		1119	
X, volume / capacity	0.13		0.14		0.04	

Movement, Approach, & Intersection Results

Lane LOS	A		A		A	
95th-Percentile Queue Length [veh]	0.44		0.48		0.13	
95th-Percentile Queue Length [ft]	11.00		12.06		3.36	
Approach Delay [s/veh]	3.81		3.85		3.58	
Approach LOS	A		A		A	
Intersection Delay [s/veh]			3.80			
Intersection LOS			A			



**Intersection Level Of Service Report
Intersection 12: Flynn Ln & Mullan Rd**

Control Type: Roundabout
Analysis Method: HCM 6th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 52.7
Level Of Service: F

Intersection Setup

Name	Flynn Ln			Mullan Rd			Mullan Rd					
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↶			↷			↶↷			↶↷		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	1	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00
Speed [mph]	30.00			25.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Flynn Ln			Mullan Rd			Mullan Rd					
Base Volume Input [veh/h]	0	0	1	0	0	139	55	685	1	1	1364	99
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	1	0	0	139	55	685	1	1	1364	99
Peak Hour Factor	1.0000	1.0000	0.9200	0.9200	1.0000	0.9200	0.9200	0.9200	1.0000	1.0000	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	0	0	38	15	186	0	0	371	27
Total Analysis Volume [veh/h]	0	0	1	0	0	151	60	745	1	1	1483	108
Pedestrian Volume [ped/h]	0			0			0			0		



Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	821			1514			1			61		
Exiting Flow Rate [veh/h]	2			171			1667			761		
Demand Flow Rate [veh/h]	0	0	1	0	0	139	55	685	1	1	1364	99
Adjusted Demand Flow Rate [veh/h]	0	0	1	0	0	151	60	745	1	1	1483	108

Lanes

Override Calculated Critical Headway	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00102	0.00102	0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	0.98	0.98	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	2	155	62	761	1514	111
Capacity of Entry and Bypass Lanes [veh/h]	598	295	1419	1419	1344	1344
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	586	289	1391	1391	1317	1317
X, volume / capacity	0.00	0.52	0.04	0.54	1.13	0.08

Movement, Approach, & Intersection Results

Lane LOS	A	D	A	A	F	A
95th-Percentile Queue Length [veh]	0.01	2.82	0.14	3.33	36.26	0.27
95th-Percentile Queue Length [ft]	0.13	70.57	3.38	83.32	906.40	6.69
Approach Delay [s/veh]	6.17	27.95	7.83		77.84	
Approach LOS	A	D	A		F	
Intersection Delay [s/veh]	52.73					
Intersection LOS	F					



**Intersection Level Of Service Report
Intersection 13: Mary Jane Blvd & Mullan Rd**

Control Type:	Roundabout	Delay (sec / veh):	60.6
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes		

Intersection Setup

Name	Mary Jane Blvd		Mullan Rd		Mullan Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	1	0	1	0	1
Exit Pocket Length [ft]	0.00	100.00	0.00	100.00	0.00	100.00
Speed [mph]	30.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Mary Jane Blvd		Mullan Rd		Mullan Rd	
Base Volume Input [veh/h]	109	135	119	565	1330	125
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	109	135	119	565	1330	125
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	30	37	32	154	361	34
Total Analysis Volume [veh/h]	118	147	129	614	1446	136
Pedestrian Volume [ped/h]	0		0		0	



Intersection Settings

Number of Conflicting Circulating Lanes	1		1		1	
Circulating Flow Rate [veh/h]	1475		120		132	
Exiting Flow Rate [veh/h]	270		1625		747	
Demand Flow Rate [veh/h]	109	135	119	565	1330	125
Adjusted Demand Flow Rate [veh/h]	118	147	129	614	1446	136

Lanes

Override Calculated Critical Headway	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1420.00	1420.00	1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00091	0.00091	0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	0.98	0.98	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	121	150	132	627	1475	139
Capacity of Entry and Bypass Lanes [veh/h]	372	372	1273	1273	1260	1260
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	364	364	1248	1248	1236	1236
X, volume / capacity	0.32	0.40	0.10	0.49	1.17	0.11

Movement, Approach, & Intersection Results

Lane LOS	C	C	A	A	F	A
95th-Percentile Queue Length [veh]	1.38	1.90	0.35	2.81	39.94	0.37
95th-Percentile Queue Length [ft]	34.47	47.53	8.63	70.18	998.59	9.26
Approach Delay [s/veh]	17.46		7.35		92.86	
Approach LOS	C		A		F	
Intersection Delay [s/veh]	60.61					
Intersection LOS	F					

**Intersection Level Of Service Report
Intersection 14: Mary Jane Blvd & O'Leary St**

Control Type: Roundabout
Analysis Method: HCM 6th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 4.4
Level Of Service: A

Intersection Setup

Name	Mary Jane Blvd			Mary Jane Blvd			O'Leary St			O'Leary St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	⊕			⊕			⊕			⊕		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mary Jane Blvd			Mary Jane Blvd			O'Leary St			O'Leary St		
Base Volume Input [veh/h]	14	212	18	31	175	27	17	6	55	13	5	15
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	212	18	31	175	27	17	6	55	13	5	15
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	58	5	8	48	7	5	2	15	4	1	4
Total Analysis Volume [veh/h]	15	230	20	34	190	29	18	7	60	14	5	16
Pedestrian Volume [ped/h]	0			0			0			0		



Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	60			35			243			268		
Exiting Flow Rate [veh/h]	269			269			50			62		
Demand Flow Rate [veh/h]	14	212	18	31	175	27	17	6	55	13	5	15
Adjusted Demand Flow Rate [veh/h]	15	230	20	34	190	29	18	7	60	14	5	16

Lanes

Override Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	271	259	87	36
Capacity of Entry and Bypass Lanes [veh/h]	1298	1333	1078	1050
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	1273	1306	1057	1030
X, volume / capacity	0.21	0.19	0.08	0.03

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	0.78	0.72	0.26	0.11
95th-Percentile Queue Length [ft]	19.61	17.92	6.55	2.64
Approach Delay [s/veh]	4.61	4.39	4.11	3.79
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	4.41			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 15: Mary Jane Blvd & Melrose PI

Control Type:	Roundabout	Delay (sec / veh):	5.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	Mary Jane Blvd			Mary Jane Blvd			Melrose PI			Melrose PI		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mary Jane Blvd			Mary Jane Blvd			Melrose PI			Melrose PI		
Base Volume Input [veh/h]	38	193	13	35	180	37	50	57	41	11	48	8
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	3.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	38	193	13	35	180	37	50	57	41	11	48	8
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	52	4	10	49	10	14	15	11	3	13	2
Total Analysis Volume [veh/h]	41	210	14	38	196	40	54	62	45	12	52	9
Pedestrian Volume [ped/h]	0			0			0			0		



Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	158			107			251			311		
Exiting Flow Rate [veh/h]	258			278			136			117		
Demand Flow Rate [veh/h]	38	193	13	35	180	37	50	57	41	11	48	8
Adjusted Demand Flow Rate [veh/h]	41	210	14	38	196	40	54	62	45	12	52	9

Lanes

Override Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	271	280	165	75
Capacity of Entry and Bypass Lanes [veh/h]	1175	1238	1069	1005
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	1152	1213	1044	986
X, volume / capacity	0.23	0.23	0.15	0.07

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	0.89	0.87	0.54	0.24
95th-Percentile Queue Length [ft]	22.23	21.73	13.62	5.99
Approach Delay [s/veh]	5.21	4.96	4.85	4.32
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	4.96			
Intersection LOS	A			

**Intersection Level Of Service Report
Intersection 16: Mary Jane Blvd & England Blvd**

Control Type: Roundabout
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 10.0
 Level Of Service: B

Intersection Setup

Name	Mary Jane Blvd			Mary Jane Blvd			England Blvd			England Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mary Jane Blvd			Mary Jane Blvd			England Blvd			England Blvd		
Base Volume Input [veh/h]	68	78	106	92	156	14	26	348	33	64	452	93
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	68	78	106	92	156	14	26	348	33	64	452	93
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	21	29	25	42	4	7	95	9	17	123	25
Total Analysis Volume [veh/h]	74	85	115	100	170	15	28	378	36	70	491	101
Pedestrian Volume [ped/h]	0			0			0			0		



Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	516			648			347			191		
Exiting Flow Rate [veh/h]	282			218			592			605		
Demand Flow Rate [veh/h]	68	78	106	92	156	14	26	348	33	64	452	93
Adjusted Demand Flow Rate [veh/h]	74	85	115	100	170	15	28	378	36	70	491	101

Lanes

Override Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	280	291	451	676
Capacity of Entry and Bypass Lanes [veh/h]	816	713	969	1137
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	800	699	950	1114
X, volume / capacity	0.34	0.41	0.47	0.59

Movement, Approach, & Intersection Results

Lane LOS	A	B	A	B
95th-Percentile Queue Length [veh]	1.53	1.99	2.51	4.10
95th-Percentile Queue Length [ft]	38.24	49.74	62.79	102.47
Approach Delay [s/veh]	8.55	10.69	9.37	10.82
Approach LOS	A	B	A	B
Intersection Delay [s/veh]	10.04			
Intersection LOS	B			

**Intersection Level Of Service Report
Intersection 17: Mary Jane Blvd & Camden St**

Control Type: Roundabout
Analysis Method: HCM 6th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 4.3
Level Of Service: A

Intersection Setup

Name	Mary Jane Blvd			Mary Jane Blvd			Camden St			Camden St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mary Jane Blvd			Mary Jane Blvd			Camden St			Camden St		
Base Volume Input [veh/h]	8	183	4	13	222	26	13	14	39	3	12	8
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	8	183	4	13	222	26	13	14	39	3	12	8
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	50	1	4	60	7	4	4	11	1	3	2
Total Analysis Volume [veh/h]	9	199	4	14	241	28	14	15	42	3	13	9
Pedestrian Volume [ped/h]	0			0			0			0		



Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	44			26			263			226		
Exiting Flow Rate [veh/h]	292			226			51			34		
Demand Flow Rate [veh/h]	8	183	4	13	222	26	13	14	39	3	12	8
Adjusted Demand Flow Rate [veh/h]	9	199	4	14	241	28	14	15	42	3	13	9

Lanes

Override Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	217	289	73	26
Capacity of Entry and Bypass Lanes [veh/h]	1320	1345	1056	1096
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	1294	1319	1035	1074
X, volume / capacity	0.16	0.21	0.07	0.02

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	0.59	0.81	0.22	0.07
95th-Percentile Queue Length [ft]	14.64	20.37	5.52	1.79
Approach Delay [s/veh]	4.15	4.55	4.08	3.55
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	4.31			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 18: Mary Jane Blvd & Flynn Ln

Control Type: Roundabout
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 5.1
 Level Of Service: A

Intersection Setup

Name	Mary Jane Blvd			Mary Jane Blvd			Flynn Ln			Flynn Ln		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mary Jane Blvd			Mary Jane Blvd			Flynn Ln			Flynn Ln		
Base Volume Input [veh/h]	3	165	37	53	219	55	43	55	18	23	58	28
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	165	37	53	219	55	43	55	18	23	58	28
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	45	10	14	60	15	12	15	5	6	16	8
Total Analysis Volume [veh/h]	3	179	40	58	238	60	47	60	20	25	63	30
Pedestrian Volume [ped/h]	0			0			0			0		



Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	168			93			327			234		
Exiting Flow Rate [veh/h]	289			261			129			161		
Demand Flow Rate [veh/h]	3	165	37	53	219	55	43	55	18	23	58	28
Adjusted Demand Flow Rate [veh/h]	3	179	40	58	238	60	47	60	20	25	63	30

Lanes

Override Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	227	364	130	121
Capacity of Entry and Bypass Lanes [veh/h]	1163	1256	989	1088
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	1140	1231	969	1067
X, volume / capacity	0.19	0.29	0.13	0.11

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	0.72	1.21	0.45	0.37
95th-Percentile Queue Length [ft]	18.03	30.19	11.27	9.31
Approach Delay [s/veh]	4.90	5.56	4.93	4.35
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	5.11			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 19: Mary Jane Blvd & Veteran's Way

Control Type:	Roundabout	Delay (sec / veh):	5.5
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	Mary Jane Blvd			Mary Jane Blvd			Veteran's Way			Veteran's Way		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Mary Jane Blvd			Mary Jane Blvd			Veteran's Way			Veteran's Way		
Base Volume Input [veh/h]	4	232	0	0	315	90	84	0	10	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	5.00	2.00	2.00	5.00	2.00	20.00	2.00	20.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	4	232	0	0	315	90	84	0	10	0	0	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	63	0	0	86	24	23	0	3	0	0	0
Total Analysis Volume [veh/h]	4	252	0	0	342	98	91	0	11	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		



Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	109			4			359			378		
Exiting Flow Rate [veh/h]	372			374			104			0		
Demand Flow Rate [veh/h]	4	232	0	0	315	90	84	0	10	0	0	0
Adjusted Demand Flow Rate [veh/h]	4	252	0	0	342	98	91	0	11	0	0	0

Lanes

Override Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.95	0.96	0.83	0.98
Entry Flow Rate [veh/h]	269	459	123	0
Capacity of Entry and Bypass Lanes [veh/h]	1235	1375	957	939
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	1177	1318	798	921
X, volume / capacity	0.22	0.33	0.13	0.00

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	0.83	1.48	0.44	0.00
95th-Percentile Queue Length [ft]	20.71	37.11	10.95	0.00
Approach Delay [s/veh]	5.00	5.77	5.82	3.91
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	5.53			
Intersection LOS	A			

**Intersection Level Of Service Report
Intersection 20: Mary Jane Blvd & W Broadway St**

Control Type:	Roundabout	Delay (sec / veh):	18.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes		

Intersection Setup

Name	Mary Jane Blvd		W Broadway St		W Broadway St	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	1	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	49.21	0.00	0.00
Speed [mph]	30.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Mary Jane Blvd		W Broadway St		W Broadway St	
Base Volume Input [veh/h]	216	101	1471	223	184	1097
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.00	3.00	2.00	3.00	3.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	216	101	1471	223	184	1097
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	59	27	400	61	50	298
Total Analysis Volume [veh/h]	235	110	1599	242	200	1192
Pedestrian Volume [ped/h]	0		0		0	



