

## **Appendix H: Traffic Impact Analysis**

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TRAFFIC IMPACT ANALYSIS REPORT  
**CASA BLANCA ELEMENTARY SCHOOL PROJECT**  
Riverside, California  
December 20, 2018  
(Revision of November 2, 2018)

*Prepared for:*

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### **APPENDIX**

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**TRAFFIC IMPACT ANALYSIS REPORT**  
**CASA BLANCA ELEMENTARY SCHOOL PROJECT, RIVERSIDE**

Riverside, California  
December 20, 2018  
(Revision of November 2, 2018)

## **1.0 INTRODUCTION**

This traffic impact study addresses the potential traffic impacts and circulation needs associated with the proposed Casa Blanca Elementary School Project, which consists of an elementary school with a maximum student enrollment of 800 students. The Project site is generally located north of Lincoln Avenue between Bunker Street and Dorlen Street in City of Riverside, California.

This report documents the findings and recommendations of a traffic impact analysis conducted by Linscott, Law & Greenspan, Engineers (LLG) to determine the potential impacts associated with the Casa Blanca Elementary School Project (hereinafter referred to as Project).

### **1.1 Scope of Work**

The traffic analysis evaluates the existing operating conditions at eleven (11) key study intersections within the project vicinity, estimates the trip generation potential of the proposed Project, superimposes the project-related traffic volumes on the circulation system as it currently exists, and forecasts future operating conditions without and with the proposed Project. Where necessary, intersection improvements/mitigation measures are identified. This traffic report satisfies the traffic impact requirements of the City of Riverside.<sup>1</sup> It should be noted that the proposed Project will serve existing elementary school students and will not be growth inducing. Based on information provided by Riverside Unified School District (RUSD) staff, 836 elementary school students located within the proposed Project's academic service boundary currently attend other RUSD elementary schools and the proposed Project will provide a closer campus in their respective neighborhoods that will require less travel. In reality, the proposed Project will represent a shift in traffic that is already on the existing street system, resulting in no new actual project traffic, but is difficult to quantify at each key study intersection given that it would require identifying the path of travel of each existing student. Therefore, in order to provide a conservative traffic analysis, the potential impacts associated with the proposed Project (i.e. 800 students) have been evaluated based on the presumption that all project traffic is new to the study area.

The Project site has been visited and an inventory of adjacent area roadways and intersections was performed. Existing peak hour traffic information has been collected at eleven (11) key study intersections on a "typical" weekday for use in the preparation of intersection level of service calculations. Information concerning cumulative projects (planned and/or approved) in the vicinity of the proposed Project has been researched at the City of Riverside. Based on our research, there

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<sup>1</sup> Source: City of Riverside Public Works Department *Traffic Impact Analysis Preparation Guide*, dated December 2017.

are twenty (20) cumulative projects in the City of Riverside. These twenty (20) planned and/or approved cumulative projects were considered in the cumulative traffic analysis for this project.

This traffic report analyzes existing and future weekday AM peak hour and PM peak hour traffic conditions for a near-term (Year 2022) and long-term (Year 2040) traffic setting upon completion of the proposed Project. Peak hour traffic forecasts for the Year 2022 horizon year have been projected by increasing existing traffic volumes by an annual growth rate of two percent (2.0%) per year and adding traffic volumes generated by twenty (20) cumulative projects. Long-term (Year 2040) peak hour traffic forecasts were projected based on modeled traffic projections prepared by LSA utilizing the SCAG Year 2040 Model.

## 1.2 Study Area

Eleven (11) key study intersections have been selected for evaluation based on discussions with City of Riverside Public Works Department staff, and based on review of the existing transportation system surrounding the proposed Project site. The eleven (11) key study intersections listed below provide local access to the study area and define the extent of the boundaries for this traffic impact investigation.

### **Key Study Intersections**

1. Madison Street at Indiana Avenue
2. Madison Street at Emerald Street
3. Madison Street at Lincoln Avenue
- 4A. Madison Street at Victoria Avenue (West)
- 4B. Madison Street at Victoria Avenue (East)
5. Sonora Place at Lincoln Avenue
6. Collingwood Street at Lincoln Avenue
7. Dorlen Street at Lincoln Avenue
8. Washington Street at Indiana Avenue
9. Washington Street at Marguerita Avenue
10. Washington Street at Lincoln Avenue
- 11A. Washington Street at Victoria Avenue (West)
- 11B. Washington Street at Victorian Avenue (East)

**Figure 1-1** presents a Vicinity Map, which illustrates the general location of the Project and depicts the study locations and surrounding street system. The Level of Service (LOS) investigations at the eleven (11) key study intersections were used to evaluate the potential traffic-related impacts associated with area growth, cumulative projects and the proposed Project. When necessary, this report recommends intersection improvements that may be required to accommodate future traffic volumes and restore/maintain an acceptable Level of Service and/or mitigate the impact of the project.

Included in this Traffic Impact Analysis are:

- Existing traffic counts,
- Estimated Project traffic generation/distribution/assignment,
- Estimated cumulative project traffic generation/distribution/assignment,
- AM and PM peak hour capacity analyses for existing conditions,
- AM and PM peak hour capacity analyses for existing plus Project conditions,
- AM and PM peak hour capacity analyses for existing plus ambient growth to the Year 2022 without and with project traffic conditions,
- AM and PM peak hour capacity analyses for existing plus ambient growth to the Year 2022 plus Project plus cumulative projects traffic conditions (i.e. cumulative traffic conditions),
- AM and PM peak hour capacity analyses for long-term (Year 2040) without and with project traffic conditions,
- Site Access Evaluation, and
- Recommended Improvements (if any).



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**FIGURE 1-1**

**VICINITY MAP**  
CASA BLANCA ELEMENTARY SCHOOL PROJECT, RIVERSIDE

LINSCOTT  
LAW &  
GREENSPAN  
*engineers*



NO SCALE

SOURCE: GOOGLE

**KEY**

(#) = STUDY INTERSECTION

(red dotted box) = PROJECT SITE

## **2.0 PROJECT DESCRIPTION AND LOCATION**

The Project site is generally located north of Lincoln Avenue between Bunker Street and Dorlen Street in City of Riverside, California. *Figure 2-1* presents an aerial depiction of the existing site.

*Figure 2-2* presents the proposed site plan for the proposed Project, prepared by HMC Architects. Review of the proposed site plan indicates that the proposed Project will consist of an elementary school with a maximum student enrollment of 800 students. The academic service boundary as provided by District staff is bounded by Indiana Avenue to the north, Victoria Avenue to the south, Jefferson Street to the west and Mary Street to the east. Based on information provided by District staff, 309 students within the academic service boundary will be eligible to be bussed to/from the site based on their distance of 1.25+ miles. The proposed Project is expected to be constructed and fully occupied by the Year 2022.

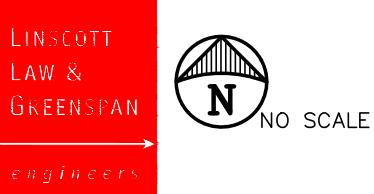
### **2.1 Site Access**

As shown in *Figure 2-2*, access to the Project site will be provided via four (4) full access unsignalized driveways located along Lincoln Avenue. The westerly project driveway is referred to as Project Driveway No. 1. The proposed project driveway located between Sonora Place and Collingwood Street is referred to as Project Driveway No. 2. Project Driveway No. 3 is located opposite of Collingwood Street (slightly offset to the east). The easterly project driveway is referred to as Project Driveway No. 4.

- Prior to finalization of the project site plan, it is recommended that Project Driveway No. 3 be directly aligned (i.e. center line to center line) with Collingwood Street to minimize conflicting vehicular movements.



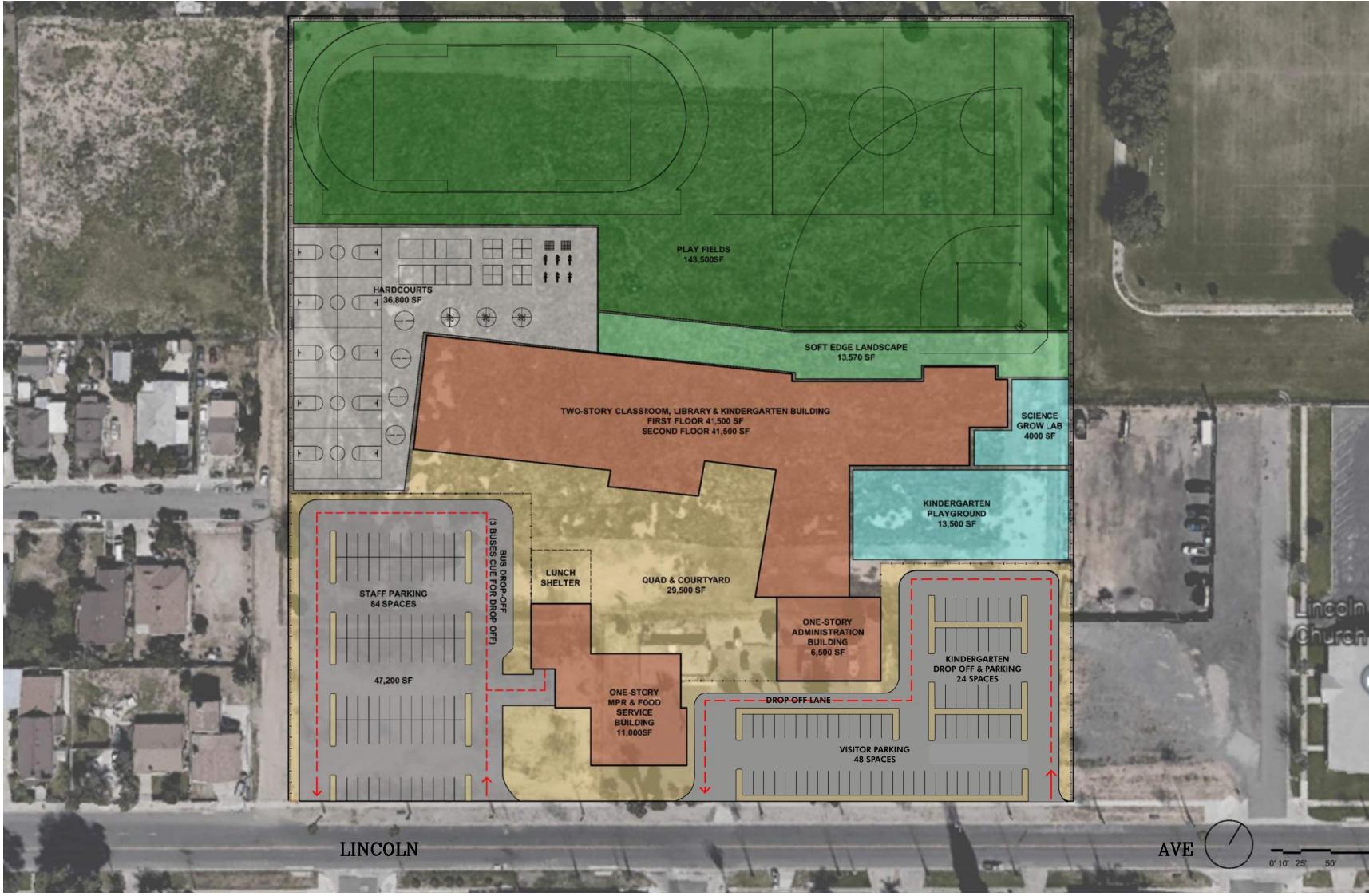
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SOURCE: GOOGLE

## FIGURE 2-1

EXISTING AERIAL SITE PLAN  
CASA BLANCA ELEMENTARY SCHOOL PROJECT, RIVERSIDE



SOURCE: HMC ARCHITECTS

**FIGURE 2-2**

**PROPOSED SITE PLAN**  
CASA BLANCA ELEMENTARY SCHOOL PROJECT, RIVERSIDE



## 3.0 EXISTING CONDITIONS

### 3.1 Existing Street Network

Regional access to the project site is provided via the SR-91 Freeway. Direct access to the project site from the SR-91 Freeway is provided via the interchange at Madison Street. The principal local network of streets serving the project site are Madison Street, Lincoln Avenue and Washington Street. The following discussion provides a brief synopsis of these key streets. The descriptions are based on an inventory of existing roadway conditions.

**Madison Street** is generally a two-lane, divided roadway in the vicinity of the project site, oriented in the north-south direction. On-street parking is generally permitted along this roadway in the general vicinity of the project. The posted speed limit along Madison Street is 35 miles per hour (mph). Traffic signals control the key study intersections of Madison Street at Indiana Avenue and Lincoln Avenue.

**Lincoln Avenue** is generally a three-lane (i.e. two westbound lanes and one eastbound lane), undivided roadway west of Sonora Place, a two-lane, undivided roadway between Sonora Place and Washington Street and a three-lane (i.e. two westbound lanes and one eastbound lane), undivided roadway east of Washington Street, oriented in the east-west direction. Lincoln Avenue borders the project site to the south and will provide access to the project site via four full access driveways. On-street parking is generally permitted along this roadway in the general vicinity of the project. The posted speed limit along Lincoln Avenue is 40 mph. A traffic signal controls the key study intersection of Lincoln Avenue at Madison Street.

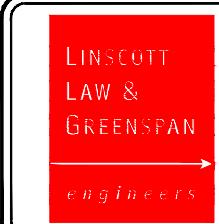
**Washington Street** is generally a two-lane, divided roadway in the vicinity of the project site, oriented in the north-south direction. On-street parking is generally permitted along this roadway in the general vicinity of the project. The posted speed limit along Washington Street is 35 mph. A traffic signal controls the key study intersection of Washington Street at Indiana Avenue.

*Figure 3-1* presents an inventory of the existing roadway conditions for the arterials and intersections evaluated in this report. This figure identifies the number of travel lanes for key arterials, as well as intersection configurations and controls for the key area study intersections.

### 3.2 Existing Traffic Volumes

Eleven (11) key study intersections have been identified as the locations at which to evaluate existing and future traffic operating conditions. Some portion of potential project-related traffic will pass through each of these intersections and their analysis will reveal the expected relative impacts of the project. These key study intersections were selected for evaluation based on discussions with City of Riverside Public Works Department staff.

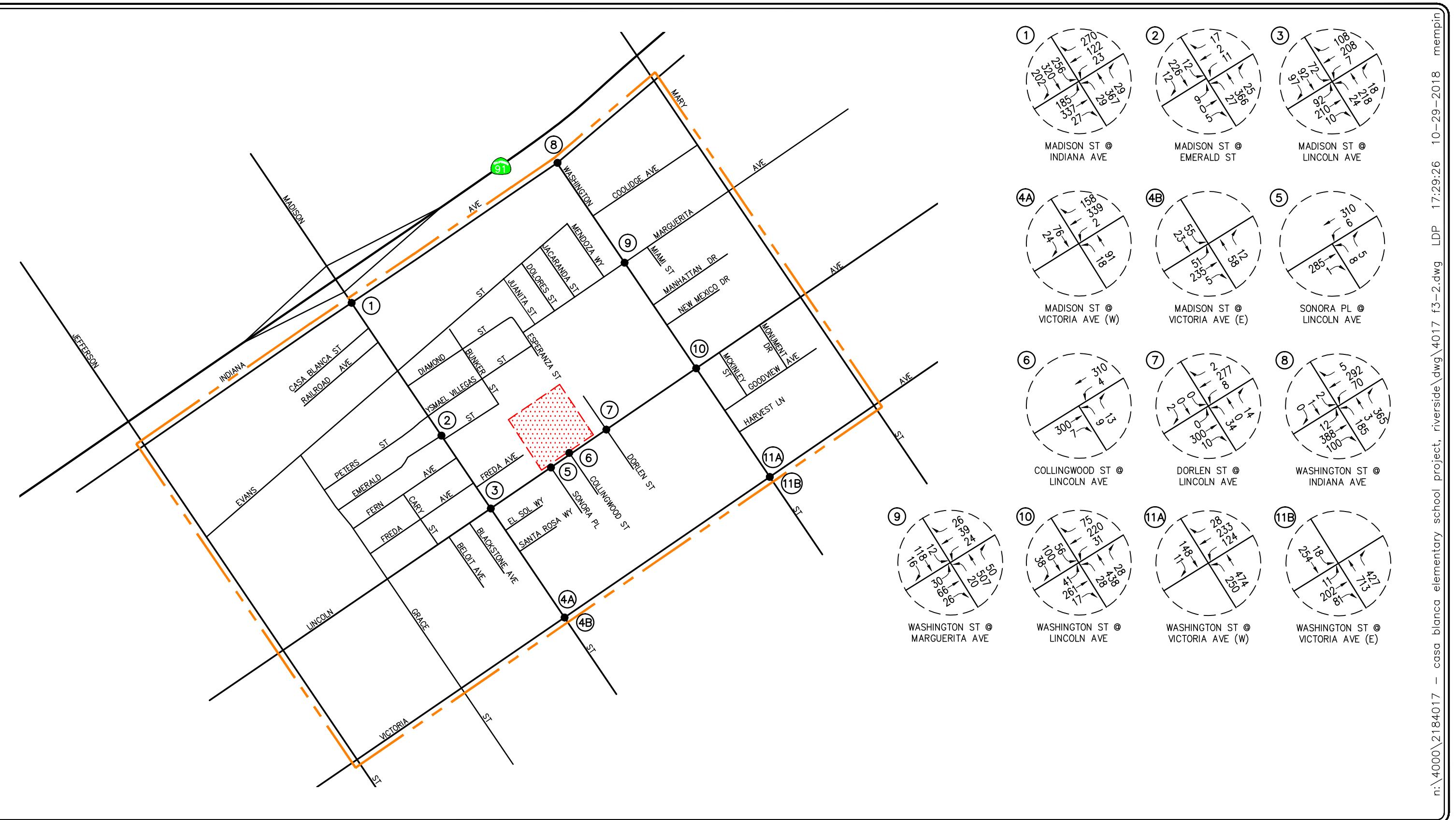
Existing AM and PM peak hour traffic volumes for the eleven (11) key study intersections were obtained from manual peak hour turning movement counts conducted by Transportation Studies, Inc. (TSI) in August 2018. *Figures 3-2* and *3-3* illustrate the existing AM and PM peak hour traffic volumes at the eleven (11) key study intersections evaluated in this report, respectively.



**KEY**

- (#) = STUDY INTERSECTION
- = ACADEMIC SERVICE BOUNDARY
- ← = APPROACH LANE ASSIGNMENT
- = TRAFFIC SIGNAL, ▴ = STOP SIGN
- P = PARKING, NP = NO PARKING
- U = UNDIVIDED, D = DIVIDED
- 2 = NUMBER OF TRAVEL LANES
- (XX) = POSTED SPEED LIMIT (MPH)
- OL = OVERLAP
- = PROJECT SITE

**FIGURE 3-1**  
**EXISTING ROADWAY CONDITIONS**  
**AND INTERSECTION CONTROLS**  
CASA BLANCA ELEMENTARY SCHOOL PROJECT, RIVERSIDE



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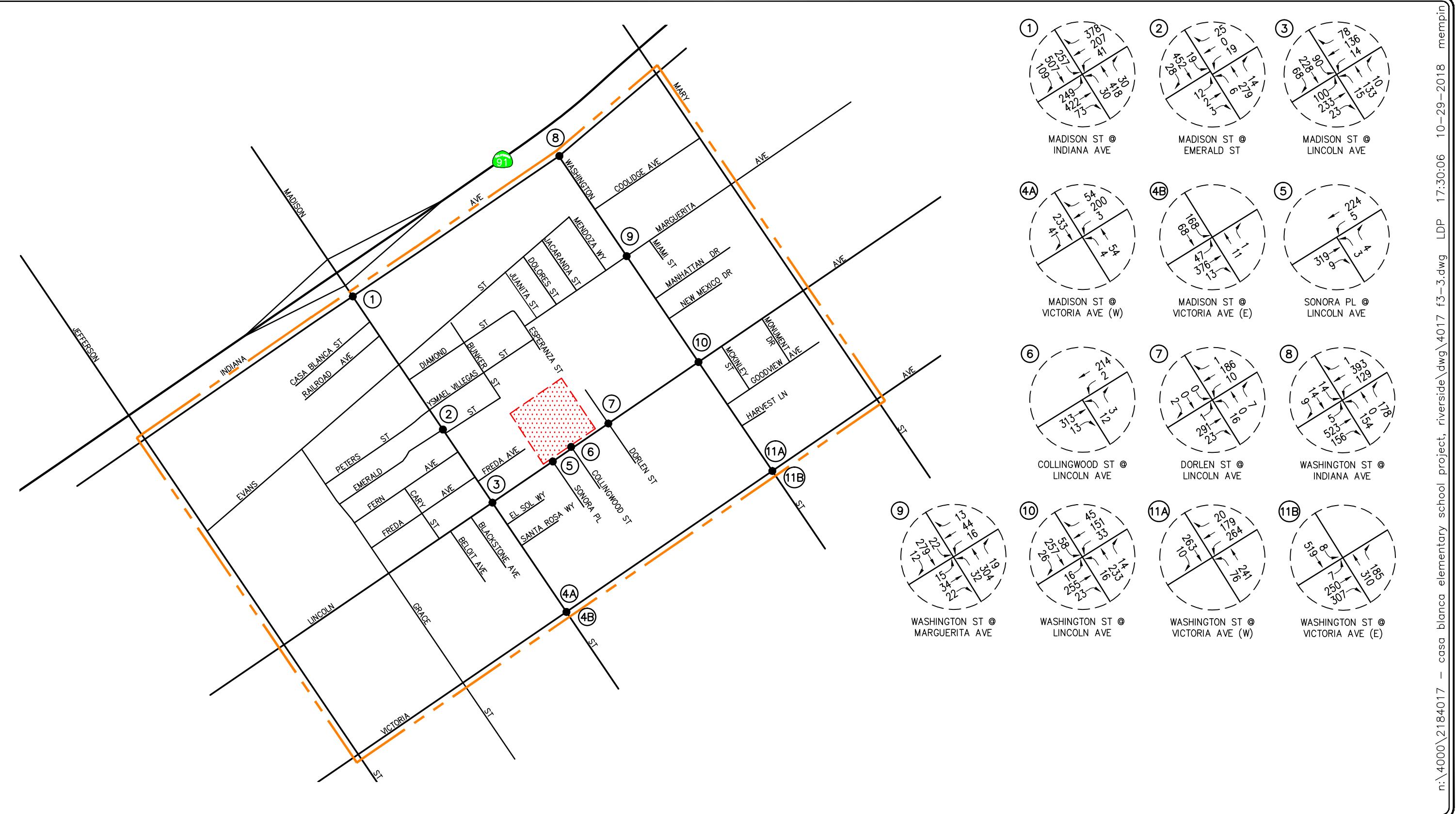
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**KEY**

- (#) = STUDY INTERSECTION
- = ACADEMIC SERVICE BOUNDARY
- = PROJECT SITE

**FIGURE 3-2**

**EXISTING AM PEAK HOUR TRAFFIC VOLUMES**  
CASA BLANCA ELEMENTARY SCHOOL PROJECT, RIVERSIDE



*Appendix A* contains the detailed peak hour count sheets for the locations evaluated in this report.

### **3.3 Level Of Service (LOS) Analysis Methodologies**

AM and PM peak hour operating conditions for the eleven (11) key study intersections were evaluated using the methodology outlined in *Chapter 19 of the Highway Capacity Manual 6 (HCM 6)* for signalized intersections, the methodology outlined in *Chapter 20 of the HCM 6* for two-way stop-controlled intersections, and the methodology outlined in *Chapter 21 of the HCM 6* for all-way stop-controlled intersections.

#### **3.3.1 Highway Capacity Manual (HCM) Method of Analysis (Signalized Intersections)**

Based on the HCM operations method of analysis, level of service for signalized intersections and approaches is defined in terms of control delay, which is a measure of the increase in travel time due to traffic signal control, driver discomfort, and fuel consumption. Control delay includes the delay associated with vehicles slowing in advance of an intersection, the time spent stopped on an intersection approach, the time spent as vehicles move up in the queue, and the time needed for vehicles to accelerate to their desired speed. LOS criteria for traffic signals are stated in terms of the control delay in seconds per vehicle. The LOS thresholds established for the automobile mode at a signalized intersection are shown in *Table 3-1*.

#### **3.3.2 Highway Capacity Manual (HCM) Method of Analysis (Unsignalized Intersections)**

The HCM unsignalized methodology for stop-controlled intersections was utilized for the analysis of the unsignalized intersections. LOS criteria for unsignalized intersections differ from LOS criteria for signalized intersections as signalized intersections are designed for heavier traffic and therefore a greater delay. Unsignalized intersections are also associated with more uncertainty for users, as delays are less predictable, which can reduce users' delay tolerance.

##### **3.3.2.1 Two-Way Stop-Controlled Intersections**

Two-way stop-controlled intersections are comprised of a major street, which is uncontrolled, and a minor street, which is controlled by stop signs. Level of service for a two-way stop-controlled intersection is determined by the computed or measured control delay. The control delay by movement, by approach, and for the intersection as a whole is estimated by the computed capacity for each movement. LOS is determined for each minor-street movement (or shared movement) as well as major-street left turns. The worst side street approach delay is reported. LOS is not defined for the intersection as a whole or for major-street approaches, as it is assumed that major-street through vehicles experience zero delay. The HCM control delay value ranges for two-way stop-controlled intersections are shown in *Table 3-2*.

##### **3.3.2.2 All-Way Stop-Controlled Intersections**

All-way stop-controlled intersections require every vehicle to stop at the intersection before proceeding. Because each driver must stop, the decision to proceed into the intersection is a function of traffic conditions on the other approaches. The time between subsequent vehicle departures depends on the degree of conflict that results between the vehicles and vehicles on the other approaches. This methodology determines the control delay for each lane on the approach, computes

a weighted average for the whole approach, and computes a weighted average for the intersection as a whole. Level of service (LOS) at the approach and intersection levels is based solely on control delay. The HCM control delay value ranges for all-way stop-controlled intersections are shown in *Table 3-2*.

### **3.4 Level of Service Standards**

The City of Riverside allows LOS “D” to be used as the maximum acceptable threshold for the study intersections and roadways of Collector or higher classification. However, at some key locations, such as City arterial roadways which are used as a freeway bypass by regional through traffic and at heavily traveled freeway interchanges, LOS “E” may be acceptable as determined on a case-by-case basis. Locations that may warrant the LOS “E” standard include portions of Arlington Avenue/Alessandro Boulevard, Van Buren Boulevard throughout the City, portions of La Sierra Avenue and selected freeway interchanges. The City also recognizes that along key freeway-feeder segments during peak commute hours, LOS F may be expected due to regional travel patterns. A higher standard, such as LOS “C” or better, may be adopted for Local streets in residential areas. Based on the above, LOS D is required for the eleven (11) key study intersections.

### **3.5 Existing Level of Service Results**

*Table 3-3* summarizes the existing peak hour service level calculations for the eleven (11) key study intersections based on existing traffic volumes and current street geometry. Review of *Table 3-3* indicates that one (1) of the eleven (11) key study intersections currently operates at an unacceptable level of service during the AM peak hour. The intersection of Washington Street at Lincoln Avenue currently operates at unacceptable LOS E during the AM peak hour. The remaining ten (10) key study intersections currently operate at acceptable LOS D or better during the AM and PM peak hours.

**Appendix B** presents the Existing peak hour HCM/LOS calculation worksheets for the eleven (11) key study intersections.

**TABLE 3-1**  
**LEVEL OF SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS (HCM 6 METHODOLOGY)<sup>2</sup>**

Level of Service (LOS)	Control Delay Per Vehicle (seconds/vehicle)	Level of Service Description
A	$\leq 10.0$	This level of service occurs when progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.
B	$> 10.0$ and $\leq 20.0$	This level generally occurs with good progression, short cycle lengths, or both. More vehicles stop than with LOS A, causing higher levels of average delay.
C	$> 20.0$ and $\leq 35.0$	Average traffic delays. These higher delays may result from fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant at this level, though many still pass through the intersection without stopping.
D	$> 35.0$ and $\leq 55.0$	Long traffic delays At level D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high v/c ratios. Many vehicles stop and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	$> 55.0$ and $\leq 80.0$	Very long traffic delays This level is considered by many agencies to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths and high v/c ratios. Individual cycle failures are frequent occurrences.
F	$\geq 80.0$	Severe congestion This level, considered to be unacceptable to most drivers, often occurs with over saturation, that is, when arrival flow rates exceed the capacity of the intersection. It may also occur at high v/c ratios below 1.0 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing factors to such delay levels.

<sup>2</sup> Source: *Highway Capacity Manual 6*, Chapter 19: Signalized Intersections.

**TABLE 3-2**  
**LEVEL OF SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS (HCM 6 METHODOLOGY)<sup>3,4</sup>**

Level of Service (LOS)	Highway Capacity Manual (HCM) Delay Per Vehicle (seconds/vehicle)	Level of Service Description
A	$\leq 10.0$	Little or no delay
B	$> 10.0$ and $\leq 15.0$	Short traffic delays
C	$> 15.0$ and $\leq 25.0$	Average traffic delays
D	$> 25.0$ and $\leq 35.0$	Long traffic delays
E	$> 35.0$ and $\leq 50.0$	Very long traffic delays
F	$> 50.0$	Severe congestion

<sup>3</sup> Source: *Highway Capacity Manual 6*, Chapter 20: Two-Way Stop-Controlled Intersections. The LOS criteria apply to each lane on a given approach and to each approach on the minor street. LOS is not calculated for major-street approaches or for the intersection as a whole.

<sup>4</sup> Source: *Highway Capacity Manual 6*, Chapter 21: All-Way Stop-Controlled Intersections. For approaches and intersection-wide assessment, LOS is defined solely by control delay.

**TABLE 3-3**  
**EXISTING PEAK HOUR LEVELS OF SERVICE**

Key Intersection	Time Period	Minimum Acceptable LOS	Control Type	HCM	LOS
1. Madison Street at Indiana Avenue	AM	D	8Ø Traffic	34.9 s/v	C
	PM		Signal	33.7 s/v	C
2. Madison Street at Emerald Street	AM	D	All – Way	15.2 s/v	C
	PM		Stop	15.3 s/v	C
3. Madison Street at Lincoln Avenue	AM	D	8Ø Traffic	22.9 s/v	C
	PM		Signal	23.8 s/v	C
4A. Madison Street at Victoria Avenue (West)	AM	D	All – Way	13.0 s/v	B
	PM		Stop	9.4 s/v	A
4B. Madison Street at Victoria Avenue (East)	AM	D	All – Way	9.2 s/v	A
	PM		Stop	12.1 s/v	B
5. Sonora Place at Lincoln Avenue	AM	D	One – Way	12.4 s/v	B
	PM		Stop	11.9 s/v	B
6. Collingwood Street at Lincoln Avenue	AM	D	One – Way	12.4 s/v	B
	PM		Stop	12.7 s/v	B
7. Dorlen Street at Lincoln Avenue	AM	D	Two – Way	15.5 s/v	C
	PM		Stop	12.5 s/v	B
8. Washington Street at Indiana Avenue	AM	D	5Ø Traffic	18.1 s/v	B
	PM		Signal	15.8 s/v	B
9. Washington Street at Marguerita Avenue	AM	D	All – Way	33.0 s/v	D
	PM		Stop	11.8 s/v	B
10. Washington Street at Lincoln Avenue	AM	D	All – Way	<b>46.7 s/v</b>	E
	PM		Stop	18.1 s/v	C
11A. Washington Street at Victoria Avenue (West)	AM	D	All – Way	13.1 s/v	B
	PM		Stop	11.0 s/v	B
11B. Washington Street at Victoria Avenue (East)	AM	D	All – Way	13.0 s/v	B
	PM		Stop	15.7 s/v	C

Notes:

- LOS = Level of Service, please refer to *Tables 3-1* and *3-2* for the LOS definitions
- **Bold Delay/LOS** values indicate adverse service levels based on City of Riverside LOS standards
- s/v = seconds per vehicle

## **4.0 TRAFFIC FORECASTING METHODOLOGY**

In order to estimate the traffic impact characteristics of the proposed Project, a multi-step process has been utilized. The first step is traffic generation, which estimates the total arriving and departing traffic on a peak hour and daily basis. The traffic generation potential is forecast by applying the appropriate vehicle trip generation equations and/or rates to the Project development tabulation.

The second step of the forecasting process is traffic distribution, which identifies the origins and destinations of inbound and outbound Project traffic. These origins and destinations are typically based on demographics and existing/expected future travel patterns in the study area.

The third step is traffic assignment, which involves the allocation of Project traffic to study area streets and intersections. Traffic assignment is typically based on minimization of travel time, which may or may not involve the shortest route, depending on prevailing operating conditions and travel speeds. Traffic distribution patterns are indicated by general percentage orientation, while traffic assignment allocates specific volume forecasts to individual roadway segments and intersection turning movements throughout the study area.

With the forecasting process complete and project traffic assignments developed, the impact of the Project is isolated by comparing operational (LOS) conditions at the selected key intersection using expected future traffic volumes with and without forecast project traffic. If necessary, the need for site-specific and/or cumulative local area traffic improvements can then be evaluated and the significance of the project's impacts identified.

## **5.0 PROJECT TRAFFIC CHARACTERISTICS**

### **5.1 Project Traffic Generation**

Traffic generation is expressed in vehicle trip ends, defined as one-way vehicular movements, either entering or exiting the generating land use. Generation equations and/or rates used in the traffic forecasting procedure are found in the 10<sup>th</sup> Edition of *Trip Generation*, published by the Institute of Transportation Engineers (ITE) [Washington D.C., 2017].

It should be noted that the proposed Project will serve existing elementary school students and will not be growth inducing. Based on information provided by Riverside Unified School District (RUSD) staff, 836 elementary school students located within the proposed Project's academic service boundary currently attend other RUSD elementary schools and the proposed Project will provide a closer campus in their respective neighborhoods that will require less travel. In reality, the proposed Project will represent a shift in traffic that is already on the existing street system, resulting in no new actual project traffic, but is difficult to quantify at each key study intersection given that it would require identifying the path of travel of each existing student. Therefore, in order to provide a conservative traffic analysis, the potential impacts associated with the proposed Project (i.e. 800 students) have been evaluated based on the presumption that all project traffic is new to the study area.

**Table 5-1** summarizes the trip generation rates used in forecasting the vehicular trips generated by the proposed Project and also presents the Project's forecast peak hour and daily traffic volumes. As shown, the trip generation potential of the Project was estimated using ITE Land Use 520: Elementary School trip rates. Review of *Table 5-1* indicates that the proposed Project is forecast to generate 1,512 daily trips, with 536 trips (289 inbound, 247 outbound) produced in the AM peak hour and 136 trips (65 inbound, 71 outbound) produced in the PM peak hour on a “typical” weekday. It should be noted that this trip generation potential does not likely account for the amount of students that will utilize the school bus and/or walk to school and therefore provides for a very conservative analysis.

### **5.2 Project Traffic Distribution and Assignment**

**Figure 5-1** illustrates the general, directional traffic distribution pattern for the proposed Project. Project traffic volumes both entering and exiting the project site have been distributed and assigned to the adjacent street system based on the following considerations:

- the site's proximity to major traffic carriers (i.e. Madison Street, Washington Street, etc.),
- the school attendance zone (academic service boundary)
- expected localized traffic flow patterns based on adjacent street channelization and presence of traffic signals,
- existing intersection traffic volumes, and
- ingress/egress availability at the project site.

The anticipated AM and PM peak hour traffic volumes associated with the Project are presented in **Figures 5-2** and **5-3**, respectively. The traffic volume assignments presented in **Figures 5-3** and **5-4**

reflect the traffic distribution characteristics shown in *Figure 5-1* and the traffic generation forecast presented in *Table 5-1*.

### 5.3 Existing Plus Project Traffic Conditions

The existing plus project traffic conditions have been generated based upon existing conditions and the estimated project traffic. These forecast traffic conditions have been prepared pursuant to the California Environmental Quality Act (CEQA) guidelines, which require that the potential impacts of a Project be evaluated upon the circulation system as it currently exists. This traffic volume scenario and the related intersection capacity analyses will identify the roadway improvements necessary to mitigate the direct traffic impacts of the Project, if any.

**Figures 5-4 and 5-5** present projected AM and PM peak hour traffic volumes at the eleven (11) key study intersections with the addition of the trips generated by the proposed Project to existing traffic volumes, respectively.

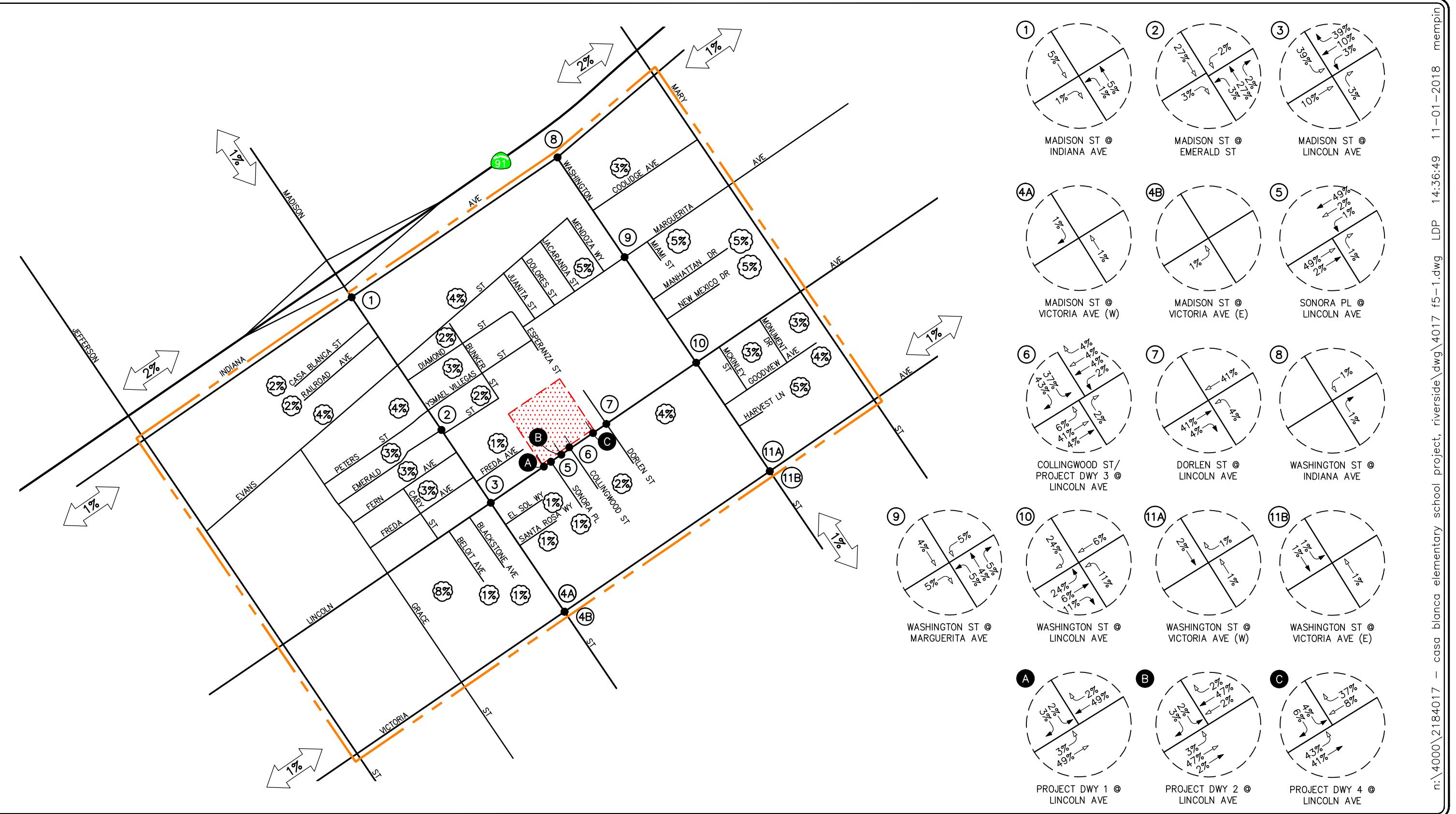
**TABLE 5-1**  
**PROJECT TRAFFIC GENERATION FORECAST<sup>5</sup>**

ITE Land Use Code / Project Description	Daily 2-Way	AM Peak Hour			PM Peak Hour		
		Enter	Exit	Total	Enter	Exit	Total
<b><u>Generation Factors:</u></b>							
▪ 520: Elementary School (TE/Student)	1.89	54%	46%	0.67	48%	52%	0.17
<b><u>Generation Forecast:</u></b>							
▪ Casa Blanca Elementary School (800 Students)	1,512	289	247	536	65	71	136

Note:

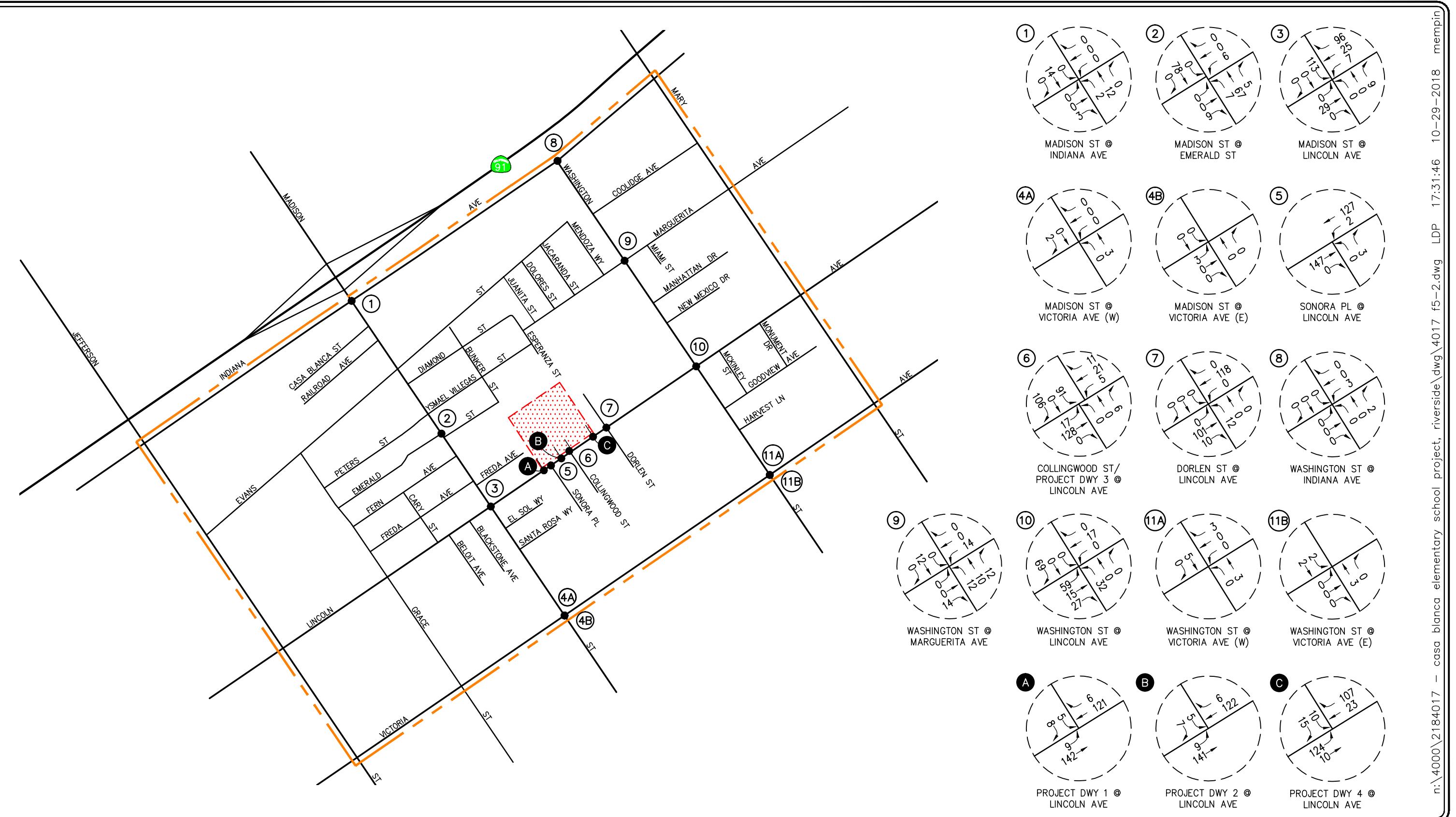
- TE/Student = trip end per student

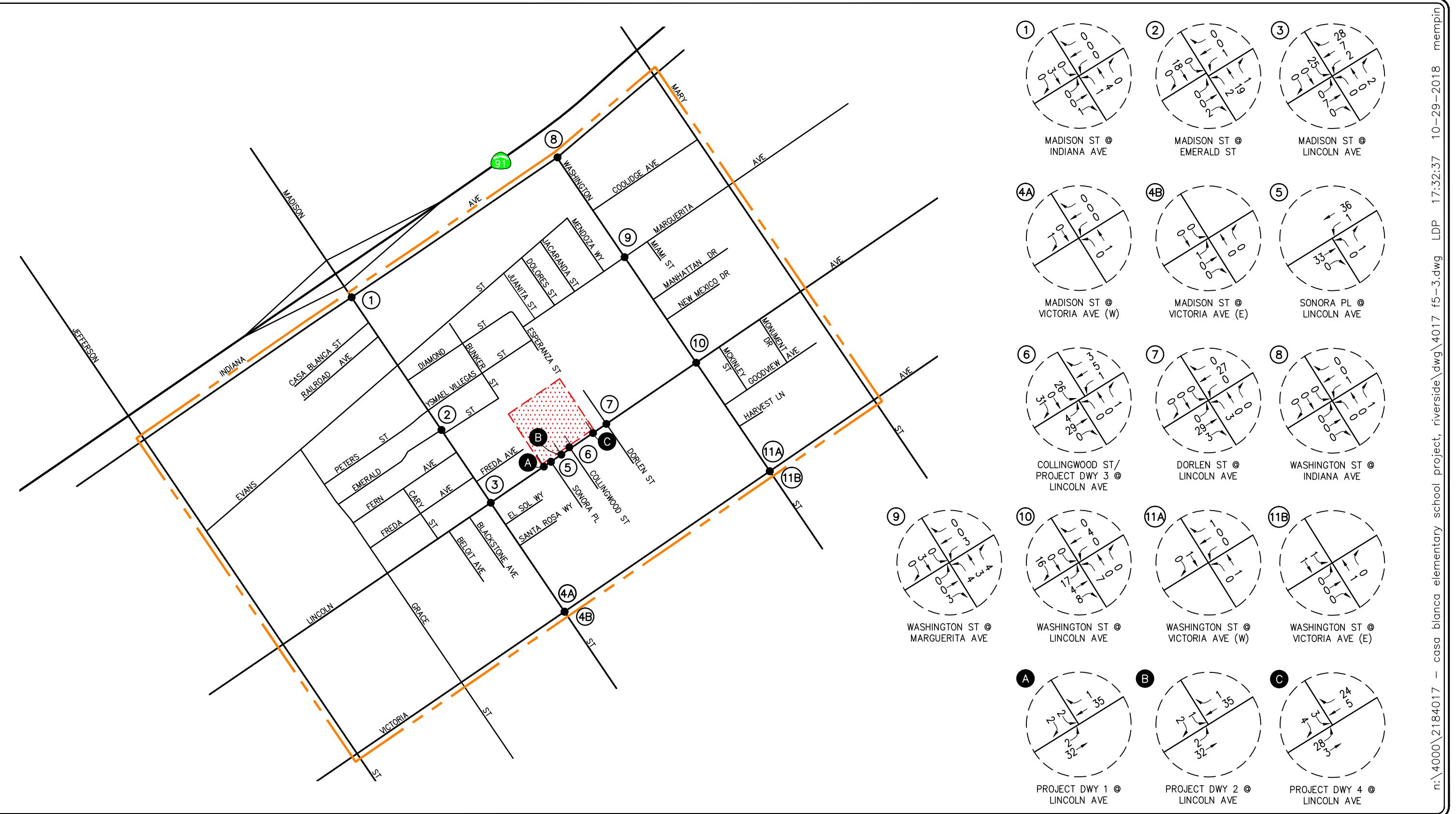
<sup>5</sup> Source: *Trip Generation*, 10<sup>th</sup> Edition, Institute of Transportation Engineers (ITE), Washington, D.C. (2017).



**FIGURE 5-1**

**PROJECT TRAFFIC DISTRIBUTION PATTERN**  
CASA BLANCA ELEMENTARY SCHOOL PROJECT, RIVERSIDE









## **6.0 FUTURE TRAFFIC CONDITIONS**

### **6.1 Year 2022 Traffic Conditions**

#### **6.1.1 Ambient Traffic Growth**

Horizon year, background traffic growth estimates have been calculated using an ambient growth factor. The ambient traffic growth factor is intended to include unknown and future cumulative projects in the study area, as well as account for regular growth in traffic volumes due to the development of projects outside the study area. Consistent with prior traffic studies conducted in the City of Riverside, the future growth in traffic volumes has been calculated at two percent (2.0%) per year. Applied to existing Year 2018 traffic volumes results in an eight percent (8.0%) increase growth in existing volumes to horizon Year 2022.

#### **6.1.2 Cumulative Projects Traffic Characteristics**

In order to make a realistic estimate of future on-street conditions prior to implementation of the proposed Project, the status of other known development projects (cumulative projects) has been researched at the City of Riverside. With this information, the potential impact of the proposed Project can be evaluated within the context of the cumulative impact of all ongoing development. Based on our research, there are twenty (20) cumulative projects in the City of Riverside that have either been built, but not yet fully occupied, or are being processed for approval. These twenty (20) cumulative projects have been included as part of the cumulative background setting.

**Table 6-1** provides the location and a brief description for each of the twenty (20) cumulative projects. **Figure 6-1** graphically illustrates the location of the twenty (20) cumulative projects. These cumulative projects are expected to generate vehicular traffic, which may affect the operating conditions of the key study intersections.

**Table 6-2** presents the traffic generation potential for the twenty (20) cumulative projects. As shown in **Table 6-2**, the twenty (20) cumulative projects are forecast to generate a combined total of 25,392 daily trips, with 1,447 trips (958 inbound and 489 outbound) forecast during the AM peak hour and 2,024 trips (885 inbound and 1,139 outbound) forecast during the PM peak hour.

#### **6.1.3 Year 2022 Traffic Volumes**

**Figures 6-2** and **6-3** present the AM and PM peak hour Existing Plus Ambient Growth to the Year 2022 traffic volumes at the eleven (11) key study intersections, respectively.

**Figures 6-4** and **6-5** present the AM and PM peak hour Existing Plus Ambient Growth to the Year 2022 Plus Project traffic volumes at the eleven (11) key study intersections, respectively.

**Figures 6-6** and **6-7** present Year 2022 Cumulative Plus Project AM and PM peak hour traffic volumes at the eleven (11) key study intersections, respectively.

## **6.2 Year 2040 Traffic Conditions**

As requested by City of Riverside Staff, the Year 2040 traffic volume forecasts for this traffic study were developed via the utilization of the SCAG Year 2040 Model provided by LSA. Specifically, AM peak hour and PM peak hour link traffic volumes were provided by LSA for the existing base year (i.e. Year 2012) and for the Year 2040. These future Year 2040 link traffic volumes were post-processed based on the relationship of the base year validation model run output to the base year ground traffic counts resulting in Year 2040 without project AM peak hour and PM peak hour turning movements for the eleven (11) key study intersections. It should be noted that each projected volume was reviewed carefully for reasonableness and adjustments were applied as warranted based on local conditions and professional judgment.

Copies of the model post-processing worksheets are contained in *Appendix C*.

### **6.2.1 Year 2040 Traffic Volumes**

*Figures 6-8* and *6-9* present the Year 2040 buildout AM and PM peak hour traffic volumes at the eleven (11) key study intersections, respectively.

*Figures 6-10* and *6-11* illustrate the Year 2040 buildout plus Project AM and PM peak hour traffic volumes at the eleven (11) key study intersections, respectively.

**TABLE 6-1**  
**LOCATION AND DESCRIPTION OF CUMULATIVE PROJECTS<sup>6</sup>**

No.	Cumulative Project	Address	Description/Size
<b>City of Riverside</b>			
1.	P14-0225/P14-0226/ P14-0227/P16-0063	North of Dominion Avenue, between McMahon Street and Division Avenue	117 DU Senior Apartment Complex
2.	P15-0404/P15-0405	3399 Adams Street	3,040 SF Gas Station (12 VFP), 4,159 SF Convenience Store, 2,080 SF Car Wash
3.	P15-0478	3457 Arlington Avenue	7,686 SF Retail and 7,210 SF Restaurant
4.	P15-0847/P15-0848/ P15-0850	3530 Madison Street	37,849 SF 24 Hour Fitness, 1,950 SF Starbucks with Drive-Thru, 41,117 SF Commercial
5.	P15-0979/P15-0980/ P15-0981	5573 Arlington Avenue	2,200 SF Fast-Food Restaurant with Drive-Thru
6.	P16-0396/P16-0397/ P17-0440	3640 Central Avenue	4,721 SF Chick-fil-A with Drive-thru
7.	P16-0413/P16-0414	7820 Lincoln Avenue	100,974 SF General Light Industrial
8.	P16-0423/P16-0424	6264 Nogales Street	7,030 SF Office and 4,140 SF Medical Office
9.	P16-0891/P16-0892/ P16-0893/P17-0374	Madison Street at Railroad Avenue	18,900 SF Commercial Warehouse
10.	P17-0038	8043 Indiana Avenue	12,430 SF Automobile Sales (New)
11.	P17-0097/P17-0098/ P17-0099/P17-0228	6289 Palm Avenue	99,172 SF Self-storage facility
12.	P17-0100/P17-0105/ P17-0559	3763 Tibbets Street	2,500 SF Medical Office Building
13.	P17-0239/P17-0241	7979 Auto Drive	40,374 SF Walter Sprinter Dealership
14.	P17-0466/P17-0467/P17-0468/ P17-0469/P17-0470/P17-0471/ P17-0472	3575-3661 Merrill Avenue	108 DU Apartments and 1,200 SF Commercial
15.	P18-0151/P17-0585/P17-0586/ P17-0755/P17-0756/ P17-0757	3510-3522, 3536 Adams Street	12,500 SF Athletic Performance Center, 11,200 SF Recreation Center <sup>7</sup> 1,456-space Parking Structure <sup>8</sup>
16.	P17-0627/P17-0628	7434 Diamond Street	7,078 SF Church
17.	P17-0883/P17-0884/ P17-0885	3490 Madison Street	17,889 SF Grocery Store, 8,065 SF Commercial
18.	P18-0104/P18-0105/ P18-0106	8230 Magnolia Avenue	116 Bed Student Housing
19.	P18-0563/P18-0569	8432 Magnolia Avenue	1,198 Bed Student Housing
20.	Riverside Poly High School	Northwest corner of Central Avenue and Victoria Avenue	Baseball/softball fields on approximately 10 acres and redevelop 2.25 acres of existing softball field

<sup>6</sup> Source: City of Riverside Community & Economic Development Department.

<sup>7</sup> The athletic performance center and recreation center are considered to be ancillary uses of Cal Baptist University and thus will not generate new traffic onto the roadway network.

<sup>8</sup> The forecasted trip generation potential of the parking structure is based on the anticipated student growth from Fall 2018 to Fall 2022, approximated to be an increase of 4,233 students.

**TABLE 6-2**  
**CUMULATIVE PROJECTS TRIP GENERATION FORECAST<sup>9</sup>**

No.	Cumulative Project Description	Daily 2-Way	AM Peak Hour			PM Peak Hour		
			Enter	Exit	Total	Enter	Exit	Total
1.	P14-0225/P14-0226/ P14-0227/P16-0063	433	8	15	23	17	13	30
2.	P15-0404/P15-0405	1,848	29	28	57	38	36	74
3.	P15-0478	989	40	31	71	34	25	59
4.	P15-0847/P15-0848/ P15-0850	3,903	92	80	172	156	143	299
5.	P15-0979/P15-0980/ P15-0981	777	23	22	45	18	18	36
6.	P16-0396/P16-0397/ P17-0440	1,667	49	48	97	40	37	77
7.	P16-0413/P16-0414 <sup>10</sup>	923	105	14	119	17	108	125
8.	P16-0423/P16-0424	212	16	4	20	5	17	22
9.	P16-0891/P16-0892/ P16-0893/P17-0374	33	2	1	3	1	3	4
10.	P17-0038	346	17	6	23	12	18	30
11.	P17-0097/P17-0098/ P17-0099/P17-0228	150	6	4	10	8	9	17
12.	P17-0100/P17-0105/ P17-0559	87	5	2	7	3	6	9
13.	P17-0239/P17-0241 <sup>11</sup>	331	16	6	22	11	18	29
14.	P17-0466/P17-0467/P17-0468/P17-0469/ P17-0470/P17-0471/ P17-0472 <sup>12</sup>	772	21	46	67	47	32	79
15.	P18-0151 P17-0585/ P17-0586/ P17-0755/P17-0756/ P17-0757 <sup>13</sup>	6,096	320	61	381	228	238	466
16.	P17-0627/P17-0628	49	1	1	2	1	2	3
17.	P17-0883/P17-0884/ P17-0885	1,993	41	27	68	64	62	126
18.	P18-0104/P18-0105/ P18-0106	365	6	8	14	15	14	29
19.	P18-0563/P18-0569	3,774	59	85	144	150	150	300
20.	Riverside Poly High School <sup>14</sup>	644	102	0	102	20	190	210
<b>Cumulative Projects Trip Generation Potential</b>		<b>25,392</b>	<b>958</b>	<b>489</b>	<b>1,447</b>	<b>885</b>	<b>1,139</b>	<b>2,024</b>

<sup>9</sup> Unless otherwise noted; Source: *Trip Generation, 10<sup>th</sup> Edition, Institute of Transportation Engineers (ITE), Washington, D.C. (2017)*. Where applicable, pass-by adjustment factors were utilized and are reflected in the cumulative projects trip generation potential.

<sup>10</sup> Source: *Traffic Impact Analysis Lincoln Avenue Industrial Warehouse*, prepared by LSA, dated October 25, 2016.

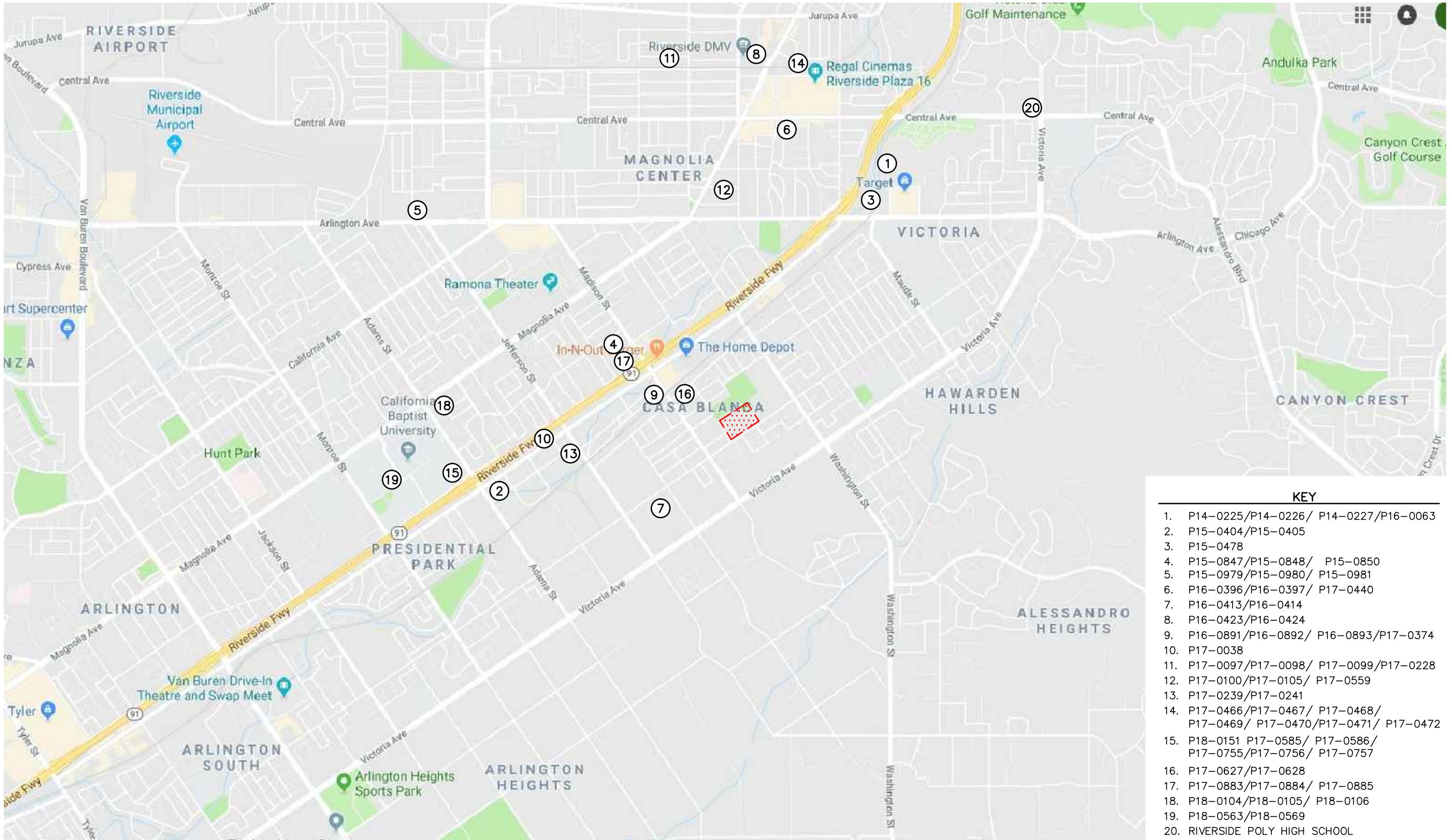
<sup>11</sup> Source: *Traffic Impact Analysis Report for Walter's Sprinter Dealership*, prepared by LLG Engineers, dated April 30, 2018.

<sup>12</sup> Source: *Draft Initial Study/MND for the Proposed Merrill Avenue Brownstones*, prepared by Psomas, dated February 2018.

<sup>13</sup> The trip generation forecast for this cumulative project is based on the following trip generation rates, provided by City of Riverside staff, developed specifically for Cal Baptist University:

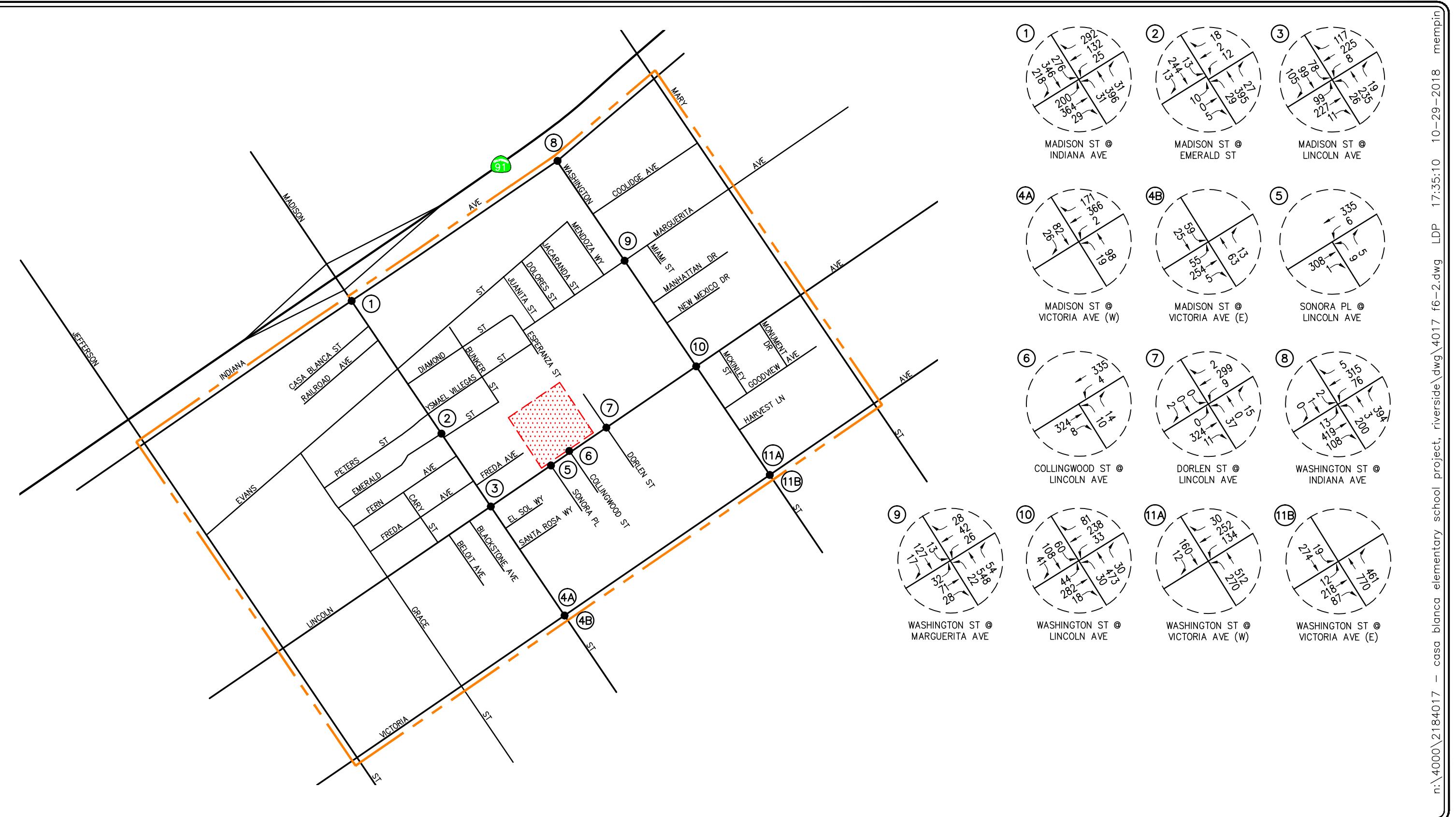
- Daily = 1.44 trips per student
- AM Peak Hour = 0.09 trips per student (84% Inbound, 16% Outbound)
- PM Peak Hour = 0.11 trips per student (49% Inbound, 51% Outbound)

<sup>14</sup> Source: *Traffic Impact Analysis Report for Riverside Polytech High School Project*, prepared by LLG Engineers, dated October 2018.



**FIGURE 6-1**

**LOCATION OF CUMULATIVE PROJECTS**  
CASA BLANCA ELEMENTARY SCHOOL PROJECT, RIVERSIDE



LINSCOTT  
LAW &  
GREENSPAN  
e ngi neers



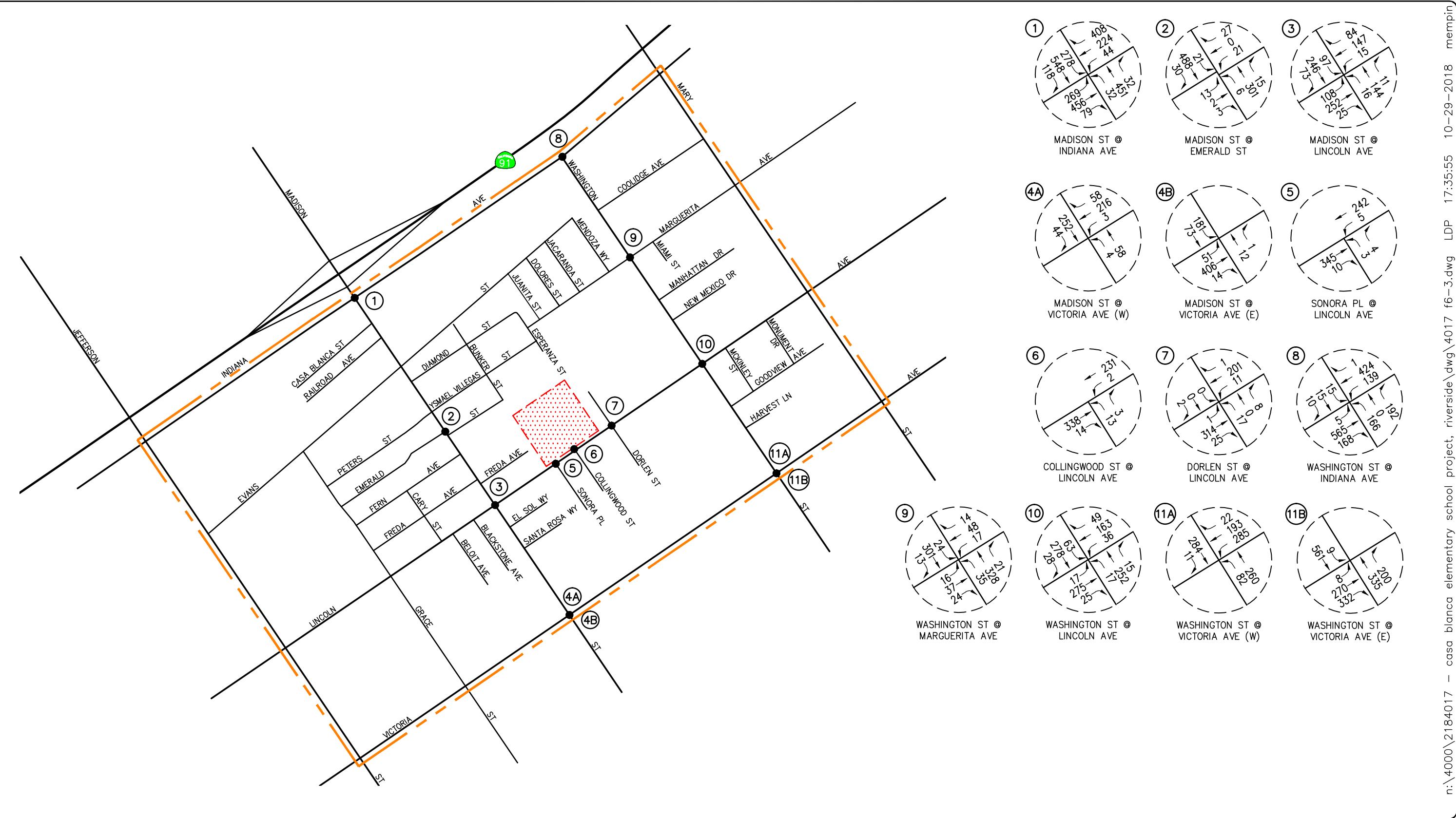
**KEY**

- ① = STUDY INTERSECTION
- = ACADEMIC SERVICE BOUNDARY
- = PROJECT SITE

**FIGURE 6-2**

**EXISTING PLUS AMBIENT (YEAR 2022)  
AM PEAK HOUR TRAFFIC VOLUMES**

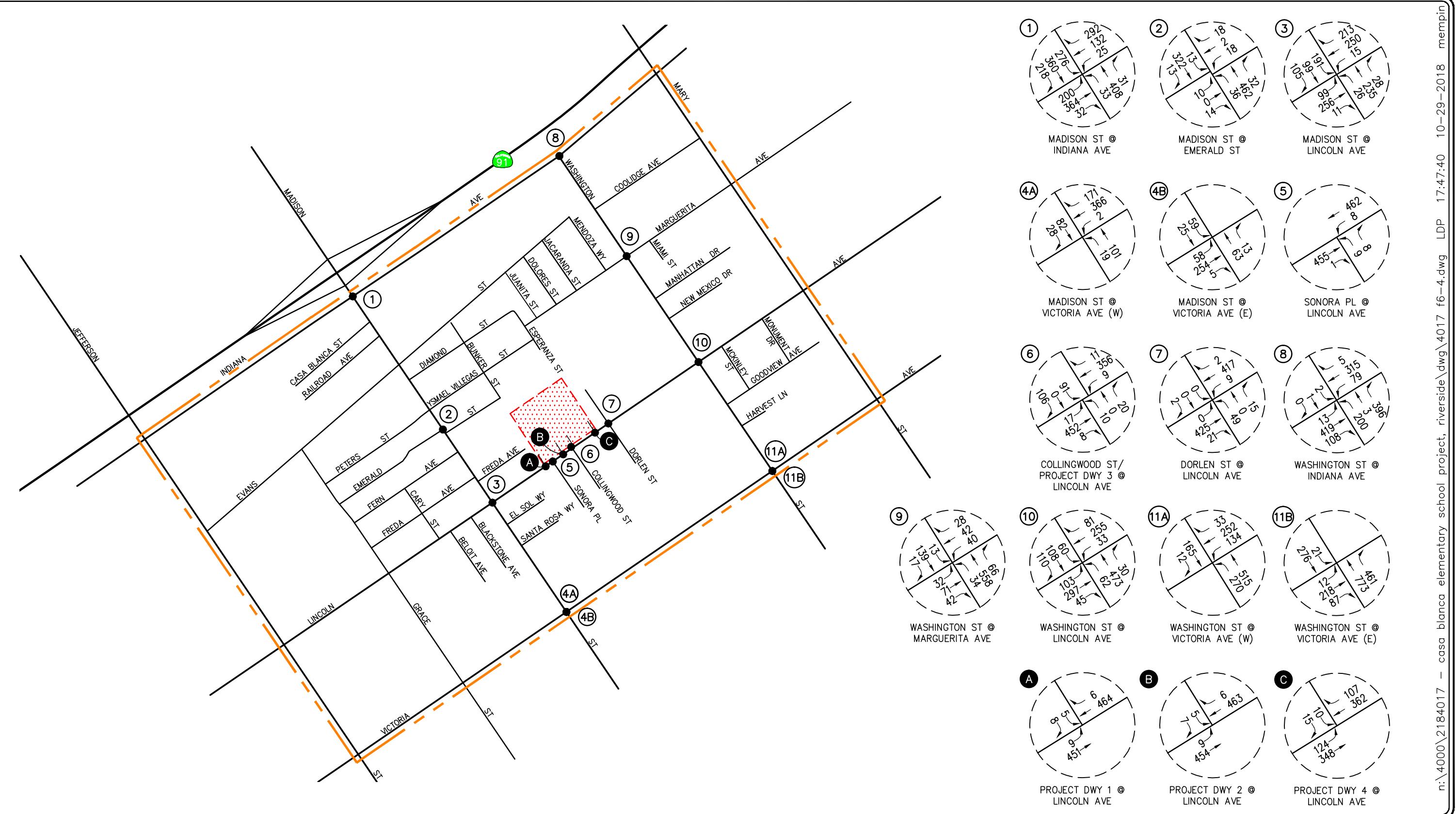
CASA BLANCA ELEMENTARY SCHOOL PROJECT, RIVERSIDE



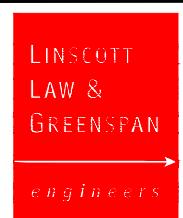
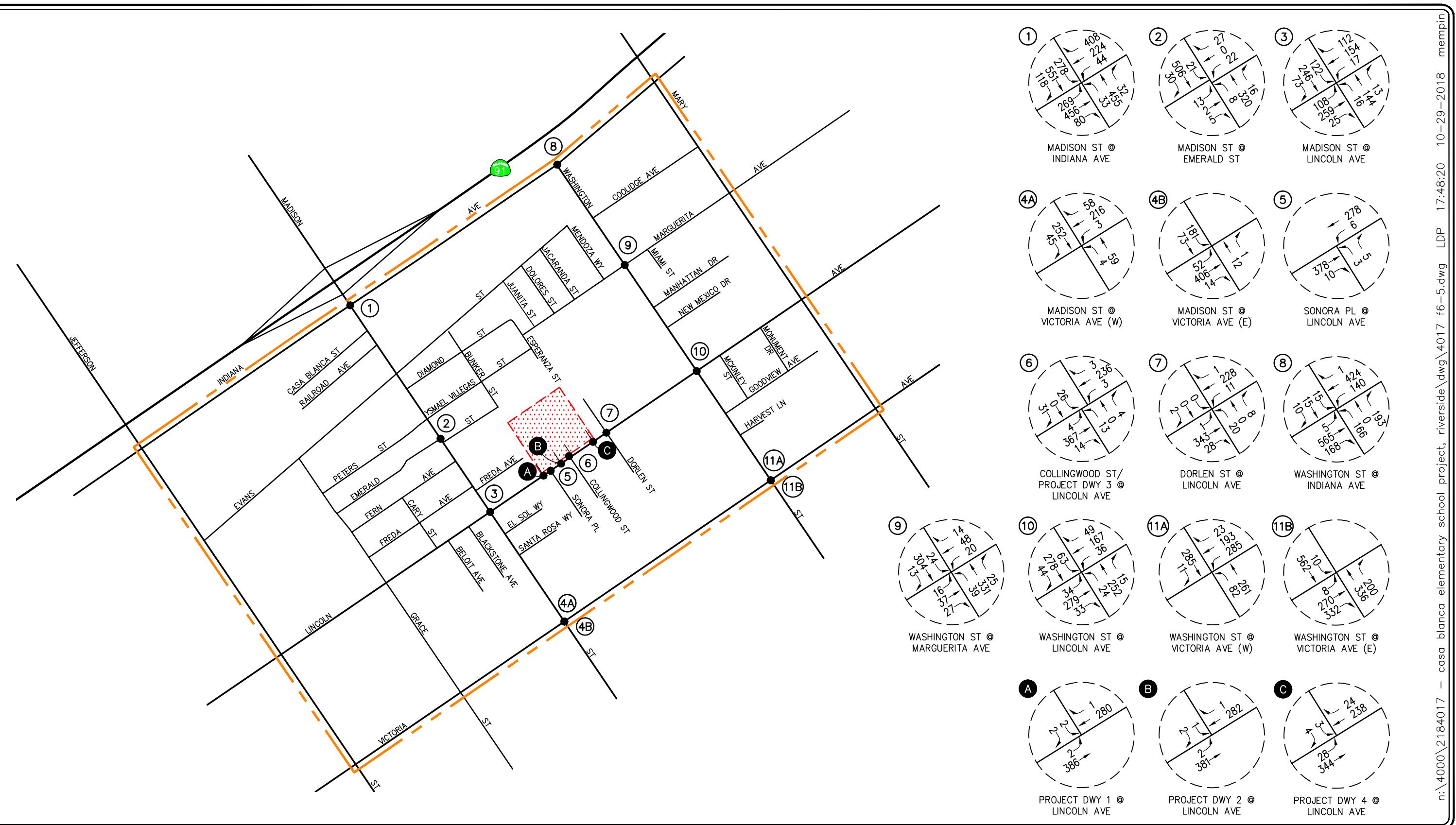
**FIGURE 6-3**

**EXISTING PLUS AMBIENT (YEAR 2022)  
PM PEAK HOUR TRAFFIC VOLUMES**

CASA BLANCA ELEMENTARY SCHOOL PROJECT, RIVERSIDE



**FIGURE 6-4**  
EXISTING PLUS AMBIENT (YEAR 2022) PLUS PROJECT  
AM PEAK HOUR TRAFFIC VOLUMES  
CASA BLANCA ELEMENTARY SCHOOL PROJECT, RIVERSIDE



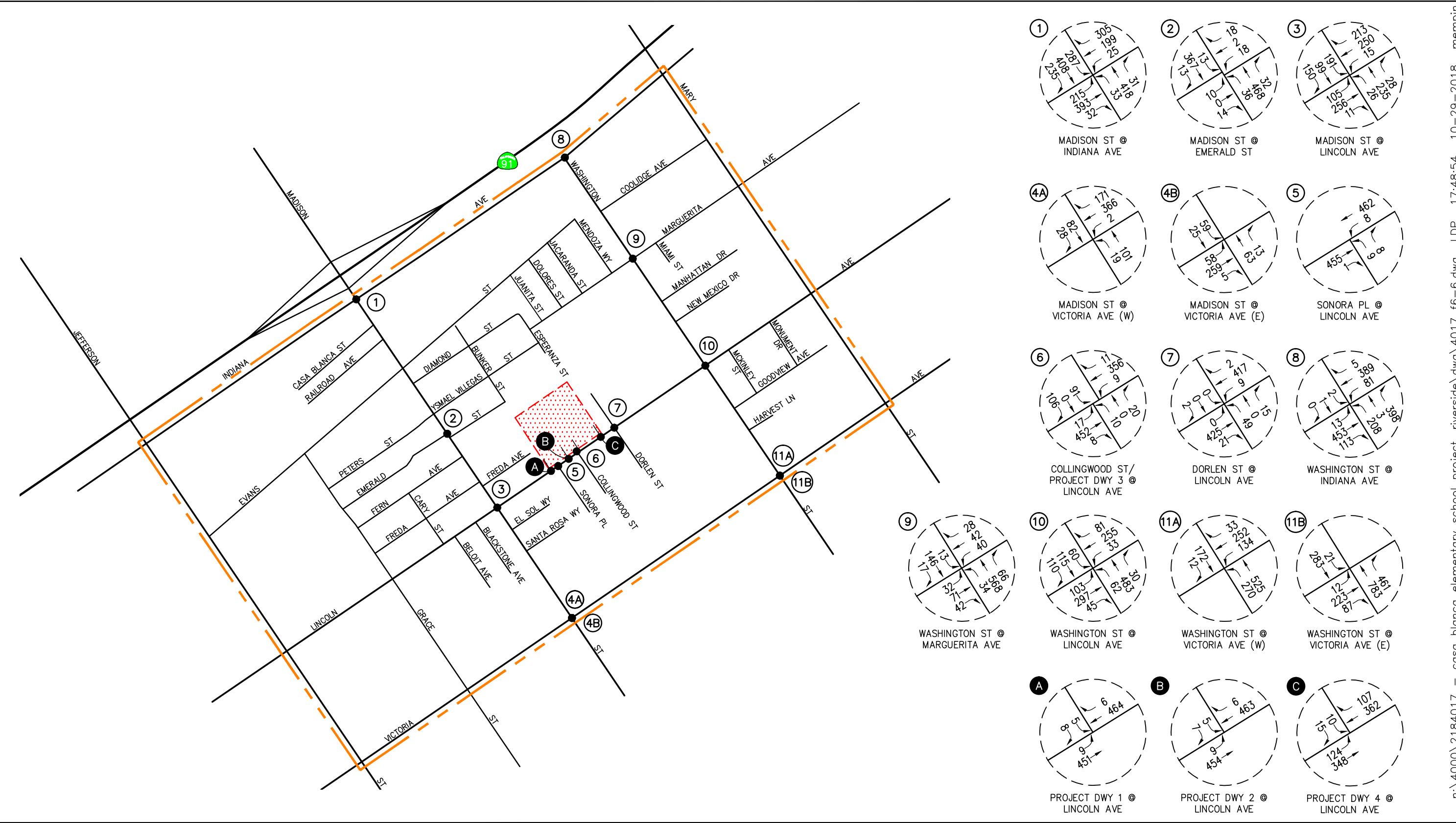
NO SCALE

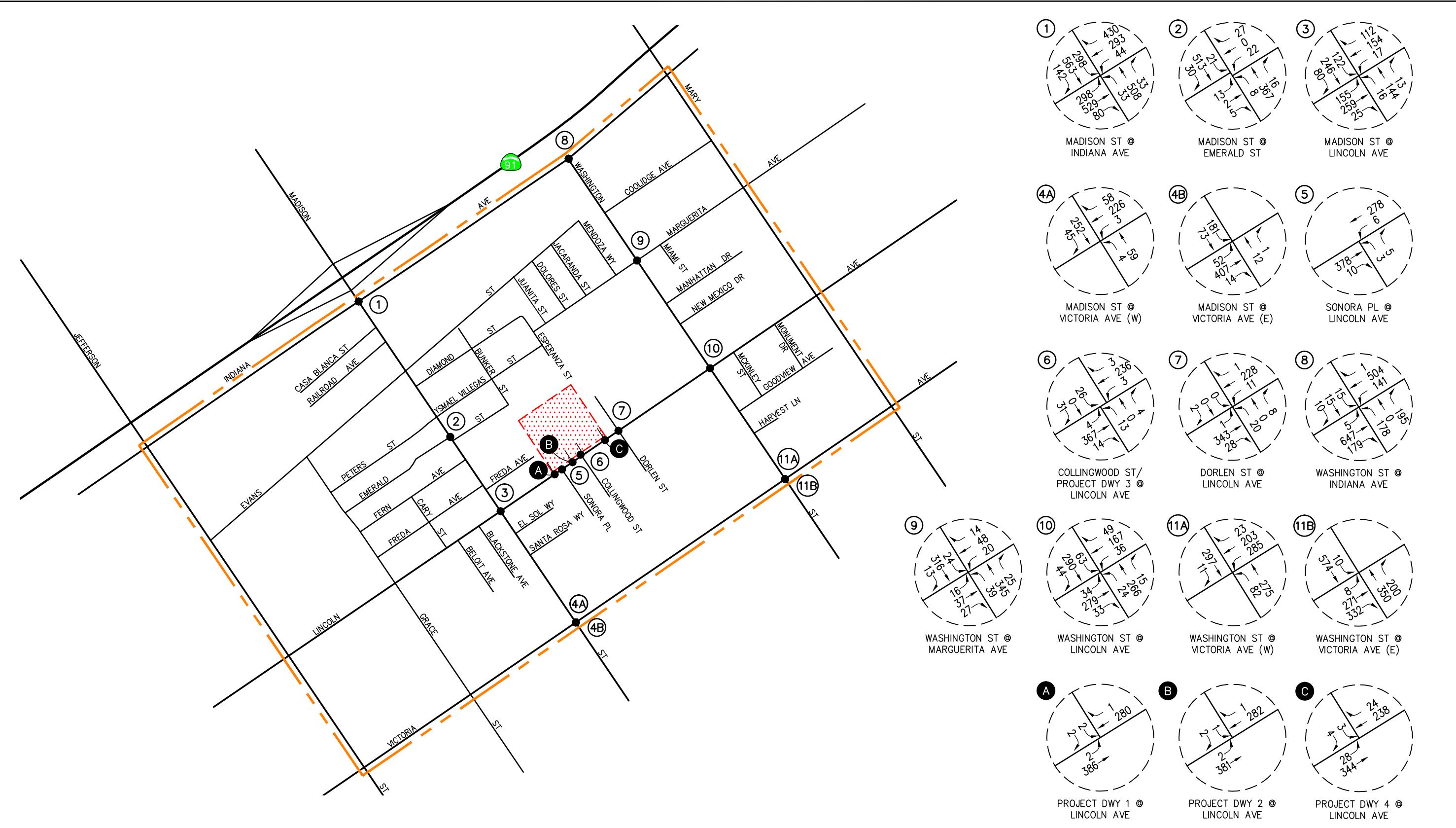
KEY

- - # = STUDY INTERSECTION
  - - - = ACADEMIC SERVICE BOUNDARY
  - ██████ = PROJECT SITE

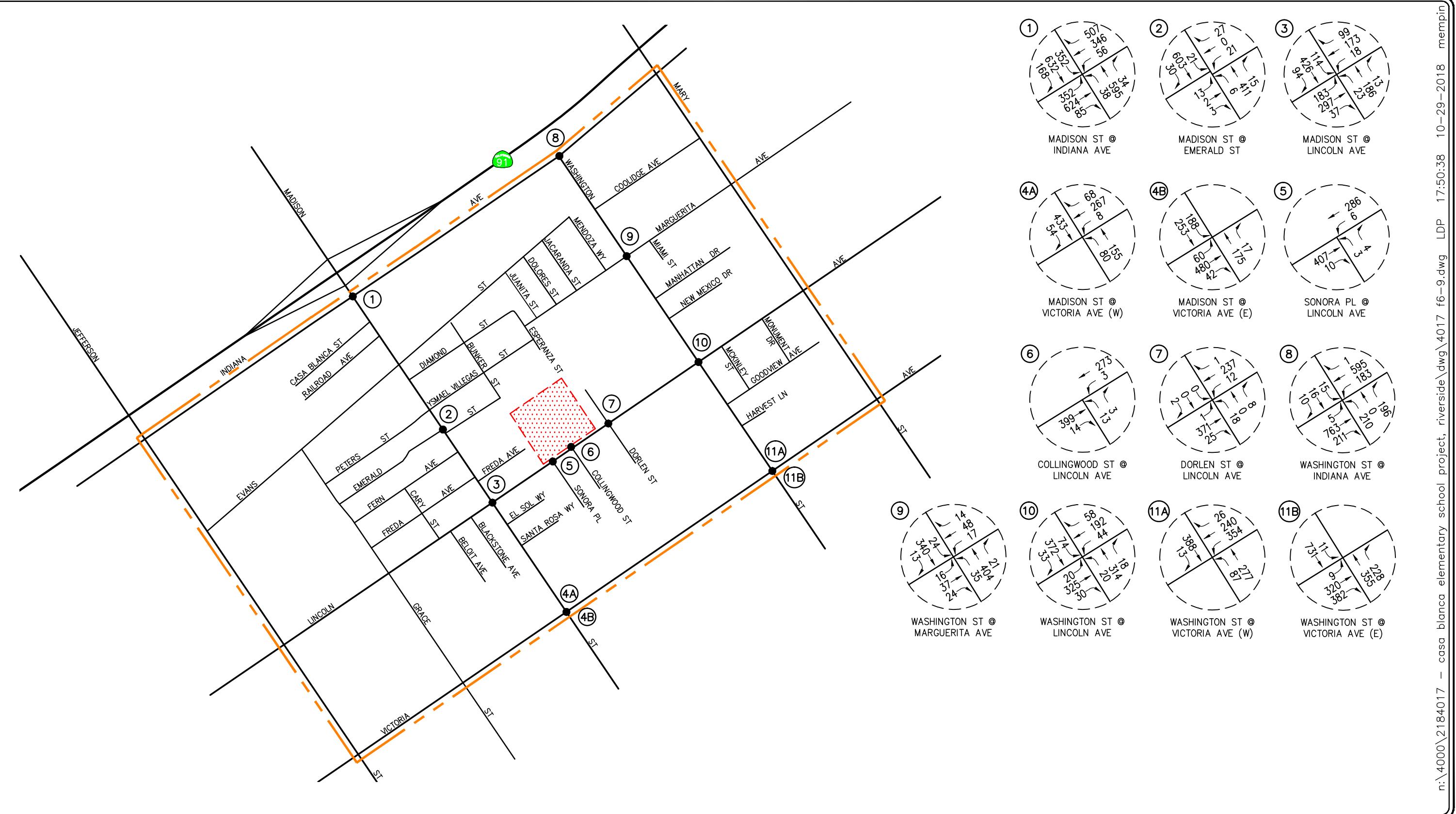
## FIGURE 6-5

**EXISTING PLUS AMBIENT (YEAR 2022) PLUS PROJECT  
PM PEAK HOUR TRAFFIC VOLUMES**







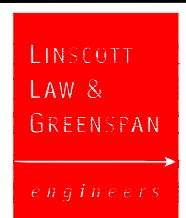
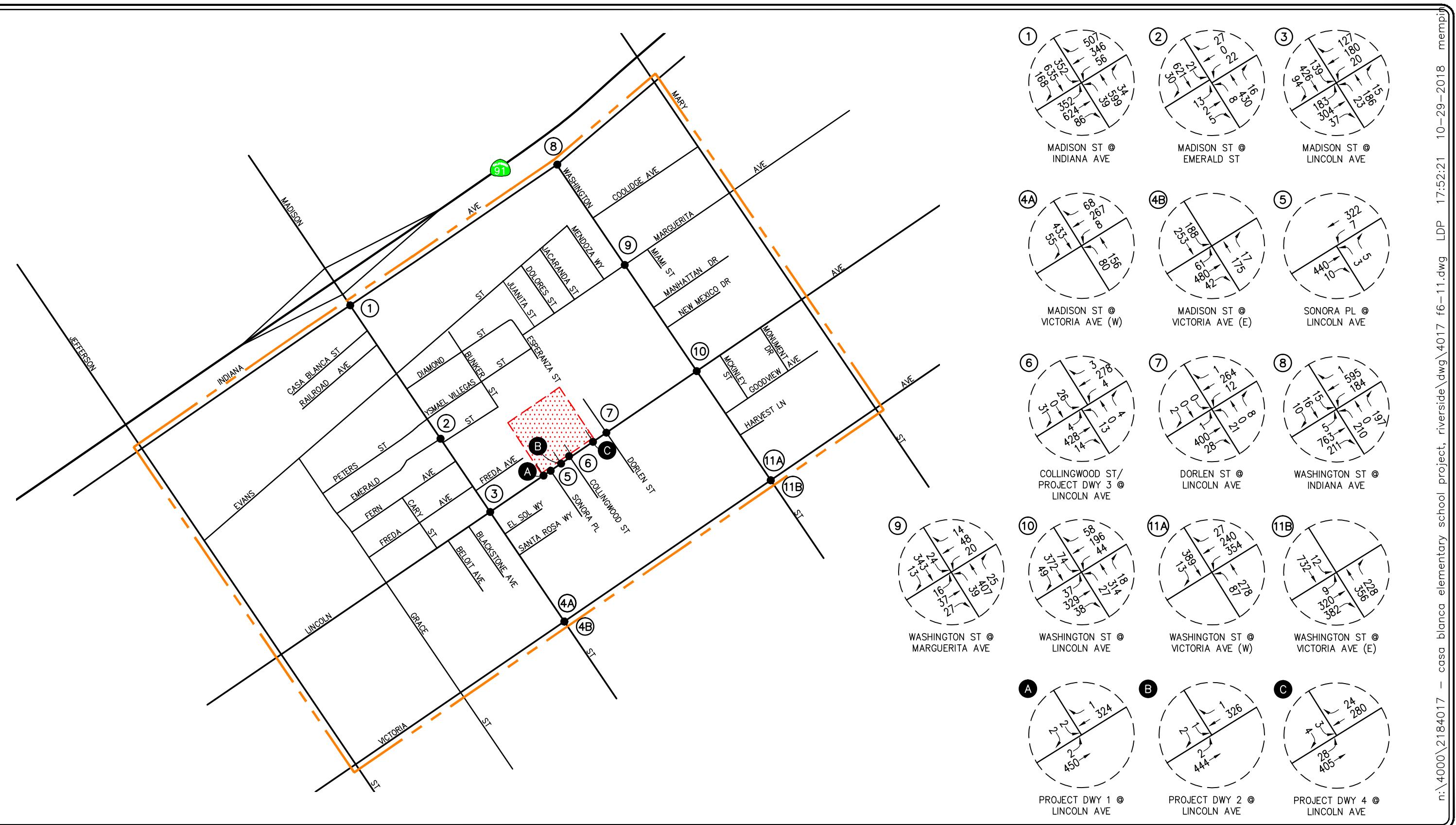




**FIGURE 6-10**

**YEAR 2040 BUILDOUT PLUS PROJECT AM PEAK HOUR TRAFFIC VOLUMES**

CASA BLANCA ELEMENTARY SCHOOL PROJECT, RIVERSIDE



## SCALE

KEY

- (#) = STUDY INTERSECTION
  - = ACADEMIC SERVICE BOUNDARY
  - = PROJECT SITE

**FIGURE 6-11**

## YEAR 2040 BUILDOUT PLUS PROJECT PM PEAK HOUR TRAFFIC VOLUMES

CASA BLANCA ELEMENTARY SCHOOL PROJECT, RIVERSIDE

## **7.0 TRAFFIC IMPACT ANALYSIS METHODOLOGY**

The relative impact of the Project during the AM peak hour and PM peak hour was evaluated based on analysis of future operating conditions at eleven (11) key study intersections, without, then with, the proposed Project. The previously discussed capacity analysis procedures were utilized to investigate the future volume-to-capacity relationships and service level characteristics at the key study intersections. The significance of the potential impacts of the Project at the eleven (11) key study intersections was then evaluated using the following traffic impact criteria.

### **7.1 Impact Criteria and Thresholds**

The City of Riverside allows LOS “D” to be used as the maximum acceptable threshold for the study intersections and roadways of Collector or higher classification. However, at some key locations, such as City arterial roadways which are used as a freeway bypass by regional through traffic and at heavily traveled freeway interchanges, LOS “E” may be acceptable as determined on a case-by-case basis. Locations that may warrant the LOS “E” standard include portions of Arlington Avenue/Alessandro Boulevard, Van Buren Boulevard throughout the City, portions of La Sierra Avenue and selected freeway interchanges. The City also recognizes that along key freeway-feeder segments during peak commute hours, LOS F may be expected due to regional travel patterns. A higher standard, such as LOS “C” or better, may be adopted for Local streets in residential areas. Based on the above, LOS D is required for the eleven (11) key study intersections.

A significant impact occurs at a study intersection when the addition of project generated trips causes peak hour LOS to degrade from acceptable LOS to unacceptable LOS.

### **7.2 Traffic Impact Analysis Scenarios**

The following scenarios are those for which volume/capacity calculations have been performed at the eleven (11) key study intersections for Existing Plus Project, near-term (Year 2022) and long-term (Year 2040) traffic conditions:

- A. Existing Traffic Conditions;
- B. Existing Plus Project Traffic Conditions;
- C. Scenario (B) with Improvements, if necessary;
- D. Existing Plus A.G. (Ambient Growth) to the Year 2022 Traffic Conditions;
- E. Existing Plus A.G. to the Year 2022 Plus Project Traffic Conditions;
- F. Scenario (E) with Improvements, if necessary;
- G. Existing Plus A.G. Plus Project Plus Cumulative Traffic Conditions;
- H. Scenario (G) with Improvements, if necessary;
- I. Year 2040 Buildout Traffic Conditions;
- J. Year 2040 Buildout Plus Project Traffic Conditions; and
- K. Scenario (J) with Improvements, if necessary.

## 8.0 PEAK HOUR INTERSECTION CAPACITY ANALYSIS

### 8.1 Existing Plus Project Traffic Conditions

*Table 8-1* summarizes the peak hour level of service results at the eleven (11) key study intersections for “Existing Plus Project” traffic conditions. The first column (1) of HCM/LOS values in *Table 8-1* presents a summary of existing AM and PM peak hour traffic conditions (which were also presented in *Table 3-3*). The second column (2) lists existing plus project traffic conditions. The third column (3) indicates whether the traffic associated with the Project will have a significant impact based on the significant impact criteria defined in this report. The fourth column (4) indicates the anticipated operating conditions with implementation of improvements recommended to mitigate Project traffic and/or achieve an acceptable Level of Service, if any.

#### 8.1.1 Existing Plus Project Traffic Conditions

Review of columns 2 and 3 of *Table 8-1* indicates that traffic associated with the proposed Project will significantly impact two of the eleven (11) key study intersections, when compared to the LOS standards and significant impact criteria specified in this report. The remaining nine (9) key study intersections are forecast to continue to operate at an acceptable LOS with the addition of Project generated traffic to existing traffic. The two locations projected to operate at an unacceptable LOS with the addition of project traffic to existing traffic are as follows:

<u>Key Intersection</u>	<u>AM Peak Hour</u>		<u>PM Peak Hour</u>	
	<u>HCM</u>	<u>LOS</u>	<u>HCM</u>	<u>LOS</u>
9. Washington Street at Marguerita Avenue	47.0 s/v	E	---	---
10. Washington Street at Lincoln Avenue	96.9 s/v	F	---	---

As shown in column 4, the implementation of improvements (discussed later in this report) at the impacted key study intersection of Washington Street/Lincoln Avenue completely offsets the impact of project traffic and the key study intersection is forecast to operate at an acceptable LOS during the AM and PM peak hours. For the remaining impacted key study intersection of Washington Street/Marguerita Avenue, additional capacity-enhancing improvements at this key study intersection do not appear feasible due to physical and right-of-way restrictions that prohibit any additional widening and/or restriping. Therefore, the impact at this location will remain significant.

*Appendix D* presents the Existing Plus Project HCM/LOS calculations for the eleven (11) key study intersections.

### 8.2 Year 2022 Traffic Conditions

*Table 8-2* summarizes the peak hour level of service results at the eleven (11) key study intersections for “Year 2022” traffic conditions. The first column (1) of HCM/LOS values in *Table 8-2* presents Year 2022 plus ambient growth traffic conditions based on existing intersection geometry, but without any traffic generated from the proposed project. The second column (2) presents forecast Year 2022 plus ambient growth traffic conditions with the addition of project traffic. The third column (3) indicates whether the traffic associated with the Project will have a significant impact

based on the significant impact criteria defined in this report. The fourth column (4) indicates the anticipated operating conditions with implementation of improvements recommended to mitigate Project traffic and/or achieve an acceptable Level of Service. The fifth column (5) lists Year 2022 plus ambient growth plus project plus cumulative project traffic conditions (i.e. the cumulative scenario). The sixth column (6) indicates whether the traffic associated with the Project will have a significant “cumulative” impact based on the significant impact criteria defined in this report. The seventh column (7) indicates the anticipated operating conditions with implementation of recommended improvements, if any.

### **8.2.1 Existing Plus Ambient Growth to the Year 2022 Traffic Conditions**

As shown in column 1 of *Table 8-2*, the addition of ambient growth traffic will adversely impact the intersection of Washington Street/Lincoln Avenue. The intersection of Washington Street/Lincoln Avenue is forecast to operate at unacceptable LOS F during the AM peak hour with the addition of ambient growth traffic. The remaining ten (10) key study intersections are forecast to continue to operate at an acceptable service level during the AM and PM peak hours with the addition of ambient growth traffic to existing traffic.

### **8.2.2 Existing Plus Ambient Growth to the Year 2022 Plus Project Traffic Conditions**

Review of columns 2 and 3 of *Table 8-2* indicates that traffic associated with the proposed Project will significantly impact two of the eleven (11) key study intersections, when compared to the LOS standards and significant impact criteria specified in this report. The remaining nine (9) key study intersections are forecast to continue to operate at an acceptable service level during the AM and PM peak hours with the addition of ambient growth and Project generated traffic in the Year 2022. The two locations projected to operate at an unacceptable LOS are as follows:

<u>Key Intersection</u>	<u>AM Peak Hour</u>		<u>PM Peak Hour</u>	
	<u>HCM</u>	<u>LOS</u>	<u>HCM</u>	<u>LOS</u>
9. Washington Street at Marguerita Avenue	35.0 s/v	E	---	---
10. Washington Street at Lincoln Avenue	113.6 s/v	F	---	---

As shown in column 4, the implementation of improvements (discussed later in this report) at the impacted key study intersection of Washington Street/Lincoln Avenue completely offsets the impact of project traffic and the key study intersection is forecast to operate at an acceptable LOS during the AM and PM peak hours. For the remaining impacted key study intersection of Washington Street/Marguerita Avenue, additional capacity-enhancing improvements at this key study intersection do not appear feasible due to physical and right-of-way restrictions that prohibit any additional widening and/or restriping. Therefore, the impact at this location will remain significant.

### **8.2.3 Year 2022 Cumulative Traffic Conditions**

Review of columns 5 and 6 of *Table 8-2* indicates that traffic associated with the proposed Project will cumulatively impact two of the eleven (11) key study intersections, when compared to the LOS standards and significant impact criteria specified in this report. The remaining nine (9) key study intersections are forecast to continue to operate at an acceptable service level during the AM and PM peak hours with the addition of ambient growth, cumulative, and Project generated traffic in the Year 2022. The two locations projected to operate at an unacceptable LOS are as follows:

<u>Key Intersection</u>	<u>AM Peak Hour</u>		<u>PM Peak Hour</u>	
	<u>HCM</u>	<u>LOS</u>	<u>HCM</u>	<u>LOS</u>
9. Washington Street at Marguerita Avenue	38.1 s/v	E	---	---
10. Washington Street at Lincoln Avenue	119.4 s/v	F	---	---

As shown in column 7, the implementation of improvements (discussed later in this report) at the impacted key study intersection of Washington Street/Lincoln Avenue completely offsets the impact of project traffic and the key study intersection is forecast to operate at an acceptable LOS during the AM and PM peak hours. For the remaining impacted key study intersection of Washington Street/Marguerita Avenue, additional capacity-enhancing improvements at this key study intersection do not appear feasible due to physical and right-of-way restrictions that prohibit any additional widening and/or restriping. Therefore, the impact at this location will remain significant.

*Appendix E* presents the Year 2022 Plus Project HCM/LOS calculations for the eleven (11) key study intersections.

## **8.3 Year 2040 Buildout Traffic Conditions**

*Table 8-3* summarizes the peak hour level of service results at the eleven (11) key study intersections for “Year 2040 Buildout Plus Project” traffic conditions. The first column (1) lists Year 2040 buildout traffic conditions, but without any traffic generated from the proposed project. The second column (2) presents Year 2040 buildout traffic conditions with the addition of project traffic. The third column (3) indicates whether the traffic associated with the Project will have a significant impact based on the significant impact criteria defined in this report. The fourth column (4) indicates the anticipated operating conditions with implementation of improvements recommended to mitigate Project traffic and/or achieve an acceptable Level of Service.

### **8.3.1 Year 2040 Buildout Traffic Conditions**

Review of column 1 of *Table 8-3* shows that projected Year 2040 buildout without project traffic will adversely impact two of the eleven (11) key study intersections. The remaining nine (9) key study intersections are forecast to operate at an acceptable LOS for Year 2040 buildout without project traffic conditions. The two locations projected to operate at an unacceptable LOS are as follows:

<u>Key Intersection</u>	<u>AM Peak Hour</u>		<u>PM Peak Hour</u>	
	<u>HCM</u>	<u>LOS</u>	<u>HCM</u>	<u>LOS</u>
9. Washington Street at Marguerita Avenue	41.2 s/v	E	---	---
10. Washington Street at Lincoln Avenue	127.1 s/v	F	55.6 s/v	F

### **8.3.2 Year 2040 Buildout Plus Project Traffic Conditions**

Review of Columns 2 and 3 of *Table 8-3* indicates that the added traffic associated with the proposed Project will significantly impact two (2) the eleven (11) key study intersections, when compared to the LOS standards and significant impact criteria specified in this report. The remaining nine (9) key study intersections are forecast to continue to operate at an acceptable LOS with the addition of project generated traffic in the Year 2040. The two locations projected to operate at an unacceptable LOS are as follows:

<u>Key Intersection</u>	<u>AM Peak Hour</u>		<u>PM Peak Hour</u>	
	<u>HCM</u>	<u>LOS</u>	<u>HCM</u>	<u>LOS</u>
9. Washington Street at Marguerita Avenue	54.8 s/v	F	---	---
10. Washington Street at Lincoln Avenue	181.4 s/v	F	70.2 s/v	F

As shown in column 4, the implementation of improvements (discussed later in this report) at the impacted key study intersection of Washington Street/Lincoln Avenue completely offsets the impact of project traffic and the key study intersection is forecast to operate at an acceptable LOS during the AM and PM peak hours. For the remaining impacted key study intersection of Washington Street/Marguerita Avenue, additional capacity-enhancing improvements at this key study intersection do not appear feasible due to physical and right-of-way restrictions that prohibit any additional widening and/or restriping. Therefore, the impact at this location will remain significant.

**Appendix F** presents the Year 2040 Plus Project HCM/LOS calculations for the eleven (11) key study intersections.

**TABLE 8-1**  
**EXISTING PLUS PROJECT PEAK HOUR INTERSECTION CAPACITY ANALYSIS SUMMARY**

Key Intersection	Time Period	Minimum Acceptable LOS	(1) Existing Traffic Conditions		(2) Existing Plus Project Traffic Conditions		(3) Significant Impact	(4) Existing Plus Project With Improvements	
			HCM	LOS	HCM	LOS		HCM	LOS
1. Madison Street at Indiana Avenue	AM	LOS D	34.9 s/v	C	35.0 s/v	C	No	--	--
	PM		33.7 s/v	C	33.8 s/v	C	No	--	--
2. Madison Street at Emerald Street	AM	LOS D	15.2 s/v	C	23.7 s/v	C	No	--	--
	PM		15.3 s/v	C	16.5 s/v	C	No	--	--
3. Madison Street at Lincoln Avenue	AM	LOS D	22.9 s/v	C	26.0 s/v	C	No	--	--
	PM		23.8 s/v	C	24.1 s/v	C	No	--	--
4A. Madison Street at Victoria Avenue (West)	AM	LOS D	13.0 s/v	B	13.0 s/v	B	No	--	--
	PM		9.4 s/v	A	9.4 s/v	A	No	--	--
4B. Madison Street at Victoria Avenue (East)	AM	LOS D	9.2 s/v	A	9.2 s/v	A	No	--	--
	PM		12.1 s/v	B	12.2 s/v	B	No	--	--
5. Sonora Place at Lincoln Avenue	AM	LOS D	12.4 s/v	B	14.9 s/v	B	No	--	--
	PM		11.9 s/v	B	12.4 s/v	B	No	--	--
6. Collingwood Street at Lincoln Avenue	AM	LOS D	12.4 s/v	B	24.6 s/v	C	No	--	--
	PM		12.7 s/v	B	13.9 s/v	B	No	--	--
7. Dorlen Street at Lincoln Avenue	AM	LOS D	15.5 s/v	C	23.8 s/v	C	No	--	--
	PM		12.5 s/v	B	13.4 s/v	B	No	--	--
8. Washington Street at Indiana Avenue	AM	LOS D	18.1 s/v	B	18.2 s/v	B	No	--	--
	PM		15.8 s/v	B	15.8 s/v	B	No	--	--

Notes:

- LOS = Level of Service, please refer to *Tables 3-1* and *3-2* for the LOS definitions
- **Bold Delay/LOS** values indicate adverse service levels based on City of Riverside LOS standards
- s/v = seconds per vehicle

**TABLE 8-1 (CONTINUED)**  
**EXISTING PLUS PROJECT PEAK HOUR INTERSECTION CAPACITY ANALYSIS SUMMARY**

Key Intersection	Time Period	Minimum Acceptable LOS	(1) Existing Traffic Conditions		(2) Existing Plus Project Traffic Conditions		(3) Significant Impact	(4) Existing Plus Project With Improvements	
			HCM	LOS	HCM	LOS		HCM	LOS
9. Washington Street at Marguerita Avenue	AM	LOS D	33.0 s/v	D	<b>47.0 s/v</b>	E	Yes	N.F.	N.F.
	PM		11.8 s/v	B	12.1 s/v	B	No	N.F.	N.F.
10. Washington Street at Lincoln Avenue	AM	LOS D	<b>46.7 s/v</b>	E	<b>96.9 s/v</b>	F	Yes	13.6 s/v	B
	PM		18.1 s/v	C	21.2 s/v	C	No	11.6 s/v	B
11A. Washington Street at Victoria Avenue (West)	AM	LOS D	13.1 s/v	B	13.1 s/v	B	No	--	--
	PM		11.0 s/v	B	11.1 s/v	B	No	--	--
11B. Washington Street at Victoria Avenue (East)	AM	LOS D	13.0 s/v	B	13.1 s/v	B	No	--	--
	PM		15.7 s/v	C	15.7 s/v	C	No	--	--

Notes:

- LOS = Level of Service, please refer to *Tables 3-1* and *3-2* for the LOS definitions
- **Bold Delay/LOS** values indicate adverse service levels based on City of Riverside LOS standards
- s/v = seconds per vehicle
- N.F. = None Feasible

**TABLE 8-2**  
**YEAR 2022 PEAK HOUR INTERSECTION CAPACITY ANALYSIS SUMMARY**

Key Intersection	Time Period	Minimum Acceptable LOS	(1)		(2) Existing Plus Ambient Growth (Year 2022)		Significant Impact	(4) Existing Plus Ambient Growth (Year 2022)		(5) Existing Plus A.G. (Year 2022) Plus Project Plus Cumulative Traffic Conditions		Year 2022 Cumulative Impact	(7) Year 2022 Cumulative W/Improvements		
			Existing Plus A.G. (Year 2022) Traffic Conditions		Plus Project Traffic Conditions			W/Improvements		HCM LOS			HCM LOS		
			HCM	LOS	HCM	LOS		Yes/No	HCM	LOS	HCM	LOS	HCM	LOS	
1. Madison Street at Indiana Avenue	AM	LOS D	34.8 s/v	C	34.9 s/v	C	No	--	--	35.0 s/v	D	No	--	--	
	PM		35.8 s/v	D	35.8 s/v	D	No	--	--	38.1 s/v	D	No	--	--	
2. Madison Street at Emerald Street	AM	LOS D	12.6 s/v	B	16.0 s/v	C	No	--	--	17.2 s/v	C	No	--	--	
	PM		17.3 s/v	C	18.9 s/v	C	No	--	--	20.2 s/v	C	No	--	--	
3. Madison Street at Lincoln Avenue	AM	LOS D	22.8 s/v	C	25.7 s/v	C	No	--	--	25.9 s/v	C	No	--	--	
	PM		24.0 s/v	C	24.3 s/v	C	No	--	--	25.0 s/v	C	No	--	--	
4A. Madison Street at Victoria Ave (W)	AM	LOS D	13.2 s/v	B	13.2 s/v	B	No	--	--	13.2 s/v	B	No	--	--	
	PM		9.5 s/v	A	9.5 s/v	A	No	--	--	9.6 s/v	A	No	--	--	
4B. Madison Street at Victoria Ave (E)	AM	LOS D	9.2 s/v	A	9.3 s/v	A	No	--	--	9.3 s/v	A	No	--	--	
	PM		12.7 s/v	B	12.7 s/v	B	No	--	--	12.7 s/v	B	No	--	--	
5. Sonora Place at Lincoln Avenue	AM	LOS D	12.7 s/v	B	15.3 s/v	C	No	--	--	15.3 s/v	C	No	--	--	
	PM		11.6 s/v	B	12.0 s/v	B	No	--	--	12.0 s/v	B	No	--	--	
6. Collingwood St at Lincoln Avenue	AM	LOS D	12.1 s/v	B	27.8 s/v	D	No	--	--	27.8 s/v	D	No	--	--	
	PM		12.7 s/v	B	14.6 s/v	B	No	--	--	14.6 s/v	B	No	--	--	
7. Dorlen Street at Lincoln Avenue	AM	LOS D	14.9 s/v	B	21.2 s/v	C	No	--	--	21.2 s/v	C	No	--	--	
	PM		13.0 s/v	B	13.9 s/v	B	No	--	--	13.9 s/v	B	No	--	--	

Notes:

- LOS = Level of Service, please refer to *Tables 3-1 and 3-2* for the LOS definitions
- s/v = seconds per vehicle
- A.G. = ambient growth

**TABLE 8-2 (CONTINUED)**  
**YEAR 2022 PEAK HOUR INTERSECTION CAPACITY ANALYSIS SUMMARY**

Key Intersection	Time Period	Minimum Acceptable LOS	(1)		(2)		Significant Impact	(4)		(5)		Year 2022 Cumulative Impact	(7)		
			Existing Plus A.G. (Year 2022) Traffic Conditions		Existing Plus Ambient Growth (Year 2022) Plus Project Traffic Conditions			Existing Plus Ambient Growth (Year 2022) Plus Project W/Improvements		Existing Plus A.G. (Year 2022) Plus Project Plus Cumulative Traffic Conditions			Year 2022 Cumulative W/Improvements		
			HCM	LOS	HCM	LOS		Yes/No	HCM	LOS	HCM	LOS	HCM	LOS	
8. Washington St at Indiana Avenue	AM	LOS D	18.5 s/v	B	18.6 s/v	B	No	--	--	18.4 s/v	B	No	--	--	
	PM		15.7 s/v	B	15.8 s/v	B	No	--	--	15.9 s/v	B	No	--	--	
9. Washington St at Marguerita Ave	AM	LOS D	25.8 s/v	D	<b>35.0 s/v</b>	E	<b>Yes</b>	N.F.	N.F.	<b>38.1 s/v</b>	E	<b>Yes</b>	N.F.	N.F.	
	PM		12.6 s/v	B	12.9 s/v	B	No	N.F.	N.F.	13.4 s/v	B	No	N.F.	N.F.	
10. Washington St at Lincoln Avenue	AM	LOS D	<b>60.8 s/v</b>	F	<b>113.6 s/v</b>	F	<b>Yes</b>	14.1 s/v	B	<b>119.4 s/v</b>	F	<b>Yes</b>	14.2 s/v	B	
	PM		22.9 s/v	C	28.2 s/v	D	No	11.7 s/v	B	32.2 s/v	D	No	11.6 s/v	B	
11A. Washington St at Victoria Ave (W)	AM	LOS D	13.3 s/v	B	13.4 s/v	B	No	--	--	13.5 s/v	B	No	--	--	
	PM		11.7 s/v	B	11.7 s/v	B	No	--	--	11.9 s/v	B	No	--	--	
11B. Washington St at Victoria Ave (E)	AM	LOS D	13.3 s/v	B	13.3 s/v	B	No	--	--	13.6 s/v	B	No	--	--	
	PM		18.8 s/v	C	18.9 s/v	C	No	--	--	19.7 s/v	C	No	--	--	

Notes:

- LOS = Level of Service, please refer to *Tables 3-1 and 3-2* for the LOS definitions
- s/v = seconds per vehicle
- A.G. = ambient growth
- N.F. = None Feasible

**TABLE 8-3**  
**YEAR 2040 BUILDOUT PEAK HOUR INTERSECTION CAPACITY ANALYSIS SUMMARY**

Key Intersection	Time Period	Minimum Acceptable LOS	(1) Year 2040 Buildout Traffic Conditions		(2) Year 2040 Buildout Plus Project Traffic Conditions		Significant Impact Yes/No	(4) Year 2040 Buildout Plus Project With Improvements	
			HCM	LOS	HCM	LOS		HCM	LOS
1. Madison Street at Indiana Avenue	AM	LOS D	37.3 s/v	D	37.3 s/v	D	No	--	--
	PM		51.9 s/v	D	52.4 s/v	D	No	--	--
2. Madison Street at Emerald Street	AM	LOS D	13.9 s/v	B	18.3 s/v	C	No	--	--
	PM		26.4 s/v	D	29.8 s/v	D	No	--	--
3. Madison Street at Lincoln Avenue	AM	LOS D	25.0 s/v	C	27.7 s/v	C	No	--	--
	PM		29.0 s/v	C	29.2 s/v	C	No	--	--
4A. Madison Street at Victoria Avenue (West)	AM	LOS D	19.8 s/v	C	19.8 s/v	C	No	--	--
	PM		12.3 s/v	B	12.3 s/v	B	No	--	--
4B. Madison Street at Victoria Avenue (East)	AM	LOS D	11.2 s/v	B	11.2 s/v	B	No	--	--
	PM		20.3 s/v	C	20.4 s/v	C	No	--	--
5. Sonora Place at Lincoln Avenue	AM	LOS D	13.5 s/v	B	16.2 s/v	C	No	--	--
	PM		12.2 s/v	B	12.5 s/v	B	No	--	--
6. Collingwood Street at Lincoln Avenue	AM	LOS D	12.7 s/v	B	31.3 s/v	D	No	--	--
	PM		13.4 s/v	B	15.6 s/v	C	No	--	--
7. Dorlen Street at Lincoln Avenue	AM	LOS D	16.2 s/v	C	23.1 s/v	C	No	--	--
	PM		13.8 s/v	B	14.8 s/v	B	No	--	--
8. Washington Street at Indiana Avenue	AM	LOS D	19.7 s/v	B	19.8 s/v	B	No	--	--
	PM		17.3 s/v	B	17.3 s/v	B	No	--	--

Notes:

- LOS = Level of Service, please refer to *Tables 3-1* and *3-2* for the LOS definitions
- **Bold Delay/LOS** values indicate adverse service levels based on City of Riverside LOS standards
- s/v = seconds per vehicle

**TABLE 8-3 (CONTINUED)**  
**YEAR 2040 BUILDOUT PEAK HOUR INTERSECTION CAPACITY ANALYSIS SUMMARY**

Key Intersection	Time Period	Minimum Acceptable LOS	(1) Year 2040 Buildout Traffic Conditions		(2) Year 2040 Buildout Plus Project Traffic Conditions		(3) Significant Impact	(4) Year 2040 Buildout Plus Project With Improvements	
			HCM	LOS	HCM	LOS		HCM	LOS
9. Washington Street at Marguerita Avenue	AM	LOS D	<b>41.2 s/v</b>	E	<b>54.8 s/v</b>	F	Yes	N.F.	N.F.
	PM		14.0 s/v	B	14.5 s/v	B	No	N.F.	N.F.
10. Washington Street at Lincoln Avenue	AM	LOS D	<b>127.1 s/v</b>	F	<b>181.4 s/v</b>	F	Yes	17.8 s/v	B
	PM		<b>55.6 s/v</b>	F	<b>70.2 s/v</b>	F	Yes	12.0 s/v	B
11A. Washington Street at Victoria Avenue (West)	AM	LOS D	15.1 s/v	C	15.2 s/v	C	No	--	--
	PM		13.8 s/v	B	13.8 s/v	B	No	--	--
11B. Washington Street at Victoria Avenue (East)	AM	LOS D	14.8 s/v	B	14.9 s/v	B	No	--	--
	PM		34.2 s/v	D	34.6 s/v	D	No	--	--

Notes:

- LOS = Level of Service, please refer to *Tables 3-1* and *3-2* for the LOS definitions
- **Bold Delay/LOS** values indicate adverse service levels based on City of Riverside LOS standards
- s/v = seconds per vehicle
- N.F. = None Feasible

## **9.0 SITE ACCESS AND INTERNAL CIRCULATION EVALUATION**

### **9.1 Site Access Evaluation**

As shown previously in *Figure 2-2*, access to the Project site will be provided via four (4) full access unsignalized driveways located along Lincoln Avenue. The westerly project driveway is referred to as Project Driveway No. 1. The proposed project driveway located between Sonora Place and Collingwood Street is referred to as Project Driveway No. 2. Project Driveway No. 3 is located opposite of Collingwood Street (slightly offset to the east). The easterly project driveway is referred to as Project Driveway No. 4.

- Prior to finalization of the project site plan, it is recommended that Project Driveway No. 3 be directly aligned (i.e. center line to center line) with Collingwood Street to minimize conflicting vehicular movements.

**Table 9-1** summarizes the intersection operations at the Project driveways for Year 2022 Cumulative Plus Project traffic conditions and for Year 2040 Buildout Plus Project traffic conditions at completion of the proposed Project. The operations analysis for the Project driveways is based on the *Highway Capacity Manual 6<sup>th</sup> Edition* (HCM 6) unsignalized methodology. Review of *Table 9-1* shows that the Project driveways are forecast to operate at acceptable LOS D or better during the AM and PM peak hours for Year 2022 Cumulative Plus Project traffic conditions and for Year 2040 Buildout Plus Project traffic conditions. As such, Project access will be adequate. Motorists entering and exiting the Project site will be able to do so comfortably, safely, and without undue congestion.

**Appendix G** presents the level of service calculation worksheets for the project driveways under Year 2022 Cumulative Plus Project and Year 2040 Buildout Plus Project traffic conditions.

### **9.2 School Drop-Off and Pick-Up Evaluation**

An evaluation of the school drop-off and pick-up area was conducted to ensure that vehicles will not queue back onto Lincoln Avenue. The following summarizes the results of our evaluation.

Based on the Best Practice standards for on-site queuing related to school drop-off/pick-up activities, 6% of the effective student enrollment is a reasonable factor for estimating the “maximum queue” of vehicles on site.<sup>15</sup> As stated previously in Section 2.0 of this report, the proposed school will have a total of 800 students. Of this total, it is conservatively assumed that 15% of the total student enrollment (i.e. 120 students) would walk to/from school. Based on information provided by District staff, 309 students within the academic service boundary will be eligible to be bussed to/from the site based on their distance of 1.25+ miles. This evaluation assumes 80% of the 309 eligible students (i.e. 248 students) would be bussed to/from the site. With the aforementioned adjustments, a total of 432 effective students would utilize the drop-off/pick-up area [(800 students) – (120 students) – (248 students) = 432 students]. Application of the 6% factor to 432 students, results in a “maximum queue” of 26 vehicles.

<sup>15</sup> Source: *Strategies for the Greening of Student Pick-Ups at School Dismissal White Paper*, Dustin Qualls, PE, PTOE.

**Figure 9-1** illustrates the school drop off/pick-up area queuing analysis. Review of *Figure 9-1* shows that the proposed Project can accommodate a maximum queue of 26 vehicles on site and therefore it is not anticipated that vehicles will queue back onto Lincoln Avenue. As such, we conclude that the drop-off/pick-up area is adequate.

### **9.3 Recommended Safe Route To School Evaluation**

**Figure 9-2** presents the recommended safe route to school paths of travel for students walking and/or biking to/from the school. Review of *Figure 9-2* indicates that it is recommended that students northwest/west/southwest of the school site make their way to Madison Street and travel along Madison Street to its intersection with Lincoln Avenue. It is then recommended that these students cross the street within the crosswalks at the intersection of Madison Street/Lincoln Avenue during the traffic signals walk-phase.

Further review of *Figure 9-2* indicates that it is recommended that students northeast/east/southeast of the school site make their way to Washington Street and travel along Washington Street to its intersection with Lincoln Avenue. It is then recommended that these students cross the street within the crosswalks at the intersection of Washington Street/Lincoln Avenue.

Lastly, as shown in *Figure 9-2*, in order for students to access the site from neighborhoods along Sonora Place, Collingwood Street and Dorlen Street, a pedestrian school crossing signal will be required to be installed on the west leg of the intersection of Lincoln Avenue/Collingwood Street-Project Driveway No. 3 for students to safely cross Lincoln Avenue.

Based on our review of the site plan (*Figure 2-2*), it is recommended that sidewalk improvements be provided along the easterly boundary of the parking lot to provide safe student access to the school from the east via the north side of Lincoln Avenue.

### **9.4 Recommended School Signs and Pavement Markings**

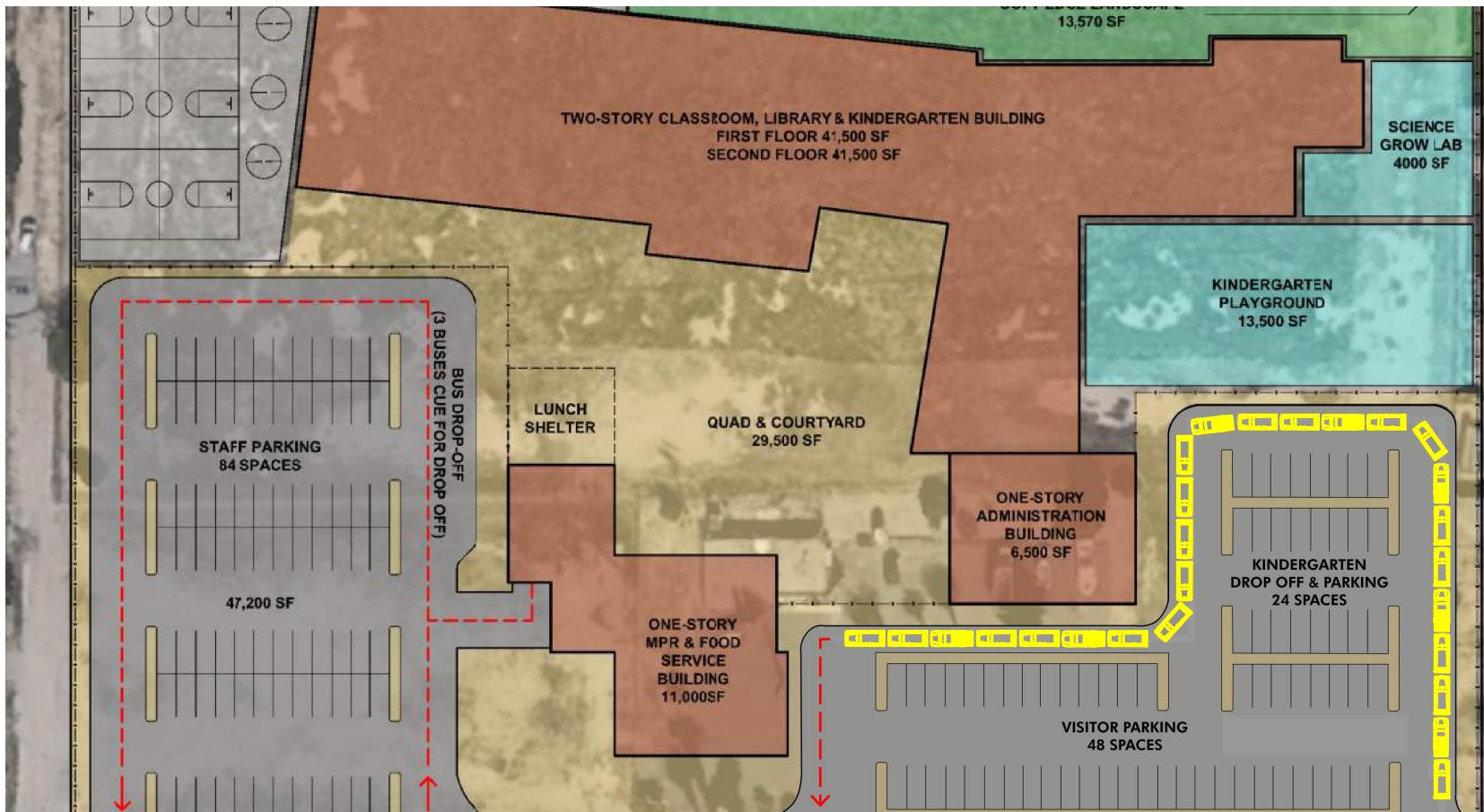
**Figure 9-3** presents the recommended school signs and pavement markings required of the proposed Project based on the safe route to school pedestrian paths of travel presented previously in *Figure 9-2*. Review of *Figure 9-3* shows that it is recommended that the crosswalks at the intersections of Madison Street/Lincoln Avenue and Washington Street/Lincoln Avenue be painted yellow to indicate school crossings. It is also recommended that SR4-1(CA) signs (i.e. school, 25 mph speed limit when children are present) and SW24-3(CA) signs (i.e. school crossing ahead) be installed in the general vicinity of the yellow asterisks shown in *Figure 9-3*. Lastly, as shown in *Figure 9-3*, it is recommended that a flashing pedestrian school crossing signal be installed on the west leg of the intersection of Lincoln Avenue/Collingwood Street-Project Driveway No. 3. It is also recommended that this flashing pedestrian school crossing signal be staffed by a crossing guard during the school arrival period and school departure period to further ensure that pedestrians can safely cross Lincoln Avenue. It should be noted that all of the aforementioned improvements are subject to the approval of the City of Riverside.

**TABLE 9-1**  
**PROJECT DRIVEWAY PEAK HOUR LEVELS OF SERVICE SUMMARY**

Project Driveway	Time Period	Intersection Control	Year 2022 Plus Project Traffic Conditions		Year 2040 Buildout Plus Project Traffic Conditions	
			HCM	LOS	HCM	LOS
A. Project Driveway No. 1 at Lincoln Avenue	AM	One-Way	14.2 s/v	B	15.0 s/v	B
	PM	Stop	12.0 s/v	B	12.5 s/v	B
B. Project Driveway No. 2 at Lincoln Avenue	AM	One-Way	14.4 s/v	B	15.2 s/v	C
	PM	Stop	11.2 s/v	B	11.7 s/v	B
6. Collingwood St/Project Driveway No. 3 at Lincoln Avenue	AM	Two-Way	27.8 s/v	D	31.3 s/v	D
	PM	Stop	14.6 s/v	B	15.6 s/v	C
C. Project Driveway No. 4 at Lincoln Avenue	AM	One-Way	16.4 s/v	C	17.2 s/v	C
	PM	Stop	11.6 s/v	B	12.1 s/v	B

Note:

- s/v = seconds per vehicle



LINSCOTT  
LAW &  
GREENSPAN  
  
engineers

NO SCALE

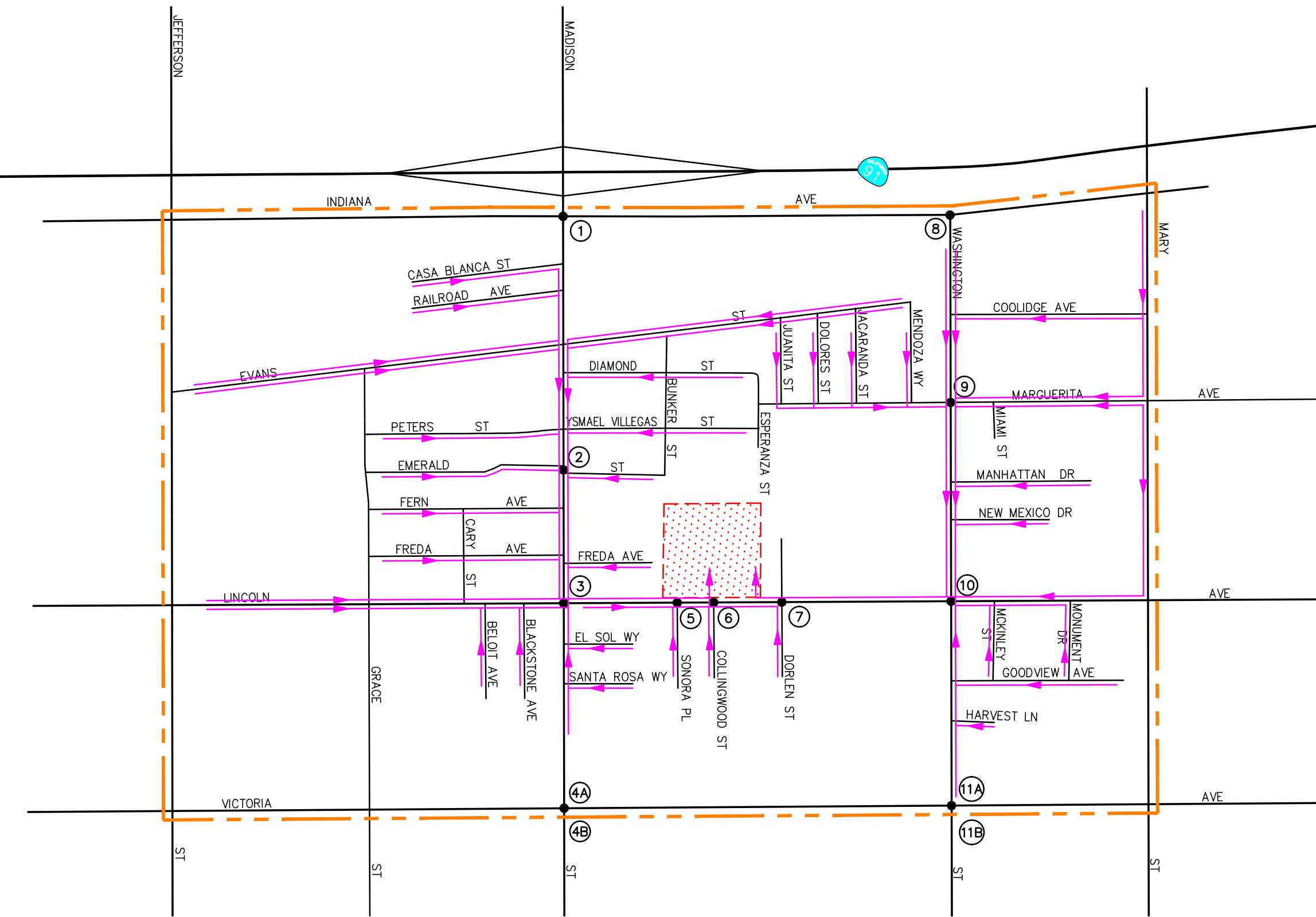
SOURCE: FIRST CARBON SOLUTIONS

KEY

 = MAXIMUM ANTICIPATED QUEUE (26 VEHICLES)

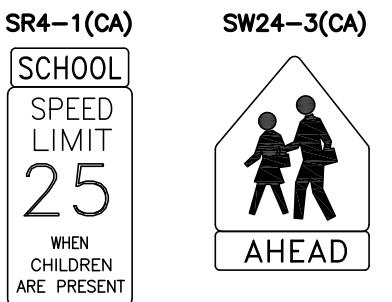
FIGURE 9-1

DROP-OFF/PICK-UP AREA QUEUING ANALYSIS  
CASA BLANCA ELEMENTARY SCHOOL PROJECT, RIVERSIDE





#### SIGN DETAILS



SOURCE: GOOGLE

#### KEY

- = YELLOW CROSSWALKS
- = FLASHING PEDESTRIAN SCHOOL CROSSING SIGNAL
- = SCHOOL ZONE SIGNAGE (SEE DETAIL)
- = SLOW SCHOOL XING

## 10.0 RECOMMENDED IMPROVEMENTS

For those intersections where projected Project traffic volumes are expected to result in unacceptable operating conditions (as defined by a City's significant impact criteria), traffic impact studies of this type typically recommend (identify) improvement measures that change the intersection geometry to increase capacity. These capacity improvements involve roadway widening and/or re-striping to reconfigure (add lanes) to specific approaches of a key intersection. The identified improvements are expected to:

- mitigate the impact of existing traffic, Project traffic and future non-project (ambient traffic growth and cumulative project) traffic and
- improve Levels of Service to an acceptable range and/or to pre-project conditions.

### 10.1 Existing Plus Project Traffic Conditions

The results of the intersection capacity analysis presented previously in *Table 8-1* shows that the proposed Project will significantly impact two (2) of the eleven (11) key study intersections under the “Existing Plus Project” traffic scenario. The following are improvements recommended to mitigate the Existing Plus Project traffic impacts:

- **No. 9 – Washington Street at Marguerita Avenue:** No physical mitigation measures are feasible; any additional turn lanes will require widening and additional right-of-way. As such, the impact at this location is considered **significant and unavoidable** and a statement of overriding considerations will be required for this location.
- **No. 10 – Washington Street at Lincoln Avenue:** Install a two-phase traffic signal. The installation of this improvement is subject to the approval of the City of Riverside.

*Figure 10-1* graphically illustrates the existing plus project recommended improvements.

### 10.2 Existing Plus Ambient Growth (Year 2022) Plus Project Traffic Conditions

The results of the “Existing Plus Ambient Growth (Year 2022) Plus Project” intersection capacity analysis presented previously in *Table 8-2* (columns 2 - 4) indicates that the proposed Project will significantly impact two (2) of the eleven (11) key study intersections. The following are improvements recommended to mitigate the Existing Plus Ambient Growth (Year 2022) Plus Project traffic impacts.

- **No. 9 – Washington Street at Marguerita Avenue:** No physical mitigation measures are feasible; any additional turn lanes will require widening and additional right-of-way. As such, the impact at this location is considered **significant and unavoidable** and a statement of overriding considerations will be required for this location.
- **No. 10 – Washington Street at Lincoln Avenue:** Install a two-phase traffic signal. The installation of this improvement is subject to the approval of the City of Riverside.

**Figure 10-2** graphically illustrates the existing plus ambient growth (Year 2022) plus project recommended improvements.

### 10.3 Year 2022 Cumulative Plus Project Traffic Conditions

The results of the “Year 2022 Cumulative Plus Project” intersection capacity analysis presented previously in *Table 8-2* (columns 5 - 7) indicates that the proposed Project will significantly impact two (2) of the eleven (11) key study intersections. The following are improvements recommended to mitigate the Year 2022 Cumulative Plus Project traffic impacts.

- **No. 9 – Washington Street at Marguerita Avenue:** No physical mitigation measures are feasible; any additional turn lanes will require widening and additional right-of-way. As such, the impact at this location is considered **significant and unavoidable** and a statement of overriding considerations will be required for this location.
- **No. 10 – Washington Street at Lincoln Avenue:** Install a two-phase traffic signal. The installation of this improvement is subject to the approval of the City of Riverside.

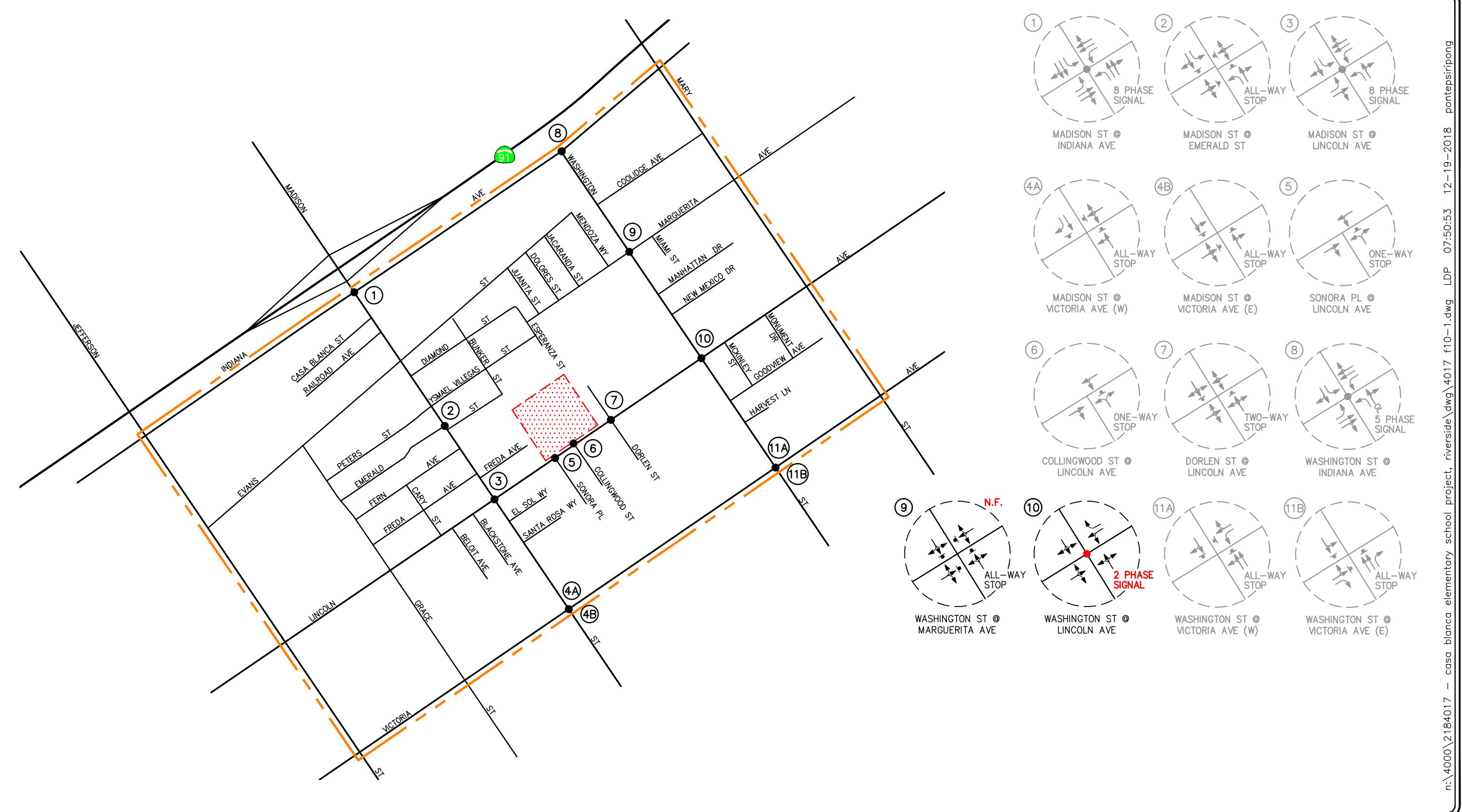
**Figure 10-3** graphically illustrates the Year 2022 cumulative plus project recommended improvements.

### 10.4 Year 2040 Buildout Plus Project Traffic Conditions

The results of the “Year 2040 Buildout Plus Project” intersection capacity analysis presented previously in *Table 8-3* indicates that the proposed Project will significantly impact two (2) of the eleven (11) key study intersections. The following are improvements recommended to mitigate the Year 2040 Buildout Plus Project traffic impacts.

- **No. 9 – Washington Street at Marguerita Avenue:** No physical mitigation measures are feasible; any additional turn lanes will require widening and additional right-of-way. As such, the impact at this location is considered **significant and unavoidable** and a statement of overriding considerations will be required for this location.
- **No. 10 – Washington Street at Lincoln Avenue:** Install a two-phase traffic signal. The installation of this improvement is subject to the approval of the City of Riverside.

**Figure 10-4** graphically illustrates the Year 2040 buildout plus project recommended improvements.



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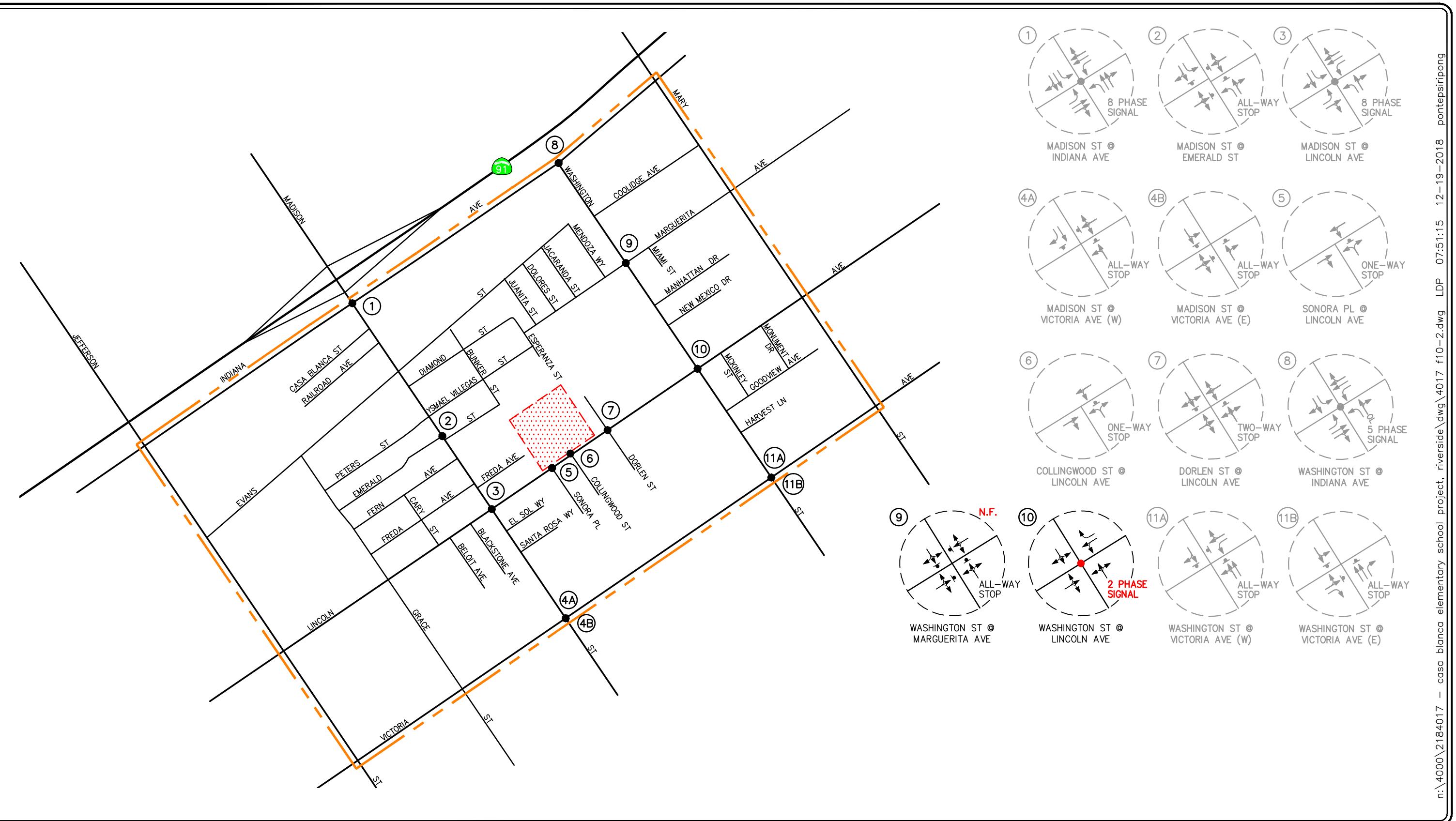


NO SCALE

**KEY**

- (#) = STUDY INTERSECTION
- = ACADEMIC SERVICE BOUNDARY
- ← = APPROACH LANE ASSIGNMENT
- = RECOMMENDED IMPROVEMENT
- = PROJECT SITE
- N.F. = NONE FEASIBLE

**FIGURE 10-1**  
**EXISTING PLUS PROJECT RECOMMENDED IMPROVEMENTS**  
CASA BLANCA ELEMENTARY SCHOOL PROJECT, RIVERSIDE



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GREENSPAN  
e ng i n e e r s

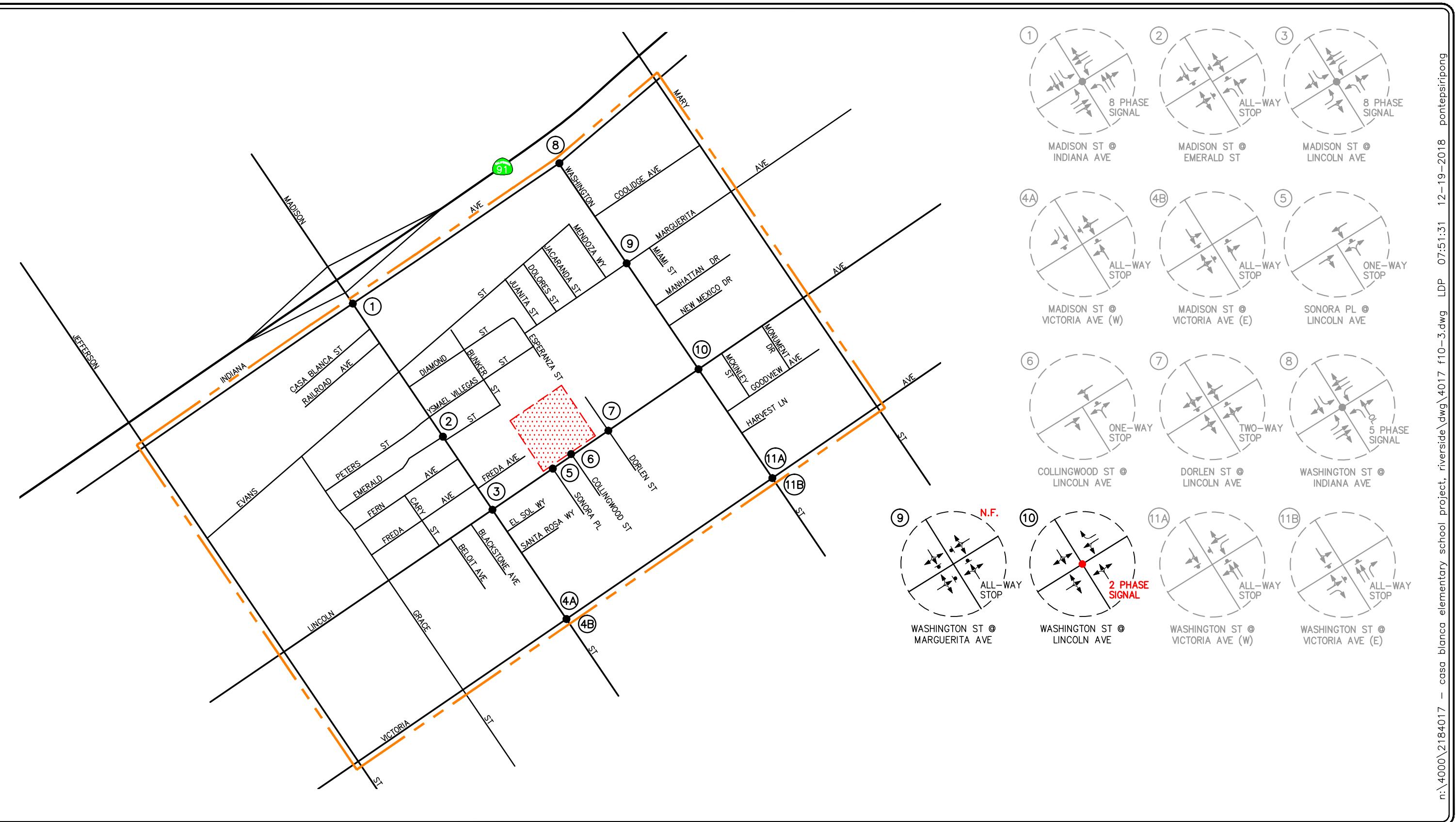
NO SCALE

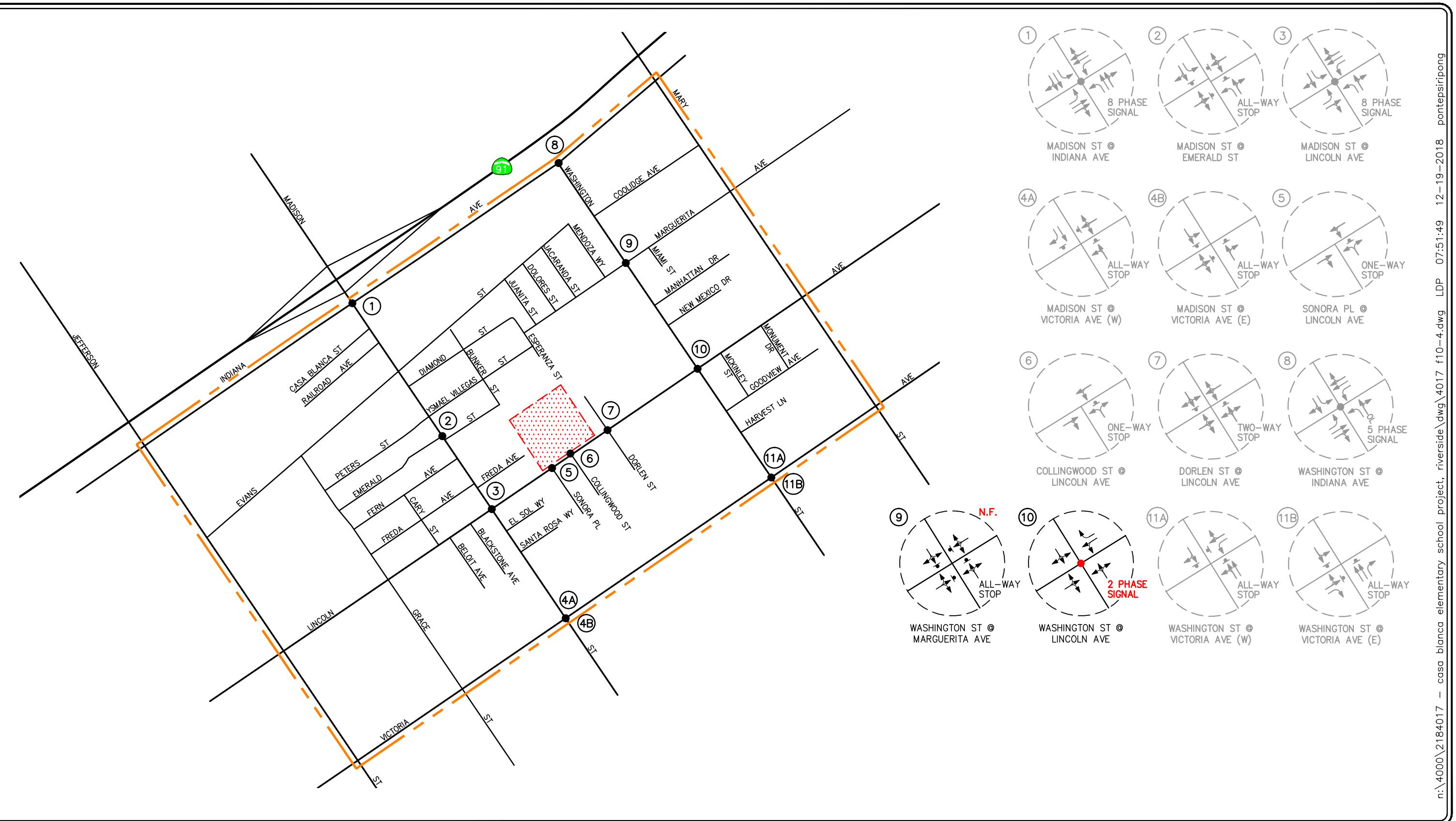
**KEY**

- (#) = STUDY INTERSECTION
- = ACADEMIC SERVICE BOUNDARY
- = APPROACH LANE ASSIGNMENT
- ← = RECOMMENDED IMPROVEMENT
- = PROJECT SITE
- N.F. = NONE FEASIBLE

**FIGURE 10-2**

EXISTING PLUS AMBIENT GROWTH (YEAR 2022)  
PLUS PROJECT RECOMMENDED IMPROVEMENTS  
CASA BLANCA ELEMENTARY SCHOOL PROJECT, RIVERSIDE





LINSCOTT  
LAW &  
GREENSPAN  
e ng i n e e r s

NO SCALE

**KEY**

- (#) = STUDY INTERSECTION
- = ACADEMIC SERVICE BOUNDARY
- = APPROACH LANE ASSIGNMENT
- ← = RECOMMENDED IMPROVEMENT
- = PROJECT SITE
- N.F. = NONE FEASIBLE

**FIGURE 10-4**

**YEAR 2040 BUILDOUT PLUS PROJECT  
RECOMMENDED IMPROVEMENTS**

CASA BLANCA ELEMENTARY SCHOOL PROJECT, RIVERSIDE

## **11.0 PROJECT FAIR SHARE ANALYSIS**

The transportation impacts associated with development of the proposed Project were determined based on the level of service analyses presented previously in *Tables 8-1, 8-2 and 8-3*. As summarized previously in Section 8.0, the proposed Project is anticipated to create two (2) significant impacts in the near-term (Year 2022) traffic condition and two (2) significant impacts in the Year 2040 buildout traffic condition. As such, the proposed Project can be expected to pay a proportional “fair-share” of the improvement costs of the impacted intersections to mitigate the project’s traffic impacts.

### **11.1 Year 2022 (Cumulative Analysis) Project-Related Fair Share Contribution**

*Table 11-1* presents the peak hour percentage of net traffic impact at the study intersections impacted by the proposed Project for Year 2022 traffic conditions (i.e. cumulative analysis). As presented in this table, the first column (1) presents a total of all intersection peak hour movements for existing traffic conditions. The second column (2) presents project only traffic conditions. The third column (3) presents future Year 2022 traffic conditions with project traffic. The fourth column (4) represents what percentage of total intersection peak hour traffic is project-related traffic.

Review of *Table 11-1* shows that the project’s traffic percentage at the impacted key study intersection of Washington Street/Lincoln Avenue under Year 2022 traffic conditions totals 64.2%. However, given that the project consists of no new actual project traffic based on the current student generation within the academic service boundary (i.e. 836 students  $\geq$  800 proposed students) and the fact that the impact is cumulative at this location, the fair share contribution could be considered zero.

It should be noted that a fair-share percentage has not been identified for the remaining impacted key study intersection of Washington Street/Marguerita Avenue, since no physical mitigation measures are feasible at this location.

### **11.2 Year 2040 Buildout Project-Related Fair Share Contribution**

*Table 11-2* presents the peak hour percentage of net traffic impact at the study intersections impacted by the proposed Project for Year 2040 buildout traffic conditions. As presented in this table, the first column (1) presents a total of all intersection peak hour movements for existing traffic conditions. The second column (2) presents project only traffic conditions. The third column (3) presents future Year 2040 buildout traffic conditions with project traffic. The fourth column (4) represents what percentage of total intersection peak hour traffic is project-related traffic.

Review of *Table 11-2* shows that the project’s traffic percentage at the impacted key study intersection of Washington Street/Lincoln Avenue under Year 2040 buildout traffic conditions totals 35.2%. However, given that the project consists of no new actual project traffic based on the current student generation within the academic service boundary (i.e. 836 students  $\geq$  800 proposed students) and the fact that the impact is cumulative at this location, the fair share contribution could be considered zero.

It should be noted that a fair-share percentage has not been identified for the remaining impacted key study intersection of Washington Street/Marguerita Avenue, since no physical mitigation measures are feasible at this location.

**TABLE 11-1**  
**YEAR 2022 PROJECT FAIR SHARE PERCENTAGE CONTRIBUTION**

<b>Key Intersection</b>	<b>Impacted Time Period</b>	<b>(1) Existing Traffic</b>	<b>(2) Project Only Traffic</b>	<b>(3) Year 2022 Plus Project Traffic</b>	<b>(4) Project Percentage Share</b>
10. Washington Street at Lincoln Avenue	AM	1,333	219	1,674	<b>64.2%</b>

Notes:

Net Project Percent Increase (4) = [Column (2)] / [Column (3) – Column (1)]

**TABLE 11-2**  
**YEAR 2040 BUILDOUT PROJECT FAIR SHARE PERCENTAGE CONTRIBUTION**

<b>Key Intersection</b>	<b>Impacted Time Period</b>	<b>(1) Existing Traffic</b>	<b>(2) Project Only Traffic</b>	<b>(3) Year 2040 Buildout Plus Project Traffic</b>	<b>(4) Project Percentage Share</b>
10. Washington Street at Lincoln Avenue	AM	1,333	219	1,956	<b>35.2%</b>
	PM	1,127	56	1,556	13.1%

Notes:

Net Project Percent Increase (4) = [Column (2)] / [Column (3) – Column (1)]

## 12.0 SUMMARY OF FINDINGS AND CONCLUSIONS

- **Project Description** – The Project site is generally located north of Lincoln Avenue between Bunker Street and Dorlen Street in City of Riverside, California. The proposed Project will consist of an elementary school with a maximum student enrollment of 800 students. The academic service boundary as provided by District staff is bounded by Indiana Avenue to the north, Victoria Avenue to the south, Jefferson Street to the west and Mary Street to the east. Based on information provided by District staff, 309 students within the academic service boundary will be eligible to be bussed to/from the site based on their distance of 1.25+ miles. The proposed Project is expected to be constructed and fully occupied by the Year 2022.

Access to the Project site will be provided via four (4) full access unsignalized driveways located along Lincoln Avenue. The westerly project driveway is referred to as Project Driveway No. 1. The proposed project driveway located between Sonora Place and Collingwood Street is referred to as Project Driveway No. 2. Project Driveway No. 3 is located opposite of Collingwood Street (slightly offset to the east). The easterly project driveway is referred to as Project Driveway No. 4. Prior to finalization of the project site plan, it is recommended that Project Driveway No. 3 be directly aligned (i.e. center line to center line) with Collingwood Street to minimize conflicting vehicular movements.

- **Study Scope** – Eleven (11) key study intersections have been selected for evaluation based on discussions with City of Riverside Public Works Department staff, and based on review of the existing transportation system surrounding the proposed Project site. The eleven (11) key study intersections listed below provide local access to the study area and define the extent of the boundaries for this traffic impact investigation.

### **Key Study Intersections**

1. Madison Street at Indiana Avenue
2. Madison Street at Emerald Street
3. Madison Street at Lincoln Avenue
- 4A. Madison Street at Victoria Avenue (West)
- 4B. Madison Street at Victoria Avenue (East)
5. Sonora Place at Lincoln Avenue
6. Collingwood Street at Lincoln Avenue
7. Dorlen Street at Lincoln Avenue
8. Washington Street at Indiana Avenue
9. Washington Street at Marguerita Avenue
10. Washington Street at Lincoln Avenue
- 11A. Washington Street at Victoria Avenue (West)
- 11B. Washington Street at Victorian Avenue (East)

Detailed peak hour level of service analyses for the eleven (11) key study intersections were prepared for Existing Traffic Conditions, Existing Plus Project Traffic Conditions, Existing Plus Ambient Growth (Year 2022) Traffic Conditions, Existing Plus Ambient Growth (Year 2022) Plus Project Traffic Conditions, Year 2022 Cumulative Traffic Conditions, Year 2040 Buildout Traffic Conditions and Year 2040 Buildout Plus Project Traffic Conditions.

- ***Existing Traffic Conditions*** – One (1) of the eleven (11) key study intersections currently operates at an unacceptable level of service during the AM peak hour. The intersection of Washington Street at Lincoln Avenue currently operates at unacceptable LOS E during the AM peak hour. The remaining ten (10) key study intersections currently operate at acceptable LOS D or better during the AM and PM peak hours.
- ***Project Trip Generation*** – The proposed Project is forecast to generate 1,512 daily trips, with 536 trips (289 inbound, 247 outbound) produced in the AM peak hour and 136 trips (65 inbound, 71 outbound) produced in the PM peak hour on a “typical” weekday. It should be noted that this trip generation potential does not likely account for the amount of students that will utilize the school bus and/or walk to school and therefore provides for a very conservative analysis.
- ***Cumulative Projects Trip Generation*** – The twenty (20) cumulative projects are forecast to generate a combined total of 25,392 daily trips, with 1,447 trips (958 inbound and 489 outbound) forecast during the AM peak hour and 2,024 trips (885 inbound and 1,139 outbound) forecast during the PM peak hour.
- ***Existing Plus Project Traffic Conditions*** – The proposed Project will significantly impact two of the eleven (11) key study intersections, when compared to the LOS standards and significant impact criteria specified in this report. The remaining nine (9) key study intersections are forecast to continue to operate at an acceptable LOS with the addition of Project generated traffic to existing traffic. The two locations projected to operate at an unacceptable LOS with the addition of project traffic to existing traffic are as follows:

<u>Key Intersection</u>	<u>AM Peak Hour</u>		<u>PM Peak Hour</u>	
	<u>HCM</u>	<u>LOS</u>	<u>HCM</u>	<u>LOS</u>
9. Washington Street at Marguerita Avenue	47.0 s/v	E	---	---
10. Washington Street at Lincoln Avenue	96.9 s/v	F	---	---

The implementation of improvements at the impacted key study intersection of Washington Street/Lincoln Avenue completely offsets the impact of project traffic and the key study intersection is forecast to operate at an acceptable LOS during the AM and PM peak hours. For the remaining impacted key study intersection of Washington Street/Marguerita Avenue, additional capacity-enhancing improvements at this key study intersection do not appear feasible due to physical and right-of-way restrictions that prohibit any additional widening and/or restriping. Therefore, the impact at this location will remain significant.