Intersection Settings

Number of Conflicting Circulating Lanes	2		1		1	
Circulating Flow Rate [veh/h]	1631		206		242	
Exiting Flow Rate [veh/h]	455		1458		1744	
Demand Flow Rate [veh/h]	216	101	1471	223	184	1097
Adjusted Demand Flow Rate [veh/h]	235	110	1599	242	200	1192

Lanes

Override Calculated Critical Headway	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1350.00	1420.00	1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00092	0.00085	0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	0.97	0.97	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	243	114	883	997	669	753
Capacity of Entry and Bypass Lanes [veh/h]	302	355	1178	1178	1140	1140
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	293	345	1155	1153	1116	1117
X, volume / capacity	0.80	0.32	0.75	0.85	0.59	0.66

Movement, Approach, & Intersection Results

Lane LOS	F	C	C	C	B	B
95th-Percentile Queue Length [veh]	6.47	1.34	7.45	11.04	3.98	5.25
95th-Percentile Queue Length [ft]	161.65	33.62	186.21	275.88	99.53	131.36
Approach Delay [s/veh]	40.96		18.77		11.65	
Approach LOS	E		C		B	
Intersection Delay [s/veh]	18.14					
Intersection LOS	C					



**Intersection Level Of Service Report
Intersection 21: Flynn Ln & W Broadway St**

Control Type:	Roundabout	Delay (sec / veh):	11.8
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes		

Intersection Setup

Name	Flynn Ln		W Broadway St		W Broadway St	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↻		↻		↻	
Turning Movement	Left	Thru	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	1	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	890.00	0.00	0.00
Speed [mph]	25.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Flynn Ln		W Broadway St		W Broadway St	
Base Volume Input [veh/h]	0	283	1397	143	0	1280
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	2.00	2.00	0.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	283	1397	143	0	1280
Peak Hour Factor	0.7900	0.9200	0.9200	0.9200	0.7900	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	77	380	39	0	348
Total Analysis Volume [veh/h]	0	308	1518	155	0	1391
Pedestrian Volume [ped/h]	0		0		0	



Intersection Settings

Number of Conflicting Circulating Lanes	2		1		1	
Circulating Flow Rate [veh/h]	1548		0		0	
Exiting Flow Rate [veh/h]	158		1419		1856	
Demand Flow Rate [veh/h]	0	283	1397	143	0	1280
Adjusted Demand Flow Rate [veh/h]	0	308	1518	155	0	1391

Lanes

Override Calculated Critical Headway	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00
A (intercept)	1420.00	1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00085	0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	1.00	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	308	803	905	667	752
Capacity of Entry and Bypass Lanes [veh/h]	381	1420	1420	1420	1420
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	381	1393	1393	1393	1393
X, volume / capacity	0.81	0.56	0.64	0.47	0.53

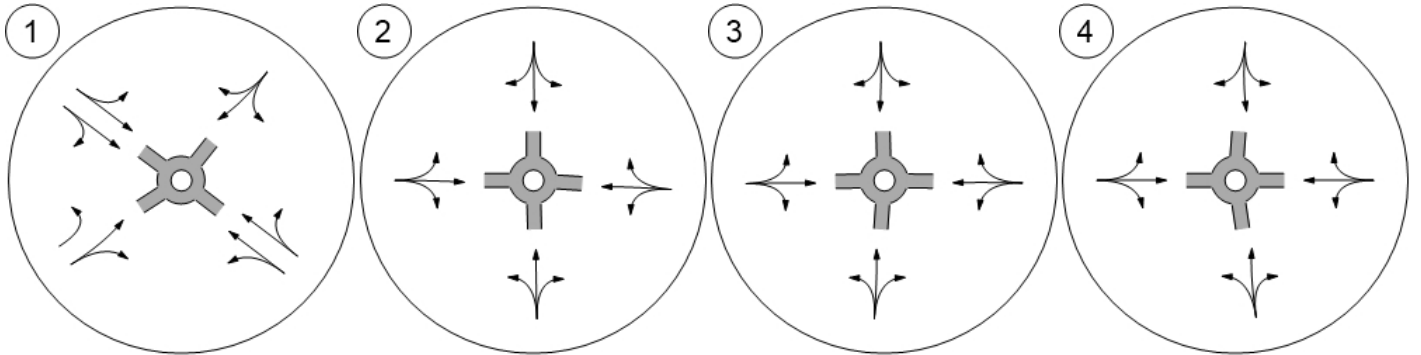
Movement, Approach, & Intersection Results

Lane LOS	E	A	B	A	A
95th-Percentile Queue Length [veh]	7.12	3.71	4.88	2.58	3.25
95th-Percentile Queue Length [ft]	178.00	92.79	122.12	64.60	81.20
Approach Delay [s/veh]	43.22	9.49		7.68	
Approach LOS	E	A		A	
Intersection Delay [s/veh]	11.83				
Intersection LOS	B				

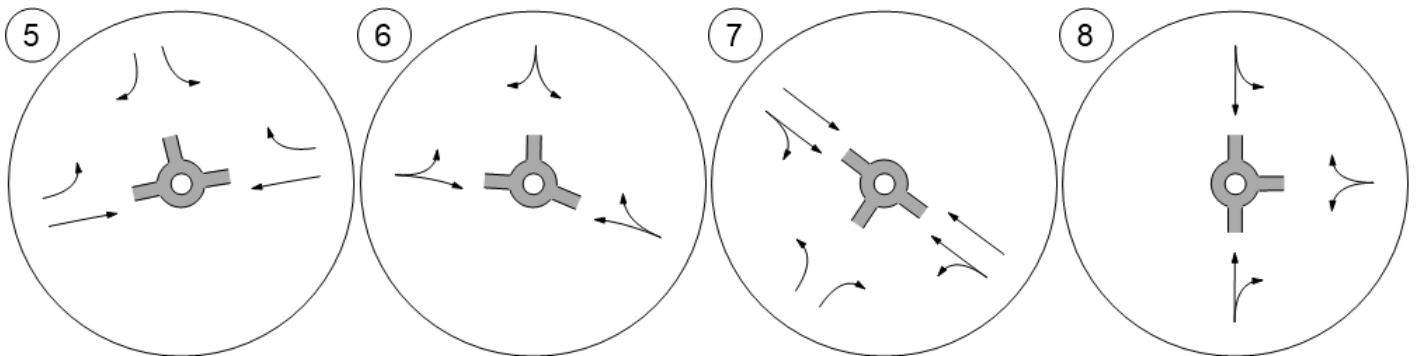
Lane Configuration and Traffic Control



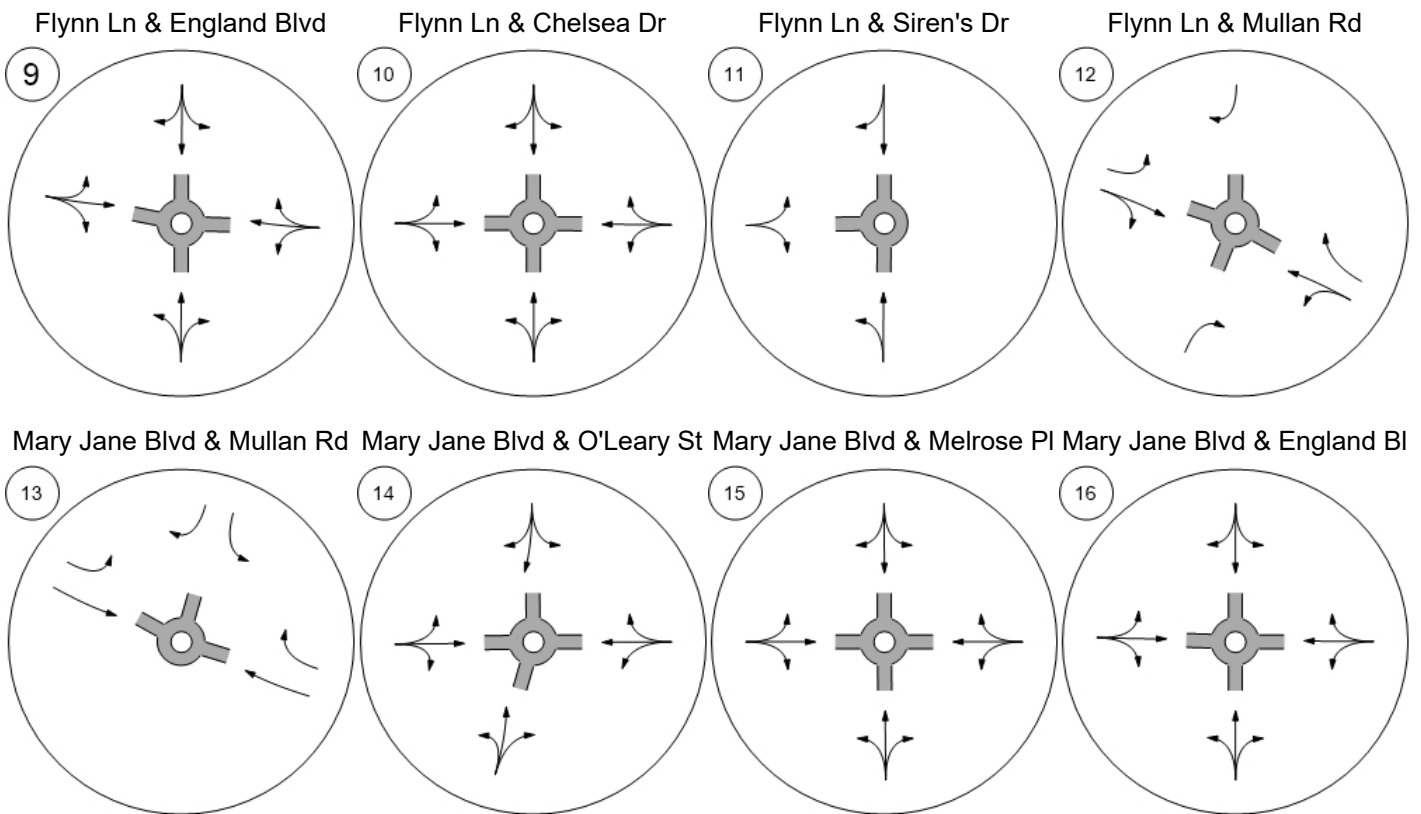
George Elmer Dr & W Broad George Elmer Dr & England George Elmer Dr & Cattle Dr George Elmer Dr & Heron's L



George Elmer Dr & Mullan R Dougherty Dr & England Blvd Dougherty Dr & W Broadway Flynn Ln & Camden St



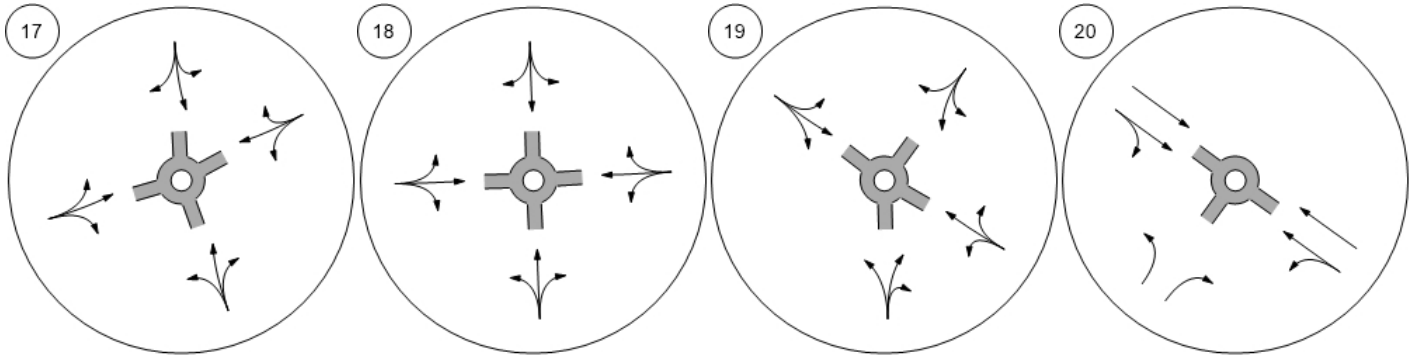
Lane Configuration and Traffic Control



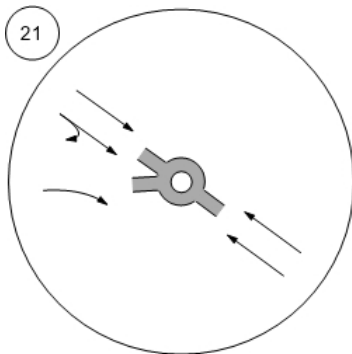
Lane Configuration and Traffic Control






Mary Jane Blvd & Camden St Mary Jane Blvd & Flynn Ln Mary Jane Blvd & Veteran's Mary Jane Blvd & W Broadw



Flynn Ln & W Broadway St



Option 1: WB T/L & EB T/R

Number	5					
Intersection	George Elmer Dr & Mullan Rd					
Control Type	Roundabout					
Analysis Method	HCM 6th Edition					
Name	George Elmer Dr		Mullan Rd		Mullan Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Base Volume Input [veh/h]	104	275	179	637	1185	353
Total Analysis Volume [veh/h]	113	299	195	692	1288	384

Intersection Settings

Number of Conflicting Circulating Lanes	2		1		1	
Circulating Flow Rate [veh/h]	1301		115		215	
Exiting Flow Rate [veh/h]	606		1606		814	
Demand Flow Rate [veh/h]	104	275	179	637	1185	353
Adjusted Demand Flow Rate [veh/h]	113	299	195	692	1288	384

Lanes

Override Calculated Critical Headway	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1350.00	1420.00	1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00092	0.00085	0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	0.98	0.98	0.97	0.99	0.99	0.99
Entry Flow Rate [veh/h]	116	305	429	475	794	898
Capacity of Entry and Bypass Lanes [veh/h]	408	470	1279	1279	1169	1169
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	400	461	1244	1266	1157	1155
X, volume / capacity	0.28	0.65	0.34	0.37	0.68	0.77

Movement, Approach, & Intersection Results

Average Lane Delay [s/veh]	13.92	24.38	6.03	6.37	12.83	16.42
Lane LOS	B	C	A	A	B	C
95th-Percentile Queue Length [veh]	1.14	4.53	1.49	1.74	5.67	8.01
95th-Percentile Queue Length [ft]	28.62	113.26	37.30	43.54	141.64	200.22
Approach Delay [s/veh]	21.51		6.21		14.73	
Approach LOS	C		A		B	
Intersection Delay [s/veh]	13.13					
Intersection LOS	B					