- ***Existing Plus Ambient Growth to the Year 2022 Plus Project Traffic Conditions*** – The proposed Project will significantly impact two of the eleven (11) key study intersections, when compared to the LOS standards and significant impact criteria specified in this report. The remaining nine (9) key study intersections are forecast to continue to operate at an acceptable service level during the AM and PM peak hours with the addition of ambient growth and Project generated traffic in the Year 2022. The two locations projected to operate at an unacceptable LOS are as follows:

<u>Key Intersection</u>	<u>AM Peak Hour</u>		<u>PM Peak Hour</u>	
	<u>HCM</u>	<u>LOS</u>	<u>HCM</u>	<u>LOS</u>
9. Washington Street at Marguerita Avenue	35.0 s/v	E	---	---
10. Washington Street at Lincoln Avenue	113.6 s/v	F	---	---

The implementation of improvements at the impacted key study intersection of Washington Street/Lincoln Avenue completely offsets the impact of project traffic and the key study intersection is forecast to operate at an acceptable LOS during the AM and PM peak hours. For the remaining impacted key study intersection of Washington Street/Marguerita Avenue, additional capacity-enhancing improvements at this key study intersection do not appear feasible due to physical and right-of-way restrictions that prohibit any additional widening and/or restriping. Therefore, the impact at this location will remain significant.

- **Year 2022 Cumulative Traffic Conditions** – The proposed Project will cumulatively impact two of the eleven (11) key study intersections, when compared to the LOS standards and significant impact criteria specified in this report. The remaining nine (9) key study intersections are forecast to continue to operate at an acceptable service level during the AM and PM peak hours with the addition of ambient growth, cumulative, and Project generated traffic in the Year 2022. The two locations projected to operate at an unacceptable LOS are as follows:

<u>Key Intersection</u>	<u>AM Peak Hour</u>		<u>PM Peak Hour</u>	
	<u>HCM</u>	<u>LOS</u>	<u>HCM</u>	<u>LOS</u>
9. Washington Street at Marguerita Avenue	38.1 s/v	E	---	---
10. Washington Street at Lincoln Avenue	119.4 s/v	F	---	---

The implementation of improvements at the impacted key study intersection of Washington Street/Lincoln Avenue completely offsets the impact of project traffic and the key study intersection is forecast to operate at an acceptable LOS during the AM and PM peak hours. For the remaining impacted key study intersection of Washington Street/Marguerita Avenue, additional capacity-enhancing improvements at this key study intersection do not appear feasible due to physical and right-of-way restrictions that prohibit any additional widening and/or restriping. Therefore, the impact at this location will remain significant.

- **Year 2040 Buildout Plus Project Traffic Conditions** – The proposed Project will significantly impact two (2) the eleven (11) key study intersections, when compared to the LOS standards and significant impact criteria specified in this report. The remaining nine (9) key study intersections are forecast to continue to operate at an acceptable LOS with the addition of project generated traffic in the Year 2040. The two locations projected to operate at an unacceptable LOS are as follows:

<u>Key Intersection</u>	<u>AM Peak Hour</u>		<u>PM Peak Hour</u>	
	<u>HCM</u>	<u>LOS</u>	<u>HCM</u>	<u>LOS</u>
9. Washington Street at Marguerita Avenue	54.8 s/v	F	---	---
10. Washington Street at Lincoln Avenue	181.4 s/v	F	70.2 s/v	F

The implementation of improvements at the impacted key study intersection of Washington Street/Lincoln Avenue completely offsets the impact of project traffic and the key study intersection is forecast to operate at an acceptable LOS during the AM and PM peak hours. For the remaining impacted key study intersection of Washington Street/Marguerita Avenue, additional capacity-enhancing improvements at this key study intersection do not appear feasible due to physical and right-of-way restrictions that prohibit any additional widening and/or restriping. Therefore, the impact at this location will remain significant.

- **Site Access Evaluation** – The Project driveways are forecast to operate at acceptable LOS D or better during the AM and PM peak hours for Year 2022 Cumulative Plus Project traffic conditions and for Year 2040 Buildout Plus Project traffic conditions. As such, Project access will be adequate. Motorists entering and exiting the Project site will be able to do so comfortably, safely, and without undue congestion.
  - Prior to finalization of the project site plan, it is recommended that Project Driveway No. 3 be directly aligned (i.e. center line to center line) with Collingwood Street to minimize conflicting vehicular movements.
- **School Drop-Off and Pick-Up Evaluation** – Based on the Best Practice standards for on-site queuing related to school drop-off/pick-up activities, 6% of the effective student enrollment is a reasonable factor for estimating the “maximum queue” of vehicles on site.<sup>16</sup> The proposed school will have a total of 800 students. Of this total, it is conservatively assumed that 15% of the total student enrollment (i.e. 120 students) would walk to/from school. Based on information provided by District staff, 309 students within the academic service boundary will be eligible to be bussed to/from the site based on their distance of 1.25+ miles. This evaluation assumes 80% of the 309 eligible students (i.e. 248 students) would be bussed to/from the site. With the aforementioned adjustments, a total of 432 effective students would utilize the drop-off/pick-up area [(800 students) – (120 students) – (248 students) = 432 students]. Application of the 6% factor to 432 students, results in a “maximum queue” of 26 vehicles. Review of *Figure 9-1* shows that the proposed Project can accommodate a maximum queue of 26 vehicles on site and therefore it is not anticipated that vehicles will queue back onto Lincoln Avenue. As such, we conclude that the drop-off/pick-up area is adequate.
- **Recommended Safe Route To School Evaluation** – *Figure 9-2* presents the recommended safe route to school paths of travel for students walking and/or biking to/from the school. Review of *Figure 9-2* indicates that it is recommended that students northwest/west/southwest of the school site make their way to Madison Street and travel along Madison Street to its intersection with Lincoln Avenue. It is then recommended that these students cross the street within the crosswalks at the intersection of Madison Street/Lincoln Avenue during the traffic signals walk-phase. Further review of *Figure 9-2* indicates that it is recommended that students northeast/east/southeast of the school site make their way to Washington Street and travel along Washington Street to its intersection with Lincoln Avenue. It is then recommended that these students cross the street within the crosswalks at the intersection of Washington Street/Lincoln Avenue. Lastly, as shown in *Figure 9-2*, in order for students to access the site from neighborhoods along Sonora Place, Collingwood Street and Dorlen Street, a pedestrian school

<sup>16</sup> Source: *Strategies for the Greening of Student Pick-Ups at School Dismissal White Paper*, Dustin Qualls, PE, PTOE.

crossing signal will be required to be installed on the west leg of the intersection of Lincoln Avenue/Collingwood Street-Project Driveway No. 3 for students to safely cross Lincoln Avenue.

Based on our review of the site plan (*Figure 2-2*), it is recommended that sidewalk improvements be provided along the easterly boundary of the parking lot to provide safe student access to the school from the east via the north side of Lincoln Avenue.

- **Recommended School Signs and Pavement Markings** – *Figure 9-3* presents the recommended school signs and pavement markings required of the proposed Project based on the safe route to school pedestrian paths of travel presented in *Figure 9-2*. Review of *Figure 9-3* shows that it is recommended that the crosswalks at the intersections of Madison Street/Lincoln Avenue and Washington Street/Lincoln Avenue be painted yellow to indicate school crossings. It is also recommended that SR4-1(CA) signs (i.e. school, 25 mph speed limit when children are present) and SW24-3(CA) signs (i.e. school crossing ahead) be installed in the general vicinity of the yellow asterisks shown in *Figure 9-3*. Lastly, as shown in *Figure 9-3*, it is recommended that a flashing pedestrian school crossing signal be installed on the west leg of the intersection of Lincoln Avenue/Collingwood Street-Project Driveway No. 3. It is also recommended that this flashing pedestrian school crossing signal be staffed by a crossing guard during the school arrival period and school departure period to further ensure that pedestrians can safely cross Lincoln Avenue. It should be noted that all of the aforementioned improvements are subject to the approval of the City of Riverside
- **Recommended Existing Plus Project Improvements** – The results of the intersection capacity analysis presented previously in *Table 8-1* shows that the proposed Project will significantly impact two (2) of the eleven (11) key study intersections under the “Existing Plus Project” traffic scenario. The following are improvements recommended to mitigate the Existing Plus Project traffic impacts:
  - **No. 9 – Washington Street at Marguerita Avenue:** No physical mitigation measures are feasible; any additional turn lanes will require widening and additional right-of-way. As such, the impact at this location is considered **significant and unavoidable** and a statement of overriding considerations will be required for this location.
  - **No. 10 – Washington Street at Lincoln Avenue:** Install a two-phase traffic signal. The installation of this improvement is subject to the approval of the City of Riverside.
- **Recommended Existing Plus Ambient Growth (Year 2022) Plus Project Improvements** – The results of the “Existing Plus Ambient Growth (Year 2022) Plus Project” intersection capacity analysis presented previously in *Table 8-2* (columns 2 - 4) indicates that the proposed Project will significantly impact two (2) of the eleven (11) key study intersections. The following are improvements recommended to mitigate the Existing Plus Ambient Growth (Year 2022) Plus Project traffic impacts.
  - **No. 9 – Washington Street at Marguerita Avenue:** No physical mitigation measures are feasible; any additional turn lanes will require widening and additional right-of-way.

As such, the impact at this location is considered **significant and unavoidable** and a statement of overriding considerations will be required for this location.

- **No. 10 – Washington Street at Lincoln Avenue:** Install a two-phase traffic signal. The installation of this improvement is subject to the approval of the City of Riverside.
- **Recommended Year 2022 Cumulative Plus Project Improvements** – The results of the “Year 2022 Cumulative Plus Project” intersection capacity analysis presented previously in *Table 8-2* (columns 5 - 7) indicates that the proposed Project will significantly impact two (2) of the eleven (11) key study intersections. The following are improvements recommended to mitigate the Year 2022 Cumulative Plus Project traffic impacts.
  - **No. 9 – Washington Street at Marguerita Avenue:** No physical mitigation measures are feasible; any additional turn lanes will require widening and additional right-of-way. As such, the impact at this location is considered **significant and unavoidable** and a statement of overriding considerations will be required for this location.
  - **No. 10 – Washington Street at Lincoln Avenue:** Install a two-phase traffic signal. The installation of this improvement is subject to the approval of the City of Riverside.
- **Recommended Year 2040 Buildout Plus Project Improvements** – The results of the “Year 2040 Buildout Plus Project” intersection capacity analysis presented previously in *Table 8-3* indicates that the proposed Project will significantly impact two (2) of the eleven (11) key study intersections. The following are improvements recommended to mitigate the Year 2040 Buildout Plus Project traffic impacts.
  - **No. 9 – Washington Street at Marguerita Avenue:** No physical mitigation measures are feasible; any additional turn lanes will require widening and additional right-of-way. As such, the impact at this location is considered **significant and unavoidable** and a statement of overriding considerations will be required for this location.
  - **No. 10 – Washington Street at Lincoln Avenue:** Install a two-phase traffic signal. The installation of this improvement is subject to the approval of the City of Riverside.
- **Year 2022 (Cumulative Analysis) Project-Related Fair Share Contribution** – The project’s traffic percentage at the impacted key study intersection of Washington Street/Lincoln Avenue under Year 2022 traffic conditions totals 64.2%. However, given that the project consists of no new actual project traffic based on the current student generation within the academic service boundary (i.e. 836 students  $\geq$  800 proposed students) and the fact that the impact is cumulative at this location, the fair share contribution could be considered zero.

It should be noted that a fair-share percentage has not been identified for the remaining impacted key study intersection of Washington Street/Marguerita Avenue, since no physical mitigation measures are feasible at this location.

- **Year 2040 Buildout Project-Related Fair Share Contribution** – The project's traffic percentage at the impacted key study intersection of Washington Street/Lincoln Avenue under Year 2040 buildout traffic conditions totals 35.2%. However, given that the project consists of no new actual project traffic based on the current student generation within the academic service boundary (i.e. 836 students  $\geq$  800 proposed students) and the fact that the impact is cumulative at this location, the fair share contribution could be considered zero.

It should be noted that a fair-share percentage has not been identified for the remaining impacted key study intersection of Washington Street/Marguerita Avenue, since no physical mitigation measures are feasible at this location.

## **APPENDIX A**

### **EXISTING TRAFFIC COUNT DATA**

*APPENDIX A-I*

**INTERSECTION COUNTS**

City: RIVERSIDE  
N-S Direction: MADISON STREET  
E-W Direction: INDIANA AVENUE

File Name : H1808010  
Site Code : 00000000  
Start Date : 8/21/2018  
Page No : 1

Groups Printed- Turning Movements

	MADISON STREET Southbound				INDIAINA AVENUE Westbound			MADISON STREET Northbound			INDIAINA AVENUE Eastbound			Int. Total
	Right	Thru	Left	U-Turn	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Start Time														
07:00	30	74	41	3	58	16	0	7	131	7	7	42	37	453
07:15	26	64	53	1	72	30	1	5	111	5	3	59	53	483
07:30	48	86	65	6	76	38	3	9	107	9	2	65	46	560
07:45	53	47	70	2	77	30	7	7	33	7	7	108	51	499
Total	157	271	229	12	283	114	11	28	382	28	19	274	187	1995
08:00	56	104	53	3	68	27	9	8	134	8	10	85	58	623
08:15	45	83	55	2	49	27	4	5	93	5	8	79	30	485
08:30	40	78	48	0	63	38	4	10	118	10	6	45	37	497
08:45	65	67	71	0	60	38	7	10	50	10	4	81	35	498
Total	206	332	227	5	240	130	24	33	395	33	28	290	160	2103

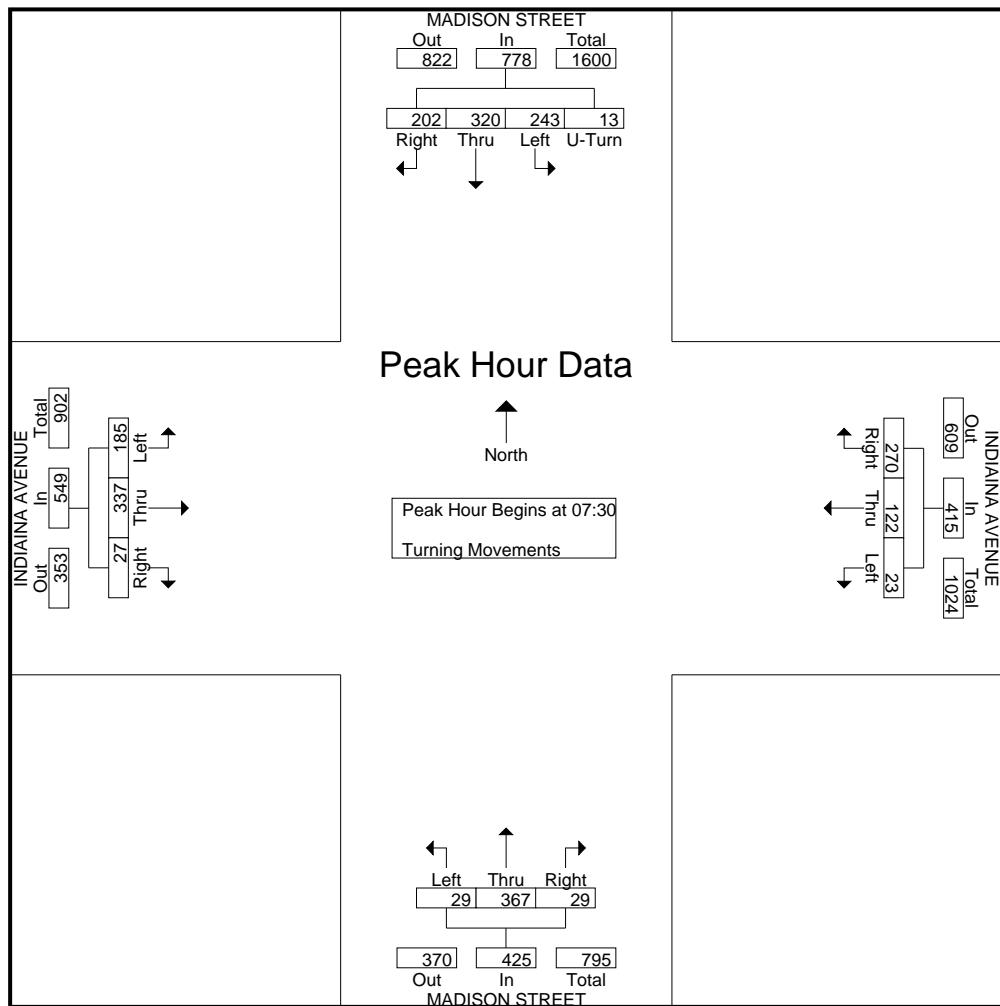
\*\*\* BREAK \*\*\*

16:00	27	120	76	0	90	52	7	9	107	9	13	117	54	681
16:15	29	123	58	0	66	62	8	4	110	4	13	107	52	636
16:30	19	132	69	0	79	44	14	9	89	9	12	80	46	602
16:45	27	113	64	0	85	45	8	14	111	14	21	111	58	671
Total	102	488	267	0	320	203	37	36	417	36	59	415	210	2590
17:00	33	128	62	0	98	80	13	4	105	4	22	106	75	730
17:15	23	128	72	1	93	38	13	5	96	5	15	106	65	660
17:30	26	138	58	0	102	44	7	7	106	7	15	99	51	660
17:45	19	142	60	0	80	52	9	4	89	4	14	86	57	616
Total	101	536	252	1	373	214	42	20	396	20	66	397	248	2666
Grand Total	566	1627	975	18	1216	661	114	117	1590	117	172	1376	805	9354
Apprch %	17.8	51.1	30.6	0.6	61.1	33.2	5.7	6.4	87.2	6.4	7.3	58.5	34.2	
Total %	6.1	17.4	10.4	0.2	13	7.1	1.2	1.3	17	1.3	1.8	14.7	8.6	

City: RIVERSIDE  
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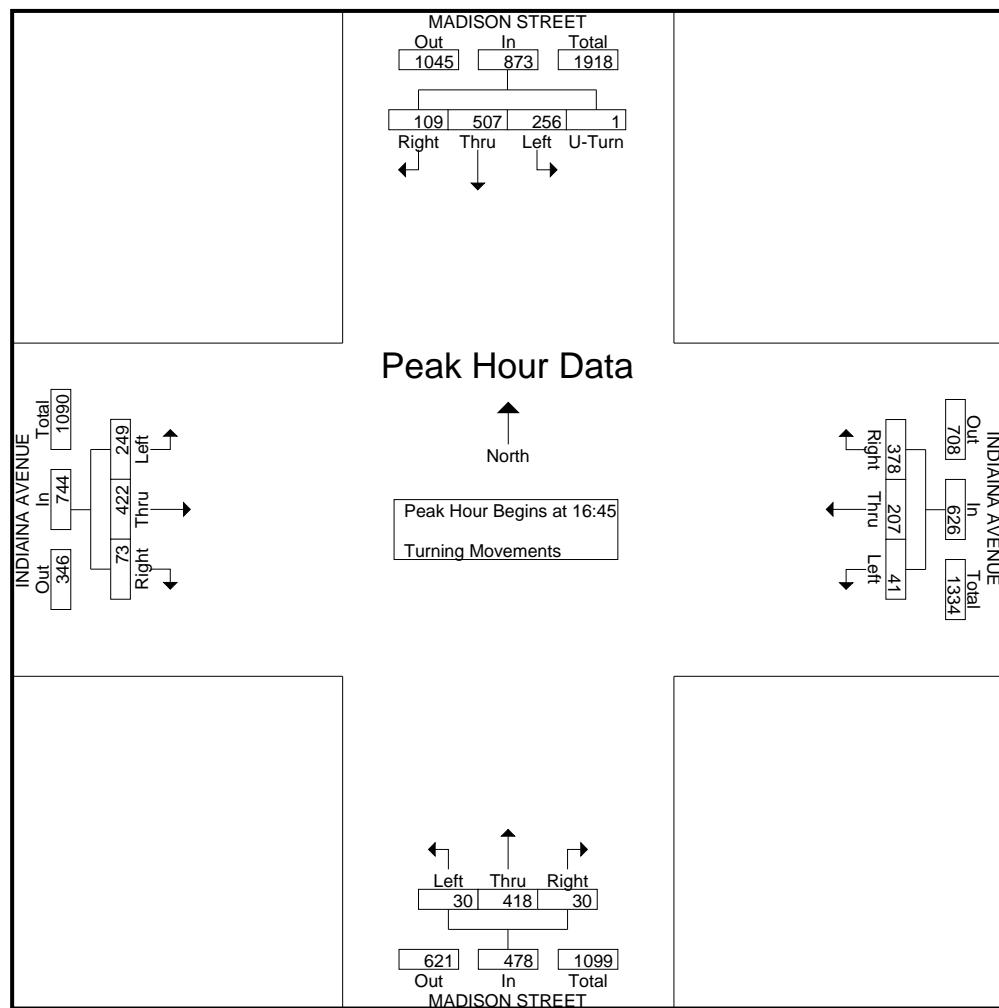
	MADISON STREET Southbound					INDIAINA AVENUE Westbound					MADISON STREET Northbound					INDIAINA AVENUE Eastbound				
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total		
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																				
Peak Hour for Entire Intersection Begins at 07:30																				
07:30	48	86	65	6	205	76	38	3	117	9	33	7	47	7	108	51	166	499		
07:45	53	47	70	2	172	77	30	7	114	7	33	7	47	10	85	58	153	623		
08:00	56	104	53	3	216	68	27	9	104	8	134	8	150	10	85	58	153	623		
08:15	45	83	55	2	185	49	27	4	80	5	93	5	103	8	79	30	117	485		
Total Volume	202	320	243	13	778	270	122	23	415	29	367	29	425	27	337	185	549	2167		
% App. Total	26	41.1	31.2	1.7		65.1	29.4	5.5		6.8	86.4	6.8		4.9	61.4	33.7				
PHF	.902	.769	.868	.542	.900	.877	.803	.639	.887	.806	.685	.806	.708	.675	.780	.797	.827	.870		



City: RIVERSIDE  
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	MADISON STREET Southbound					INDIAINA AVENUE Westbound				MADISON STREET Northbound				INDIAINA AVENUE Eastbound				
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																		
Peak Hour for Entire Intersection Begins at 16:45																		
16:45	27	113	64	0	204	85	45	8	138	14	111	14	139	21	111	58	190	671
17:00	33	128	62	0	223	98	80	13	191	4	105	4	113	22	106	75	203	730
17:15	23	128	72	1	224	93	38	13	144	5	96	5	106	15	106	65	186	660
17:30	26	138	58	0	222	102	44	7	153	7	106	7	120	15	99	51	165	660
Total Volume	109	507	256	1	873	378	207	41	626	30	418	30	478	73	422	249	744	2721
% App. Total	12.5	58.1	29.3	0.1		60.4	33.1	6.5		6.3	87.4	6.3		9.8	56.7	33.5		
PHF	.826	.918	.889	.250	.974	.926	.647	.788	.819	.536	.941	.536	.860	.830	.950	.830	.916	.932



City: RIVERSIDE  
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Groups Printed- Turning Movements

	MADISON STREET Southbound			EMERLAD STREET Westbound			MADISON STREET Northbound				EMERLAD STREET Eastbound			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	U-Turn	Right	Thru	Left	Int. Total
07:00	0	48	1	0	0	1	0	81	0	0	2	0	2	135
07:15	2	48	2	2	0	7	2	91	0	0	1	0	0	155
07:30	2	61	0	6	1	3	6	94	6	1	3	0	2	185
07:45	0	34	2	2	0	3	7	70	11	2	1	0	2	134
Total	4	191	5	10	1	14	15	336	17	3	7	0	6	609
08:00	6	82	8	4	0	3	5	116	7	0	0	0	3	234
08:15	4	49	2	5	1	2	7	86	0	0	1	0	2	159
08:30	3	46	0	2	0	2	7	78	1	0	5	0	12	156
08:45	6	42	0	4	1	2	4	69	2	1	0	0	1	132
Total	19	219	10	15	2	9	23	349	10	1	6	0	18	681

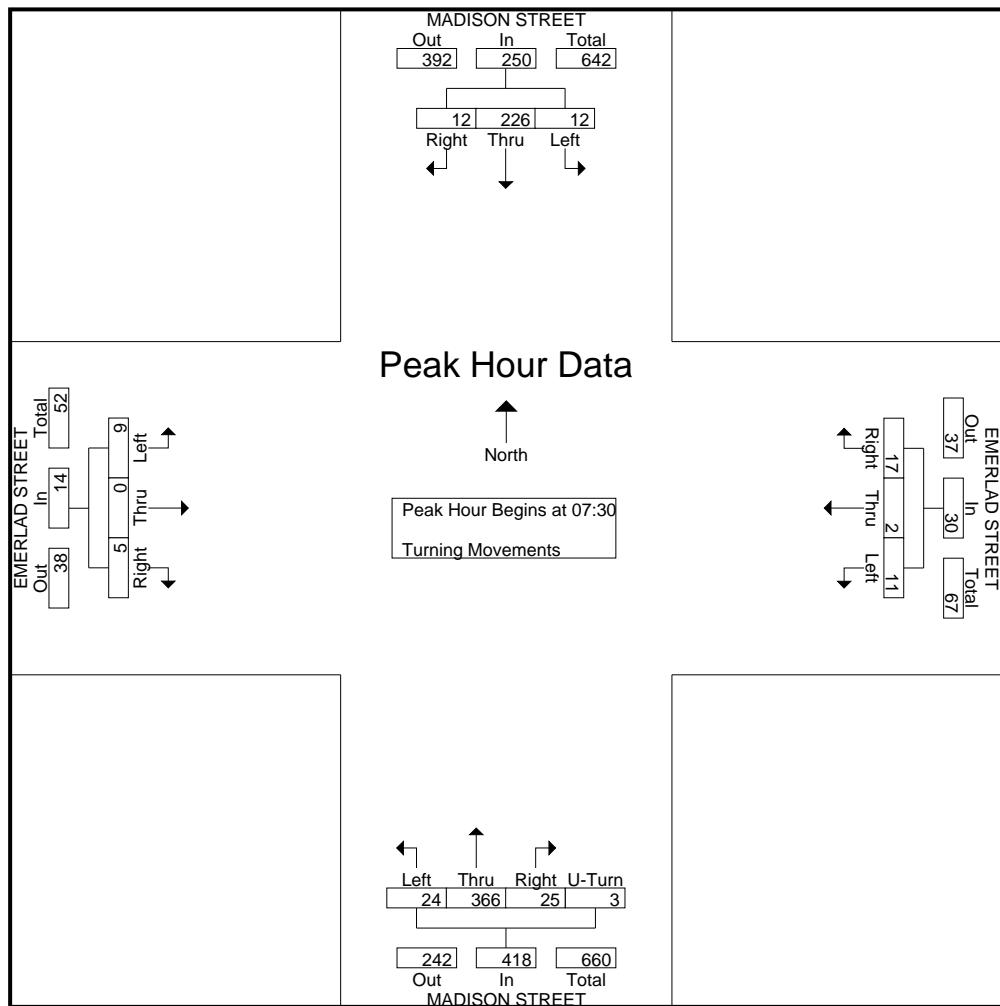
\*\*\* BREAK \*\*\*

16:00	18	82	4	13	0	5	6	87	0	0	1	0	4	220
16:15	14	91	4	11	0	6	2	70	0	1	0	0	2	201
16:30	11	102	2	9	0	7	7	68	1	0	1	1	2	211
16:45	6	108	3	11	0	4	1	73	1	0	0	1	4	212
Total	49	383	13	44	0	22	16	298	2	1	2	2	12	844
17:00	3	128	10	3	0	4	4	70	2	0	1	0	4	229
17:15	8	114	4	2	0	4	2	68	2	0	1	0	2	207
17:30	7	98	5	8	1	10	4	63	1	0	4	0	5	206
17:45	8	110	2	11	2	0	4	63	1	0	2	1	2	206
Total	26	450	21	24	3	18	14	264	6	0	8	1	13	848
Grand Total	98	1243	49	93	6	63	68	1247	35	5	23	3	49	2982
Apprch %	7.1	89.4	3.5	57.4	3.7	38.9	5	92	2.6	0.4	30.7	4	65.3	
Total %	3.3	41.7	1.6	3.1	0.2	2.1	2.3	41.8	1.2	0.2	0.8	0.1	1.6	

City: RIVERSIDE  
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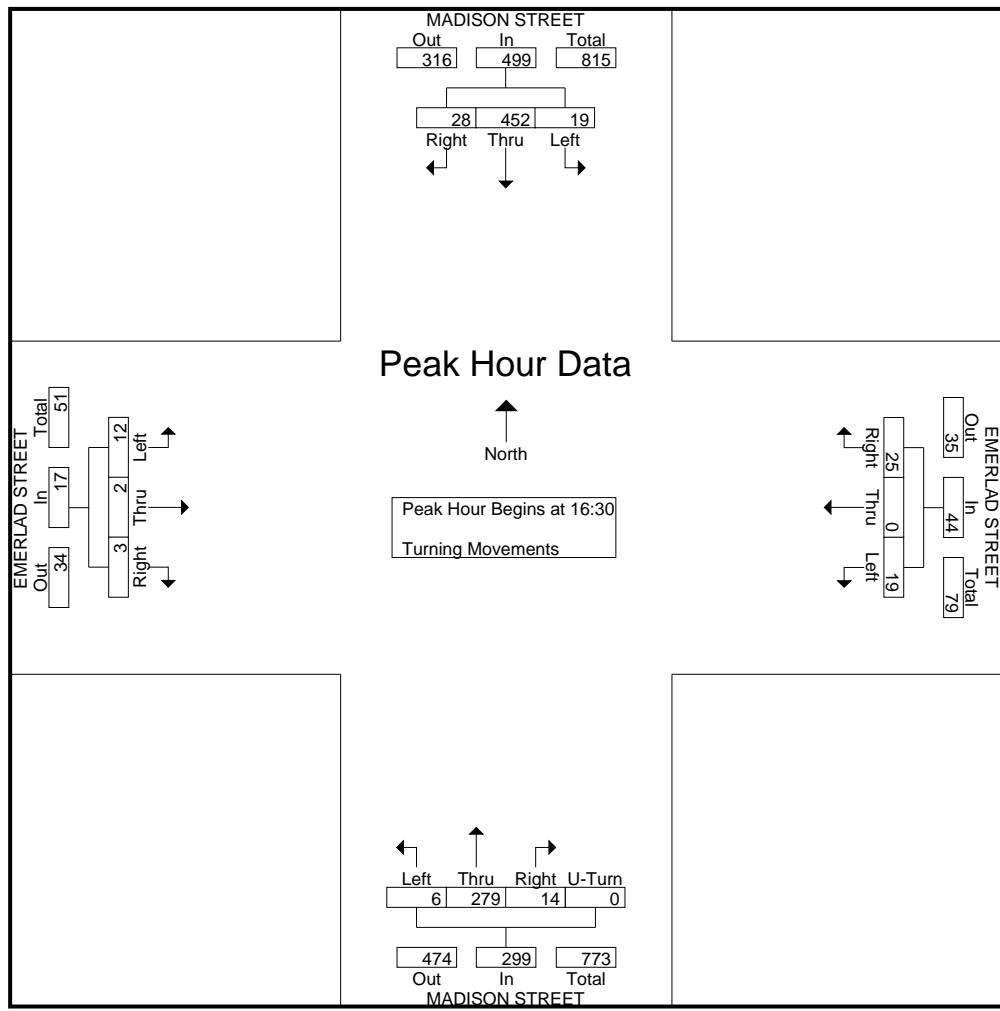
	MADISON STREET Southbound				EMERLAD STREET Westbound				MADISON STREET Northbound					EMERLAD STREET Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																		
Peak Hour for Entire Intersection Begins at 07:30																		
07:30	2	61	0	63	6	1	3	10	6	94	6	1	107	3	0	2	5	185
07:45	0	34	2	36	2	0	3	5	7	70	11	2						
<b>08:00</b>	<b>6</b>	<b>82</b>	<b>8</b>	<b>96</b>	4	0	3	7	5	116	7	0	<b>128</b>	0	0	<b>3</b>	3	<b>234</b>
08:15	4	49	2	55	5	1	2	8	7	86	0	0	93	1	0	2	3	159
Total Volume	12	226	12	250	17	2	11	30	25	366	24	3	418	5	0	9	14	712
% App. Total	4.8	90.4	4.8		56.7	6.7	36.7		6	87.6	5.7	0.7		35.7	0	64.3		
PHF	.500	.689	.375	.651	.708	.500	.917	.750	.893	.789	.545	.375	.816	.417	.000	.750	.700	.761



City: RIVERSIDE  
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	MADISON STREET Southbound				EMERLAD STREET Westbound				MADISON STREET Northbound					EMERLAD STREET Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	Int. Total
<b>Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1</b>																		
<b>Peak Hour for Entire Intersection Begins at 16:30</b>																		
16:30	11	102	2	115	9	0	7	16	7	68	1	0	76	1	1	2	4	211
16:45	6	108	3	117	11	0	4	15	1	73				4		5		212
17:00	3	128	10	141	3	0	4	7	4	70	2	0	76	1	0	4	5	229
17:15	8	114	4	126	2	0	4	6	2	68	2	0	72	1	0	2	3	207
Total Volume	28	452	19	499	25	0	19	44	14	279	6	0	299	3	2	12	17	859
% App. Total	5.6	90.6	3.8		56.8	0	43.2		4.7	93.3	2	0		17.6	11.8	70.6		
PHF	.636	.883	.475	.885	.568	.000	.679	.688	.500	.955	.750	.000	.984	.750	.500	.750	.850	.938



City: RIVERSIDE  
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	MADISON STREET Southbound			LINCOLN AVENUE Westbound			MADISON STREET Northbound			LINCOLN AVENUE Eastbound			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
07:00	11	27	11	20	44	0	1	41	4	4	37	21	221
07:15	20	22	10	23	52	0	5	45	4	1	35	16	233
07:30	24	29	26	29	60	2	8	68	6	4	62	16	334
07:45	27	10	19	25	45	2	4	53	14	3	67	33	302
Total	82	88	66	97	201	4	18	207	28	12	201	86	1090
08:00	26	31	17	31	51	3	1	52	0	2	46	27	287
08:15	16	23	10	16	39	0	1	50	1	2	33	26	217
08:30	8	24	13	13	45	0	0	41	1	5	27	25	202
08:45	19	16	9	18	27	0	2	37	8	3	15	19	173
Total	69	94	49	78	162	3	4	180	10	12	121	97	879

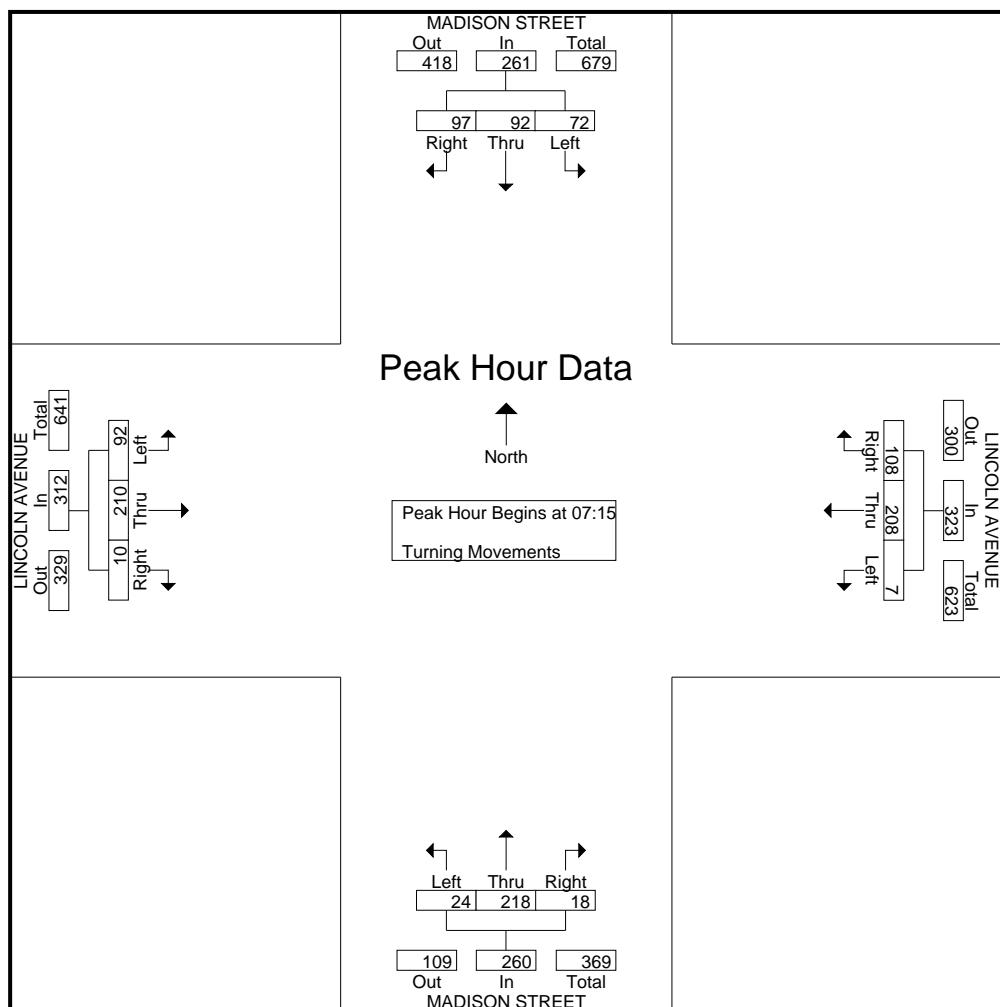
\*\*\* BREAK \*\*\*

16:00	21	43	21	16	37	5	5	38	5	6	77	34	308
16:15	14	64	16	20	36	1	1	30	2	6	57	22	269
16:30	16	62	26	23	35	5	2	28	5	8	52	27	289
16:45	17	59	27	19	28	3	2	37	3	3	47	17	262
Total	68	228	90	78	136	14	10	133	15	23	233	100	1128
17:00	15	82	25	18	31	2	2	32	3	4	62	21	297
17:15	17	64	21	24	30	2	2	20	1	3	57	20	261
17:30	10	61	36	20	32	1	5	22	2	7	45	21	262
17:45	17	69	13	19	38	0	2	36	0	5	38	20	257
Total	59	276	95	81	131	5	11	110	6	19	202	82	1077
Grand Total	278	686	300	334	630	26	43	630	59	66	757	365	4174
Apprch %	22	54.3	23.7	33.7	63.6	2.6	5.9	86.1	8.1	5.6	63.7	30.7	
Total %	6.7	16.4	7.2	8	15.1	0.6	1	15.1	1.4	1.6	18.1	8.7	

City: RIVERSIDE  
N-S Direction: MADISON STREET  
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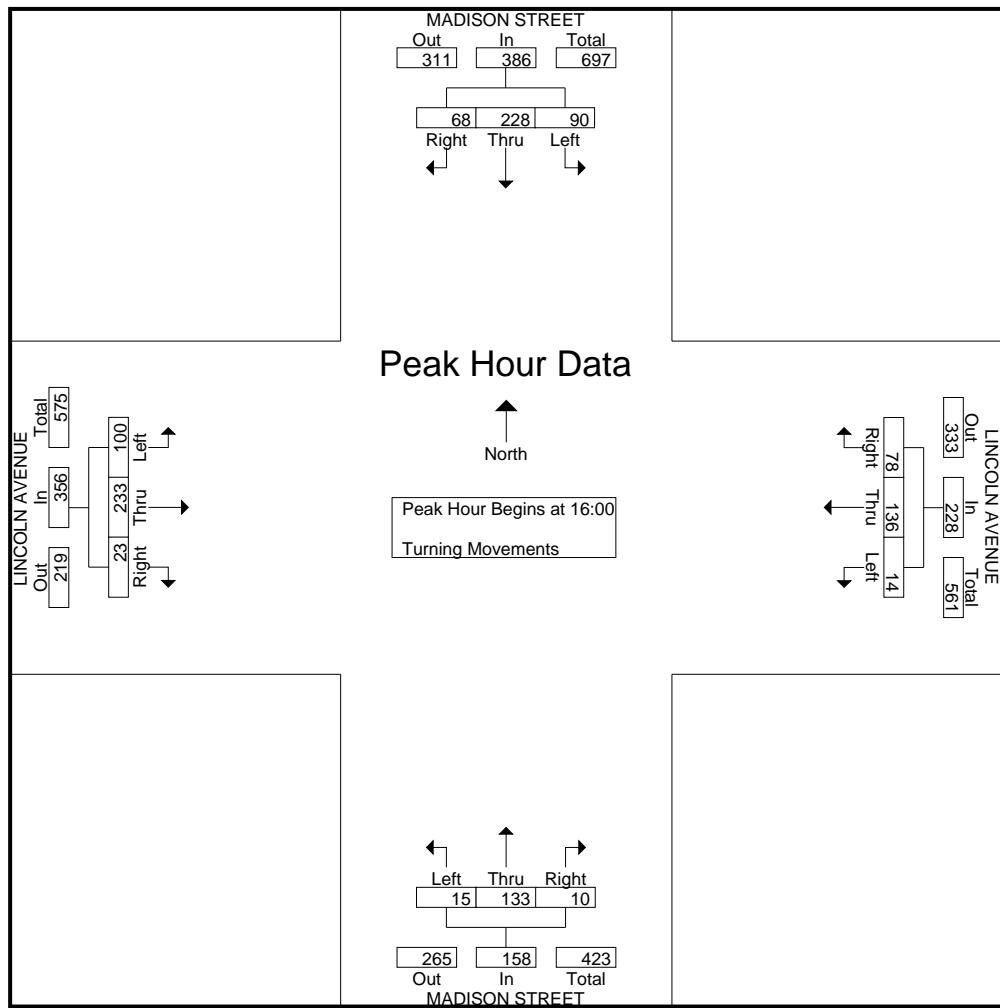
	MADISON STREET Southbound				LINCOLN AVENUE Westbound				MADISON STREET Northbound				LINCOLN AVENUE Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
<b>Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1</b>																	
Peak Hour for Entire Intersection Begins at 07:15																	
07:15	20	22	10	52	23	52	0	75	5	45	4	54	1	35	16	52	233
07:30	24	29	26	79	29	60	2	91	8	68	6	82	4	62	16	82	334
07:45	27	10	19	56	25	45	2	72	4	53	14	71	3	67	33	103	302
08:00	26	31	17	74	31	51	3	85	1	52	0	53	2	46	27	75	287
Total Volume	97	92	72	261	108	208	7	323	18	218	24	260	10	210	92	312	1156
% App. Total	37.2	35.2	27.6		33.4	64.4	2.2		6.9	83.8	9.2		3.2	67.3	29.5		
PHF	.898	.742	.692	.826	.871	.867	.583	.887	.563	.801	.429	.793	.625	.784	.697	.757	.865



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	MADISON STREET Southbound				LINCOLN AVENUE Westbound				MADISON STREET Northbound				LINCOLN AVENUE Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:00																	
16:00	21	43	21	85	16	37	5	58	5	38	5	48	6	77	34	117	308
16:15	14	64	16	94	20	36	1	57	1	30	2	33	6	57	22	85	269
16:30	16	62	26	104	23	35	5	63	2	28	5	35	8	52	27	87	289
16:45	17	59	27	103	19	28	3	50	2	37	3	42	3	47	17	67	262
Total Volume	68	228	90	386	78	136	14	228	10	133	15	158	23	233	100	356	1128
% App. Total	17.6	59.1	23.3		34.2	59.6	6.1		6.3	84.2	9.5		6.5	65.4	28.1		
PHF	.810	.891	.833	.928	.848	.919	.700	.905	.500	.875	.750	.823	.719	.756	.735	.761	.916



City: RIVERSIDE  
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Groups Printed- Turning Movements

	MADISON STREET Southbound			VICTORIA AVENUE Westbound			MADISON STREET Northbound			VICTORIA AVENUE Eastbound			
Start Time	Right	Thru	Left	Int. Total									
07:00	6	4	20	24	69	1	2	8	0	2	42	6	184
07:15	1	7	12	32	64	0	0	7	2	1	48	9	183
07:30	11	7	18	47	83	1	4	13	4	1	57	14	260
07:45	1	0	6	41	99	1	5	14	10	1	77	15	270
Total	19	18	56	144	315	3	11	42	16	5	224	44	897
08:00	7	9	18	37	91	0	2	5	3	1	48	15	236
08:15	5	5	13	33	66	0	1	8	1	2	53	7	194
08:30	2	5	20	27	47	1	5	6	1	1	40	8	163
08:45	1	3	14	31	44	1	0	6	2	1	31	6	140
Total	15	22	65	128	248	2	8	25	7	5	172	36	733

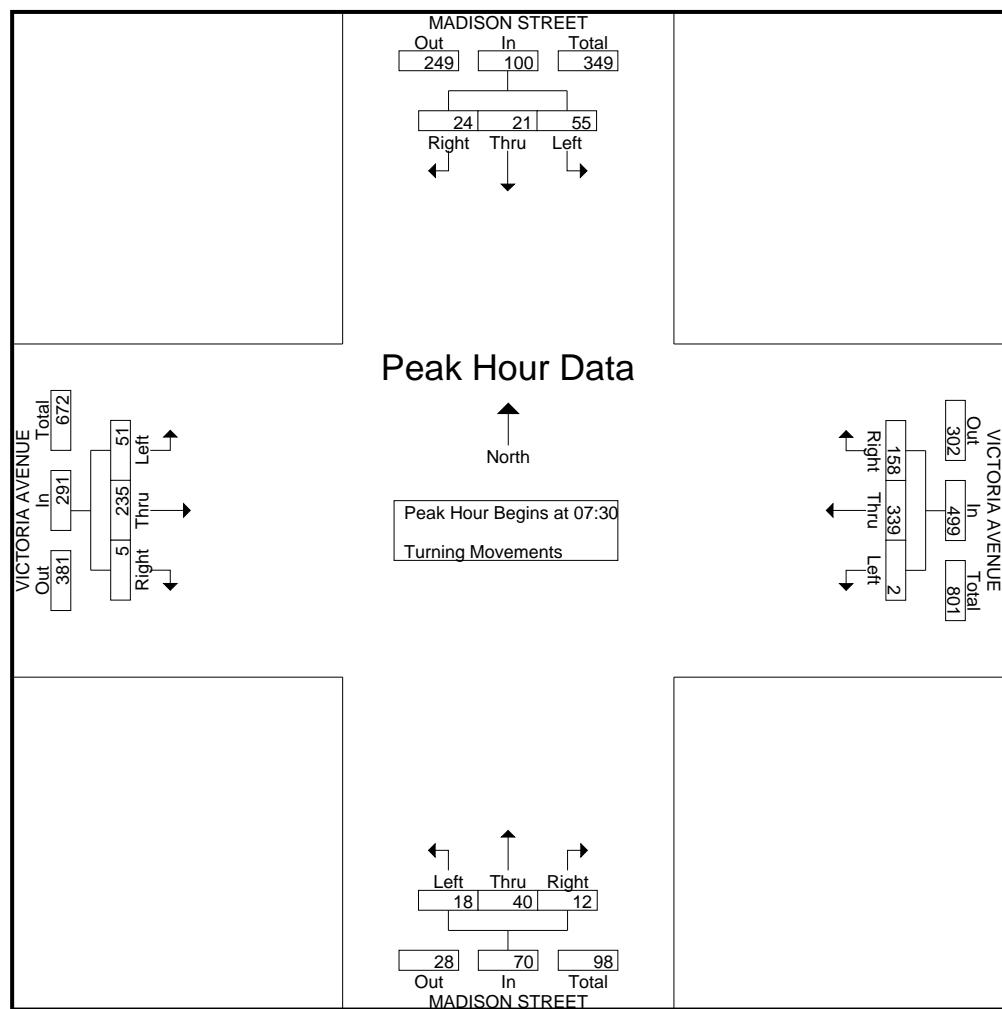
\*\*\* BREAK \*\*\*

16:00	6	14	29	18	38	0	4	9	8	6	82	13	227
16:15	7	15	39	16	51	1	0	4	2	5	73	10	223
16:30	10	13	46	11	47	3	1	7	2	4	71	9	224
16:45	11	13	34	16	46	1	0	2	1	5	81	19	229
Total	34	55	148	61	182	5	5	22	13	20	307	51	903
17:00	11	19	52	13	49	1	1	2	2	4	101	13	268
17:15	14	18	39	14	60	1	0	0	0	2	95	6	249
17:30	5	15	43	11	45	0	0	3	1	2	99	9	233
17:45	11	17	43	19	35	0	0	4	1	2	88	8	228
Total	41	69	177	57	189	2	1	9	4	10	383	36	978
Grand Total	109	164	446	390	934	12	25	98	40	40	1086	167	3511
Apprch %	15.2	22.8	62	29.2	69.9	0.9	15.3	60.1	24.5	3.1	84	12.9	
Total %	3.1	4.7	12.7	11.1	26.6	0.3	0.7	2.8	1.1	1.1	30.9	4.8	

City: RIVERSIDE  
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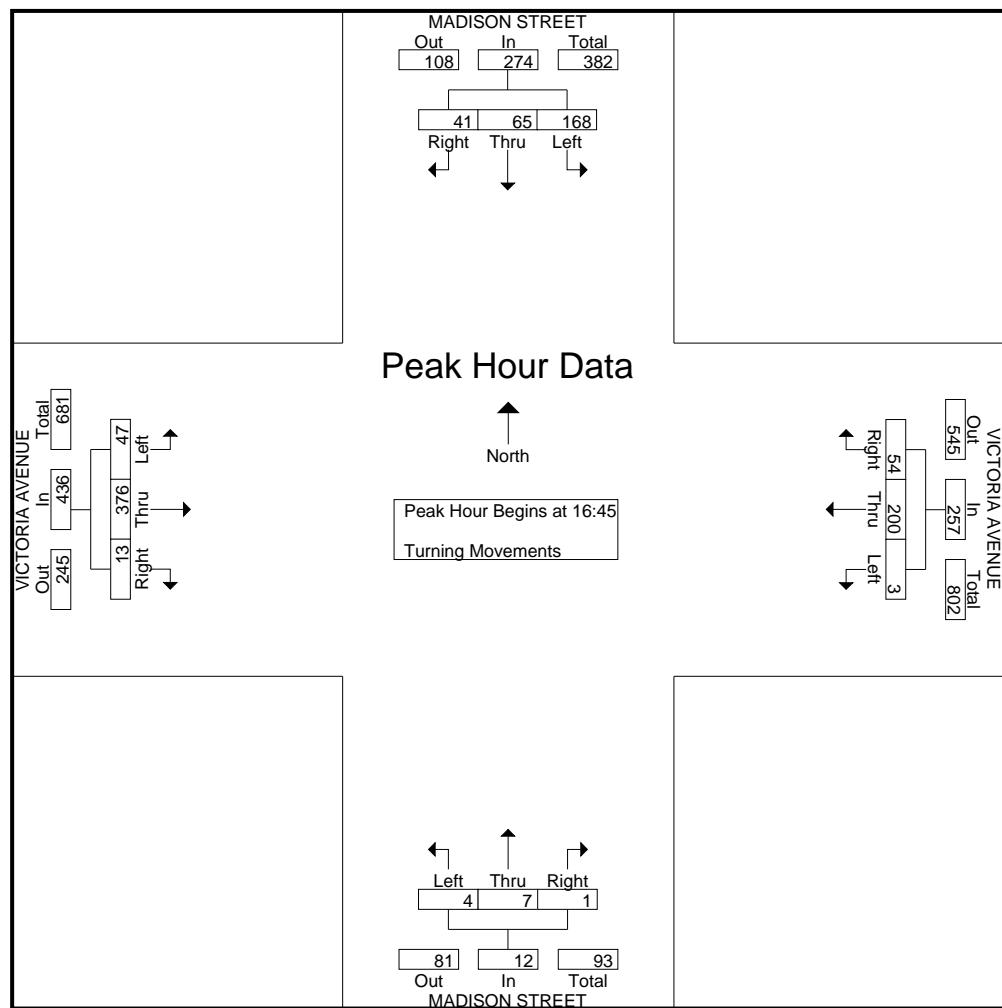
	MADISON STREET Southbound				VICTORIA AVENUE Westbound				MADISON STREET Northbound				VICTORIA AVENUE Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30																	
07:30	11	7	18	36	47	83	1	131	4	13	4	21	1	57	14	72	260
07:45	1	0	6	7	41	99	1	141	5	14	10	29	1	77	15	93	270
08:00	7	9	18	34	37	91	0	128	2	5	3	10	1	48	15	64	236
08:15	5	5	13	23	33	66	0	99	1	8	1	10	2	53	7	62	194
Total Volume	24	21	55	100	158	339	2	499	12	40	18	70	5	235	51	291	960
% App. Total	24	21	55		31.7	67.9	0.4		17.1	57.1	25.7		1.7	80.8	17.5		
PHF	.545	.583	.764	.694	.840	.856	.500	.885	.600	.714	.450	.603	.625	.763	.850	.782	.889



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	MADISON STREET Southbound				VICTORIA AVENUE Westbound				MADISON STREET Northbound				VICTORIA AVENUE Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:45																	
16:45	11	13	34	58	16	46	1	63	0	2	1	3	5	81	19	105	229
17:00	11	19	52	82	13	49	1	63	1	2	2	5	4	101	13	118	268
17:15	14	18	39	71	14	60	1	75	0	0	0	0	2	95	6	103	249
17:30	5	15	43	63	11	45	0	56	0	3	1	4	2	99	9	110	233
Total Volume	41	65	168	274	54	200	3	257	1	7	4	12	13	376	47	436	979
% App. Total	15	23.7	61.3		21	77.8	1.2		8.3	58.3	33.3		3	86.2	10.8		
PHF	.732	.855	.808	.835	.844	.833	.750	.857	.250	.583	.500	.600	.650	.931	.618	.924	.913



City: RIVERSIDE  
N-S Direction: SONORA PLACE  
E-W Direction: LINCOLN AVENUE

File Name : H1808014  
Site Code : 00000000  
Start Date : 8/21/2018  
Page No : 1

Groups Printed- Turning Movements

	DEAD END Southbound			LINCOLN AVENUE Westbound			SONORA PLACE Northbound			LINCOLN AVENUE Eastbound			Int. Total
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Start Time													
07:00	0	0	0	0	56	0	3	0	0	1	50	0	110
07:15	0	0	0	0	82	3	2	0	3	0	69	0	159
07:30	0	0	0	0	72	2	3	0	4	1	81	0	163
07:45	0	0	0	0	82	1	0	0	1	0	83	0	167
Total	0	0	0	0	292	6	8	0	8	2	283	0	599
08:00	0	0	0	0	74	0	0	0	0	0	52	0	126
08:15	0	0	0	0	58	0	0	0	0	2	44	0	104
08:30	0	0	0	0	57	0	0	0	4	0	38	0	99
08:45	0	0	0	0	45	0	0	0	0	0	36	0	81
Total	0	0	0	0	234	0	0	0	4	2	170	0	410

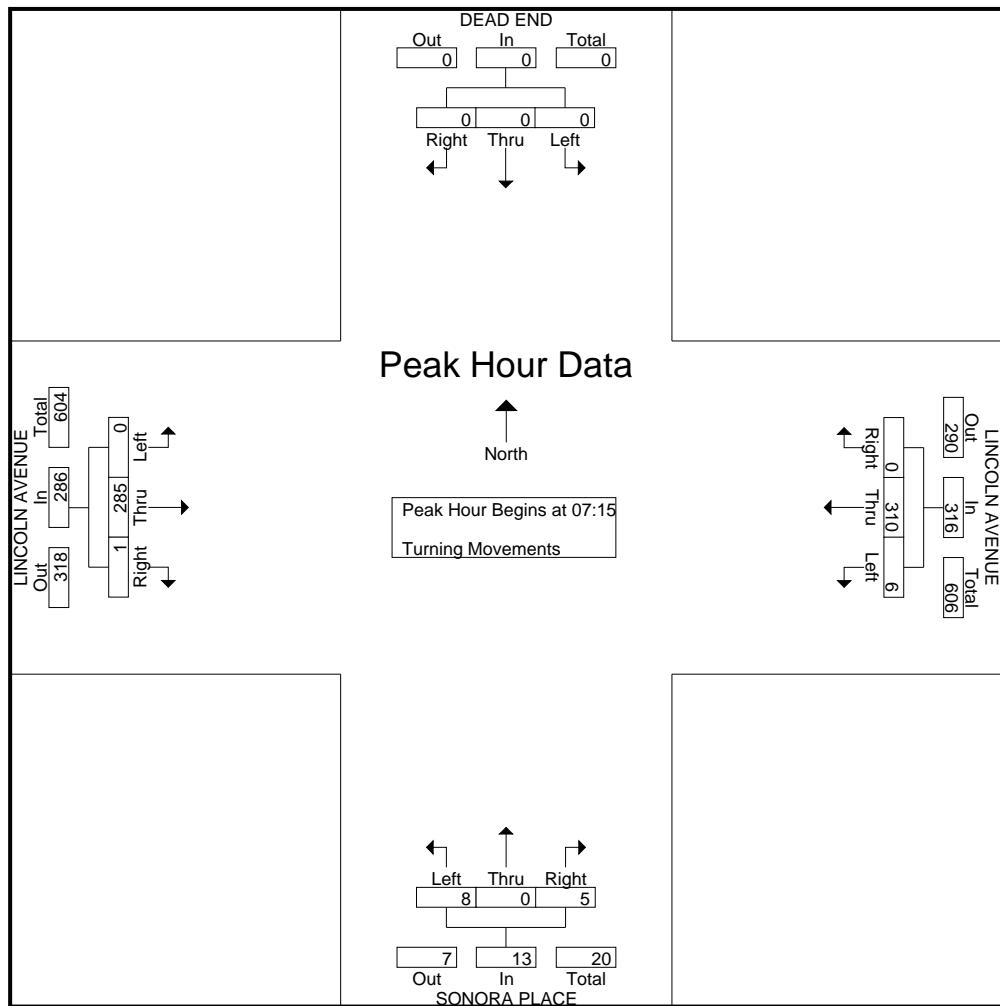
\*\*\* BREAK \*\*\*

16:00	0	0	0	0	58	1	2	0	1	2	103	0	167
16:15	0	0	0	0	68	2	1	0	1	1	61	0	134
16:30	0	0	0	0	50	0	0	0	1	6	78	0	135
16:45	0	0	0	0	48	2	1	0	0	0	77	0	128
Total	0	0	0	0	224	5	4	0	3	9	319	0	564
17:00	0	0	0	0	54	0	3	0	1	2	96	0	156
17:15	0	0	0	0	52	2	0	0	0	3	81	0	138
17:30	0	0	0	0	55	1	0	0	3	2	67	0	128
17:45	0	0	0	0	51	2	0	0	1	1	57	0	112
Total	0	0	0	0	212	5	3	0	5	8	301	0	534
Grand Total	0	0	0	0	962	16	15	0	20	21	1073	0	2107
Apprch %	0	0	0	0	98.4	1.6	42.9	0	57.1	1.9	98.1	0	
Total %	0	0	0	0	45.7	0.8	0.7	0	0.9	1	50.9	0	

City: RIVERSIDE  
N-S Direction: SONORA PLACE  
E-W Direction: LINCOLN AVENUE

File Name : H1808014  
Site Code : 00000000  
Start Date : 8/21/2018  
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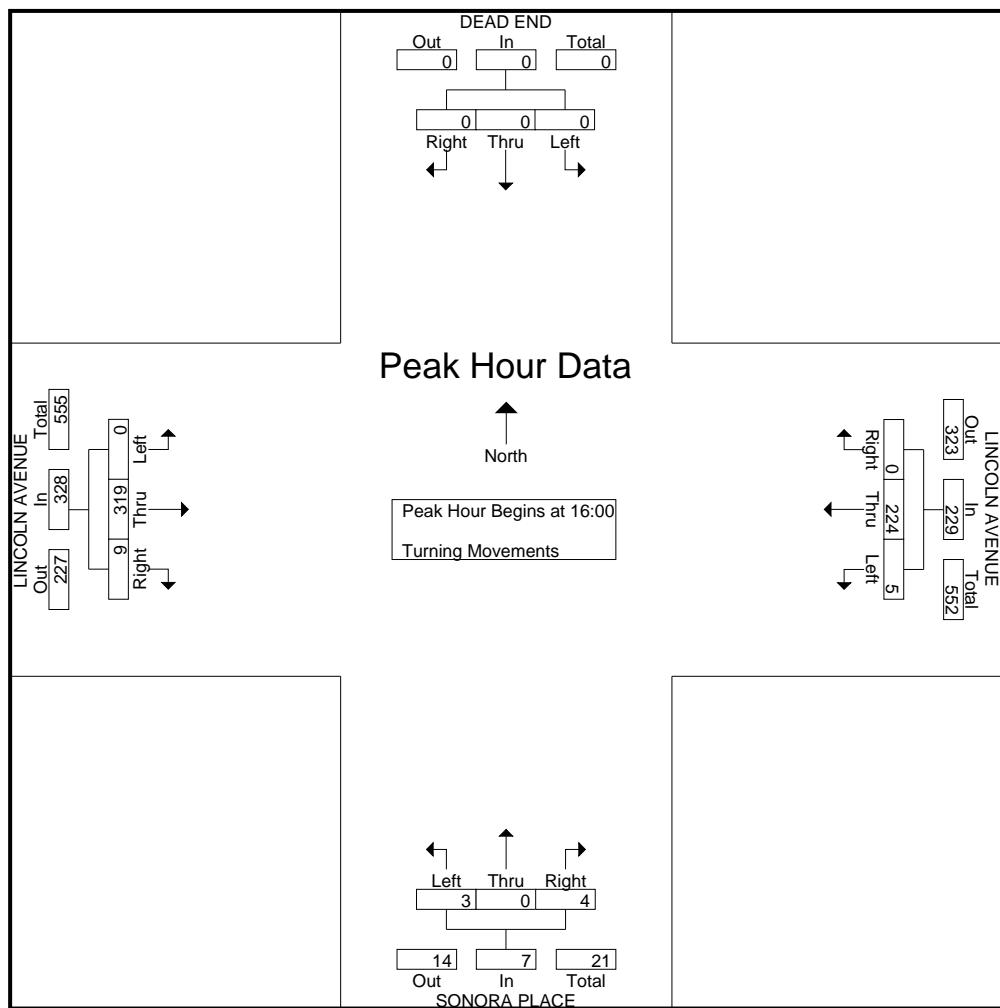
	DEAD END Southbound				LINCOLN AVENUE Westbound				SONORA PLACE Northbound				LINCOLN AVENUE Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15																	
07:15	0	0	0	0	0	82	3	85	2	0	3	5	0	69	0	69	159
07:30	0	0	0	0	0	72	2	74	3	0	4	7	1	81	0	82	163
07:45	0	0	0	0	0	82	1	83	0	0	1	1	0	83	0	83	167
08:00	0	0	0	0	0	74	0	74	0	0	0	0	0	52	0	52	126
Total Volume	0	0	0	0	0	310	6	316	5	0	8	13	1	285	0	286	615
% App. Total	0	0	0	0	0	98.1	1.9	38.5	0	61.5	0.3	99.7	0				
PHF	.000	.000	.000	.000	.000	.945	.500	.929	.417	.000	.500	.464	.250	.858	.000	.861	.921



City: RIVERSIDE  
N-S Direction: SONORA PLACE  
E-W Direction: LINCOLN AVENUE

File Name : H1808014  
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	DEAD END Southbound				LINCOLN AVENUE Westbound				SONORA PLACE Northbound				LINCOLN AVENUE Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:00																	
16:00	0	0	0	0	0	58	1	59	2	0	1	3	2	103	0	105	167
16:15	0	0	0	0	0	68	2	70	1	0	1	2	1	61	0	62	134
16:30	0	0	0	0	0	50	0	50	0	0	1	1	6	78	0	84	135
16:45	0	0	0	0	0	48	2	50	1	0	0	1	0	77	0	77	128
Total Volume	0	0	0	0	0	224	5	229	4	0	3	7	9	319	0	328	564
% App. Total	0	0	0	0	0	97.8	2.2	57.1	0	42.9	2.7	97.3	0	97.3	0	0	0
PHF	.000	.000	.000	.000	.000	.824	.625	.818	.500	.000	.750	.583	.375	.774	.000	.781	.844



City: RIVERSIDE  
N-S Direction: COLLINGWOOD STREET  
E-W Direction: LINCOLN AVENUE

File Name : H1808015  
Site Code : 00000000  
Start Date : 8/21/2018  
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Groups Printed- Turning Movements

	DEAD END Southbound			LINCOLN AVENUE Westbound			COLLINGWOOD STREET Northbound			LINCOLN AVENUE Eastbound			Int. Total
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Start Time													
07:00	0	0	0	0	55	0	2	0	3	3	44	0	107
07:15	0	0	0	0	74	0	3	0	2	3	50	0	132
07:30	0	0	0	0	84	1	4	0	4	2	97	0	192
07:45	0	0	0	0	70	2	5	0	2	0	95	0	174
Total	0	0	0	0	283	3	14	0	11	8	286	0	605
08:00	0	0	0	0	82	1	1	0	1	2	58	0	145
08:15	0	0	0	0	53	0	1	0	1	2	44	0	101
08:30	0	0	0	0	53	2	2	0	2	0	36	0	95
08:45	0	0	0	0	42	1	1	0	2	2	25	0	73
Total	0	0	0	0	230	4	5	0	6	6	163	0	414

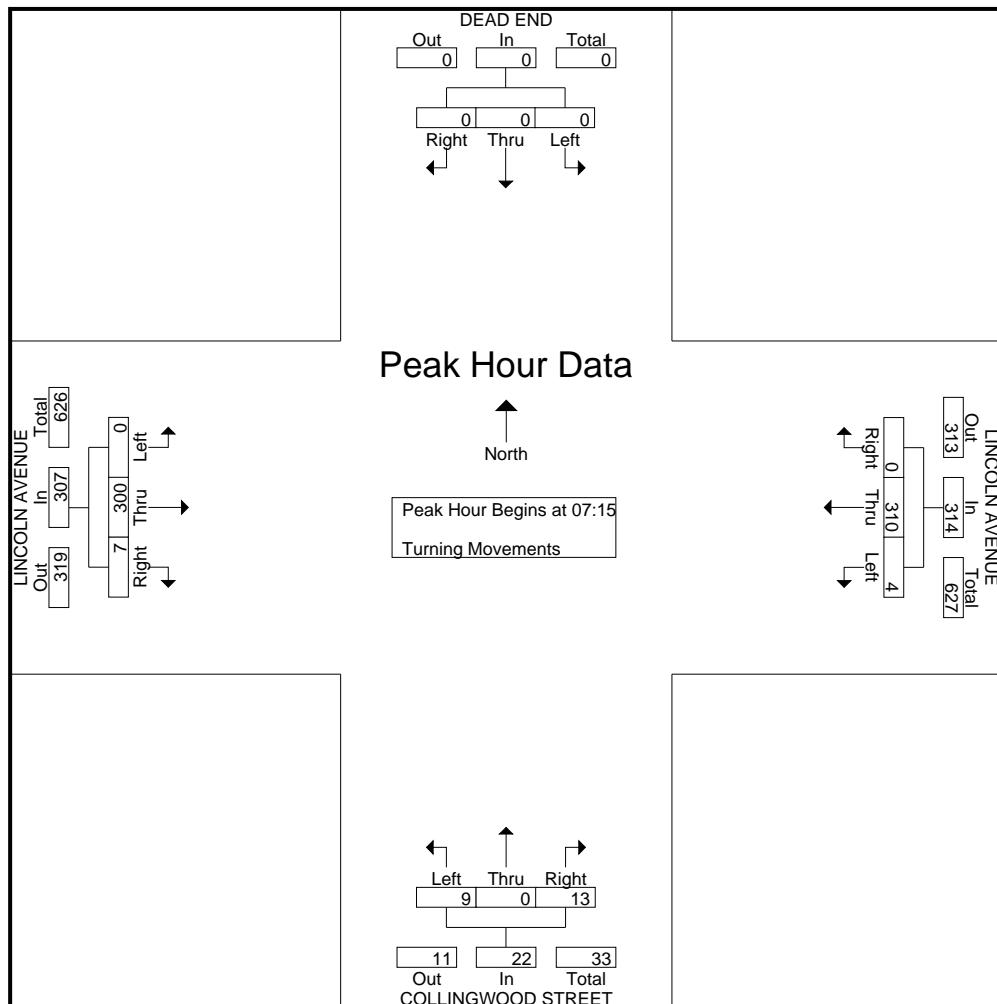
\*\*\* BREAK \*\*\*

16:00	0	0	0	0	54	0	0	0	3	4	96	0	157
16:15	0	0	0	0	53	1	1	0	5	1	76	0	137
16:30	0	0	0	0	59	0	1	0	2	1	74	0	137
16:45	0	0	0	0	48	1	1	0	2	7	67	0	126
Total	0	0	0	0	214	2	3	0	12	13	313	0	557
17:00	0	0	0	0	48	1	0	0	0	3	86	0	138
17:15	0	0	0	0	49	2	0	0	4	4	80	0	139
17:30	0	0	0	0	53	1	1	0	3	4	78	0	140
17:45	0	0	0	0	57	0	1	0	1	2	49	0	110
Total	0	0	0	0	207	4	2	0	8	13	293	0	527
Grand Total	0	0	0	0	934	13	24	0	37	40	1055	0	2103
Apprch %	0	0	0	0	98.6	1.4	39.3	0	60.7	3.7	96.3	0	
Total %	0	0	0	0	44.4	0.6	1.1	0	1.8	1.9	50.2	0	

City: RIVERSIDE  
N-S Direction: COLLINGWOOD STREET  
E-W Direction: LINCOLN AVENUE

File Name : H1808015  
Site Code : 00000000  
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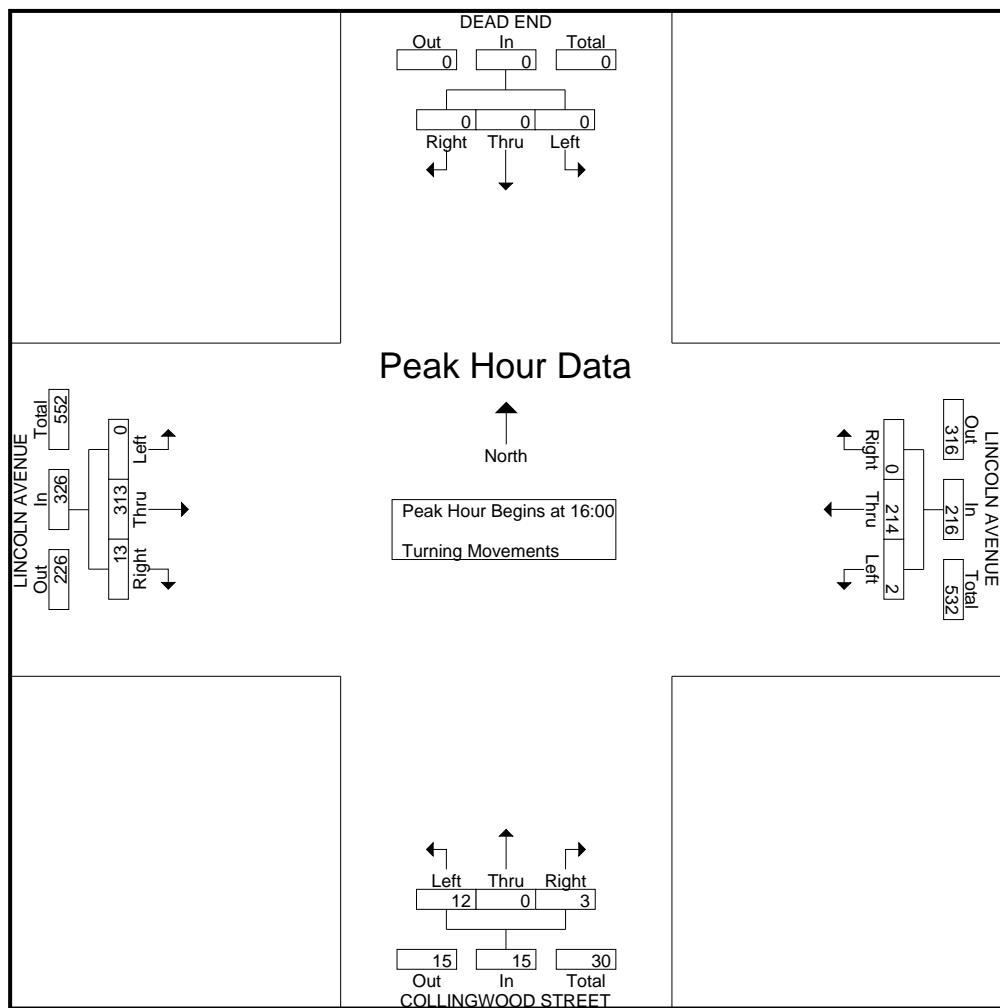
Start Time	DEAD END Southbound				LINCOLN AVENUE Westbound				COLLINGWOOD STREET Northbound				LINCOLN AVENUE Eastbound				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15																	
07:15	0	0	0	0	0	74	0	74	3	0	2	5	3	50	0	53	132
07:30	0	0	0	0	0	84	1	85	4	0	4	8	2	97	0	99	192
07:45	0	0	0	0	0	70	2	72	5	0	2	7	0	95	0	95	174
08:00	0	0	0	0	0	82	1	83	1	0	1	2	2	58	0	60	145
Total Volume	0	0	0	0	0	310	4	314	13	0	9	22	7	300	0	307	643
% App. Total	0	0	0	0	0	98.7	1.3	59.1	0	40.9	2.3	97.7	0				
PHF	.000	.000	.000	.000	.000	.923	.500	.924	.650	.000	.563	.688	.583	.773	.000	.775	.837



City: RIVERSIDE  
N-S Direction: COLLINGWOOD STREET  
E-W Direction: LINCOLN AVENUE

File Name : H1808015  
Site Code : 00000000  
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	DEAD END Southbound				LINCOLN AVENUE Westbound				COLLINGWOOD STREET Northbound				LINCOLN AVENUE Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:00																	
16:00	0	0	0	0	0	54	0	54	0	0	3	3	4	96	0	100	157
16:15	0	0	0	0	0	53	1	54	1	0	5	6	1	76	0	77	137
16:30	0	0	0	0	0	59	0	59	1	0	2	3	1	74	0	75	137
16:45	0	0	0	0	0	48	1	49	1	0	2	3	7	67	0	74	126
Total Volume	0	0	0	0	0	214	2	216	3	0	12	15	13	313	0	326	557
% App. Total	0	0	0	0	0	99.1	0.9		20	0	80		4	96	0		
PHF	.000	.000	.000	.000	.000	.907	.500	.915	.750	.000	.600	.625	.464	.815	.000	.815	.887



City: RIVERSIDE  
N-S Direction: DORLEN STREET  
E-W Direction: LINCOLN AVENUE

File Name : H1808016  
Site Code : 00000000  
Start Date : 8/21/2018  
Page No : 1

Groups Printed- Turning Movements

	DORLEN STREET Southbound			LINCOLN AVENUE Westbound			DORLEN STREET Northbound			LINCOLN AVENUE Eastbound			
Start Time	Right	Thru	Left	Int. Total									
07:00	0	0	0	0	49	1	3	0	5	0	45	0	103
07:15	1	0	0	1	63	1	0	0	10	1	51	0	128
07:30	1	0	0	1	69	0	8	0	14	1	99	0	193
07:45	0	0	0	0	69	5	5	0	6	2	96	0	183
Total	2	0	0	2	250	7	16	0	35	4	291	0	607
08:00	0	0	0	0	76	2	1	0	4	6	54	0	143
08:15	0	0	1	0	50	1	1	0	2	1	44	0	100
08:30	1	0	0	0	47	3	2	0	6	5	33	1	98
08:45	0	0	0	1	42	0	2	0	1	2	24	0	72
Total	1	0	1	1	215	6	6	0	13	14	155	1	413

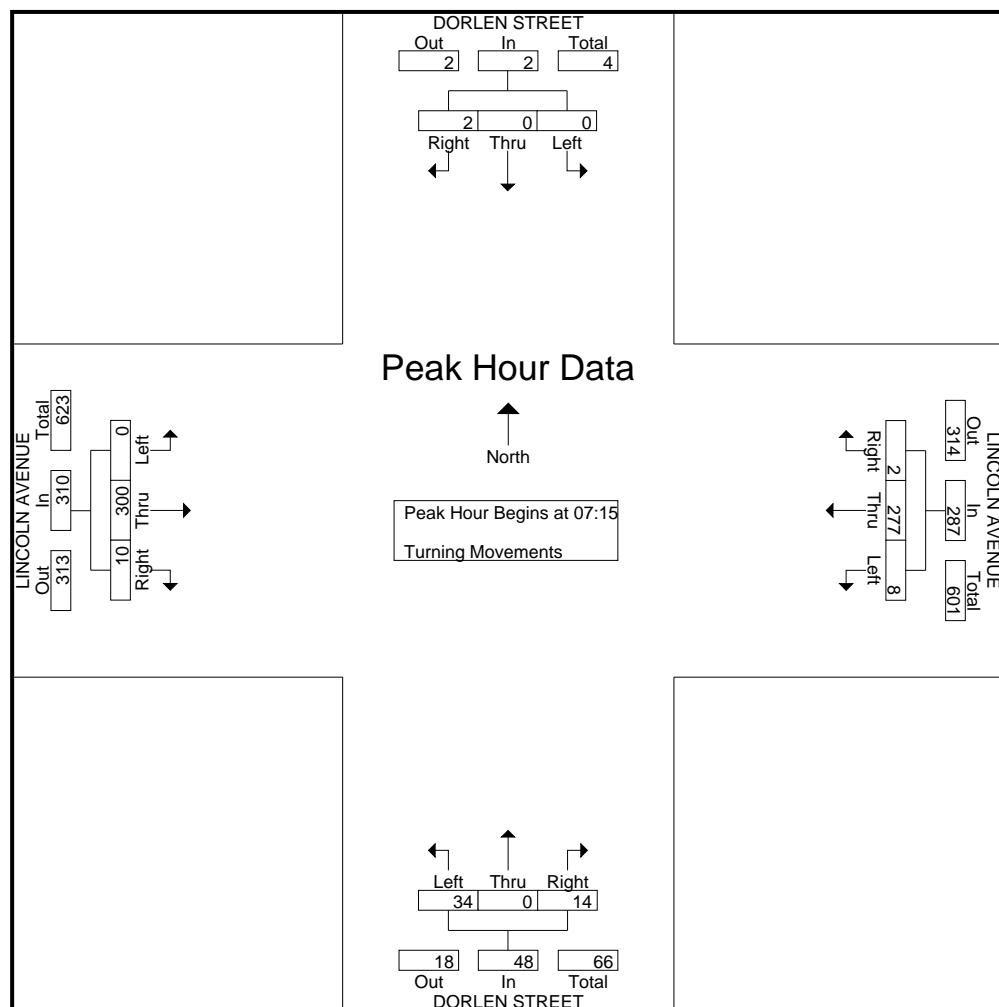
\*\*\* BREAK \*\*\*

16:00	0	0	0	0	48	0	0	0	6	7	88	0	149
16:15	0	0	0	0	55	1	1	0	1	5	69	0	132
16:30	0	0	1	0	52	1	1	0	4	6	68	1	134
16:45	2	0	0	1	39	4	2	0	5	5	61	1	120
Total	2	0	1	1	194	6	4	0	16	23	286	2	535
17:00	0	0	0	0	46	2	2	0	3	6	80	0	139
17:15	0	0	0	0	50	1	2	0	3	5	75	0	136
17:30	0	0	0	0	51	3	1	0	5	7	75	0	142
17:45	0	0	0	0	49	3	0	0	6	3	47	0	108
Total	0	0	0	0	196	9	5	0	17	21	277	0	525
Grand Total	5	0	2	4	855	28	31	0	81	62	1009	3	2080
Apprch %	71.4	0	28.6	0.5	96.4	3.2	27.7	0	72.3	5.8	93.9	0.3	
Total %	0.2	0	0.1	0.2	41.1	1.3	1.5	0	3.9	3	48.5	0.1	

City: RIVERSIDE  
N-S Direction: DORLEN STREET  
E-W Direction: LINCOLN AVENUE

File Name : H1808016  
Site Code : 00000000  
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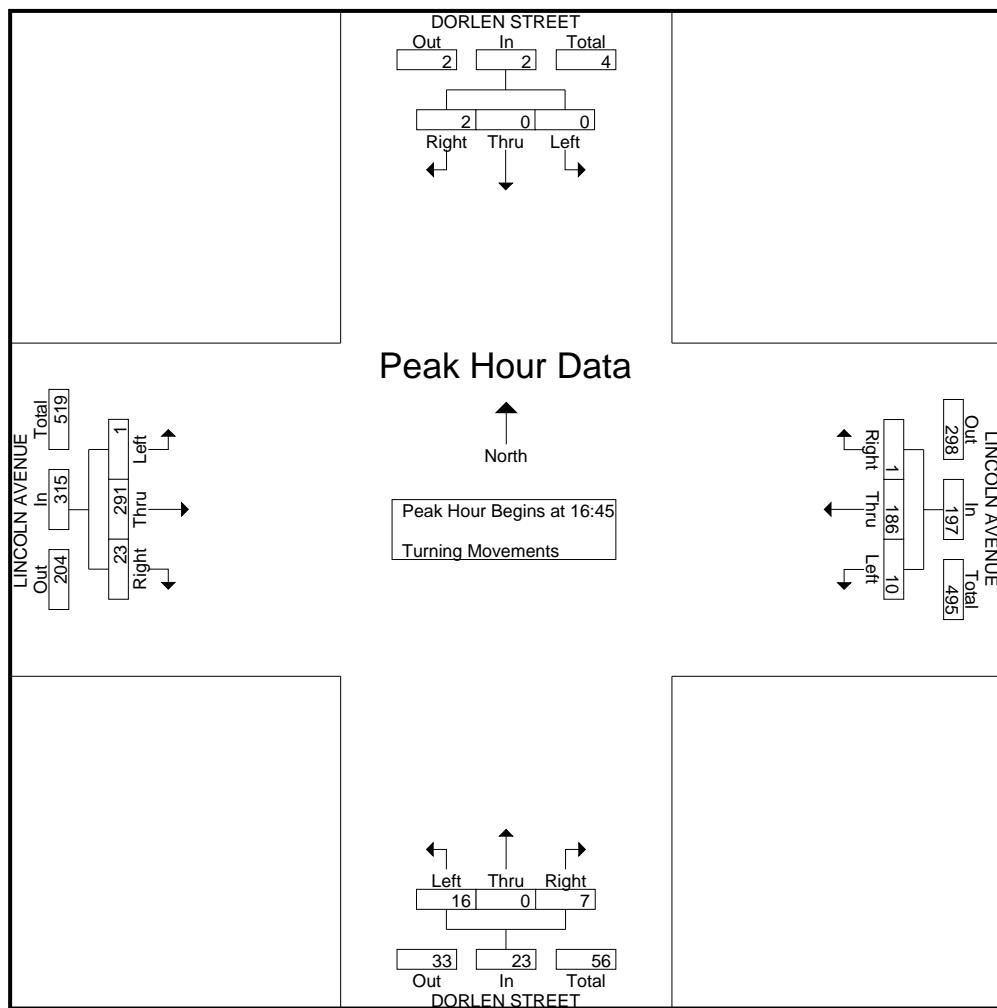
	DORLEN STREET Southbound				LINCOLN AVENUE Westbound				DORLEN STREET Northbound				LINCOLN AVENUE Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15																	
07:15	1	0	0	1	1	63	1	65	0	0	10	10	1	51	0	52	128
07:30	1	0	0	1	1	69	0	70	8	0	14	22	1	99	0	100	193
07:45	0	0	0	0	0	69	5	74	5	0	6	11	2	96	0	98	183
08:00	0	0	0	0	0	76	2	78	1	0	4	5	6	54	0	60	143
Total Volume	2	0	0	2	2	277	8	287	14	0	34	48	10	300	0	310	647
% App. Total	100	0	0		0.7	96.5	2.8		29.2	0	70.8		3.2	96.8	0		
PHF	.500	.000	.000	.500	.500	.911	.400	.920	.438	.000	.607	.545	.417	.758	.000	.775	.838