Option 1: Dual Through Lanes WB & EB

Number	12											
Intersection	Flynn Ln & Mullan Rd											
Control Type	Roundabout											
Analysis Method	HCM 6th Edition											
Name				Flynn Ln			Mullan Rd			Mullan Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↗			↗			↕↕			↕↕		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Base Volume Input [veh/h]	0	0	1	0	0	139	55	685	1	1	1364	99
Total Analysis Volume [veh/h]	0	0	1	0	0	151	60	745	1	1	1483	108

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	821			1514			1			61		
Exiting Flow Rate [veh/h]	2			171			1667			761		
Demand Flow Rate [veh/h]	0	0	1	0	0	139	55	685	1	1	1364	99
Adjusted Demand Flow Rate [veh/h]	0	0	1	0	0	151	60	745	1	1	1483	108

Lanes

Override Calculated Critical Headway	No			No			No	No	No	No
User-Defined Critical Headway [s]	4.00			4.00			4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No			No			No	No	No	No
User-Defined Follow-Up Time [s]	3.00			3.00			3.00	3.00	3.00	3.00
A (intercept)	1380.00			1380.00			1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00102			0.00102			0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	0.98			0.98			0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	2			155			387	436	764	861
Capacity of Entry and Bypass Lanes [veh/h]	598			295			1419	1419	1344	1344
Pedestrian Impedance	1.00			1.00			1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	586			289			1391	1391	1317	1317
X, volume / capacity	0.00			0.52			0.27	0.31	0.57	0.64

Movement, Approach, & Intersection Results

Average Lane Delay [s/veh]	6.17			27.95			4.92	5.27	9.11	10.68		
Lane LOS	A			D			A	A	A	B		
95th-Percentile Queue Length [veh]	0.01			2.82			1.11	1.32	3.75	4.94		
95th-Percentile Queue Length [ft]	0.13			70.57			27.83	32.89	93.76	123.48		
Approach Delay [s/veh]	6.17			27.95			5.10		9.94			
Approach LOS	A			D			A		A			
Intersection Delay [s/veh]	9.48											
Intersection LOS	A											



Option 1: WB T/R & EB T/L

Number	13					
Intersection	Mary Jane Blvd & Mullan Rd					
Control Type	Roundabout					
Analysis Method	HCM 6th Edition					
Name	Mary Jane Blvd		Mullan Rd		Mullan Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Base Volume Input [veh/h]	109	135	119	565	1330	125
Total Analysis Volume [veh/h]	118	147	129	614	1446	136

Intersection Settings

Number of Conflicting Circulating Lanes	2		1		1	
Circulating Flow Rate [veh/h]	1518		120		135	
Exiting Flow Rate [veh/h]	274		1668		741	
Demand Flow Rate [veh/h]	109	135	119	565	1330	125
Adjusted Demand Flow Rate [veh/h]	118	147	129	614	1446	136

Lanes

Override Calculated Critical Headway	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1350.00	1420.00	1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00092	0.00085	0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	0.98	0.98	0.98	0.99	0.95	0.95
Entry Flow Rate [veh/h]	121	150	356	398	781	879
Capacity of Entry and Bypass Lanes [veh/h]	334	391	1273	1273	1256	1256
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	328	384	1252	1261	1196	1199
X, volume / capacity	0.36	0.38	0.28	0.31	0.62	0.70

Movement, Approach, & Intersection Results

Average Lane Delay [s/veh]	18.87	17.05	5.38	5.71	10.94	13.17
Lane LOS	C	C	A	A	B	B
95th-Percentile Queue Length [veh]	1.59	1.76	1.15	1.35	4.57	6.15
95th-Percentile Queue Length [ft]	39.84	44.08	28.73	33.67	114.15	153.65
Approach Delay [s/veh]	17.86		5.56		12.12	
Approach LOS	C		A		B	
Intersection Delay [s/veh]	10.82					
Intersection LOS	B					

Mullan BUILD - 2050 PM

Vistro File: H:\...\24667_PM2050.vistro

Scenario 4 Signal (2050)

Report File: H:\...\24667_PM2050_SIGNAL.pdf

7/17/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	George Elmer Dr & W Broadway St	Signalized	HCM 6th Edition	NB Left	0.750	28.8	C
2	George Elmer Dr & England Blvd	Signalized	HCM 6th Edition	NB Left	0.607	24.2	C
5	George Elmer Dr & Mullan Rd	Signalized	HCM 6th Edition	SB Left	0.841	42.9	D
7	Doughtery Dr & W Broadway St	Signalized	HCM 6th Edition	WB Left	0.847	29.4	C
9	Flynn Ln & England Blvd	Signalized	HCM 6th Edition	NB Thru	0.464	15.2	B
12	Flynn Ln & Mullan Rd	Signalized	HCM 6th Edition	WB Thru	1.033	46.4	D
13	Mary Jane Blvd & Mullan Rd	Signalized	HCM 6th Edition	SB Left	0.939	44.0	D
16	Mary Jane Blvd & England Blvd	Signalized	HCM 6th Edition	SB Left	0.529	18.8	B
20	Mary Jane Blvd & W Broadway St	Signalized	HCM 6th Edition	NB Left	0.751	18.6	B
21	Flynn Ln & W Broadway St	Signalized	HCM 6th Edition	NB Thru	0.843	11.4	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: George Elmer Dr & W Broadway St

Control Type:	Signalized	Delay (sec / veh):	28.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.750

Intersection Setup

Name	George Elmer Dr			Commercial Access			W Broadway St			W Broadway St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00
Speed [mph]	30.00			30.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		



Volumes

Name	George Elmer Dr			Commercial Access			W Broadway St			W Broadway St		
Base Volume Input [veh/h]	204	1	159	1	1	1	1	1435	250	137	1098	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.00	2.00	3.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	204	1	159	1	1	1	1	1435	250	137	1098	1
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	55	0	43	0	0	0	0	390	68	37	298	0
Total Analysis Volume [veh/h]	222	1	173	1	1	1	1	1560	272	149	1193	1
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street		0			0			0			0	
v_di, Inbound Pedestrian Volume crossing major street		0			0			0			0	
v_co, Outbound Pedestrian Volume crossing minor street		0			0			0			0	
v_ci, Inbound Pedestrian Volume crossing minor street		0			0			0			0	
v_ab, Corner Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	ProtPer	Permis	Permis	ProtPer	Permis	Permis
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	4.0	0.0	0.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
All red [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Split [s]	0	54	0	0	54	0	11	33	0	33	55	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	7	7	0
Pedestrian Clearance [s]	0	20	0	0	20	0	0	20	0	20	20	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	4.0	0.0	0.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	4.00	0.00	4.00	4.00	0.00	4.00	4.00
g_i, Effective Green Time [s]	32	32	32	76	64	64	76	70	70
g / C, Green / Cycle	0.26	0.26	0.26	0.64	0.53	0.53	0.64	0.58	0.58
(v / s)_i Volume / Saturation Flow Rate	0.16	0.12	0.00	0.00	0.48	0.19	0.29	0.36	0.00
s, saturation flow rate [veh/h]	1403	1465	998	533	3279	1464	512	3279	1464
c, Capacity [veh/h]	235	388	305	316	1739	776	274	1914	854
d1, Uniform Delay [s]	46.17	36.77	32.90	11.28	25.25	16.26	24.57	16.36	10.41
k, delay calibration	0.11	0.11	0.11	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	16.77	0.81	0.01	0.02	7.73	1.25	7.56	1.54	0.00
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.94	0.45	0.01	0.00	0.90	0.35	0.54	0.62	0.00
d, Delay for Lane Group [s/veh]	62.94	37.58	32.91	11.30	32.99	17.51	32.13	17.90	10.42
Lane Group LOS	E	D	C	B	C	B	C	B	B
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	7.55	4.36	0.07	0.01	19.16	4.15	1.91	9.63	0.01
50th-Percentile Queue Length [ft/ln]	188.77	108.98	1.65	0.24	478.93	103.77	47.68	240.86	0.26
95th-Percentile Queue Length [veh/ln]	12.06	7.78	0.12	0.02	26.34	7.47	3.43	14.72	0.02
95th-Percentile Queue Length [ft/ln]	301.43	194.58	2.97	0.44	658.38	186.79	85.82	368.12	0.47



Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	62.94	37.58	37.58	32.91	32.91	32.91	11.30	32.99	17.51	32.13	17.90	10.42
Movement LOS	E	D	D	C	C	C	B	C	B	C	B	B
d_A, Approach Delay [s/veh]	51.80			32.91			30.68			19.47		
Approach LOS	D			C			C			B		
d_I, Intersection Delay [s/veh]	28.81											
Intersection LOS	C											
Intersection V/C	0.750											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0			0.0			0.0			0.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	0.00			0.00			0.00			0.00		
I_p,int, Pedestrian LOS Score for Intersection	0.000			0.000			0.000			0.000		
Crosswalk LOS	F			F			F			F		
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	800			800			450			817		
d_b, Bicycle Delay [s]	21.60			21.60			36.04			21.00		
I_b,int, Bicycle LOS Score for Intersection	2.213			1.565			3.072			2.668		
Bicycle LOS	B			A			C			B		

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-





**Intersection Level Of Service Report
Intersection 2: George Elmer Dr & England Blvd**

Control Type:	Signalized	Delay (sec / veh):	24.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.607

Intersection Setup

Name	George Elmer Dr			George Elmer Dr			England Blvd			England Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵			↵			↵			↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		



Volumes

Name	George Elmer Dr			George Elmer Dr			England Blvd			England Blvd		
Base Volume Input [veh/h]	142	199	46	42	169	184	122	301	159	43	431	42
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	3.00	2.00	2.00	3.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	142	199	46	42	169	184	122	301	159	43	431	42
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	39	54	13	11	46	50	33	82	43	12	117	11
Total Analysis Volume [veh/h]	154	216	50	46	184	200	133	327	173	47	468	46
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lag	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	15	20	0	15	20	0	15	20	0	15	20	0
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
All red [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Split [s]	96	39	0	96	39	0	96	51	0	96	51	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	7	7	0	5	7	0	0	7	0	7	7	0
Pedestrian Clearance [s]	10	10	0	10	10	0	0	10	0	10	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	L	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
g_i, Effective Green Time [s]	33	33	33	33	45	45	45	45
g / C, Green / Cycle	0.37	0.37	0.37	0.37	0.50	0.50	0.50	0.50
(v / s)_i Volume / Saturation Flow Rate	0.15	0.16	0.04	0.25	0.15	0.31	0.05	0.30
s, saturation flow rate [veh/h]	999	1654	1113	1565	886	1623	898	1696
c, Capacity [veh/h]	212	604	322	572	316	813	315	850
d1, Uniform Delay [s]	39.85	21.58	28.72	24.00	28.48	16.18	25.89	16.07
k, delay calibration	0.11	0.11	0.11	0.18	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.65	0.50	0.20	2.33	4.07	3.46	1.00	3.19
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.72	0.44	0.14	0.67	0.42	0.61	0.15	0.60
d, Delay for Lane Group [s/veh]	44.50	22.09	28.92	26.33	32.55	19.64	26.89	19.25
Lane Group LOS	D	C	C	C	C	B	C	B
Critical Lane Group	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.68	4.19	0.82	6.97	2.78	7.72	0.86	7.83
50th-Percentile Queue Length [ft/ln]	91.98	104.83	20.43	174.13	69.43	192.95	21.51	195.81
95th-Percentile Queue Length [veh/ln]	6.62	7.55	1.47	11.29	5.00	12.27	1.55	12.42
95th-Percentile Queue Length [ft/ln]	165.57	188.69	36.77	282.34	124.97	306.86	38.73	310.56



Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	44.50	22.09	22.09	28.92	26.33	26.33	32.55	19.64	19.64	26.89	19.25	19.25
Movement LOS	D	C	C	C	C	C	C	B	B	C	B	B
d_A, Approach Delay [s/veh]	30.31			26.60			22.35			19.89		
Approach LOS	C			C			C			B		
d_I, Intersection Delay [s/veh]	24.21											
Intersection LOS	C											
Intersection V/C	0.607											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	34.67			34.67			34.67			34.67		
I_p,int, Pedestrian LOS Score for Intersection	2.274			2.397			2.632			2.325		
Crosswalk LOS	B			B			B			B		
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	733			733			1000			1000		
d_b, Bicycle Delay [s]	18.05			18.05			11.25			11.25		
I_b,int, Bicycle LOS Score for Intersection	2.253			2.269			2.604			2.485		
Bicycle LOS	B			B			B			B		

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-





Intersection Level Of Service Report
Intersection 5: George Elmer Dr & Mullan Rd

Control Type:	Signalized	Delay (sec / veh):	42.9
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.841

Intersection Setup

Name	George Elmer Dr		Mullan Rd		Mullan Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration	↔↔		↔↑		↑↔	
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	325.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	



Volumes

Name	George Elmer Dr		Mullan Rd		Mullan Rd	
Base Volume Input [veh/h]	104	275	179	637	1185	353
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	3.00	2.00	2.00	3.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	104	275	179	637	1185	353
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	75	49	173	322	96
Total Analysis Volume [veh/h]	113	299	195	692	1288	384
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0		0		0	
v_di, Inbound Pedestrian Volume crossing major street	0		0		0	
v_co, Outbound Pedestrian Volume crossing minor street	0		0		0	
v_ci, Inbound Pedestrian Volume crossing minor street	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	ProtPerm	Permissive	Permissive	Permissive
Signal Group	8	8	5	2	6	6
Auxiliary Signal Groups						
Lead / Lag	Lead	-	Lag	-	-	-
Minimum Green [s]	5	5	5	5	5	5
Maximum Green [s]	30	30	30	30	30	30
Amber [s]	4.0	4.0	4.0	4.0	4.0	4.0
All red [s]	2.0	2.0	2.0	2.0	2.0	2.0
Split [s]	61	61	30	120	90	90
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	7	7	0	7	7	7
Pedestrian Clearance [s]	20	20	0	20	20	20
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Recall	No		No	No	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	L	C	C	R
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	0.00	0.00	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	2.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	0.00	0.00	4.00	4.00	4.00
g_i, Effective Green Time [s]	0	0	9	114	103	103
g / C, Green / Cycle	0.00	0.00	0.08	0.95	0.86	0.86
(v / s)_i Volume / Saturation Flow Rate	0.51	0.20	0.36	0.40	0.75	0.26
s, saturation flow rate [veh/h]	220	1464	548	1722	1722	1452
c, Capacity [veh/h]	60	0	129	1636	1477	1246
d1, Uniform Delay [s]	59.95	0.00	0.31	0.25	4.81	1.65
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	452.89	0.00	268.08	0.80	7.35	0.64
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.88	10000.00	1.52	0.42	0.87	0.31
d, Delay for Lane Group [s/veh]	512.84	0.00	268.39	1.05	12.15	2.29
Lane Group LOS	F	F	F	A	B	A
Critical Lane Group	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	9.55	0.00	9.58	0.37	8.96	0.83
50th-Percentile Queue Length [ft/ln]	238.87	0.00	239.38	9.13	223.90	20.74
95th-Percentile Queue Length [veh/ln]	14.62	0.00	16.42	0.66	13.86	1.49
95th-Percentile Queue Length [ft/ln]	365.61	0.00	410.60	16.44	346.59	37.33