City: RIVERSIDE  
N-S Direction: DORLEN STREET  
E-W Direction: LINCOLN AVENUE

File Name : H1808016  
Site Code : 00000000  
Start Date : 8/21/2018  
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	DORLEN STREET Southbound				LINCOLN AVENUE Westbound				DORLEN STREET Northbound				LINCOLN AVENUE Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:45																	
16:45	2	0	0	2	1	39	4	44	2	0	5	7	5	61	1	67	120
17:00	0	0	0	0	0	46	2	48	2	0	3	5	6	80	0	86	139
17:15	0	0	0	0	0	50	1	51	2	0	3	5	5	75	0	80	136
17:30	0	0	0	0	0	51	3	54	1	0	5	6	7	75	0	82	142
Total Volume	2	0	0	2	1	186	10	197	7	0	16	23	23	291	1	315	537
% App. Total	100	0	0	0	0.5	94.4	5.1	30.4	0	69.6	7.3	92.4	0.3				
PHF	.250	.000	.000	.250	.250	.912	.625	.912	.875	.000	.800	.821	.821	.909	.250	.916	.945



City: RIVERSIDE  
N-S Direction: WASHINGTON STREET  
E-W Direction: INDIANA AVENUE

File Name : H1808017  
Site Code : 00000000  
Start Date : 8/21/2018  
Page No : 1

Groups Printed- Turning Movements

	WASHINGTON STREET Southbound			INDIANA AVENUE Westbound			WASHINGTON STREET Northbound			INDIANA AVENUE Eastbound			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
07:00	0	0	0	1	47	14	77	0	37	15	47	1	239
07:15	0	1	0	0	73	16	92	2	30	18	69	2	303
07:30	0	0	0	1	74	17	83	0	43	31	97	2	348
07:45	0	0	0	1	79	18	79	0	47	34	125	2	385
Total	0	1	0	3	273	65	331	2	157	98	338	7	1275
08:00	0	0	2	3	66	19	111	1	65	17	97	6	387
08:15	0	0	2	6	53	13	81	1	29	10	82	3	280
08:30	2	0	0	4	70	18	70	0	40	16	85	1	306
08:45	0	0	2	4	68	13	21	0	21	8	81	5	223
Total	2	0	6	17	257	63	283	2	155	51	345	15	1196

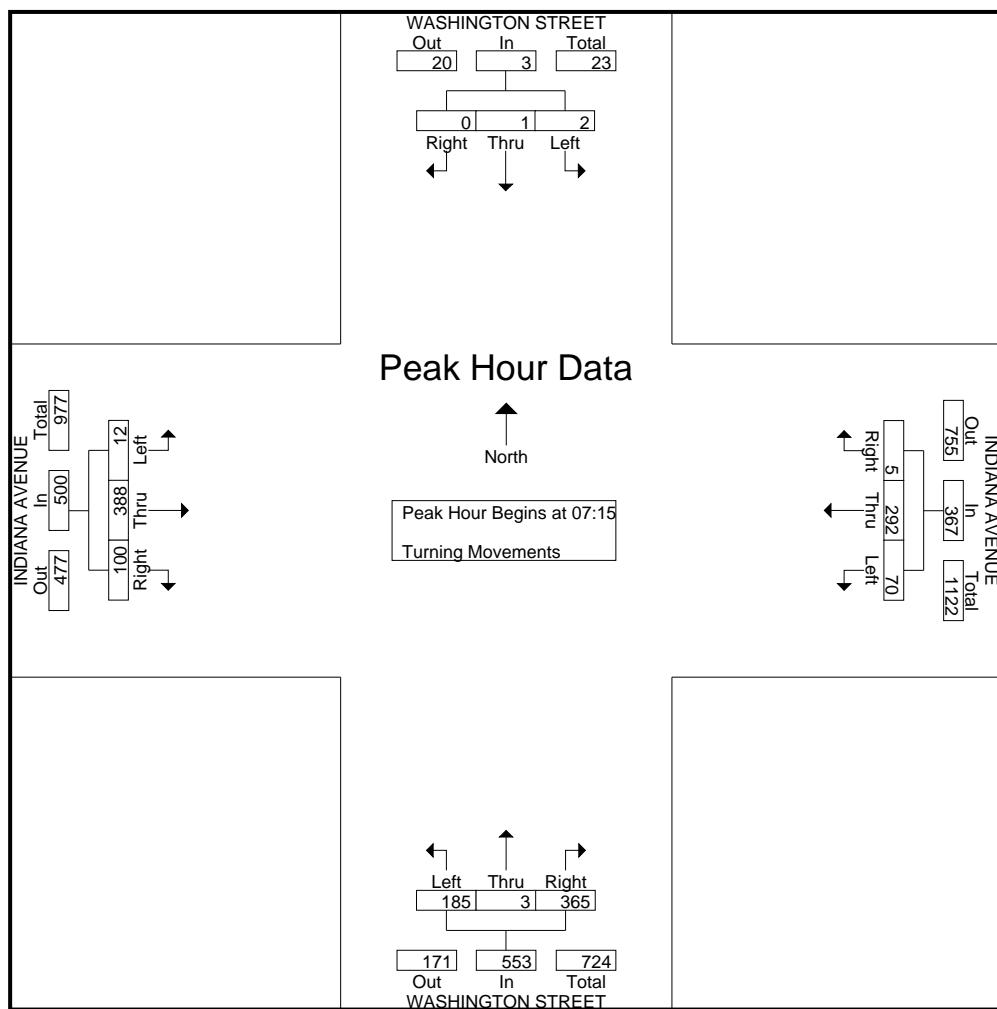
\*\*\* BREAK \*\*\*

16:00	3	0	3	1	99	25	44	0	36	41	134	0	386
16:15	1	0	4	0	83	30	43	0	25	34	147	2	369
16:30	2	5	3	1	82	33	67	0	43	36	99	2	373
16:45	1	3	5	0	93	31	33	0	34	40	134	2	376
Total	7	8	15	2	357	119	187	0	138	151	514	6	1504
17:00	4	4	5	0	126	40	43	0	51	34	141	1	449
17:15	2	2	1	0	92	25	35	0	26	46	149	0	378
17:30	2	0	5	1	85	43	38	0	36	33	104	1	348
17:45	1	0	1	1	75	25	40	0	37	39	99	0	318
Total	9	6	12	2	378	133	156	0	150	152	493	2	1493
Grand Total	18	15	33	24	1265	380	957	4	600	452	1690	30	5468
Apprch %	27.3	22.7	50	1.4	75.8	22.8	61.3	0.3	38.4	20.8	77.8	1.4	
Total %	0.3	0.3	0.6	0.4	23.1	6.9	17.5	0.1	11	8.3	30.9	0.5	

City: RIVERSIDE  
N-S Direction: WASHINGTON STREET  
E-W Direction: INDIANA AVENUE

File Name : H1808017  
Site Code : 00000000  
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Page No : 2

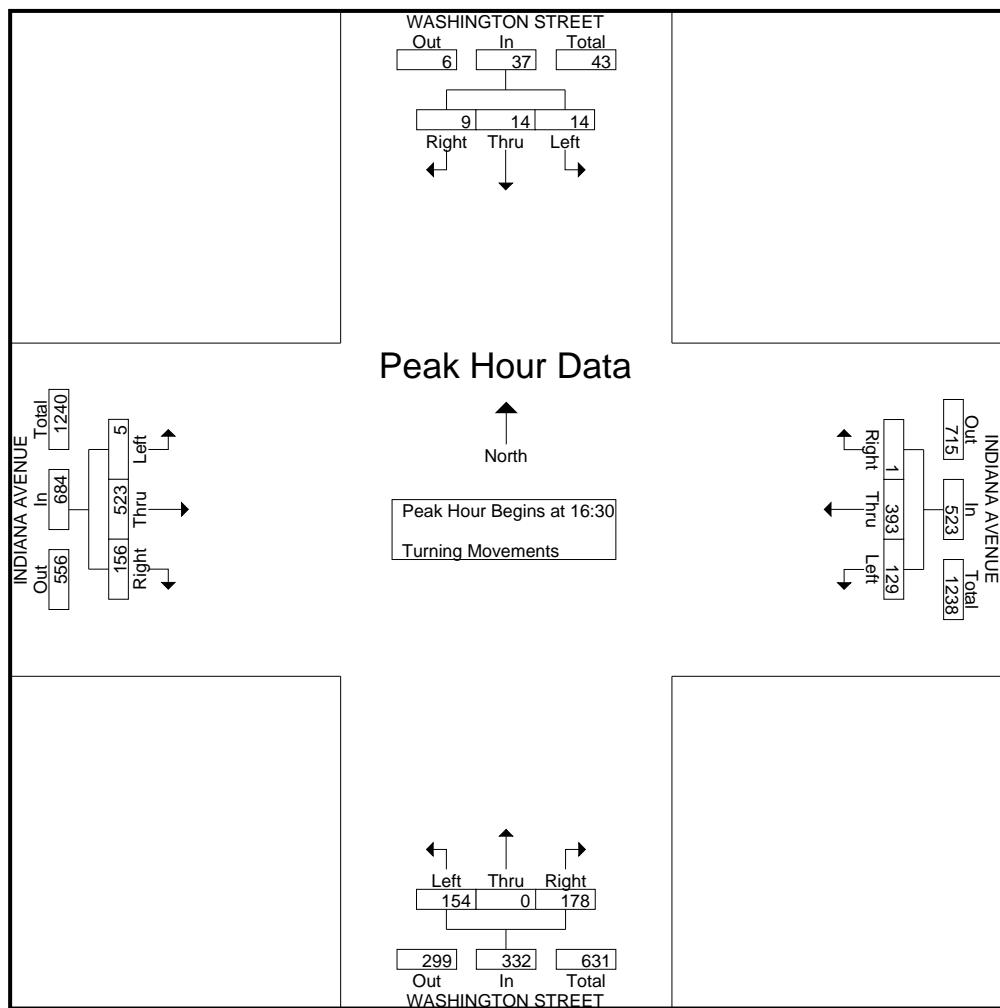
	WASHINGTON STREET Southbound				INDIANA AVENUE Westbound				WASHINGTON STREET Northbound				INDIANA AVENUE Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15																	
07:15	0	1	0	1	0	73	16	89	92	2	30	124	18	69	2	89	303
07:30	0	0	0	0	1	74	17	92	83	0	43	126	31	97	2	130	348
07:45	0	0	0	0	1	79	18	98	79	0	47	126	34	125	2	161	385
08:00	0	0	2	2	3	66	19	88	111	1	65	177	17	97	6	120	387
Total Volume	0	1	2	3	5	292	70	367	365	3	185	553	100	388	12	500	1423
% App. Total	0	33.3	66.7		1.4	79.6	19.1		66	0.5	33.5		20	77.6	2.4		
PHF	.000	.250	.250	.375	.417	.924	.921	.936	.822	.375	.712	.781	.735	.776	.500	.776	.919



City: RIVERSIDE  
N-S Direction: WASHINGTON STREET  
E-W Direction: INDIANA AVENUE

File Name : H1808017  
Site Code : 00000000  
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	WASHINGTON STREET Southbound				INDIANA AVENUE Westbound				WASHINGTON STREET Northbound				INDIANA AVENUE Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:30																	
16:30	2	5	3	10	1	82	33	116	67	0	43	110	36	99	2	137	373
16:45	1	3	5	9	0	93	31	124	33	0	34	67	40	134	2	176	376
17:00	4	4	5	13	0	126	40	166	43	0	51	94	34	141	1	176	449
17:15	2	2	1	5	0	92	25	117	35	0	26	61	46	149	0	195	378
Total Volume	9	14	14	37	1	393	129	523	178	0	154	332	156	523	5	684	1576
% App. Total	24.3	37.8	37.8		0.2	75.1	24.7		53.6	0	46.4		22.8	76.5	0.7		
PHF	.563	.700	.700	.712	.250	.780	.806	.788	.664	.000	.755	.755	.848	.878	.625	.877	.878



City: RIVERSIDE  
N-S Direction: WASHINGTON STREET  
E-W Direction: MARGUERITA AVENUE

File Name : H1808018  
Site Code : 00000000  
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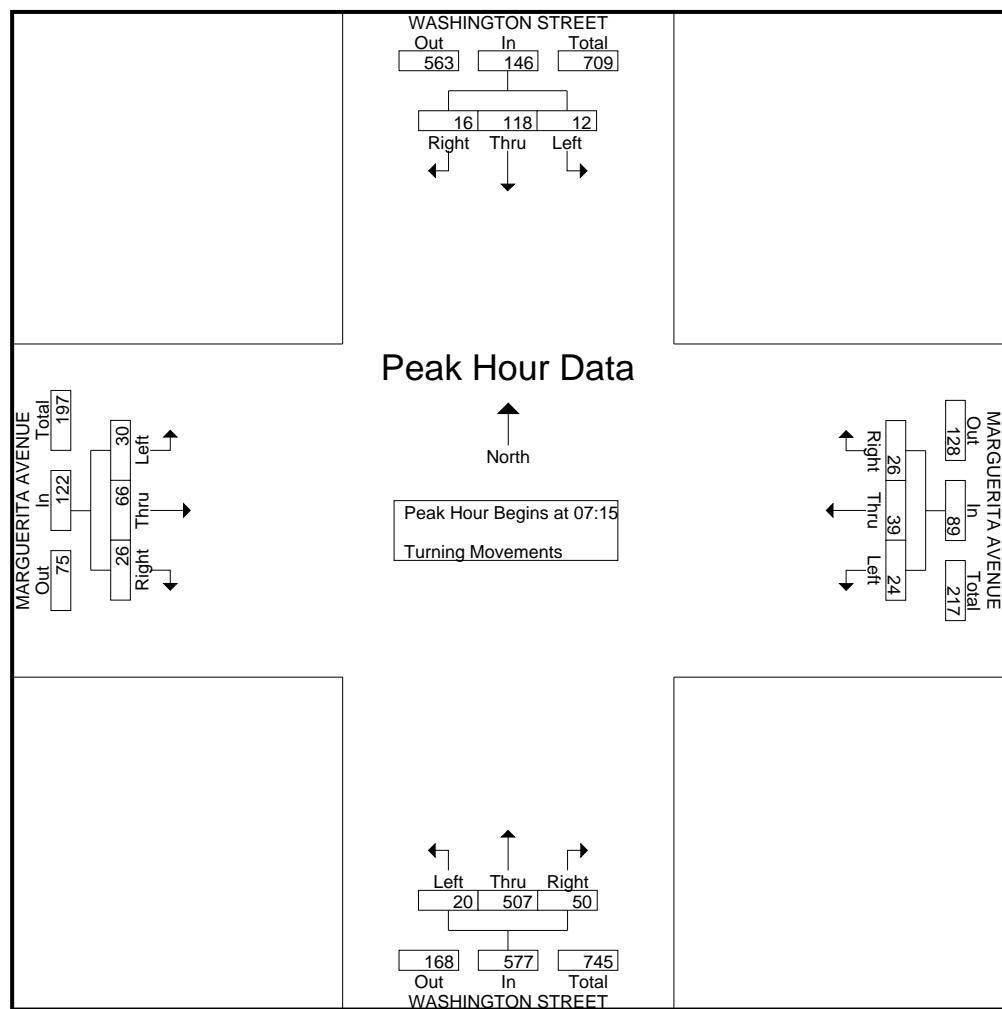
Groups Printed- Turning Movements

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Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
07:00	0	25	2	4	3	5	6	107	5	5	8	0	170
07:15	2	21	2	7	3	7	9	125	3	7	16	4	206
07:30	1	36	3	5	6	3	11	112	3	5	19	7	211
07:45	8	36	5	7	18	7	20	120	6	9	28	15	279
Total	11	118	12	23	30	22	46	464	17	26	71	26	866
08:00	5	25	2	7	12	7	10	150	8	5	3	4	238
08:15	1	21	1	2	4	2	8	96	5	2	1	4	147
08:30	5	29	3	4	4	3	5	104	5	1	3	0	166
08:45	3	10	2	3	10	2	12	55	11	2	4	5	119
Total	14	85	8	16	30	14	35	405	29	10	11	13	670
<b>*** BREAK ***</b>													
16:00	2	59	7	5	8	3	4	66	4	2	8	1	169
16:15	6	50	5	3	11	1	5	68	3	5	6	4	167
16:30	3	69	3	3	7	4	9	97	8	3	9	2	217
16:45	3	71	5	4	10	3	1	69	5	9	6	5	191
Total	14	249	20	15	36	11	19	300	20	19	29	12	744
17:00	2	77	5	2	12	5	3	78	10	6	7	4	211
17:15	4	62	9	4	15	4	6	60	9	4	12	4	193
17:30	3	69	9	4	7	3	1	66	7	7	16	1	193
17:45	9	58	7	6	10	3	3	70	9	9	3	4	191
Total	18	266	30	16	44	15	13	274	35	26	38	13	788
Grand Total	57	718	70	70	140	62	113	1443	101	81	149	64	3068
Apprch %	6.7	85	8.3	25.7	51.5	22.8	6.8	87.1	6.1	27.6	50.7	21.8	
Total %	1.9	23.4	2.3	2.3	4.6	2	3.7	47	3.3	2.6	4.9	2.1	

City: RIVERSIDE  
N-S Direction: WASHINGTON STREET  
E-W Direction: MARGUERITA AVENUE

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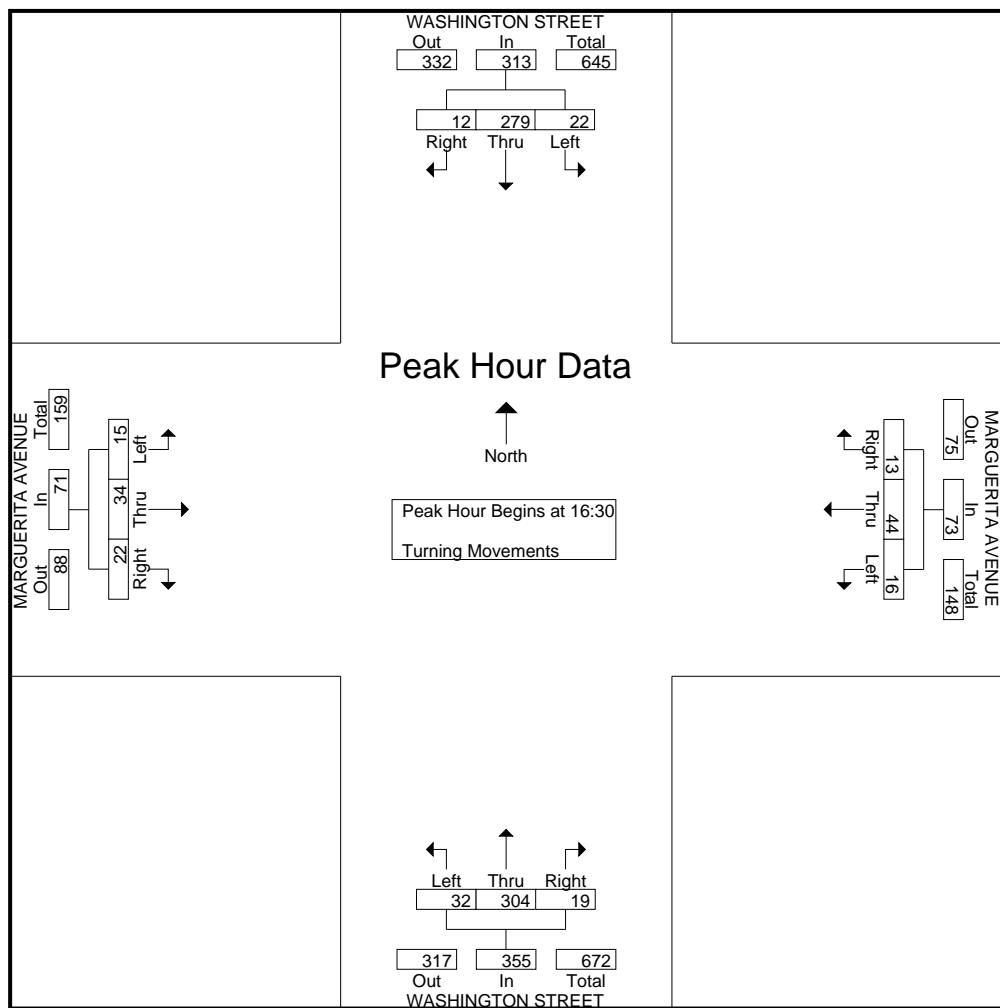
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Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15																	
07:15	2	21	2	25	7	3	7	17	9	125	3	137	7	16	4	27	206
07:30	1	36	3	40	5	6	3	14	11	112	3	126	5	19	7	31	211
07:45	8	36	5	49	7	18	7	32	20	120	6	146	9	28	15	52	279
08:00	5	25	2	32	7	12	7	26	10	150	8	168	5	3	4	12	238
Total Volume	16	118	12	146	26	39	24	89	50	507	20	577	26	66	30	122	934
% App. Total	11	80.8	8.2		29.2	43.8	27		8.7	87.9	3.5		21.3	54.1	24.6		
PHF	.500	.819	.600	.745	.929	.542	.857	.695	.625	.845	.625	.859	.722	.589	.500	.587	.837



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	WASHINGTON STREET Southbound				MARGUERITA AVENUE Westbound				WASHINGTON STREET Northbound				MARGUERITA AVENUE Eastbound				Int. Total	
	Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	
<b>Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1</b>																		
<b>Peak Hour for Entire Intersection Begins at 16:30</b>																		
16:30	3	69	3	75	75	3	7	4	14	9	97	8	114	3	9	2	14	217
16:45	3	71	5	79	79	4	10	3	17	1	69	5	75	9	6	5	20	191
17:00	2	77	5	84	84	2	12	5	19	3	78	10	91	6	7	4	17	211
17:15	4	62	9	75	75	4	15	4	23	6	60	9	75	4	12	4	20	193
Total Volume	12	279	22	313	313	13	44	16	73	19	304	32	355	22	34	15	71	812
% App. Total	3.8	89.1	7			17.8	60.3	21.9		5.4	85.6	9		31	47.9	21.1		
PHF	.750	.906	.611	.932	.932	.813	.733	.800	.793	.528	.784	.800	.779	.611	.708	.750	.888	.935



City: RIVERSIDE  
N-S Direction: WASHINGTON STREET  
E-W Direction: LINCOLN AVENUE

File Name : H1808019  
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Groups Printed- Turning Movements

	WASHINGTON STREET Southbound			LINCOLN AVENUE Westbound			WASHINGTON STREET Northbound			LINCOLN AVENUE Eastbound			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
07:00	7	26	11	15	47	6	5	107	3	5	39	4	275
07:15	10	21	11	9	46	5	10	122	8	3	44	6	295
07:30	13	29	22	13	51	7	4	96	7	7	86	11	346
07:45	12	23	14	27	53	12	7	99	9	2	84	19	361
Total	42	99	58	64	197	30	26	424	27	17	253	40	1277
08:00	3	27	9	26	70	7	7	121	4	5	47	5	331
08:15	9	17	3	13	35	8	6	97	6	5	28	12	239
08:30	7	25	4	7	40	8	4	99	3	4	28	4	233
08:45	3	13	5	6	28	6	10	88	10	1	23	2	195
Total	22	82	21	52	173	29	27	405	23	15	126	23	998

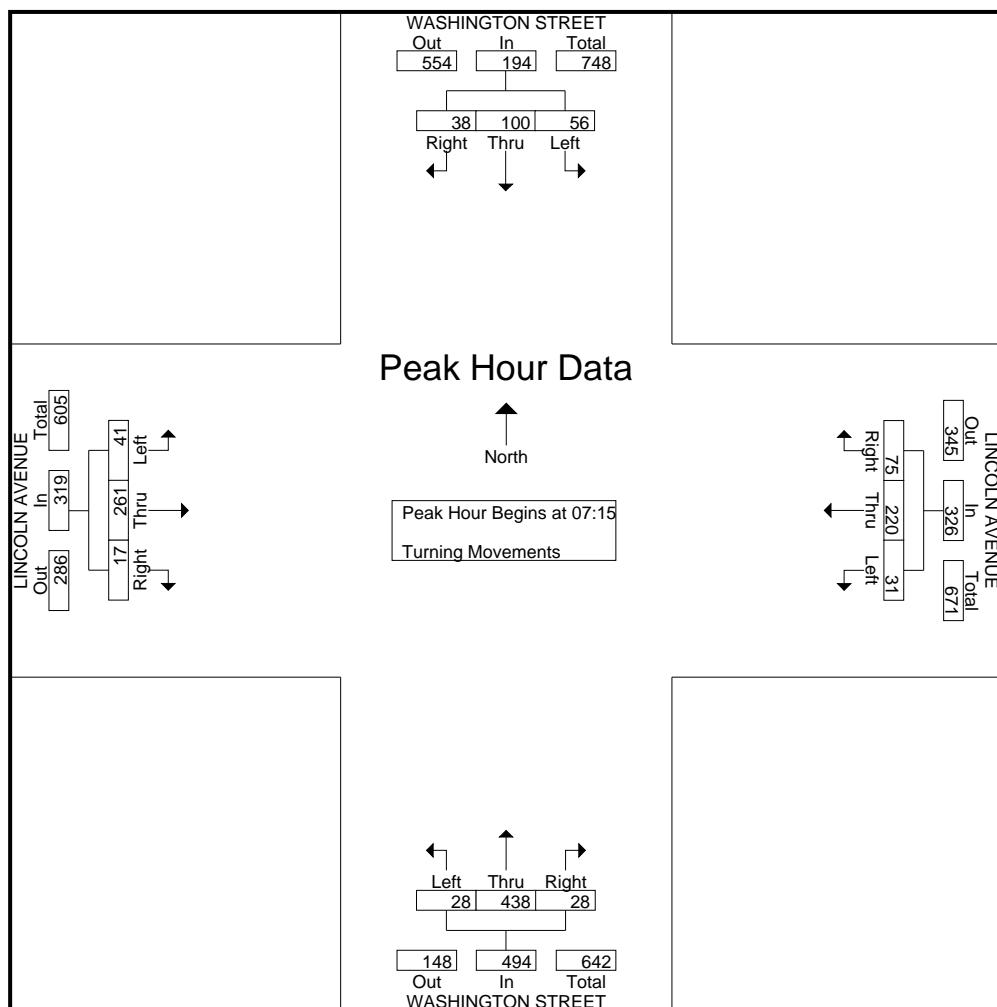
\*\*\* BREAK \*\*\*

16:00	5	46	12	10	38	11	7	53	4	4	79	6	275
16:15	7	52	12	6	42	13	1	61	11	6	53	10	274
16:30	11	74	24	7	37	6	6	54	3	8	60	6	296
16:45	5	57	13	9	32	7	3	60	3	4	53	1	247
Total	28	229	61	32	149	37	17	228	21	22	245	23	1092
17:00	7	68	12	11	40	14	1	61	3	3	72	6	298
17:15	3	58	9	18	42	6	4	58	7	8	70	3	286
17:30	9	57	9	10	47	15	3	52	1	7	63	5	278
17:45	3	43	23	18	48	7	1	60	5	2	45	2	257
Total	22	226	53	57	177	42	9	231	16	20	250	16	1119
Grand Total	114	636	193	205	696	138	79	1288	87	74	874	102	4486
Apprch %	12.1	67.4	20.5	19.7	67	13.3	5.4	88.6	6	7	83.2	9.7	
Total %	2.5	14.2	4.3	4.6	15.5	3.1	1.8	28.7	1.9	1.6	19.5	2.3	

City: RIVERSIDE  
N-S Direction: WASHINGTON STREET  
E-W Direction: LINCOLN AVENUE

File Name : H1808019  
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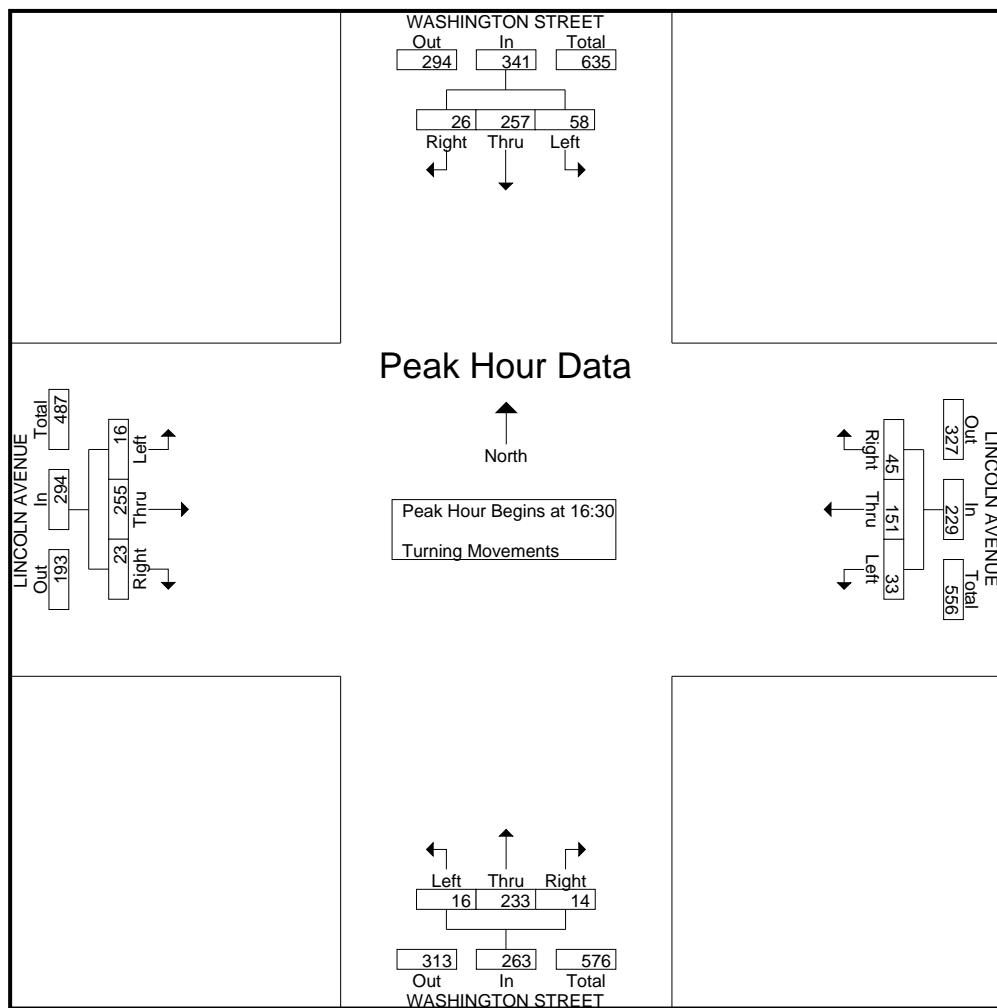
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Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15																	
07:15	10	21	11	42	9	46	5	60	10	122	8	140	3	44	6	53	295
07:30	13	29	22	64	13	51	7	71	4	96	7	107	7	86	11	104	346
07:45	12	23	14	49	27	53	12	92	7	99	9	115	2	84	19	105	361
08:00	3	27	9	39	26	70	7	103	7	121	4	132	5	47	5	57	331
Total Volume	38	100	56	194	75	220	31	326	28	438	28	494	17	261	41	319	1333
% App. Total	19.6	51.5	28.9		23	67.5	9.5		5.7	88.7	5.7		5.3	81.8	12.9		
PHF	.731	.862	.636	.758	.694	.786	.646	.791	.700	.898	.778	.882	.607	.759	.539	.760	.923



City: RIVERSIDE  
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	WASHINGTON STREET Southbound				LINCOLN AVENUE Westbound				WASHINGTON STREET Northbound				LINCOLN AVENUE Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:30																	
16:30	11	74	24	109	7	37	6	50	6	54	3	63	8	60	6	74	296
16:45	5	57	13	75	9	32	7	48	3	60	3	66	4	53	1	58	247
17:00	7	68	12	87	11	40	14	65	1	61	3	65	3	72	6	81	298
17:15	3	58	9	70	18	42	6	66	4	58	7	69	8	70	3	81	286
Total Volume	26	257	58	341	45	151	33	229	14	233	16	263	23	255	16	294	1127
% App. Total	7.6	75.4	17		19.7	65.9	14.4		5.3	88.6	6.1		7.8	86.7	5.4		
PHF	.591	.868	.604	.782	.625	.899	.589	.867	.583	.955	.571	.953	.719	.885	.667	.907	.945



City: RIVERSIDE  
N-S Direction: WASHINGTON STREET  
E-W Direction: VICTORIA STREET

File Name : H1808020  
Site Code : 00000000  
Start Date : 8/21/2018  
Page No : 1

Groups Printed- Turning Movements

	WASHINGTON STREET Southbound			VICTORIA AVENUE Westbound			WASHINGTON STREET Northbound			VICTORIA AVENUE Eastbound			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
07:00	1	34	0	4	41	40	95	88	55	23	40	0	421
07:15	2	25	4	2	45	19	133	117	53	14	47	1	462
07:30	2	36	9	6	54	24	101	115	77	19	54	3	500
07:45	5	31	4	14	61	40	115	114	78	22	62	4	550
Total	10	126	17	26	201	123	444	434	263	78	203	8	1933
08:00	2	38	1	6	73	41	78	117	42	26	39	3	466
08:15	0	24	1	4	45	25	79	104	52	20	43	4	401
08:30	1	31	3	2	32	25	85	85	45	24	35	3	371
08:45	0	17	0	1	30	27	70	106	38	19	26	2	336
Total	3	110	5	13	180	118	312	412	177	89	143	12	1574

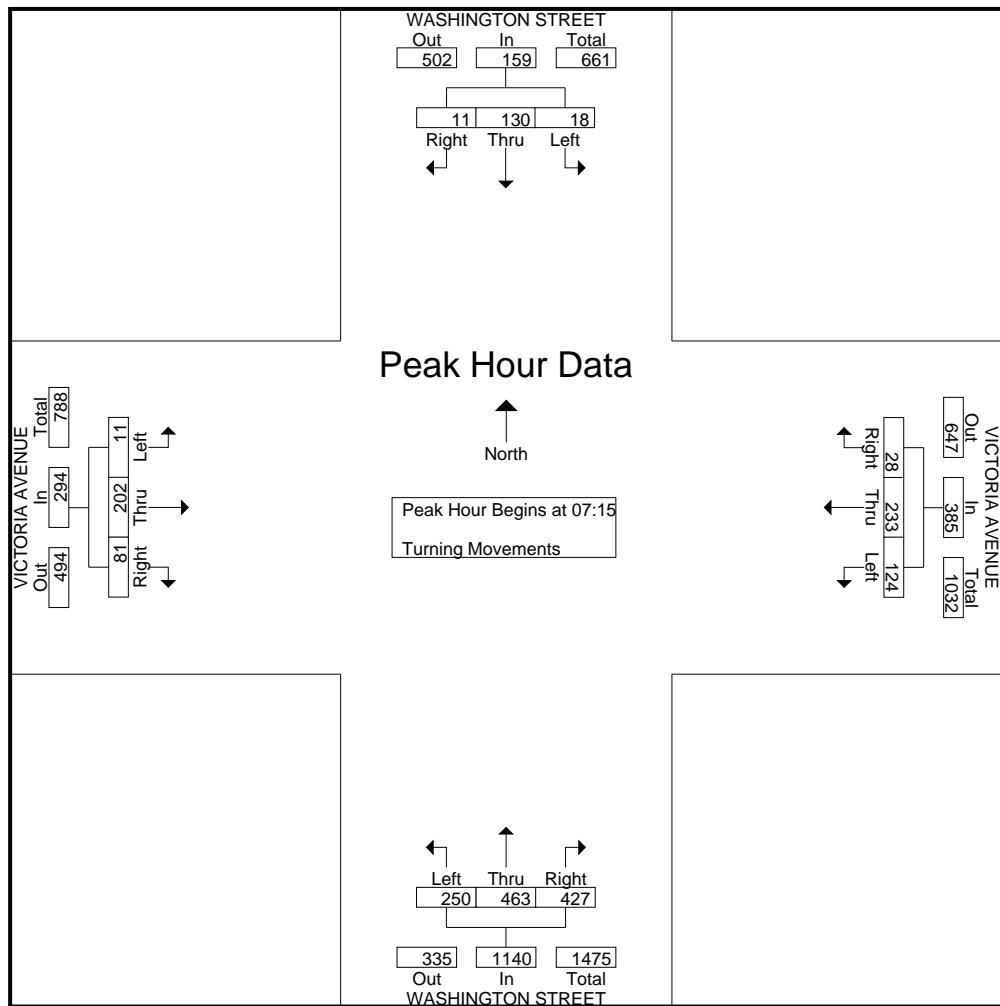
\*\*\* BREAK \*\*\*

16:00	3	55	0	2	38	42	54	64	13	48	63	1	383
16:15	3	59	2	2	47	61	52	65	24	49	63	4	431
16:30	3	72	5	5	38	63	39	55	15	64	48	4	411
16:45	1	59	5	2	38	72	48	61	24	56	54	1	421
Total	10	245	12	11	161	238	193	245	76	217	228	10	1646
17:00	2	65	1	10	41	61	42	58	21	88	69	1	459
17:15	2	71	1	6	51	73	45	61	22	75	58	2	467
17:30	4	65	3	2	36	70	50	49	12	78	59	3	431
17:45	2	54	3	2	51	60	48	66	21	66	64	1	438
Total	10	255	8	20	179	264	185	234	76	307	250	7	1795
Grand Total	33	736	42	70	721	743	1134	1325	592	691	824	37	6948
Apprch %	4.1	90.8	5.2	4.6	47	48.4	37.2	43.4	19.4	44.5	53.1	2.4	
Total %	0.5	10.6	0.6	1	10.4	10.7	16.3	19.1	8.5	9.9	11.9	0.5	

City: RIVERSIDE  
N-S Direction: WASHINGTON STREET  
E-W Direction: VICTORIA STREET

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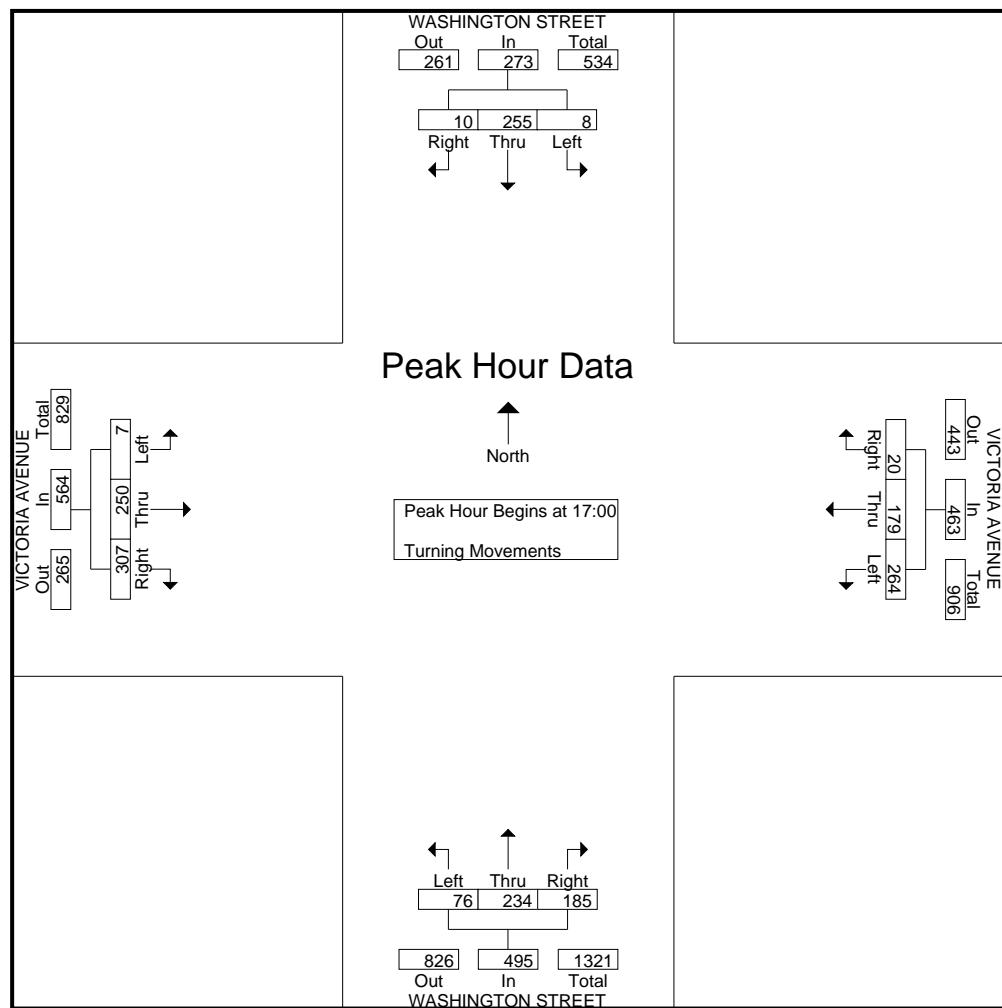
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Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15																	
07:15	2	25	4	31	2	45	19	66	133	117	53	303	14	47	1	62	462
07:30	2	36	9	47	6	54	24	84	101	115	77	293	19	54	3	76	500
07:45	5	31	4	40	14	61	40	115	115	114	78	307	22	62	4	88	550
08:00	2	38	1	41	6	73	41	120	78	117	42	237	26	39	3	68	466
Total Volume	11	130	18	159	28	233	124	385	427	463	250	1140	81	202	11	294	1978
% App. Total	6.9	81.8	11.3		7.3	60.5	32.2		37.5	40.6	21.9		27.6	68.7	3.7		
PHF	.550	.855	.500	.846	.500	.798	.756	.802	.803	.989	.801	.928	.779	.815	.688	.835	.899



City: RIVERSIDE  
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	WASHINGTON STREET Southbound				VICTORIA AVENUE Westbound				WASHINGTON STREET Northbound				VICTORIA AVENUE Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 17:00																	
17:00	2	65	1	68	10	41	61	112	42	58	21	121	88	69	1	158	459
17:15	2	71	1	74	6	51	73	130	45	61	22	128	75	58	2	135	467
17:30	4	65	3	72	2	36	70	108	50	49	12	111	78	59	3	140	431
17:45	2	54	3	59	2	51	60	113	48	66	21	135	66	64	1	131	438
Total Volume	10	255	8	273	20	179	264	463	185	234	76	495	307	250	7	564	1795
% App. Total	3.7	93.4	2.9		4.3	38.7	57		37.4	47.3	15.4		54.4	44.3	1.2		
PHF	.625	.898	.667	.922	.500	.877	.904	.890	.925	.886	.864	.917	.872	.906	.583	.892	.961



## APPENDIX B

### EXISTING TRAFFIC CONDITIONS LEVEL OF SERVICE CALCULATION WORKSHEETS

**Intersection Key**  
**Casa Blanca Elementary School Project, Riverside**

Vistro Model Number	Report Number	Key Study Intersections
1	1	Madison Street at Indiana Avenue (traffic signal)
2	2	Madison Street at Emerald Street (all-way stop)
3	3	Madison Street at Lincoln Avenue (traffic signal)
4	4A	Madison Street at Victoria Avenue (West)
5	5	Sonora Place at Lincoln Avenue (one-way stop)
6	6	Collingwood Street/ProjectDwy 3 at Lincoln Avenue (one-way stop)
7	7	Dorlen Street at Lincoln Avenue (two-way stop)
8	8	Washington Street at Indiana Avenue (traffic signal)
9	9	Washington Street at Marguerita Avenue (all-way stop)
10	10	Washington Street at Lincoln Avenue (all-way stop)
11	11A	Washington Street at Victoria Avenue (West)
12	A	Project Driveway 1 at Lincoln Avenue
13	B	Project Driveway 2 at Lincoln Avenue
14	C	Project Driveway 4 at Lincoln Avenue
15	4B	Madison Street at Victoria Avenue (East)
16	11B	Washington Street at Victoria Avenue (East)

**Intersection Level Of Service Report**  
**Intersection 1: Madison Street at Indiana Avenue**

Control Type:	Signalized	Delay (sec / veh):	34.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.660

**Intersection Setup**

Name	Madison Street			Madison Street			Indiana Ave			Indiana Ave		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
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			No			Yes			Yes		

**Volumes**

Name	Madison Street			Madison Street			Indiana Ave			Indiana Ave		
Base Volume Input [veh/h]	29	367	29	256	320	202	185	337	27	23	122	270
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	29	367	29	256	320	202	185	337	27	23	122	270
Peak Hour Factor	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700
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	0.7500
Total 15-Minute Volume [veh/h]	8	105	8	74	92	58	53	97	8	7	35	58
Total Analysis Volume [veh/h]	33	422	33	294	368	232	213	387	31	26	140	233
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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing mi	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	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]	100											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Offset [s]	0.0											
Offset Reference	LeadGreen											
Permissive Mode	SingleBand											
Lost time [s]	16.00											

**Phasing & Timing**

Control Type	Protecte	Permiss	Permiss									
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-									
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [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
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	29	0	31	49	0	29	29	0	11	11	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]	0	7	0	0	7	0	0	7	0	0	0	0
Pedestrian Clearance [s]	0	18	0	0	18	0	0	18	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No										
Maximum Recall	No	No										
Pedestrian Recall	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	C	L	C	C	L	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
I1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	15	15	19	29	29	14	47	47	4	36	36
g / C, Green / Cycle	0.04	0.15	0.15	0.19	0.29	0.29	0.14	0.47	0.47	0.04	0.36	0.36
(v / s)_i Volume / Saturation Flow Rate	0.02	0.12	0.12	0.17	0.17	0.17	0.12	0.11	0.11	0.01	0.07	0.15
s, saturation flow rate [veh/h]	1781	1870	1823	1781	1870	1631	1781	1870	1822	1781	1870	1589
c, Capacity [veh/h]	77	281	274	332	550	479	253	871	849	66	675	574
d1, Uniform Delay [s]	46.70	41.19	41.23	39.67	30.12	30.12	41.87	16.10	16.11	47.11	22.09	23.95
k, delay calibration	0.11	0.11	0.11	0.12	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
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
d2, Incremental Delay [s]	3.74	5.73	6.05	8.61	0.98	1.13	7.43	0.66	0.68	3.77	0.70	2.13
d3, Initial Queue Delay [s]	0.00	0.00	0.00	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	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	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.43	0.82	0.82	0.88	0.58	0.58	0.84	0.24	0.24	0.39	0.21	0.41
d, Delay for Lane Group [s/veh]	50.44	46.92	47.28	48.28	31.10	31.25	49.30	16.76	16.79	50.89	22.79	26.08
Lane Group LOS	D	D	D	D	C	C	D	B	B	D	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.88	5.88	5.79	7.75	6.62	5.80	5.60	3.00	2.94	0.70	2.38	4.39
50th-Percentile Queue Length [ft/ln]	21.94	146.98	144.84	193.63	165.61	145.09	139.94	75.05	73.49	17.49	59.42	109.80
95th-Percentile Queue Length [veh/ln]	1.58	9.86	9.74	12.31	10.85	9.75	9.48	5.40	5.29	1.26	4.28	7.83
95th-Percentile Queue Length [ft/ln]	39.50	246.39	243.52	307.73	271.14	243.86	236.94	135.10	132.28	31.49	106.96	195.72

**Movement, Approach, & Intersection Results**

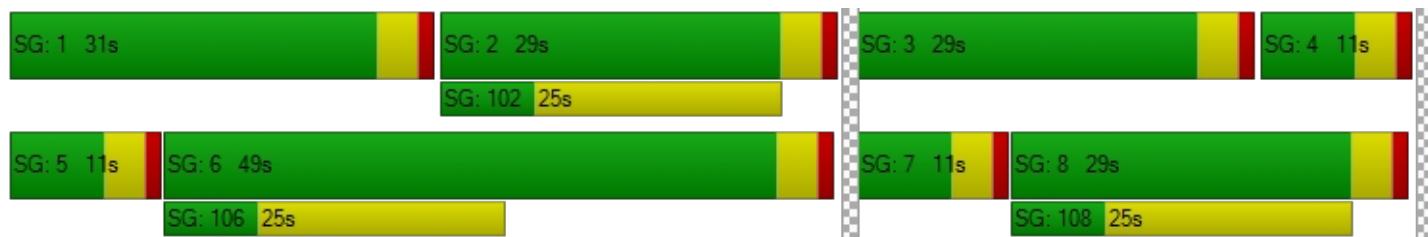
d_M, Delay for Movement [s/veh]	50.44	47.09	47.28	48.28	31.12	31.25	49.30	16.77	16.79	50.89	22.79	26.08
Movement LOS	D	D	D	D	C	C	D	B	B	D	C	C
d_A, Approach Delay [s/veh]	47.33				36.80			27.75			26.54	
Approach LOS		D			D			C			C	
d_I, Intersection Delay [s/veh]					34.87							
Intersection LOS							C					
Intersection V/C					0.660							

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	39.61	0.00	39.61	39.61
I_p,int, Pedestrian LOS Score for Intersection	2.483	0.000	2.507	2.522
Crosswalk LOS	B	F	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	500	900	500	140
d_b, Bicycle Delay [s]	28.13	15.13	28.13	43.25
I_b,int, Bicycle LOS Score for Intersection	1.962	2.297	2.080	1.889
Bicycle LOS	A	B	B	A

**Sequence**

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 2: Madison Street at Emerald Street**

Control Type:	All-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):	0.705

**Intersection Setup**

Name	Madison Street			Madison Street			Emerald Street			Emerald Street		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

**Volumes**

Name	Madison Street			Madison Street			Emerald Street			Emerald Street		
Base Volume Input [veh/h]	27	366	25	12	226	12	9	0	5	11	2	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	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	27	366	25	12	226	12	9	0	5	11	2	17
Peak Hour Factor	0.7610	0.7610	0.7610	0.7610	0.7610	0.7610	0.7610	0.7610	0.7610	0.7610	0.7610	0.7610
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]	9	120	8	4	74	4	3	0	2	4	1	6
Total Analysis Volume [veh/h]	35	481	33	16	297	16	12	0	7	14	3	22
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	656	729	636	703	609	633
Degree of Utilization, x	0.05	0.71	0.03	0.45	0.03	0.06

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	0.17	5.88	0.08	2.30	0.10	0.20
95th-Percentile Queue Length [ft]	4.21	147.07	1.93	57.51	2.41	4.91
Approach Delay [s/veh]		17.90		11.71		9.10
Approach LOS	C		B		A	A
Intersection Delay [s/veh]				15.18		
Intersection LOS				C		

**Intersection Level Of Service Report**  
**Intersection 3: Madison Street at Lincoln Avenue**

Control Type:	Signalized	Delay (sec / veh):	22.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.466

**Intersection Setup**

Name	Madison Street			Madison Street			Lincoln Avenue			Lincoln Avenue		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
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	Madison Street			Madison Street			Lincoln Avenue			Lincoln Avenue		
Base Volume Input [veh/h]	24	218	18	72	92	97	92	210	10	7	208	108
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	24	218	18	72	92	97	92	210	10	7	208	108
Peak Hour Factor	0.8650	0.8650	0.8650	0.8650	0.8650	0.8650	0.8650	0.8650	0.8650	0.8650	0.8650	0.8650
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]	7	63	5	21	27	28	27	61	3	2	60	31
Total Analysis Volume [veh/h]	28	252	21	83	106	112	106	243	12	8	240	125
Presence of On-Street Parking	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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing m	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	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]	70											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Offset [s]	0.0											
Offset Reference	LeadGreen											
Permissive Mode	SingleBand											
Lost time [s]	16.00											

**Phasing & Timing**

Control Type	Protecte	Permiss	Permiss									
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-									
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [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
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	26	0	11	26	0	11	22	0	11	22	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]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	14	0	0	14	0	0	11	0	0	11	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No										
Maximum Recall	No	No										
Pedestrian Recall	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
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
I1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	3	13	6	15	6	35	1	30	30
g / C, Green / Cycle	0.04	0.18	0.08	0.22	0.09	0.50	0.02	0.42	0.42
(v / s)_i Volume / Saturation Flow Rate	0.02	0.15	0.05	0.13	0.06	0.14	0.00	0.10	0.11
s, saturation flow rate [veh/h]	1781	1845	1781	1715	1781	1855	1781	1870	1661
c, Capacity [veh/h]	79	330	146	372	157	918	29	791	703
d1, Uniform Delay [s]	32.61	27.79	31.06	24.68	31.06	10.38	34.15	13.01	13.07
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.50	0.11	0.50	0.50
I, 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]	2.72	5.25	3.46	1.47	4.98	0.75	5.06	0.71	0.85
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	0.36	0.83	0.57	0.59	0.68	0.28	0.28	0.24	0.25
d, Delay for Lane Group [s/veh]	35.33	33.04	34.52	26.16	36.04	11.14	39.21	13.72	13.92
Lane Group LOS	D	C	C	C	D	B	D	B	B
Critical Lane Group	No	Yes	Yes	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.51	4.69	1.45	3.24	1.90	2.24	0.17	1.91	1.80
50th-Percentile Queue Length [ft/ln]	12.69	117.17	36.19	81.12	47.38	55.88	4.29	47.75	45.02
95th-Percentile Queue Length [veh/ln]	0.91	8.24	2.61	5.84	3.41	4.02	0.31	3.44	3.24
95th-Percentile Queue Length [ft/ln]	22.84	205.93	65.14	146.02	85.28	100.58	7.72	85.95	81.03

#### Movement, Approach, & Intersection Results

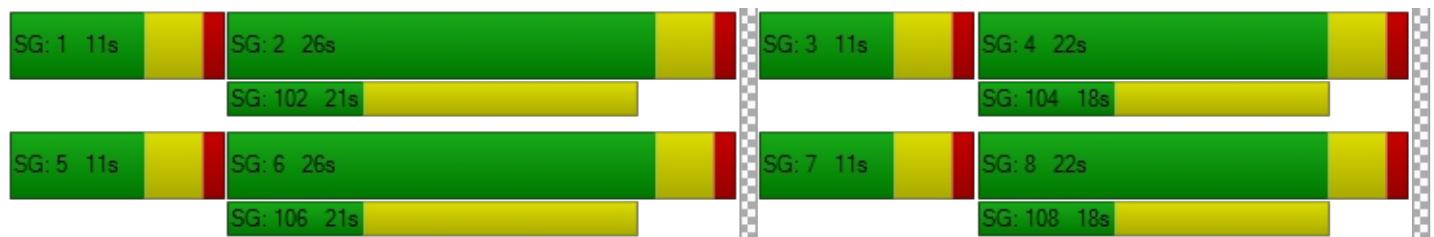
d_M, Delay for Movement [s/veh]	35.33	33.04	33.04	34.52	26.16	26.16	36.04	11.14	11.14	39.21	13.76	13.92
Movement LOS	D	C	C	C	C	C	D	B	B	D	B	B
d_A, Approach Delay [s/veh]	33.25			28.46			18.45			14.36		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]				22.90								
Intersection LOS				C								
Intersection V/C				0.466								

#### Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	24.86	24.86	24.86	24.86
I_p,int, Pedestrian LOS Score for Intersection	2.065	2.181	2.298	2.293
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	629	629	514	514
d_b, Bicycle Delay [s]	16.46	16.46	19.31	19.31
I_b,int, Bicycle LOS Score for Intersection	2.056	2.056	2.155	1.867
Bicycle LOS	B	B	B	A

#### Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report****Intersection 4: Madison Street at Victoria Avenue (West)**

Control Type:	All-way stop	Delay (sec / veh):	13.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.662

**Intersection Setup**

Name	Madison Street			Madison Street			Victoria Ave (West)			Victoria Ave (West)		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Madison Street			Madison Street			Victoria Ave (West)			Victoria Ave (West)		
Base Volume Input [veh/h]	18	91	0	0	76	24	0	0	0	2	339	158
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	18	91	0	0	76	24	0	0	0	2	339	158
Peak Hour Factor	0.8890	0.8890	1.0000	1.0000	0.8890	0.8890	1.0000	1.0000	1.0000	0.8890	0.8890	0.8890
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	26	0	0	21	7	0	0	0	1	95	44
Total Analysis Volume [veh/h]	20	102	0	0	85	27	0	0	0	2	381	178
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	862	782	921		847
Degree of Utilization, x	0.14	0.11	0.03		0.66

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	0.49	0.36	0.09		5.14
95th-Percentile Queue Length [ft]	12.29	9.12	2.26		128.52
Approach Delay [s/veh]	7.86	7.59	0.00		15.16
Approach LOS	A	A	A		C
Intersection Delay [s/veh]			12.98		
Intersection LOS			B		

**Intersection Level Of Service Report**  
**Intersection 5: Sonora Place at Lincoln Avenue**

Control Type:	Two-way stop	Delay (sec / veh):	13.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.021

**Intersection Setup**

Name	Sonora Place		Lincoln Avenue		Lincoln Avenue	
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

**Volumes**

Name	Sonora Place		Lincoln Avenue		Lincoln Avenue	
Base Volume Input [veh/h]	8	5	285	1	6	310
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00
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]	8	5	285	1	6	310
Peak Hour Factor	0.9210	0.9210	0.9210	0.9210	0.9210	0.9210
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	1	77	0	2	84
Total Analysis Volume [veh/h]	9	5	309	1	7	337
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
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	0.02	0.01	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	13.68	10.14	0.00	0.00	7.90	0.00
Movement LOS	B	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.09	0.09	0.00	0.00	0.01	0.01
95th-Percentile Queue Length [ft/ln]	2.16	2.16	0.00	0.00	0.36	0.36
d_A, Approach Delay [s/veh]	12.42		0.00		0.16	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]			0.34			
Intersection LOS			B			

**Intersection Level Of Service Report**  
**Intersection 6: Collingwood Street at Lincoln Avenue**

Control Type:	Two-way stop	Delay (sec / veh):	14.8
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.029

**Intersection Setup**

Name	Collingwood St		Lincoln Ave		Lincoln Ave	
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

**Volumes**

Name	Collingwood St		Lincoln Ave		Lincoln Ave	
Base Volume Input [veh/h]	9	13	300	7	4	310
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00
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]	9	13	300	7	4	310
Peak Hour Factor	0.8370	0.8370	0.8370	0.8370	0.8370	0.8370
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	4	90	2	1	93
Total Analysis Volume [veh/h]	11	16	358	8	5	370
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
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	0.03	0.02	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	14.83	10.66	0.00	0.00	8.03	0.00
Movement LOS	B	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.17	0.17	0.00	0.00	0.01	0.01
95th-Percentile Queue Length [ft/ln]	4.13	4.13	0.00	0.00	0.25	0.25
d_A, Approach Delay [s/veh]	12.36		0.00		0.11	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]			0.49			
Intersection LOS			B			

**Intersection Level Of Service Report**  
**Intersection 7: Dorlen Street at Lincoln Avenue**

Control Type:	Two-way stop	Delay (sec / veh):	17.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.120

**Intersection Setup**

Name	Dorlen Street			Dorlen Street			Lincoln Avenue			Lincoln Avenue		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

**Volumes**

Name	Dorlen Street			Dorlen Street			Lincoln Avenue			Lincoln Avenue		
Base Volume Input [veh/h]	34	0	14	0	0	2	0	300	10	8	277	2
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	34	0	14	0	0	2	0	300	10	8	277	2
Peak Hour Factor	0.8380	0.8380	0.8380	0.8380	0.8380	0.8380	0.8380	0.8380	0.8380	0.8380	0.8380	0.8380
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	0	4	0	0	1	0	89	3	2	83	1
Total Analysis Volume [veh/h]	41	0	17	0	0	2	0	358	12	10	331	2
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	0.12	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	17.08	16.76	11.81	15.94	15.32	10.09	7.94	0.00	0.00	8.05	0.00	0.00
Movement LOS	C	C	B	C	C	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.50	0.50	0.50	0.01	0.01	0.01	0.00	0.00	0.00	0.02	0.02	0.02
95th-Percentile Queue Length [ft/ln]	12.59	12.59	12.59	0.21	0.21	0.21	0.00	0.00	0.00	0.51	0.51	0.51
d_A, Approach Delay [s/veh]		15.54			10.09			0.00			0.23	
Approach LOS		C			B			A			A	
d_I, Intersection Delay [s/veh]							1.30					
Intersection LOS							C					

## Intersection Level Of Service Report

## Intersection 8: Washington Street at Indiana Avenue

Control Type: Signalized Delay (sec / veh): 18.1  
 Analysis Method: HCM 6th Edition Level Of Service: B  
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.542

## Intersection Setup

Name	Washington Street			Washington Street			Indiana Avenue			Indiana Avenue		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
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	Washington Street			Washington Street			Indiana Avenue			Indiana Avenue		
Base Volume Input [veh/h]	185	3	365	2	1	0	12	388	100	70	292	5
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	185	3	365	2	1	0	12	388	100	70	292	5
Peak Hour Factor	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190
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]	50	1	99	1	0	0	3	106	27	19	79	1
Total Analysis Volume [veh/h]	201	3	397	2	1	0	13	422	109	76	318	5
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	0				0			0			0	
v_di, Inbound Pedestrian Volume crossing m	0				0			0			0	
v_co, Outbound Pedestrian Volume crossing	0				0			0			0	
v_ci, Inbound Pedestrian Volume crossing mi	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]	65											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Offset [s]	0.0											
Offset Reference	LeadGreen											
Permissive Mode	SingleBand											
Lost time [s]	12.00											

**Phasing & Timing**

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [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
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	32	0	0	32	0	11	22	0	11	22	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	18	0	0	18	0	0	11	0	0	11	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	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	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	L	C	L	C	C	L	C	C
C, Cycle Length [s]	65	65	65	65	65	65	65	65	65	65
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
I1_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	0.00
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	19	19	19	19	2	29	29	5	33	33
g / C, Green / Cycle	0.29	0.29	0.29	0.29	0.02	0.44	0.44	0.08	0.50	0.50
(v / s)_i Volume / Saturation Flow Rate	0.14	0.25	0.00	0.00	0.01	0.15	0.15	0.04	0.09	0.09
s, saturation flow rate [veh/h]	1416	1591	985	1870	1781	1870	1740	1781	1870	1860
c, Capacity [veh/h]	485	463	136	544	44	827	770	146	935	930
d1, Uniform Delay [s]	20.53	21.87	30.98	16.38	31.22	11.86	11.88	28.66	8.91	8.91
k, delay calibration	0.11	0.12	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.57	5.31	0.04	0.00	3.74	1.07	1.17	2.83	0.40	0.41
d3, Initial Queue Delay [s]	0.00	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	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.41	0.86	0.01	0.00	0.30	0.33	0.33	0.52	0.17	0.17
d, Delay for Lane Group [s/veh]	21.09	27.18	31.02	16.38	34.96	12.92	13.05	31.49	9.31	9.31
Lane Group LOS	C	C	C	B	C	B	B	C	A	A
Critical Lane Group	No	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.52	6.00	0.03	0.01	0.24	2.54	2.42	1.20	1.19	1.19
50th-Percentile Queue Length [ft/ln]	62.94	149.91	0.78	0.25	5.97	63.48	60.48	30.11	29.72	29.64
95th-Percentile Queue Length [veh/ln]	4.53	10.01	0.06	0.02	0.43	4.57	4.35	2.17	2.14	2.13
95th-Percentile Queue Length [ft/ln]	113.29	250.31	1.40	0.46	10.74	114.27	108.87	54.19	53.50	53.34

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	21.09	27.18	27.18	31.02	16.38	16.38	34.96	12.97	13.05	31.49	9.31	9.31
Movement LOS	C	C	C	C	B	B	C	B	B	C	A	A
d_A, Approach Delay [s/veh]	25.15			26.14			13.51			13.53		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]				18.06								
Intersection LOS					B							
Intersection V/C				0.542								

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	22.43	22.43	22.43	22.43
I_p,int, Pedestrian LOS Score for Intersection	2.178	1.930	2.775	2.523
Crosswalk LOS	B	A	C	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	862	862	554	554
d_b, Bicycle Delay [s]	10.53	10.53	16.99	16.99
I_b,int, Bicycle LOS Score for Intersection	2.551	1.565	2.008	1.889
Bicycle LOS	B	A	B	A

**Sequence**

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 9: Washington Street at Marguerita Avenue**

Control Type:	All-way stop	Delay (sec / veh):	33.0
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.961

**Intersection Setup**

Name	Washington Street			Washington Street			Marguerita Ave			Marguerita Ave		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

**Volumes**

Name	Washington Street			Washington Street			Marguerita Ave			Marguerita Ave		
Base Volume Input [veh/h]	20	507	50	12	118	16	30	66	26	24	39	26
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	20	507	50	12	118	16	30	66	26	24	39	26
Peak Hour Factor	0.8370	0.8370	0.8370	0.8370	0.8370	0.8370	0.8370	0.8370	0.8370	0.8370	0.8370	0.8370
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]	6	151	15	4	35	5	9	20	8	7	12	8
Total Analysis Volume [veh/h]	24	606	60	14	141	19	36	79	31	29	47	31
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	718	627	566	560
Degree of Utilization, x	0.96	0.28	0.26	0.19

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	14.42	1.13	1.02	0.70
95th-Percentile Queue Length [ft]	360.39	28.21	25.62	17.52
Approach Delay [s/veh]	46.54	10.92	11.57	10.95
Approach LOS	E	B	B	B
Intersection Delay [s/veh]	33.01			
Intersection LOS	D			

**Intersection Level Of Service Report**  
**Intersection 10: Washington Street at Lincoln Avenue**

Control Type:	All-way stop	Delay (sec / veh):	46.7
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.069

**Intersection Setup**

Name	Washington Street			Washington Street			Lincoln Avenue			Lincoln Avenue		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	35.00			35.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Washington Street			Washington Street			Lincoln Avenue			Lincoln Avenue		
Base Volume Input [veh/h]	28	438	28	56	100	38	41	261	17	31	220	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	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	438	28	56	100	38	41	261	17	31	220	75
Peak Hour Factor	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230
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	119	8	15	27	10	11	71	5	8	60	20
Total Analysis Volume [veh/h]	30	475	30	61	108	41	44	283	18	34	238	81
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	535	448	468	438	483
Degree of Utilization, x	1.07	0.47	0.74	0.62	0.17

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	16.47	2.45	6.04	4.10	0.60
95th-Percentile Queue Length [ft]	411.86	61.15	150.94	102.61	14.95
Approach Delay [s/veh]	86.44	17.93	29.31		20.76
Approach LOS	F	C	D		C
Intersection Delay [s/veh]			46.74		
Intersection LOS			E		

**Intersection Level Of Service Report**  
**Intersection 11: Washington Street at Victoria Avenue (West)**

Control Type:	All-way stop	Delay (sec / veh):	13.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.559

**Intersection Setup**

Name	Washington Street			Washington Street			Victoria Ave (West)			Victoria Ave (West)		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

**Volumes**

Name	Washington Street			Washington Street			Victoria Ave (West)			Victoria Ave (West)		
Base Volume Input [veh/h]	250	474	0	0	148	11	0	0	0	124	233	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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	250	474	0	0	148	11	0	0	0	124	233	28
Peak Hour Factor	0.8990	0.8990	1.0000	1.0000	0.8990	0.8990	1.0000	1.0000	1.0000	0.8990	0.8990	0.8990
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]	70	132	0	0	41	3	0	0	0	34	65	8
Total Analysis Volume [veh/h]	278	527	0	0	165	12	0	0	0	138	259	31
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	720	773	780		512	558
Degree of Utilization, x	0.56	0.52	0.23		0.27	0.52

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	3.50	3.05	0.87		1.08	2.98
95th-Percentile Queue Length [ft]	87.38	76.33	21.78		27.03	74.50
Approach Delay [s/veh]		13.07	8.97	0.00		14.75
Approach LOS		B	A	A		B
Intersection Delay [s/veh]				13.06		
Intersection LOS				B		

**Intersection Level Of Service Report****Intersection 15: Madison Street at Victoria Avenue (East)**

Control Type:	All-way stop	Delay (sec / veh):	9.2
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.391

**Intersection Setup**

Name	Madison Street			Madison Street			Victoria Ave (East)			Victoria Ave (East)		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Madison Street			Madison Street			Victoria Ave (East)			Victoria Ave (East)		
Base Volume Input [veh/h]	0	58	12	55	23	0	51	235	5	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	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	58	12	55	23	0	51	235	5	0	0	0
Peak Hour Factor	1.0000	0.8890	0.8890	0.8890	0.8890	1.0000	0.8890	0.8890	0.8890	1.0000	1.0000	1.0000
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	16	3	15	6	0	14	66	1	0	0	0
Total Analysis Volume [veh/h]	0	65	13	62	26	0	57	264	6	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	919	869	835	
Degree of Utilization, x	0.08	0.10	0.39	

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	0.28	0.34	1.87	
95th-Percentile Queue Length [ft]	6.94	8.43	46.85	
Approach Delay [s/veh]	7.28	7.61	10.05	0.00
Approach LOS	A	A	B	A
Intersection Delay [s/veh]			9.18	
Intersection LOS			A	

**Intersection Level Of Service Report****Intersection 16: Washington Street at Victoria Avenue (East)**

Control Type:	All-way stop	Delay (sec / veh):	13.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.538

**Intersection Setup**

Name	Washington Street			Washington Street			Victoria Ave (East)			Victoria Ave (East)		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Washington Street			Washington Street			Victoria Ave (East)			Victoria Ave (East)		
Base Volume Input [veh/h]	0	713	427	18	254	0	11	202	81	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	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	713	427	18	254	0	11	202	81	0	0	0
Peak Hour Factor	1.0000	0.8990	0.8990	0.8990	0.8990	1.0000	0.8990	0.8990	0.8990	1.0000	1.0000	1.0000
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	198	119	5	71	0	3	56	23	0	0	0
Total Analysis Volume [veh/h]	0	793	475	20	283	0	12	225	90	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	753	753	883	647	476	527	
Degree of Utilization, x	0.53	0.53	0.54	0.47	0.50	0.17	

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	3.12	3.12	3.28	2.50	2.73	0.61	
95th-Percentile Queue Length [ft]	77.95	77.95	82.10	62.50	68.18	15.30	
Approach Delay [s/veh]		12.20		13.38		15.72	0.00
Approach LOS		B		B		C	A
Intersection Delay [s/veh]					13.00		
Intersection LOS					B		

**Intersection Level Of Service Report**  
**Intersection 1: Madison Street at Indiana Avenue**

Control Type:	Signalized	Delay (sec / veh):	33.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.753

**Intersection Setup**

Name	Madison Street			Madison Street			Indiana Ave			Indiana Ave		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
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			No			Yes			Yes		

**Volumes**

Name	Madison Street			Madison Street			Indiana Ave			Indiana Ave		
Base Volume Input [veh/h]	30	418	30	257	507	109	249	422	73	41	207	378
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	418	30	257	507	109	249	422	73	41	207	378
Peak Hour Factor	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320
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	0.7500
Total 15-Minute Volume [veh/h]	8	112	8	69	136	29	67	113	20	11	56	76
Total Analysis Volume [veh/h]	32	448	32	276	544	117	267	453	78	44	222	304
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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing mi	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	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]	95											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Offset [s]	0.0											
Offset Reference	LeadGreen											
Permissive Mode	SingleBand											
Lost time [s]	16.00											

**Phasing & Timing**

Control Type	Protecte	Permiss	Permiss									
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-									
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [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
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	29	0	26	44	0	29	29	0	11	11	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]	0	7	0	0	7	0	0	7	0	0	0	0
Pedestrian Clearance [s]	0	18	0	0	18	0	0	18	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No										
Maximum Recall	No	No										
Pedestrian Recall	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	C	L	C	C	L	C	C
C, Cycle Length [s]	95	95	95	95	95	95	95	95	95	95	95	95
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
I1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	15	15	17	28	28	17	42	42	5	31	31
g / C, Green / Cycle	0.04	0.16	0.16	0.18	0.29	0.29	0.17	0.45	0.45	0.05	0.32	0.32
(v / s)_i Volume / Saturation Flow Rate	0.02	0.13	0.13	0.15	0.18	0.18	0.15	0.15	0.15	0.02	0.12	0.19
s, saturation flow rate [veh/h]	1781	1870	1827	1781	1870	1757	1781	1870	1776	1781	1870	1589
c, Capacity [veh/h]	77	297	290	315	546	513	310	832	790	92	603	512
d1, Uniform Delay [s]	44.34	38.69	38.72	38.17	29.17	29.17	38.18	17.16	17.16	43.87	24.79	27.01
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
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
d2, Incremental Delay [s]	3.53	5.47	5.74	7.74	1.17	1.25	6.99	1.05	1.11	3.81	1.73	4.99
d3, Initial Queue Delay [s]	0.00	0.00	0.00	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	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	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.41	0.82	0.82	0.88	0.62	0.62	0.86	0.33	0.33	0.48	0.37	0.59
d, Delay for Lane Group [s/veh]	47.87	44.16	44.46	45.90	30.34	30.42	45.17	18.21	18.27	47.69	26.52	32.00
Lane Group LOS	D	D	D	D	C	C	D	B	B	D	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.81	5.83	5.75	6.84	6.77	6.37	6.55	3.98	3.80	1.10	4.06	6.34
50th-Percentile Queue Length [ft/ln]	20.14	145.86	143.80	171.02	169.33	159.35	163.78	99.56	95.02	27.45	101.56	158.49
95th-Percentile Queue Length [veh/ln]	1.45	9.80	9.69	11.13	11.04	10.51	10.75	7.17	6.84	1.98	7.31	10.47
95th-Percentile Queue Length [ft/ln]	36.25	244.89	242.13	278.26	276.03	262.87	268.72	179.20	171.04	49.40	182.81	261.72

**Movement, Approach, & Intersection Results**

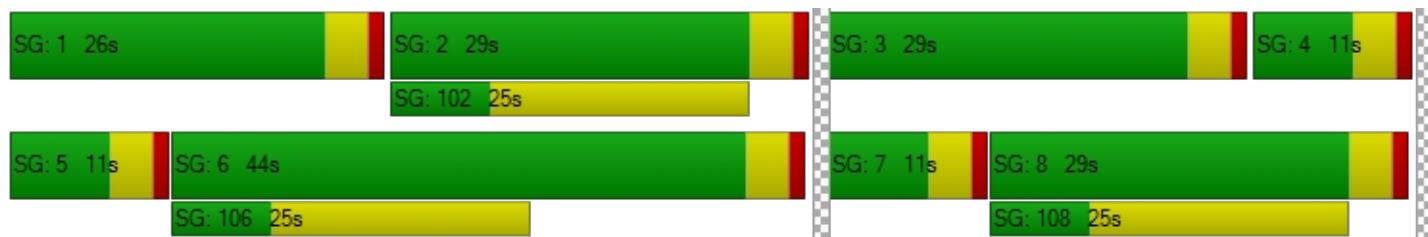
d_M, Delay for Movement [s/veh]	47.87	44.30	44.46	45.90	30.37	30.42	45.17	18.23	18.27	47.69	26.52	32.00
Movement LOS	D	D	D	D	C	C	D	B	B	D	C	C
d_A, Approach Delay [s/veh]	44.53				34.95			27.25			31.07	
Approach LOS		D			C			C			C	
d_I, Intersection Delay [s/veh]					33.73							
Intersection LOS						C						
Intersection V/C					0.753							

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	37.14	0.00	37.14	37.14
I_p,int, Pedestrian LOS Score for Intersection	2.532	0.000	2.530	2.562
Crosswalk LOS	B	F	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	526	842	526	147
d_b, Bicycle Delay [s]	25.79	15.92	25.79	40.76
I_b,int, Bicycle LOS Score for Intersection	1.982	2.333	2.218	2.030
Bicycle LOS	A	B	B	B

**Sequence**

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 2: Madison Street at Emerald Street**

Control Type:	All-way stop	Delay (sec / veh):	15.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.705

**Intersection Setup**

Name	Madison Street			Madison Street			Emerald Street			Emerald Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

**Volumes**

Name	Madison Street			Madison Street			Emerald Street			Emerald Street		
Base Volume Input [veh/h]	6	279	14	19	452	28	12	2	3	19	0	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	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	6	279	14	19	452	28	12	2	3	19	0	25
Peak Hour Factor	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380
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	74	4	5	120	7	3	1	1	5	0	7
Total Analysis Volume [veh/h]	6	297	15	20	482	30	13	2	3	20	0	27
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	635	702	655	726	594	633
Degree of Utilization, x	0.01	0.44	0.03	0.70	0.03	0.07

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	0.03	2.29	0.09	5.87	0.09	0.24
95th-Percentile Queue Length [ft]	0.71	57.36	2.36	146.86	2.34	6.00
Approach Delay [s/veh]		11.81		18.20		9.25
Approach LOS		B		C		A
Intersection Delay [s/veh]					15.34	
Intersection LOS					C	

**Intersection Level Of Service Report**  
**Intersection 3: Madison Street at Lincoln Avenue**

Control Type:	Signalized	Delay (sec / veh):	23.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.452

**Intersection Setup**

Name	Madison Street			Madison Street			Lincoln Avenue			Lincoln Avenue		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
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	Madison Street			Madison Street			Lincoln Avenue			Lincoln Avenue		
Base Volume Input [veh/h]	15	133	10	90	228	68	100	233	23	14	136	78
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	133	10	90	228	68	100	233	23	14	136	78
Peak Hour Factor	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160
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	36	3	25	62	19	27	64	6	4	37	21
Total Analysis Volume [veh/h]	16	145	11	98	249	74	109	254	25	15	148	85
Presence of On-Street Parking	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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing m	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	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]	70											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Offset [s]	0.0											
Offset Reference	LeadGreen											
Permissive Mode	SingleBand											
Lost time [s]	16.00											

**Phasing & Timing**

Control Type	Protecte	Permiss	Permiss									
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-									
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [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
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	25	0	11	25	0	12	23	0	11	22	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]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	14	0	0	14	0	0	11	0	0	11	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No										
Maximum Recall	No	No										
Pedestrian Recall	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
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
I1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	2	11	6	15	6	36	2	31	31
g / C, Green / Cycle	0.03	0.15	0.09	0.21	0.09	0.51	0.03	0.44	0.44
(v / s)_i Volume / Saturation Flow Rate	0.01	0.08	0.06	0.18	0.06	0.15	0.01	0.06	0.07
s, saturation flow rate [veh/h]	1781	1847	1781	1797	1781	1841	1781	1870	1651
c, Capacity [veh/h]	51	284	155	381	158	928	48	828	731
d1, Uniform Delay [s]	33.44	27.46	31.00	26.59	31.07	10.17	33.53	11.66	11.71
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.50	0.11	0.50	0.50
I, 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]	3.41	1.65	4.25	5.28	5.25	0.83	3.57	0.37	0.45
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	0.31	0.55	0.63	0.85	0.69	0.30	0.31	0.14	0.15
d, Delay for Lane Group [s/veh]	36.84	29.11	35.25	31.87	36.31	11.00	37.09	12.03	12.17
Lane Group LOS	D	C	D	C	D	B	D	B	B
Critical Lane Group	Yes	No	No	Yes	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.31	2.45	1.73	5.47	1.96	2.43	0.29	1.10	1.06
50th-Percentile Queue Length [ft/ln]	7.69	61.26	43.24	136.86	48.93	60.65	7.28	27.52	26.40
95th-Percentile Queue Length [veh/ln]	0.55	4.41	3.11	9.31	3.52	4.37	0.52	1.98	1.90
95th-Percentile Queue Length [ft/ln]	13.85	110.28	77.84	232.78	88.08	109.17	13.11	49.54	47.51

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	36.84	29.11	29.11	35.25	31.87	31.87	36.31	11.00	11.00	37.09	12.05	12.17
Movement LOS	D	C	C	D	C	C	D	B	B	D	B	B
d_A, Approach Delay [s/veh]	29.83			32.66			18.11			13.61		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]				23.83								
Intersection LOS					C							
Intersection V/C				0.452								

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	24.86	24.86	24.86	24.86
I_p,int, Pedestrian LOS Score for Intersection	2.076	2.173	2.270	2.266
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	600	600	543	514
d_b, Bicycle Delay [s]	17.15	17.15	18.58	19.31
I_b,int, Bicycle LOS Score for Intersection	1.843	2.254	2.200	1.764
Bicycle LOS	A	B	B	A

**Sequence**

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report****Intersection 4: Madison Street at Victoria Avenue (West)**

Control Type:	All-way stop	Delay (sec / veh):	9.4
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.359

**Intersection Setup**

Name	Madison Street			Madison Street			Victoria Ave (West)			Victoria Ave (West)		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Madison Street			Madison Street			Victoria Ave (West)			Victoria Ave (West)		
Base Volume Input [veh/h]	4	54	0	0	233	41	0	0	0	3	200	54
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	54	0	0	233	41	0	0	0	3	200	54
Peak Hour Factor	0.9130	0.9130	1.0000	1.0000	0.9130	0.9130	1.0000	1.0000	1.0000	0.9130	0.9130	0.9130
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	15	0	0	64	11	0	0	0	1	55	15
Total Analysis Volume [veh/h]	4	59	0	0	255	45	0	0	0	3	219	59
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	831	787	930		783
Degree of Utilization, x	0.08	0.32	0.05		0.36

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	0.25	1.41	0.15		1.64
95th-Percentile Queue Length [ft]	6.13	35.20	3.81		40.96
Approach Delay [s/veh]	7.68		9.05	0.00	10.16
Approach LOS	A		A	A	B
Intersection Delay [s/veh]			9.40		
Intersection LOS			A		

**Intersection Level Of Service Report**  
**Intersection 5: Sonora Place at Lincoln Avenue**

Control Type:	Two-way stop	Delay (sec / veh):	13.6
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.009

**Intersection Setup**

Name	Sonora Place		Lincoln Avenue		Lincoln Avenue	
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

**Volumes**

Name	Sonora Place		Lincoln Avenue		Lincoln Avenue	
Base Volume Input [veh/h]	3	4	319	9	5	224
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00
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]	3	4	319	9	5	224
Peak Hour Factor	0.8440	0.8440	0.8440	0.8440	0.8440	0.8440
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	1	94	3	1	66
Total Analysis Volume [veh/h]	4	5	378	11	6	265
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
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	0.01	0.01	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	13.59	10.54	0.00	0.00	8.09	0.00
Movement LOS	B	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.05	0.05	0.00	0.00	0.01	0.01
95th-Percentile Queue Length [ft/ln]	1.29	1.29	0.00	0.00	0.32	0.32
d_A, Approach Delay [s/veh]	11.89		0.00		0.18	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]			0.23			
Intersection LOS			B			

**Intersection Level Of Service Report**  
**Intersection 6: Collingwood Street at Lincoln Avenue**

Control Type:	Two-way stop	Delay (sec / veh):	13.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.030

**Intersection Setup**

Name	Collingwood St		Lincoln Ave		Lincoln Ave	
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

**Volumes**

Name	Collingwood St		Lincoln Ave		Lincoln Ave	
Base Volume Input [veh/h]	12	3	313	13	2	214
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00
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]	12	3	313	13	2	214
Peak Hour Factor	0.8870	0.8870	0.8870	0.8870	0.8870	0.8870
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	1	88	4	1	60
Total Analysis Volume [veh/h]	14	3	353	15	2	241
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
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	0.03	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	13.10	10.53	0.00	0.00	8.03	0.00
Movement LOS	B	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.11	0.11	0.00	0.00	0.01	0.01
95th-Percentile Queue Length [ft/ln]	2.70	2.70	0.00	0.00	0.13	0.13
d_A, Approach Delay [s/veh]		12.65		0.00		0.07
Approach LOS		B		A		A
d_I, Intersection Delay [s/veh]				0.37		
Intersection LOS				B		

**Intersection Level Of Service Report**  
**Intersection 7: Dorlen Street at Lincoln Avenue**

Control Type:	Two-way stop	Delay (sec / veh):	13.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.038

**Intersection Setup**

Name	Dorlen Street			Dorlen Street			Lincoln Avenue			Lincoln Avenue		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

**Volumes**

Name	Dorlen Street			Dorlen Street			Lincoln Avenue			Lincoln Avenue		
Base Volume Input [veh/h]	16	0	7	0	0	2	1	291	23	10	186	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 [%]	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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	0	7	0	0	2	1	291	23	10	186	1
Peak Hour Factor	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450
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	0	2	0	0	1	0	77	6	3	49	0
Total Analysis Volume [veh/h]	17	0	7	0	0	2	1	308	24	11	197	1
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	0.04	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	13.43	13.49	10.35	13.17	13.27	9.28	7.62	0.00	0.00	7.96	0.00	0.00
Movement LOS	B	B	B	B	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.15	0.15	0.15	0.01	0.01	0.01	0.00	0.00	0.00	0.02	0.02	0.02
95th-Percentile Queue Length [ft/ln]	3.76	3.76	3.76	0.18	0.18	0.18	0.05	0.05	0.05	0.62	0.62	0.62
d_A, Approach Delay [s/veh]		12.53			9.28			0.02			0.42	
Approach LOS		B			A			A			A	
d_I, Intersection Delay [s/veh]							0.73					
Intersection LOS							B					

## Intersection Level Of Service Report

## Intersection 8: Washington Street at Indiana Avenue

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): 0.522

## Intersection Setup

Name	Washington Street			Washington Street			Indiana Avenue			Indiana Avenue		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
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	Washington Street			Washington Street			Indiana Avenue			Indiana Avenue		
Base Volume Input [veh/h]	154	0	178	14	14	9	5	523	156	129	393	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 [%]	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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	154	0	178	14	14	9	5	523	156	129	393	1
Peak Hour Factor	0.8780	0.8780	0.8780	0.8780	0.8780	0.8780	0.8780	0.8780	0.8780	0.8780	0.8780	0.8780
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]	44	0	51	4	4	3	1	149	44	37	112	0
Total Analysis Volume [veh/h]	175	0	203	16	16	10	6	596	178	147	448	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	0					0			0			0
v_di, Inbound Pedestrian Volume crossing m	0					0			0			0
v_co, Outbound Pedestrian Volume crossing	0					0			0			0
v_ci, Inbound Pedestrian Volume crossing mi	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]	65											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Offset [s]	0.0											
Offset Reference	LeadGreen											
Permissive Mode	SingleBand											
Lost time [s]	12.00											

**Phasing & Timing**

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [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
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	29	0	0	29	0	11	22	0	14	25	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	18	0	0	18	0	0	11	0	0	11	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	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	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	L	C	L	C	C	L	C	C
C, Cycle Length [s]	65	65	65	65	65	65	65	65	65	65
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
I1_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	0.00
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	14	14	14	14	1	32	32	7	39	39
g / C, Green / Cycle	0.21	0.21	0.21	0.21	0.01	0.50	0.50	0.11	0.59	0.59
(v / s)_i Volume / Saturation Flow Rate	0.13	0.13	0.01	0.01	0.00	0.22	0.22	0.08	0.12	0.12
s, saturation flow rate [veh/h]	1384	1589	1179	1751	1781	1870	1724	1781	1870	1869
c, Capacity [veh/h]	336	332	179	366	21	934	861	191	1113	1112
d1, Uniform Delay [s]	26.08	23.34	29.28	20.66	31.88	10.38	10.39	28.25	6.06	6.06
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.25	1.83	0.21	0.08	7.62	1.45	1.58	6.39	0.41	0.41
d3, Initial Queue Delay [s]	0.00	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	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.52	0.61	0.09	0.07	0.29	0.43	0.43	0.77	0.20	0.20
d, Delay for Lane Group [s/veh]	27.33	25.16	29.49	20.75	39.50	11.83	11.97	34.64	6.47	6.47
Lane Group LOS	C	C	C	C	D	B	B	C	A	A
Critical Lane Group	No	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.57	2.82	0.24	0.31	0.13	3.53	3.30	2.46	1.26	1.26
50th-Percentile Queue Length [ft/ln]	64.14	70.51	5.99	7.73	3.34	88.32	82.50	61.53	31.44	31.43
95th-Percentile Queue Length [veh/ln]	4.62	5.08	0.43	0.56	0.24	6.36	5.94	4.43	2.26	2.26
95th-Percentile Queue Length [ft/ln]	115.46	126.93	10.79	13.91	6.01	158.97	148.50	110.75	56.60	56.57

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	27.33	25.16	25.16	29.49	20.75	20.75	39.50	11.88	11.97	34.64	6.47	6.47
Movement LOS	C	C	C	C	C	C	D	B	B	C	A	A
d_A, Approach Delay [s/veh]	26.17			24.08			12.11			13.41		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]				15.78								
Intersection LOS				B								
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 <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	22.43	22.43	22.43	22.43
I_p,int, Pedestrian LOS Score for Intersection	2.156	1.938	2.806	2.580
Crosswalk LOS	B	A	C	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	769	769	554	646
d_b, Bicycle Delay [s]	12.31	12.31	16.99	14.89
I_b,int, Bicycle LOS Score for Intersection	2.183	1.629	2.203	2.051
Bicycle LOS	B	A	B	B

**Sequence**

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 9: Washington Street at Marguerita Avenue**

Control Type:	All-way stop	Delay (sec / veh):	11.8
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.506

**Intersection Setup**

Name	Washington Street			Washington Street			Marguerita Ave			Marguerita Ave		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

**Volumes**

Name	Washington Street			Washington Street			Marguerita Ave			Marguerita Ave		
Base Volume Input [veh/h]	32	304	19	22	279	12	15	34	22	16	44	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 [%]	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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	32	304	19	22	279	12	15	34	22	16	44	13
Peak Hour Factor	0.9350	0.9350	0.9350	0.9350	0.9350	0.9350	0.9350	0.9350	0.9350	0.9350	0.9350	0.9350
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]	9	81	5	6	75	3	4	9	6	4	12	3
Total Analysis Volume [veh/h]	34	325	20	24	298	13	16	36	24	17	47	14
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	749	740	635	626
Degree of Utilization, x	0.51	0.45	0.12	0.12

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	2.90	2.37	0.41	0.42
95th-Percentile Queue Length [ft]	72.39	59.27	10.14	10.60
Approach Delay [s/veh]	12.64	11.83	9.44	9.56
Approach LOS	B	B	A	A
Intersection Delay [s/veh]	11.77			
Intersection LOS	B			

**Intersection Level Of Service Report****Intersection 10: Washington Street at Lincoln Avenue**

Control Type:	All-way stop	Delay (sec / veh):	18.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.654

**Intersection Setup**

Name	Washington Street			Washington Street			Lincoln Avenue			Lincoln Avenue		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	35.00			35.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Washington Street			Washington Street			Lincoln Avenue			Lincoln Avenue		
Base Volume Input [veh/h]	16	233	14	58	257	26	16	255	23	33	151	45
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	233	14	58	257	26	16	255	23	33	151	45
Peak Hour Factor	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450
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	62	4	15	68	7	4	67	6	9	40	12
Total Analysis Volume [veh/h]	17	247	15	61	272	28	17	270	24	35	160	48
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	536	552	529	479	536
Degree of Utilization, x	0.52	0.65	0.59	0.41	0.09

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	2.98	4.73	3.76	1.95	0.29
95th-Percentile Queue Length [ft]	74.58	118.28	94.05	48.86	7.33
Approach Delay [s/veh]	16.79	21.00	19.06	14.26	
Approach LOS	C	C	C	B	
Intersection Delay [s/veh]	18.14				
Intersection LOS	C				

**Intersection Level Of Service Report**  
**Intersection 11: Washington Street at Victoria Avenue (West)**

Control Type:	All-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):	0.486

**Intersection Setup**

Name	Washington Street			Washington Street			Victoria Ave (West)			Victoria Ave (West)		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

**Volumes**

Name	Washington Street			Washington Street			Victoria Ave (West)			Victoria Ave (West)		
Base Volume Input [veh/h]	76	241	0	0	263	10	0	0	0	264	179	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 [%]	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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	76	241	0	0	263	10	0	0	0	264	179	20
Peak Hour Factor	0.9610	0.9610	1.0000	1.0000	0.9610	0.9610	1.0000	1.0000	1.0000	0.9610	0.9610	0.9610
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	63	0	0	68	3	0	0	0	69	47	5
Total Analysis Volume [veh/h]	79	251	0	0	274	10	0	0	0	275	186	21
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	727	764	833		566	622
Degree of Utilization, x	0.23	0.22	0.34		0.49	0.33

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	0.87	0.82	1.52		2.65	1.46
95th-Percentile Queue Length [ft]	21.76	20.45	38.00		66.16	36.42
Approach Delay [s/veh]	8.91		9.55	0.00		13.40
Approach LOS	A		A	A		B
Intersection Delay [s/veh]				11.05		
Intersection LOS				B		

**Intersection Level Of Service Report****Intersection 15: Madison Street at Victoria Avenue (East)**

Control Type:	All-way stop	Delay (sec / veh):	12.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.600

**Intersection Setup**

Name	Madison Street			Madison Street			Victoria Ave (East)			Victoria Ave (East)		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Madison Street			Madison Street			Victoria Ave (East)			Victoria Ave (East)		
Base Volume Input [veh/h]	0	11	1	168	68	0	47	376	13	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	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	11	1	168	68	0	47	376	13	0	0	0
Peak Hour Factor	1.0000	0.9130	0.9130	0.9130	0.9130	1.0000	0.9130	0.9130	0.9130	1.0000	1.0000	1.0000
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	3	0	46	19	0	13	103	4	0	0	0
Total Analysis Volume [veh/h]	0	12	1	184	74	0	51	412	14	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	872	881	795	
Degree of Utilization, x	0.01	0.29	0.60	

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	0.05	1.22	4.08	
95th-Percentile Queue Length [ft]	1.13	30.61	101.94	
Approach Delay [s/veh]	7.19	8.77	14.07	0.00
Approach LOS	A	A	B	A
Intersection Delay [s/veh]		12.12		
Intersection LOS		B		

### Intersection Level Of Service Report

#### Intersection 16: Washington Street at Victoria Avenue (East)

Control Type:	All-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):	0.747

#### Intersection Setup

Name	Washington Street			Washington Street			Victoria Ave (East)			Victoria Ave (East)		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

#### Volumes

Name	Washington Street			Washington Street			Victoria Ave (East)			Victoria Ave (East)		
Base Volume Input [veh/h]	0	310	185	8	519	0	7	250	307	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	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	310	185	8	519	0	7	250	307	0	0	0
Peak Hour Factor	1.0000	0.9610	0.9610	0.9610	0.9610	1.0000	0.9610	0.9610	0.9610	1.0000	1.0000	1.0000
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	81	48	2	135	0	2	65	80	0	0	0
Total Analysis Volume [veh/h]	0	323	193	8	540	0	7	260	319	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	731	731	853	734	513	571	
Degree of Utilization, x	0.22	0.22	0.23	0.75	0.52	0.56	

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	0.84	0.84	0.87	6.84	2.97	3.43	
95th-Percentile Queue Length [ft]	21.04	21.04	21.73	170.97	74.29	85.68	
Approach Delay [s/veh]		8.70		20.90		16.88	0.00
Approach LOS		A		C		C	A
Intersection Delay [s/veh]				15.66			
Intersection LOS				C			

## APPENDIX C

### MODEL POST-PROCESSING WORKSHEETS

**Intersection Key**  
**Casa Blanca Elementary School Project, Riverside**

Vistro Model Number	Report Number	Key Study Intersections
1	1	Madison Street at Indiana Avenue (traffic signal)
2	2	Madison Street at Emerald Street (all-way stop)
3	3	Madison Street at Lincoln Avenue (traffic signal)
4	4A	Madison Street at Victoria Avenue (West)
5	5	Sonora Place at Lincoln Avenue (one-way stop)
6	6	Collingwood Street/ProjectDwy 3 at Lincoln Avenue (one-way stop)
7	7	Dorlen Street at Lincoln Avenue (two-way stop)
8	8	Washington Street at Indiana Avenue (traffic signal)
9	9	Washington Street at Marguerita Avenue (all-way stop)
10	10	Washington Street at Lincoln Avenue (all-way stop)
11	11A	Washington Street at Victoria Avenue (West)
12	A	Project Driveway 1 at Lincoln Avenue
13	B	Project Driveway 2 at Lincoln Avenue
14	C	Project Driveway 4 at Lincoln Avenue
15	4B	Madison Street at Victoria Avenue (East)
16	11B	Washington Street at Victoria Avenue (East)

**1. Madison Street at Indiana Avenue (traffic signal)**

**AM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

APPROACH	TURN	BY	FY
MOVEMENT	COUNT	APPROACH	TOTAL
-----	-----	-----	-----
NORTH	LEFT	29	NORTHBOUND
BOUND	THRU	367	IN ...
	RIGHT	29	OUT ...
SOUTH	LEFT	256	SOUTHBOUND
BOUND	THRU	320	IN ...
	RIGHT	202	OUT ...
EAST	LEFT	185	EASTBOUND
BOUND	THRU	337	IN ...
	RIGHT	27	OUT ...
WEST	LEFT	23	WESTBOUND
BOUND	THRU	122	IN ...
	RIGHT	270	OUT ...
			595

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN	BY	FY
MOVEMENT	COUNT	FORECAST	
-----	-----	-----	-----
NORTH	LEFT	29	33
BOUND	THRU	367	454
	RIGHT	29	37
SOUTH	LEFT	256	339
BOUND	THRU	320	465
	RIGHT	202	277
EAST	LEFT	185	254
BOUND	THRU	337	464
	RIGHT	27	30
WEST	LEFT	23	30
BOUND	THRU	122	235
	RIGHT	270	360

**2. Madison Street at Emerald Street (all-way stop)**

**AM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

APPROACH	TURN	BY	FY
MOVEMENT	COUNT	APPROACH	TOTAL
-----	-----	-----	-----
NORTH	LEFT	27	NORTHBOUND
BOUND	THRU	366	IN ...
	RIGHT	25	OUT ...
SOUTH	LEFT	12	SOUTHBOUND
BOUND	THRU	226	IN ...
	RIGHT	12	OUT ...
EAST	LEFT	9	EASTBOUND
BOUND	THRU	0	IN ...
	RIGHT	5	OUT ...
WEST	LEFT	11	WESTBOUND
BOUND	THRU	2	IN ...
	RIGHT	17	OUT ...
			37

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN	BY	FY
MOVEMENT	COUNT	FORECAST	
-----	-----	-----	-----
NORTH	LEFT	27	29
BOUND	THRU	366	457
	RIGHT	25	27
SOUTH	LEFT	12	13
BOUND	THRU	226	295
	RIGHT	12	13
EAST	LEFT	9	10
BOUND	THRU	0	0
	RIGHT	5	5
WEST	LEFT	11	12
BOUND	THRU	2	2
	RIGHT	17	18

**3. Madison Street at Lincoln Avenue (traffic signal)**

**AM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

APPROACH	TURN	BY	FY	
MOVEMENT	COUNT	APPROACH	TOTAL	
-----	-----	-----	-----	
NORTH	LEFT	24	NORTHBOUND	
BOUND	THRU	218	IN ...	405
	RIGHT	18	OUT ...	214
SOUTH	LEFT	72	SOUTHBOUND	
BOUND	THRU	92	IN ...	330
	RIGHT	97	OUT ...	509
EAST	LEFT	92	EASTBOUND	
BOUND	THRU	210	IN ...	308
	RIGHT	10	OUT ...	232
WEST	LEFT	7	WESTBOUND	
BOUND	THRU	208	IN ...	174
	RIGHT	108	OUT ...	261

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN	BY	FY
MOVEMENT	COUNT	FORECAST	
-----	-----	-----	-----
NORTH	LEFT	24	35
BOUND	THRU	218	346
	RIGHT	18	22
SOUTH	LEFT	72	92
BOUND	THRU	92	184
	RIGHT	97	177
EAST	LEFT	92	124
BOUND	THRU	210	268
	RIGHT	10	22
WEST	LEFT	7	9
BOUND	THRU	208	266
	RIGHT	108	138

**4. Madison Street at Victoria Avenue (all-way stop)**

**AM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

APPROACH	TURN	BY	FY
MOVEMENT	COUNT	APPROACH	TOTAL
NORTH	LEFT	18	NORTHBOUND
BOUND	THRU	40	IN ...
	RIGHT	12	OUT ...
SOUTH	LEFT	55	SOUTHBOUND
BOUND	THRU	21	IN ...
	RIGHT	24	OUT ...
EAST	LEFT	51	EASTBOUND
BOUND	THRU	235	IN ...
	RIGHT	5	OUT ...
WEST	LEFT	2	WESTBOUND
BOUND	THRU	339	IN ...
	RIGHT	158	OUT ...

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN	BY	FY
MOVEMENT	COUNT	FORECAST	
NORTH	LEFT	18	86
BOUND	THRU	40	168
	RIGHT	12	37
SOUTH	LEFT	55	70
BOUND	THRU	21	133
	RIGHT	24	29
EAST	LEFT	51	60
BOUND	THRU	235	306
	RIGHT	5	35
WEST	LEFT	2	12
BOUND	THRU	339	405
	RIGHT	158	202

**5. Sonora Place at Lincoln Avenue (one-way stop)**

**AM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

APPROACH	MOVEMENT	TURN	BY	APPROACH	FY
		COUNT	TOTAL		
NORTH BOUND	LEFT	8	NORTHBOUND		
	THRU	0		IN ...	13
	RIGHT	5		OUT ...	7
SOUTH BOUND	LEFT	0	SOUTHBOUND		
	THRU	0		IN ...	0
	RIGHT	0		OUT ...	0
EAST BOUND	LEFT	0	EASTBOUND		
	THRU	285		IN ...	247
	RIGHT	1		OUT ...	169
WEST BOUND	LEFT	6	WESTBOUND		
	THRU	310		IN ...	167
	RIGHT	0		OUT ...	251

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	MOVEMENT	TURN	BY	FY
		COUNT	FORECAST	
NORTH BOUND	LEFT	8		9
	THRU	0		0
	RIGHT	5		5
SOUTH BOUND	LEFT	0		0
	THRU	0		0
	RIGHT	0		0
EAST BOUND	LEFT	0		0
	THRU	285		363
	RIGHT	1		1
WEST BOUND	LEFT	6		6
	THRU	310		395
	RIGHT	0		0

**6. Collingwood Street/Project Driveway 3 at Lincoln Avenue (one-way stop)**

**AM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

APPROACH	TURN	BY	FY
MOVEMENT	COUNT	APPROACH	TOTAL
NORTH	LEFT	9	NORTHBOUND
BOUND	THRU	0	IN ...
	RIGHT	13	OUT ...
SOUTH	LEFT	0	SOUTHBOUND
BOUND	THRU	0	IN ...
	RIGHT	0	OUT ...
EAST	LEFT	0	EASTBOUND
BOUND	THRU	300	IN ...
	RIGHT	7	OUT ...
WEST	LEFT	4	WESTBOUND
BOUND	THRU	310	IN ...
	RIGHT	0	OUT ...

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN	BY	FY
MOVEMENT	COUNT	FORECAST	
NORTH	LEFT	9	10
BOUND	THRU	0	0
	RIGHT	13	14
SOUTH	LEFT	0	0
BOUND	THRU	0	0
	RIGHT	0	0
EAST	LEFT	0	0
BOUND	THRU	300	382
	RIGHT	7	8
WEST	LEFT	4	4
BOUND	THRU	310	395
	RIGHT	0	0

**7. Dorlen Street at Lincoln Avenue (two-way stop)**

**AM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

APPROACH	TURN	BY	FY
MOVEMENT	COUNT	APPROACH	TOTAL
NORTH	LEFT	34	NORTHBOUND
BOUND	THRU	0	IN ...
	RIGHT	14	OUT ...
SOUTH	LEFT	0	SOUTHBOUND
BOUND	THRU	0	IN ...
	RIGHT	2	OUT ...
EAST	LEFT	0	EASTBOUND
BOUND	THRU	300	IN ...
	RIGHT	10	OUT ...
WEST	LEFT	8	WESTBOUND
BOUND	THRU	277	IN ...
	RIGHT	2	OUT ...

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN	BY	FY
MOVEMENT	COUNT	FORECAST	
NORTH	LEFT	34	37
BOUND	THRU	0	0
	RIGHT	14	15
SOUTH	LEFT	0	0
BOUND	THRU	0	0
	RIGHT	2	2
EAST	LEFT	0	0
BOUND	THRU	300	382
	RIGHT	10	12
WEST	LEFT	8	9
BOUND	THRU	277	353
	RIGHT	2	2

**8. Washington Street at Indiana Avenue (traffic signal)**

**AM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

APPROACH	TURN	BY	FY
MOVEMENT	COUNT	APPROACH	TOTAL
-----	-----	-----	-----
NORTH	LEFT	185	NORTHBOUND
BOUND	THRU	3	IN ...
	RIGHT	365	OUT ...
SOUTH	LEFT	2	SOUTHBOUND
BOUND	THRU	1	IN ...
	RIGHT	0	OUT ...
EAST	LEFT	12	EASTBOUND
BOUND	THRU	388	IN ...
	RIGHT	100	OUT ...
WEST	LEFT	70	WESTBOUND
BOUND	THRU	292	IN ...
	RIGHT	5	OUT ...
			728

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN	BY	FY
MOVEMENT	COUNT	FORECAST	
-----	-----	-----	-----
NORTH	LEFT	185	245
BOUND	THRU	3	3
	RIGHT	365	467
SOUTH	LEFT	2	2
BOUND	THRU	1	1
	RIGHT	0	0
EAST	LEFT	12	13
BOUND	THRU	388	535
	RIGHT	100	133
WEST	LEFT	70	92
BOUND	THRU	292	459
	RIGHT	5	5

**9. Washington Street at Marguerita Avenue (all-way stop)**

**AM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

APPROACH	TURN	BY	FY
MOVEMENT	COUNT	APPROACH	TOTAL
NORTH	LEFT	20	NORTHBOUND
BOUND	THRU	507	IN ...
	RIGHT	50	OUT ...
SOUTH	LEFT	12	SOUTHBOUND
BOUND	THRU	118	IN ...
	RIGHT	16	OUT ...
EAST	LEFT	30	EASTBOUND
BOUND	THRU	66	IN ...
	RIGHT	26	OUT ...
WEST	LEFT	24	WESTBOUND
BOUND	THRU	39	IN ...
	RIGHT	26	OUT ...

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN	BY	FY
MOVEMENT	COUNT	FORECAST	
NORTH	LEFT	20	22
BOUND	THRU	507	658
	RIGHT	50	54
SOUTH	LEFT	12	13
BOUND	THRU	118	158
	RIGHT	16	17
EAST	LEFT	30	32
BOUND	THRU	66	71
	RIGHT	26	28
WEST	LEFT	24	26
BOUND	THRU	39	42
	RIGHT	26	28

**10. Washington Street at Lincoln Avenue (all-way stop)**

**AM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

APPROACH	TURN	BY	FY
MOVEMENT	COUNT	APPROACH	TOTAL
NORTH	LEFT	28	NORTHBOUND
BOUND	THRU	438	IN ...
	RIGHT	28	OUT ...
SOUTH	LEFT	56	SOUTHBOUND
BOUND	THRU	100	IN ...
	RIGHT	38	OUT ...
EAST	LEFT	41	EASTBOUND
BOUND	THRU	261	IN ...
	RIGHT	17	OUT ...
WEST	LEFT	31	WESTBOUND
BOUND	THRU	220	IN ...
	RIGHT	75	OUT ...

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN	BY	FY
MOVEMENT	COUNT	FORECAST	
NORTH	LEFT	28	35
BOUND	THRU	438	570
	RIGHT	28	54
SOUTH	LEFT	56	72
BOUND	THRU	100	136
	RIGHT	38	48
EAST	LEFT	41	52
BOUND	THRU	261	333
	RIGHT	17	21
WEST	LEFT	31	39
BOUND	THRU	220	281
	RIGHT	75	96

**11. Washington Street at Victoria Avenue (all-way stop)**

**AM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

APPROACH	TURN	BY	FY
MOVEMENT	COUNT	APPROACH	TOTAL
-----	-----	-----	-----
NORTH	LEFT	250	NORTHBOUND
BOUND	THRU	463	IN ...
	RIGHT	427	OUT ...
SOUTH	LEFT	18	SOUTHBOUND
BOUND	THRU	130	IN ...
	RIGHT	11	OUT ...
EAST	LEFT	11	EASTBOUND
BOUND	THRU	202	IN ...
	RIGHT	81	OUT ...
WEST	LEFT	124	WESTBOUND
BOUND	THRU	233	IN ...
	RIGHT	28	OUT ...
			657

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN	BY	FY
MOVEMENT	COUNT	FORECAST	
-----	-----	-----	-----
NORTH	LEFT	250	357
BOUND	THRU	463	538
	RIGHT	427	473
SOUTH	LEFT	18	22
BOUND	THRU	130	173
	RIGHT	11	14
EAST	LEFT	11	14
BOUND	THRU	202	263
	RIGHT	81	98
WEST	LEFT	124	158
BOUND	THRU	233	297
	RIGHT	28	35

**12. Project Driveway 1 at Lincoln Avenue**

**AM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

APPROACH	TURN	BY	FY	
MOVEMENT	COUNT	APPROACH	TOTAL	
NORTH	LEFT	0	NORTHBOUND	
BOUND	THRU	0	IN ...	0
	RIGHT	0	OUT ...	0
SOUTH	LEFT	0	SOUTHBOUND	
BOUND	THRU	0	IN ...	0
	RIGHT	0	OUT ...	0
EAST	LEFT	0	EASTBOUND	
BOUND	THRU	286	IN ...	247
	RIGHT	0	OUT ...	169
WEST	LEFT	0	WESTBOUND	
BOUND	THRU	318	IN ...	169
	RIGHT	0	OUT ...	247

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN	BY	FY
MOVEMENT	COUNT	FORECAST	
NORTH	LEFT	0	0
BOUND	THRU	0	0
	RIGHT	0	0
SOUTH	LEFT	0	0
BOUND	THRU	0	0
	RIGHT	0	0
EAST	LEFT	0	0
BOUND	THRU	286	365
	RIGHT	0	0
WEST	LEFT	0	0
BOUND	THRU	318	405
	RIGHT	0	0

### 13. Project Driveway 2 at Lincoln Avenue

#### AM PEAK HOUR

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

APPROACH	TURN	BY	FY	
MOVEMENT	COUNT	APPROACH	TOTAL	
-----	-----	-----	-----	
NORTH	LEFT	0	NORTHBOUND	
BOUND	THRU	0	IN ...	0
	RIGHT	0	OUT ...	0
SOUTH	LEFT	0	SOUTHBOUND	
BOUND	THRU	0	IN ...	0
	RIGHT	0	OUT ...	0
EAST	LEFT	0	EASTBOUND	
BOUND	THRU	290	IN ...	251
	RIGHT	0	OUT ...	167
WEST	LEFT	0	WESTBOUND	
BOUND	THRU	316	IN ...	167
	RIGHT	0	OUT ...	251

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN	BY	FY
MOVEMENT	COUNT	FORECAST	
-----	-----	-----	-----
NORTH	LEFT	0	0
BOUND	THRU	0	0
	RIGHT	0	0
SOUTH	LEFT	0	0
BOUND	THRU	0	0
	RIGHT	0	0
EAST	LEFT	0	0
BOUND	THRU	290	369
	RIGHT	0	0
WEST	LEFT	0	0
BOUND	THRU	316	402
	RIGHT	0	0

**14. Project Driveway 4 at Lincoln Avenue**

**AM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

APPROACH	TURN	BY	FY	
MOVEMENT	COUNT	APPROACH	TOTAL	
NORTH	LEFT	0	NORTHBOUND	
BOUND	THRU	0	IN ...	0
	RIGHT	0	OUT ...	0
SOUTH	LEFT	0	SOUTHBOUND	
BOUND	THRU	0	IN ...	0
	RIGHT	0	OUT ...	0
EAST	LEFT	0	EASTBOUND	
BOUND	THRU	313	IN ...	274
	RIGHT	0	OUT ...	165
WEST	LEFT	0	WESTBOUND	
BOUND	THRU	314	IN ...	165
	RIGHT	0	OUT ...	274

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN	BY	FY
MOVEMENT	COUNT	FORECAST	
NORTH	LEFT	0	0
BOUND	THRU	0	0
	RIGHT	0	0
SOUTH	LEFT	0	0
BOUND	THRU	0	0
	RIGHT	0	0
EAST	LEFT	0	0
BOUND	THRU	313	399
	RIGHT	0	0
WEST	LEFT	0	0
BOUND	THRU	314	400
	RIGHT	0	0

**1. Madison Street at Indiana Avenue (traffic signal)**

**PM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

APPROACH	TURN	BY	FY
MOVEMENT	COUNT	APPROACH	TOTAL
NORTH	LEFT	30	NORTHBOUND
BOUND	THRU	418	IN ...
	RIGHT	30	OUT ...
SOUTH	LEFT	257	SOUTHBOUND
BOUND	THRU	507	IN ...
	RIGHT	109	OUT ...
EAST	LEFT	249	EASTBOUND
BOUND	THRU	422	IN ...
	RIGHT	73	OUT ...
WEST	LEFT	41	WESTBOUND
BOUND	THRU	207	IN ...
	RIGHT	378	OUT ...

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN	BY	FY
MOVEMENT	COUNT	FORECAST	
NORTH	LEFT	30	38
BOUND	THRU	418	595
	RIGHT	30	34
SOUTH	LEFT	257	352
BOUND	THRU	507	632
	RIGHT	109	168
EAST	LEFT	249	352
BOUND	THRU	422	624
	RIGHT	73	85
WEST	LEFT	41	56
BOUND	THRU	207	346
	RIGHT	378	507

**2. Madison Street at Emerald Street (all-way stop)**

**PM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

APPROACH	TURN	BY	FY
MOVEMENT	COUNT	APPROACH	TOTAL
NORTH	LEFT	6	NORTHBOUND
BOUND	THRU	279	IN ...
	RIGHT	14	OUT ...
SOUTH	LEFT	19	SOUTHBOUND
BOUND	THRU	452	IN ...
	RIGHT	28	OUT ...
EAST	LEFT	12	EASTBOUND
BOUND	THRU	2	IN ...
	RIGHT	3	OUT ...
WEST	LEFT	19	WESTBOUND
BOUND	THRU	0	IN ...
	RIGHT	25	OUT ...

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN	BY	FY
MOVEMENT	COUNT	FORECAST	
NORTH	LEFT	6	6
BOUND	THRU	279	411
	RIGHT	14	15
SOUTH	LEFT	19	21
BOUND	THRU	452	603
	RIGHT	28	30
EAST	LEFT	12	13
BOUND	THRU	2	2
	RIGHT	3	3
WEST	LEFT	19	21
BOUND	THRU	0	0
	RIGHT	25	27

### 3. Madison Street at Lincoln Avenue (traffic signal)

#### PM PEAK HOUR

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

APPROACH	TURN	BY	FY
MOVEMENT	COUNT	APPROACH	TOTAL
-----	-----	-----	-----
NORTH	LEFT	15	NORTHBOUND
BOUND	THRU	133	IN ...
	RIGHT	10	OUT ...
SOUTH	LEFT	90	SOUTHBOUND
BOUND	THRU	228	IN ...
	RIGHT	68	OUT ...
EAST	LEFT	100	EASTBOUND
BOUND	THRU	233	IN ...
	RIGHT	23	OUT ...
WEST	LEFT	14	WESTBOUND
BOUND	THRU	136	IN ...
	RIGHT	78	OUT ...

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN	BY	FY
MOVEMENT	COUNT	FORECAST	
-----	-----	-----	-----
NORTH	LEFT	15	23
BOUND	THRU	133	186
	RIGHT	10	13
SOUTH	LEFT	90	114
BOUND	THRU	228	426
	RIGHT	68	94
EAST	LEFT	100	183
BOUND	THRU	233	297
	RIGHT	23	37
WEST	LEFT	14	18
BOUND	THRU	136	173
	RIGHT	78	99

**4. Madison Street at Victoria Avenue (all-way stop)**

**PM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

APPROACH	TURN	BY	FY
MOVEMENT	COUNT	APPROACH	TOTAL
-----	-----	-----	-----
NORTH	LEFT	4	NORTHBOUND
BOUND	THRU	7	IN ...
	RIGHT	1	OUT ...
SOUTH	LEFT	168	SOUTHBOUND
BOUND	THRU	65	IN ...
	RIGHT	41	OUT ...
EAST	LEFT	47	EASTBOUND
BOUND	THRU	376	IN ...
	RIGHT	13	OUT ...
WEST	LEFT	3	WESTBOUND
BOUND	THRU	200	IN ...
	RIGHT	54	OUT ...
			563

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN	BY	FY
MOVEMENT	COUNT	FORECAST	
-----	-----	-----	-----
NORTH	LEFT	4	80
BOUND	THRU	7	95
	RIGHT	1	17
SOUTH	LEFT	168	188
BOUND	THRU	65	245
	RIGHT	41	54
EAST	LEFT	47	60
BOUND	THRU	376	480
	RIGHT	13	42
WEST	LEFT	3	8
BOUND	THRU	200	267
	RIGHT	54	68

**5. Sonora Place at Lincoln Avenue (one-way stop)**

**PM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

APPROACH	MOVEMENT	TURN	BY	FY
			COUNT	
NORTH BOUND	LEFT		3	NORTHBOUND
	THRU		0	IN ...
	RIGHT		4	OUT ...
SOUTH BOUND	LEFT		0	SOUTHBOUND
	THRU		0	IN ...
	RIGHT		0	OUT ...
EAST BOUND	LEFT		0	EASTBOUND
	THRU		319	IN ...
	RIGHT		9	OUT ...
WEST BOUND	LEFT		5	WESTBOUND
	THRU		224	IN ...
	RIGHT		0	OUT ...

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	MOVEMENT	TURN	BY	FY
			COUNT	
NORTH BOUND	LEFT		3	3
	THRU		0	0
	RIGHT		4	4
SOUTH BOUND	LEFT		0	0
	THRU		0	0
	RIGHT		0	0
EAST BOUND	LEFT		0	0
	THRU		319	407
	RIGHT		9	10
WEST BOUND	LEFT		5	6
	THRU		224	286
	RIGHT		0	0

**6. Collingwood Street/Project Driveway 3 at Lincoln Avenue (one-way stop)**

**PM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

APPROACH	TURN	BY	FY
MOVEMENT	COUNT	APPROACH	TOTAL
-----	-----	-----	-----
NORTH	LEFT	12	NORTHBOUND
BOUND	THRU	0	IN ...
	RIGHT	3	OUT ...
SOUTH	LEFT	0	SOUTHBOUND
BOUND	THRU	0	IN ...
	RIGHT	0	OUT ...
EAST	LEFT	0	EASTBOUND
BOUND	THRU	313	IN ...
	RIGHT	13	OUT ...
WEST	LEFT	2	WESTBOUND
BOUND	THRU	214	IN ...
	RIGHT	0	OUT ...
			98

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN	BY	FY
MOVEMENT	COUNT	FORECAST	
-----	-----	-----	-----
NORTH	LEFT	12	13
BOUND	THRU	0	0
	RIGHT	3	3
SOUTH	LEFT	0	0
BOUND	THRU	0	0
	RIGHT	0	0
EAST	LEFT	0	0
BOUND	THRU	313	399
	RIGHT	13	14
WEST	LEFT	2	3
BOUND	THRU	214	273
	RIGHT	0	0

**7. Dorlen Street at Lincoln Avenue (two-way stop)**

**PM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

APPROACH	TURN	BY	FY
MOVEMENT	COUNT	APPROACH	TOTAL
NORTH	LEFT	16	NORTHBOUND
BOUND	THRU	0	IN ...
	RIGHT	7	OUT ...
SOUTH	LEFT	0	SOUTHBOUND
BOUND	THRU	0	IN ...
	RIGHT	2	OUT ...
EAST	LEFT	1	EASTBOUND
BOUND	THRU	291	IN ...
	RIGHT	23	OUT ...
WEST	LEFT	10	WESTBOUND
BOUND	THRU	186	IN ...
	RIGHT	1	OUT ...

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN	BY	FY
MOVEMENT	COUNT	FORECAST	
NORTH	LEFT	16	18
BOUND	THRU	0	0
	RIGHT	7	8
SOUTH	LEFT	0	0
BOUND	THRU	0	0
	RIGHT	2	2
EAST	LEFT	1	1
BOUND	THRU	291	371
	RIGHT	23	25
WEST	LEFT	10	12
BOUND	THRU	186	237
	RIGHT	1	1

**8. Washington Street at Indiana Avenue (traffic signal)**

**PM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

APPROACH	TURN	BY	FY
MOVEMENT	COUNT	APPROACH	TOTAL
NORTH	LEFT	154	NORTHBOUND
BOUND	THRU	0	IN ...
	RIGHT	178	OUT ...
SOUTH	LEFT	14	SOUTHBOUND
BOUND	THRU	14	IN ...
	RIGHT	9	OUT ...
EAST	LEFT	5	EASTBOUND
BOUND	THRU	523	IN ...
	RIGHT	156	OUT ...
WEST	LEFT	129	WESTBOUND
BOUND	THRU	393	IN ...
	RIGHT	1	OUT ...

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN	BY	FY
MOVEMENT	COUNT	FORECAST	
NORTH	LEFT	154	210
BOUND	THRU	0	0
	RIGHT	178	196
SOUTH	LEFT	14	15
BOUND	THRU	14	16
	RIGHT	9	10
EAST	LEFT	5	5
BOUND	THRU	523	763
	RIGHT	156	211
WEST	LEFT	129	183
BOUND	THRU	393	595
	RIGHT	1	1

**9. Washington Street at Marguerita Avenue (all-way stop)**

**PM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

APPROACH	TURN	BY	FY
MOVEMENT	COUNT	APPROACH	TOTAL
-----	-----	-----	-----
NORTH	LEFT	32	NORTHBOUND
BOUND	THRU	304	IN ...
	RIGHT	19	OUT ...
SOUTH	LEFT	22	SOUTHBOUND
BOUND	THRU	279	IN ...
	RIGHT	12	OUT ...
EAST	LEFT	15	EASTBOUND
BOUND	THRU	34	IN ...
	RIGHT	22	OUT ...
WEST	LEFT	16	WESTBOUND
BOUND	THRU	44	IN ...
	RIGHT	13	OUT ...

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN	BY	FY
MOVEMENT	COUNT	FORECAST	
-----	-----	-----	-----
NORTH	LEFT	32	35
BOUND	THRU	304	404
	RIGHT	19	21
SOUTH	LEFT	22	24
BOUND	THRU	279	340
	RIGHT	12	13
EAST	LEFT	15	16
BOUND	THRU	34	37
	RIGHT	22	24
WEST	LEFT	16	17
BOUND	THRU	44	48
	RIGHT	13	14

**10. Washington Street at Lincoln Avenue (all-way stop)**

**PM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

APPROACH	TURN	BY	FY
MOVEMENT	COUNT	APPROACH	TOTAL
NORTH	LEFT	16	NORTHBOUND
BOUND	THRU	233	IN ...
	RIGHT	14	OUT ...
SOUTH	LEFT	58	SOUTHBOUND
BOUND	THRU	257	IN ...
	RIGHT	26	OUT ...
EAST	LEFT	16	EASTBOUND
BOUND	THRU	255	IN ...
	RIGHT	23	OUT ...
WEST	LEFT	33	WESTBOUND
BOUND	THRU	151	IN ...
	RIGHT	45	OUT ...

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN	BY	FY
MOVEMENT	COUNT	FORECAST	
NORTH	LEFT	16	20
BOUND	THRU	233	314
	RIGHT	14	18
SOUTH	LEFT	58	74
BOUND	THRU	257	372
	RIGHT	26	33
EAST	LEFT	16	20
BOUND	THRU	255	325
	RIGHT	23	30
WEST	LEFT	33	44
BOUND	THRU	151	192
	RIGHT	45	58

**11. Washington Street at Victoria Avenue (all-way stop)**

**PM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

APPROACH	TURN	BY	FY
MOVEMENT	COUNT	APPROACH	TOTAL
NORTH	LEFT	76	NORTHBOUND
BOUND	THRU	234	IN ...
	RIGHT	185	OUT ...
SOUTH	LEFT	8	SOUTHBOUND
BOUND	THRU	255	IN ...
	RIGHT	10	OUT ...
EAST	LEFT	7	EASTBOUND
BOUND	THRU	250	IN ...
	RIGHT	307	OUT ...
WEST	LEFT	264	WESTBOUND
BOUND	THRU	179	IN ...
	RIGHT	20	OUT ...

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN	BY	FY
MOVEMENT	COUNT	FORECAST	
NORTH	LEFT	76	87
BOUND	THRU	234	268
	RIGHT	185	228
SOUTH	LEFT	8	11
BOUND	THRU	255	377
	RIGHT	10	13
EAST	LEFT	7	9
BOUND	THRU	250	320
	RIGHT	307	382
WEST	LEFT	264	354
BOUND	THRU	179	240
	RIGHT	20	26

**12. Project Driveway 1 at Lincoln Avenue**

**PM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

APPROACH	TURN	BY	FY	
MOVEMENT	COUNT	APPROACH	TOTAL	
NORTH	LEFT	0	NORTHBOUND	
BOUND	THRU	0	IN ...	0
	RIGHT	0	OUT ...	0
SOUTH	LEFT	0	SOUTHBOUND	
BOUND	THRU	0	IN ...	0
	RIGHT	0	OUT ...	0
EAST	LEFT	0	EASTBOUND	
BOUND	THRU	328	IN ...	110
	RIGHT	0	OUT ...	137
WEST	LEFT	0	WESTBOUND	
BOUND	THRU	227	IN ...	137
	RIGHT	0	OUT ...	110

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN	BY	FY
MOVEMENT	COUNT	FORECAST	
NORTH	LEFT	0	0
BOUND	THRU	0	0
	RIGHT	0	0
SOUTH	LEFT	0	0
BOUND	THRU	0	0
	RIGHT	0	0
EAST	LEFT	0	0
BOUND	THRU	328	418
	RIGHT	0	0
WEST	LEFT	0	0
BOUND	THRU	227	289
	RIGHT	0	0

### 13. Project Driveway 2 at Lincoln Avenue

#### PM PEAK HOUR

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

APPROACH	TURN	BY	FY	
MOVEMENT	COUNT	APPROACH	TOTAL	
NORTH	LEFT	0	NORTHBOUND	
BOUND	THRU	0	IN ...	0
	RIGHT	0	OUT ...	0
SOUTH	LEFT	0	SOUTHBOUND	
BOUND	THRU	0	IN ...	0
	RIGHT	0	OUT ...	0
EAST	LEFT	0	EASTBOUND	
BOUND	THRU	323	IN ...	105
	RIGHT	0	OUT ...	139
WEST	LEFT	0	WESTBOUND	
BOUND	THRU	229	IN ...	139
	RIGHT	0	OUT ...	105

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN	BY	FY
MOVEMENT	COUNT	FORECAST	
NORTH	LEFT	0	0
BOUND	THRU	0	0
	RIGHT	0	0
SOUTH	LEFT	0	0
BOUND	THRU	0	0
	RIGHT	0	0
EAST	LEFT	0	0
BOUND	THRU	323	412
	RIGHT	0	0
WEST	LEFT	0	0
BOUND	THRU	229	291
	RIGHT	0	0

**14. Project Driveway 4 at Lincoln Avenue**

**PM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

APPROACH	TURN	BY	FY	
MOVEMENT	COUNT	APPROACH	TOTAL	
NORTH	LEFT	0	NORTHBOUND	
BOUND	THRU	0	IN ...	0
	RIGHT	0	OUT ...	0
SOUTH	LEFT	0	SOUTHBOUND	
BOUND	THRU	0	IN ...	0
	RIGHT	0	OUT ...	0
EAST	LEFT	0	EASTBOUND	
BOUND	THRU	316	IN ...	98
	RIGHT	0	OUT ...	126
WEST	LEFT	0	WESTBOUND	
BOUND	THRU	216	IN ...	126
	RIGHT	0	OUT ...	98

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN	BY	FY
MOVEMENT	COUNT	FORECAST	
NORTH	LEFT	0	0
BOUND	THRU	0	0
	RIGHT	0	0
SOUTH	LEFT	0	0
BOUND	THRU	0	0
	RIGHT	0	0
EAST	LEFT	0	0
BOUND	THRU	316	402
	RIGHT	0	0
WEST	LEFT	0	0
BOUND	THRU	216	275
	RIGHT	0	0

## APPENDIX D

### EXISTING PLUS PROJECT TRAFFIC CONDITIONS LEVEL OF SERVICE CALCULATION WORKSHEETS

**Intersection Key**  
**Casa Blanca Elementary School Project, Riverside**

Vistro Model Number	Report Number	Key Study Intersections
1	1	Madison Street at Indiana Avenue (traffic signal)
2	2	Madison Street at Emerald Street (all-way stop)
3	3	Madison Street at Lincoln Avenue (traffic signal)
4	4A	Madison Street at Victoria Avenue (West)
5	5	Sonora Place at Lincoln Avenue (one-way stop)
6	6	Collingwood Street/ProjectDwy 3 at Lincoln Avenue (one-way stop)
7	7	Dorlen Street at Lincoln Avenue (two-way stop)
8	8	Washington Street at Indiana Avenue (traffic signal)
9	9	Washington Street at Marguerita Avenue (all-way stop)
10	10	Washington Street at Lincoln Avenue (all-way stop)
11	11A	Washington Street at Victoria Avenue (West)
12	A	Project Driveway 1 at Lincoln Avenue
13	B	Project Driveway 2 at Lincoln Avenue
14	C	Project Driveway 4 at Lincoln Avenue
15	4B	Madison Street at Victoria Avenue (East)
16	11B	Washington Street at Victoria Avenue (East)

*APPENDIX D-I*

**EXISTING PLUS PROJECT LEVEL OF SERVICE  
CALCULATION WORKSHEETS**

**Intersection Level Of Service Report**  
**Intersection 1: Madison Street at Indiana Avenue**

Control Type:	Signalized	Delay (sec / veh):	35.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.665

**Intersection Setup**

Name	Madison Street			Madison Street			Indiana Ave			Indiana Ave		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
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			No			Yes			Yes		

**Volumes**

Name	Madison Street			Madison Street			Indiana Ave			Indiana Ave		
Base Volume Input [veh/h]	31	379	29	256	334	202	185	337	30	23	122	270
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	31	379	29	256	334	202	185	337	30	23	122	270
Peak Hour Factor	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700
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	0.7500
Total 15-Minute Volume [veh/h]	9	109	8	74	96	58	53	97	9	7	35	58
Total Analysis Volume [veh/h]	36	436	33	294	384	232	213	387	34	26	140	233
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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing mi	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	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]	100											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Offset [s]	0.0											
Offset Reference	LeadGreen											
Permissive Mode	SingleBand											
Lost time [s]	16.00											

**Phasing & Timing**

Control Type	Protecte	Permiss	Permiss									
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-									
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [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
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	29	0	31	49	0	29	29	0	11	11	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]	0	7	0	0	7	0	0	7	0	0	0	0
Pedestrian Clearance [s]	0	18	0	0	18	0	0	18	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No										
Maximum Recall	No	No										
Pedestrian Recall	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	C	L	C	C	L	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
I1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	15	15	19	30	30	14	46	46	4	36	36
g / C, Green / Cycle	0.04	0.15	0.15	0.19	0.30	0.30	0.14	0.46	0.46	0.04	0.36	0.36
(v / s)_i Volume / Saturation Flow Rate	0.02	0.13	0.13	0.17	0.18	0.18	0.12	0.11	0.11	0.01	0.07	0.15
s, saturation flow rate [veh/h]	1781	1870	1824	1781	1870	1637	1781	1870	1818	1781	1870	1589
c, Capacity [veh/h]	81	289	282	332	553	484	253	864	840	66	668	568
d1, Uniform Delay [s]	46.57	40.99	41.03	39.67	30.14	30.14	41.87	16.35	16.36	47.11	22.36	24.24
k, delay calibration	0.11	0.11	0.11	0.12	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
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
d2, Incremental Delay [s]	3.80	5.73	6.03	8.61	1.02	1.17	7.44	0.68	0.70	3.77	0.71	2.19
d3, Initial Queue Delay [s]	0.00	0.00	0.00	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	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	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.44	0.82	0.82	0.88	0.59	0.59	0.84	0.25	0.25	0.39	0.21	0.41
d, Delay for Lane Group [s/veh]	50.36	46.72	47.06	48.28	31.16	31.31	49.30	17.03	17.06	50.89	23.08	26.43
Lane Group LOS	D	D	D	D	C	C	D	B	B	D	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.95	6.05	5.96	7.75	6.81	5.99	5.60	3.06	2.99	0.70	2.39	4.43
50th-Percentile Queue Length [ft/ln]	23.87	151.31	149.08	193.63	170.27	149.64	139.94	76.45	74.71	17.49	59.87	110.68
95th-Percentile Queue Length [veh/ln]	1.72	10.09	9.97	12.31	11.09	10.00	9.48	5.50	5.38	1.26	4.31	7.88
95th-Percentile Queue Length [ft/ln]	42.97	252.17	249.21	307.73	277.27	249.95	236.95	137.61	134.47	31.49	107.77	196.95

**Movement, Approach, & Intersection Results**

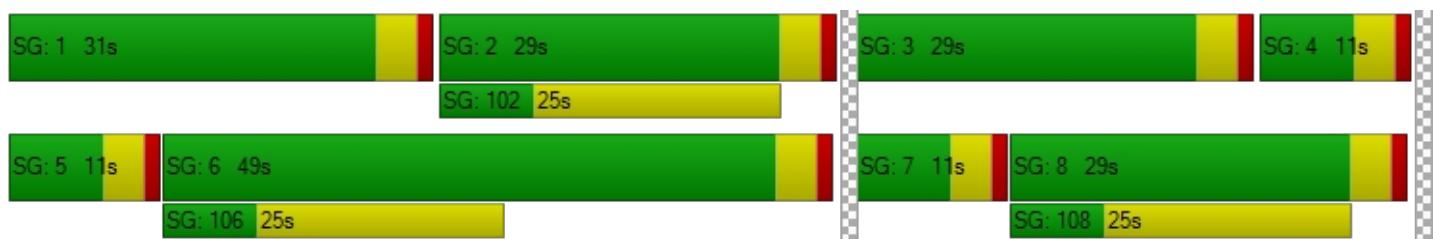
d_M, Delay for Movement [s/veh]	50.36	46.88	47.06	48.28	31.18	31.31	49.30	17.04	17.06	50.89	23.08	26.43
Movement LOS	D	D	D	D	C	C	D	B	B	D	C	C
d_A, Approach Delay [s/veh]	47.14				36.74			27.88			26.85	
Approach LOS		D			D			C			C	
d_I, Intersection Delay [s/veh]					34.98							
Intersection LOS						C						
Intersection V/C					0.665							

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	39.61	0.00	39.61	39.61
I_p,int, Pedestrian LOS Score for Intersection	2.490	0.000	2.508	2.522
Crosswalk LOS	B	F	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	500	900	500	140
d_b, Bicycle Delay [s]	28.13	15.13	28.13	43.25
I_b,int, Bicycle LOS Score for Intersection	1.976	2.310	2.083	1.889
Bicycle LOS	A	B	B	A

**Sequence**

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 2: Madison Street at Emerald Street**

Control Type:	All-way stop	Delay (sec / veh):	23.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.868

**Intersection Setup**

Name	Madison Street			Madison Street			Emerald Street			Emerald Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

**Volumes**

Name	Madison Street			Madison Street			Emerald Street			Emerald Street		
Base Volume Input [veh/h]	34	433	30	12	304	12	9	0	14	17	2	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	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	34	433	30	12	304	12	9	0	14	17	2	17
Peak Hour Factor	0.7610	0.7610	0.7610	0.7610	0.7610	0.7610	0.7610	0.7610	0.7610	0.7610	0.7610	0.7610
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	142	10	4	100	4	3	0	5	6	1	6
Total Analysis Volume [veh/h]	45	569	39	16	399	16	12	0	18	22	3	22
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	633	701	611	672	573	570
Degree of Utilization, x	0.07	0.87	0.03	0.62	0.05	0.08

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	0.23	10.40	0.08	4.28	0.17	0.27
95th-Percentile Queue Length [ft]	5.72	260.05	2.01	106.89	4.13	6.72
Approach Delay [s/veh]	30.36		16.03		9.63	9.89
Approach LOS	D		C		A	A
Intersection Delay [s/veh]				23.68		
Intersection LOS				C		

**Intersection Level Of Service Report**  
**Intersection 3: Madison Street at Lincoln Avenue**

Control Type:	Signalized	Delay (sec / veh):	26.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.613

**Intersection Setup**

Name	Madison Street			Madison Street			Lincoln Avenue			Lincoln Avenue		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
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	Madison Street			Madison Street			Lincoln Avenue			Lincoln Avenue		
Base Volume Input [veh/h]	24	218	27	185	92	97	92	239	10	14	233	204
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	24	218	27	185	92	97	92	239	10	14	233	204
Peak Hour Factor	0.8650	0.8650	0.8650	0.8650	0.8650	0.8650	0.8650	0.8650	0.8650	0.8650	0.8650	0.8650
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]	7	63	8	53	27	28	27	69	3	4	67	59
Total Analysis Volume [veh/h]	28	252	31	214	106	112	106	276	12	16	269	236
Presence of On-Street Parking	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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing mi	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	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]	75											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Offset [s]	0.0											
Offset Reference	LeadGreen											
Permissive Mode	SingleBand											
Lost time [s]	16.00											

**Phasing & Timing**

Control Type	Protecte	Permiss	Permiss									
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-									
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [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
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	27	0	15	31	0	11	22	0	11	22	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]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	14	0	0	14	0	0	11	0	0	11	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No										
Maximum Recall	No	No										
Pedestrian Recall	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
C, Cycle Length [s]	75	75	75	75	75	75	75	75	75
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
I1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	3	14	11	21	6	33	2	28	28
g / C, Green / Cycle	0.04	0.18	0.14	0.28	0.08	0.43	0.03	0.38	0.38
(v / s)_i Volume / Saturation Flow Rate	0.02	0.15	0.12	0.13	0.06	0.16	0.01	0.14	0.15
s, saturation flow rate [veh/h]	1781	1835	1781	1715	1781	1856	1781	1870	1590
c, Capacity [veh/h]	77	336	256	487	149	802	50	703	598
d1, Uniform Delay [s]	34.99	29.67	31.33	22.09	33.57	14.37	35.85	17.10	17.19
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.50	0.11	0.50	0.50
I, 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]	2.87	5.69	7.00	0.65	6.07	1.25	3.58	1.57	1.95
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	0.36	0.84	0.83	0.45	0.71	0.36	0.32	0.38	0.39
d, Delay for Lane Group [s/veh]	37.86	35.36	38.33	22.73	39.64	15.63	39.42	18.67	19.14
Lane Group LOS	D	D	D	C	D	B	D	B	B
Critical Lane Group	No	Yes	Yes	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.55	5.27	4.15	3.10	2.08	3.32	0.33	3.48	3.13
50th-Percentile Queue Length [ft/ln]	13.69	131.86	103.63	77.52	52.06	83.07	8.28	86.97	78.14
95th-Percentile Queue Length [veh/ln]	0.99	9.04	7.46	5.58	3.75	5.98	0.60	6.26	5.63
95th-Percentile Queue Length [ft/ln]	24.65	226.02	186.54	139.54	93.71	149.53	14.90	156.55	140.66

**Movement, Approach, & Intersection Results**

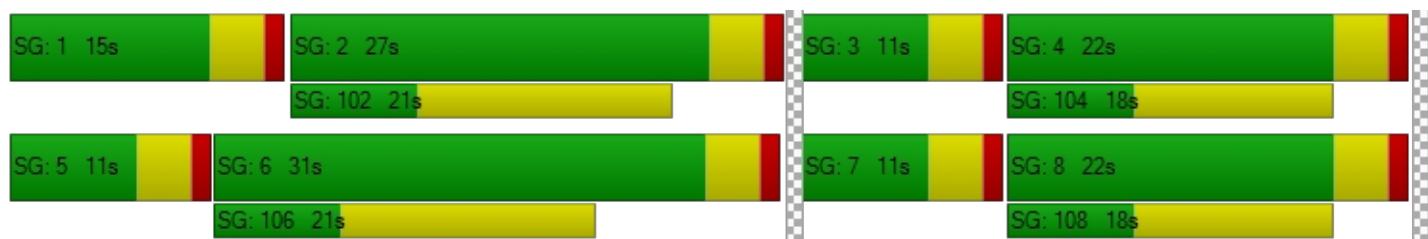
d_M, Delay for Movement [s/veh]	37.86	35.36	35.36	38.33	22.73	22.73	39.64	15.63	15.63	39.42	18.67	19.14
Movement LOS	D	D	D	D	C	C	D	B	B	D	B	B
d_A, Approach Delay [s/veh]	35.59			30.46			22.09			19.52		
Approach LOS	D			C			C			B		
d_I, Intersection Delay [s/veh]				26.00								
Intersection LOS				C								
Intersection V/C				0.613								

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	27.31	27.31	27.31	27.31
I_p,int, Pedestrian LOS Score for Intersection	2.075	2.264	2.317	2.375
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	613	720	480	480
d_b, Bicycle Delay [s]	18.03	15.36	21.66	21.66
I_b,int, Bicycle LOS Score for Intersection	2.073	2.272	2.210	1.989
Bicycle LOS	B	B	B	A

**Sequence**

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 4: Madison Street at Victoria Avenue (West)**

Control Type:	All-way stop	Delay (sec / veh):	13.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.664

**Intersection Setup**

Name	Madison Street			Madison Street			Victoria Ave (West)			Victoria Ave (West)		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Madison Street			Madison Street			Victoria Ave (West)			Victoria Ave (West)		
Base Volume Input [veh/h]	18	94	0	0	76	26	0	0	0	2	339	158
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	18	94	0	0	76	26	0	0	0	2	339	158
Peak Hour Factor	0.8890	0.8890	1.0000	1.0000	0.8890	0.8890	1.0000	1.0000	1.0000	0.8890	0.8890	0.8890
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	26	0	0	21	7	0	0	0	1	95	44
Total Analysis Volume [veh/h]	20	106	0	0	85	29	0	0	0	2	381	178
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	863	781	921		845
Degree of Utilization, x	0.15	0.11	0.03		0.66

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	0.51	0.37	0.10		5.17
95th-Percentile Queue Length [ft]	12.76	9.13	2.44		129.35
Approach Delay [s/veh]	7.89	7.58	0.00		15.26
Approach LOS	A	A	A		C
Intersection Delay [s/veh]			13.01		
Intersection LOS			B		

**Intersection Level Of Service Report**  
**Intersection 5: Sonora Place at Lincoln Avenue**

Control Type:	Two-way stop	Delay (sec / veh):	18.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.032

**Intersection Setup**

Name	Sonora Place		Lincoln Avenue		Lincoln Avenue	
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

**Volumes**

Name	Sonora Place		Lincoln Avenue		Lincoln Avenue	
Base Volume Input [veh/h]	8	8	432	1	8	437
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00
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]	8	8	432	1	8	437
Peak Hour Factor	0.9210	0.9210	0.9210	0.9210	0.9210	0.9210
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	2	117	0	2	119
Total Analysis Volume [veh/h]	9	9	469	1	9	474
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
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	0.03	0.02	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	18.28	11.53	0.00	0.00	8.33	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.15	0.15	0.00	0.00	0.02	0.02
95th-Percentile Queue Length [ft/ln]	3.70	3.70	0.00	0.00	0.55	0.55
d_A, Approach Delay [s/veh]	14.90		0.00		0.16	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]			0.35			
Intersection LOS			C			

**Intersection Level Of Service Report**  
**Intersection 6: Collingwood Street/Project Driveway 3 at Lincoln Avenue**

Control Type:	Two-way stop	Delay (sec / veh):	29.4
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.375

**Intersection Setup**

Name	Collingwood St			Project Dwy 3			Lincoln Ave			Lincoln Ave		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

**Volumes**

Name	Collingwood St			Project Dwy 3			Lincoln Ave			Lincoln Ave		
Base Volume Input [veh/h]	9	0	19	91	0	106	17	428	7	9	331	11
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	0	19	91	0	106	17	428	7	9	331	11
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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	0	5	24	0	28	4	113	2	2	87	3
Total Analysis Volume [veh/h]	9	0	20	96	0	112	18	451	7	9	348	12
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	0.04	0.00	0.03	0.38	0.00	0.16	0.02	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	23.24	18.58	11.73	29.38	28.05	20.53	8.05	0.00	0.00	8.29	0.00	0.00
Movement LOS	C	C	B	D	D	C	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.25	0.25	0.25	3.07	3.07	3.07	0.04	0.04	0.04	0.02	0.02	0.02
95th-Percentile Queue Length [ft/ln]	6.19	6.19	6.19	76.69	76.69	76.69	1.08	1.08	1.08	0.62	0.62	0.62
d_A, Approach Delay [s/veh]		15.30			24.61			0.30			0.20	
Approach LOS		C			C			A			A	
d_I, Intersection Delay [s/veh]							5.34					
Intersection LOS								D				

**Intersection Level Of Service Report**  
**Intersection 7: Dorlen Street at Lincoln Avenue**

Control Type:	Two-way stop	Delay (sec / veh):	26.1
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.245

**Intersection Setup**

Name	Dorlen Street			Dorlen Street			Lincoln Avenue			Lincoln Avenue		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

**Volumes**

Name	Dorlen Street			Dorlen Street			Lincoln Avenue			Lincoln Avenue		
Base Volume Input [veh/h]	46	0	14	0	0	2	0	401	20	8	395	2
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	46	0	14	0	0	2	0	401	20	8	395	2
Peak Hour Factor	0.8380	0.8380	0.8380	0.8380	0.8380	0.8380	0.8380	0.8380	0.8380	0.8380	0.8380	0.8380
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]	14	0	4	0	0	1	0	120	6	2	118	1
Total Analysis Volume [veh/h]	55	0	17	0	0	2	0	479	24	10	471	2
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	0.24	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	26.14	24.79	16.34	21.68	19.92	11.10	8.31	0.00	0.00	8.42	0.00	0.00
Movement LOS	D	C	C	C	C	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	1.08	1.08	1.08	0.01	0.01	0.01	0.00	0.00	0.00	0.02	0.02	0.02
95th-Percentile Queue Length [ft/ln]	27.12	27.12	27.12	0.25	0.25	0.25	0.00	0.00	0.00	0.57	0.57	0.57
d_A, Approach Delay [s/veh]		23.83			11.10			0.00			0.17	
Approach LOS		C			B			A			A	
d_I, Intersection Delay [s/veh]							1.72					
Intersection LOS							D					

**Intersection Level Of Service Report****Intersection 8: Washington Street at Indiana Avenue**

Control Type: Signalized Delay (sec / veh): 18.2  
 Analysis Method: HCM 6th Edition Level Of Service: B  
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.546

**Intersection Setup**

Name	Washington Street			Washington Street			Indiana Avenue			Indiana Avenue		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
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	Washington Street			Washington Street			Indiana Avenue			Indiana Avenue		
Base Volume Input [veh/h]	185	3	367	2	1	0	12	388	100	73	292	5
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	185	3	367	2	1	0	12	388	100	73	292	5
Peak Hour Factor	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190
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]	50	1	100	1	0	0	3	106	27	20	79	1
Total Analysis Volume [veh/h]	201	3	399	2	1	0	13	422	109	79	318	5
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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	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]	65											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Offset [s]	0.0											
Offset Reference	LeadGreen											
Permissive Mode	SingleBand											
Lost time [s]	12.00											

**Phasing & Timing**

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [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
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	32	0	0	32	0	11	22	0	11	22	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	18	0	0	18	0	0	11	0	0	11	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	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	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	L	C	L	C	C	L	C	C
C, Cycle Length [s]	65	65	65	65	65	65	65	65	65	65
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
I1_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	0.00
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	19	19	19	19	2	29	29	5	33	33
g / C, Green / Cycle	0.29	0.29	0.29	0.29	0.02	0.44	0.44	0.08	0.50	0.50
(v / s)_i Volume / Saturation Flow Rate	0.14	0.25	0.00	0.00	0.01	0.15	0.15	0.04	0.09	0.09
s, saturation flow rate [veh/h]	1416	1591	983	1870	1781	1870	1740	1781	1870	1860
c, Capacity [veh/h]	487	465	136	547	44	823	765	149	933	928
d1, Uniform Delay [s]	20.46	21.83	30.98	16.32	31.22	11.97	12.00	28.62	8.95	8.95
k, delay calibration	0.11	0.12	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.56	5.41	0.04	0.00	3.74	1.08	1.19	2.91	0.40	0.41
d3, Initial Queue Delay [s]	0.00	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	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.41	0.86	0.01	0.00	0.30	0.33	0.34	0.53	0.17	0.17
d, Delay for Lane Group [s/veh]	21.02	27.24	31.02	16.33	34.96	13.05	13.18	31.53	9.35	9.36
Lane Group LOS	C	C	C	B	C	B	B	C	A	A
Critical Lane Group	No	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.51	6.03	0.03	0.01	0.24	2.56	2.44	1.25	1.19	1.19
50th-Percentile Queue Length [ft/ln]	62.80	150.87	0.78	0.25	5.97	63.92	60.90	31.31	29.83	29.74
95th-Percentile Queue Length [veh/ln]	4.52	10.06	0.06	0.02	0.43	4.60	4.38	2.25	2.15	2.14
95th-Percentile Queue Length [ft/ln]	113.04	251.59	1.40	0.46	10.74	115.06	109.62	56.36	53.69	53.53

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	21.02	27.24	27.24	31.02	16.33	16.33	34.96	13.10	13.18	31.53	9.36	9.36
Movement LOS	C	C	C	C	B	B	C	B	B	C	A	A
d_A, Approach Delay [s/veh]	25.16			26.12			13.64			13.71		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]					18.16							
Intersection LOS						B						
Intersection V/C					0.546							

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	22.43	22.43	22.43	22.43
I_p,int, Pedestrian LOS Score for Intersection	2.180	1.930	2.775	2.524
Crosswalk LOS	B	A	C	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	862	862	554	554
d_b, Bicycle Delay [s]	10.53	10.53	16.99	16.99
I_b,int, Bicycle LOS Score for Intersection	2.555	1.565	2.008	1.891
Bicycle LOS	B	A	B	A

**Sequence**

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report****Intersection 9: Washington Street at Marguerita Avenue**

Control Type:	All-way stop	Delay (sec / veh):	47.0
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.050

**Intersection Setup**

Name	Washington Street			Washington Street			Marguerita Ave			Marguerita Ave		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

**Volumes**

Name	Washington Street			Washington Street			Marguerita Ave			Marguerita Ave		
Base Volume Input [veh/h]	32	517	62	12	130	16	30	66	40	38	39	26
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	32	517	62	12	130	16	30	66	40	38	39	26
Peak Hour Factor	0.8370	0.8370	0.8370	0.8370	0.8370	0.8370	0.8370	0.8370	0.8370	0.8370	0.8370	0.8370
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	154	19	4	39	5	9	20	12	11	12	8
Total Analysis Volume [veh/h]	38	618	74	14	155	19	36	79	48	45	47	31
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	730	613	562	548
Degree of Utilization, x	1.05	0.31	0.29	0.22

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	18.84	1.30	1.20	0.85
95th-Percentile Queue Length [ft]	471.05	32.44	29.93	21.36
Approach Delay [s/veh]	70.03	11.46	12.00	11.46
Approach LOS	F	B	B	B
Intersection Delay [s/veh]	47.04			
Intersection LOS	E			

**Intersection Level Of Service Report****Intersection 10: Washington Street at Lincoln Avenue**

Control Type:	All-way stop	Delay (sec / veh):	96.9
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.313

**Intersection Setup**

Name	Washington Street			Washington Street			Lincoln Avenue			Lincoln Avenue		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	35.00			35.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Washington Street			Washington Street			Lincoln Avenue			Lincoln Avenue		
Base Volume Input [veh/h]	60	438	28	56	100	107	100	276	44	31	237	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	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	60	438	28	56	100	107	100	276	44	31	237	75
Peak Hour Factor	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230
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]	16	119	8	15	27	29	27	75	12	8	64	20
Total Analysis Volume [veh/h]	65	475	30	61	108	116	108	299	48	34	257	81
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	570	410	455	395	431
Degree of Utilization, x	1.31	0.70	1.06	0.74	0.19

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	25.39	5.15	14.75	5.81	0.68
95th-Percentile Queue Length [ft]	634.66	128.79	368.86	145.19	17.11
Approach Delay [s/veh]	180.82	29.55	89.36	28.97	
Approach LOS	F	D	F	D	
Intersection Delay [s/veh]		96.87			
Intersection LOS		F			

**Intersection Level Of Service Report****Intersection 11: Washington Street at Victoria Avenue (West)**

Control Type: All-way stop Delay (sec / veh): 13.1  
 Analysis Method: HCM 6th Edition Level Of Service: B  
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.562

**Intersection Setup**

Name	Washington Street			Washington Street			Victoria Ave (West)			Victoria Ave (West)		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

**Volumes**

Name	Washington Street			Washington Street			Victoria Ave (West)			Victoria Ave (West)		
Base Volume Input [veh/h]	250	477	0	0	153	11	0	0	0	124	233	31
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	250	477	0	0	153	11	0	0	0	124	233	31
Peak Hour Factor	0.8990	0.8990	1.0000	1.0000	0.8990	0.8990	1.0000	1.0000	1.0000	0.8990	0.8990	0.8990
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]	70	133	0	0	43	3	0	0	0	34	65	9
Total Analysis Volume [veh/h]	278	531	0	0	170	12	0	0	0	138	259	34
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	720	773	779		511	557
Degree of Utilization, x	0.56	0.52	0.23		0.27	0.53

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	3.53	3.09	0.90		1.08	3.04
95th-Percentile Queue Length [ft]	88.31	77.16	22.59		27.11	76.12
Approach Delay [s/veh]		13.14	9.02	0.00		14.89
Approach LOS		B	A	A		B
Intersection Delay [s/veh]				13.14		
Intersection LOS				B		

**Intersection Level Of Service Report****Intersection 15: Madison Street at Victoria Avenue (East)**

Control Type:	All-way stop	Delay (sec / veh):	9.2
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.396

**Intersection Setup**

Name	Madison Street			Madison Street			Victoria Ave (East)			Victoria Ave (East)		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Madison Street			Madison Street			Victoria Ave (East)			Victoria Ave (East)		
Base Volume Input [veh/h]	0	58	12	55	23	0	54	235	5	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	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	58	12	55	23	0	54	235	5	0	0	0
Peak Hour Factor	1.0000	0.8890	0.8890	0.8890	0.8890	1.0000	0.8890	0.8890	0.8890	1.0000	1.0000	1.0000
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	16	3	15	6	0	15	66	1	0	0	0
Total Analysis Volume [veh/h]	0	65	13	62	26	0	61	264	6	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	919	869	835	
Degree of Utilization, x	0.08	0.10	0.40	

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	0.28	0.34	1.91	
95th-Percentile Queue Length [ft]	6.94	8.43	47.80	
Approach Delay [s/veh]	7.28	7.61	10.11	0.00
Approach LOS	A	A	B	A
Intersection Delay [s/veh]			9.23	
Intersection LOS			A	

**Intersection Level Of Service Report****Intersection 16: Washington Street at Victoria Avenue (East)**

Control Type:	All-way stop	Delay (sec / veh):	13.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.539

**Intersection Setup**

Name	Washington Street			Washington Street			Victoria Ave (East)			Victoria Ave (East)		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Washington Street			Washington Street			Victoria Ave (East)			Victoria Ave (East)		
Base Volume Input [veh/h]	0	716	427	20	256	0	11	202	81	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	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	716	427	20	256	0	11	202	81	0	0	0
Peak Hour Factor	1.0000	0.8990	0.8990	0.8990	0.8990	1.0000	0.8990	0.8990	0.8990	1.0000	1.0000	1.0000
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	199	119	6	71	0	3	56	23	0	0	0
Total Analysis Volume [veh/h]	0	796	475	22	285	0	12	225	90	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	753	753	882	646	475	525	
Degree of Utilization, x	0.53	0.53	0.54	0.48	0.50	0.17	

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	3.15	3.15	3.29	2.56	2.74	0.61	
95th-Percentile Queue Length [ft]	78.63	78.63	82.23	64.04	68.44	15.34	
Approach Delay [s/veh]		12.25		13.51		15.77	0.00
Approach LOS		B		B		C	A
Intersection Delay [s/veh]				13.06			
Intersection LOS				B			

**Intersection Level Of Service Report**  
**Intersection 1: Madison Street at Indiana Avenue**

Control Type:	Signalized	Delay (sec / veh):	33.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.755

**Intersection Setup**

Name	Madison Street			Madison Street			Indiana Ave			Indiana Ave		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
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			No			Yes			Yes		

**Volumes**

Name	Madison Street			Madison Street			Indiana Ave			Indiana Ave		
Base Volume Input [veh/h]	31	422	30	257	510	109	249	422	74	41	207	378
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	31	422	30	257	510	109	249	422	74	41	207	378
Peak Hour Factor	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320	0.9320
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	0.7500
Total 15-Minute Volume [veh/h]	8	113	8	69	137	29	67	113	20	11	56	76
Total Analysis Volume [veh/h]	33	453	32	276	547	117	267	453	79	44	222	304
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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing mi	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	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]	95											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Offset [s]	0.0											
Offset Reference	LeadGreen											
Permissive Mode	SingleBand											
Lost time [s]	16.00											

**Phasing & Timing**

Control Type	Protecte	Permiss	Permiss									
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-									
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [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
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	29	0	26	44	0	29	29	0	11	11	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]	0	7	0	0	7	0	0	7	0	0	0	0
Pedestrian Clearance [s]	0	18	0	0	18	0	0	18	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No										
Maximum Recall	No	No										
Pedestrian Recall	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	C	L	C	C	L	C	C
C, Cycle Length [s]	95	95	95	95	95	95	95	95	95	95	95	95
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
I1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	15	15	17	28	28	17	42	42	5	31	31
g / C, Green / Cycle	0.04	0.16	0.16	0.18	0.29	0.29	0.17	0.44	0.44	0.05	0.32	0.32
(v / s)_i Volume / Saturation Flow Rate	0.02	0.13	0.13	0.15	0.18	0.18	0.15	0.15	0.15	0.02	0.12	0.19
s, saturation flow rate [veh/h]	1781	1870	1827	1781	1870	1757	1781	1870	1775	1781	1870	1589
c, Capacity [veh/h]	79	299	292	315	547	514	310	829	787	92	600	510
d1, Uniform Delay [s]	44.29	38.63	38.66	38.17	29.15	29.15	38.18	17.25	17.26	43.87	24.89	27.12
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
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
d2, Incremental Delay [s]	3.53	5.47	5.73	7.74	1.18	1.26	6.99	1.06	1.12	3.81	1.75	5.06
d3, Initial Queue Delay [s]	0.00	0.00	0.00	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	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	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.42	0.82	0.82	0.88	0.63	0.63	0.86	0.33	0.33	0.48	0.37	0.60
d, Delay for Lane Group [s/veh]	47.82	44.10	44.39	45.90	30.33	30.40	45.17	18.31	18.38	47.69	26.64	32.18
Lane Group LOS	D	D	D	D	C	C	D	B	B	D	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.83	5.89	5.81	6.84	6.80	6.40	6.55	4.01	3.82	1.10	4.07	6.36
50th-Percentile Queue Length [ft/ln]	20.74	147.31	145.23	171.02	170.09	160.12	163.78	100.13	95.52	27.45	101.84	159.00
95th-Percentile Queue Length [veh/ln]	1.49	9.87	9.76	11.13	11.08	10.56	10.75	7.21	6.88	1.98	7.33	10.50
95th-Percentile Queue Length [ft/ln]	37.33	246.83	244.04	278.26	277.04	263.88	268.72	180.24	171.93	49.40	183.31	262.40

**Movement, Approach, & Intersection Results**

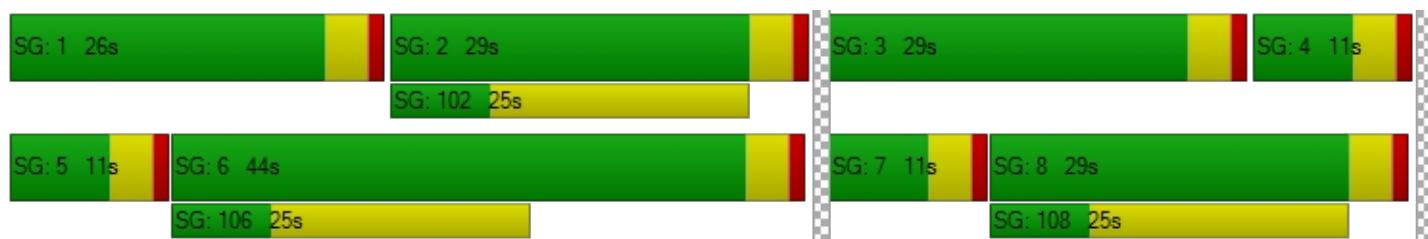
d_M, Delay for Movement [s/veh]	47.82	44.23	44.39	45.90	30.36	30.40	45.17	18.34	18.38	47.69	26.64	32.18
Movement LOS	D	D	D	D	C	C	D	B	B	D	C	C
d_A, Approach Delay [s/veh]	44.47				34.93			27.31				31.22
Approach LOS		D			C			C				C
d_I, Intersection Delay [s/veh]					33.77							
Intersection LOS						C						
Intersection V/C					0.755							

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	37.14	0.00	37.14	37.14
I_p,int, Pedestrian LOS Score for Intersection	2.534	0.000	2.530	2.562
Crosswalk LOS	B	F	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	526	842	526	147
d_b, Bicycle Delay [s]	25.79	15.92	25.79	40.76
I_b,int, Bicycle LOS Score for Intersection	1.987	2.335	2.219	2.030
Bicycle LOS	A	B	B	B

**Sequence**

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 2: Madison Street at Emerald Street**

Control Type:	All-way stop	Delay (sec / veh):	16.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.737

**Intersection Setup**

Name	Madison Street			Madison Street			Emerald Street			Emerald Street		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

**Volumes**

Name	Madison Street			Madison Street			Emerald Street			Emerald Street		
Base Volume Input [veh/h]	8	298	15	19	470	28	12	2	5	20	0	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	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	298	15	19	470	28	12	2	5	20	0	25
Peak Hour Factor	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380
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	79	4	5	125	7	3	1	1	5	0	7
Total Analysis Volume [veh/h]	9	318	16	20	501	30	13	2	5	21	0	27
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	632	697	650	720	590	621
Degree of Utilization, x	0.01	0.48	0.03	0.74	0.03	0.08

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	0.04	2.61	0.10	6.57	0.11	0.25
95th-Percentile Queue Length [ft]	1.08	65.28	2.38	164.36	2.63	6.26
Approach Delay [s/veh]	12.42		19.90		9.31	9.28
Approach LOS	B		C		A	A
Intersection Delay [s/veh]				16.48		
Intersection LOS				C		

**Intersection Level Of Service Report**  
**Intersection 3: Madison Street at Lincoln Avenue**

Control Type:	Signalized	Delay (sec / veh):	24.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.459

**Intersection Setup**

Name	Madison Street			Madison Street			Lincoln Avenue			Lincoln Avenue		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
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	Madison Street			Madison Street			Lincoln Avenue			Lincoln Avenue		
Base Volume Input [veh/h]	15	133	12	115	228	68	100	240	23	16	143	106
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	133	12	115	228	68	100	240	23	16	143	106
Peak Hour Factor	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160	0.9160
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	36	3	31	62	19	27	66	6	4	39	29
Total Analysis Volume [veh/h]	16	145	13	126	249	74	109	262	25	17	156	116
Presence of On-Street Parking	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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing mi	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	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]	70											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Offset [s]	0.0											
Offset Reference	LeadGreen											
Permissive Mode	SingleBand											
Lost time [s]	16.00											

**Phasing & Timing**

Control Type	Protecte	Permiss	Permiss									
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-									
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [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
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	25	0	11	25	0	12	23	0	11	22	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]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	14	0	0	14	0	0	11	0	0	11	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No										
Maximum Recall	No	No										
Pedestrian Recall	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
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
I1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	2	10	6	15	6	35	2	31	31
g / C, Green / Cycle	0.03	0.15	0.09	0.21	0.09	0.50	0.03	0.44	0.44
(v / s)_i Volume / Saturation Flow Rate	0.01	0.09	0.07	0.18	0.06	0.16	0.01	0.08	0.08
s, saturation flow rate [veh/h]	1781	1843	1781	1797	1781	1842	1781	1870	1617
c, Capacity [veh/h]	51	272	166	381	158	924	53	828	716
d1, Uniform Delay [s]	33.44	27.91	31.10	26.59	31.07	10.34	33.37	11.80	11.87
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.50	0.11	0.50	0.50
I, 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]	3.41	1.95	7.00	5.28	5.25	0.88	3.36	0.45	0.56
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	0.31	0.58	0.76	0.85	0.69	0.31	0.32	0.17	0.18
d, Delay for Lane Group [s/veh]	36.84	29.86	38.10	31.87	36.32	11.22	36.73	12.25	12.43
Lane Group LOS	D	C	D	C	D	B	D	B	B
Critical Lane Group	Yes	No	No	Yes	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.31	2.52	2.33	5.47	1.96	2.53	0.33	1.31	1.24
50th-Percentile Queue Length [ft/ln]	7.69	63.05	58.22	136.85	48.94	63.26	8.13	32.87	31.04
95th-Percentile Queue Length [veh/ln]	0.55	4.54	4.19	9.31	3.52	4.55	0.59	2.37	2.23
95th-Percentile Queue Length [ft/ln]	13.85	113.49	104.80	232.78	88.09	113.87	14.63	59.16	55.87