Movement, Approach, & Intersection Results

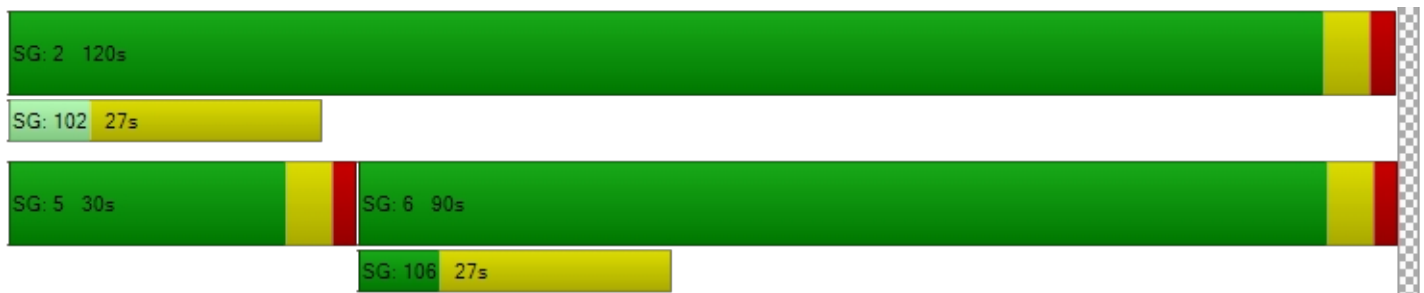
d_M, Delay for Movement [s/veh]	512.84	0.00	268.39	1.05	12.15	2.29
Movement LOS	F	A	F	A	B	A
d_A, Approach Delay [s/veh]	140.66		59.83		9.89	
Approach LOS	F		E		A	
d_I, Intersection Delay [s/veh]	42.93					
Intersection LOS	D					
Intersection V/C	0.841					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.50	49.50	49.50
I_p,int, Pedestrian LOS Score for Intersection	2.290	3.160	3.322
Crosswalk LOS	B	C	C
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	1900	1400
d_b, Bicycle Delay [s]	60.00	0.15	5.40
I_b,int, Bicycle LOS Score for Intersection	1.560	3.023	4.318
Bicycle LOS	A	C	E

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-





Intersection Level Of Service Report
Intersection 7: Dougherty Dr & W Broadway St

Control Type:	Signalized	Delay (sec / veh):	29.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.847

Intersection Setup

Name	Dougherty Dr		W Broadway St		W Broadway St	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	100.00
Speed [mph]	30.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		No	



Volumes

Name	Dougherty Dr		W Broadway St		W Broadway St	
Base Volume Input [veh/h]	175	300	1394	200	254	1060
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	175	300	1394	200	254	1060
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	48	82	379	54	69	288
Total Analysis Volume [veh/h]	190	326	1515	217	276	1152
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0		0		0	
v_di, Inbound Pedestrian Volume crossing major street	0		0		0	
v_co, Outbound Pedestrian Volume crossing minor street	0		0		0	
v_ci, Inbound Pedestrian Volume crossing minor street	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Permissive	Permissive	ProtPerm	Permissive
Signal Group	8	8	2	2	1	6
Auxiliary Signal Groups						
Lead / Lag	Lag	-	-	-	Lead	-
Minimum Green [s]	5	5	5	5	5	5
Maximum Green [s]	30	30	30	30	30	30
Amber [s]	4.0	4.0	4.0	4.0	4.0	4.0
All red [s]	2.0	2.0	2.0	2.0	2.0	2.0
Split [s]	53	53	51	51	16	67
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	4.00	4.00	0.00	4.00
g_i, Effective Green Time [s]	29	29	63	63	79	79
g / C, Green / Cycle	0.24	0.24	0.52	0.52	0.66	0.66
(v / s)_i Volume / Saturation Flow Rate	0.12	0.22	0.46	0.15	0.48	0.35
s, saturation flow rate [veh/h]	1640	1464	3279	1464	577	3279
c, Capacity [veh/h]	400	357	1712	764	323	2151
d1, Uniform Delay [s]	38.77	44.10	25.48	16.09	33.38	10.94
k, delay calibration	0.11	0.13	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.88	10.52	7.12	0.93	24.11	0.96
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.47	0.91	0.89	0.28	0.86	0.54
d, Delay for Lane Group [s/veh]	39.65	54.62	32.60	17.02	57.48	11.90
Lane Group LOS	D	D	C	B	E	B
Critical Lane Group	No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	4.89	10.40	18.45	3.23	4.63	6.90
50th-Percentile Queue Length [ft/ln]	122.27	259.98	461.32	80.76	115.80	172.51
95th-Percentile Queue Length [veh/ln]	8.52	15.69	25.50	5.81	8.16	11.21
95th-Percentile Queue Length [ft/ln]	212.94	392.19	637.44	145.36	204.04	280.21

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	39.65	54.62	32.60	17.02	57.48	11.90
Movement LOS	D	D	C	B	E	B
d_A, Approach Delay [s/veh]	49.11		30.65		20.71	
Approach LOS	D		C		C	
d_I, Intersection Delay [s/veh]	29.38					
Intersection LOS	C					
Intersection V/C	0.847					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000
Crosswalk LOS	F	F	F
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	783	750	1017
d_b, Bicycle Delay [s]	22.20	23.44	14.50
I_b,int, Bicycle LOS Score for Intersection	1.560	2.989	2.738
Bicycle LOS	A	C	B

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report
Intersection 9: Flynn Ln & England Blvd**

Control Type:	Signalized	Delay (sec / veh):	15.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.464

Intersection Setup

Name	Flynn Ln			Flynn Ln			England Blvd			England Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			T			T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			25.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		



Volumes

Name	Flynn Ln			Flynn Ln			England Blvd			England Blvd		
Base Volume Input [veh/h]	2	74	65	17	79	3	21	324	15	58	461	15
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	3.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	74	65	17	79	3	21	324	15	58	461	15
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	20	18	5	21	1	6	88	4	16	125	4
Total Analysis Volume [veh/h]	2	80	71	18	86	3	23	352	16	63	501	16
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	ProtPer	Permis	Permis	ProtPer	Permis	Permis
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	4.0	0.0	0.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
All red [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Split [s]	0	33	0	0	33	0	24	46	0	11	33	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	4.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	20	0	0	20	0	0	20	0	0	20	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	4.0	0.0	0.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	C	L	C
C, Cycle Length [s]	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	0.00	4.00	0.00	4.00
g_i, Effective Green Time [s]	11	11	68	57	68	59
g / C, Green / Cycle	0.12	0.12	0.75	0.64	0.75	0.66
(v / s)_i Volume / Saturation Flow Rate	0.10	0.07	0.02	0.22	0.06	0.30
s, saturation flow rate [veh/h]	1593	1611	955	1709	1089	1713
c, Capacity [veh/h]	227	236	691	1090	824	1126
d1, Uniform Delay [s]	38.83	37.46	4.04	7.53	3.49	7.57
k, delay calibration	0.11	0.15	0.50	0.50	0.04	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.45	1.94	0.09	0.84	0.01	1.35
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.67	0.45	0.03	0.34	0.08	0.46
d, Delay for Lane Group [s/veh]	42.27	39.41	4.13	8.37	3.50	8.92
Lane Group LOS	D	D	A	A	A	A
Critical Lane Group	Yes	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	3.51	2.35	0.10	3.14	0.22	4.62
50th-Percentile Queue Length [ft/ln]	87.64	58.67	2.40	78.54	5.61	115.41
95th-Percentile Queue Length [veh/ln]	6.31	4.22	0.17	5.65	0.40	8.14
95th-Percentile Queue Length [ft/ln]	157.74	105.61	4.32	141.37	10.10	203.50



Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	42.27	42.27	42.27	39.41	39.41	39.41	4.13	8.37	8.37	3.50	8.92	8.92
Movement LOS	D	D	D	D	D	D	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	42.27			39.41			8.12			8.33		
Approach LOS	D			D			A			A		
d_I, Intersection Delay [s/veh]	15.19											
Intersection LOS	B											
Intersection V/C	0.464											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	34.67			34.67			34.67			34.67		
I_p,int, Pedestrian LOS Score for Intersection	1.903			1.828			2.234			2.297		
Crosswalk LOS	A			A			B			B		
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	600			600			889			600		
d_b, Bicycle Delay [s]	22.05			22.05			13.89			22.05		
I_b,int, Bicycle LOS Score for Intersection	1.812			1.736			2.205			2.517		
Bicycle LOS	A			A			B			B		

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-





**Intersection Level Of Service Report
Intersection 12: Flynn Ln & Mullan Rd**

Control Type:	Signalized	Delay (sec / veh):	46.4
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.033

Intersection Setup

Name	Flynn Ln			Mullan Rd			Mullan Rd					
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↶			↷			↶↷			↶↷		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			25.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		



Volumes

Name				Flynn Ln			Mullan Rd			Mullan Rd		
Base Volume Input [veh/h]	0	0	1	0	0	139	55	685	1	1	1364	99
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	1	0	0	139	55	685	1	1	1364	99
Peak Hour Factor	1.0000	1.0000	0.9200	0.9200	1.0000	0.9200	0.9200	0.9200	1.0000	1.0000	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	0	0	38	15	186	0	0	371	27
Total Analysis Volume [veh/h]	0	0	1	0	0	151	60	745	1	1	1483	108
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permis	Permis	Overla	Permis	Permis	Overla	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	0	5	0	0	5	0	2	0	0	6	6
Auxiliary Signal Groups			5			5						
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	5	0	0	5	0	5	0	0	5	5
Maximum Green [s]	0	0	30	0	0	30	0	30	0	0	30	30
Amber [s]	0.0	0.0	4.0	0.0	0.0	4.0	0.0	4.0	0.0	0.0	4.0	4.0
All red [s]	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0
Split [s]	0	0	30	0	0	30	0	120	0	0	90	90
Vehicle Extension [s]	0.0	0.0	3.0	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	3.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	0	0	0	0	0	0	20	0	0	20	20
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk			No			No		No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	0.0	4.0	0.0	0.0	4.0	0.0	4.0	0.0	0.0	4.0	4.0
Minimum Recall			No			No		No			No	
Maximum Recall			No			No		No			No	
Pedestrian Recall			No			No		No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	R	R	L	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	0.00	4.00	4.00	4.00	4.00
g_i, Effective Green Time [s]	14	14	114	114	94	94	94
g / C, Green / Cycle	0.12	0.12	0.95	0.95	0.78	0.78	0.78
(v / s)_i Volume / Saturation Flow Rate	0.00	0.10	0.11	0.43	0.00	0.86	0.07
s, saturation flow rate [veh/h]	1464	1464	562	1722	715	1722	1464
c, Capacity [veh/h]	174	174	344	1636	577	1345	1143
d1, Uniform Delay [s]	46.57	51.89	38.16	0.26	4.60	13.13	3.11
k, delay calibration	0.11	0.11	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.01	12.12	1.10	0.92	0.01	57.65	0.16
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.01	0.87	0.17	0.46	0.00	1.10	0.09
d, Delay for Lane Group [s/veh]	46.58	64.01	39.26	1.18	4.61	70.78	3.27
Lane Group LOS	D	E	D	A	A	F	A
Critical Lane Group	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.03	5.08	0.11	0.42	0.01	44.48	0.49
50th-Percentile Queue Length [ft/ln]	0.68	127.01	2.63	10.44	0.16	1112.1	12.19
95th-Percentile Queue Length [veh/ln]	0.05	8.78	0.19	0.75	0.01	60.56	0.88
95th-Percentile Queue Length [ft/ln]	1.22	219.43	4.74	18.79	0.29	1513.9	21.95



Movement, Approach, & Intersection Results

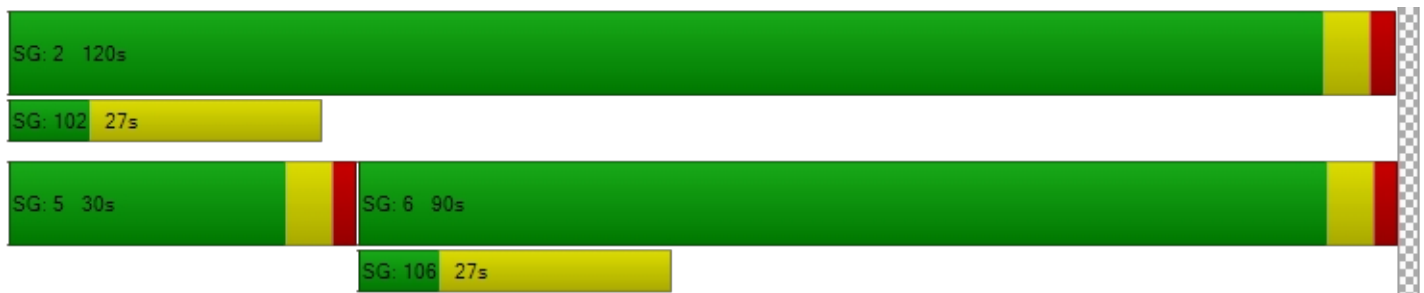
d_M, Delay for Movement [s/veh]	0.00	0.00	46.58	0.00	0.00	64.01	39.26	1.18	1.18	4.61	70.78	3.27
Movement LOS			D			E	D	A	A	A	F	A
d_A, Approach Delay [s/veh]	46.58			64.01			4.02			66.16		
Approach LOS	D			E			A			E		
d_I, Intersection Delay [s/veh]	46.38											
Intersection LOS	D											
Intersection V/C	1.033											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			24.0			24.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	49.50			49.50			38.40			38.40		
I_p,int, Pedestrian LOS Score for Intersection	1.732			1.926			3.133			2.990		
Crosswalk LOS	A			A			C			C		
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	400			400			1900			1400		
d_b, Bicycle Delay [s]	38.40			38.40			0.15			5.40		
I_b,int, Bicycle LOS Score for Intersection	1.560			1.560			2.890			4.186		
Bicycle LOS	A			A			C			D		