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	36.84	29.86	29.86	38.10	31.87	31.87	36.32	11.22	11.22	36.73	12.27	12.43
Movement LOS	D	C	C	D	C	C	D	B	B	D	B	B
d_A, Approach Delay [s/veh]	30.50			33.62			18.13			13.77		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]				24.13								
Intersection LOS					C							
Intersection V/C				0.459								

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	24.86	24.86	24.86	24.86
I_p,int, Pedestrian LOS Score for Intersection	2.077	2.193	2.274	2.285
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	600	600	543	514
d_b, Bicycle Delay [s]	17.15	17.15	18.58	19.31
I_b,int, Bicycle LOS Score for Intersection	1.847	2.300	2.213	1.798
Bicycle LOS	A	B	B	A

**Sequence**

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report****Intersection 4: Madison Street at Victoria Avenue (West)**

Control Type:	All-way stop	Delay (sec / veh):	9.4
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.359

**Intersection Setup**

Name	Madison Street			Madison Street			Victoria Ave (West)			Victoria Ave (West)		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Madison Street			Madison Street			Victoria Ave (West)			Victoria Ave (West)		
Base Volume Input [veh/h]	4	55	0	0	233	42	0	0	0	3	200	54
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	55	0	0	233	42	0	0	0	3	200	54
Peak Hour Factor	0.9130	0.9130	1.0000	1.0000	0.9130	0.9130	1.0000	1.0000	1.0000	0.9130	0.9130	0.9130
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	15	0	0	64	12	0	0	0	1	55	15
Total Analysis Volume [veh/h]	4	60	0	0	255	46	0	0	0	3	219	59
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	831	787	929		782
Degree of Utilization, x	0.08	0.32	0.05		0.36

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	0.25	1.41	0.16		1.64
95th-Percentile Queue Length [ft]	6.24	35.21	3.90		41.01
Approach Delay [s/veh]	7.69		9.04	0.00	10.17
Approach LOS	A		A	A	B
Intersection Delay [s/veh]			9.40		
Intersection LOS			A		

**Intersection Level Of Service Report**  
**Intersection 5: Sonora Place at Lincoln Avenue**

Control Type:	Two-way stop	Delay (sec / veh):	14.6
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.011

**Intersection Setup**

Name	Sonora Place		Lincoln Avenue		Lincoln Avenue	
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

**Volumes**

Name	Sonora Place		Lincoln Avenue		Lincoln Avenue	
Base Volume Input [veh/h]	3	5	352	9	6	260
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00
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]	3	5	352	9	6	260
Peak Hour Factor	0.8440	0.8440	0.8440	0.8440	0.8440	0.8440
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	1	104	3	2	77
Total Analysis Volume [veh/h]	4	6	417	11	7	308
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
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	0.01	0.01	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	14.65	10.85	0.00	0.00	8.20	0.00
Movement LOS	B	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.06	0.06	0.00	0.00	0.02	0.02
95th-Percentile Queue Length [ft/ln]	1.53	1.53	0.00	0.00	0.40	0.40
d_A, Approach Delay [s/veh]	12.37		0.00		0.18	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]			0.24			
Intersection LOS			B			

**Intersection Level Of Service Report****Intersection 6: Collingwood Street/Project Driveway 3 at Lincoln Avenue**

Control Type:	Two-way stop	Delay (sec / veh):	14.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.035

**Intersection Setup**

Name	Collingwood St			Project Dwy 3			Lincoln Ave			Lincoln Ave		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

**Volumes**

Name	Collingwood St			Project Dwy 3			Lincoln Ave			Lincoln Ave		
Base Volume Input [veh/h]	12	0	4	26	0	31	4	342	13	3	219	3
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	12	0	4	26	0	31	4	342	13	3	219	3
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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	0	1	7	0	8	1	90	3	1	58	1
Total Analysis Volume [veh/h]	13	0	4	27	0	33	4	360	14	3	231	3
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	0.03	0.00	0.01	0.07	0.00	0.04	0.00	0.00	0.00	0.00	0.00								
d_M, Delay for Movement [s/veh]	14.93	14.28	10.67	14.82	14.77	10.26	7.71	0.00	0.00	8.05	0.00								
Movement LOS	B	B	B	B	B	B	A	A	A	A	A								
95th-Percentile Queue Length [veh/ln]	0.13	0.13	0.13	0.36	0.36	0.36	0.01	0.01	0.01	0.01	0.01								
95th-Percentile Queue Length [ft/ln]	3.15	3.15	3.15	9.09	9.09	9.09	0.23	0.23	0.23	0.19	0.19								
d_A, Approach Delay [s/veh]	13.93			12.31			0.08			0.10									
Approach LOS	B			B			A			A									
d_I, Intersection Delay [s/veh]	1.49																		
Intersection LOS	B																		

**Intersection Level Of Service Report**  
**Intersection 7: Dorlen Street at Lincoln Avenue**

Control Type:	Two-way stop	Delay (sec / veh):	14.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.049

**Intersection Setup**

Name	Dorlen Street			Dorlen Street			Lincoln Avenue			Lincoln Avenue		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

**Volumes**

Name	Dorlen Street			Dorlen Street			Lincoln Avenue			Lincoln Avenue		
Base Volume Input [veh/h]	19	0	7	0	0	2	1	320	26	10	213	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 [%]	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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	0	7	0	0	2	1	320	26	10	213	1
Peak Hour Factor	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450
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	0	2	0	0	1	0	85	7	3	56	0
Total Analysis Volume [veh/h]	20	0	7	0	0	2	1	339	28	11	225	1
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	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	14.37	14.32	10.71	13.98	13.99	9.43	7.68	0.00	0.00	8.05	0.00	0.00
Movement LOS	B	B	B	B	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.19	0.19	0.19	0.01	0.01	0.01	0.00	0.00	0.00	0.03	0.03	0.03
95th-Percentile Queue Length [ft/ln]	4.72	4.72	4.72	0.18	0.18	0.18	0.06	0.06	0.06	0.63	0.63	0.63
d_A, Approach Delay [s/veh]		13.42			9.43			0.02			0.37	
Approach LOS		B			A			A			A	
d_I, Intersection Delay [s/veh]							0.75					
Intersection LOS							B					

## Intersection Level Of Service Report

## Intersection 8: Washington Street at Indiana Avenue

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): 0.524

## Intersection Setup

Name	Washington Street			Washington Street			Indiana Avenue			Indiana Avenue		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
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	Washington Street			Washington Street			Indiana Avenue			Indiana Avenue		
Base Volume Input [veh/h]	154	0	179	14	14	9	5	523	156	130	393	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 [%]	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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	154	0	179	14	14	9	5	523	156	130	393	1
Peak Hour Factor	0.8780	0.8780	0.8780	0.8780	0.8780	0.8780	0.8780	0.8780	0.8780	0.8780	0.8780	0.8780
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]	44	0	51	4	4	3	1	149	44	37	112	0
Total Analysis Volume [veh/h]	175	0	204	16	16	10	6	596	178	148	448	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	0					0			0			0
v_di, Inbound Pedestrian Volume crossing m	0					0			0			0
v_co, Outbound Pedestrian Volume crossing	0					0			0			0
v_ci, Inbound Pedestrian Volume crossing mi	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]	65											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Offset [s]	0.0											
Offset Reference	LeadGreen											
Permissive Mode	SingleBand											
Lost time [s]	12.00											

**Phasing & Timing**

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [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
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	29	0	0	29	0	11	22	0	14	25	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	18	0	0	18	0	0	11	0	0	11	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	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	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	L	C	L	C	C	L	C	C
C, Cycle Length [s]	65	65	65	65	65	65	65	65	65	65
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
I1_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	0.00
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	14	14	14	14	1	32	32	7	39	39
g / C, Green / Cycle	0.21	0.21	0.21	0.21	0.01	0.50	0.50	0.11	0.59	0.59
(v / s)_i Volume / Saturation Flow Rate	0.13	0.13	0.01	0.01	0.00	0.22	0.22	0.08	0.12	0.12
s, saturation flow rate [veh/h]	1384	1589	1178	1751	1781	1870	1724	1781	1870	1869
c, Capacity [veh/h]	336	332	178	366	21	933	860	192	1113	1112
d1, Uniform Delay [s]	26.08	23.35	29.32	20.66	31.88	10.41	10.42	28.22	6.06	6.06
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.25	1.85	0.22	0.08	7.62	1.45	1.59	6.37	0.41	0.41
d3, Initial Queue Delay [s]	0.00	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	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.52	0.61	0.09	0.07	0.29	0.43	0.43	0.77	0.20	0.20
d, Delay for Lane Group [s/veh]	27.33	25.20	29.53	20.74	39.50	11.86	12.00	34.59	6.47	6.47
Lane Group LOS	C	C	C	C	D	B	B	C	A	A
Critical Lane Group	No	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.57	2.84	0.24	0.31	0.13	3.54	3.31	2.48	1.26	1.26
50th-Percentile Queue Length [ft/ln]	64.14	70.94	6.00	7.73	3.34	88.50	82.67	61.89	31.45	31.43
95th-Percentile Queue Length [veh/ln]	4.62	5.11	0.43	0.56	0.24	6.37	5.95	4.46	2.26	2.26
95th-Percentile Queue Length [ft/ln]	115.45	127.69	10.80	13.91	6.01	159.30	148.81	111.41	56.60	56.57

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	27.33	25.20	25.20	29.53	20.74	20.74	39.50	11.91	12.00	34.59	6.47	6.47
Movement LOS	C	C	C	C	C	C	D	B	B	C	A	A
d_A, Approach Delay [s/veh]	26.19			24.09			12.14			13.44		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]				15.81								
Intersection LOS				B								
Intersection V/C				0.524								

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	22.43	22.43	22.43	22.43
I_p,int, Pedestrian LOS Score for Intersection	2.157	1.938	2.806	2.580
Crosswalk LOS	B	A	C	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	769	769	554	646
d_b, Bicycle Delay [s]	12.31	12.31	16.99	14.89
I_b,int, Bicycle LOS Score for Intersection	2.185	1.629	2.203	2.052
Bicycle LOS	B	A	B	B

**Sequence**

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 9: Washington Street at Marguerita Avenue**

Control Type:	All-way stop	Delay (sec / veh):	12.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.527

**Intersection Setup**

Name	Washington Street			Washington Street			Marguerita Ave			Marguerita Ave		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

**Volumes**

Name	Washington Street			Washington Street			Marguerita Ave			Marguerita Ave		
Base Volume Input [veh/h]	36	307	23	22	282	12	15	34	25	19	44	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 [%]	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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	36	307	23	22	282	12	15	34	25	19	44	13
Peak Hour Factor	0.9350	0.9350	0.9350	0.9350	0.9350	0.9350	0.9350	0.9350	0.9350	0.9350	0.9350	0.9350
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	82	6	6	75	3	4	9	7	5	12	3
Total Analysis Volume [veh/h]	39	328	25	24	302	13	16	36	27	20	47	14
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	744	733	630	619
Degree of Utilization, x	0.53	0.46	0.13	0.13

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	3.12	2.46	0.43	0.45
95th-Percentile Queue Length [ft]	78.00	61.44	10.69	11.22
Approach Delay [s/veh]	13.10	12.06	9.53	9.69
Approach LOS	B	B	A	A
Intersection Delay [s/veh]	12.08			
Intersection LOS	B			

**Intersection Level Of Service Report****Intersection 10: Washington Street at Lincoln Avenue**

Control Type:	All-way stop	Delay (sec / veh):	21.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.713

**Intersection Setup**

Name	Washington Street			Washington Street			Lincoln Avenue			Lincoln Avenue		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	35.00			35.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Washington Street			Washington Street			Lincoln Avenue			Lincoln Avenue		
Base Volume Input [veh/h]	23	233	14	58	257	42	33	259	31	33	155	45
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	23	233	14	58	257	42	33	259	31	33	155	45
Peak Hour Factor	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450
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]	6	62	4	15	68	11	9	69	8	9	41	12
Total Analysis Volume [veh/h]	24	247	15	61	272	44	35	274	33	35	164	48
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	509	529	509	458	510
Degree of Utilization, x	0.56	0.71	0.67	0.43	0.09

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	3.43	5.72	4.96	2.16	0.31
95th-Percentile Queue Length [ft]	85.86	143.09	123.99	54.10	7.75
Approach Delay [s/veh]	18.80	24.94	23.34	15.32	
Approach LOS	C	C	C	C	
Intersection Delay [s/veh]	21.20				
Intersection LOS	C				

**Intersection Level Of Service Report****Intersection 11: Washington Street at Victoria Avenue (West)**

Control Type:	All-way stop	Delay (sec / veh):	11.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.487

**Intersection Setup**

Name	Washington Street			Washington Street			Victoria Ave (West)			Victoria Ave (West)		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

**Volumes**

Name	Washington Street			Washington Street			Victoria Ave (West)			Victoria Ave (West)		
Base Volume Input [veh/h]	76	242	0	0	264	10	0	0	0	264	179	21
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	76	242	0	0	264	10	0	0	0	264	179	21
Peak Hour Factor	0.9610	0.9610	1.0000	1.0000	0.9610	0.9610	1.0000	1.0000	1.0000	0.9610	0.9610	0.9610
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	63	0	0	69	3	0	0	0	69	47	5
Total Analysis Volume [veh/h]	79	252	0	0	275	10	0	0	0	275	186	22
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	727	764	832		566	622
Degree of Utilization, x	0.23	0.22	0.34		0.49	0.33

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	0.87	0.82	1.53		2.65	1.47
95th-Percentile Queue Length [ft]	21.85	20.53	38.21		66.23	36.69
Approach Delay [s/veh]	8.91		9.56	0.00		13.41
Approach LOS	A		A	A		B
Intersection Delay [s/veh]				11.06		
Intersection LOS				B		

**Intersection Level Of Service Report****Intersection 15: Madison Street at Victoria Avenue (East)**

Control Type:	All-way stop	Delay (sec / veh):	12.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.602

**Intersection Setup**

Name	Madison Street			Madison Street			Victoria Ave (East)			Victoria Ave (East)		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Madison Street			Madison Street			Victoria Ave (East)			Victoria Ave (East)		
Base Volume Input [veh/h]	0	11	1	168	68	0	48	376	13	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	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	11	1	168	68	0	48	376	13	0	0	0
Peak Hour Factor	1.0000	0.9130	0.9130	0.9130	0.9130	1.0000	0.9130	0.9130	0.9130	1.0000	1.0000	1.0000
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	3	0	46	19	0	13	103	4	0	0	0
Total Analysis Volume [veh/h]	0	12	1	184	74	0	53	412	14	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	872	881	795	
Degree of Utilization, x	0.01	0.29	0.60	

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	0.05	1.22	4.12	
95th-Percentile Queue Length [ft]	1.13	30.61	102.90	
Approach Delay [s/veh]	7.19	8.77	14.14	0.00
Approach LOS	A	A	B	A
Intersection Delay [s/veh]		12.17		
Intersection LOS		B		

**Intersection Level Of Service Report****Intersection 16: Washington Street at Victoria Avenue (East)**

Control Type:	All-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):	0.750

**Intersection Setup**

Name	Washington Street			Washington Street			Victoria Ave (East)			Victoria Ave (East)		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Washington Street			Washington Street			Victoria Ave (East)			Victoria Ave (East)		
Base Volume Input [veh/h]	0	311	185	9	520	0	7	250	307	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	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	311	185	9	520	0	7	250	307	0	0	0
Peak Hour Factor	1.0000	0.9610	0.9610	0.9610	0.9610	1.0000	0.9610	0.9610	0.9610	1.0000	1.0000	1.0000
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	81	48	2	135	0	2	65	80	0	0	0
Total Analysis Volume [veh/h]	0	324	193	9	541	0	7	260	319	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	731	731	852	733	513	571	
Degree of Utilization, x	0.22	0.22	0.23	0.75	0.52	0.56	

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	0.85	0.85	0.87	6.91	2.98	3.43	
95th-Percentile Queue Length [ft]	21.13	21.13	21.74	172.77	74.43	85.86	
Approach Delay [s/veh]		8.70		21.08		16.91	0.00
Approach LOS		A		C		C	A
Intersection Delay [s/veh]				15.73			
Intersection LOS				C			

*APPENDIX D-II*

**EXISTING PLUS PROJECT WITH MITIGATION  
LEVEL OF SERVICE CALCULATION WORKSHEETS**

**Intersection Level Of Service Report****Intersection 10: Washington Street at Lincoln Avenue**

Control Type:	Signalized	Delay (sec / veh):	13.6
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.781

**Intersection Setup**

Name	Washington Street			Washington Street			Lincoln Avenue			Lincoln Avenue		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	35.00			35.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Washington Street			Washington Street			Lincoln Avenue			Lincoln Avenue		
Base Volume Input [veh/h]	60	438	28	56	100	107	100	276	44	31	237	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	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	60	438	28	56	100	107	100	276	44	31	237	75
Peak Hour Factor	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230
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]	16	119	8	15	27	29	27	75	12	8	64	20
Total Analysis Volume [veh/h]	65	475	30	61	108	116	108	299	48	34	257	81
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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing mi	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	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]	50											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Offset [s]	0.0											
Offset Reference	LeadGreen											
Permissive Mode	SingleBand											
Lost time [s]	8.00											

**Phasing & Timing**

Control Type	Permiss											
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	0	7	0	0	7	0	0	7	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	22	0	0	22	0	0	28	0	0	28	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	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	11	0	0	7	0	0	7	0	0	7	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	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	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	C	C	C	C	R
C, Cycle Length [s]	50	50	50	50	50
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	2.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	23	23	19	19	19
g / C, Green / Cycle	0.46	0.46	0.38	0.38	0.38
(v / s)_i Volume / Saturation Flow Rate	0.32	0.18	0.34	0.17	0.05
s, saturation flow rate [veh/h]	1775	1567	1356	1763	1589
c, Capacity [veh/h]	898	809	604	750	604
d1, Uniform Delay [s]	10.57	8.72	14.96	11.41	10.16
k, delay calibration	0.50	0.50	0.13	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.42	1.21	2.28	0.33	0.10
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.64	0.35	0.75	0.39	0.13
d, Delay for Lane Group [s/veh]	13.99	9.93	17.24	11.74	10.25
Lane Group LOS	B	A	B	B	B
Critical Lane Group	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.47	1.77	4.25	1.89	0.47
50th-Percentile Queue Length [ft/ln]	111.73	44.19	106.21	47.28	11.70
95th-Percentile Queue Length [veh/ln]	7.94	3.18	7.63	3.40	0.84
95th-Percentile Queue Length [ft/ln]	198.41	79.54	190.72	85.10	21.07

#### Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	13.99	13.99	13.99	9.93	9.93	9.93	17.24	17.24	17.24	11.74	11.74	10.25
Movement LOS	B	B	B	A	A	A	B	B	B	B	B	B
d_A, Approach Delay [s/veh]	13.99			9.93			17.24			11.42		
Approach LOS	B			A			B			B		
d_I, Intersection Delay [s/veh]				13.61								
Intersection LOS				B								
Intersection V/C				0.781								

#### Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	15.21	15.21	15.21	15.21
I_p,int, Pedestrian LOS Score for Intersection	2.162	2.375	2.354	2.324
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	720	720	960	960
d_b, Bicycle Delay [s]	10.24	10.24	6.76	6.76
I_b,int, Bicycle LOS Score for Intersection	2.500	2.030	2.310	2.173
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 10: Washington Street at Lincoln Avenue**

Control Type:	Signalized	Delay (sec / veh):	11.6
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.513

**Intersection Setup**

Name	Washington Street			Washington Street			Lincoln Avenue			Lincoln Avenue		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	35.00			35.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Washington Street			Washington Street			Lincoln Avenue			Lincoln Avenue		
Base Volume Input [veh/h]	23	233	14	58	257	42	33	259	31	33	155	45
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	23	233	14	58	257	42	33	259	31	33	155	45
Peak Hour Factor	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450
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]	6	62	4	15	68	11	9	69	8	9	41	12
Total Analysis Volume [veh/h]	24	247	15	61	272	44	35	274	33	35	164	48
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	0				0			0			0	
v_di, Inbound Pedestrian Volume crossing m	0				0			0			0	
v_co, Outbound Pedestrian Volume crossing	0				0			0			0	
v_ci, Inbound Pedestrian Volume crossing mi	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]	50											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Offset [s]	0.0											
Offset Reference	LeadGreen											
Permissive Mode	SingleBand											
Lost time [s]	8.00											

**Phasing & Timing**

Control Type	Permiss											
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	0	7	0	0	7	0	0	7	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	22	0	0	22	0	0	28	0	0	28	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	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	11	0	0	7	0	0	7	0	0	7	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	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	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	C	C	C	C	R
C, Cycle Length [s]	50	50	50	50	50
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00
I1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	2.00	2.00	0.00
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	29	29	13	13	13
g / C, Green / Cycle	0.59	0.59	0.25	0.25	0.25
(v / s)_i Volume / Saturation Flow Rate	0.16	0.22	0.21	0.11	0.03
s, saturation flow rate [veh/h]	1802	1713	1622	1738	1589
c, Capacity [veh/h]	1135	1088	491	526	403
d1, Uniform Delay [s]	5.06	5.39	17.58	15.60	14.38
k, delay calibration	0.50	0.50	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.53	0.87	1.80	0.45	0.13
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.25	0.35	0.70	0.38	0.12
d, Delay for Lane Group [s/veh]	5.60	6.26	19.38	16.05	14.51
Lane Group LOS	A	A	B	B	B
Critical Lane Group	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.06	1.52	3.34	1.63	0.36
50th-Percentile Queue Length [ft/ln]	26.55	37.97	83.52	40.78	9.06
95th-Percentile Queue Length [veh/ln]	1.91	2.73	6.01	2.94	0.65
95th-Percentile Queue Length [ft/ln]	47.80	68.35	150.33	73.40	16.31

#### Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	5.60	5.60	5.60	6.26	6.26	6.26	19.38	19.38	19.38	16.05	16.05	14.51
Movement LOS	A	A	A	A	A	A	B	B	B	B	B	B
d_A, Approach Delay [s/veh]	5.60			6.26			19.38			15.75		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]				11.57								
Intersection LOS							B					
Intersection V/C				0.513								

#### Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	15.21	15.21	15.21	15.21
I_p,int, Pedestrian LOS Score for Intersection	2.087	2.133	2.089	2.252
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	720	720	960	960
d_b, Bicycle Delay [s]	10.24	10.24	6.76	6.76
I_b,int, Bicycle LOS Score for Intersection	2.032	2.182	2.124	1.967
Bicycle LOS	B	B	B	A

#### Sequence

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



## APPENDIX E

### YEAR 2022 TRAFFIC CONDITIONS LEVEL OF SERVICE CALCULATION WORKSHEETS

**Intersection Key**  
**Casa Blanca Elementary School Project, Riverside**

Vistro Model Number	Report Number	Key Study Intersections
1	1	Madison Street at Indiana Avenue (traffic signal)
2	2	Madison Street at Emerald Street (all-way stop)
3	3	Madison Street at Lincoln Avenue (traffic signal)
4	4A	Madison Street at Victoria Avenue (West)
5	5	Sonora Place at Lincoln Avenue (one-way stop)
6	6	Collingwood Street/ProjectDwy 3 at Lincoln Avenue (one-way stop)
7	7	Dorlen Street at Lincoln Avenue (two-way stop)
8	8	Washington Street at Indiana Avenue (traffic signal)
9	9	Washington Street at Marguerita Avenue (all-way stop)
10	10	Washington Street at Lincoln Avenue (all-way stop)
11	11A	Washington Street at Victoria Avenue (West)
12	A	Project Driveway 1 at Lincoln Avenue
13	B	Project Driveway 2 at Lincoln Avenue
14	C	Project Driveway 4 at Lincoln Avenue
15	4B	Madison Street at Victoria Avenue (East)
16	11B	Washington Street at Victoria Avenue (East)

*APPENDIX E-I*

**EXISTING PLUS AMBIENT GROWTH  
LEVEL OF SERVICE CALCULATION WORKSHEETS**

**Intersection Level Of Service Report**  
**Intersection 1: Madison Street at Indiana Avenue**

Control Type:	Signalized	Delay (sec / veh):	34.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.654

**Intersection Setup**

Name	Madison Street			Madison Street			Indiana Ave			Indiana Ave		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
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			No			Yes			Yes		

**Volumes**

Name	Madison Street			Madison Street			Indiana Ave			Indiana Ave		
Base Volume Input [veh/h]	31	396	31	276	346	218	200	364	29	25	132	292
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	31	396	31	276	346	218	200	364	29	25	132	292
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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	0.7500
Total 15-Minute Volume [veh/h]	8	104	8	73	91	57	53	96	8	7	35	58
Total Analysis Volume [veh/h]	33	417	33	291	364	229	211	383	31	26	139	231
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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing mi	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	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]	100											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Offset [s]	0.0											
Offset Reference	LeadGreen											
Permissive Mode	SingleBand											
Lost time [s]	16.00											

**Phasing & Timing**

Control Type	Protecte	Permiss	Permiss									
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-									
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [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
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	29	0	31	49	0	29	29	0	11	11	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]	0	7	0	0	7	0	0	7	0	0	0	0
Pedestrian Clearance [s]	0	18	0	0	18	0	0	18	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No										
Maximum Recall	No	No										
Pedestrian Recall	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	C	L	C	C	L	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
I1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	15	15	18	29	29	14	47	47	4	37	37
g / C, Green / Cycle	0.04	0.15	0.15	0.18	0.29	0.29	0.14	0.47	0.47	0.04	0.37	0.37
(v / s)_i Volume / Saturation Flow Rate	0.02	0.12	0.12	0.16	0.17	0.17	0.12	0.11	0.11	0.01	0.07	0.15
s, saturation flow rate [veh/h]	1781	1870	1822	1781	1870	1631	1781	1870	1821	1781	1870	1589
c, Capacity [veh/h]	77	279	272	329	544	475	251	877	854	66	683	581
d1, Uniform Delay [s]	46.70	41.26	41.30	39.76	30.30	30.31	41.93	15.90	15.90	47.11	21.79	23.60
k, delay calibration	0.11	0.11	0.11	0.12	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
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
d2, Incremental Delay [s]	3.74	5.73	6.06	8.34	0.99	1.14	7.44	0.64	0.66	3.77	0.67	2.03
d3, Initial Queue Delay [s]	0.00	0.00	0.00	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	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	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.43	0.81	0.82	0.88	0.58	0.58	0.84	0.24	0.24	0.39	0.20	0.40
d, Delay for Lane Group [s/veh]	50.44	46.99	47.36	48.10	31.29	31.45	49.36	16.54	16.57	50.89	22.47	25.64
Lane Group LOS	D	D	D	D	C	C	D	B	B	D	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.88	5.82	5.73	7.64	6.56	5.75	5.55	2.95	2.89	0.70	2.34	4.31
50th-Percentile Queue Length [ft/ln]	21.94	145.43	143.31	191.12	164.09	143.83	138.68	73.71	72.17	17.49	58.48	107.72
95th-Percentile Queue Length [veh/ln]	1.58	9.77	9.66	12.18	10.77	9.69	9.41	5.31	5.20	1.26	4.21	7.71
95th-Percentile Queue Length [ft/ln]	39.50	244.31	241.47	304.49	269.13	242.17	235.24	132.68	129.90	31.49	105.26	192.82

#### Movement, Approach, & Intersection Results

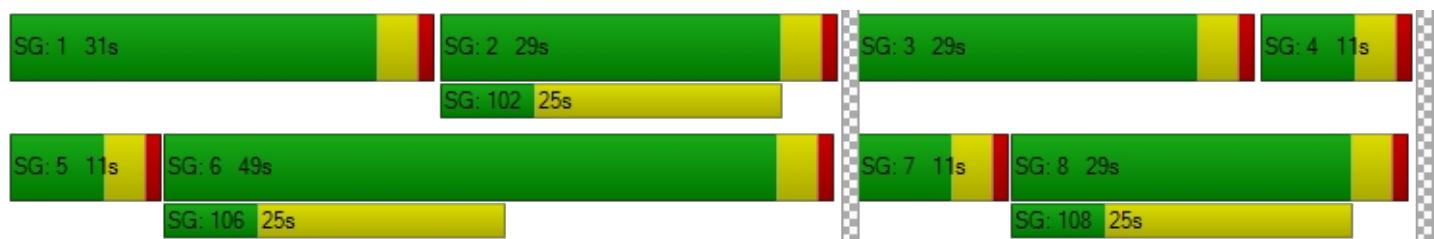
d_M, Delay for Movement [s/veh]	50.44	47.16	47.36	48.10	31.31	31.45	49.36	16.55	16.57	50.89	22.47	25.64
Movement LOS	D	D	D	D	C	C	D	B	B	D	C	C
d_A, Approach Delay [s/veh]	47.40				36.87			27.63			26.18	
Approach LOS		D			D			C			C	
d_I, Intersection Delay [s/veh]					34.81							
Intersection LOS							C					
Intersection V/C					0.654							

#### Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	39.61	0.00	39.61	39.61
I_p,int, Pedestrian LOS Score for Intersection	2.481	0.000	2.505	2.520
Crosswalk LOS	B	F	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	500	900	500	140
d_b, Bicycle Delay [s]	28.13	15.13	28.13	43.25
I_b,int, Bicycle LOS Score for Intersection	1.958	2.289	2.075	1.886
Bicycle LOS	A	B	B	A

#### Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 2: Madison Street at Emerald Street**

Control Type:	All-way stop	Delay (sec / veh):	12.6
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.600

**Intersection Setup**

Name	Madison Street			Madison Street			Emerald Street			Emerald Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

**Volumes**

Name	Madison Street			Madison Street			Emerald Street			Emerald Street		
Base Volume Input [veh/h]	29	395	27	13	244	13	10	0	5	12	2	18
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	29	395	27	13	244	13	10	0	5	12	2	18
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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	104	7	3	64	3	3	0	1	3	1	5
Total Analysis Volume [veh/h]	31	416	28	14	257	14	11	0	5	13	2	19
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	666	740	648	718	636	664
Degree of Utilization, x	0.05	0.60	0.02	0.38	0.03	0.05

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	0.15	4.05	0.07	1.76	0.08	0.16
95th-Percentile Queue Length [ft]	3.66	101.25	1.65	44.11	1.94	4.04
Approach Delay [s/veh]		14.17		10.61		8.81
Approach LOS		B		B	A	A
Intersection Delay [s/veh]					12.58	
Intersection LOS					B	

**Intersection Level Of Service Report**  
**Intersection 3: Madison Street at Lincoln Avenue**

Control Type:	Signalized	Delay (sec / veh):	22.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.458

**Intersection Setup**

Name	Madison Street			Madison Street			Lincoln Avenue			Lincoln Avenue		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
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	Madison Street			Madison Street			Lincoln Avenue			Lincoln Avenue		
Base Volume Input [veh/h]	26	235	19	78	99	105	99	227	11	8	225	117
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	26	235	19	78	99	105	99	227	11	8	225	117
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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]	7	62	5	21	26	28	26	60	3	2	59	31
Total Analysis Volume [veh/h]	27	247	20	82	104	111	104	239	12	8	237	123
Presence of On-Street Parking	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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing mi	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	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]	70											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Offset [s]	0.0											
Offset Reference	LeadGreen											
Permissive Mode	SingleBand											
Lost time [s]	16.00											

**Phasing & Timing**

Control Type	Protecte	Permiss	Permiss									
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-									
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [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
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	26	0	11	26	0	11	22	0	11	22	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]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	14	0	0	14	0	0	11	0	0	11	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No										
Maximum Recall	No	No										
Pedestrian Recall	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
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
I1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	3	12	6	15	6	35	1	30	30
g / C, Green / Cycle	0.04	0.17	0.08	0.21	0.09	0.50	0.02	0.43	0.43
(v / s)_i Volume / Saturation Flow Rate	0.02	0.14	0.05	0.13	0.06	0.14	0.00	0.10	0.10
s, saturation flow rate [veh/h]	1781	1846	1781	1714	1781	1854	1781	1870	1662
c, Capacity [veh/h]	77	324	145	367	156	925	29	799	710
d1, Uniform Delay [s]	32.67	27.91	31.07	24.80	31.05	10.21	34.15	12.80	12.86
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.50	0.11	0.50	0.50
I, 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]	2.74	5.25	3.42	1.48	4.82	0.72	5.06	0.68	0.82
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	0.35	0.82	0.56	0.59	0.67	0.27	0.28	0.23	0.24
d, Delay for Lane Group [s/veh]	35.41	33.15	34.48	26.29	35.87	10.93	39.21	13.48	13.68
Lane Group LOS	D	C	C	C	D	B	D	B	B
Critical Lane Group	No	Yes	Yes	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.49	4.59	1.43	3.21	1.85	2.17	0.17	1.86	1.76
50th-Percentile Queue Length [ft/ln]	12.27	114.74	35.73	80.21	46.35	54.27	4.29	46.51	43.89
95th-Percentile Queue Length [veh/ln]	0.88	8.10	2.57	5.78	3.34	3.91	0.31	3.35	3.16
95th-Percentile Queue Length [ft/ln]	22.09	202.58	64.32	144.38	83.43	97.69	7.72	83.72	79.00

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	35.41	33.15	33.15	34.48	26.29	26.29	35.87	10.93	10.93	39.21	13.52	13.68
Movement LOS	D	C	C	C	C	C	D	B	B	D	B	B
d_A, Approach Delay [s/veh]	33.36			28.55			18.23			14.13		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]				22.80								
Intersection LOS				C								
Intersection V/C				0.458								

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	24.86	24.86	24.86	24.86
I_p,int, Pedestrian LOS Score for Intersection	2.062	2.177	2.295	2.290
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	629	629	514	514
d_b, Bicycle Delay [s]	16.46	16.46	19.31	19.31
I_b,int, Bicycle LOS Score for Intersection	2.045	2.050	2.145	1.863
Bicycle LOS	B	B	B	A

**Sequence**

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-



### Intersection Level Of Service Report

#### Intersection 4: Madison Street at Victoria Avenue (West)

Control Type:	All-way stop	Delay (sec / veh):	13.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.670

#### Intersection Setup

Name	Madison Street			Madison Street			Victoria Ave (West)			Victoria Ave (West)		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

#### Volumes

Name	Madison Street			Madison Street			Victoria Ave (West)			Victoria Ave (West)		
Base Volume Input [veh/h]	19	98	0	0	82	26	0	0	0	2	366	171
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	98	0	0	82	26	0	0	0	2	366	171
Peak Hour Factor	0.9500	0.9500	1.0000	1.0000	0.9500	0.9500	1.0000	1.0000	1.0000	0.9500	0.9500	0.9500
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	26	0	0	22	7	0	0	0	1	96	45
Total Analysis Volume [veh/h]	20	103	0	0	86	27	0	0	0	2	385	180
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	863	781	921		847
Degree of Utilization, x	0.14	0.11	0.03		0.67

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	0.50	0.37	0.09		5.29		
95th-Percentile Queue Length [ft]	12.41	9.24	2.26		132.18		
Approach Delay [s/veh]	7.87	7.60		0.00	15.43		
Approach LOS	A	A		A	C		
Intersection Delay [s/veh]	13.17						
Intersection LOS	B						

**Intersection Level Of Service Report**  
**Intersection 5: Sonora Place at Lincoln Avenue**

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):	0.022

**Intersection Setup**

Name	Sonora Place		Lincoln Avenue		Lincoln Avenue	
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

**Volumes**

Name	Sonora Place		Lincoln Avenue		Lincoln Avenue	
Base Volume Input [veh/h]	9	5	308	1	6	335
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00
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]	9	5	308	1	6	335
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	1	81	0	2	88
Total Analysis Volume [veh/h]	9	5	324	1	6	353
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
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	0.02	0.01	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	14.03	10.25	0.00	0.00	7.93	0.00
Movement LOS	B	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.09	0.09	0.00	0.00	0.01	0.01
95th-Percentile Queue Length [ft/ln]	2.24	2.24	0.00	0.00	0.37	0.37
d_A, Approach Delay [s/veh]	12.68		0.00		0.13	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]			0.32			
Intersection LOS			B			

**Intersection Level Of Service Report**  
**Intersection 6: Collingwood Street at Lincoln Avenue**

Control Type:	Two-way stop	Delay (sec / veh):	14.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.027

**Intersection Setup**

Name	Collingwood St		Lincoln Ave		Lincoln Ave	
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

**Volumes**

Name	Collingwood St		Lincoln Ave		Lincoln Ave	
Base Volume Input [veh/h]	10	14	324	8	4	335
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00
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]	10	14	324	8	4	335
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	4	85	2	1	88
Total Analysis Volume [veh/h]	11	15	341	8	4	353
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
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	0.03	0.02	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	14.34	10.51	0.00	0.00	7.99	0.00
Movement LOS	B	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.15	0.15	0.00	0.00	0.01	0.01
95th-Percentile Queue Length [ft/ln]	3.85	3.85	0.00	0.00	0.25	0.25
d_A, Approach Delay [s/veh]	12.13		0.00		0.09	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]			0.47			
Intersection LOS			B			

**Intersection Level Of Service Report**  
**Intersection 7: Dorlen Street at Lincoln Avenue**

Control Type:	Two-way stop	Delay (sec / veh):	16.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.108

**Intersection Setup**

Name	Dorlen Street			Dorlen Street			Lincoln Avenue			Lincoln Avenue		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

**Volumes**

Name	Dorlen Street			Dorlen Street			Lincoln Avenue			Lincoln Avenue		
Base Volume Input [veh/h]	37	0	15	0	0	2	0	324	11	9	299	2
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	37	0	15	0	0	2	0	324	11	9	299	2
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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	0	4	0	0	1	0	85	3	2	79	1
Total Analysis Volume [veh/h]	39	0	16	0	0	2	0	341	12	9	315	2
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	0.11	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	16.28	16.05	11.46	15.32	14.84	9.98	7.90	0.00	0.00	8.01	0.00
Movement LOS	C	C	B	C	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.45	0.45	0.45	0.01	0.01	0.01	0.00	0.00	0.00	0.02	0.02
95th-Percentile Queue Length [ft/ln]	11.22	11.22	11.22	0.21	0.21	0.21	0.00	0.00	0.00	0.56	0.56
d_A, Approach Delay [s/veh]		14.88			9.98			0.00			0.22
Approach LOS		B			A			A			A
d_I, Intersection Delay [s/veh]						1.24					
Intersection LOS							C				

**Intersection Level Of Service Report****Intersection 8: Washington Street at Indiana Avenue**

Control Type: Signalized Delay (sec / veh): 18.5  
 Analysis Method: HCM 6th Edition Level Of Service: B  
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.567

**Intersection Setup**

Name	Washington Street			Washington Street			Indiana Avenue			Indiana Avenue		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
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	Washington Street			Washington Street			Indiana Avenue			Indiana Avenue		
Base Volume Input [veh/h]	200	3	394	2	1	0	13	419	108	76	315	5
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	200	3	394	2	1	0	13	419	108	76	315	5
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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]	53	1	104	1	0	0	3	110	28	20	83	1
Total Analysis Volume [veh/h]	211	3	415	2	1	0	14	441	114	80	332	5
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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	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]	65											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Offset [s]	0.0											
Offset Reference	LeadGreen											
Permissive Mode	SingleBand											
Lost time [s]	12.00											

**Phasing & Timing**

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [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
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	32	0	0	32	0	11	22	0	11	22	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	18	0	0	18	0	0	11	0	0	11	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	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	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	L	C	L	C	C	L	C	C
C, Cycle Length [s]	65	65	65	65	65	65	65	65	65	65
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
I1_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	0.00
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	20	20	20	20	2	28	28	5	32	32
g / C, Green / Cycle	0.30	0.30	0.30	0.30	0.03	0.43	0.43	0.08	0.49	0.49
(v / s)_i Volume / Saturation Flow Rate	0.15	0.26	0.00	0.00	0.01	0.15	0.15	0.04	0.09	0.09
s, saturation flow rate [veh/h]	1416	1591	968	1870	1781	1870	1740	1781	1870	1860
c, Capacity [veh/h]	501	481	136	565	46	803	747	150	912	907
d1, Uniform Delay [s]	20.08	21.51	30.95	15.87	31.14	12.51	12.54	28.61	9.40	9.40
k, delay calibration	0.11	0.14	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.56	6.11	0.04	0.00	3.59	1.23	1.35	2.94	0.45	0.45
d3, Initial Queue Delay [s]	0.00	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	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

#### Lane Group Results

X, volume / capacity	0.42	0.87	0.01	0.00	0.30	0.36	0.36	0.53	0.19	0.19
d, Delay for Lane Group [s/veh]	20.64	27.62	30.99	15.87	34.73	13.75	13.89	31.54	9.85	9.85
Lane Group LOS	C	C	C	B	C	B	B	C	A	A
Critical Lane Group	No	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.61	6.34	0.03	0.01	0.25	2.77	2.64	1.27	1.29	1.29
50th-Percentile Queue Length [ft/ln]	65.31	158.47	0.78	0.25	6.35	69.32	65.94	31.71	32.30	32.21
95th-Percentile Queue Length [veh/ln]	4.70	10.47	0.06	0.02	0.46	4.99	4.75	2.28	2.33	2.32
95th-Percentile Queue Length [ft/ln]	117.56	261.69	1.40	0.45	11.44	124.78	118.69	57.09	58.14	57.97

#### Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	20.64	27.62	27.62	30.99	15.87	15.87	34.73	13.80	13.89	31.54	9.85	9.85
Movement LOS	C	C	C	C	B	B	C	B	B	C	A	A
d_A, Approach Delay [s/veh]	25.28			25.95			14.33			14.01		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]				18.53								
Intersection LOS					B							
Intersection V/C				0.567								

#### Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	22.43	22.43	22.43	22.43
I_p,int, Pedestrian LOS Score for Intersection	2.190	1.930	2.799	2.533
Crosswalk LOS	B	A	C	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	862	862	554	554
d_b, Bicycle Delay [s]	10.53	10.53	16.99	16.99
I_b,int, Bicycle LOS Score for Intersection	2.597	1.565	2.029	1.904
Bicycle LOS	B	A	B	A

#### Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 9: Washington Street at Marguerita Avenue**

Control Type:	All-way stop	Delay (sec / veh):	25.8
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.898

**Intersection Setup**

Name	Washington Street			Washington Street			Marguerita Ave			Marguerita Ave		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

**Volumes**

Name	Washington Street			Washington Street			Marguerita Ave			Marguerita Ave		
Base Volume Input [veh/h]	22	548	54	13	127	17	32	71	28	26	42	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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	22	548	54	13	127	17	32	71	28	26	42	28
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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]	6	144	14	3	33	4	8	19	7	7	11	7
Total Analysis Volume [veh/h]	23	577	57	14	134	18	34	75	29	27	44	29
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

**Lanes**

Capacity per Entry Lane [veh/h]	732	645	581	576
Degree of Utilization, x	0.90	0.26	0.24	0.17

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	11.70	1.02	0.92	0.62
95th-Percentile Queue Length [ft]	292.47	25.57	22.99	15.60
Approach Delay [s/veh]	35.07	10.51	11.12	10.56
Approach LOS	E	B	B	B
Intersection Delay [s/veh]	25.80			
Intersection LOS	D			

**Intersection Level Of Service Report**  
**Intersection 10: Washington Street at Lincoln Avenue**

Control Type:	All-way stop	Delay (sec / veh):	60.8
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.162

**Intersection Setup**

Name	Washington Street			Washington Street			Lincoln Avenue			Lincoln Avenue		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	35.00			35.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Washington Street			Washington Street			Lincoln Avenue			Lincoln Avenue		
Base Volume Input [veh/h]	30	473	30	60	108	41	44	282	18	33	238	81
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	473	30	60	108	41	44	282	18	33	238	81
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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	124	8	16	28	11	12	74	5	9	63	21
Total Analysis Volume [veh/h]	32	498	32	63	114	43	46	297	19	35	251	85
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	562	436	459	431	474
Degree of Utilization, x	1.16	0.50	0.79	0.66	0.18

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	20.21	2.77	7.06	4.72	0.65
95th-Percentile Queue Length [ft]	505.26	69.31	176.54	117.88	16.20
Approach Delay [s/veh]	119.06	19.38	34.25		22.90
Approach LOS	F	C	D		C
Intersection Delay [s/veh]		60.77			
Intersection LOS		F			

**Intersection Level Of Service Report****Intersection 11: Washington Street at Victoria Avenue (West)**

Control Type:	All-way stop	Delay (sec / veh):	13.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.572

**Intersection Setup**

Name	Washington Street			Washington Street			Victoria Ave (West)			Victoria Ave (West)		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

**Volumes**

Name	Washington Street			Washington Street			Victoria Ave (West)			Victoria Ave (West)		
Base Volume Input [veh/h]	270	512	0	0	160	12	0	0	0	134	252	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	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	270	512	0	0	160	12	0	0	0	134	252	30
Peak Hour Factor	0.9500	0.9500	1.0000	1.0000	0.9500	0.9500	1.0000	1.0000	1.0000	0.9500	0.9500	0.9500
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]	71	135	0	0	42	3	0	0	0	35	66	8
Total Analysis Volume [veh/h]	284	539	0	0	168	13	0	0	0	141	265	32
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	720	773	778		510	555
Degree of Utilization, x	0.57	0.53	0.23		0.28	0.54

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	3.66	3.19	0.90		1.12	3.15
95th-Percentile Queue Length [ft]	91.47	79.73	22.45		28.01	78.63
Approach Delay [s/veh]		13.35	9.02	0.00		15.13
Approach LOS		B	A	A		C
Intersection Delay [s/veh]				13.34		
Intersection LOS				B		

### Intersection Level Of Service Report

#### Intersection 15: Madison Street at Victoria Avenue (East)

Control Type:	All-way stop	Delay (sec / veh):	9.2
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.396

#### Intersection Setup

Name	Madison Street			Madison Street			Victoria Ave (East)			Victoria Ave (East)		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

#### Volumes

Name	Madison Street			Madison Street			Victoria Ave (East)			Victoria Ave (East)		
Base Volume Input [veh/h]	0	63	13	59	25	0	55	254	5	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	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	63	13	59	25	0	55	254	5	0	0	0
Peak Hour Factor	1.0000	0.9500	0.9500	0.9500	0.9500	1.0000	0.9500	0.9500	0.9500	1.0000	1.0000	1.0000
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	17	3	16	7	0	14	67	1	0	0	0
Total Analysis Volume [veh/h]	0	66	14	62	26	0	58	267	5	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	920	868	834	
Degree of Utilization, x	0.09	0.10	0.40	

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	0.28	0.34	1.91	
95th-Percentile Queue Length [ft]	7.12	8.43	47.64	
Approach Delay [s/veh]	7.28	7.61	10.11	0.00
Approach LOS	A	A	B	A
Intersection Delay [s/veh]			9.21	
Intersection LOS			A	

**Intersection Level Of Service Report****Intersection 16: Washington Street at Victoria Avenue (East)**

Control Type:	All-way stop	Delay (sec / veh):	13.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.550

**Intersection Setup**

Name	Washington Street			Washington Street			Victoria Ave (East)			Victoria Ave (East)		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Washington Street			Washington Street			Victoria Ave (East)			Victoria Ave (East)		
Base Volume Input [veh/h]	0	770	461	19	274	0	12	218	87	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	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	770	461	19	274	0	12	218	87	0	0	0
Peak Hour Factor	1.0000	0.9500	0.9500	0.9500	0.9500	1.0000	0.9500	0.9500	0.9500	1.0000	1.0000	1.0000
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	203	121	5	72	0	3	57	23	0	0	0
Total Analysis Volume [veh/h]	0	811	485	20	288	0	13	229	92	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	752	752	881	644	472	523	
Degree of Utilization, x	0.54	0.54	0.55	0.48	0.51	0.18	

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	3.26	3.26	3.43	2.59	2.86	0.63	
95th-Percentile Queue Length [ft]	81.57	81.57	85.79	64.81	71.61	15.84	
Approach Delay [s/veh]		12.46		13.62		16.12	0.00
Approach LOS		B		B		C	A
Intersection Delay [s/veh]					13.28		
Intersection LOS					B		

**Intersection Level Of Service Report**  
**Intersection 1: Madison Street at Indiana Avenue**

Control Type:	Signalized	Delay (sec / veh):	35.8
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.790

**Intersection Setup**

Name	Madison Street			Madison Street			Indiana Ave			Indiana Ave		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
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			No			Yes			Yes		

**Volumes**

Name	Madison Street			Madison Street			Indiana Ave			Indiana Ave		
Base Volume Input [veh/h]	32	451	32	278	548	118	269	456	79	44	224	408
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	32	451	32	278	548	118	269	456	79	44	224	408
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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	0.7500
Total 15-Minute Volume [veh/h]	8	119	8	73	144	31	71	120	21	12	59	81
Total Analysis Volume [veh/h]	34	475	34	293	577	124	283	480	83	46	236	322
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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing mi	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	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]	100											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Offset [s]	0.0											
Offset Reference	LeadGreen											
Permissive Mode	SingleBand											
Lost time [s]	16.00											

**Phasing & Timing**

Control Type	Protecte	Permiss	Permiss									
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-									
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [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
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	29	0	31	49	0	29	29	0	11	11	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]	0	7	0	0	7	0	0	7	0	0	0	0
Pedestrian Clearance [s]	0	18	0	0	18	0	0	18	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No										
Maximum Recall	No	No										
Pedestrian Recall	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	C	L	C	C	L	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
I1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	17	17	19	31	31	18	44	44	5	31	31
g / C, Green / Cycle	0.04	0.17	0.17	0.19	0.31	0.31	0.18	0.44	0.44	0.05	0.31	0.31
(v / s)_i Volume / Saturation Flow Rate	0.02	0.14	0.14	0.16	0.19	0.19	0.16	0.15	0.15	0.03	0.13	0.20
s, saturation flow rate [veh/h]	1781	1870	1827	1781	1870	1757	1781	1870	1775	1781	1870	1589
c, Capacity [veh/h]	78	310	302	331	575	540	324	818	776	92	573	487
d1, Uniform Delay [s]	46.65	40.42	40.45	39.70	29.75	29.75	39.83	18.76	18.76	46.25	27.55	30.19
k, delay calibration	0.11	0.11	0.11	0.12	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
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
d2, Incremental Delay [s]	3.76	5.71	5.98	8.52	1.13	1.21	7.32	1.20	1.26	4.20	2.18	6.88
d3, Initial Queue Delay [s]	0.00	0.00	0.00	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	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	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.43	0.83	0.83	0.88	0.63	0.63	0.87	0.35	0.35	0.50	0.41	0.66
d, Delay for Lane Group [s/veh]	50.41	46.13	46.43	48.22	30.89	30.96	47.15	19.95	20.02	50.45	29.73	37.07
Lane Group LOS	D	D	D	D	C	C	D	B	C	D	C	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.90	6.54	6.45	7.71	7.52	7.07	7.34	4.62	4.40	1.22	4.76	7.54
50th-Percentile Queue Length [ft/ln]	22.59	163.60	161.14	192.79	187.88	176.78	183.58	115.43	110.04	30.41	119.12	188.43
95th-Percentile Queue Length [veh/ln]	1.63	10.74	10.61	12.27	12.01	11.43	11.79	8.14	7.84	2.19	8.34	12.04
95th-Percentile Queue Length [ft/ln]	40.65	268.48	265.23	306.65	300.28	285.81	294.68	203.53	196.05	54.74	208.62	300.98

#### Movement, Approach, & Intersection Results

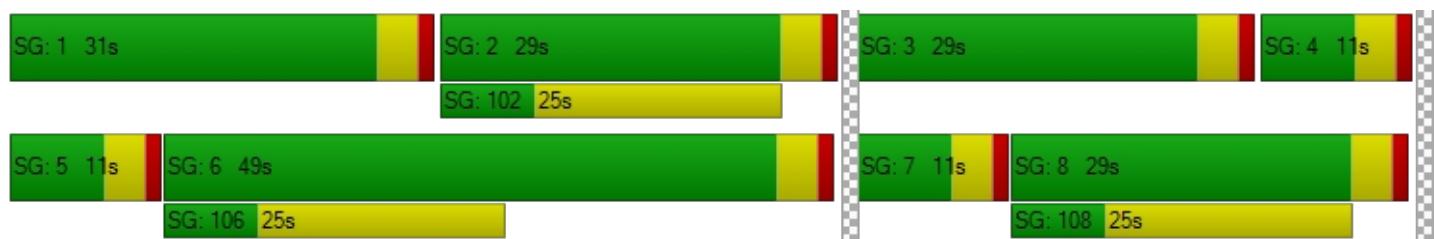
d_M, Delay for Movement [s/veh]	50.41	46.27	46.43	48.22	30.91	30.96	47.15	19.98	20.02	50.45	29.73	37.07
Movement LOS	D	D	D	D	C	C	D	B	C	D	C	D
d_A, Approach Delay [s/veh]	46.54				36.02			29.07			35.22	
Approach LOS		D			D			C			D	
d_I, Intersection Delay [s/veh]					35.80							
Intersection LOS							D					
Intersection V/C					0.790							

#### Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	39.61	0.00	39.61	39.61
I_p,int, Pedestrian LOS Score for Intersection	2.548	0.000	2.546	2.580
Crosswalk LOS	B	F	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	500	900	500	140
d_b, Bicycle Delay [s]	28.13	15.13	28.13	43.25
I_b,int, Bicycle LOS Score for Intersection	2.008	2.380	2.258	2.058
Bicycle LOS	B	B	B	B

#### Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 2: Madison Street at Emerald Street**

Control Type:	All-way stop	Delay (sec / veh):	17.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.758

**Intersection Setup**

Name	Madison Street			Madison Street			Emerald Street			Emerald Street		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

**Volumes**

Name	Madison Street			Madison Street			Emerald Street			Emerald Street		
Base Volume Input [veh/h]	6	301	15	21	488	30	13	2	3	21	0	27
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	6	301	15	21	488	30	13	2	3	21	0	27
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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	79	4	6	128	8	3	1	1	6	0	7
Total Analysis Volume [veh/h]	6	317	16	22	514	32	14	2	3	22	0	28
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	629	693	650	720	579	617
Degree of Utilization, x	0.01	0.48	0.03	0.76	0.03	0.08

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	0.03	2.62	0.10	7.08	0.10	0.26
95th-Percentile Queue Length [ft]	0.72	65.40	2.62	177.10	2.54	6.59
Approach Delay [s/veh]		12.51		21.05		9.43
Approach LOS		B		C		A
Intersection Delay [s/veh]					17.26	
Intersection LOS					C	

**Intersection Level Of Service Report**  
**Intersection 3: Madison Street at Lincoln Avenue**

Control Type:	Signalized	Delay (sec / veh):	24.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.471

**Intersection Setup**

Name	Madison Street			Madison Street			Lincoln Avenue			Lincoln Avenue		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
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	Madison Street			Madison Street			Lincoln Avenue			Lincoln Avenue		
Base Volume Input [veh/h]	16	144	11	97	246	73	108	252	25	15	147	84
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	16	144	11	97	246	73	108	252	25	15	147	84
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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	38	3	26	65	19	28	66	7	4	39	22
Total Analysis Volume [veh/h]	17	152	12	102	259	77	114	265	26	16	155	88
Presence of On-Street Parking	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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing m	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	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]	70											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Offset [s]	0.0											
Offset Reference	LeadGreen											
Permissive Mode	SingleBand											
Lost time [s]	16.00											

**Phasing & Timing**

Control Type	Protecte	Permiss	Permiss									
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-									
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [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
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	25	0	11	25	0	12	23	0	11	22	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]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	14	0	0	14	0	0	11	0	0	11	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No										
Maximum Recall	No	No										
Pedestrian Recall	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
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
I1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	2	11	6	15	6	35	2	30	30
g / C, Green / Cycle	0.03	0.16	0.09	0.22	0.09	0.50	0.03	0.43	0.43
(v / s)_i Volume / Saturation Flow Rate	0.01	0.09	0.06	0.19	0.06	0.16	0.01	0.07	0.07
s, saturation flow rate [veh/h]	1781	1846	1781	1797	1781	1841	1781	1870	1652
c, Capacity [veh/h]	54	298	157	394	160	910	51	810	715
d1, Uniform Delay [s]	33.36	27.11	31.00	26.34	31.08	10.67	33.45	12.11	12.16
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.50	0.11	0.50	0.50
I, 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]	3.31	1.58	4.52	5.30	5.74	0.93	3.46	0.41	0.50
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	0.32	0.55	0.65	0.85	0.71	0.32	0.31	0.15	0.16
d, Delay for Lane Group [s/veh]	36.66	28.69	35.52	31.65	36.82	11.60	36.90	12.51	12.66
Lane Group LOS	D	C	D	C	D	B	D	B	B
Critical Lane Group	Yes	No	No	Yes	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.32	2.56	1.81	5.68	2.06	2.63	0.31	1.18	1.13
50th-Percentile Queue Length [ft/ln]	8.11	63.89	45.21	142.03	51.60	65.67	7.70	29.52	28.26
95th-Percentile Queue Length [veh/ln]	0.58	4.60	3.26	9.59	3.72	4.73	0.55	2.13	2.03
95th-Percentile Queue Length [ft/ln]	14.60	115.01	81.38	239.75	92.88	118.21	13.87	53.13	50.87

#### Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	36.66	28.69	28.69	35.52	31.65	31.65	36.82	11.60	11.60	36.90	12.54	12.66
Movement LOS	D	C	C	D	C	C	D	B	B	D	B	B
d_A, Approach Delay [s/veh]	29.44			32.55			18.70			14.09		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]				24.01								
Intersection LOS				C								
Intersection V/C				0.471								

#### Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	24.86	24.86	24.86	24.86
I_p,int, Pedestrian LOS Score for Intersection	2.083	2.184	2.277	2.273
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	600	600	543	514
d_b, Bicycle Delay [s]	17.15	17.15	18.58	19.31
I_b,int, Bicycle LOS Score for Intersection	1.858	2.282	2.228	1.773
Bicycle LOS	A	B	B	A

#### Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report****Intersection 4: Madison Street at Victoria Avenue (West)**

Control Type:	All-way stop	Delay (sec / veh):	9.5
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.374

**Intersection Setup**

Name	Madison Street			Madison Street			Victoria Ave (West)			Victoria Ave (West)		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Madison Street			Madison Street			Victoria Ave (West)			Victoria Ave (West)		
Base Volume Input [veh/h]	4	58	0	0	252	44	0	0	0	3	216	58
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	58	0	0	252	44	0	0	0	3	216	58
Peak Hour Factor	0.9500	0.9500	1.0000	1.0000	0.9500	0.9500	1.0000	1.0000	1.0000	0.9500	0.9500	0.9500
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	15	0	0	66	12	0	0	0	1	57	15
Total Analysis Volume [veh/h]	4	61	0	0	265	46	0	0	0	3	227	61
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	830	787	929		777
Degree of Utilization, x	0.08	0.34	0.05		0.37

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	0.25	1.49	0.16		1.74
95th-Percentile Queue Length [ft]	6.36	37.24	3.90		43.60
Approach Delay [s/veh]	7.71		9.17	0.00	10.37
Approach LOS	A		A	A	B
Intersection Delay [s/veh]			9.55		
Intersection LOS			A		

**Intersection Level Of Service Report**  
**Intersection 5: Sonora Place at Lincoln Avenue**

Control Type:	Two-way stop	Delay (sec / veh):	13.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.007

**Intersection Setup**

Name	Sonora Place		Lincoln Avenue		Lincoln Avenue	
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

**Volumes**

Name	Sonora Place		Lincoln Avenue		Lincoln Avenue	
Base Volume Input [veh/h]	3	4	345	10	5	242
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00
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]	3	4	345	10	5	242
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	1	91	3	1	64
Total Analysis Volume [veh/h]	3	4	363	11	5	255
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
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	0.01	0.01	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	13.24	10.40	0.00	0.00	8.05	0.00
Movement LOS	B	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.04	0.04	0.00	0.00	0.01	0.01
95th-Percentile Queue Length [ft/ln]	0.96	0.96	0.00	0.00	0.32	0.32
d_A, Approach Delay [s/veh]	11.62		0.00		0.15	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]			0.19			
Intersection LOS			B			

**Intersection Level Of Service Report**  
**Intersection 6: Collingwood Street at Lincoln Avenue**

Control Type:	Two-way stop	Delay (sec / veh):	13.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.031

**Intersection Setup**

Name	Collingwood St		Lincoln Ave		Lincoln Ave	
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

**Volumes**

Name	Collingwood St		Lincoln Ave		Lincoln Ave	
Base Volume Input [veh/h]	13	3	338	14	2	231
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00
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]	13	3	338	14	2	231
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	1	89	4	1	61
Total Analysis Volume [veh/h]	14	3	356	15	2	243
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
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	0.03	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	13.16	10.55	0.00	0.00	8.04	0.00
Movement LOS	B	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.11	0.11	0.00	0.00	0.01	0.01
95th-Percentile Queue Length [ft/ln]	2.72	2.72	0.00	0.00	0.13	0.13
d_A, Approach Delay [s/veh]	12.70		0.00		0.07	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]			0.37			
Intersection LOS			B			

**Intersection Level Of Service Report**  
**Intersection 7: Dorlen Street at Lincoln Avenue**

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):	0.043

**Intersection Setup**

Name	Dorlen Street			Dorlen Street			Lincoln Avenue			Lincoln Avenue		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

**Volumes**

Name	Dorlen Street			Dorlen Street			Lincoln Avenue			Lincoln Avenue		
Base Volume Input [veh/h]	17	0	8	0	0	2	1	314	25	11	201	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 [%]	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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	17	0	8	0	0	2	1	314	25	11	201	1
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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	0	2	0	0	1	0	83	7	3	53	0
Total Analysis Volume [veh/h]	18	0	8	0	0	2	1	331	26	12	212	1
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	0.04	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	14.04	14.03	10.59	13.73	13.75	9.36	7.65	0.00	0.00	8.03	0.00	0.00
Movement LOS	B	B	B	B	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.17	0.17	0.17	0.01	0.01	0.01	0.00	0.00	0.00	0.03	0.03	0.03
95th-Percentile Queue Length [ft/ln]	4.31	4.31	4.31	0.18	0.18	0.18	0.06	0.06	0.06	0.69	0.69	0.69
d_A, Approach Delay [s/veh]		12.98			9.36			0.02			0.43	
Approach LOS		B			A			A			A	
d_I, Intersection Delay [s/veh]						0.75						
Intersection LOS							B					

## Intersection Level Of Service Report

## Intersection 8: Washington Street at Indiana Avenue

Control Type: Signalized Delay (sec / veh): 15.7  
 Analysis Method: HCM 6th Edition Level Of Service: B  
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.520

## Intersection Setup

Name	Washington Street			Washington Street			Indiana Avenue			Indiana Avenue		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
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	Washington Street			Washington Street			Indiana Avenue			Indiana Avenue		
Base Volume Input [veh/h]	166	0	192	15	15	10	5	565	168	139	424	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 [%]	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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	166	0	192	15	15	10	5	565	168	139	424	1
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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]	44	0	51	4	4	3	1	149	44	37	112	0
Total Analysis Volume [veh/h]	175	0	202	16	16	11	5	595	177	146	446	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	0			0			0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0			0			0		0		0	
v_co, Outbound Pedestrian Volume crossing	0			0			0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0		0		0	
Bicycle Volume [bicycles/h]	0			0			0		0		0	

**Intersection Settings**

Located in CBD	No											
Signal Coordination Group	-											
Cycle Length [s]	65											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Offset [s]	0.0											
Offset Reference	LeadGreen											
Permissive Mode	SingleBand											
Lost time [s]	12.00											

**Phasing & Timing**

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [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
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	29	0	0	29	0	11	22	0	14	25	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	18	0	0	18	0	0	11	0	0	11	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	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	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	L	C	L	C	C	L	C	C
C, Cycle Length [s]	65	65	65	65	65	65	65	65	65	65
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
I1_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	0.00
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	14	14	14	14	1	32	32	7	39	39
g / C, Green / Cycle	0.21	0.21	0.21	0.21	0.01	0.50	0.50	0.11	0.60	0.60
(v / s)_i Volume / Saturation Flow Rate	0.13	0.13	0.01	0.02	0.00	0.21	0.22	0.08	0.12	0.12
s, saturation flow rate [veh/h]	1383	1589	1180	1745	1781	1870	1725	1781	1870	1869
c, Capacity [veh/h]	336	333	180	365	17	934	861	190	1115	1114
d1, Uniform Delay [s]	26.08	23.28	29.19	20.64	31.98	10.37	10.38	28.27	6.02	6.02
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.25	1.78	0.21	0.08	8.76	1.44	1.57	6.42	0.40	0.40
d3, Initial Queue Delay [s]	0.00	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	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.52	0.61	0.09	0.07	0.29	0.43	0.43	0.77	0.20	0.20
d, Delay for Lane Group [s/veh]	27.33	25.07	29.40	20.73	40.73	11.81	11.95	34.69	6.42	6.43
Lane Group LOS	C	C	C	C	D	B	B	C	A	A
Critical Lane Group	No	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.57	2.80	0.24	0.32	0.12	3.52	3.29	2.45	1.25	1.25
50th-Percentile Queue Length [ft/ln]	64.14	69.99	5.98	8.02	2.94	87.98	82.21	61.16	31.14	31.13
95th-Percentile Queue Length [veh/ln]	4.62	5.04	0.43	0.58	0.21	6.33	5.92	4.40	2.24	2.24
95th-Percentile Queue Length [ft/ln]	115.45	125.99	10.77	14.44	5.29	158.36	147.98	110.09	56.06	56.03

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	27.33	25.07	25.07	29.40	20.73	20.73	40.73	11.86	11.95	34.69	6.42	6.43
Movement LOS	C	C	C	C	C	C	D	B	B	C	A	A
d_A, Approach Delay [s/veh]	26.12			23.95			12.07			13.38		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]				15.75								
Intersection LOS				B								
Intersection V/C				0.520								

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	22.43	22.43	22.43	22.43
I_p,int, Pedestrian LOS Score for Intersection	2.155	1.938	2.806	2.579
Crosswalk LOS	B	A	C	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	769	769	554	646
d_b, Bicycle Delay [s]	12.31	12.31	16.99	14.89
I_b,int, Bicycle LOS Score for Intersection	2.182	1.631	2.201	2.049
Bicycle LOS	B	A	B	B

**Sequence**

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report****Intersection 9: Washington Street at Marguerita Avenue**

Control Type:	All-way stop	Delay (sec / veh):	12.6
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.549

**Intersection Setup**

Name	Washington Street			Washington Street			Marguerita Ave			Marguerita Ave		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

**Volumes**

Name	Washington Street			Washington Street			Marguerita Ave			Marguerita Ave		
Base Volume Input [veh/h]	35	328	21	24	301	13	16	37	24	17	48	14
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	35	328	21	24	301	13	16	37	24	17	48	14
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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]	9	86	6	6	79	3	4	10	6	4	13	4
Total Analysis Volume [veh/h]	37	345	22	25	317	14	17	39	25	18	51	15
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	735	726	617	610
Degree of Utilization, x	0.55	0.49	0.13	0.14

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	3.38	2.72	0.45	0.48
95th-Percentile Queue Length [ft]	84.55	68.12	11.25	11.89
Approach Delay [s/veh]	13.70	12.63	9.71	9.84
Approach LOS	B	B	A	A
Intersection Delay [s/veh]	12.59			
Intersection LOS	B			

**Intersection Level Of Service Report****Intersection 10: Washington Street at Lincoln Avenue**

Control Type:	All-way stop	Delay (sec / veh):	22.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.752

**Intersection Setup**

Name	Washington Street			Washington Street			Lincoln Avenue			Lincoln Avenue		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	35.00			35.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Washington Street			Washington Street			Lincoln Avenue			Lincoln Avenue		
Base Volume Input [veh/h]	17	252	15	63	278	28	17	275	25	36	163	49
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	17	252	15	63	278	28	17	275	25	36	163	49
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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	66	4	17	73	7	4	72	7	9	43	13
Total Analysis Volume [veh/h]	18	265	16	66	293	29	18	289	26	38	172	52
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	499	517	494	449	500
Degree of Utilization, x	0.60	0.75	0.67	0.47	0.10

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	3.89	6.47	4.98	2.44	0.35
95th-Percentile Queue Length [ft]	97.28	161.71	124.38	61.06	8.67
Approach Delay [s/veh]	20.47	28.13	24.07	16.24	
Approach LOS	C	D	C	C	
Intersection Delay [s/veh]		22.86			
Intersection LOS		C			

**Intersection Level Of Service Report**  
**Intersection 11: Washington Street at Victoria Avenue (West)**

Control Type:	All-way stop	Delay (sec / veh):	11.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.540

**Intersection Setup**

Name	Washington Street			Washington Street			Victoria Ave (West)			Victoria Ave (West)		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

**Volumes**

Name	Washington Street			Washington Street			Victoria Ave (West)			Victoria Ave (West)		
Base Volume Input [veh/h]	82	260	0	0	284	11	0	0	0	285	193	22
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	82	260	0	0	284	11	0	0	0	285	193	22
Peak Hour Factor	0.9500	0.9500	1.0000	1.0000	0.9500	0.9500	1.0000	1.0000	1.0000	0.9500	0.9500	0.9500
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]	22	68	0	0	75	3	0	0	0	75	51	6
Total Analysis Volume [veh/h]	86	274	0	0	299	12	0	0	0	300	203	23
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	724	761	828		555	610
Degree of Utilization, x	0.25	0.24	0.38		0.54	0.37

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	0.98	0.92	1.76		3.20	1.71
95th-Percentile Queue Length [ft]	24.46	22.96	43.93		80.05	42.69
Approach Delay [s/veh]	9.10		9.94	0.00		14.61
Approach LOS	A		A	A		B
Intersection Delay [s/veh]				11.74		
Intersection LOS				B		

**Intersection Level Of Service Report****Intersection 15: Madison Street at Victoria Avenue (East)**

Control Type:	All-way stop	Delay (sec / veh):	12.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.627

**Intersection Setup**

Name	Madison Street			Madison Street			Victoria Ave (East)			Victoria Ave (East)		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Madison Street			Madison Street			Victoria Ave (East)			Victoria Ave (East)		
Base Volume Input [veh/h]	0	12	1	181	73	0	51	406	14	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	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	12	1	181	73	0	51	406	14	0	0	0
Peak Hour Factor	1.0000	0.9500	0.9500	0.9500	0.9500	1.0000	0.9500	0.9500	0.9500	1.0000	1.0000	1.0000
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	3	0	48	19	0	13	107	4	0	0	0
Total Analysis Volume [veh/h]	0	13	1	191	77	0	54	427	15	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	869	880	791	
Degree of Utilization, x	0.02	0.30	0.63	

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	0.05	1.29	4.49	
95th-Percentile Queue Length [ft]	1.23	32.29	112.34	
Approach Delay [s/veh]	7.21	8.87	14.88	0.00
Approach LOS	A	A	B	A
Intersection Delay [s/veh]		12.67		
Intersection LOS		B		

**Intersection Level Of Service Report****Intersection 16: Washington Street at Victoria Avenue (East)**

Control Type:	All-way stop	Delay (sec / veh):	18.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.825

**Intersection Setup**

Name	Washington Street			Washington Street			Victoria Ave (East)			Victoria Ave (East)		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Washington Street			Washington Street			Victoria Ave (East)			Victoria Ave (East)		
Base Volume Input [veh/h]	0	335	200	9	561	0	8	270	332	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	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	335	200	9	561	0	8	270	332	0	0	0
Peak Hour Factor	1.0000	0.9500	0.9500	0.9500	0.9500	1.0000	0.9500	0.9500	0.9500	1.0000	1.0000	1.0000
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	88	53	2	148	0	2	71	87	0	0	0
Total Analysis Volume [veh/h]	0	353	211	9	591	0	8	284	349	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	725	725	844	727	497	551	
Degree of Utilization, x	0.24	0.24	0.25	0.83	0.59	0.63	

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	0.95	0.95	0.99	9.04	3.74	4.42	
95th-Percentile Queue Length [ft]	23.82	23.82	24.69	225.92	93.53	110.46	
Approach Delay [s/veh]		8.93		26.83		19.84	0.00
Approach LOS		A		D		C	A
Intersection Delay [s/veh]					18.76		
Intersection LOS					C		

*APPENDIX E-II*

**EXISTING PLUS AMBIENT GROWTH PLUS PROJECT  
LEVEL OF SERVICE CALCULATION WORKSHEETS**

**Intersection Level Of Service Report**  
**Intersection 1: Madison Street at Indiana Avenue**

Control Type:	Signalized	Delay (sec / veh):	34.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.658

**Intersection Setup**

Name	Madison Street			Madison Street			Indiana Ave			Indiana Ave		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
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			No			Yes			Yes		

**Volumes**

Name	Madison Street			Madison Street			Indiana Ave			Indiana Ave		
Base Volume Input [veh/h]	33	408	31	276	360	218	200	364	32	25	132	292
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	33	408	31	276	360	218	200	364	32	25	132	292
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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	0.7500
Total 15-Minute Volume [veh/h]	9	107	8	73	95	57	53	96	8	7	35	58
Total Analysis Volume [veh/h]	35	429	33	291	379	229	211	383	34	26	139	231
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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing mi	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	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]	100											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Offset [s]	0.0											
Offset Reference	LeadGreen											
Permissive Mode	SingleBand											
Lost time [s]	16.00											

**Phasing & Timing**

Control Type	Protecte	Permiss	Permiss									
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-									
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [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
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	29	0	31	49	0	18	29	0	11	22	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]	0	7	0	0	7	0	0	7	0	0	0	0
Pedestrian Clearance [s]	0	18	0	0	18	0	0	18	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No										
Maximum Recall	No	No										
Pedestrian Recall	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	C	L	C	C	L	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
I1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	15	15	18	29	29	14	47	47	4	36	36
g / C, Green / Cycle	0.04	0.15	0.15	0.18	0.29	0.29	0.14	0.47	0.47	0.04	0.36	0.36
(v / s)_i Volume / Saturation Flow Rate	0.02	0.12	0.13	0.16	0.17	0.17	0.12	0.11	0.11	0.01	0.07	0.15
s, saturation flow rate [veh/h]	1781	1870	1824	1781	1870	1637	1781	1870	1817	1781	1870	1589
c, Capacity [veh/h]	80	285	278	329	547	479	250	871	846	66	678	576
d1, Uniform Delay [s]	46.61	41.09	41.13	39.76	30.30	30.30	41.98	16.11	16.12	47.11	21.99	23.81
k, delay calibration	0.11	0.11	0.11	0.12	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
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
d2, Incremental Delay [s]	3.77	5.73	6.04	8.34	1.03	1.17	7.62	0.66	0.68	3.77	0.68	2.08
d3, Initial Queue Delay [s]	0.00	0.00	0.00	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	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	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.44	0.82	0.82	0.88	0.59	0.59	0.84	0.24	0.24	0.39	0.21	0.40
d, Delay for Lane Group [s/veh]	50.38	46.82	47.17	48.10	31.32	31.47	49.59	16.77	16.80	50.89	22.67	25.89
Lane Group LOS	D	D	D	D	C	C	D	B	B	D	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.93	5.97	5.88	7.64	6.74	5.92	5.56	3.00	2.93	0.70	2.35	4.33
50th-Percentile Queue Length [ft/ln]	23.23	149.14	146.95	191.12	168.39	148.02	139.01	74.99	73.28	17.49	58.81	108.36
95th-Percentile Queue Length [veh/ln]	1.67	9.97	9.85	12.18	10.99	9.91	9.43	5.40	5.28	1.26	4.23	7.75
95th-Percentile Queue Length [ft/ln]	41.81	249.28	246.36	304.49	274.79	247.78	235.70	134.99	131.90	31.49	105.85	193.72

**Movement, Approach, & Intersection Results**

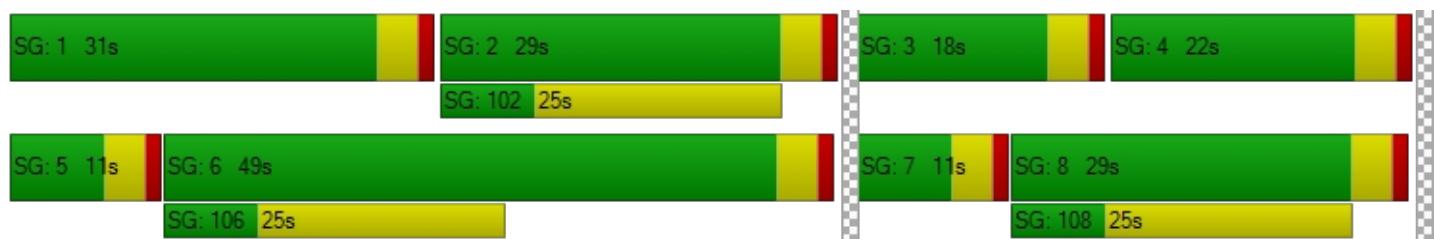
d_M, Delay for Movement [s/veh]	50.38	46.98	47.17	48.10	31.34	31.47	49.59	16.79	16.80	50.89	22.67	25.89
Movement LOS	D	D	D	D	C	C	D	B	B	D	C	C
d_A, Approach Delay [s/veh]	47.23				36.80			27.81			26.40	
Approach LOS		D			D			C			C	
d_I, Intersection Delay [s/veh]					34.91							
Intersection LOS						C						
Intersection V/C					0.658							

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	39.61	0.00	39.61	39.61
I_p,int, Pedestrian LOS Score for Intersection	2.487	0.000	2.506	2.520
Crosswalk LOS	B	F	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	500	900	500	360
d_b, Bicycle Delay [s]	28.13	15.13	28.13	33.62
I_b,int, Bicycle LOS Score for Intersection	1.970	2.301	2.078	1.886
Bicycle LOS	A	B	B	A

**Sequence**

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 2: Madison Street at Emerald Street**

Control Type:	All-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):	0.723

**Intersection Setup**

Name	Madison Street			Madison Street			Emerald Street			Emerald Street		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

**Volumes**

Name	Madison Street			Madison Street			Emerald Street			Emerald Street		
Base Volume Input [veh/h]	36	462	32	13	322	13	10	0	14	18	2	18
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	36	462	32	13	322	13	10	0	14	18	2	18
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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]	9	122	8	3	85	3	3	0	4	5	1	5
Total Analysis Volume [veh/h]	38	486	34	14	339	14	11	0	15	19	2	19
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	649	720	630	695	614	610
Degree of Utilization, x	0.06	0.72	0.02	0.51	0.04	0.07

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	0.19	6.25	0.07	2.90	0.13	0.21
95th-Percentile Queue Length [ft]	4.66	156.36	1.70	72.53	3.31	5.25
Approach Delay [s/veh]	18.87		12.94		9.13	9.32
Approach LOS	C		B		A	A
Intersection Delay [s/veh]				16.03		
Intersection LOS				C		

**Intersection Level Of Service Report**  
**Intersection 3: Madison Street at Lincoln Avenue**

Control Type:	Signalized	Delay (sec / veh):	25.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.591

**Intersection Setup**

Name	Madison Street			Madison Street			Lincoln Avenue			Lincoln Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
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	Madison Street			Madison Street			Lincoln Avenue			Lincoln Avenue		
Base Volume Input [veh/h]	26	235	28	191	99	105	99	256	11	15	250	213
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	26	235	28	191	99	105	99	256	11	15	250	213
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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]	7	62	7	50	26	28	26	67	3	4	66	56
Total Analysis Volume [veh/h]	27	247	29	201	104	111	104	269	12	16	263	224
Presence of On-Street Parking	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	0				0			0			0	
v_di, Inbound Pedestrian Volume crossing m	0				0			0			0	
v_co, Outbound Pedestrian Volume crossing	0				0			0			0	
v_ci, Inbound Pedestrian Volume crossing mi	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]	75											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Offset [s]	0.0											
Offset Reference	LeadGreen											
Permissive Mode	SingleBand											
Lost time [s]	16.00											

**Phasing & Timing**

Control Type	Protecte	Permiss	Permiss									
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-									
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [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
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	27	0	15	31	0	11	22	0	11	22	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]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	14	0	0	14	0	0	11	0	0	11	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No										
Maximum Recall	No	No										
Pedestrian Recall	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
C, Cycle Length [s]	75	75	75	75	75	75	75	75	75
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
I1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	3	13	10	21	6	33	2	29	29
g / C, Green / Cycle	0.04	0.18	0.14	0.27	0.08	0.45	0.03	0.39	0.39
(v / s)_i Volume / Saturation Flow Rate	0.02	0.15	0.11	0.13	0.06	0.15	0.01	0.14	0.14
s, saturation flow rate [veh/h]	1781	1836	1781	1714	1781	1856	1781	1870	1594
c, Capacity [veh/h]	73	328	242	469	148	826	49	728	620
d1, Uniform Delay [s]	35.06	29.82	31.60	22.66	33.53	13.64	35.85	16.27	16.36
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.50	0.11	0.50	0.50
I, 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]	3.06	5.80	7.13	0.70	5.95	1.12	3.85	1.36	1.68
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	0.37	0.84	0.83	0.46	0.70	0.34	0.33	0.36	0.37
d, Delay for Lane Group [s/veh]	38.12	35.62	38.73	23.36	39.48	14.76	39.70	17.63	18.04
Lane Group LOS	D	D	D	C	D	B	D	B	B
Critical Lane Group	No	Yes	Yes	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.53	5.16	3.91	3.11	2.04	3.13	0.33	3.23	2.91
50th-Percentile Queue Length [ft/ln]	13.29	128.93	97.75	77.68	50.95	78.18	8.33	80.66	72.77
95th-Percentile Queue Length [veh/ln]	0.96	8.88	7.04	5.59	3.67	5.63	0.60	5.81	5.24
95th-Percentile Queue Length [ft/ln]	23.92	222.04	175.96	139.83	91.71	140.72	14.99	145.19	130.98

#### Movement, Approach, & Intersection Results

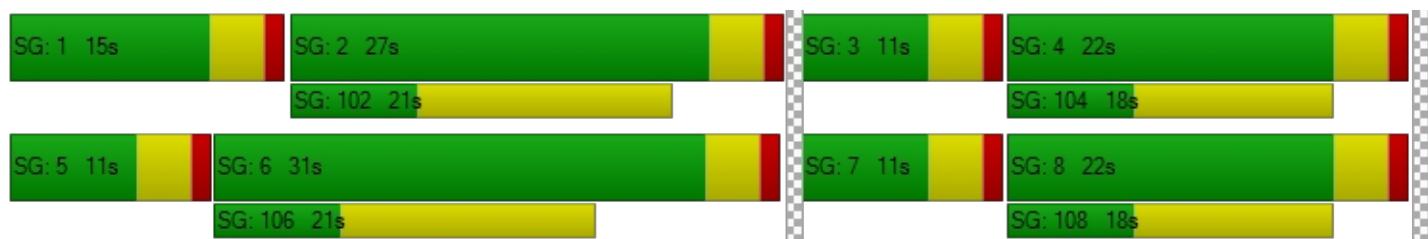
d_M, Delay for Movement [s/veh]	38.12	35.62	35.62	38.73	23.36	23.36	39.48	14.76	14.76	39.70	17.63	18.04
Movement LOS	D	D	D	D	C	C	D	B	B	D	B	B
d_A, Approach Delay [s/veh]	35.84			30.79			21.44			18.52		
Approach LOS	D			C			C			B		
d_I, Intersection Delay [s/veh]				25.66								
Intersection LOS				C								
Intersection V/C				0.591								

#### Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	27.31	27.31	27.31	27.31
I_p,int, Pedestrian LOS Score for Intersection	2.071	2.252	2.313	2.365
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	613	720	480	480
d_b, Bicycle Delay [s]	18.03	15.36	21.66	21.66
I_b,int, Bicycle LOS Score for Intersection	2.060	2.246	2.195	1.975
Bicycle LOS	B	B	B	A

#### Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report****Intersection 4: Madison Street at Victoria Avenue (West)**

Control Type:	All-way stop	Delay (sec / veh):	13.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.671

**Intersection Setup**

Name	Madison Street			Madison Street			Victoria Ave (West)			Victoria Ave (West)		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Madison Street			Madison Street			Victoria Ave (West)			Victoria Ave (West)		
Base Volume Input [veh/h]	19	101	0	0	82	28	0	0	0	2	366	171
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	101	0	0	82	28	0	0	0	2	366	171
Peak Hour Factor	0.9500	0.9500	1.0000	1.0000	0.9500	0.9500	1.0000	1.0000	1.0000	0.9500	0.9500	0.9500
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	27	0	0	22	7	0	0	0	1	96	45
Total Analysis Volume [veh/h]	20	106	0	0	86	29	0	0	0	2	385	180
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	862	781	921		845
Degree of Utilization, x	0.15	0.11	0.03		0.67

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	0.51	0.37	0.10		5.32
95th-Percentile Queue Length [ft]	12.76	9.25	2.44		132.90
Approach Delay [s/veh]	7.89	7.59	0.00		15.51
Approach LOS	A	A	A		C
Intersection Delay [s/veh]	13.20				
Intersection LOS	B				

**Intersection Level Of Service Report**  
**Intersection 5: Sonora Place at Lincoln Avenue**

Control Type:	Two-way stop	Delay (sec / veh):	18.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.033

**Intersection Setup**

Name	Sonora Place		Lincoln Avenue		Lincoln Avenue	
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

**Volumes**

Name	Sonora Place		Lincoln Avenue		Lincoln Avenue	
Base Volume Input [veh/h]	9	8	455	1	8	462
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00
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]	9	8	455	1	8	462
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	2	120	0	2	122
Total Analysis Volume [veh/h]	9	8	479	1	8	486
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
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	0.03	0.01	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	18.64	11.62	0.00	0.00	8.35	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.15	0.15	0.00	0.00	0.02	0.02
95th-Percentile Queue Length [ft/ln]	3.65	3.65	0.00	0.00	0.56	0.56
d_A, Approach Delay [s/veh]	15.34		0.00		0.14	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]			0.33			
Intersection LOS			C			

**Intersection Level Of Service Report**  
**Intersection 6: Collingwood Street/Project Driveway 3 at Lincoln Avenue**

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):	0.409

**Intersection Setup**

Name	Collingwood St			Project Dwy 3			Lincoln Ave			Lincoln Ave		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

**Volumes**

Name	Collingwood St			Project Dwy 3			Lincoln Ave			Lincoln Ave		
Base Volume Input [veh/h]	10	0	20	91	0	106	17	452	8	9	356	11
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	10	0	20	91	0	106	17	452	8	9	356	11
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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	0	5	24	0	28	4	119	2	2	94	3
Total Analysis Volume [veh/h]	11	0	21	96	0	112	18	476	8	9	375	12
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	0.06	0.00	0.04	0.41	0.00	0.17	0.02	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	25.20	19.84	12.24	33.13	31.49	23.19	8.12	0.00	0.00	8.37	0.00	0.00
Movement LOS	D	C	B	D	D	C	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.31	0.31	0.31	3.47	3.47	3.47	0.04	0.04	0.04	0.03	0.03	0.03
95th-Percentile Queue Length [ft/ln]	7.74	7.74	7.74	86.66	86.66	86.66	1.10	1.10	1.10	0.63	0.63	0.63
d_A, Approach Delay [s/veh]		16.70			27.78			0.29			0.19	
Approach LOS		C			D			A			A	
d_I, Intersection Delay [s/veh]						5.74						
Intersection LOS							D					

**Intersection Level Of Service Report**  
**Intersection 7: Dorlen Street at Lincoln Avenue**

Control Type:	Two-way stop	Delay (sec / veh):	23.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.208

**Intersection Setup**

Name	Dorlen Street			Dorlen Street			Lincoln Avenue			Lincoln Avenue		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

**Volumes**

Name	Dorlen Street			Dorlen Street			Lincoln Avenue			Lincoln Avenue		
Base Volume Input [veh/h]	49	0	15	0	0	2	0	425	21	9	417	2
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	49	0	15	0	0	2	0	425	21	9	417	2
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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]	13	0	4	0	0	1	0	112	6	2	110	1
Total Analysis Volume [veh/h]	52	0	16	0	0	2	0	447	22	9	439	2
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	0.21	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	23.19	22.16	14.74	19.94	18.58	10.85	8.22	0.00	0.00	8.32	0.00	0.00
Movement LOS	C	C	B	C	C	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.89	0.89	0.89	0.01	0.01	0.01	0.00	0.00	0.00	0.02	0.02	0.02
95th-Percentile Queue Length [ft/ln]	22.29	22.29	22.29	0.24	0.24	0.24	0.00	0.00	0.00	0.62	0.62	0.62
d_A, Approach Delay [s/veh]		21.20			10.85			0.00			0.17	
Approach LOS		C			B			A			A	
d_I, Intersection Delay [s/veh]							1.56					
Intersection LOS							C					

## Intersection Level Of Service Report

## Intersection 8: Washington Street at Indiana Avenue

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):	0.570

## Intersection Setup

Name	Washington Street			Washington Street			Indiana Avenue			Indiana Avenue		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
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	Washington Street			Washington Street			Indiana Avenue			Indiana Avenue		
Base Volume Input [veh/h]	200	3	396	2	1	0	13	419	108	79	315	5
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	200	3	396	2	1	0	13	419	108	79	315	5
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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]	53	1	104	1	0	0	3	110	28	21	83	1
Total Analysis Volume [veh/h]	211	3	417	2	1	0	14	441	114	83	332	5
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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	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]	65											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Offset [s]	0.0											
Offset Reference	LeadGreen											
Permissive Mode	SingleBand											
Lost time [s]	12.00											

**Phasing & Timing**

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [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
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	32	0	0	32	0	11	22	0	11	22	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	18	0	0	18	0	0	11	0	0	11	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	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	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	L	C	L	C	C	L	C	C
C, Cycle Length [s]	65	65	65	65	65	65	65	65	65	65
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
I1_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	0.00
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	20	20	20	20	2	28	28	6	32	32
g / C, Green / Cycle	0.30	0.30	0.30	0.30	0.03	0.43	0.43	0.08	0.49	0.49
(v / s)_i Volume / Saturation Flow Rate	0.15	0.26	0.00	0.00	0.01	0.15	0.15	0.05	0.09	0.09
s, saturation flow rate [veh/h]	1416	1591	967	1870	1781	1870	1740	1781	1870	1860
c, Capacity [veh/h]	503	483	136	567	46	798	743	152	910	905
d1, Uniform Delay [s]	20.01	21.47	30.95	15.82	31.14	12.62	12.65	28.58	9.45	9.45
k, delay calibration	0.11	0.14	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.56	6.20	0.04	0.00	3.59	1.25	1.37	3.02	0.45	0.45
d3, Initial Queue Delay [s]	0.00	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	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.42	0.87	0.01	0.00	0.30	0.36	0.36	0.55	0.19	0.19
d, Delay for Lane Group [s/veh]	20.57	27.67	30.99	15.82	34.73	13.88	14.02	31.60	9.90	9.90
Lane Group LOS	C	C	C	B	C	B	B	C	A	A
Critical Lane Group	No	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.61	6.38	0.03	0.01	0.25	2.79	2.65	1.32	1.30	1.29
50th-Percentile Queue Length [ft/ln]	65.17	159.44	0.78	0.25	6.35	69.77	66.37	32.93	32.41	32.32
95th-Percentile Queue Length [veh/ln]	4.69	10.52	0.06	0.02	0.46	5.02	4.78	2.37	2.33	2.33
95th-Percentile Queue Length [ft/ln]	117.30	262.99	1.40	0.45	11.44	125.58	119.46	59.28	58.34	58.17

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	20.57	27.67	27.67	30.99	15.82	15.82	34.73	13.93	14.02	31.60	9.90	9.90
Movement LOS	C	C	C	C	B	B	C	B	B	C	A	A
d_A, Approach Delay [s/veh]	25.30			25.93			14.46			14.19		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]				18.62								
Intersection LOS					B							
Intersection V/C				0.570								

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	22.43	22.43	22.43	22.43
I_p,int, Pedestrian LOS Score for Intersection	2.192	1.930	2.799	2.534
Crosswalk LOS	B	A	C	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	862	862	554	554
d_b, Bicycle Delay [s]	10.53	10.53	16.99	16.99
I_b,int, Bicycle LOS Score for Intersection	2.601	1.565	2.029	1.906
Bicycle LOS	B	A	B	A

**Sequence**

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 9: Washington Street at Marguerita Avenue**

Control Type:	All-way stop	Delay (sec / veh):	35.0
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.976

**Intersection Setup**

Name	Washington Street			Washington Street			Marguerita Ave			Marguerita Ave		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

**Volumes**

Name	Washington Street			Washington Street			Marguerita Ave			Marguerita Ave		
Base Volume Input [veh/h]	34	558	66	13	139	17	32	71	42	40	42	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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	34	558	66	13	139	17	32	71	42	40	42	28
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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]	9	147	17	3	37	4	8	19	11	11	11	7
Total Analysis Volume [veh/h]	36	587	69	14	146	18	34	75	44	42	44	29
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

**Lanes**

Capacity per Entry Lane [veh/h]	709	618	563	550
Degree of Utilization, x	0.98	0.29	0.27	0.21

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	15.09	1.19	1.10	0.78
95th-Percentile Queue Length [ft]	377.25	29.73	27.38	19.54
Approach Delay [s/veh]	50.26	11.17	11.76	11.27
Approach LOS	F	B	B	B
Intersection Delay [s/veh]	35.03			
Intersection LOS	E			

**Intersection Level Of Service Report****Intersection 10: Washington Street at Lincoln Avenue**

Control Type: All-way stop Delay (sec / veh): 113.6  
 Analysis Method: HCM 6th Edition Level Of Service: F  
 Analysis Period: 15 minutes Volume to Capacity (v/c): 1.392

**Intersection Setup**

Name	Washington Street			Washington Street			Lincoln Avenue			Lincoln Avenue		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	35.00			35.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Washington Street			Washington Street			Lincoln Avenue			Lincoln Avenue		
Base Volume Input [veh/h]	62	473	30	60	108	110	103	297	45	33	255	81
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	62	473	30	60	108	110	103	297	45	33	255	81
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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]	16	124	8	16	28	29	27	78	12	9	67	21
Total Analysis Volume [veh/h]	65	498	32	63	114	116	108	313	47	35	268	85
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

**Lanes**

Capacity per Entry Lane [veh/h]	595	406	468	393	428
Degree of Utilization, x	1.39	0.72	1.11	0.77	0.20

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	28.72	5.59	16.38	6.45	0.73
95th-Percentile Queue Length [ft]	717.95	139.66	409.62	161.20	18.30
Approach Delay [s/veh]	213.92	31.78	105.17	31.69	
Approach LOS	F	D	F	D	
Intersection Delay [s/veh]	113.60				
Intersection LOS	F				

**Intersection Level Of Service Report****Intersection 11: Washington Street at Victoria Avenue (West)**

Control Type: All-way stop Delay (sec / veh): 13.4  
 Analysis Method: HCM 6th Edition Level Of Service: B  
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.574

**Intersection Setup**

Name	Washington Street			Washington Street			Victoria Ave (West)			Victoria Ave (West)		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

**Volumes**

Name	Washington Street			Washington Street			Victoria Ave (West)			Victoria Ave (West)		
Base Volume Input [veh/h]	270	515	0	0	165	12	0	0	0	134	252	33
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	270	515	0	0	165	12	0	0	0	134	252	33
Peak Hour Factor	0.9500	0.9500	1.0000	1.0000	0.9500	0.9500	1.0000	1.0000	1.0000	0.9500	0.9500	0.9500
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]	71	136	0	0	43	3	0	0	0	35	66	9
Total Analysis Volume [veh/h]	284	542	0	0	174	13	0	0	0	141	265	35
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	719	772	778		508	555
Degree of Utilization, x	0.57	0.53	0.24		0.28	0.54

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	3.69	3.22	0.94		1.12	3.21
95th-Percentile Queue Length [ft]	92.26	80.43	23.43		28.09	80.35
Approach Delay [s/veh]		13.41	9.08	0.00		15.27
Approach LOS		B	A	A		C
Intersection Delay [s/veh]				13.42		
Intersection LOS				B		

**Intersection Level Of Service Report****Intersection 15: Madison Street at Victoria Avenue (East)**

Control Type:	All-way stop	Delay (sec / veh):	9.3
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.399

**Intersection Setup**

Name	Madison Street			Madison Street			Victoria Ave (East)			Victoria Ave (East)		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Madison Street			Madison Street			Victoria Ave (East)			Victoria Ave (East)		
Base Volume Input [veh/h]	0	63	13	59	25	0	58	254	5	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	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	63	13	59	25	0	58	254	5	0	0	0
Peak Hour Factor	1.0000	0.9500	0.9500	0.9500	0.9500	1.0000	0.9500	0.9500	0.9500	1.0000	1.0000	1.0000
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	17	3	16	7	0	15	67	1	0	0	0
Total Analysis Volume [veh/h]	0	66	14	62	26	0	61	267	5	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	920	868	834	
Degree of Utilization, x	0.09	0.10	0.40	

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	0.28	0.34	1.93	
95th-Percentile Queue Length [ft]	7.12	8.43	48.36	
Approach Delay [s/veh]	7.28	7.61	10.16	0.00
Approach LOS	A	A	B	A
Intersection Delay [s/veh]			9.25	
Intersection LOS			A	

**Intersection Level Of Service Report****Intersection 16: Washington Street at Victoria Avenue (East)**

Control Type:	All-way stop	Delay (sec / veh):	13.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.551

**Intersection Setup**

Name	Washington Street			Washington Street			Victoria Ave (East)			Victoria Ave (East)		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Washington Street			Washington Street			Victoria Ave (East)			Victoria Ave (East)		
Base Volume Input [veh/h]	0	773	461	21	276	0	12	218	87	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	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	773	461	21	276	0	12	218	87	0	0	0
Peak Hour Factor	1.0000	0.9500	0.9500	0.9500	0.9500	1.0000	0.9500	0.9500	0.9500	1.0000	1.0000	1.0000
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	203	121	6	73	0	3	57	23	0	0	0
Total Analysis Volume [veh/h]	0	814	485	22	291	0	13	229	92	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	752	752	881	644	471	521	
Degree of Utilization, x	0.54	0.54	0.55	0.49	0.51	0.18	

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	3.29	3.29	3.44	2.67	2.88	0.64	
95th-Percentile Queue Length [ft]	82.30	82.30	85.96	66.78	71.92	15.89	
Approach Delay [s/veh]		12.51		13.79		16.18	0.00
Approach LOS		B		B		C	A
Intersection Delay [s/veh]					13.34		
Intersection LOS					B		

**Intersection Level Of Service Report**  
**Intersection 1: Madison Street at Indiana Avenue**

Control Type:	Signalized	Delay (sec / veh):	35.8
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.792

**Intersection Setup**

Name	Madison Street			Madison Street			Indiana Ave			Indiana Ave		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
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			No			Yes			Yes		

**Volumes**

Name	Madison Street			Madison Street			Indiana Ave			Indiana Ave		
Base Volume Input [veh/h]	33	455	32	278	551	118	269	456	80	44	224	408
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	33	455	32	278	551	118	269	456	80	44	224	408
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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	0.7500
Total 15-Minute Volume [veh/h]	9	120	8	73	145	31	71	120	21	12	59	81
Total Analysis Volume [veh/h]	35	479	34	293	580	124	283	480	84	46	236	322
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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing mi	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	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]	100											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Offset [s]	0.0											
Offset Reference	LeadGreen											
Permissive Mode	SingleBand											
Lost time [s]	16.00											

**Phasing & Timing**

Control Type	Protecte	Permiss	Permiss									
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-									
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [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
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	29	0	31	49	0	29	29	0	11	11	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]	0	7	0	0	7	0	0	7	0	0	0	0
Pedestrian Clearance [s]	0	18	0	0	18	0	0	18	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No										
Maximum Recall	No	No										
Pedestrian Recall	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	C	L	C	C	L	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
I1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	17	17	19	31	31	18	44	44	5	31	31
g / C, Green / Cycle	0.04	0.17	0.17	0.19	0.31	0.31	0.18	0.44	0.44	0.05	0.31	0.31
(v / s)_i Volume / Saturation Flow Rate	0.02	0.14	0.14	0.16	0.19	0.19	0.16	0.15	0.15	0.03	0.13	0.20
s, saturation flow rate [veh/h]	1781	1870	1827	1781	1870	1757	1781	1870	1774	1781	1870	1589
c, Capacity [veh/h]	80	312	304	331	576	541	324	815	774	92	571	486
d1, Uniform Delay [s]	46.61	40.36	40.39	39.70	29.75	29.75	39.83	18.84	18.84	46.25	27.64	30.28
k, delay calibration	0.11	0.11	0.11	0.12	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
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
d2, Incremental Delay [s]	3.77	5.71	5.97	8.52	1.14	1.22	7.32	1.21	1.28	4.20	2.20	6.97
d3, Initial Queue Delay [s]	0.00	0.00	0.00	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	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	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.44	0.83	0.83	0.88	0.63	0.63	0.87	0.35	0.36	0.50	0.41	0.66
d, Delay for Lane Group [s/veh]	50.38	46.08	46.37	48.22	30.89	30.97	47.15	20.05	20.11	50.45	29.84	37.26
Lane Group LOS	D	D	D	D	C	C	D	C	C	D	C	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.93	6.59	6.49	7.71	7.55	7.11	7.34	4.64	4.42	1.22	4.78	7.56
50th-Percentile Queue Length [ft/ln]	23.23	164.83	162.34	192.79	188.75	177.65	183.58	116.00	110.53	30.41	119.38	188.96
95th-Percentile Queue Length [veh/ln]	1.67	10.80	10.67	12.27	12.06	11.48	11.79	8.17	7.87	2.19	8.36	12.07
95th-Percentile Queue Length [ft/ln]	41.81	270.10	266.82	306.65	301.40	286.94	294.68	204.32	196.74	54.74	208.98	301.68

#### Movement, Approach, & Intersection Results

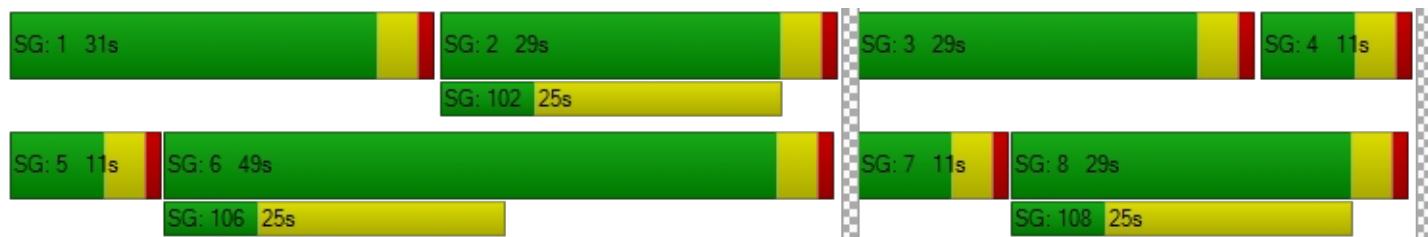
d_M, Delay for Movement [s/veh]	50.38	46.21	46.37	48.22	30.92	30.97	47.15	20.07	20.11	50.45	29.84	37.26
Movement LOS	D	D	D	D	C	C	D	C	C	D	C	D
d_A, Approach Delay [s/veh]	46.49				36.01			29.13			35.36	
Approach LOS		D			D			C			D	
d_I, Intersection Delay [s/veh]					35.85							
Intersection LOS							D					
Intersection V/C					0.792							

#### Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	39.61	0.00	39.61	39.61
I_p,int, Pedestrian LOS Score for Intersection	2.550	0.000	2.547	2.580
Crosswalk LOS	B	F	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	500	900	500	140
d_b, Bicycle Delay [s]	28.13	15.13	28.13	43.25
I_b,int, Bicycle LOS Score for Intersection	2.012	2.382	2.258	2.058
Bicycle LOS	B	B	B	B

#### Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 2: Madison Street at Emerald Street**

Control Type:	All-way stop	Delay (sec / veh):	18.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.791

**Intersection Setup**

Name	Madison Street			Madison Street			Emerald Street			Emerald Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

**Volumes**

Name	Madison Street			Madison Street			Emerald Street			Emerald Street		
Base Volume Input [veh/h]	8	320	16	21	506	30	13	2	5	22	0	27
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	320	16	21	506	30	13	2	5	22	0	27
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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	84	4	6	133	8	3	1	1	6	0	7
Total Analysis Volume [veh/h]	8	337	17	22	533	32	14	2	5	23	0	28
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	624	688	645	714	573	603
Degree of Utilization, x	0.01	0.51	0.03	0.79	0.04	0.08

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	0.04	2.97	0.11	7.97	0.11	0.28
95th-Percentile Queue Length [ft]	0.97	74.23	2.65	199.25	2.85	6.90
Approach Delay [s/veh]		13.24		23.46		9.52
Approach LOS		B		C		A
Intersection Delay [s/veh]					18.85	
Intersection LOS					C	

**Intersection Level Of Service Report**  
**Intersection 3: Madison Street at Lincoln Avenue**

Control Type:	Signalized	Delay (sec / veh):	24.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.478

**Intersection Setup**

Name	Madison Street			Madison Street			Lincoln Avenue			Lincoln Avenue		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
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	Madison Street			Madison Street			Lincoln Avenue			Lincoln Avenue		
Base Volume Input [veh/h]	16	144	13	122	246	73	108	259	25	17	154	112
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	16	144	13	122	246	73	108	259	25	17	154	112
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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	38	3	32	65	19	28	68	7	4	41	29
Total Analysis Volume [veh/h]	17	152	14	128	259	77	114	273	26	18	162	118
Presence of On-Street Parking	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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing m	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	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]	70											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Offset [s]	0.0											
Offset Reference	LeadGreen											
Permissive Mode	SingleBand											
Lost time [s]	16.00											

**Phasing & Timing**

Control Type	Protecte	Permiss	Permiss									
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-									
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [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
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	25	0	11	25	0	12	23	0	11	22	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]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	14	0	0	14	0	0	11	0	0	11	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No										
Maximum Recall	No	No										
Pedestrian Recall	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
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
I1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	2	11	6	15	6	35	2	30	30
g / C, Green / Cycle	0.03	0.15	0.09	0.22	0.09	0.49	0.03	0.43	0.43
(v / s)_i Volume / Saturation Flow Rate	0.01	0.09	0.07	0.19	0.06	0.16	0.01	0.08	0.08
s, saturation flow rate [veh/h]	1781	1843	1781	1797	1781	1842	1781	1870	1619
c, Capacity [veh/h]	54	287	166	394	160	905	56	810	701
d1, Uniform Delay [s]	33.36	27.50	31.11	26.34	31.08	10.84	33.30	12.25	12.32
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.50	0.11	0.50	0.50
I, 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]	3.31	1.83	7.28	5.30	5.74	0.98	3.27	0.49	0.61
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	0.32	0.58	0.77	0.85	0.71	0.33	0.32	0.18	0.19
d, Delay for Lane Group [s/veh]	36.66	29.34	38.39	31.64	36.83	11.82	36.57	12.73	12.93
Lane Group LOS	D	C	D	C	D	B	D	B	B
Critical Lane Group	Yes	No	No	Yes	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.32	2.62	2.38	5.68	2.06	2.74	0.34	1.39	1.31
50th-Percentile Queue Length [ft/ln]	8.11	65.59	59.41	142.02	51.61	68.40	8.54	34.77	32.79
95th-Percentile Queue Length [veh/ln]	0.58	4.72	4.28	9.59	3.72	4.93	0.62	2.50	2.36
95th-Percentile Queue Length [ft/ln]	14.60	118.06	106.94	239.74	92.89	123.13	15.38	62.58	59.03

#### Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	36.66	29.34	29.34	38.39	31.64	31.64	36.83	11.82	11.82	36.57	12.75	12.93
Movement LOS	D	C	C	D	C	C	D	B	B	D	B	B
d_A, Approach Delay [s/veh]	30.02			33.50			18.72			14.26		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]				24.32								
Intersection LOS				C								
Intersection V/C				0.478								

#### Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	24.86	24.86	24.86	24.86
I_p,int, Pedestrian LOS Score for Intersection	2.084	2.202	2.280	2.291
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	600	600	543	514
d_b, Bicycle Delay [s]	17.15	17.15	18.58	19.31
I_b,int, Bicycle LOS Score for Intersection	1.862	2.325	2.241	1.805
Bicycle LOS	A	B	B	A

#### Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report****Intersection 4: Madison Street at Victoria Avenue (West)**

Control Type:	All-way stop	Delay (sec / veh):	9.5
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.374

**Intersection Setup**

Name	Madison Street			Madison Street			Victoria Ave (West)			Victoria Ave (West)		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Madison Street			Madison Street			Victoria Ave (West)			Victoria Ave (West)		
Base Volume Input [veh/h]	4	59	0	0	252	45	0	0	0	3	216	58
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	59	0	0	252	45	0	0	0	3	216	58
Peak Hour Factor	0.9500	0.9500	1.0000	1.0000	0.9500	0.9500	1.0000	1.0000	1.0000	0.9500	0.9500	0.9500
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	16	0	0	66	12	0	0	0	1	57	15
Total Analysis Volume [veh/h]	4	62	0	0	265	47	0	0	0	3	227	61
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	829	786	929		777
Degree of Utilization, x	0.08	0.34	0.05		0.37

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	0.26	1.49	0.16		1.75
95th-Percentile Queue Length [ft]	6.46	37.25	3.99		43.65
Approach Delay [s/veh]	7.71		9.16	0.00	10.38
Approach LOS	A		A	A	B
Intersection Delay [s/veh]			9.55		
Intersection LOS			A		

**Intersection Level Of Service Report**  
**Intersection 5: Sonora Place at Lincoln Avenue**

Control Type:	Two-way stop	Delay (sec / veh):	14.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.008

**Intersection Setup**

Name	Sonora Place		Lincoln Avenue		Lincoln Avenue	
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

**Volumes**

Name	Sonora Place		Lincoln Avenue		Lincoln Avenue	
Base Volume Input [veh/h]	3	5	378	10	6	278
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00
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]	3	5	378	10	6	278
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	1	99	3	2	73
Total Analysis Volume [veh/h]	3	5	398	11	6	293
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
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	0.01	0.01	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	14.14	10.67	0.00	0.00	8.15	0.00
Movement LOS	B	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.05	0.05	0.00	0.00	0.02	0.02
95th-Percentile Queue Length [ft/ln]	1.16	1.16	0.00	0.00	0.39	0.39
d_A, Approach Delay [s/veh]	11.97		0.00		0.16	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]			0.20			
Intersection LOS			B			

**Intersection Level Of Service Report**  
**Intersection 6: Collingwood Street/Project Driveway 3 at Lincoln Avenue**

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):	0.040

**Intersection Setup**

Name	Collingwood St			Project Dwy 3			Lincoln Ave			Lincoln Ave		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

**Volumes**

Name	Collingwood St			Project Dwy 3			Lincoln Ave			Lincoln Ave		
Base Volume Input [veh/h]	13	0	4	26	0	31	4	367	14	3	236	3
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	13	0	4	26	0	31	4	367	14	3	236	3
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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	0	1	7	0	8	1	97	4	1	62	1
Total Analysis Volume [veh/h]	14	0	4	27	0	33	4	386	15	3	248	3
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	0.04	0.00	0.01	0.07	0.00	0.04	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	15.69	14.89	10.93	15.54	15.40	10.44	7.75	0.00	0.00	8.12	0.00
Movement LOS	C	B	B	C	C	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.14	0.14	0.14	0.38	0.38	0.38	0.01	0.01	0.01	0.01	0.01
95th-Percentile Queue Length [ft/ln]	3.60	3.60	3.60	9.61	9.61	9.61	0.23	0.23	0.23	0.19	0.19
d_A, Approach Delay [s/veh]		14.63			12.74			0.08			0.10
Approach LOS		B		B			A			A	
d_I, Intersection Delay [s/veh]							1.47				
Intersection LOS							C				

**Intersection Level Of Service Report**  
**Intersection 7: Dorlen Street at Lincoln Avenue**

Control Type:	Two-way stop	Delay (sec / veh):	15.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.055

**Intersection Setup**

Name	Dorlen Street			Dorlen Street			Lincoln Avenue			Lincoln Avenue		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

**Volumes**

Name	Dorlen Street			Dorlen Street			Lincoln Avenue			Lincoln Avenue		
Base Volume Input [veh/h]	20	0	8	0	0	2	1	343	28	11	228	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 [%]	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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	20	0	8	0	0	2	1	343	28	11	228	1
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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	0	2	0	0	1	0	90	7	3	60	0
Total Analysis Volume [veh/h]	21	0	8	0	0	2	1	361	29	12	240	1
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	0.06	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	15.03	14.90	10.96	14.58	14.49	9.52	7.72	0.00	0.00	8.11	0.00	0.00
Movement LOS	C	B	B	B	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.21	0.21	0.21	0.01	0.01	0.01	0.00	0.00	0.00	0.03	0.03	0.03
95th-Percentile Queue Length [ft/ln]	5.36	5.36	5.36	0.19	0.19	0.19	0.06	0.06	0.06	0.71	0.71	0.71
d_A, Approach Delay [s/veh]		13.91			9.52			0.02			0.38	
Approach LOS		B			A			A			A	
d_I, Intersection Delay [s/veh]							0.78					
Intersection LOS							C					

## Intersection Level Of Service Report

## Intersection 8: Washington Street at Indiana Avenue

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): 0.522

## Intersection Setup

Name	Washington Street			Washington Street			Indiana Avenue			Indiana Avenue		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
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	Washington Street			Washington Street			Indiana Avenue			Indiana Avenue		
Base Volume Input [veh/h]	166	0	193	15	15	10	5	565	168	140	424	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 [%]	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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	166	0	193	15	15	10	5	565	168	140	424	1
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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]	44	0	51	4	4	3	1	149	44	37	112	0
Total Analysis Volume [veh/h]	175	0	203	16	16	11	5	595	177	147	446	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	0			0			0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0			0			0		0		0	
v_co, Outbound Pedestrian Volume crossing	0			0			0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0		0		0	
Bicycle Volume [bicycles/h]	0			0			0		0		0	

**Intersection Settings**

Located in CBD	No											
Signal Coordination Group	-											
Cycle Length [s]	65											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Offset [s]	0.0											
Offset Reference	LeadGreen											
Permissive Mode	SingleBand											
Lost time [s]	12.00											

**Phasing & Timing**

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [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
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	29	0	0	29	0	11	22	0	14	25	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	18	0	0	18	0	0	11	0	0	11	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	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	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	L	C	L	C	C	L	C	C
C, Cycle Length [s]	65	65	65	65	65	65	65	65	65	65
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
I1_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	0.00
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	14	14	14	14	1	32	32	7	39	39
g / C, Green / Cycle	0.21	0.21	0.21	0.21	0.01	0.50	0.50	0.11	0.60	0.60
(v / s)_i Volume / Saturation Flow Rate	0.13	0.13	0.01	0.02	0.00	0.21	0.22	0.08	0.12	0.12
s, saturation flow rate [veh/h]	1383	1589	1179	1745	1781	1870	1725	1781	1870	1869
c, Capacity [veh/h]	336	333	180	365	17	933	860	191	1115	1114
d1, Uniform Delay [s]	26.08	23.30	29.23	20.64	31.98	10.40	10.41	28.25	6.02	6.02
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.25	1.81	0.21	0.08	8.76	1.45	1.58	6.39	0.40	0.40
d3, Initial Queue Delay [s]	0.00	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	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.52	0.61	0.09	0.07	0.29	0.43	0.43	0.77	0.20	0.20
d, Delay for Lane Group [s/veh]	27.33	25.10	29.44	20.73	40.73	11.85	11.99	34.64	6.42	6.43
Lane Group LOS	C	C	C	C	D	B	B	C	A	A
Critical Lane Group	No	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.57	2.82	0.24	0.32	0.12	3.53	3.30	2.46	1.25	1.25
50th-Percentile Queue Length [ft/ln]	64.14	70.41	5.99	8.02	2.94	88.16	82.38	61.53	31.15	31.13
95th-Percentile Queue Length [veh/ln]	4.62	5.07	0.43	0.58	0.21	6.35	5.93	4.43	2.24	2.24
95th-Percentile Queue Length [ft/ln]	115.45	126.75	10.78	14.44	5.29	158.69	148.29	110.75	56.06	56.03

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	27.33	25.10	25.10	29.44	20.73	20.73	40.73	11.89	11.99	34.64	6.43	6.43
Movement LOS	C	C	C	C	C	C	D	B	B	C	A	A
d_A, Approach Delay [s/veh]	26.13			23.97			12.10			13.41		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]				15.78								
Intersection LOS				B								
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 <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	22.43	22.43	22.43	22.43
I_p,int, Pedestrian LOS Score for Intersection	2.156	1.938	2.806	2.579
Crosswalk LOS	B	A	C	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	769	769	554	646
d_b, Bicycle Delay [s]	12.31	12.31	16.99	14.89
I_b,int, Bicycle LOS Score for Intersection	2.183	1.631	2.201	2.050
Bicycle LOS	B	A	B	B

**Sequence**

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 9: Washington Street at Marguerita Avenue**

Control Type:	All-way stop	Delay (sec / veh):	12.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.568

**Intersection Setup**

Name	Washington Street			Washington Street			Marguerita Ave			Marguerita Ave		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

**Volumes**

Name	Washington Street			Washington Street			Marguerita Ave			Marguerita Ave		
Base Volume Input [veh/h]	39	331	25	24	304	13	16	37	27	20	48	14
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	331	25	24	304	13	16	37	27	20	48	14
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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	87	7	6	80	3	4	10	7	5	13	4
Total Analysis Volume [veh/h]	41	348	26	25	320	14	17	39	28	21	51	15
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	731	720	613	604
Degree of Utilization, x	0.57	0.50	0.14	0.14

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	3.61	2.81	0.47	0.50
95th-Percentile Queue Length [ft]	90.30	70.25	11.82	12.54
Approach Delay [s/veh]	14.20	12.87	9.80	9.97
Approach LOS	B	B	A	A
Intersection Delay [s/veh]	12.91			
Intersection LOS	B			

**Intersection Level Of Service Report****Intersection 10: Washington Street at Lincoln Avenue**

Control Type:	All-way stop	Delay (sec / veh):	28.2
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.820

**Intersection Setup**

Name	Washington Street			Washington Street			Lincoln Avenue			Lincoln Avenue		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	35.00			35.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Washington Street			Washington Street			Lincoln Avenue			Lincoln Avenue		
Base Volume Input [veh/h]	24	252	15	63	278	44	34	279	33	36	167	49
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	24	252	15	63	278	44	34	279	33	36	167	49
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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]	6	66	4	17	73	12	9	73	9	9	44	13
Total Analysis Volume [veh/h]	25	265	16	66	293	46	36	294	35	38	176	52
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	472	494	475	428	474
Degree of Utilization, x	0.65	0.82	0.77	0.50	0.11

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	4.54	7.97	6.69	2.72	0.37
95th-Percentile Queue Length [ft]	113.41	199.20	167.20	68.11	9.18
Approach Delay [s/veh]	23.61	35.63	31.48	17.67	
Approach LOS	C	E	D	C	
Intersection Delay [s/veh]		28.20			
Intersection LOS		D			

**Intersection Level Of Service Report****Intersection 11: Washington Street at Victoria Avenue (West)**

Control Type:	All-way stop	Delay (sec / veh):	11.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.540

**Intersection Setup**

Name	Washington Street			Washington Street			Victoria Ave (West)			Victoria Ave (West)		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

**Volumes**

Name	Washington Street			Washington Street			Victoria Ave (West)			Victoria Ave (West)		
Base Volume Input [veh/h]	82	261	0	0	285	11	0	0	0	285	193	23
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	82	261	0	0	285	11	0	0	0	285	193	23
Peak Hour Factor	0.9500	0.9500	1.0000	1.0000	0.9500	0.9500	1.0000	1.0000	1.0000	0.9500	0.9500	0.9500
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]	22	69	0	0	75	3	0	0	0	75	51	6
Total Analysis Volume [veh/h]	86	275	0	0	300	12	0	0	0	300	203	24
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	725	761	828		555	609
Degree of Utilization, x	0.25	0.24	0.38		0.54	0.37

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	0.98	0.92	1.77		3.21	1.72
95th-Percentile Queue Length [ft]	24.55	23.04	44.16		80.14	42.99
Approach Delay [s/veh]	9.11		9.96	0.00		14.62
Approach LOS	A		A	A		B
Intersection Delay [s/veh]				11.75		
Intersection LOS				B		

**Intersection Level Of Service Report**  
**Intersection 15: Madison Street at Victoria Avenue (East)**

Control Type:	All-way stop	Delay (sec / veh):	12.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.628

**Intersection Setup**

Name	Madison Street			Madison Street			Victoria Ave (East)			Victoria Ave (East)		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Madison Street			Madison Street			Victoria Ave (East)			Victoria Ave (East)		
Base Volume Input [veh/h]	0	12	1	181	73	0	52	406	14	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	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	12	1	181	73	0	52	406	14	0	0	0
Peak Hour Factor	1.0000	0.9500	0.9500	0.9500	0.9500	1.0000	0.9500	0.9500	0.9500	1.0000	1.0000	1.0000
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	3	0	48	19	0	14	107	4	0	0	0
Total Analysis Volume [veh/h]	0	13	1	191	77	0	55	427	15	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	869	880	791	
Degree of Utilization, x	0.02	0.30	0.63	

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	0.05	1.29	4.52	
95th-Percentile Queue Length [ft]	1.23	32.29	112.88	
Approach Delay [s/veh]	7.21	8.87	14.92	0.00
Approach LOS	A	A	B	A
Intersection Delay [s/veh]		12.70		
Intersection LOS		B		

**Intersection Level Of Service Report****Intersection 16: Washington Street at Victoria Avenue (East)**

Control Type:	All-way stop	Delay (sec / veh):	18.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.830

**Intersection Setup**

Name	Washington Street			Washington Street			Victoria Ave (East)			Victoria Ave (East)		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Washington Street			Washington Street			Victoria Ave (East)			Victoria Ave (East)		
Base Volume Input [veh/h]	0	336	200	10	562	0	8	270	332	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	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	336	200	10	562	0	8	270	332	0	0	0
Peak Hour Factor	1.0000	0.9500	0.9500	0.9500	0.9500	1.0000	0.9500	0.9500	0.9500	1.0000	1.0000	1.0000
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	88	53	3	148	0	2	71	87	0	0	0
Total Analysis Volume [veh/h]	0	354	211	11	592	0	8	284	349	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	724	724	844	727	496	550	
Degree of Utilization, x	0.24	0.24	0.25	0.83	0.59	0.63	

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	0.96	0.96	0.99	9.18	3.75	4.43	
95th-Percentile Queue Length [ft]	23.93	23.93	24.71	229.50	93.78	110.81	
Approach Delay [s/veh]		8.94		27.26		19.90	0.00
Approach LOS		A		D		C	A
Intersection Delay [s/veh]					18.93		
Intersection LOS					C		

*APPENDIX E-III*

**EXISTING PLUS AMBIENT GROWTH PLUS PROJECT  
WITH MITIGATION LEVEL OF SERVICE  
CALCULATION WORKSHEETS**

## Intersection Level Of Service Report

## Intersection 10: Washington Street at Lincoln Avenue

Control Type:	Signalized	Delay (sec / veh):	14.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.808

## Intersection Setup

Name	Washington Street			Washington Street			Lincoln Avenue			Lincoln Avenue		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	35.00			35.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

## Volumes

Name	Washington Street			Washington Street			Lincoln Avenue			Lincoln Avenue		
Base Volume Input [veh/h]	62	473	30	60	108	110	103	297	45	33	255	81
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	62	473	30	60	108	110	103	297	45	33	255	81
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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]	16	124	8	16	28	29	27	78	12	9	67	21
Total Analysis Volume [veh/h]	65	498	32	63	114	116	108	313	47	35	268	85
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	0				0			0			0	
v_di, Inbound Pedestrian Volume crossing m	0				0			0			0	
v_co, Outbound Pedestrian Volume crossing	0				0			0			0	
v_ci, Inbound Pedestrian Volume crossing mi	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]	50											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Offset [s]	0.0											
Offset Reference	LeadGreen											
Permissive Mode	SingleBand											
Lost time [s]	8.00											

**Phasing & Timing**

Control Type	Permiss											
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	0	7	0	0	7	0	0	7	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	22	0	0	22	0	0	28	0	0	28	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	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	11	0	0	7	0	0	7	0	0	7	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	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	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	C	C	C	C	R
C, Cycle Length [s]	50	50	50	50	50
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	2.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	23	23	19	19	19
g / C, Green / Cycle	0.45	0.45	0.39	0.39	0.39
(v / s)_i Volume / Saturation Flow Rate	0.33	0.19	0.34	0.17	0.05
s, saturation flow rate [veh/h]	1777	1545	1360	1758	1589
c, Capacity [veh/h]	884	787	615	762	616
d1, Uniform Delay [s]	11.11	9.02	14.80	11.22	9.93
k, delay calibration	0.50	0.50	0.14	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.07	1.35	2.52	0.34	0.10
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

#### Lane Group Results

X, volume / capacity	0.67	0.37	0.76	0.40	0.14
d, Delay for Lane Group [s/veh]	15.18	10.37	17.31	11.56	10.03
Lane Group LOS	B	B	B	B	B
Critical Lane Group	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.95	1.88	4.38	1.94	0.48
50th-Percentile Queue Length [ft/ln]	123.71	47.01	109.61	48.59	12.06
95th-Percentile Queue Length [veh/ln]	8.60	3.39	7.82	3.50	0.87
95th-Percentile Queue Length [ft/ln]	214.91	84.63	195.46	87.47	21.70

#### Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	15.18	15.18	15.18	10.37	10.37	10.37	17.31	17.31	17.31	11.56	11.56	10.03
Movement LOS	B	B	B	B	B	B	B	B	B	B	B	B
d_A, Approach Delay [s/veh]	15.18			10.37			17.31			11.22		
Approach LOS	B			B			B			B		
d_I, Intersection Delay [s/veh]				14.06								
Intersection LOS					B							
Intersection V/C				0.808								

#### Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	15.21	15.21	15.21	15.21
I_p,int, Pedestrian LOS Score for Intersection	2.181	2.395	2.370	2.341
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	720	720	960	960
d_b, Bicycle Delay [s]	10.24	10.24	6.76	6.76
I_b,int, Bicycle LOS Score for Intersection	2.541	2.043	2.332	2.200
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 10: Washington Street at Lincoln Avenue**

Control Type:	Signalized	Delay (sec / veh):	11.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.548

**Intersection Setup**

Name	Washington Street			Washington Street			Lincoln Avenue			Lincoln Avenue		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	35.00			35.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Washington Street			Washington Street			Lincoln Avenue			Lincoln Avenue		
Base Volume Input [veh/h]	24	252	15	63	278	44	34	279	33	36	167	49
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	24	252	15	63	278	44	34	279	33	36	167	49
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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]	6	66	4	17	73	12	9	73	9	9	44	13
Total Analysis Volume [veh/h]	25	265	16	66	293	46	36	294	35	38	176	52
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	0				0			0			0	
v_di, Inbound Pedestrian Volume crossing m	0				0			0			0	
v_co, Outbound Pedestrian Volume crossing	0				0			0			0	
v_ci, Inbound Pedestrian Volume crossing mi	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]	50											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Offset [s]	0.0											
Offset Reference	LeadGreen											
Permissive Mode	SingleBand											
Lost time [s]	8.00											

**Phasing & Timing**

Control Type	Permiss											
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	0	7	0	0	7	0	0	7	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	22	0	0	22	0	0	28	0	0	28	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	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	11	0	0	7	0	0	7	0	0	7	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	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	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	C	C	C	C	R
C, Cycle Length [s]	50	50	50	50	50
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00
I1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	2.00	2.00	0.00
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	29	29	13	13	13
g / C, Green / Cycle	0.57	0.57	0.27	0.27	0.27
(v / s)_i Volume / Saturation Flow Rate	0.17	0.24	0.22	0.12	0.03
s, saturation flow rate [veh/h]	1803	1709	1632	1720	1589
c, Capacity [veh/h]	1111	1064	515	544	424
d1, Uniform Delay [s]	5.46	5.85	17.25	15.19	13.91
k, delay calibration	0.50	0.50	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.61	1.04	1.82	0.46	0.13
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

#### Lane Group Results

X, volume / capacity	0.28	0.38	0.71	0.39	0.12
d, Delay for Lane Group [s/veh]	6.07	6.89	19.06	15.66	14.04
Lane Group LOS	A	A	B	B	B
Critical Lane Group	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.22	1.77	3.53	1.72	0.38
50th-Percentile Queue Length [ft/ln]	30.62	44.37	88.29	43.12	9.58
95th-Percentile Queue Length [veh/ln]	2.20	3.19	6.36	3.10	0.69
95th-Percentile Queue Length [ft/ln]	55.12	79.86	158.92	77.62	17.24

#### Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	6.07	6.07	6.07	6.89	6.89	6.89	19.06	19.06	19.06	15.66	15.66	14.04
Movement LOS	A	A	A	A	A	A	B	B	B	B	B	B
d_A, Approach Delay [s/veh]	6.07			6.89			19.06			15.34		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]				11.69								
Intersection LOS				B								
Intersection V/C				0.548								

#### Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	15.21	15.21	15.21	15.21
I_p,int, Pedestrian LOS Score for Intersection	2.118	2.164	2.115	2.279
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	720	720	960	960
d_b, Bicycle Delay [s]	10.24	10.24	6.76	6.76
I_b,int, Bicycle LOS Score for Intersection	2.065	2.228	2.162	1.999
Bicycle LOS	B	B	B	A

#### Sequence

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



*APPENDIX E-IV*

**YEAR 2022 CUMULATIVE PLUS PROJECT  
LEVEL OF SERVICE CALCULATION WORKSHEETS**

**Intersection Level Of Service Report**  
**Intersection 1: Madison Street at Indiana Avenue**

Control Type:	Signalized	Delay (sec / veh):	35.0
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.686

**Intersection Setup**

Name	Madison Street			Madison Street			Indiana Ave			Indiana Ave		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
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			No			Yes			Yes		

**Volumes**

Name	Madison Street			Madison Street			Indiana Ave			Indiana Ave		
Base Volume Input [veh/h]	33	418	31	287	408	235	215	393	32	25	199	305
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	33	418	31	287	408	235	215	393	32	25	199	305
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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	0.7500
Total 15-Minute Volume [veh/h]	9	110	8	76	107	62	57	103	8	7	52	60
Total Analysis Volume [veh/h]	35	440	33	302	429	247	226	414	34	26	209	241
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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing mi	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	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]	100											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Offset [s]	0.0											
Offset Reference	LeadGreen											
Permissive Mode	SingleBand											
Lost time [s]	16.00											

**Phasing & Timing**

Control Type	Protecte	Permiss	Permiss									
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-									
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [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
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	29	0	31	49	0	29	29	0	11	11	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]	0	7	0	0	7	0	0	7	0	0	0	0
Pedestrian Clearance [s]	0	18	0	0	18	0	0	18	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No										
Maximum Recall	No	No										
Pedestrian Recall	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	C	L	C	C	L	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
I1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	16	16	19	30	30	15	46	46	4	35	35
g / C, Green / Cycle	0.04	0.16	0.16	0.19	0.30	0.30	0.15	0.46	0.46	0.04	0.35	0.35
(v / s)_i Volume / Saturation Flow Rate	0.02	0.13	0.13	0.17	0.19	0.19	0.13	0.12	0.12	0.01	0.11	0.15
s, saturation flow rate [veh/h]	1781	1870	1825	1781	1870	1643	1781	1870	1821	1781	1870	1589
c, Capacity [veh/h]	80	291	284	340	564	496	266	854	831	66	644	547
d1, Uniform Delay [s]	46.61	40.94	40.97	39.46	30.22	30.22	41.49	16.82	16.83	47.11	24.24	25.38
k, delay calibration	0.11	0.11	0.11	0.13	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
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
d2, Incremental Delay [s]	3.77	5.74	6.04	9.31	1.20	1.37	7.41	0.76	0.78	3.77	1.34	2.56
d3, Initial Queue Delay [s]	0.00	0.00	0.00	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	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	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.44	0.82	0.83	0.89	0.64	0.64	0.85	0.27	0.27	0.39	0.32	0.44
d, Delay for Lane Group [s/veh]	50.38	46.68	47.01	48.77	31.43	31.59	48.90	17.58	17.61	50.89	25.58	27.94
Lane Group LOS	D	D	D	D	C	C	D	B	B	D	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.93	6.10	6.01	8.01	7.55	6.66	5.92	3.32	3.25	0.70	3.84	4.74
50th-Percentile Queue Length [ft/ln]	23.23	152.55	150.32	200.33	188.83	166.52	148.11	83.10	81.26	17.49	96.06	118.48
95th-Percentile Queue Length [veh/ln]	1.67	10.15	10.03	12.66	12.06	10.89	9.92	5.98	5.85	1.26	6.92	8.31
95th-Percentile Queue Length [ft/ln]	41.81	253.84	250.86	316.39	301.51	272.34	247.90	149.59	146.27	31.49	172.90	207.74

#### Movement, Approach, & Intersection Results

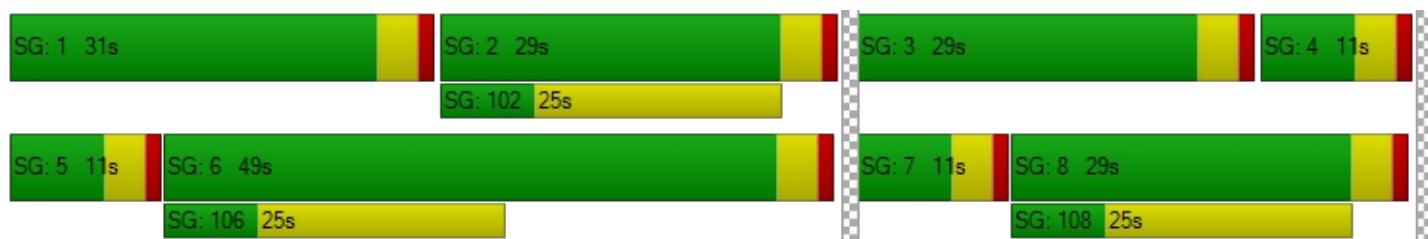
d_M, Delay for Movement [s/veh]	50.38	46.83	47.01	48.77	31.45	31.59	48.90	17.60	17.61	50.89	25.58	27.94
Movement LOS	D	D	D	D	C	C	D	B	B	D	C	C
d_A, Approach Delay [s/veh]	47.09				36.83			28.09			28.16	
Approach LOS		D			D			C			C	
d_I, Intersection Delay [s/veh]					35.01							
Intersection LOS							D					
Intersection V/C					0.686							

#### Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	39.61	0.00	39.61	39.61
I_p,int, Pedestrian LOS Score for Intersection	2.499	0.000	2.532	2.544
Crosswalk LOS	B	F	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	500	900	500	140
d_b, Bicycle Delay [s]	28.13	15.13	28.13	43.25
I_b,int, Bicycle LOS Score for Intersection	1.979	2.366	2.116	1.952
Bicycle LOS	A	B	B	A

#### Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 2: Madison Street at Emerald Street**

Control Type:	All-way stop	Delay (sec / veh):	17.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.740

**Intersection Setup**

Name	Madison Street			Madison Street			Emerald Street			Emerald Street		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

**Volumes**

Name	Madison Street			Madison Street			Emerald Street			Emerald Street		
Base Volume Input [veh/h]	36	468	32	13	367	13	10	0	14	18	2	18
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	36	468	32	13	367	13	10	0	14	18	2	18
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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]	9	123	8	3	97	3	3	0	4	5	1	5
Total Analysis Volume [veh/h]	38	493	34	14	386	14	11	0	15	19	2	19
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	642	712	628	691	598	595
Degree of Utilization, x	0.06	0.74	0.02	0.58	0.04	0.07

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	0.19	6.65	0.07	3.74	0.14	0.22
95th-Percentile Queue Length [ft]	4.70	166.14	1.71	93.46	3.40	5.39
Approach Delay [s/veh]	19.93		14.60		9.29	9.49
Approach LOS	C		B		A	A
Intersection Delay [s/veh]				17.16		
Intersection LOS				C		

**Intersection Level Of Service Report**  
**Intersection 3: Madison Street at Lincoln Avenue**

Control Type:	Signalized	Delay (sec / veh):	25.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.596

**Intersection Setup**

Name	Madison Street			Madison Street			Lincoln Avenue			Lincoln Avenue		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
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	Madison Street			Madison Street			Lincoln Avenue			Lincoln Avenue		
Base Volume Input [veh/h]	26	235	28	191	99	150	105	256	11	15	250	213
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	26	235	28	191	99	150	105	256	11	15	250	213
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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]	7	62	7	50	26	39	28	67	3	4	66	56
Total Analysis Volume [veh/h]	27	247	29	201	104	158	111	269	12	16	263	224
Presence of On-Street Parking	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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing mi	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	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]	75											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Offset [s]	0.0											
Offset Reference	LeadGreen											
Permissive Mode	SingleBand											
Lost time [s]	16.00											

**Phasing & Timing**

Control Type	Protecte	Permiss	Permiss									
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-									
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [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
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	27	0	15	31	0	11	22	0	11	22	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]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	14	0	0	14	0	0	11	0	0	11	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No										
Maximum Recall	No	No										
Pedestrian Recall	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
C, Cycle Length [s]	75	75	75	75	75	75	75	75	75
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
I1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	3	13	10	21	6	33	2	29	29
g / C, Green / Cycle	0.04	0.18	0.14	0.27	0.08	0.45	0.03	0.39	0.39
(v / s)_i Volume / Saturation Flow Rate	0.02	0.15	0.11	0.16	0.06	0.15	0.01	0.14	0.14
s, saturation flow rate [veh/h]	1781	1836	1781	1690	1781	1856	1781	1870	1594
c, Capacity [veh/h]	73	328	242	463	151	826	49	725	618
d1, Uniform Delay [s]	35.06	29.82	31.60	23.45	33.57	13.64	35.85	16.35	16.44
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.50	0.11	0.50	0.50
I, 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]	3.06	5.80	7.13	1.09	6.84	1.12	3.85	1.37	1.70
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	0.37	0.84	0.83	0.57	0.74	0.34	0.33	0.36	0.37
d, Delay for Lane Group [s/veh]	38.12	35.62	38.73	24.54	40.41	14.76	39.70	17.72	18.14
Lane Group LOS	D	D	D	C	D	B	D	B	B
Critical Lane Group	No	Yes	Yes	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.53	5.16	3.91	3.94	2.20	3.13	0.33	3.24	2.92
50th-Percentile Queue Length [ft/ln]	13.29	128.93	97.75	98.61	55.12	78.18	8.33	80.93	73.01
95th-Percentile Queue Length [veh/ln]	0.96	8.88	7.04	7.10	3.97	5.63	0.60	5.83	5.26
95th-Percentile Queue Length [ft/ln]	23.92	222.04	175.96	177.50	99.22	140.72	14.99	145.67	131.42

#### Movement, Approach, & Intersection Results

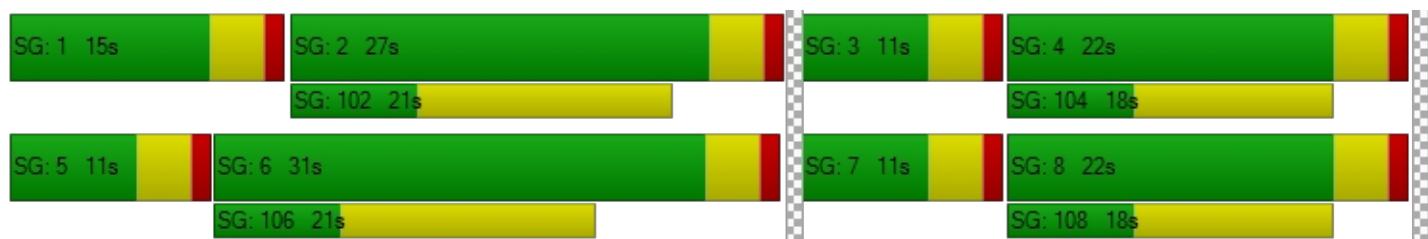
d_M, Delay for Movement [s/veh]	38.12	35.62	35.62	38.73	24.54	24.54	40.41	14.76	14.76	39.70	17.72	18.14
Movement LOS	D	D	D	D	C	C	D	B	B	D	B	B
d_A, Approach Delay [s/veh]	35.84			30.70			22.03			18.61		
Approach LOS	D			C			C			B		
d_I, Intersection Delay [s/veh]				25.93								
Intersection LOS				C								
Intersection V/C				0.596								

#### Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	27.31	27.31	27.31	27.31
I_p,int, Pedestrian LOS Score for Intersection	2.071	2.270	2.326	2.365
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	613	720	480	480
d_b, Bicycle Delay [s]	18.03	15.36	21.66	21.66
I_b,int, Bicycle LOS Score for Intersection	2.060	2.324	2.206	1.975
Bicycle LOS	B	B	B	A

#### Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report****Intersection 4: Madison Street at Victoria Avenue (West)**

Control Type: All-way stop Delay (sec / veh): 13.2  
 Analysis Method: HCM 6th Edition Level Of Service: B  
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.671

**Intersection Setup**

Name	Madison Street			Madison Street			Victoria Ave (West)			Victoria Ave (West)		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Madison Street			Madison Street			Victoria Ave (West)			Victoria Ave (West)		
Base Volume Input [veh/h]	19	101	0	0	82	28	0	0	0	2	366	171
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	101	0	0	82	28	0	0	0	2	366	171
Peak Hour Factor	0.9500	0.9500	1.0000	1.0000	0.9500	0.9500	1.0000	1.0000	1.0000	0.9500	0.9500	0.9500
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	27	0	0	22	7	0	0	0	1	96	45
Total Analysis Volume [veh/h]	20	106	0	0	86	29	0	0	0	2	385	180
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	862	781	921		845
Degree of Utilization, x	0.15	0.11	0.03		0.67

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	0.51	0.37	0.10		5.32
95th-Percentile Queue Length [ft]	12.76	9.25	2.44		132.90
Approach Delay [s/veh]	7.89	7.59	0.00		15.51
Approach LOS	A	A	A		C
Intersection Delay [s/veh]	13.20				
Intersection LOS	B				

**Intersection Level Of Service Report**  
**Intersection 5: Sonora Place at Lincoln Avenue**

Control Type:	Two-way stop	Delay (sec / veh):	18.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.033

**Intersection Setup**

Name	Sonora Place		Lincoln Avenue		Lincoln Avenue	
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

**Volumes**

Name	Sonora Place		Lincoln Avenue		Lincoln Avenue	
Base Volume Input [veh/h]	9	8	455	1	8	462
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00
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]	9	8	455	1	8	462
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	2	120	0	2	122
Total Analysis Volume [veh/h]	9	8	479	1	8	486
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
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	0.03	0.01	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	18.64	11.62	0.00	0.00	8.35	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.15	0.15	0.00	0.00	0.02	0.02
95th-Percentile Queue Length [ft/ln]	3.65	3.65	0.00	0.00	0.56	0.56
d_A, Approach Delay [s/veh]	15.34		0.00		0.14	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]			0.33			
Intersection LOS			C			

**Intersection Level Of Service Report**  
**Intersection 6: Collingwood Street/Project Driveway 3 at Lincoln Avenue**

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):	0.409

**Intersection Setup**

Name	Collingwood St			Project Dwy 3			Lincoln Ave			Lincoln Ave		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

**Volumes**

Name	Collingwood St			Project Dwy 3			Lincoln Ave			Lincoln Ave		
Base Volume Input [veh/h]	10	0	20	91	0	106	17	452	8	9	356	11
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	10	0	20	91	0	106	17	452	8	9	356	11
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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	0	5	24	0	28	4	119	2	2	94	3
Total Analysis Volume [veh/h]	11	0	21	96	0	112	18	476	8	9	375	12
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	0.06	0.00	0.04	0.41	0.00	0.17	0.02	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	25.20	19.84	12.24	33.13	31.49	23.19	8.12	0.00	0.00	8.37	0.00	0.00
Movement LOS	D	C	B	D	D	C	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.31	0.31	0.31	3.47	3.47	3.47	0.04	0.04	0.04	0.03	0.03	0.03
95th-Percentile Queue Length [ft/ln]	7.74	7.74	7.74	86.66	86.66	86.66	1.10	1.10	1.10	0.63	0.63	0.63
d_A, Approach Delay [s/veh]		16.70			27.78			0.29			0.19	
Approach LOS		C			D			A			A	
d_I, Intersection Delay [s/veh]						5.74						
Intersection LOS							D					

**Intersection Level Of Service Report**  
**Intersection 7: Dorlen Street at Lincoln Avenue**

Control Type:	Two-way stop	Delay (sec / veh):	23.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.208

**Intersection Setup**

Name	Dorlen Street			Dorlen Street			Lincoln Avenue			Lincoln Avenue		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

**Volumes**

Name	Dorlen Street			Dorlen Street			Lincoln Avenue			Lincoln Avenue		
Base Volume Input [veh/h]	49	0	15	0	0	2	0	425	21	9	417	2
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	49	0	15	0	0	2	0	425	21	9	417	2
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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]	13	0	4	0	0	1	0	112	6	2	110	1
Total Analysis Volume [veh/h]	52	0	16	0	0	2	0	447	22	9	439	2
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	0.21	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	23.19	22.16	14.74	19.94	18.58	10.85	8.22	0.00	0.00	8.32	0.00	0.00
Movement LOS	C	C	B	C	C	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.89	0.89	0.89	0.01	0.01	0.01	0.00	0.00	0.00	0.02	0.02	0.02
95th-Percentile Queue Length [ft/ln]	22.29	22.29	22.29	0.24	0.24	0.24	0.00	0.00	0.00	0.62	0.62	0.62
d_A, Approach Delay [s/veh]		21.20			10.85			0.00			0.17	
Approach LOS		C			B			A			A	
d_I, Intersection Delay [s/veh]							1.56					
Intersection LOS							C					

## Intersection Level Of Service Report

## Intersection 8: Washington Street at Indiana Avenue

Control Type: Signalized Delay (sec / veh): 18.4  
 Analysis Method: HCM 6th Edition Level Of Service: B  
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.587

## Intersection Setup

Name	Washington Street			Washington Street			Indiana Avenue			Indiana Avenue		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
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	Washington Street			Washington Street			Indiana Avenue			Indiana Avenue		
Base Volume Input [veh/h]	208	3	398	2	1	0	13	453	113	81	389	5
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	208	3	398	2	1	0	13	453	113	81	389	5
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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	1	105	1	0	0	3	119	30	21	102	1
Total Analysis Volume [veh/h]	219	3	419	2	1	0	14	477	119	85	409	5
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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	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]	65											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Offset [s]	0.0											
Offset Reference	LeadGreen											
Permissive Mode	SingleBand											
Lost time [s]	12.00											

**Phasing & Timing**

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [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
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	32	0	0	32	0	11	22	0	11	22	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	18	0	0	18	0	0	11	0	0	11	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	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	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	L	C	L	C	C	L	C	C
C, Cycle Length [s]	65	65	65	65	65	65	65	65	65	65
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
I1_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	0.00
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	20	20	20	20	2	28	28	6	32	32
g / C, Green / Cycle	0.30	0.30	0.30	0.30	0.03	0.43	0.43	0.09	0.49	0.49
(v / s)_i Volume / Saturation Flow Rate	0.15	0.27	0.00	0.00	0.01	0.16	0.17	0.05	0.11	0.11
s, saturation flow rate [veh/h]	1416	1591	965	1870	1781	1870	1743	1781	1870	1862
c, Capacity [veh/h]	505	485	136	570	46	794	740	154	907	903
d1, Uniform Delay [s]	20.07	21.43	30.93	15.75	31.14	12.90	12.92	28.56	9.72	9.72
k, delay calibration	0.11	0.14	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.59	6.26	0.04	0.00	3.59	1.42	1.55	3.09	0.59	0.59
d3, Initial Queue Delay [s]	0.00	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	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.43	0.87	0.01	0.00	0.30	0.39	0.39	0.55	0.23	0.23
d, Delay for Lane Group [s/veh]	20.65	27.69	30.97	15.75	34.73	14.32	14.47	31.65	10.30	10.31
Lane Group LOS	C	C	C	B	C	B	B	C	B	B
Critical Lane Group	No	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.72	6.41	0.03	0.01	0.25	3.06	2.91	1.35	1.64	1.64
50th-Percentile Queue Length [ft/ln]	67.95	160.29	0.78	0.25	6.35	76.62	72.81	33.75	41.00	40.89
95th-Percentile Queue Length [veh/ln]	4.89	10.56	0.06	0.02	0.46	5.52	5.24	2.43	2.95	2.94
95th-Percentile Queue Length [ft/ln]	122.32	264.10	1.40	0.45	11.44	137.91	131.06	60.75	73.80	73.60

#### Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	20.65	27.69	27.69	30.97	15.75	15.75	34.73	14.37	14.47	31.65	10.31	10.31
Movement LOS	C	C	C	C	B	B	C	B	B	C	B	B
d_A, Approach Delay [s/veh]	25.28			25.90			14.86			13.94		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]				18.43								
Intersection LOS					B							
Intersection V/C				0.587								

#### Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	22.43	22.43	22.43	22.43
I_p,int, Pedestrian LOS Score for Intersection	2.197	1.930	2.835	2.557
Crosswalk LOS	B	A	C	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	862	862	554	554
d_b, Bicycle Delay [s]	10.53	10.53	16.99	16.99
I_b,int, Bicycle LOS Score for Intersection	2.617	1.565	2.063	1.971
Bicycle LOS	B	A	B	A

#### Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 9: Washington Street at Marguerita Avenue**

Control Type:	All-way stop	Delay (sec / veh):	38.1
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.997

**Intersection Setup**

Name	Washington Street			Washington Street			Marguerita Ave			Marguerita Ave		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

**Volumes**

Name	Washington Street			Washington Street			Marguerita Ave			Marguerita Ave		
Base Volume Input [veh/h]	34	568	66	13	146	17	32	71	42	40	42	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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	34	568	66	13	146	17	32	71	42	40	42	28
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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]	9	149	17	3	38	4	8	19	11	11	11	7
Total Analysis Volume [veh/h]	36	598	69	14	154	18	34	75	44	42	44	29
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	706	614	558	545
Degree of Utilization, x	1.00	0.30	0.27	0.21

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	16.09	1.27	1.11	0.79
95th-Percentile Queue Length [ft]	402.29	31.85	27.74	19.79
Approach Delay [s/veh]	55.21	11.40	11.88	11.37
Approach LOS	F	B	B	B
Intersection Delay [s/veh]	38.08			
Intersection LOS	E			

**Intersection Level Of Service Report**  
**Intersection 10: Washington Street at Lincoln Avenue**

Control Type:	All-way stop	Delay (sec / veh):	119.4
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.424

**Intersection Setup**

Name	Washington Street			Washington Street			Lincoln Avenue			Lincoln Avenue		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	35.00			35.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Washington Street			Washington Street			Lincoln Avenue			Lincoln Avenue		
Base Volume Input [veh/h]	62	483	30	60	115	110	103	297	45	33	255	81
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	62	483	30	60	115	110	103	297	45	33	255	81
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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]	16	127	8	16	30	29	27	78	12	9	67	21
Total Analysis Volume [veh/h]	65	508	32	63	121	116	108	313	47	35	268	85
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	605	405	468	391	426
Degree of Utilization, x	1.42	0.74	1.11	0.78	0.20

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	30.06	5.91	16.57	6.50	0.74
95th-Percentile Queue Length [ft]	751.49	147.68	414.26	162.58	18.40
Approach Delay [s/veh]	227.36	33.32	107.55	32.06	
Approach LOS	F	D	F	D	
Intersection Delay [s/veh]	119.43				
Intersection LOS	F				

**Intersection Level Of Service Report**  
**Intersection 11: Washington Street at Victoria Avenue (West)**

Control Type:	All-way stop	Delay (sec / veh):	13.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.582

**Intersection Setup**

Name	Washington Street			Washington Street			Victoria Ave (West)			Victoria Ave (West)		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

**Volumes**

Name	Washington Street			Washington Street			Victoria Ave (West)			Victoria Ave (West)		
Base Volume Input [veh/h]	270	525	0	0	172	12	0	0	0	134	252	33
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	270	525	0	0	172	12	0	0	0	134	252	33
Peak Hour Factor	0.9500	0.9500	1.0000	1.0000	0.9500	0.9500	1.0000	1.0000	1.0000	0.9500	0.9500	0.9500
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]	71	138	0	0	45	3	0	0	0	35	66	9
Total Analysis Volume [veh/h]	284	553	0	0	181	13	0	0	0	141	265	35
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	719	771	777		507	552
Degree of Utilization, x	0.58	0.54	0.25		0.28	0.54

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	3.79	3.31	0.99		1.13	3.24
95th-Percentile Queue Length [ft]	94.82	82.70	24.63		28.24	81.01
Approach Delay [s/veh]		13.59	9.17	0.00		15.38
Approach LOS		B	A	A		C
Intersection Delay [s/veh]				13.55		
Intersection LOS				B		

**Intersection Level Of Service Report****Intersection 15: Madison Street at Victoria Avenue (East)**

Control Type:	All-way stop	Delay (sec / veh):	9.3
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.406

**Intersection Setup**

Name	Madison Street			Madison Street			Victoria Ave (East)			Victoria Ave (East)		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Madison Street			Madison Street			Victoria Ave (East)			Victoria Ave (East)		
Base Volume Input [veh/h]	0	63	13	59	25	0	58	259	5	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	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	63	13	59	25	0	58	259	5	0	0	0
Peak Hour Factor	1.0000	0.9500	0.9500	0.9500	0.9500	1.0000	0.9500	0.9500	0.9500	1.0000	1.0000	1.0000
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	17	3	16	7	0	15	68	1	0	0	0
Total Analysis Volume [veh/h]	0	66	14	62	26	0	61	273	5	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

**Lanes**

Capacity per Entry Lane [veh/h]	920	868	834	
Degree of Utilization, x	0.09	0.10	0.41	

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	0.28	0.34	1.99	
95th-Percentile Queue Length [ft]	7.12	8.43	49.75	
Approach Delay [s/veh]	7.28	7.61	10.24	0.00
Approach LOS	A	A	B	A
Intersection Delay [s/veh]			9.32	
Intersection LOS			A	

### Intersection Level Of Service Report

#### Intersection 16: Washington Street at Victoria Avenue (East)

Control Type:	All-way stop	Delay (sec / veh):	13.6
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.552

#### Intersection Setup

Name	Washington Street			Washington Street			Victoria Ave (East)			Victoria Ave (East)		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

#### Volumes

Name	Washington Street			Washington Street			Victoria Ave (East)			Victoria Ave (East)		
Base Volume Input [veh/h]	0	783	461	21	283	0	12	223	87	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	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	783	461	21	283	0	12	223	87	0	0	0
Peak Hour Factor	1.0000	0.9500	0.9500	0.9500	0.9500	1.0000	0.9500	0.9500	0.9500	1.0000	1.0000	1.0000
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	206	121	6	74	0	3	59	23	0	0	0
Total Analysis Volume [veh/h]	0	824	485	22	298	0	13	235	92	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	750	750	880	642	469	519	
Degree of Utilization, x	0.55	0.55	0.55	0.50	0.53	0.18	

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	3.38	3.38	3.45	2.79	3.03	0.64	
95th-Percentile Queue Length [ft]	84.51	84.51	86.21	69.71	75.77	15.99	
Approach Delay [s/veh]		12.63		14.05		16.62	0.00
Approach LOS		B		B		C	A
Intersection Delay [s/veh]					13.55		
Intersection LOS					B		

**Intersection Level Of Service Report**  
**Intersection 1: Madison Street at Indiana Avenue**

Control Type:	Signalized	Delay (sec / veh):	38.1
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.857

**Intersection Setup**

Name	Madison Street			Madison Street			Indiana Ave			Indiana Ave		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
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			No			Yes			Yes		

**Volumes**

Name	Madison Street			Madison Street			Indiana Ave			Indiana Ave		
Base Volume Input [veh/h]	33	508	33	298	563	142	298	529	80	44	293	430
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	33	508	33	298	563	142	298	529	80	44	293	430
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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	0.7500
Total 15-Minute Volume [veh/h]	9	134	9	78	148	37	78	139	21	12	77	85
Total Analysis Volume [veh/h]	35	535	35	314	593	149	314	557	84	46	308	339
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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing mi	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	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]	100											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Offset [s]	0.0											
Offset Reference	LeadGreen											
Permissive Mode	SingleBand											
Lost time [s]	16.00											

**Phasing & Timing**

Control Type	Protecte	Permiss	Permiss									
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-									
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [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
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	29	0	31	49	0	19	29	0	11	21	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]	0	7	0	0	7	0	0	7	0	0	0	0
Pedestrian Clearance [s]	0	18	0	0	18	0	0	18	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No										
Maximum Recall	No	No										
Pedestrian Recall	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	C	L	C	C	L	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
I1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	18	18	20	34	34	20	41	41	5	26	26
g / C, Green / Cycle	0.04	0.18	0.18	0.20	0.33	0.33	0.20	0.41	0.41	0.05	0.26	0.26
(v / s)_i Volume / Saturation Flow Rate	0.02	0.15	0.15	0.18	0.21	0.21	0.18	0.18	0.18	0.03	0.16	0.21
s, saturation flow rate [veh/h]	1781	1870	1830	1781	1870	1742	1781	1870	1785	1781	1870	1589
c, Capacity [veh/h]	80	341	333	352	627	584	352	765	730	92	491	417
d1, Uniform Delay [s]	46.61	39.57	39.60	39.13	27.85	27.86	39.11	21.21	21.21	46.25	32.60	34.62
k, delay calibration	0.11	0.11	0.11	0.15	0.11	0.11	0.15	0.50	0.50	0.11	0.50	0.50
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
d2, Incremental Delay [s]	3.77	5.72	5.94	10.34	0.98	1.05	10.27	1.76	1.84	4.20	5.96	15.75
d3, Initial Queue Delay [s]	0.00	0.00	0.00	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	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	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.44	0.84	0.85	0.89	0.61	0.61	0.89	0.43	0.43	0.50	0.63	0.81
d, Delay for Lane Group [s/veh]	50.38	45.29	45.53	49.47	28.83	28.90	49.39	22.97	23.05	50.45	38.57	50.37
Lane Group LOS	D	D	D	D	C	C	D	C	C	D	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.93	7.29	7.18	8.42	7.71	7.20	8.41	5.75	5.50	1.22	7.30	9.41
50th-Percentile Queue Length [ft/ln]	23.23	182.31	179.51	210.47	192.78	180.00	210.21	143.66	137.59	30.41	182.48	235.13
95th-Percentile Queue Length [veh/ln]	1.67	11.72	11.57	13.18	12.27	11.60	13.16	9.68	9.35	2.19	11.73	14.43
95th-Percentile Queue Length [ft/ln]	41.81	293.02	289.37	329.43	306.64	290.01	329.10	241.95	233.77	54.74	293.25	360.87

**Movement, Approach, & Intersection Results**

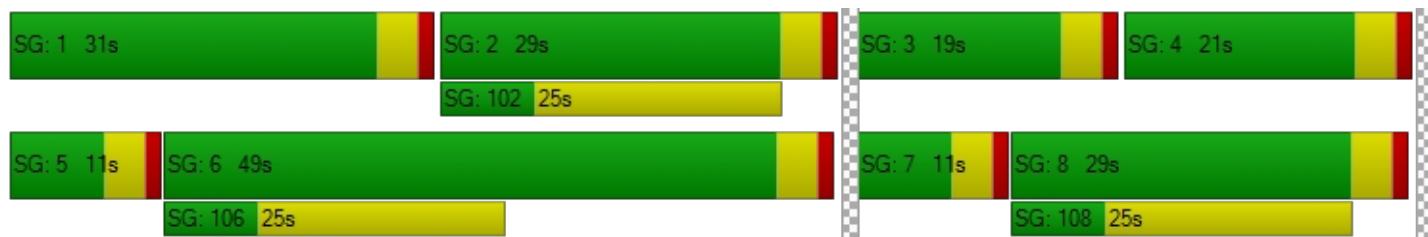
d_M, Delay for Movement [s/veh]	50.38	45.41	45.53	49.47	28.85	28.90	49.39	23.00	23.05	50.45	38.57	50.37
Movement LOS	D	D	D	D	C	C	D	C	C	D	D	D
d_A, Approach Delay [s/veh]	45.70				34.99			31.68			45.13	
Approach LOS		D			C			C			D	
d_I, Intersection Delay [s/veh]					38.12							
Intersection LOS							D					
Intersection V/C					0.857							

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	39.61	0.00	39.61	39.61
I_p,int, Pedestrian LOS Score for Intersection	2.564	0.000	2.587	2.616
Crosswalk LOS	B	F	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	500	900	500	340
d_b, Bicycle Delay [s]	28.13	15.13	28.13	34.45
I_b,int, Bicycle LOS Score for Intersection	2.059	2.431	2.347	2.131
Bicycle LOS	B	B	B	B

**Sequence**

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 2: Madison Street at Emerald Street**

Control Type:	All-way stop	Delay (sec / veh):	20.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.809

**Intersection Setup**

Name	Madison Street			Madison Street			Emerald Street			Emerald Street		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

**Volumes**

Name	Madison Street			Madison Street			Emerald Street			Emerald Street		
Base Volume Input [veh/h]	8	367	16	21	513	30	13	2	5	22	0	27
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	367	16	21	513	30	13	2	5	22	0	27
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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	97	4	6	135	8	3	1	1	6	0	7
Total Analysis Volume [veh/h]	8	386	17	22	540	32	14	2	5	23	0	28
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	622	685	639	707	560	589
Degree of Utilization, x	0.01	0.59	0.03	0.81	0.04	0.09

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	0.04	3.86	0.11	8.47	0.12	0.28
95th-Percentile Queue Length [ft]	0.98	96.57	2.67	211.75	2.92	7.07
Approach Delay [s/veh]		15.05		25.04		9.68
Approach LOS	C		D		A	A
Intersection Delay [s/veh]				20.20		
Intersection LOS				C		

**Intersection Level Of Service Report**  
**Intersection 3: Madison Street at Lincoln Avenue**

Control Type:	Signalized	Delay (sec / veh):	25.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.487

**Intersection Setup**

Name	Madison Street			Madison Street			Lincoln Avenue			Lincoln Avenue		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
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	Madison Street			Madison Street			Lincoln Avenue			Lincoln Avenue		
Base Volume Input [veh/h]	16	144	13	122	246	80	155	259	25	17	154	112
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	16	144	13	122	246	80	155	259	25	17	154	112
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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	38	3	32	65	21	41	68	7	4	41	29
Total Analysis Volume [veh/h]	17	152	14	128	259	84	163	273	26	18	162	118
Presence of On-Street Parking	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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing mi	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	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]	70											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Offset [s]	0.0											
Offset Reference	LeadGreen											
Permissive Mode	SingleBand											
Lost time [s]	16.00											

**Phasing & Timing**

Control Type	Protecte	Permiss	Permiss									
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-									
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [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
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	25	0	11	25	0	12	23	0	11	22	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]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	14	0	0	14	0	0	11	0	0	11	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No										
Maximum Recall	No	No										
Pedestrian Recall	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
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
I1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	2	11	6	16	8	34	2	28	28
g / C, Green / Cycle	0.03	0.16	0.09	0.22	0.12	0.49	0.03	0.40	0.40
(v / s)_i Volume / Saturation Flow Rate	0.01	0.09	0.07	0.19	0.09	0.16	0.01	0.08	0.08
s, saturation flow rate [veh/h]	1781	1843	1781	1793	1781	1842	1781	1870	1619
c, Capacity [veh/h]	54	295	166	401	209	897	56	750	650
d1, Uniform Delay [s]	33.36	27.22	31.11	26.19	30.13	11.03	33.30	13.66	13.74
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.50	0.11	0.50	0.50
I, 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]	3.31	1.67	7.28	5.33	6.23	1.00	3.27	0.58	0.72
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	0.32	0.56	0.77	0.86	0.78	0.33	0.32	0.19	0.21
d, Delay for Lane Group [s/veh]	36.66	28.90	38.39	31.52	36.36	12.03	36.57	14.23	14.46
Lane Group LOS	D	C	D	C	D	B	D	B	B
Critical Lane Group	Yes	No	No	Yes	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.32	2.60	2.38	5.79	2.93	2.77	0.34	1.50	1.41
50th-Percentile Queue Length [ft/ln]	8.11	64.97	59.41	144.81	73.28	69.25	8.54	37.45	35.34
95th-Percentile Queue Length [veh/ln]	0.58	4.68	4.28	9.74	5.28	4.99	0.62	2.70	2.54
95th-Percentile Queue Length [ft/ln]	14.60	116.95	106.94	243.48	131.90	124.65	15.38	67.42	63.61

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	36.66	28.90	28.90	38.39	31.52	31.52	36.36	12.03	12.03	36.57	14.25	14.46
Movement LOS	D	C	C	D	C	C	D	B	B	D	B	B
d_A, Approach Delay [s/veh]	29.62			33.38			20.61			15.68		
Approach LOS	C			C			C			B		
d_I, Intersection Delay [s/veh]				24.99								
Intersection LOS				C								
Intersection V/C				0.487								