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-





**Intersection Level Of Service Report
Intersection 13: Mary Jane Blvd & Mullan Rd**

Control Type:	Signalized	Delay (sec / veh):	44.0
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.939

Intersection Setup

Name	Mary Jane Blvd		Mullan Rd		Mullan Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration	↵↵		↵↑		↑↵	
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	



Volumes

Name	Mary Jane Blvd		Mullan Rd		Mullan Rd	
Base Volume Input [veh/h]	109	135	119	565	1330	125
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	109	135	119	565	1330	125
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	30	37	32	154	361	34
Total Analysis Volume [veh/h]	118	147	129	614	1446	136
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0		0		0	
v_di, Inbound Pedestrian Volume crossing major street	0		0		0	
v_co, Outbound Pedestrian Volume crossing minor street	0		0		0	
v_ci, Inbound Pedestrian Volume crossing minor street	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	ProtPerm	Permissive	Permissive	Permissive
Signal Group	8	8	5	2	6	6
Auxiliary Signal Groups						
Lead / Lag	Lead	-	Lag	-	-	-
Minimum Green [s]	5	5	5	5	5	5
Maximum Green [s]	30	30	30	30	30	30
Amber [s]	4.0	4.0	4.0	4.0	4.0	4.0
All red [s]	2.0	2.0	2.0	2.0	2.0	2.0
Split [s]	61	61	30	120	90	90
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	7	7	0	7	7	7
Pedestrian Clearance [s]	20	20	0	20	20	20
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Recall	No		No	No	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	L	C	C	R
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	0.00	0.00	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	2.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	0.00	0.00	4.00	4.00	4.00
g_i, Effective Green Time [s]	0	0	9	114	103	103
g / C, Green / Cycle	0.00	0.00	0.07	0.95	0.86	0.86
(v / s)_i Volume / Saturation Flow Rate	0.58	0.10	0.24	0.36	0.84	0.09
s, saturation flow rate [veh/h]	203	1464	544	1722	1722	1464
c, Capacity [veh/h]	60	0	128	1636	1478	1257
d1, Uniform Delay [s]	59.95	0.00	0.31	0.23	7.49	1.33
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	488.57	0.00	81.23	0.66	18.73	0.17
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.97	10000.00	1.01	0.38	0.98	0.11
d, Delay for Lane Group [s/veh]	548.52	0.00	81.54	0.89	26.22	1.50
Lane Group LOS	F	F	F	A	C	A
Critical Lane Group	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	10.15	0.00	2.89	0.30	18.01	0.23
50th-Percentile Queue Length [ft/ln]	253.75	0.00	72.30	7.49	450.25	5.81
95th-Percentile Queue Length [veh/ln]	15.37	0.00	5.21	0.54	24.97	0.42
95th-Percentile Queue Length [ft/ln]	384.37	0.00	130.13	13.48	624.24	10.45



Movement, Approach, & Intersection Results

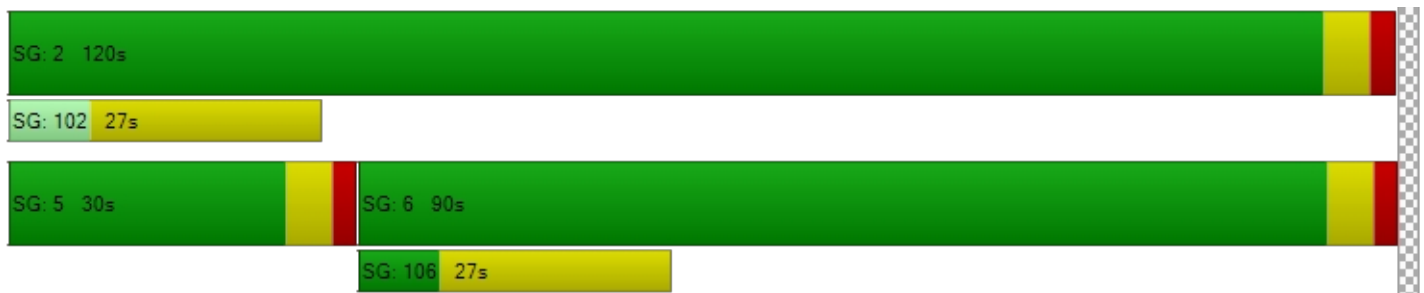
d_M, Delay for Movement [s/veh]	548.52	0.00	81.54	0.89	26.22	1.50
Movement LOS	F	A	F	A	C	A
d_A, Approach Delay [s/veh]	244.25		14.89		24.10	
Approach LOS	F		B		C	
d_I, Intersection Delay [s/veh]	43.98					
Intersection LOS	D					
Intersection V/C	0.939					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.50	49.50	49.50
I_p,int, Pedestrian LOS Score for Intersection	2.135	3.093	3.250
Crosswalk LOS	B	C	C
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	1900	1400
d_b, Bicycle Delay [s]	60.00	0.15	5.40
I_b,int, Bicycle LOS Score for Intersection	1.560	2.786	4.170
Bicycle LOS	A	C	D

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-





Intersection Level Of Service Report
Intersection 16: Mary Jane Blvd & England Blvd

Control Type:	Signalized	Delay (sec / veh):	18.8
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.529

Intersection Setup

Name	Mary Jane Blvd			Mary Jane Blvd			England Blvd			England Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵			↵			↵			↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		



Volumes

Name	Mary Jane Blvd			Mary Jane Blvd			England Blvd			England Blvd		
Base Volume Input [veh/h]	68	78	106	92	156	14	26	348	33	64	452	93
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	68	78	106	92	156	14	26	348	33	64	452	93
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	21	29	25	42	4	7	95	9	17	123	25
Total Analysis Volume [veh/h]	74	85	115	100	170	15	28	378	36	70	491	101
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lag	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	15	20	0	15	20	0	15	20	0	15	20	0
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
All red [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Split [s]	96	39	0	96	39	0	96	51	0	96	51	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	7	7	0	5	7	0	0	7	0	7	7	0
Pedestrian Clearance [s]	10	10	0	10	10	0	0	10	0	10	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	L	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
g_i, Effective Green Time [s]	23	23	23	23	55	55	55	55
g / C, Green / Cycle	0.25	0.25	0.25	0.25	0.61	0.61	0.61	0.61
(v / s)_i Volume / Saturation Flow Rate	0.06	0.13	0.08	0.11	0.03	0.24	0.07	0.35
s, saturation flow rate [veh/h]	1198	1564	1182	1698	825	1696	972	1672
c, Capacity [veh/h]	236	398	212	432	406	1039	545	1024
d1, Uniform Delay [s]	36.26	28.68	38.77	28.07	17.05	8.95	13.20	10.47
k, delay calibration	0.11	0.11	0.11	0.11	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.75	0.98	1.62	0.67	0.33	1.14	0.49	2.38
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.31	0.50	0.47	0.43	0.07	0.40	0.13	0.58
d, Delay for Lane Group [s/veh]	37.01	29.66	40.40	28.74	17.38	10.09	13.68	12.86
Lane Group LOS	D	C	D	C	B	B	B	B
Critical Lane Group	No	Yes	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.54	3.73	2.21	3.36	0.39	4.05	0.84	6.90
50th-Percentile Queue Length [ft/ln]	38.45	93.17	55.21	83.91	9.78	101.15	20.95	172.39
95th-Percentile Queue Length [veh/ln]	2.77	6.71	3.98	6.04	0.70	7.28	1.51	11.20
95th-Percentile Queue Length [ft/ln]	69.21	167.71	99.39	151.04	17.60	182.07	37.71	280.06



Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	37.01	29.66	29.66	40.40	28.74	28.74	17.38	10.09	10.09	13.68	12.86	12.86
Movement LOS	D	C	C	D	C	C	B	B	B	B	B	B
d_A, Approach Delay [s/veh]	31.65			32.83			10.56			12.94		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]	18.80											
Intersection LOS	B											
Intersection V/C	0.529											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	34.67			34.67			34.67			34.67		
I_p,int, Pedestrian LOS Score for Intersection	2.218			2.142			2.377			2.490		
Crosswalk LOS	B			B			B			B		
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	733			733			1000			1000		
d_b, Bicycle Delay [s]	18.05			18.05			11.25			11.25		
I_b,int, Bicycle LOS Score for Intersection	2.012			2.030			2.289			2.652		
Bicycle LOS	B			B			B			B		

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-





Intersection Level Of Service Report
Intersection 20: Mary Jane Blvd & W Broadway St

Control Type:	Signalized	Delay (sec / veh):	18.6
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.751

Intersection Setup

Name	Mary Jane Blvd		W Broadway St		W Broadway St	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↵↵		↑↑↵		↵↑↑	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	



Volumes

Name	Mary Jane Blvd		W Broadway St		W Broadway St	
Base Volume Input [veh/h]	216	101	1471	223	184	1097
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.00	3.00	2.00	3.00	3.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	216	101	1471	223	184	1097
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	59	27	400	61	50	298
Total Analysis Volume [veh/h]	235	110	1599	242	200	1192
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0		0		0	
v_di, Inbound Pedestrian Volume crossing major street	0		0		0	
v_co, Outbound Pedestrian Volume crossing minor street	0		0		0	
v_ci, Inbound Pedestrian Volume crossing minor street	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Permissive	Permissive	ProtPerm	Permissive
Signal Group	8	8	2	2	1	6
Auxiliary Signal Groups						
Lead / Lag	Lag	-	-	-	Lead	-
Minimum Green [s]	5	5	5	5	5	5
Maximum Green [s]	30	30	30	30	30	30
Amber [s]	4.0	4.0	4.0	4.0	4.0	4.0
All red [s]	2.0	2.0	2.0	2.0	2.0	2.0
Split [s]	53	53	51	51	16	67
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	4.00	4.00	0.00	4.00
g_i, Effective Green Time [s]	20	20	76	76	88	88
g / C, Green / Cycle	0.16	0.16	0.63	0.63	0.74	0.74
(v / s)_i Volume / Saturation Flow Rate	0.14	0.08	0.49	0.17	0.42	0.36
s, saturation flow rate [veh/h]	1627	1452	3279	1452	475	3279
c, Capacity [veh/h]	268	239	2064	914	322	2412
d1, Uniform Delay [s]	48.93	45.29	16.07	9.88	22.17	6.60
k, delay calibration	0.11	0.11	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.94	1.38	2.91	0.71	8.71	0.73
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.88	0.46	0.77	0.26	0.62	0.49
d, Delay for Lane Group [s/veh]	57.87	46.67	18.98	10.59	30.88	7.33
Lane Group LOS	E	D	B	B	C	A
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	7.52	3.06	13.80	2.59	1.87	4.74
50th-Percentile Queue Length [ft/ln]	188.00	76.55	345.10	64.83	46.85	118.47
95th-Percentile Queue Length [veh/ln]	12.02	5.51	19.90	4.67	3.37	8.31
95th-Percentile Queue Length [ft/ln]	300.44	137.79	497.43	116.70	84.33	207.72

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	57.87	46.67	18.98	10.59	30.88	7.33
Movement LOS	E	D	B	B	C	A
d_A, Approach Delay [s/veh]	54.30		17.88		10.71	
Approach LOS	D		B		B	
d_I, Intersection Delay [s/veh]	18.60					
Intersection LOS	B					
Intersection V/C	0.751					

Other Modes

g_Walk,mi, Effective Walk Time [s]	45.0	47.0	47.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	23.44	22.20	22.20
I_p,int, Pedestrian LOS Score for Intersection	2.364	3.450	3.390
Crosswalk LOS	B	C	C
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	783	750	1017
d_b, Bicycle Delay [s]	22.20	23.44	14.50
I_b,int, Bicycle LOS Score for Intersection	1.560	3.078	2.708
Bicycle LOS	A	C	B

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 21: Flynn Ln & W Broadway St

Control Type:	Signalized	Delay (sec / veh):	11.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.843

Intersection Setup

Name	Flynn Ln		W Broadway St		W Broadway St	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↗		↑↑↗		↑↑	
Turning Movement	Left	Thru	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	1	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	49.21	0.00	0.00
Speed [mph]	25.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		No	



Volumes

Name	Flynn Ln		W Broadway St		W Broadway St	
Base Volume Input [veh/h]	0	283	1397	143	0	1280
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	2.00	2.00	0.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	283	1397	143	0	1280
Peak Hour Factor	0.7900	0.9200	0.9200	0.9200	0.7900	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	77	380	39	0	348
Total Analysis Volume [veh/h]	0	308	1518	155	0	1391
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	0		0		0	
v_di, Inbound Pedestrian Volume crossing major street [	0		0		0	
v_co, Outbound Pedestrian Volume crossing minor stree	0		0		0	
v_ci, Inbound Pedestrian Volume crossing minor street [	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Permissive	Permissive	Permissive	Permissive
Signal Group	0	8	2	2	0	6
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	-	-
Minimum Green [s]	0	5	5	5	0	5
Maximum Green [s]	0	30	30	30	0	30
Amber [s]	0.0	4.0	4.0	4.0	0.0	4.0
All red [s]	0.0	2.0	2.0	2.0	0.0	2.0
Split [s]	0	30	90	90	0	90
Vehicle Extension [s]	0.0	3.0	3.0	3.0	0.0	3.0
Walk [s]	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No	No			No
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	0.0	2.0
I2, Clearance Lost Time [s]	0.0	4.0	4.0	4.0	0.0	4.0
Minimum Recall		No	No			No
Maximum Recall		No	No			No
Pedestrian Recall		No	No			No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	R	C
C, Cycle Length [s]	50	50	50	50
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	4.00	4.00
g_i, Effective Green Time [s]	11	27	27	27
g / C, Green / Cycle	0.22	0.54	0.54	0.54
(v / s)_i Volume / Saturation Flow Rate	0.18	0.46	0.11	0.42
s, saturation flow rate [veh/h]	1750	3279	1464	3279
c, Capacity [veh/h]	384	1768	789	1768
d1, Uniform Delay [s]	18.38	9.83	5.91	9.17
k, delay calibration	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.92	1.31	0.12	0.81
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.80	0.86	0.20	0.79
d, Delay for Lane Group [s/veh]	22.30	11.14	6.03	9.98
Lane Group LOS	C	B	A	A
Critical Lane Group	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.44	3.61	0.43	3.01
50th-Percentile Queue Length [ft/ln]	86.09	90.20	10.74	75.17
95th-Percentile Queue Length [veh/ln]	6.20	6.49	0.77	5.41
95th-Percentile Queue Length [ft/ln]	154.96	162.37	19.33	135.31



Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	22.30	11.14	6.03	0.00	9.98
Movement LOS		C	B	A		A
d_A, Approach Delay [s/veh]	22.30		10.67		9.98	
Approach LOS	C		B		A	
d_I, Intersection Delay [s/veh]	11.44					
Intersection LOS	B					
Intersection V/C	0.843					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000
Crosswalk LOS	F	F	F
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	400	1400	1400
d_b, Bicycle Delay [s]	38.40	5.40	5.40
I_b,int, Bicycle LOS Score for Intersection	2.068	2.940	2.707
Bicycle LOS	B	C	B

Sequence

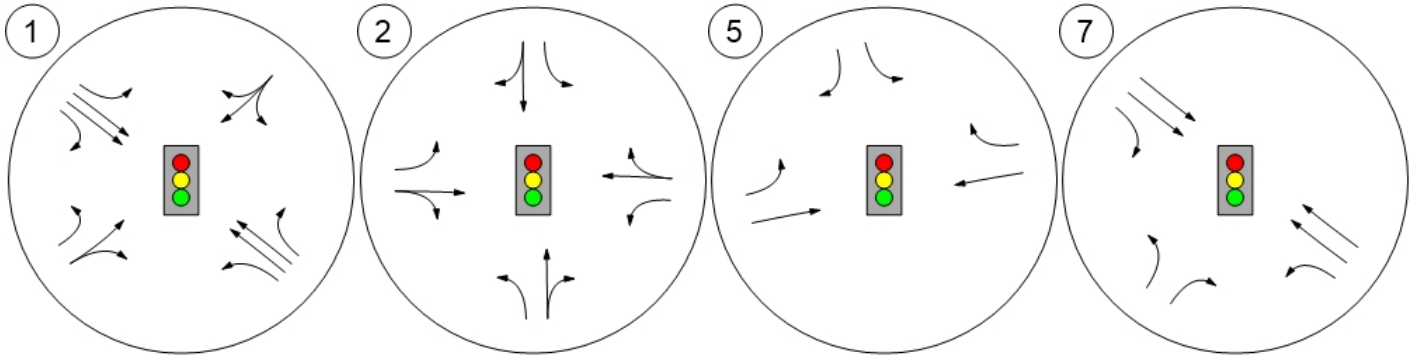
Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



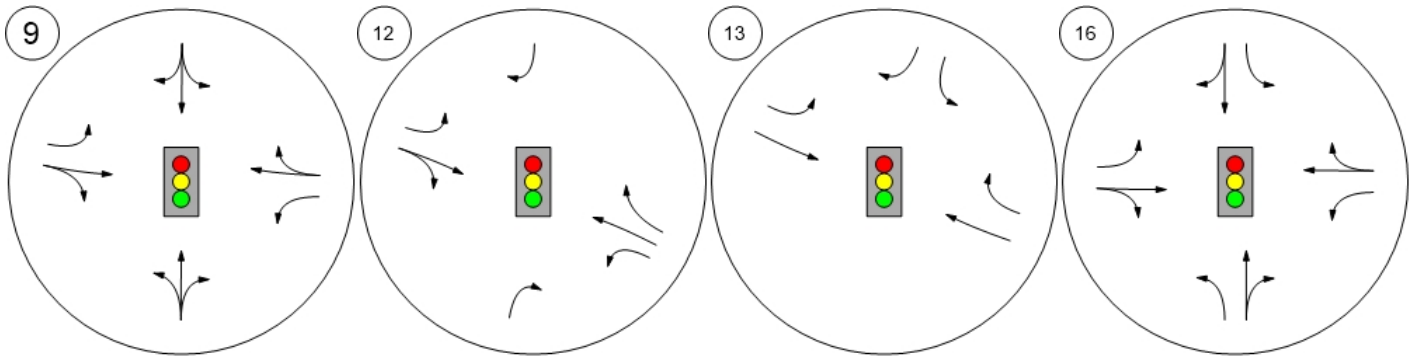
Lane Configuration and Traffic Control



George Elmer Dr & W Broad George Elmer Dr & England George Elmer Dr & Mullan R Dougherty Dr & W Broadway



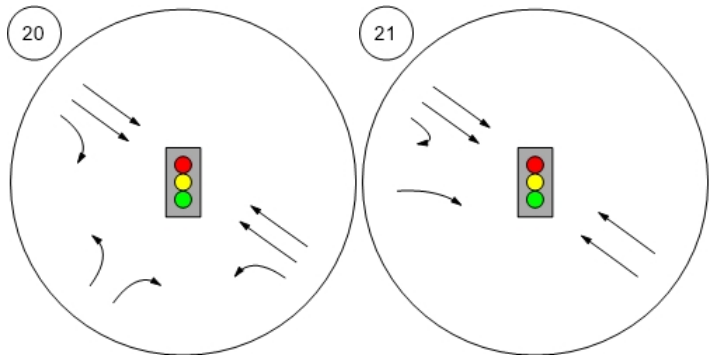
Flynn Ln & England Blvd Flynn Ln & Mullan Rd Mary Jane Blvd & Mullan Rd Mary Jane Blvd & England Bl



Lane Configuration and Traffic Control



Mary Jane Blvd & W Broadw Flynn Ln & W Broadway St





Option 1: Dual Through Lanes EB & WB

Number	5					
Intersection	George Elmer Dr & Mullan Rd					
Control Type	Signalized					
Analysis Method	HCM 6th Edition					
Name	George Elmer Dr		Mullan Rd		Mullan Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Base Volume Input [veh/h]	104	275	179	637	1185	353
Total Analysis Volume [veh/h]	113	299	195	692	1288	384

Intersection Settings

Cycle Length [s]	120					
Coordination Type	Time of Day Pattern Coordinated					
Actuation Type	Fully actuated					
Lost time [s]	12.00					
Control Type	Split	Split	Permissive	Permissive	Permissive	Permissive
Signal Group	8	8	0	2	6	6
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	5
Maximum Green [s]	30	30	0	30	30	30
Amber [s]	4.0	4.0	0.0	4.0	4.0	4.0
All red [s]	2.0	2.0	0.0	2.0	2.0	2.0
Split [s]	34	34	0	86	53	53
Walk [s]	7	7	0	7	7	7
Pedestrian Clearance [s]	20	20	0	20	20	20
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
l1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	No			No	No	
Maximum Recall	No			No	No	
Pedestrian Recall	No			No	No	
Pedestrian Signal Group	0					
Pedestrian Walk [s]	0					
Pedestrian Clearance [s]	0					

Lane Group Calculations

g / C, Green / Cycle	0.22	0.22	0.68	0.68	0.63	0.63
(v / s)_i Volume / Saturation Flow Rate	0.07	0.20	0.40	0.21	0.39	0.26
so, Base Saturation Flow per Lane [pc/h/ln]	1750	1750	1750	1750	1750	1750
Arrival type	3		3		3	
s, saturation flow rate [veh/h]	1640	1464	486	3279	3279	1452
c, Capacity [veh/h]	359	321	312	2233	2066	915
X, volume / capacity	0.31	0.93	0.62	0.31	0.62	0.42
d, Delay for Lane Group [s/veh]	39.78	70.18	26.77	8.10	14.96	12.58
Lane Group LOS	D	E	C	A	B	B



Critical Lane Group	No	Yes	No	NO	Yes	No
50th-Percentile Queue Length [veh/ln]	2.86	10.85	2.36	3.21	9.70	4.93
50th-Percentile Queue Length [ft/ln]	71.44	271.28	58.90	80.34	242.38	123.25
95th-Percentile Queue Length [veh/ln]	5.14	16.25	4.24	5.78	14.80	8.57
95th-Percentile Queue Length [ft/ln]	128.59	406.34	106.03	144.60	370.05	214.29

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	39.78	70.18	26.77	8.10	14.96	12.58
Movement LOS	D	E	C	A	B	B
Critical Movement	No	Yes	No	No	No	No
d_A, Approach Delay [s/veh]	61.84		12.21		14.41	
Approach LOS	E		B		B	
d_I, Intersection Delay [s/veh]	20.33					
Intersection LOS	C					
Intersection V/C	0.663					



Option 1: Dual Through Lanes EB & WB

Number	13					
Intersection	Mary Jane Blvd & Mullan Rd					
Control Type	Signalized					
Analysis Method	HCM 6th Edition					
Name	Mary Jane Blvd		Mullan Rd		Mullan Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Base Volume Input [veh/h]	109	135	119	565	1330	125
Total Analysis Volume [veh/h]	118	147	129	614	1446	136

Intersection Settings

Cycle Length [s]	120					
Coordination Type	Time of Day Pattern Coordinated					
Actuation Type	Fully actuated					
Lost time [s]	12.00					
Control Type	Split	Split	ProtPerm	Permissive	Permissive	Permissive
Signal Group	8	8	5	2	6	6
Auxiliary Signal Groups						
Lead / Lag	Lead	-	Lag	-	-	-
Minimum Green [s]	5	5	5	5	5	5
Maximum Green [s]	30	30	30	30	30	30
Amber [s]	4.0	4.0	4.0	4.0	4.0	4.0
All red [s]	2.0	2.0	2.0	2.0	2.0	2.0
Split [s]	33	33	33	87	54	54
Walk [s]	7	7	0	7	7	7
Pedestrian Clearance [s]	20	20	0	20	20	20
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
l1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
Minimum Recall	No		No	No	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	
Pedestrian Signal Group	0					
Pedestrian Walk [s]	0					
Pedestrian Clearance [s]	0					

Lane Group Calculations

g / C, Green / Cycle	0.12	0.12	0.78	0.78	0.69	0.69
(v / s)_i Volume / Saturation Flow Rate	0.07	0.10	0.26	0.19	0.44	0.09
so, Base Saturation Flow per Lane [pc/h/ln]	1750	1750	1750	1750	1750	1750
Arrival type	3		3		3	
s, saturation flow rate [veh/h]	1640	1464	491	3279	3279	1464
c, Capacity [veh/h]	196	175	376	2560	2258	1008
X, volume / capacity	0.60	0.84	0.34	0.24	0.64	0.13
d, Delay for Lane Group [s/veh]	53.06	61.95	11.75	3.78	11.81	6.69
Lane Group LOS	D	E	B	A	B	A



Critical Lane Group	NO	Yes	Yes	NO	Yes	NO
50th-Percentile Queue Length [veh/ln]	3.53	4.82	0.78	1.49	9.23	1.10
50th-Percentile Queue Length [ft/ln]	88.14	120.56	19.60	37.36	230.84	27.43
95th-Percentile Queue Length [veh/ln]	6.35	8.42	1.41	2.69	14.22	1.97
95th-Percentile Queue Length [ft/ln]	158.65	210.60	35.28	67.25	355.43	49.37

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	53.06	61.95	11.75	3.78	11.81	6.69
Movement LOS	D	E	B	A	B	A
Critical Movement	No	Yes	No	No	No	No
d_A, Approach Delay [s/veh]	57.99		5.16		11.37	
Approach LOS	E		A		B	
d_I, Intersection Delay [s/veh]	14.36					
Intersection LOS	B					
Intersection V/C	0.627					

Mullan BUILD - 2050 AM

Vistro File: H:\...\24667_AM2050 - Lifespan.vistro

Scenario 3 Two Way Stop Control (2050)

Report File: H:\...\24667_AM2050_TWSC_Lifespan.pdf

7/23/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
6	Dougherty Dr & England Blvd	Two-way stop	HCM 6th Edition	SB Left	0.299	21.6	C
9	Flynn Ln & England Blvd	Two-way stop	HCM 6th Edition	SB Left	0.245	33.9	D
12	Flynn Ln & Mullan Rd	Two-way stop	HCM 6th Edition	NB Right	0.006	25.6	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

**Intersection Level Of Service Report
Intersection 6: Dougherty Dr & England Blvd**

Control Type:	Two-way stop	Delay (sec / veh):	21.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.299

Intersection Setup

Name	Dougherty Dr		England Blvd		England Blvd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Dougherty Dr		England Blvd		England Blvd	
Base Volume Input [veh/h]	85	75	50	361	324	30
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	8.00	4.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	85	75	50	361	324	30
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	20	14	98	88	8
Total Analysis Volume [veh/h]	92	82	54	392	352	33
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.30	0.12	0.05	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	21.61	11.05	8.22	0.00	0.00	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	1.22	0.41	0.14	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	30.59	10.28	3.61	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	16.63		0.99		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	3.32					
Intersection LOS	C					

**Intersection Level Of Service Report
Intersection 9: Flynn Ln & England Blvd**

Control Type: Two-way stop
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 33.9
 Level Of Service: D
 Volume to Capacity (v/c): 0.245

Intersection Setup

Name	Flynn Ln			Flynn Ln			England Blvd			England Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			T			T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			25.00			30.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Flynn Ln			Flynn Ln			England Blvd			England Blvd		
Base Volume Input [veh/h]	15	72	73	55	29	19	33	378	34	142	320	75
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	8.00	2.00	2.00	4.00	2.00
Growth Factor	0.7200	0.7200	0.7200	0.7200	0.7200	0.7200	0.7200	0.7200	0.7200	0.7200	0.7200	0.7200
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	11	52	53	40	21	14	24	272	24	102	230	54
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	14	14	11	6	4	7	74	7	28	63	15
Total Analysis Volume [veh/h]	12	57	58	43	23	15	26	296	26	111	250	59
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.23	0.08	0.24	0.09	0.02	0.02	0.00	0.00	0.09	0.00	0.00
d_M, Delay for Movement [s/veh]	26.73	25.00	15.57	33.88	27.44	18.13	7.94	0.00	0.00	8.19	0.00	0.00
Movement LOS	D	D	C	D	D	C	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	1.60	1.60	1.60	1.52	1.52	1.52	0.06	0.00	0.00	0.29	0.00	0.00
95th-Percentile Queue Length [ft/ln]	39.98	39.98	39.98	38.01	38.01	38.01	1.59	0.00	0.00	7.37	0.00	0.00
d_A, Approach Delay [s/veh]	20.86			29.14			0.59			2.17		
Approach LOS	C			D			A			A		
d_I, Intersection Delay [s/veh]	6.28											
Intersection LOS	D											

**Intersection Level Of Service Report
Intersection 12: Flynn Ln & Mullan Rd**

Control Type: Two-way stop
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 25.6
 Level Of Service: D
 Volume to Capacity (v/c): 0.006

Intersection Setup

Name	Flynn Ln			Mullan Rd			Mullan Rd					
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↶			↷			↶↷			↷↶		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			25.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Flynn Ln			Mullan Rd			Mullan Rd					
Base Volume Input [veh/h]	0	0	1	0	0	106	200	1272	1	1	395	197
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	0.00	2.00	2.00	2.00	7.00	2.00	2.00	7.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	1	0	0	106	200	1272	1	1	395	197
Peak Hour Factor	1.0000	1.0000	0.9200	0.9200	1.0000	0.9200	0.9200	0.9200	1.0000	1.0000	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	0	0	29	54	346	0	0	107	54
Total Analysis Volume [veh/h]	0	0	1	0	0	115	217	1383	1	1	429	214
Pedestrian Volume [ped/h]	0			0			0			0		

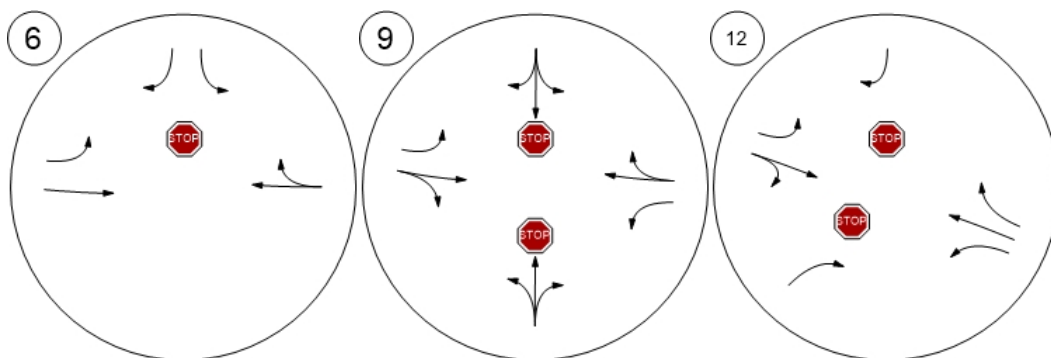
Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.00	0.18	0.23	0.01	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	25.59	0.00	0.00	12.04	9.96	0.00	0.00	12.29	0.00	0.00
Movement LOS			D			B	A	A	A	B	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.02	0.00	0.00	0.67	0.89	0.00	0.00	0.01	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.43	0.00	0.00	16.70	22.24	0.00	0.00	0.15	0.00	0.00
d_A, Approach Delay [s/veh]	25.59			12.04			1.35			0.02		
Approach LOS	D			B			A			A		
d_I, Intersection Delay [s/veh]	1.52											
Intersection LOS	D											

Lane Configuration and Traffic Control



Mullan BUILD - 2050 AM

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Scenario 5 Roundabout (2050)

Report File: H:\...\24667_AM2050_RBT_Lifespan.pdf

7/23/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
5	George Elmer Dr & Mullan Rd	Roundabout	HCM 6th Edition	EB Thru		16.9	C
13	Mary Jane Blvd & Mullan Rd	Roundabout	HCM 6th Edition	EB Thru		15.9	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

**Intersection Level Of Service Report
Intersection 5: George Elmer Dr & Mullan Rd**

Control Type:	Roundabout	Delay (sec / veh):	16.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes		

Intersection Setup

Name	George Elmer Dr		Mullan Rd		Mullan Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	325.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	George Elmer Dr		Mullan Rd		Mullan Rd	
Base Volume Input [veh/h]	222	50	253	1259	405	85
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.00	4.00	4.00	7.00	7.00	4.00
Growth Factor	0.7300	0.7300	0.7300	0.7300	0.7300	0.7300
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	162	37	185	919	296	62
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	44	10	50	250	80	17
Total Analysis Volume [veh/h]	176	40	201	999	322	67
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Number of Conflicting Circulating Lanes	1		1		1	
Circulating Flow Rate [veh/h]	345		183		209	
Exiting Flow Rate [veh/h]	279		386		1252	
Demand Flow Rate [veh/h]	162	37	185	919	296	62
Adjusted Demand Flow Rate [veh/h]	176	40	201	999	322	67

Lanes

Override Calculated Critical Headway	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1420.00	1420.00	1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00091	0.00091	0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	0.96	0.96	0.96	0.93	0.93	0.96
Entry Flow Rate [veh/h]	184	42	210	1069	345	70
Capacity of Entry and Bypass Lanes [veh/h]	1038	1038	1203	1203	1175	1175
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	998	998	1156	1124	1098	1129
X, volume / capacity	0.18	0.04	0.17	0.89	0.29	0.06

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	D	A	A
95th-Percentile Queue Length [veh]	0.64	0.13	0.63	13.08	1.23	0.19
95th-Percentile Queue Length [ft]	15.96	3.13	15.70	327.01	30.76	4.73
Approach Delay [s/veh]	5.02		22.71		5.69	
Approach LOS	A		C		A	
Intersection Delay [s/veh]	16.93					
Intersection LOS	C					

**Intersection Level Of Service Report
Intersection 13: Mary Jane Blvd & Mullan Rd**

Control Type:	Roundabout	Delay (sec / veh):	15.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes		

Intersection Setup

Name	Mary Jane Blvd		Mullan Rd		Mullan Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Mary Jane Blvd		Mullan Rd		Mullan Rd	
Base Volume Input [veh/h]	207	53	231	1042	512	100
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.00	4.00	3.00	7.00	7.00	3.00
Growth Factor	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	178	46	199	896	440	86
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	48	13	54	243	120	23
Total Analysis Volume [veh/h]	193	50	216	974	478	93
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Number of Conflicting Circulating Lanes	1		1		1	
Circulating Flow Rate [veh/h]	511		201		222	
Exiting Flow Rate [veh/h]	318		563		1243	
Demand Flow Rate [veh/h]	178	46	199	896	440	86
Adjusted Demand Flow Rate [veh/h]	193	50	216	974	478	93

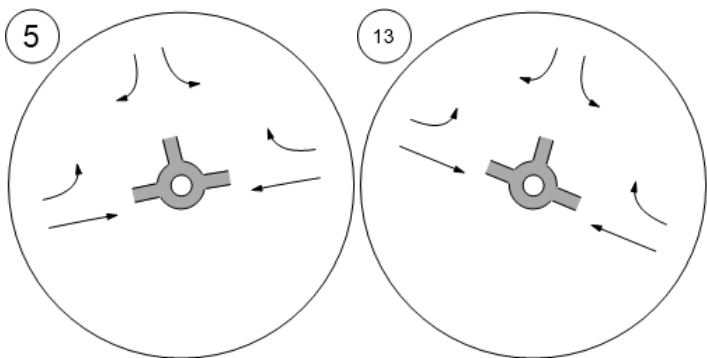
Lanes

Override Calculated Critical Headway	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1420.00	1420.00	1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00091	0.00091	0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	0.96	0.96	0.97	0.93	0.93	0.97
Entry Flow Rate [veh/h]	201	52	223	1043	512	96
Capacity of Entry and Bypass Lanes [veh/h]	892	892	1183	1183	1160	1160
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	858	858	1149	1106	1084	1126
X, volume / capacity	0.23	0.06	0.19	0.88	0.44	0.08

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	D	A	A
95th-Percentile Queue Length [veh]	0.86	0.19	0.69	12.58	2.30	0.27
95th-Percentile Queue Length [ft]	21.57	4.64	17.27	314.58	57.43	6.74
Approach Delay [s/veh]	6.17		21.90		7.43	
Approach LOS	A		C		A	
Intersection Delay [s/veh]	15.87					
Intersection LOS	C					

Lane Configuration and Traffic Control



Mullan BUILD - 2050 PM

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Scenario 3 Two Way Stop Control (2050)

Report File: H:\...\24667_PM2050_TWSC_Lifespan.pdf

7/23/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
6	Dougherty Dr & England Blvd	Two-way stop	HCM 6th Edition	SB Left	0.471	33.1	D
9	Flynn Ln & England Blvd	Two-way stop	HCM 6th Edition	SB Left	0.089	34.7	D
12	Flynn Ln & Mullan Rd	Two-way stop	HCM 6th Edition	SB Right	0.490	33.7	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

**Intersection Level Of Service Report
Intersection 6: Dougherty Dr & England Blvd**

Control Type:	Two-way stop	Delay (sec / veh):	33.1
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.471

Intersection Setup

Name	Dougherty Dr		England Blvd		England Blvd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Dougherty Dr		England Blvd		England Blvd	
Base Volume Input [veh/h]	111	100	150	249	416	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	102	92	138	229	383	46
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	25	38	62	104	13
Total Analysis Volume [veh/h]	111	100	150	249	416	50
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.47	0.16	0.14	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	33.15	11.97	8.81	0.00	0.00	0.00
Movement LOS	D	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	2.32	0.58	0.47	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	58.06	14.40	11.85	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	23.11		3.31		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	5.76					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 9: Flynn Ln & England Blvd

Control Type: Two-way stop
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 34.7
 Level Of Service: D
 Volume to Capacity (v/c): 0.089

Intersection Setup

Name	Flynn Ln			Flynn Ln			England Blvd			England Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			T			T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			25.00			30.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Flynn Ln			Flynn Ln			England Blvd			England Blvd		
Base Volume Input [veh/h]	2	74	65	17	79	3	21	324	15	58	461	15
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	3.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	63	55	14	67	3	18	275	13	49	392	13
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	17	15	4	18	1	5	75	4	13	107	4
Total Analysis Volume [veh/h]	2	68	60	15	73	3	20	299	14	53	426	14
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.26	0.08	0.09	0.28	0.00	0.02	0.00	0.00	0.04	0.00	0.00
d_M, Delay for Movement [s/veh]	29.33	23.72	15.02	34.66	27.04	19.16	8.27	0.00	0.00	8.01	0.00	0.00
Movement LOS	D	C	C	D	D	C	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	1.53	1.53	1.53	1.63	1.63	1.63	0.05	0.00	0.00	0.13	0.00	0.00
95th-Percentile Queue Length [ft/ln]	38.36	38.36	38.36	40.72	40.72	40.72	1.36	0.00	0.00	3.33	0.00	0.00
d_A, Approach Delay [s/veh]	19.79			28.04			0.50			0.86		
Approach LOS	C			D			A			A		
d_I, Intersection Delay [s/veh]	5.46											
Intersection LOS	D											

**Intersection Level Of Service Report
Intersection 12: Flynn Ln & Mullan Rd**

Control Type: Two-way stop
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 33.7
 Level Of Service: D
 Volume to Capacity (v/c): 0.490

Intersection Setup

Name	Flynn Ln			Mullan Rd			Mullan Rd					
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↶			↷			↶↷			↷↶		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			25.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Flynn Ln			Mullan Rd			Mullan Rd					
Base Volume Input [veh/h]	0	0	1	0	0	139	55	685	1	1	1364	99
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	0.7800	1.0000	1.0000	0.7800	0.7800	0.7800	0.7800	0.7800	0.7800	0.7800
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	1	0	0	108	43	534	1	1	1064	77
Peak Hour Factor	1.0000	1.0000	0.9200	0.9200	1.0000	0.9200	0.9200	0.9200	1.0000	1.0000	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	0	0	29	12	145	0	0	289	21
Total Analysis Volume [veh/h]	0	0	1	0	0	117	47	580	1	1	1157	84
Pedestrian Volume [ped/h]	0			0			0			0		

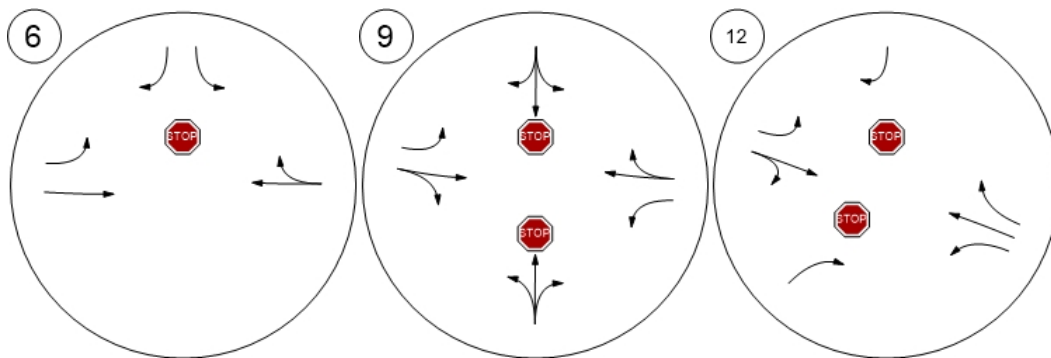
Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.49	0.08	0.01	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	12.02	0.00	0.00	33.70	12.00	0.00	0.00	8.63	0.00	0.00
Movement LOS			B			D	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.01	0.00	0.00	2.48	0.27	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.15	0.00	0.00	61.88	6.83	0.00	0.00	0.08	0.00	0.00
d_A, Approach Delay [s/veh]	12.02			33.70			0.90			0.01		
Approach LOS	B			D			A			A		
d_I, Intersection Delay [s/veh]	2.28											
Intersection LOS	D											

Lane Configuration and Traffic Control



Mullan BUILD - 2050 PM

Vistro File: H:\...\24667_PM2050 - Lifespan.vistro

Scenario 5 Roundabout (2050)

Report File: H:\...\24667_PM2050_RBT_Lifespan.pdf

7/23/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
5	George Elmer Dr & Mullan Rd	Roundabout	HCM 6th Edition	WB Thru		15.7	C
13	Mary Jane Blvd & Mullan Rd	Roundabout	HCM 6th Edition	WB Thru		16.5	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 5: George Elmer Dr & Mullan Rd

Control Type:	Roundabout	Delay (sec / veh):	15.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes		

Intersection Setup

Name	George Elmer Dr		Mullan Rd		Mullan Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	325.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	100.00
Speed [mph]	30.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	George Elmer Dr		Mullan Rd		Mullan Rd	
Base Volume Input [veh/h]	104	275	179	637	1185	353
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	3.00	2.00	2.00	3.00
Growth Factor	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	86	228	149	529	984	293
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	62	40	144	267	80
Total Analysis Volume [veh/h]	93	248	162	575	1070	318
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Number of Conflicting Circulating Lanes	2		1		1	
Circulating Flow Rate [veh/h]	1091		95		167	
Exiting Flow Rate [veh/h]	494		1344		681	
Demand Flow Rate [veh/h]	86	228	149	529	984	293
Adjusted Demand Flow Rate [veh/h]	93	248	162	575	1070	318

Lanes

Override Calculated Critical Headway	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1350.00	1420.00	1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00092	0.00085	0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	0.98	0.98	0.97	0.98	0.98	0.97
Entry Flow Rate [veh/h]	95	253	167	587	1092	328
Capacity of Entry and Bypass Lanes [veh/h]	495	562	1303	1303	1220	1220
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	485	551	1265	1278	1197	1185
X, volume / capacity	0.19	0.45	0.13	0.45	0.89	0.27

Movement, Approach, & Intersection Results

Lane LOS	B	B	A	A	D	A
95th-Percentile Queue Length [veh]	0.70	2.32	0.44	2.39	13.65	1.09
95th-Percentile Queue Length [ft]	17.55	57.93	10.98	59.80	341.18	27.25
Approach Delay [s/veh]	12.98		6.60		21.22	
Approach LOS	B		A		C	
Intersection Delay [s/veh]	15.71					
Intersection LOS	C					

**Intersection Level Of Service Report
Intersection 13: Mary Jane Blvd & Mullan Rd**

Control Type:	Roundabout	Delay (sec / veh):	16.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes		

Intersection Setup

Name	Mary Jane Blvd		Mullan Rd		Mullan Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	1	0	1	0	1
Exit Pocket Length [ft]	0.00	100.00	0.00	100.00	0.00	100.00
Speed [mph]	30.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Mary Jane Blvd		Mullan Rd		Mullan Rd	
Base Volume Input [veh/h]	109	135	119	565	1330	125
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	0.7800	0.7800	0.7800	0.7800	0.7800	0.7800
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	85	105	93	441	1037	98
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	29	25	120	282	27
Total Analysis Volume [veh/h]	92	114	101	479	1127	107
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Number of Conflicting Circulating Lanes	1		1		1	
Circulating Flow Rate [veh/h]	1150		94		103	
Exiting Flow Rate [veh/h]	212		1266		582	
Demand Flow Rate [veh/h]	85	105	93	441	1037	98
Adjusted Demand Flow Rate [veh/h]	92	114	101	479	1127	107

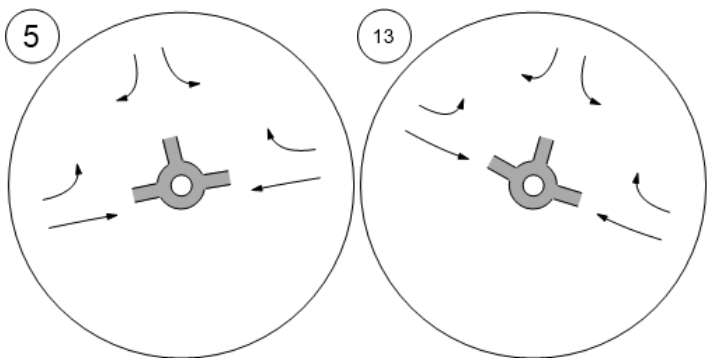
Lanes

Override Calculated Critical Headway	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1420.00	1420.00	1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00091	0.00091	0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	0.98	0.98	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	94	117	104	489	1150	110
Capacity of Entry and Bypass Lanes [veh/h]	499	499	1304	1304	1293	1293
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	490	490	1279	1279	1268	1268
X, volume / capacity	0.19	0.23	0.08	0.37	0.89	0.08

Movement, Approach, & Intersection Results

Lane LOS	A	B	A	A	C	A
95th-Percentile Queue Length [veh]	0.69	0.89	0.26	1.77	13.57	0.28
95th-Percentile Queue Length [ft]	17.14	22.37	6.42	44.17	339.27	6.90
Approach Delay [s/veh]	10.41		5.86		22.47	
Approach LOS	B		A		C	
Intersection Delay [s/veh]	16.47					
Intersection LOS	C					

Lane Configuration and Traffic Control





D. Roadway Level of Service

Status	Roadway	From	To	Existing Functional Class	Recommended Functional Class	2050 ADT	Existing Speed Limit	Recommended Speed Limit	Existing Lanes	Recommended Lanes	2050 LOS
Existing	Broadway St	Flynn Ln	Reserve St	Principal Arterial	Principal Arterial	29,460	45	45	5	5	C
Existing	Broadway St	Aviation	Flynn Ln	Principal Arterial	Principal Arterial	30,780	55	55	5	5	C
Future	Dougherty Dr	George Elmer Dr	W Broadway St		Collector	11,956	0	30	0	3	C
Future	England Blvd	George Elmer Dr	Mary Jane Blvd		Collector	10,300	0	30	0	3	C
Existing	England Blvd	Mary Jane Blvd	Reserve St	Collector	Collector	14,920	25	25	3	3	B
Existing	Flynn Ln	Mullan Rd	England Blvd	Collector	Local	1,675	25	25	2	2	C
Existing	Flynn Ln	England Blvd	W Broadway St	Collector	Local	3,340	35	25	2	2	B
Existing	George Elmer Dr	Mullan Rd	Cattle Dr	Collector	Collector	7,050	45	30	2	2	C
Future	George Elmer Dr	England Blvd	Broadway St		Collector	11,950	0	30	0	3	B
Future	George Elmer Dr	Cattle Dr	England Blvd		Collector	7,050	0	30	0	3	B
Existing	Mary Jane Blvd	England Blvd	Camden St	Local	Collector	5,910	25	30	2	3	C
Future	Mary Jane Blvd	Camden St	W Broadway St		Collector	5,725	0	30	0	3	C
29460	Mary Jane Blvd	Melrose Pl	England Blvd	Local	Collector	5,375	25	30	2	3	C
Future	Mary Jane Blvd	Mullan Rd	Melrose Pl		Collector	6,840	0	30	0	3	C
Existing	Mullan Rd	George Elmer Dr	Mary Jane Blvd	Minor Arterial	Minor Arterial	19,820	45	45	2	3	C
Existing	Mullan Rd	Mary Jane Blvd	Reserve St	Minor Arterial	Minor Arterial	24,045	45	45	2	5	C
Existing	Reserve St	Broadway St	England Blvd	Principal Arterial	Principal Arterial	47,760	45	45	5	5	C
Existing	Reserve St	England Blvd	Mullan Rd	Principal Arterial	Principal Arterial	57,015	45	45	5	5	C

State Arterials

IF('RoadwayData'!i2<='FDOT
AADT'!\$D\$22,"C",IF(i2<='FDO'
AADT'!\$E\$22,"D",IF(i2>'FDOT Urban AAD

Non State Arterials

IF('RoadwayData'!i2<='FDOT
AADT'!\$D\$22,"B",IF(i2<='FDO'
AADT'!\$E\$22,"C",IF(i2<='FDO'
AADT'!\$F\$22,"D",IF(i2>'FDOT Urban AAD



E. Pedestrian Intersection Risk Analysis

Pedestrian Risk Scoring					
Speed (mph)	Points	Volume (AADT)	Points	Lanes	Points
25	1	3000	1	2	1
30	2	9000	2	3	2
35	3	15000	3	4	3
40	4	15001	4	5	4
45	5				
50	5				
55	5				

Adapted from the Missoula MPO Pedestrian Facilities Master Plan (2018)

Bicyclist Risk Scoring					
Speed (mph)	Points	Volume (AADT)	Points	Lanes	Points
25	1	1,500	1	2	1
30	2	3,000	2	3	2
35	3	6,000	3	4	3
40	4	6,001	4	5	4
45	5			Right Turn Lane	2
50	5				
55	5				

Adapted from the Missoula MPO Bicycle Facilities Master Plan (2018)

#	Intersection	Speed 2050	Speed Points Pedestrian	Speed Points Bicycle	Volume 2050	Volume Points Pedestrian	Volume Points Bicycle	Lanes 2050	Lane Points Pedestrian	Lanes Points Bicycle
1	George Elmer Dr / Broadway St	55	5	5	29,460	4	4	5	4	4
2	George Elmer Dr / England Blvd	30	2	2	11,950	3	4	3	2	2
3	George Elmer Dr / Cattle Dr	30	2	2	7,050	2	4	3	2	2
4	George Elmer Dr / Heron's Landing	30	2	2	7,050	2	4	3	2	2
5	George Elmer Dr / Mullan Rd	45	5	5	19,820	4	4	4	3	3
6	England Blvd / Dougherty Dr	30	2	2	11,956	3	4	3	2	2
7	Broadway St / Dougherty Dr	55	5	5	30,780	4	4	5	4	4
8	Flynn Ln / Camden St	25	1	1	3,340	2	3	2	1	1
9	Flynn Ln / England Blvd	30	2	2	3,340	2	3	3	2	2
10	Flynn Ln / Chelsea Dr	25	1	1	1,675	1	2	2	1	1
11	Flynn Ln / Siren's Dr	25	1	1	1,675	1	2	3	2	2
12	Flynn Ln / Mullan Rd	45	5	5	1,675	1	2	4	3	3
13	Mary Jane Blvd / Mullan Rd	45	5	5	19,820	4	4	5	4	4
14	Mary Jane Blvd / O'Leary St	30	2	2	6,840	2	4	2	1	1
15	Mary Jane Blvd / Melrose Pl	30	2	2	6,840	2	4	2	1	1
16	Mary Jane Blvd / England Blvd	30	2	2	5,375	2	3	3	2	2
17	Mary Jane Blvd / Camden St	30	2	2	5,910	2	3	2	1	1
18	Mary Jane Blvd / Flynn Ln	30	2	2	5,725	2	3	3	2	2
19	Mary Jane Blvd / Veteran's Way	30	2	2	5,725	2	3	2	1	1
20	Mary Jane Blvd / Broadway St	55	5	5	30,780	4	4	5	4	4
21	Flynn Ln / Broadway St	55	5	5	29,460	4	4	5	4	4
	Broadway St / EB-Ramps	55	5	5	29,460	4	4	5	4	4
	Broadway St / WB-Ramps	55	5	5	29,460	4	4	5	4	4
	Reserve St / Broadway Ramp 1	45	5	5	20,000	4	4	5	4	4
	Reserve St / Broadway Ramp 2	45	5	5	19,500	4	4	5	4	4
	Reserve St / England Blvd	45	5	5	47,760	4	4	5	4	4
	Reserve St / Mullan Rd	45	5	5	57,015	4	4	5	4	4

INDEX(PedestrianRiskScore!\$B\$4:\$B\$9,MATCH(IntersectionData!I3,PedestrianRiskScore!\$A\$4:\$A\$9,0))

#	Intersection	Pedestrian Risk Score	Pedestrian Improvement Score	Pedestrian Score	Bicyclist Risk Score	Bicyclist Improvement Score	Bicyclist Score
1	George Elmer Dr / Broadway St	13	TBD	TBD	13	TBD	TBD
2	George Elmer Dr / England Blvd	7	TBD	TBD	8	TBD	TBD
3	George Elmer Dr / Cattle Dr	6	TBD	TBD	8	TBD	TBD
4	George Elmer Dr / Heron's Landing	6	TBD	TBD	8	TBD	TBD
5	George Elmer Dr / Mullan Rd	12	TBD	TBD	12	TBD	TBD
6	England Blvd / Dougherty Dr	7	TBD	TBD	8	TBD	TBD
7	Broadway St / Dougherty Dr	13	TBD	TBD	13	TBD	TBD
8	Flynn Ln / Camden St	4	TBD	TBD	5	TBD	TBD
9	Flynn Ln / England Blvd	6	TBD	TBD	7	TBD	TBD
10	Flynn Ln / Chelsea Dr	3	TBD	TBD	4	TBD	TBD
11	Flynn Ln / Siren's Dr	4	TBD	TBD	5	TBD	TBD
12	Flynn Ln / Mullan Rd	9	TBD	TBD	10	TBD	TBD
13	Mary Jane Blvd / Mullan Rd	13	TBD	TBD	13	TBD	TBD
14	Mary Jane Blvd / O'Leary St	5	TBD	TBD	7	TBD	TBD
15	Mary Jane Blvd / Melrose Pl	5	TBD	TBD	7	TBD	TBD
16	Mary Jane Blvd / England Blvd	6	TBD	TBD	7	TBD	TBD
17	Mary Jane Blvd / Camden St	5	TBD	TBD	6	TBD	TBD
18	Mary Jane Blvd / Flynn Ln	6	TBD	TBD	7	TBD	TBD
19	Mary Jane Blvd / Veteran's Way	5	TBD	TBD	6	TBD	TBD
20	Mary Jane Blvd / Broadway St	13	TBD	TBD	13	TBD	TBD
21	Flynn Ln / Broadway St	13	TBD	TBD	13	TBD	TBD
	Broadway St / EB-Ramps	13	TBD	TBD	13	TBD	TBD
	Broadway St / WB-Ramps	13	TBD	TBD	13	TBD	TBD
	Reserve St / Broadway Ramp 1	13	TBD	TBD	13	TBD	TBD
	Reserve St / Broadway Ramp 2	13	TBD	TBD	13	TBD	TBD
	Reserve St / England Blvd	13	TBD	TBD	13	TBD	TBD
	Reserve St / Mullan Rd	13	TBD	TBD	13	TBD	TBD