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	24.86	24.86	24.86	24.86
I_p,int, Pedestrian LOS Score for Intersection	2.084	2.220	2.294	2.291
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	600	600	543	514
d_b, Bicycle Delay [s]	17.15	17.15	18.58	19.31
I_b,int, Bicycle LOS Score for Intersection	1.862	2.337	2.322	1.805
Bicycle LOS	A	B	B	A

**Sequence**

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report****Intersection 4: Madison Street at Victoria Avenue (West)**

Control Type:	All-way stop	Delay (sec / veh):	9.6
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.389

**Intersection Setup**

Name	Madison Street			Madison Street			Victoria Ave (West)			Victoria Ave (West)		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Madison Street			Madison Street			Victoria Ave (West)			Victoria Ave (West)		
Base Volume Input [veh/h]	4	59	0	0	252	45	0	0	0	3	226	58
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	59	0	0	252	45	0	0	0	3	226	58
Peak Hour Factor	0.9500	0.9500	1.0000	1.0000	0.9500	0.9500	1.0000	1.0000	1.0000	0.9500	0.9500	0.9500
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	16	0	0	66	12	0	0	0	1	59	15
Total Analysis Volume [veh/h]	4	62	0	0	265	47	0	0	0	3	238	61
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	829	786	929		777
Degree of Utilization, x	0.08	0.34	0.05		0.39

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	0.26	1.49	0.16		1.85
95th-Percentile Queue Length [ft]	6.46	37.25	3.99		46.31
Approach Delay [s/veh]	7.71		9.16	0.00	10.56
Approach LOS	A		A	A	B
Intersection Delay [s/veh]			9.64		
Intersection LOS			A		

**Intersection Level Of Service Report**  
**Intersection 5: Sonora Place at Lincoln Avenue**

Control Type:	Two-way stop	Delay (sec / veh):	14.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.008

**Intersection Setup**

Name	Sonora Place		Lincoln Avenue		Lincoln Avenue	
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

**Volumes**

Name	Sonora Place		Lincoln Avenue		Lincoln Avenue	
Base Volume Input [veh/h]	3	5	378	10	6	278
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00
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]	3	5	378	10	6	278
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	1	99	3	2	73
Total Analysis Volume [veh/h]	3	5	398	11	6	293
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
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	0.01	0.01	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	14.14	10.67	0.00	0.00	8.15	0.00
Movement LOS	B	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.05	0.05	0.00	0.00	0.02	0.02
95th-Percentile Queue Length [ft/ln]	1.16	1.16	0.00	0.00	0.39	0.39
d_A, Approach Delay [s/veh]		11.97		0.00		0.16
Approach LOS		B		A		A
d_I, Intersection Delay [s/veh]				0.20		
Intersection LOS				B		

**Intersection Level Of Service Report**  
**Intersection 6: Collingwood Street/Project Driveway 3 at Lincoln Avenue**

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):	0.040

**Intersection Setup**

Name	Collingwood St			Project Dwy 3			Lincoln Ave			Lincoln Ave		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

**Volumes**

Name	Collingwood St			Project Dwy 3			Lincoln Ave			Lincoln Ave		
Base Volume Input [veh/h]	13	0	4	26	0	31	4	367	14	3	236	3
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	13	0	4	26	0	31	4	367	14	3	236	3
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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	0	1	7	0	8	1	97	4	1	62	1
Total Analysis Volume [veh/h]	14	0	4	27	0	33	4	386	15	3	248	3
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	0.04	0.00	0.01	0.07	0.00	0.04	0.00	0.00	0.00	0.00	0.00	
d_M, Delay for Movement [s/veh]	15.69	14.89	10.93	15.54	15.40	10.44	7.75	0.00	0.00	8.12	0.00	0.00
Movement LOS	C	B	B	C	C	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.14	0.14	0.14	0.38	0.38	0.38	0.01	0.01	0.01	0.01	0.01	0.01
95th-Percentile Queue Length [ft/ln]	3.60	3.60	3.60	9.61	9.61	9.61	0.23	0.23	0.23	0.19	0.19	0.19
d_A, Approach Delay [s/veh]		14.63			12.74			0.08			0.10	
Approach LOS		B		B			A			A		
d_I, Intersection Delay [s/veh]							1.47					
Intersection LOS							C					

**Intersection Level Of Service Report**  
**Intersection 7: Dorlen Street at Lincoln Avenue**

Control Type:	Two-way stop	Delay (sec / veh):	15.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.055

**Intersection Setup**

Name	Dorlen Street			Dorlen Street			Lincoln Avenue			Lincoln Avenue		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

**Volumes**

Name	Dorlen Street			Dorlen Street			Lincoln Avenue			Lincoln Avenue		
Base Volume Input [veh/h]	20	0	8	0	0	2	1	343	28	11	228	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 [%]	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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	20	0	8	0	0	2	1	343	28	11	228	1
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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	0	2	0	0	1	0	90	7	3	60	0
Total Analysis Volume [veh/h]	21	0	8	0	0	2	1	361	29	12	240	1
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	0.06	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	15.03	14.90	10.96	14.58	14.49	9.52	7.72	0.00	0.00	8.11	0.00	0.00
Movement LOS	C	B	B	B	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.21	0.21	0.21	0.01	0.01	0.01	0.00	0.00	0.00	0.03	0.03	0.03
95th-Percentile Queue Length [ft/ln]	5.36	5.36	5.36	0.19	0.19	0.19	0.06	0.06	0.06	0.71	0.71	0.71
d_A, Approach Delay [s/veh]		13.91			9.52			0.02			0.38	
Approach LOS		B			A			A			A	
d_I, Intersection Delay [s/veh]							0.78					
Intersection LOS							C					

## Intersection Level Of Service Report

## Intersection 8: Washington Street at Indiana Avenue

Control Type: Signalized Delay (sec / veh): 15.9  
 Analysis Method: HCM 6th Edition Level Of Service: B  
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.564

## Intersection Setup

Name	Washington Street			Washington Street			Indiana Avenue			Indiana Avenue		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
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	Washington Street			Washington Street			Indiana Avenue			Indiana Avenue		
Base Volume Input [veh/h]	178	0	195	15	15	10	5	647	179	141	504	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 [%]	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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	178	0	195	15	15	10	5	647	179	141	504	1
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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]	47	0	51	4	4	3	1	170	47	37	133	0
Total Analysis Volume [veh/h]	187	0	205	16	16	11	5	681	188	148	531	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	0			0			0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0			0			0		0		0	
v_co, Outbound Pedestrian Volume crossing	0			0			0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0		0		0	
Bicycle Volume [bicycles/h]	0			0			0		0		0	

**Intersection Settings**

Located in CBD	No											
Signal Coordination Group	-											
Cycle Length [s]	65											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Offset [s]	0.0											
Offset Reference	LeadGreen											
Permissive Mode	SingleBand											
Lost time [s]	12.00											

**Phasing & Timing**

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [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
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	29	0	0	29	0	11	22	0	14	25	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	18	0	0	18	0	0	11	0	0	11	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	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	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	L	C	L	C	C	L	C	C
C, Cycle Length [s]	65	65	65	65	65	65	65	65	65	65
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
I1_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	0.00
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	14	14	14	14	1	32	32	7	38	38
g / C, Green / Cycle	0.22	0.22	0.22	0.22	0.01	0.49	0.49	0.11	0.59	0.59
(v / s)_i Volume / Saturation Flow Rate	0.14	0.13	0.01	0.02	0.00	0.24	0.24	0.08	0.14	0.14
s, saturation flow rate [veh/h]	1383	1589	1177	1745	1781	1870	1732	1781	1870	1869
c, Capacity [veh/h]	348	346	189	380	17	916	848	192	1099	1098
d1, Uniform Delay [s]	25.79	22.83	28.70	20.20	31.98	11.16	11.17	28.22	6.44	6.44
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.29	1.61	0.19	0.08	8.76	1.89	2.04	6.39	0.52	0.52
d3, Initial Queue Delay [s]	0.00	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	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.54	0.59	0.08	0.07	0.29	0.49	0.49	0.77	0.24	0.24
d, Delay for Lane Group [s/veh]	27.08	24.44	28.89	20.28	40.73	13.06	13.21	34.61	6.97	6.97
Lane Group LOS	C	C	C	C	D	B	B	C	A	A
Critical Lane Group	Yes	No	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.73	2.80	0.24	0.32	0.12	4.25	3.97	2.48	1.58	1.58
50th-Percentile Queue Length [ft/ln]	68.34	69.97	5.91	7.91	2.94	106.18	99.35	61.92	39.40	39.38
95th-Percentile Queue Length [veh/ln]	4.92	5.04	0.43	0.57	0.21	7.63	7.15	4.46	2.84	2.84
95th-Percentile Queue Length [ft/ln]	123.02	125.94	10.64	14.23	5.29	190.67	178.84	111.45	70.91	70.88

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	27.08	24.44	24.44	28.89	20.28	20.28	40.73	13.11	13.21	34.61	6.97	6.97
Movement LOS	C	C	C	C	C	C	D	B	B	C	A	A
d_A, Approach Delay [s/veh]	25.70			23.48			13.29			12.98		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]				15.85								
Intersection LOS				B								
Intersection V/C				0.564								

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	22.43	22.43	22.43	22.43
I_p,int, Pedestrian LOS Score for Intersection	2.164	1.938	2.860	2.613
Crosswalk LOS	B	A	C	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	769	769	554	646
d_b, Bicycle Delay [s]	12.31	12.31	16.99	14.89
I_b,int, Bicycle LOS Score for Intersection	2.206	1.631	2.281	2.121
Bicycle LOS	B	A	B	B

**Sequence**

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 9: Washington Street at Marguerita Avenue**

Control Type:	All-way stop	Delay (sec / veh):	13.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.592

**Intersection Setup**

Name	Washington Street			Washington Street			Marguerita Ave			Marguerita Ave		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

**Volumes**

Name	Washington Street			Washington Street			Marguerita Ave			Marguerita Ave		
Base Volume Input [veh/h]	39	345	25	24	316	13	16	37	27	20	48	14
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	345	25	24	316	13	16	37	27	20	48	14
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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	91	7	6	83	3	4	10	7	5	13	4
Total Analysis Volume [veh/h]	41	363	26	25	333	14	17	39	28	21	51	15
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	727	715	605	596
Degree of Utilization, x	0.59	0.52	0.14	0.15

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	3.93	3.04	0.48	0.51
95th-Percentile Queue Length [ft]	98.32	75.89	12.00	12.73
Approach Delay [s/veh]	14.88	13.35	9.91	10.08
Approach LOS	B	B	A	B
Intersection Delay [s/veh]	13.44			
Intersection LOS	B			

**Intersection Level Of Service Report****Intersection 10: Washington Street at Lincoln Avenue**

Control Type: All-way stop Delay (sec / veh): 32.2  
 Analysis Method: HCM 6th Edition Level Of Service: D  
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.868

**Intersection Setup**

Name	Washington Street			Washington Street			Lincoln Avenue			Lincoln Avenue		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	35.00			35.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Washington Street			Washington Street			Lincoln Avenue			Lincoln Avenue		
Base Volume Input [veh/h]	24	266	15	63	290	44	34	279	33	36	167	49
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	24	266	15	63	290	44	34	279	33	36	167	49
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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]	6	70	4	17	76	12	9	73	9	9	44	13
Total Analysis Volume [veh/h]	25	280	16	66	305	46	36	294	35	38	176	52
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	459	480	460	414	458
Degree of Utilization, x	0.70	0.87	0.79	0.52	0.11

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	5.32	9.16	7.19	2.87	0.38
95th-Percentile Queue Length [ft]	132.98	228.99	179.85	71.83	9.54
Approach Delay [s/veh]	27.05	42.55	34.82		18.59
Approach LOS	D	E	D		C
Intersection Delay [s/veh]			32.20		
Intersection LOS			D		

**Intersection Level Of Service Report****Intersection 11: Washington Street at Victoria Avenue (West)**

Control Type:	All-way stop	Delay (sec / veh):	11.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.545

**Intersection Setup**

Name	Washington Street			Washington Street			Victoria Ave (West)			Victoria Ave (West)		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

**Volumes**

Name	Washington Street			Washington Street			Victoria Ave (West)			Victoria Ave (West)		
Base Volume Input [veh/h]	82	275	0	0	297	11	0	0	0	285	203	23
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	82	275	0	0	297	11	0	0	0	285	203	23
Peak Hour Factor	0.9500	0.9500	1.0000	1.0000	0.9500	0.9500	1.0000	1.0000	1.0000	0.9500	0.9500	0.9500
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]	22	72	0	0	78	3	0	0	0	75	53	6
Total Analysis Volume [veh/h]	86	289	0	0	313	12	0	0	0	300	214	24
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	724	760	825		551	604
Degree of Utilization, x	0.26	0.25	0.39		0.54	0.39

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	1.03	0.97	1.89		3.25	1.88
95th-Percentile Queue Length [ft]	25.81	24.27	47.28		81.36	46.92
Approach Delay [s/veh]	9.20		10.17	0.00		14.89
Approach LOS	A		B	A		B
Intersection Delay [s/veh]				11.93		
Intersection LOS				B		

**Intersection Level Of Service Report**  
**Intersection 15: Madison Street at Victoria Avenue (East)**

Control Type:	All-way stop	Delay (sec / veh):	12.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.629

**Intersection Setup**

Name	Madison Street			Madison Street			Victoria Ave (East)			Victoria Ave (East)		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Madison Street			Madison Street			Victoria Ave (East)			Victoria Ave (East)		
Base Volume Input [veh/h]	0	12	1	181	73	0	52	407	14	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	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	12	1	181	73	0	52	407	14	0	0	0
Peak Hour Factor	1.0000	0.9500	0.9500	0.9500	0.9500	1.0000	0.9500	0.9500	0.9500	1.0000	1.0000	1.0000
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	3	0	48	19	0	14	107	4	0	0	0
Total Analysis Volume [veh/h]	0	13	1	191	77	0	55	428	15	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	869	880	791	
Degree of Utilization, x	0.02	0.30	0.63	

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	0.05	1.29	4.54	
95th-Percentile Queue Length [ft]	1.23	32.29	113.39	
Approach Delay [s/veh]	7.21	8.87	14.95	0.00
Approach LOS	A	A	B	A
Intersection Delay [s/veh]		12.72		
Intersection LOS		B		

**Intersection Level Of Service Report****Intersection 16: Washington Street at Victoria Avenue (East)**

Control Type:	All-way stop	Delay (sec / veh):	19.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.849

**Intersection Setup**

Name	Washington Street			Washington Street			Victoria Ave (East)			Victoria Ave (East)		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Washington Street			Washington Street			Victoria Ave (East)			Victoria Ave (East)		
Base Volume Input [veh/h]	0	350	200	10	574	0	8	271	332	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	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	350	200	10	574	0	8	271	332	0	0	0
Peak Hour Factor	1.0000	0.9500	0.9500	0.9500	0.9500	1.0000	0.9500	0.9500	0.9500	1.0000	1.0000	1.0000
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	92	53	3	151	0	2	71	87	0	0	0
Total Analysis Volume [veh/h]	0	368	211	11	604	0	8	285	349	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	722	722	842	725	492	545	
Degree of Utilization, x	0.25	0.25	0.25	0.85	0.60	0.64	

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	1.01	1.01	0.99	9.81	3.84	4.52	
95th-Percentile Queue Length [ft]	25.24	25.24	24.78	245.28	95.93	112.90	
Approach Delay [s/veh]		9.02		29.22		20.31	0.00
Approach LOS		A		D		C	A
Intersection Delay [s/veh]					19.73		
Intersection LOS					C		

*APPENDIX E-V*

**YEAR 2022 CUMULATIVE PLUS PROJECT  
WITH MITIGATION LEVEL OF SERVICE  
CALCULATION WORKSHEETS**

## Intersection Level Of Service Report

## Intersection 10: Washington Street at Lincoln Avenue

Control Type: Signalized Delay (sec / veh): 14.2  
 Analysis Method: HCM 6th Edition Level Of Service: B  
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.815

## Intersection Setup

Name	Washington Street			Washington Street			Lincoln Avenue			Lincoln Avenue		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	35.00			35.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

## Volumes

Name	Washington Street			Washington Street			Lincoln Avenue			Lincoln Avenue		
Base Volume Input [veh/h]	62	483	30	60	115	110	103	297	45	33	255	81
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	62	483	30	60	115	110	103	297	45	33	255	81
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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]	16	127	8	16	30	29	27	78	12	9	67	21
Total Analysis Volume [veh/h]	65	508	32	63	121	116	108	313	47	35	268	85
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	0				0			0			0	
v_di, Inbound Pedestrian Volume crossing m	0				0			0			0	
v_co, Outbound Pedestrian Volume crossing	0				0			0			0	
v_ci, Inbound Pedestrian Volume crossing mi	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]	50											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Offset [s]	0.0											
Offset Reference	LeadGreen											
Permissive Mode	SingleBand											
Lost time [s]	8.00											

**Phasing & Timing**

Control Type	Permiss											
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	0	7	0	0	7	0	0	7	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	22	0	0	22	0	0	28	0	0	28	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	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	11	0	0	7	0	0	7	0	0	7	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	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	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	C	C	C	C	R
C, Cycle Length [s]	50	50	50	50	50
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	2.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	23	23	19	19	19
g / C, Green / Cycle	0.45	0.45	0.39	0.39	0.39
(v / s)_i Volume / Saturation Flow Rate	0.34	0.19	0.34	0.17	0.05
s, saturation flow rate [veh/h]	1777	1548	1360	1758	1589
c, Capacity [veh/h]	884	788	615	762	616
d1, Uniform Delay [s]	11.20	9.06	14.80	11.22	9.93
k, delay calibration	0.50	0.50	0.14	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.28	1.40	2.52	0.34	0.10
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.68	0.38	0.76	0.40	0.14
d, Delay for Lane Group [s/veh]	15.48	10.45	17.31	11.56	10.03
Lane Group LOS	B	B	B	B	B
Critical Lane Group	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/in]	5.10	1.94	4.38	1.94	0.48
50th-Percentile Queue Length [ft/in]	127.43	48.41	109.61	48.59	12.06
95th-Percentile Queue Length [veh/in]	8.80	3.49	7.82	3.50	0.87
95th-Percentile Queue Length [ft/in]	219.99	87.14	195.46	87.47	21.70

#### Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	15.48	15.48	15.48	10.45	10.45	10.45	17.31	17.31	17.31	11.56	11.56	10.03
Movement LOS	B	B	B	B	B	B	B	B	B	B	B	B
d_A, Approach Delay [s/veh]	15.48			10.45			17.31			11.22		
Approach LOS	B			B			B			B		
d_I, Intersection Delay [s/veh]				14.17								
Intersection LOS					B							
Intersection V/C				0.815								

#### Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	15.21	15.21	15.21	15.21
I_p,int, Pedestrian LOS Score for Intersection	2.191	2.404	2.370	2.341
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	720	720	960	960
d_b, Bicycle Delay [s]	10.24	10.24	6.76	6.76
I_b,int, Bicycle LOS Score for Intersection	2.558	2.055	2.332	2.200
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 10: Washington Street at Lincoln Avenue**

Control Type:	Signalized	Delay (sec / veh):	11.6
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.556

**Intersection Setup**

Name	Washington Street			Washington Street			Lincoln Avenue			Lincoln Avenue		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	35.00			35.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Washington Street			Washington Street			Lincoln Avenue			Lincoln Avenue		
Base Volume Input [veh/h]	24	266	15	63	290	44	34	279	33	36	167	49
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	24	266	15	63	290	44	34	279	33	36	167	49
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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]	6	70	4	17	76	12	9	73	9	9	44	13
Total Analysis Volume [veh/h]	25	280	16	66	305	46	36	294	35	38	176	52
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	0				0			0			0	
v_di, Inbound Pedestrian Volume crossing m	0				0			0			0	
v_co, Outbound Pedestrian Volume crossing	0				0			0			0	
v_ci, Inbound Pedestrian Volume crossing mi	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]	50											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Offset [s]	0.0											
Offset Reference	LeadGreen											
Permissive Mode	SingleBand											
Lost time [s]	8.00											

**Phasing & Timing**

Control Type	Permiss											
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	0	7	0	0	7	0	0	7	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	22	0	0	22	0	0	28	0	0	28	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	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	11	0	0	7	0	0	7	0	0	7	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	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	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	C	C	C	C	R
C, Cycle Length [s]	50	50	50	50	50
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	2.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	29	29	13	13	13
g / C, Green / Cycle	0.57	0.57	0.27	0.27	0.27
(v / s)_i Volume / Saturation Flow Rate	0.18	0.24	0.22	0.12	0.03
s, saturation flow rate [veh/h]	1806	1711	1632	1720	1589
c, Capacity [veh/h]	1113	1064	515	544	424
d1, Uniform Delay [s]	5.51	5.90	17.25	15.19	13.91
k, delay calibration	0.50	0.50	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.65	1.08	1.82	0.46	0.13
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.29	0.39	0.71	0.39	0.12
d, Delay for Lane Group [s/veh]	6.17	6.98	19.06	15.66	14.04
Lane Group LOS	A	A	B	B	B
Critical Lane Group	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.30	1.85	3.53	1.72	0.38
50th-Percentile Queue Length [ft/ln]	32.47	46.13	88.29	43.12	9.58
95th-Percentile Queue Length [veh/ln]	2.34	3.32	6.36	3.10	0.69
95th-Percentile Queue Length [ft/ln]	58.45	83.03	158.92	77.62	17.24

#### Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	6.17	6.17	6.17	6.98	6.98	6.98	19.06	19.06	19.06	15.66	15.66	14.04
Movement LOS	A	A	A	A	A	A	B	B	B	B	B	B
d_A, Approach Delay [s/veh]	6.17			6.98			19.06			15.34		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]				11.64								
Intersection LOS				B								
Intersection V/C				0.556								

#### Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	15.21	15.21	15.21	15.21
I_p,int, Pedestrian LOS Score for Intersection	2.133	2.179	2.115	2.279
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	720	720	960	960
d_b, Bicycle Delay [s]	10.24	10.24	6.76	6.76
I_b,int, Bicycle LOS Score for Intersection	2.089	2.248	2.162	1.999
Bicycle LOS	B	B	B	A

#### Sequence

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



## APPENDIX F

### YEAR 2040 BUILDOUT TRAFFIC CONDITIONS LEVEL OF SERVICE CALCULATION WORKSHEETS

**Intersection Key**  
**Casa Blanca Elementary School Project, Riverside**

Vistro Model Number	Report Number	Key Study Intersections
1	1	Madison Street at Indiana Avenue (traffic signal)
2	2	Madison Street at Emerald Street (all-way stop)
3	3	Madison Street at Lincoln Avenue (traffic signal)
4	4A	Madison Street at Victoria Avenue (West)
5	5	Sonora Place at Lincoln Avenue (one-way stop)
6	6	Collingwood Street/ProjectDwy 3 at Lincoln Avenue (one-way stop)
7	7	Dorlen Street at Lincoln Avenue (two-way stop)
8	8	Washington Street at Indiana Avenue (traffic signal)
9	9	Washington Street at Marguerita Avenue (all-way stop)
10	10	Washington Street at Lincoln Avenue (all-way stop)
11	11A	Washington Street at Victoria Avenue (West)
12	A	Project Driveway 1 at Lincoln Avenue
13	B	Project Driveway 2 at Lincoln Avenue
14	C	Project Driveway 4 at Lincoln Avenue
15	4B	Madison Street at Victoria Avenue (East)
16	11B	Washington Street at Victoria Avenue (East)

*APPENDIX F-I*

**YEAR 2040 BUILDOUT LEVEL OF SERVICE  
CALCULATION WORKSHEETS**

**Intersection Level Of Service Report**  
**Intersection 1: Madison Street at Indiana Avenue**

Control Type:	Signalized	Delay (sec / veh):	37.3
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.751

**Intersection Setup**

Name	Madison Street			Madison Street			Indiana Ave			Indiana Ave		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
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			No			Yes			Yes		

**Volumes**

Name	Madison Street			Madison Street			Indiana Ave			Indiana Ave		
Base Volume Input [veh/h]	33	454	37	339	465	277	254	464	30	30	235	360
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	33	454	37	339	465	277	254	464	30	30	235	360
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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	0.7500
Total 15-Minute Volume [veh/h]	8	114	9	85	116	69	64	116	8	8	59	68
Total Analysis Volume [veh/h]	33	454	37	339	465	277	254	464	30	30	235	270
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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing mi	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	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]	105											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Offset [s]	0.0											
Offset Reference	LeadGreen											
Permissive Mode	SingleBand											
Lost time [s]	16.00											

**Phasing & Timing**

Control Type	Protecte	Permiss	Permiss									
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-									
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [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
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	29	0	36	54	0	29	29	0	11	11	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]	0	7	0	0	7	0	0	7	0	0	0	0
Pedestrian Clearance [s]	0	18	0	0	18	0	0	18	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No										
Maximum Recall	No	No										
Pedestrian Recall	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	C	L	C	C	L	C	C
C, Cycle Length [s]	105	105	105	105	105	105	105	105	105	105	105	105
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
I1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	17	17	22	34	34	17	46	46	4	33	33
g / C, Green / Cycle	0.04	0.16	0.16	0.21	0.33	0.33	0.16	0.44	0.44	0.04	0.31	0.31
(v / s)_i Volume / Saturation Flow Rate	0.02	0.13	0.13	0.19	0.21	0.21	0.14	0.13	0.13	0.02	0.13	0.17
s, saturation flow rate [veh/h]	1781	1870	1821	1781	1870	1639	1781	1870	1830	1781	1870	1589
c, Capacity [veh/h]	75	298	290	376	614	538	293	817	800	71	585	497
d1, Uniform Delay [s]	49.12	42.82	42.86	40.38	30.06	30.07	42.81	19.22	19.22	49.27	28.39	29.91
k, delay calibration	0.11	0.11	0.11	0.18	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
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
d2, Incremental Delay [s]	3.96	6.00	6.33	12.11	1.13	1.30	7.73	0.96	0.99	3.92	2.05	4.22
d3, Initial Queue Delay [s]	0.00	0.00	0.00	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	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	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.44	0.83	0.84	0.90	0.64	0.64	0.87	0.31	0.31	0.42	0.40	0.54
d, Delay for Lane Group [s/veh]	53.08	48.82	49.19	52.48	31.19	31.37	50.54	20.18	20.21	53.19	30.45	34.13
Lane Group LOS	D	D	D	D	C	C	D	C	C	D	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.93	6.69	6.58	9.70	8.57	7.55	7.00	4.11	4.03	0.84	4.94	6.16
50th-Percentile Queue Length [ft/ln]	23.15	167.28	164.55	242.48	214.25	188.76	175.04	102.72	100.79	21.12	123.53	153.97
95th-Percentile Queue Length [veh/ln]	1.67	10.93	10.79	14.81	13.37	12.06	11.34	7.40	7.26	1.52	8.59	10.23
95th-Percentile Queue Length [ft/ln]	41.68	273.33	269.73	370.17	334.28	301.42	283.53	184.90	181.43	38.02	214.67	255.72

**Movement, Approach, & Intersection Results**

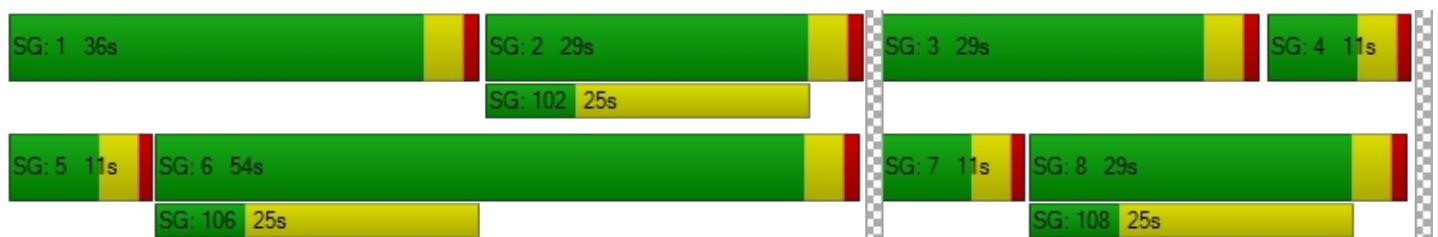
d_M, Delay for Movement [s/veh]	53.08	48.99	49.19	52.48	31.22	31.37	50.54	20.20	20.21	53.19	30.45	34.13
Movement LOS	D	D	D	D	C	C	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	49.26				37.93			30.50			33.58	
Approach LOS		D			D			C			C	
d_I, Intersection Delay [s/veh]					37.25							
Intersection LOS						D						
Intersection V/C					0.751							

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	42.08	0.00	42.08	42.08
I_p,int, Pedestrian LOS Score for Intersection	2.512	0.000	2.559	2.575
Crosswalk LOS	B	F	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	476	952	476	133
d_b, Bicycle Delay [s]	30.48	14.40	30.48	45.73
I_b,int, Bicycle LOS Score for Intersection	1.992	2.451	2.177	2.001
Bicycle LOS	A	B	B	B

**Sequence**

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 2: Madison Street at Emerald Street**

Control Type:	All-way stop	Delay (sec / veh):	13.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.657

**Intersection Setup**

Name	Madison Street			Madison Street			Emerald Street			Emerald Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

**Volumes**

Name	Madison Street			Madison Street			Emerald Street			Emerald Street		
Base Volume Input [veh/h]	29	457	27	13	295	13	10	0	5	12	2	18
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	29	457	27	13	295	13	10	0	5	12	2	18
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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]	7	114	7	3	74	3	3	0	1	3	1	5
Total Analysis Volume [veh/h]	29	457	27	13	295	13	10	0	5	12	2	18
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	663	736	645	714	618	645
Degree of Utilization, x	0.04	0.66	0.02	0.43	0.02	0.05

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	0.14	4.97	0.06	2.19	0.07	0.16
95th-Percentile Queue Length [ft]	3.42	124.33	1.54	54.64	1.86	3.91
Approach Delay [s/veh]		16.01		11.40		8.97
Approach LOS	C		B		A	A
Intersection Delay [s/veh]				13.95		
Intersection LOS				B		

**Intersection Level Of Service Report**  
**Intersection 3: Madison Street at Lincoln Avenue**

Control Type:	Signalized	Delay (sec / veh):	25.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.566

**Intersection Setup**

Name	Madison Street			Madison Street			Lincoln Avenue			Lincoln Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
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	Madison Street			Madison Street			Lincoln Avenue			Lincoln Avenue		
Base Volume Input [veh/h]	35	346	22	92	184	177	124	268	22	9	266	138
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	35	346	22	92	184	177	124	268	22	9	266	138
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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]	9	87	6	23	46	44	31	67	6	2	67	35
Total Analysis Volume [veh/h]	35	346	22	92	184	177	124	268	22	9	266	138
Presence of On-Street Parking	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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing mi	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	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]	70											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Offset [s]	0.0											
Offset Reference	LeadGreen											
Permissive Mode	SingleBand											
Lost time [s]	16.00											

**Phasing & Timing**

Control Type	Protecte	Permiss	Permiss									
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-									
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [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
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	26	0	11	26	0	11	22	0	11	22	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]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	14	0	0	14	0	0	11	0	0	11	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No										
Maximum Recall	No	No										
Pedestrian Recall	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
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
I1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	16	6	18	6	31	1	26	26
g / C, Green / Cycle	0.05	0.23	0.08	0.26	0.09	0.44	0.02	0.37	0.37
(v / s)_i Volume / Saturation Flow Rate	0.02	0.20	0.05	0.21	0.07	0.16	0.01	0.11	0.12
s, saturation flow rate [veh/h]	1781	1850	1781	1721	1781	1845	1781	1870	1661
c, Capacity [veh/h]	92	424	151	452	164	812	32	684	608
d1, Uniform Delay [s]	32.24	26.04	31.01	24.16	31.12	13.07	34.05	15.92	16.00
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.50	0.11	0.50	0.50
I, 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]	2.59	5.48	3.89	3.28	6.90	1.23	4.72	1.16	1.38
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	0.38	0.87	0.61	0.80	0.76	0.36	0.28	0.31	0.32
d, Delay for Lane Group [s/veh]	34.83	31.53	34.90	27.44	38.02	14.30	38.78	17.08	17.38
Lane Group LOS	C	C	C	C	D	B	D	B	B
Critical Lane Group	No	Yes	Yes	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.62	6.22	1.61	5.66	2.29	3.03	0.19	2.46	2.31
50th-Percentile Queue Length [ft/ln]	15.59	155.54	40.36	141.42	57.22	75.65	4.72	61.42	57.65
95th-Percentile Queue Length [veh/ln]	1.12	10.31	2.91	9.56	4.12	5.45	0.34	4.42	4.15
95th-Percentile Queue Length [ft/ln]	28.05	257.81	72.66	238.93	102.99	136.17	8.50	110.55	103.76

#### Movement, Approach, & Intersection Results

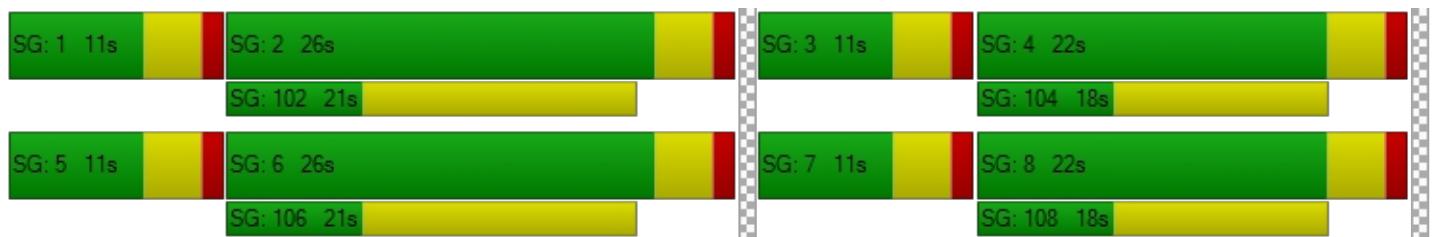
d_M, Delay for Movement [s/veh]	34.83	31.53	31.53	34.90	27.44	27.44	38.02	14.30	14.30	38.78	17.14	17.38
Movement LOS	C	C	C	C	C	C	D	B	B	D	B	B
d_A, Approach Delay [s/veh]	31.81			28.95			21.40			17.69		
Approach LOS	C			C			C			B		
d_I, Intersection Delay [s/veh]				25.02								
Intersection LOS					C							
Intersection V/C				0.566								

#### Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	24.86	24.86	24.86	24.86
I_p,int, Pedestrian LOS Score for Intersection	2.127	2.271	2.335	2.311
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	629	629	514	514
d_b, Bicycle Delay [s]	16.46	16.46	19.31	19.31
I_b,int, Bicycle LOS Score for Intersection	2.225	2.307	2.243	1.900
Bicycle LOS	B	B	B	A

#### Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report****Intersection 4: Madison Street at Victoria Avenue (West)**

Control Type:	All-way stop	Delay (sec / veh):	19.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.847

**Intersection Setup**

Name	Madison Street			Madison Street			Victoria Ave (West)			Victoria Ave (West)		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Madison Street			Madison Street			Victoria Ave (West)			Victoria Ave (West)		
Base Volume Input [veh/h]	86	228	0	0	203	29	0	0	0	12	405	202
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	86	228	0	0	203	29	0	0	0	12	405	202
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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]	22	57	0	0	51	7	0	0	0	3	101	51
Total Analysis Volume [veh/h]	86	228	0	0	203	29	0	0	0	12	405	202
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

**Lanes**

Capacity per Entry Lane [veh/h]	833	761	893		731
Degree of Utilization, x	0.38	0.27	0.03		0.85

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	1.77	1.08	0.10		9.78
95th-Percentile Queue Length [ft]	44.13	26.89	2.51		244.50
Approach Delay [s/veh]	9.91	8.86	0.00		28.87
Approach LOS	A	A	A		D
Intersection Delay [s/veh]			19.77		
Intersection LOS			C		

**Intersection Level Of Service Report**  
**Intersection 5: Sonora Place at Lincoln Avenue**

Control Type:	Two-way stop	Delay (sec / veh):	15.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.025

**Intersection Setup**

Name	Sonora Place		Lincoln Avenue		Lincoln Avenue	
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

**Volumes**

Name	Sonora Place		Lincoln Avenue		Lincoln Avenue	
Base Volume Input [veh/h]	9	5	363	1	6	395
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00
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]	9	5	363	1	6	395
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	1	91	0	2	99
Total Analysis Volume [veh/h]	9	5	363	1	6	395
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
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	0.02	0.01	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	15.10	10.55	0.00	0.00	8.03	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.10	0.10	0.00	0.00	0.02	0.02
95th-Percentile Queue Length [ft/ln]	2.47	2.47	0.00	0.00	0.38	0.38
d_A, Approach Delay [s/veh]	13.48		0.00		0.12	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]			0.30			
Intersection LOS			C			

**Intersection Level Of Service Report**  
**Intersection 6: Collingwood Street at Lincoln Avenue**

Control Type:	Two-way stop	Delay (sec / veh):	15.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.028

**Intersection Setup**

Name	Collingwood St		Lincoln Ave		Lincoln Ave	
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

**Volumes**

Name	Collingwood St		Lincoln Ave		Lincoln Ave	
Base Volume Input [veh/h]	10	14	382	8	4	395
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00
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]	10	14	382	8	4	395
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	4	96	2	1	99
Total Analysis Volume [veh/h]	10	14	382	8	4	395
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
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	0.03	0.02	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	15.44	10.82	0.00	0.00	8.09	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.15	0.15	0.00	0.00	0.01	0.01
95th-Percentile Queue Length [ft/ln]	3.86	3.86	0.00	0.00	0.26	0.26
d_A, Approach Delay [s/veh]	12.74		0.00		0.08	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]			0.42			
Intersection LOS			C			

**Intersection Level Of Service Report**  
**Intersection 7: Dorlen Street at Lincoln Avenue**

Control Type:	Two-way stop	Delay (sec / veh):	17.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.116

**Intersection Setup**

Name	Dorlen Street			Dorlen Street			Lincoln Avenue			Lincoln Avenue		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

**Volumes**

Name	Dorlen Street			Dorlen Street			Lincoln Avenue			Lincoln Avenue		
Base Volume Input [veh/h]	37	0	15	0	0	2	0	382	12	9	353	2
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	37	0	15	0	0	2	0	382	12	9	353	2
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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]	9	0	4	0	0	1	0	96	3	2	88	1
Total Analysis Volume [veh/h]	37	0	15	0	0	2	0	382	12	9	353	2
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	0.12	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	17.84	17.39	12.00	16.66	15.93	10.23	7.99	0.00	0.00	8.12	0.00	0.00
Movement LOS	C	C	B	C	C	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.48	0.48	0.48	0.01	0.01	0.01	0.00	0.00	0.00	0.02	0.02	0.02
95th-Percentile Queue Length [ft/ln]	11.95	11.95	11.95	0.22	0.22	0.22	0.00	0.00	0.00	0.58	0.58	0.58
d_A, Approach Delay [s/veh]		16.15			10.23			0.00			0.20	
Approach LOS		C			B			A			A	
d_I, Intersection Delay [s/veh]							1.15					
Intersection LOS							C					

## Intersection Level Of Service Report

## Intersection 8: Washington Street at Indiana Avenue

Control Type: Signalized Delay (sec / veh): 19.7  
 Analysis Method: HCM 6th Edition Level Of Service: B  
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.653

## Intersection Setup

Name	Washington Street			Washington Street			Indiana Avenue			Indiana Avenue		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
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	Washington Street			Washington Street			Indiana Avenue			Indiana Avenue		
Base Volume Input [veh/h]	245	3	467	2	1	0	13	535	133	92	459	5
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	245	3	467	2	1	0	13	535	133	92	459	5
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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]	61	1	117	1	0	0	3	134	33	23	115	1
Total Analysis Volume [veh/h]	245	3	467	2	1	0	13	535	133	92	459	5
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	0				0			0			0	
v_di, Inbound Pedestrian Volume crossing m	0				0			0			0	
v_co, Outbound Pedestrian Volume crossing	0				0			0			0	
v_ci, Inbound Pedestrian Volume crossing mi	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]	65											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Offset [s]	0.0											
Offset Reference	LeadGreen											
Permissive Mode	SingleBand											
Lost time [s]	12.00											

**Phasing & Timing**

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [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
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	32	0	0	32	0	11	22	0	11	22	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	18	0	0	18	0	0	11	0	0	11	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	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	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	L	C	L	C	C	L	C	C
C, Cycle Length [s]	65	65	65	65	65	65	65	65	65	65
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
I1_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	0.00
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	22	22	22	22	2	26	26	6	30	30
g / C, Green / Cycle	0.33	0.33	0.33	0.33	0.02	0.39	0.39	0.09	0.46	0.46
(v / s)_i Volume / Saturation Flow Rate	0.17	0.30	0.00	0.00	0.01	0.18	0.19	0.05	0.12	0.12
s, saturation flow rate [veh/h]	1416	1591	923	1870	1781	1870	1743	1781	1870	1863
c, Capacity [veh/h]	546	531	135	624	44	735	685	158	855	852
d1, Uniform Delay [s]	18.89	20.52	30.91	14.46	31.22	14.71	14.73	28.51	10.95	10.95
k, delay calibration	0.11	0.19	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.58	8.41	0.04	0.00	3.74	2.14	2.32	3.34	0.78	0.79
d3, Initial Queue Delay [s]	0.00	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	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.45	0.88	0.01	0.00	0.30	0.47	0.47	0.58	0.27	0.27
d, Delay for Lane Group [s/veh]	19.47	28.92	30.95	14.46	34.96	16.86	17.06	31.85	11.73	11.74
Lane Group LOS	B	C	C	B	C	B	B	C	B	B
Critical Lane Group	No	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.95	7.36	0.03	0.01	0.24	3.85	3.64	1.47	2.02	2.01
50th-Percentile Queue Length [ft/ln]	73.65	183.93	0.78	0.23	5.97	96.13	91.08	36.65	50.40	50.26
95th-Percentile Queue Length [veh/ln]	5.30	11.81	0.06	0.02	0.43	6.92	6.56	2.64	3.63	3.62
95th-Percentile Queue Length [ft/ln]	132.58	295.13	1.40	0.42	10.74	173.04	163.95	65.98	90.71	90.47

#### Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	19.47	28.92	28.92	30.95	14.46	14.46	34.96	16.93	17.06	31.85	11.73	11.74
Movement LOS	B	C	C	C	B	B	C	B	B	C	B	B
d_A, Approach Delay [s/veh]	25.68			25.45			17.30			15.06		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]				19.74								
Intersection LOS					B							
Intersection V/C				0.653								

#### Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	22.43	22.43	22.43	22.43
I_p,int, Pedestrian LOS Score for Intersection	2.228	1.930	2.900	2.589
Crosswalk LOS	B	A	C	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	862	862	554	554
d_b, Bicycle Delay [s]	10.53	10.53	16.99	16.99
I_b,int, Bicycle LOS Score for Intersection	2.739	1.565	2.121	2.018
Bicycle LOS	B	A	B	B

#### Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 9: Washington Street at Marguerita Avenue**

Control Type:	All-way stop	Delay (sec / veh):	41.2
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.012

**Intersection Setup**

Name	Washington Street			Washington Street			Marguerita Ave			Marguerita Ave		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

**Volumes**

Name	Washington Street			Washington Street			Marguerita Ave			Marguerita Ave		
Base Volume Input [veh/h]	22	658	54	13	158	17	32	71	28	26	42	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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	22	658	54	13	158	17	32	71	28	26	42	28
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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]	6	165	14	3	40	4	8	18	7	7	11	7
Total Analysis Volume [veh/h]	22	658	54	13	158	17	32	71	28	26	42	28
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	734	640	566	561
Degree of Utilization, x	1.01	0.29	0.23	0.17

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	17.13	1.22	0.89	0.61
95th-Percentile Queue Length [ft]	428.31	30.55	22.22	15.32
Approach Delay [s/veh]	58.21	10.95	11.27	10.74
Approach LOS	F	B	B	B
Intersection Delay [s/veh]	41.16			
Intersection LOS	E			

**Intersection Level Of Service Report****Intersection 10: Washington Street at Lincoln Avenue**

Control Type: All-way stop      Delay (sec / veh): 127.1  
 Analysis Method: HCM 6th Edition      Level Of Service: F  
 Analysis Period: 15 minutes      Volume to Capacity (v/c): 1.520

**Intersection Setup**

Name	Washington Street			Washington Street			Lincoln Avenue			Lincoln Avenue		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	35.00			35.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Washington Street			Washington Street			Lincoln Avenue			Lincoln Avenue		
Base Volume Input [veh/h]	35	570	54	72	136	48	52	333	21	39	281	96
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	35	570	54	72	136	48	52	333	21	39	281	96
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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]	9	143	14	18	34	12	13	83	5	10	70	24
Total Analysis Volume [veh/h]	35	570	54	72	136	48	52	333	21	39	281	96
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	659	402	430	404	442
Degree of Utilization, x	1.52	0.64	0.94	0.79	0.22

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	35.21	4.26	10.92	6.89	0.82
95th-Percentile Queue Length [ft]	880.20	106.58	273.08	172.35	20.43
Approach Delay [s/veh]	267.58	26.38	59.70	32.29	
Approach LOS	F	D	F	D	
Intersection Delay [s/veh]	127.09				
Intersection LOS	F				

**Intersection Level Of Service Report****Intersection 11: Washington Street at Victoria Avenue (West)**

Control Type:	All-way stop	Delay (sec / veh):	15.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.640

**Intersection Setup**

Name	Washington Street			Washington Street			Victoria Ave (West)			Victoria Ave (West)		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

**Volumes**

Name	Washington Street			Washington Street			Victoria Ave (West)			Victoria Ave (West)		
Base Volume Input [veh/h]	357	552	0	0	195	14	0	0	0	158	297	35
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	357	552	0	0	195	14	0	0	0	158	297	35
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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]	89	138	0	0	49	4	0	0	0	40	74	9
Total Analysis Volume [veh/h]	357	552	0	0	195	14	0	0	0	158	297	35
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	710	770	771		496	539
Degree of Utilization, x	0.64	0.59	0.27		0.32	0.62

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	4.66	3.93	1.10		1.36	4.14
95th-Percentile Queue Length [ft]	116.44	98.33	27.46		33.93	103.53
Approach Delay [s/veh]		15.11	9.40	0.00		17.48
Approach LOS	C		A	A		C
Intersection Delay [s/veh]				15.09		
Intersection LOS				C		

**Intersection Level Of Service Report**  
**Intersection 15: Madison Street at Victoria Avenue (East)**

Control Type:	All-way stop	Delay (sec / veh):	11.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.555

**Intersection Setup**

Name	Madison Street			Madison Street			Victoria Ave (East)			Victoria Ave (East)		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Madison Street			Madison Street			Victoria Ave (East)			Victoria Ave (East)		
Base Volume Input [veh/h]	0	254	37	70	145	0	60	306	35	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	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	254	37	70	145	0	60	306	35	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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	64	9	18	36	0	15	77	9	0	0	0
Total Analysis Volume [veh/h]	0	254	37	70	145	0	60	306	35	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	885	843	723	
Degree of Utilization, x	0.33	0.26	0.55	

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	1.44	1.01	3.44	
95th-Percentile Queue Length [ft]	36.04	25.34	86.06	
Approach Delay [s/veh]	9.05	8.73	14.00	0.00
Approach LOS	A	A	B	A
Intersection Delay [s/veh]			11.16	
Intersection LOS			B	

**Intersection Level Of Service Report****Intersection 16: Washington Street at Victoria Avenue (East)**

Control Type:	All-way stop	Delay (sec / veh):	14.8
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.604

**Intersection Setup**

Name	Washington Street			Washington Street			Victoria Ave (East)			Victoria Ave (East)		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Washington Street			Washington Street			Victoria Ave (East)			Victoria Ave (East)		
Base Volume Input [veh/h]	0	895	473	22	331	0	14	263	98	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	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	895	473	22	331	0	14	263	98	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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	224	118	6	83	0	4	66	25	0	0	0
Total Analysis Volume [veh/h]	0	895	473	22	331	0	14	263	98	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	746	746	873	635	458	505	
Degree of Utilization, x	0.60	0.60	0.54	0.56	0.60	0.19	

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	4.06	4.06	3.33	3.42	3.91	0.71	
95th-Percentile Queue Length [ft]	101.44	101.44	83.16	85.53	97.76	17.81	
Approach Delay [s/veh]		13.49		15.52		19.15	0.00
Approach LOS		B		C		C	A
Intersection Delay [s/veh]					14.85		
Intersection LOS					B		

**Intersection Level Of Service Report**  
**Intersection 1: Madison Street at Indiana Avenue**

Control Type:	Signalized	Delay (sec / veh):	51.9
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.917

**Intersection Setup**

Name	Madison Street			Madison Street			Indiana Ave			Indiana Ave		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
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			No			Yes			Yes		

**Volumes**

Name	Madison Street			Madison Street			Indiana Ave			Indiana Ave		
Base Volume Input [veh/h]	38	595	34	352	632	168	352	624	85	56	346	507
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	38	595	34	352	632	168	352	624	85	56	346	507
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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	0.7500
Total 15-Minute Volume [veh/h]	10	149	9	88	158	42	88	156	21	14	87	95
Total Analysis Volume [veh/h]	38	595	34	352	632	168	352	624	85	56	346	380
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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing mi	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	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]	130											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Offset [s]	0.0											
Offset Reference	LeadGreen											
Permissive Mode	SingleBand											
Lost time [s]	16.00											

**Phasing & Timing**

Control Type	Protecte	Permiss	Permiss									
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-									
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [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
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	29	0	40	58	0	33	49	0	12	28	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]	0	7	0	0	7	0	0	7	0	0	0	0
Pedestrian Clearance [s]	0	18	0	0	18	0	0	18	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No										
Maximum Recall	No	No										
Pedestrian Recall	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	C	L	C	C	L	C	C
C, Cycle Length [s]	130	130	130	130	130	130	130	130	130	130	130	130
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
I1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	25	25	28	47	47	28	55	55	6	34	34
g / C, Green / Cycle	0.04	0.19	0.19	0.21	0.36	0.36	0.21	0.43	0.43	0.05	0.26	0.26
(v / s)_i Volume / Saturation Flow Rate	0.02	0.17	0.17	0.20	0.22	0.22	0.20	0.19	0.19	0.03	0.19	0.24
s, saturation flow rate [veh/h]	1781	1870	1835	1781	1870	1736	1781	1870	1793	1781	1870	1589
c, Capacity [veh/h]	73	356	349	381	679	631	381	796	763	85	484	411
d1, Uniform Delay [s]	61.10	51.34	51.35	50.08	33.87	33.90	50.04	26.62	26.62	60.90	43.83	46.94
k, delay calibration	0.11	0.21	0.21	0.25	0.11	0.11	0.23	0.50	0.50	0.11	0.50	0.50
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
d2, Incremental Delay [s]	5.65	13.52	13.94	18.44	0.89	0.98	17.20	1.87	1.96	8.56	8.74	28.85
d3, Initial Queue Delay [s]	0.00	0.00	0.00	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	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	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.52	0.89	0.89	0.92	0.61	0.61	0.92	0.45	0.46	0.66	0.72	0.92
d, Delay for Lane Group [s/veh]	66.75	64.86	65.30	68.52	34.77	34.87	67.24	28.49	28.57	69.46	52.57	75.79
Lane Group LOS	E	E	E	E	C	C	E	C	C	E	D	E
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.35	11.41	11.25	13.14	10.87	10.14	13.01	8.43	8.10	2.02	11.31	15.22
50th-Percentile Queue Length [ft/ln]	33.70	285.16	281.35	328.56	271.76	253.49	325.22	210.63	202.42	50.60	282.83	380.53
95th-Percentile Queue Length [veh/ln]	2.43	16.95	16.76	19.09	16.28	15.36	18.92	13.19	12.76	3.64	16.83	21.62
95th-Percentile Queue Length [ft/ln]	60.65	423.63	418.90	477.20	406.93	384.05	473.09	329.64	319.09	91.08	420.73	540.49

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	66.75	65.06	65.30	68.52	34.80	34.87	67.24	28.52	28.57	69.46	52.57	75.79
Movement LOS	E	E	E	E	C	C	E	C	C	E	D	E
d_A, Approach Delay [s/veh]	65.17				45.12			41.37			65.06	
Approach LOS	E				D			D			E	
d_I, Intersection Delay [s/veh]					51.95							
Intersection LOS						D						
Intersection V/C					0.917							

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	54.47	0.00	54.47	54.47
I_p,int, Pedestrian LOS Score for Intersection	2.598	0.000	2.632	2.667
Crosswalk LOS	B	F	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	385	831	692	369
d_b, Bicycle Delay [s]	42.40	22.22	27.79	43.22
I_b,int, Bicycle LOS Score for Intersection	2.110	2.510	2.435	2.205
Bicycle LOS	B	B	B	B

**Sequence**

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 2: Madison Street at Emerald Street**

Control Type:	All-way stop	Delay (sec / veh):	26.4
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.897

**Intersection Setup**

Name	Madison Street			Madison Street			Emerald Street			Emerald Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

**Volumes**

Name	Madison Street			Madison Street			Emerald Street			Emerald Street		
Base Volume Input [veh/h]	6	411	15	21	603	30	13	2	3	21	0	27
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	6	411	15	21	603	30	13	2	3	21	0	27
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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	103	4	5	151	8	3	1	1	5	0	7
Total Analysis Volume [veh/h]	6	411	15	21	603	30	13	2	3	21	0	27
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	619	680	639	706	539	574
Degree of Utilization, x	0.01	0.63	0.03	0.90	0.03	0.08

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	0.03	4.42	0.10	11.53	0.10	0.27
95th-Percentile Queue Length [ft]	0.73	110.43	2.55	288.17	2.59	6.83
Approach Delay [s/veh]	16.34		34.74		9.91	9.85
Approach LOS	C		D		A	A
Intersection Delay [s/veh]				26.42		
Intersection LOS				D		

**Intersection Level Of Service Report**  
**Intersection 3: Madison Street at Lincoln Avenue**

Control Type:	Signalized	Delay (sec / veh):	29.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.625

**Intersection Setup**

Name	Madison Street			Madison Street			Lincoln Avenue			Lincoln Avenue		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
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	Madison Street			Madison Street			Lincoln Avenue			Lincoln Avenue		
Base Volume Input [veh/h]	23	186	13	114	426	94	183	297	37	18	173	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	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	23	186	13	114	426	94	183	297	37	18	173	99
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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]	6	47	3	29	107	24	46	74	9	5	43	25
Total Analysis Volume [veh/h]	23	186	13	114	426	94	183	297	37	18	173	99
Presence of On-Street Parking	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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing m	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	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]	75											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Offset [s]	0.0											
Offset Reference	LeadGreen											
Permissive Mode	SingleBand											
Lost time [s]	16.00											

**Phasing & Timing**

Control Type	Protecte	Permiss	Permiss									
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-									
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [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
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	25	0	17	31	0	11	22	0	11	22	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]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	14	0	0	14	0	0	11	0	0	11	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No										
Maximum Recall	No	No										
Pedestrian Recall	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
C, Cycle Length [s]	75	75	75	75	75	75	75	75	75
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
I1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	3	20	6	24	10	30	2	23	23
g / C, Green / Cycle	0.04	0.27	0.09	0.32	0.13	0.40	0.03	0.31	0.31
(v / s)_i Volume / Saturation Flow Rate	0.01	0.11	0.06	0.29	0.10	0.18	0.01	0.08	0.08
s, saturation flow rate [veh/h]	1781	1849	1781	1812	1781	1834	1781	1870	1651
c, Capacity [veh/h]	67	494	154	572	227	739	55	573	506
d1, Uniform Delay [s]	35.31	22.64	33.56	24.69	31.91	16.39	35.69	19.56	19.66
k, delay calibration	0.11	0.11	0.11	0.23	0.11	0.50	0.11	0.50	0.50
I, 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]	3.04	0.53	6.89	11.19	6.60	1.99	3.38	1.02	1.25
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	0.34	0.40	0.74	0.91	0.81	0.45	0.33	0.25	0.26
d, Delay for Lane Group [s/veh]	38.35	23.17	40.45	35.88	38.52	18.38	39.07	20.58	20.91
Lane Group LOS	D	C	D	D	D	B	D	C	C
Critical Lane Group	Yes	No	No	Yes	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.46	2.84	2.27	10.09	3.54	4.30	0.37	1.92	1.83
50th-Percentile Queue Length [ft/ln]	11.44	71.03	56.67	252.18	88.60	107.62	9.18	47.93	45.69
95th-Percentile Queue Length [veh/ln]	0.82	5.11	4.08	15.30	6.38	7.71	0.66	3.45	3.29
95th-Percentile Queue Length [ft/ln]	20.59	127.85	102.01	382.40	159.48	192.68	16.53	86.27	82.25

#### Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	38.35	23.17	23.17	40.45	35.88	35.88	38.52	18.38	18.38	39.07	20.64	20.91
Movement LOS	D	C	C	D	D	D	D	B	B	D	C	C
d_A, Approach Delay [s/veh]	24.75			36.70			25.51			21.88		
Approach LOS	C			D			C			C		
d_I, Intersection Delay [s/veh]				29.04								
Intersection LOS				C								
Intersection V/C				0.625								

#### Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	27.31	27.31	27.31	27.31
I_p,int, Pedestrian LOS Score for Intersection	2.159	2.288	2.318	2.295
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	560	720	480	480
d_b, Bicycle Delay [s]	19.44	15.36	21.66	21.66
I_b,int, Bicycle LOS Score for Intersection	1.926	2.606	2.413	1.799
Bicycle LOS	A	B	B	A

#### Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report****Intersection 4: Madison Street at Victoria Avenue (West)**

Control Type:	All-way stop	Delay (sec / veh):	12.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.564

**Intersection Setup**

Name	Madison Street			Madison Street			Victoria Ave (West)			Victoria Ave (West)		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Madison Street			Madison Street			Victoria Ave (West)			Victoria Ave (West)		
Base Volume Input [veh/h]	80	155	0	0	433	54	0	0	0	8	267	68
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	80	155	0	0	433	54	0	0	0	8	267	68
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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	39	0	0	108	14	0	0	0	2	67	17
Total Analysis Volume [veh/h]	80	155	0	0	433	54	0	0	0	8	267	68
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	788	768	902		669
Degree of Utilization, x	0.30	0.56	0.06		0.51

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	1.25	3.58	0.19		2.94
95th-Percentile Queue Length [ft]	31.31	89.47	4.77		73.61
Approach Delay [s/veh]	9.50	12.59	0.00		13.91
Approach LOS	A	B	A		B
Intersection Delay [s/veh]			12.33		
Intersection LOS			B		

**Intersection Level Of Service Report****Intersection 5: Sonora Place at Lincoln Avenue**

Control Type:	Two-way stop	Delay (sec / veh):	14.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.008

**Intersection Setup**

Name	Sonora Place		Lincoln Avenue		Lincoln Avenue	
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

**Volumes**

Name	Sonora Place		Lincoln Avenue		Lincoln Avenue	
Base Volume Input [veh/h]	3	4	407	10	6	286
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00
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]	3	4	407	10	6	286
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	1	102	3	2	72
Total Analysis Volume [veh/h]	3	4	407	10	6	286
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
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	0.01	0.01	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	14.15	10.72	0.00	0.00	8.17	0.00
Movement LOS	B	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.04	0.04	0.00	0.00	0.02	0.02
95th-Percentile Queue Length [ft/ln]	1.05	1.05	0.00	0.00	0.40	0.40
d_A, Approach Delay [s/veh]		12.19		0.00		0.17
Approach LOS		B		A		A
d_I, Intersection Delay [s/veh]				0.19		
Intersection LOS				B		

**Intersection Level Of Service Report**  
**Intersection 6: Collingwood Street at Lincoln Avenue**

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):	0.032

**Intersection Setup**

Name	Collingwood St		Lincoln Ave		Lincoln Ave	
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

**Volumes**

Name	Collingwood St		Lincoln Ave		Lincoln Ave	
Base Volume Input [veh/h]	13	3	399	14	3	273
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00
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]	13	3	399	14	3	273
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	1	100	4	1	68
Total Analysis Volume [veh/h]	13	3	399	14	3	273
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
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	0.03	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	14.03	10.89	0.00	0.00	8.15	0.00
Movement LOS	B	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.11	0.11	0.00	0.00	0.01	0.01
95th-Percentile Queue Length [ft/ln]	2.81	2.81	0.00	0.00	0.20	0.20
d_A, Approach Delay [s/veh]	13.44		0.00		0.09	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]			0.34			
Intersection LOS			B			

**Intersection Level Of Service Report**  
**Intersection 7: Dorlen Street at Lincoln Avenue**

Control Type:	Two-way stop	Delay (sec / veh):	15.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.048

**Intersection Setup**

Name	Dorlen Street			Dorlen Street			Lincoln Avenue			Lincoln Avenue		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

**Volumes**

Name	Dorlen Street			Dorlen Street			Lincoln Avenue			Lincoln Avenue		
Base Volume Input [veh/h]	18	0	8	0	0	2	1	371	25	12	237	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 [%]	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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	18	0	8	0	0	2	1	371	25	12	237	1
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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	0	2	0	0	1	0	93	6	3	59	0
Total Analysis Volume [veh/h]	18	0	8	0	0	2	1	371	25	12	237	1
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	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	15.03	14.88	10.94	14.65	14.52	9.50	7.71	0.00	0.00	8.13	0.00	0.00
Movement LOS	C	B	B	B	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.19	0.19	0.19	0.01	0.01	0.01	0.00	0.00	0.00	0.03	0.03	0.03
95th-Percentile Queue Length [ft/ln]	4.73	4.73	4.73	0.19	0.19	0.19	0.06	0.06	0.06	0.78	0.78	0.78
d_A, Approach Delay [s/veh]		13.77			9.50			0.02			0.39	
Approach LOS		B			A			A			A	
d_I, Intersection Delay [s/veh]							0.71					
Intersection LOS								C				

## Intersection Level Of Service Report

## Intersection 8: Washington Street at Indiana Avenue

Control Type: Signalized Delay (sec / veh): 17.3  
 Analysis Method: HCM 6th Edition Level Of Service: B  
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.644

## Intersection Setup

Name	Washington Street			Washington Street			Indiana Avenue			Indiana Avenue		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
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	Washington Street			Washington Street			Indiana Avenue			Indiana Avenue		
Base Volume Input [veh/h]	210	0	196	15	16	10	5	763	211	183	595	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 [%]	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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	210	0	196	15	16	10	5	763	211	183	595	1
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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]	53	0	49	4	4	3	1	191	53	46	149	0
Total Analysis Volume [veh/h]	210	0	196	15	16	10	5	763	211	183	595	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	0			0			0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0			0			0		0		0	
v_co, Outbound Pedestrian Volume crossing	0			0			0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0		0		0	
Bicycle Volume [bicycles/h]	0			0			0		0		0	

**Intersection Settings**

Located in CBD	No											
Signal Coordination Group	-											
Cycle Length [s]	65											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Offset [s]	0.0											
Offset Reference	LeadGreen											
Permissive Mode	SingleBand											
Lost time [s]	12.00											

**Phasing & Timing**

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [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
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	29	0	0	29	0	11	22	0	14	25	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	18	0	0	18	0	0	11	0	0	11	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	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	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	L	C	L	C	C	L	C	C
C, Cycle Length [s]	65	65	65	65	65	65	65	65	65	65
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
I1_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	0.00
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	15	15	15	1	29	29	8	37	37
g / C, Green / Cycle	0.23	0.23	0.23	0.23	0.01	0.45	0.45	0.13	0.57	0.57
(v / s)_i Volume / Saturation Flow Rate	0.15	0.12	0.01	0.01	0.00	0.27	0.27	0.10	0.16	0.16
s, saturation flow rate [veh/h]	1384	1589	1186	1751	1781	1870	1732	1781	1870	1869
c, Capacity [veh/h]	370	370	217	408	17	846	784	232	1071	1071
d1, Uniform Delay [s]	25.30	21.84	27.28	19.43	31.98	13.37	13.37	27.40	7.05	7.05
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.37	1.18	0.13	0.07	8.76	3.11	3.35	5.86	0.65	0.65
d3, Initial Queue Delay [s]	0.00	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	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.57	0.53	0.07	0.06	0.29	0.60	0.60	0.79	0.28	0.28
d, Delay for Lane Group [s/veh]	26.67	23.01	27.41	19.50	40.73	16.48	16.72	33.26	7.70	7.70
Lane Group LOS	C	C	C	B	D	B	B	C	A	A
Critical Lane Group	Yes	No	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.06	2.57	0.21	0.30	0.12	5.59	5.23	2.99	1.91	1.91
50th-Percentile Queue Length [ft/ln]	76.43	64.31	5.34	7.42	2.94	139.74	130.77	74.84	47.65	47.63
95th-Percentile Queue Length [veh/ln]	5.50	4.63	0.38	0.53	0.21	9.47	8.98	5.39	3.43	3.43
95th-Percentile Queue Length [ft/ln]	137.57	115.76	9.62	13.35	5.29	236.68	224.54	134.72	85.78	85.73

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	26.67	23.01	23.01	27.41	19.50	19.50	40.73	16.56	16.72	33.26	7.70	7.70
Movement LOS	C	C	C	C	B	B	D	B	B	C	A	A
d_A, Approach Delay [s/veh]	24.91			22.39			16.72			13.71		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]				17.27								
Intersection LOS					B							
Intersection V/C				0.644								

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	22.43	22.43	22.43	22.43
I_p,int, Pedestrian LOS Score for Intersection	2.187	1.938	2.930	2.645
Crosswalk LOS	B	A	C	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	769	769	554	646
d_b, Bicycle Delay [s]	12.31	12.31	16.99	14.89
I_b,int, Bicycle LOS Score for Intersection	2.230	1.627	2.367	2.202
Bicycle LOS	B	A	B	B

**Sequence**

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report****Intersection 9: Washington Street at Marguerita Avenue**

Control Type:	All-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):	0.628

**Intersection Setup**

Name	Washington Street			Washington Street			Marguerita Ave			Marguerita Ave		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

**Volumes**

Name	Washington Street			Washington Street			Marguerita Ave			Marguerita Ave		
Base Volume Input [veh/h]	35	404	21	24	340	13	16	37	24	17	48	14
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	35	404	21	24	340	13	16	37	24	17	48	14
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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]	9	101	5	6	85	3	4	9	6	4	12	4
Total Analysis Volume [veh/h]	35	404	21	24	340	13	16	37	24	17	48	14
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	732	717	599	590
Degree of Utilization, x	0.63	0.53	0.13	0.13

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	4.48	3.10	0.44	0.46
95th-Percentile Queue Length [ft]	112.03	77.48	11.00	11.49
Approach Delay [s/veh]	15.85	13.45	9.90	10.03
Approach LOS	C	B	A	B
Intersection Delay [s/veh]	14.02			
Intersection LOS	B			

**Intersection Level Of Service Report**  
**Intersection 10: Washington Street at Lincoln Avenue**

Control Type:	All-way stop	Delay (sec / veh):	55.6
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.084

**Intersection Setup**

Name	Washington Street			Washington Street			Lincoln Avenue			Lincoln Avenue		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	35.00			35.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Washington Street			Washington Street			Lincoln Avenue			Lincoln Avenue		
Base Volume Input [veh/h]	20	314	18	74	372	33	20	325	30	44	192	58
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	20	314	18	74	372	33	20	325	30	44	192	58
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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	79	5	19	93	8	5	81	8	11	48	15
Total Analysis Volume [veh/h]	20	314	18	74	372	33	20	325	30	44	192	58
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	432	479	432	393	430
Degree of Utilization, x	0.82	1.08	0.87	0.60	0.13

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	7.54	15.91	8.83	3.79	0.46
95th-Percentile Queue Length [ft]	188.53	397.81	220.86	94.63	11.58
Approach Delay [s/veh]	38.98	95.75	46.09	22.30	
Approach LOS	E	F	E	C	
Intersection Delay [s/veh]		55.62			
Intersection LOS		F			

**Intersection Level Of Service Report****Intersection 11: Washington Street at Victoria Avenue (West)**

Control Type:	All-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):	0.656

**Intersection Setup**

Name	Washington Street			Washington Street			Victoria Ave (West)			Victoria Ave (West)		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

**Volumes**

Name	Washington Street			Washington Street			Victoria Ave (West)			Victoria Ave (West)		
Base Volume Input [veh/h]	87	277	0	0	388	13	0	0	0	354	240	26
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	87	277	0	0	388	13	0	0	0	354	240	26
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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]	22	69	0	0	97	3	0	0	0	89	60	7
Total Analysis Volume [veh/h]	87	277	0	0	388	13	0	0	0	354	240	26
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	716	752	826		540	590
Degree of Utilization, x	0.25	0.24	0.49		0.66	0.45

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	1.01	0.95	2.69		4.75	2.33
95th-Percentile Queue Length [ft]	25.20	23.65	67.36		118.84	58.23
Approach Delay [s/veh]	9.23		11.40	0.00		18.00
Approach LOS	A		B	A		C
Intersection Delay [s/veh]				13.78		
Intersection LOS				B		

**Intersection Level Of Service Report****Intersection 15: Madison Street at Victoria Avenue (East)**

Control Type:	All-way stop	Delay (sec / veh):	20.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.852

**Intersection Setup**

Name	Madison Street			Madison Street			Victoria Ave (East)			Victoria Ave (East)		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Madison Street			Madison Street			Victoria Ave (East)			Victoria Ave (East)		
Base Volume Input [veh/h]	0	175	17	188	253	0	60	480	42	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	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	175	17	188	253	0	60	480	42	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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	44	4	47	63	0	15	120	11	0	0	0
Total Analysis Volume [veh/h]	0	175	17	188	253	0	60	480	42	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	836	856	684	
Degree of Utilization, x	0.23	0.52	0.85	

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	0.88	3.02	9.74	
95th-Percentile Queue Length [ft]	22.11	75.41	243.40	
Approach Delay [s/veh]	8.58	11.60	30.85	0.00
Approach LOS	A	B	D	A
Intersection Delay [s/veh]			20.34	
Intersection LOS		C		

**Intersection Level Of Service Report****Intersection 16: Washington Street at Victoria Avenue (East)**

Control Type:	All-way stop	Delay (sec / veh):	34.2
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.026

**Intersection Setup**

Name	Washington Street			Washington Street			Victoria Ave (East)			Victoria Ave (East)		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Washington Street			Washington Street			Victoria Ave (East)			Victoria Ave (East)		
Base Volume Input [veh/h]	0	355	228	11	731	0	9	320	382	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	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	355	228	11	731	0	9	320	382	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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	89	57	3	183	0	2	80	96	0	0	0
Total Analysis Volume [veh/h]	0	355	228	11	731	0	9	320	382	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	718	718	834	742	476	525	
Degree of Utilization, x	0.25	0.25	0.27	1.03	0.69	0.73	

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	0.97	0.97	1.11	17.91	5.23	6.00	
95th-Percentile Queue Length [ft]	24.30	24.30	27.84	447.76	130.71	150.02	
Approach Delay [s/veh]		9.08		62.21		25.64	0.00
Approach LOS		A		F		D	A
Intersection Delay [s/veh]					34.22		
Intersection LOS					D		

*APPENDIX F-II*

**YEAR 2040 BUILDOUT PLUS PROJECT  
LEVEL OF SERVICE CALCULATION WORKSHEETS**

**Intersection Level Of Service Report**  
**Intersection 1: Madison Street at Indiana Avenue**

Control Type:	Signalized	Delay (sec / veh):	37.3
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.754

**Intersection Setup**

Name	Madison Street			Madison Street			Indiana Ave			Indiana Ave		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
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			No			Yes			Yes		

**Volumes**

Name	Madison Street			Madison Street			Indiana Ave			Indiana Ave		
Base Volume Input [veh/h]	35	466	37	339	479	277	254	464	33	30	235	360
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	35	466	37	339	479	277	254	464	33	30	235	360
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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	0.7500
Total 15-Minute Volume [veh/h]	9	117	9	85	120	69	64	116	8	8	59	68
Total Analysis Volume [veh/h]	35	466	37	339	479	277	254	464	33	30	235	270
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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing mi	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	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]	105											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Offset [s]	0.0											
Offset Reference	LeadGreen											
Permissive Mode	SingleBand											
Lost time [s]	16.00											

**Phasing & Timing**

Control Type	Protecte	Permiss	Permiss									
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-									
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [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
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	29	0	36	54	0	29	29	0	11	11	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]	0	7	0	0	7	0	0	7	0	0	0	0
Pedestrian Clearance [s]	0	18	0	0	18	0	0	18	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No										
Maximum Recall	No	No										
Pedestrian Recall	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	C	L	C	C	L	C	C
C, Cycle Length [s]	105	105	105	105	105	105	105	105	105	105	105	105
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
I1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	17	17	22	35	35	17	46	46	4	33	33
g / C, Green / Cycle	0.04	0.16	0.16	0.21	0.33	0.33	0.16	0.43	0.43	0.04	0.31	0.31
(v / s)_i Volume / Saturation Flow Rate	0.02	0.14	0.14	0.19	0.22	0.22	0.14	0.13	0.13	0.02	0.13	0.17
s, saturation flow rate [veh/h]	1781	1870	1822	1781	1870	1643	1781	1870	1827	1781	1870	1589
c, Capacity [veh/h]	78	304	296	376	618	543	293	811	792	71	579	492
d1, Uniform Delay [s]	49.03	42.64	42.68	40.38	30.03	30.05	42.81	19.47	19.47	49.27	28.67	30.19
k, delay calibration	0.11	0.11	0.11	0.18	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
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
d2, Incremental Delay [s]	4.01	6.00	6.31	12.11	1.17	1.33	7.73	0.99	1.02	3.92	2.11	4.36
d3, Initial Queue Delay [s]	0.00	0.00	0.00	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	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	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.45	0.84	0.84	0.90	0.65	0.65	0.87	0.31	0.31	0.42	0.41	0.55
d, Delay for Lane Group [s/veh]	53.04	48.64	48.99	52.48	31.20	31.38	50.54	20.46	20.49	53.19	30.78	34.55
Lane Group LOS	D	D	D	D	C	C	D	C	C	D	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.98	6.85	6.74	9.70	8.74	7.72	7.00	4.17	4.09	0.84	4.97	6.20
50th-Percentile Queue Length [ft/ln]	24.52	171.18	168.38	242.48	218.39	192.97	175.05	104.33	102.19	21.12	124.33	155.08
95th-Percentile Queue Length [veh/ln]	1.77	11.14	10.99	14.81	13.58	12.28	11.34	7.51	7.36	1.52	8.63	10.29
95th-Percentile Queue Length [ft/ln]	44.13	278.47	274.78	370.17	339.56	306.88	283.54	187.79	183.94	38.02	215.76	257.20

**Movement, Approach, & Intersection Results**

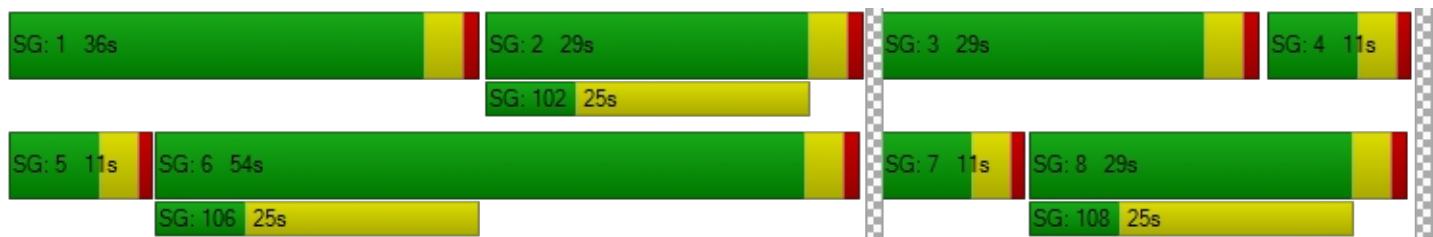
d_M, Delay for Movement [s/veh]	53.04	48.80	48.99	52.48	31.23	31.38	50.54	20.47	20.49	53.19	30.78	34.55
Movement LOS	D	D	D	D	C	C	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	49.09				37.85			30.64			33.94	
Approach LOS		D			D			C			C	
d_I, Intersection Delay [s/veh]					37.35							
Intersection LOS						D						
Intersection V/C					0.754							

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	42.08	0.00	42.08	42.08
I_p,int, Pedestrian LOS Score for Intersection	2.518	0.000	2.560	2.575
Crosswalk LOS	B	F	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	476	952	476	133
d_b, Bicycle Delay [s]	30.48	14.40	30.48	45.73
I_b,int, Bicycle LOS Score for Intersection	2.003	2.463	2.179	2.001
Bicycle LOS	B	B	B	B

**Sequence**

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 2: Madison Street at Emerald Street**

Control Type:	All-way stop	Delay (sec / veh):	18.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.777

**Intersection Setup**

Name	Madison Street			Madison Street			Emerald Street			Emerald Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

**Volumes**

Name	Madison Street			Madison Street			Emerald Street			Emerald Street		
Base Volume Input [veh/h]	36	524	32	13	373	13	10	0	14	18	2	18
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	36	524	32	13	373	13	10	0	14	18	2	18
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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]	9	131	8	3	93	3	3	0	4	5	1	5
Total Analysis Volume [veh/h]	36	524	32	13	373	13	10	0	14	18	2	18
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	647	716	629	692	598	595
Degree of Utilization, x	0.06	0.78	0.02	0.56	0.04	0.06

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	0.18	7.56	0.06	3.47	0.13	0.20
95th-Percentile Queue Length [ft]	4.41	189.09	1.58	86.82	3.13	5.10
Approach Delay [s/veh]		22.04		14.09		9.27
Approach LOS	C		B		A	A
Intersection Delay [s/veh]				18.28		
Intersection LOS				C		

**Intersection Level Of Service Report**  
**Intersection 3: Madison Street at Lincoln Avenue**

Control Type:	Signalized	Delay (sec / veh):	27.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.690

**Intersection Setup**

Name	Madison Street			Madison Street			Lincoln Avenue			Lincoln Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
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	Madison Street			Madison Street			Lincoln Avenue			Lincoln Avenue		
Base Volume Input [veh/h]	35	346	31	205	184	177	124	297	22	16	291	234
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	35	346	31	205	184	177	124	297	22	16	291	234
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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]	9	87	8	51	46	44	31	74	6	4	73	59
Total Analysis Volume [veh/h]	35	346	31	205	184	177	124	297	22	16	291	234
Presence of On-Street Parking	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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing mi	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	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]	75											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Offset [s]	0.0											
Offset Reference	LeadGreen											
Permissive Mode	SingleBand											
Lost time [s]	16.00											

**Phasing & Timing**

Control Type	Protecte	Permiss	Permiss									
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-									
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [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
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	28	0	14	31	0	11	22	0	11	22	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]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	14	0	0	14	0	0	11	0	0	11	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No										
Maximum Recall	No	No										
Pedestrian Recall	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
C, Cycle Length [s]	75	75	75	75	75	75	75	75	75
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
I1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	17	10	24	7	30	2	25	25
g / C, Green / Cycle	0.05	0.23	0.13	0.32	0.09	0.39	0.03	0.33	0.33
(v / s)_i Volume / Saturation Flow Rate	0.02	0.20	0.12	0.21	0.07	0.17	0.01	0.15	0.15
s, saturation flow rate [veh/h]	1781	1843	1781	1721	1781	1847	1781	1870	1601
c, Capacity [veh/h]	89	430	239	545	161	724	50	617	528
d1, Uniform Delay [s]	34.61	27.82	31.89	22.22	33.45	16.80	35.85	19.86	19.96
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.50	0.11	0.50	0.50
I, 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]	2.77	5.87	8.75	1.39	7.52	1.94	3.58	2.39	2.93
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	0.39	0.88	0.86	0.66	0.77	0.44	0.32	0.45	0.47
d, Delay for Lane Group [s/veh]	37.38	33.69	40.64	23.61	40.96	18.74	39.42	22.24	22.89
Lane Group LOS	D	C	D	C	D	B	D	C	C
Critical Lane Group	No	Yes	Yes	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.67	6.92	4.10	5.40	2.48	4.16	0.33	4.04	3.65
50th-Percentile Queue Length [ft/ln]	16.85	173.10	102.49	135.12	62.08	103.94	8.28	101.05	91.20
95th-Percentile Queue Length [veh/ln]	1.21	11.24	7.38	9.22	4.47	7.48	0.60	7.28	6.57
95th-Percentile Queue Length [ft/ln]	30.33	280.98	184.49	230.44	111.74	187.10	14.90	181.89	164.17

#### Movement, Approach, & Intersection Results

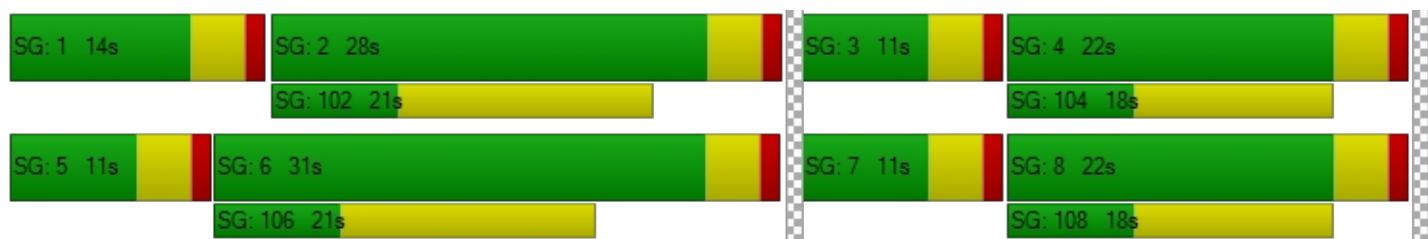
d_M, Delay for Movement [s/veh]	37.38	33.69	33.69	40.64	23.61	23.61	40.96	18.74	18.74	39.42	22.27	22.89
Movement LOS	D	C	C	D	C	C	D	B	B	D	C	C
d_A, Approach Delay [s/veh]	34.00			29.78			24.96			23.05		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]				27.72								
Intersection LOS					C							
Intersection V/C					0.690							

#### Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	27.31	27.31	27.31	27.31
I_p,int, Pedestrian LOS Score for Intersection	2.136	2.343	2.352	2.383
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	640	720	480	480
d_b, Bicycle Delay [s]	17.34	15.36	21.66	21.66
I_b,int, Bicycle LOS Score for Intersection	2.239	2.494	2.291	2.006
Bicycle LOS	B	B	B	B

#### Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report****Intersection 4: Madison Street at Victoria Avenue (West)**

Control Type:	All-way stop	Delay (sec / veh):	19.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.849

**Intersection Setup**

Name	Madison Street			Madison Street			Victoria Ave (West)			Victoria Ave (West)		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Madison Street			Madison Street			Victoria Ave (West)			Victoria Ave (West)		
Base Volume Input [veh/h]	86	231	0	0	203	31	0	0	0	12	405	202
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	86	231	0	0	203	31	0	0	0	12	405	202
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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]	22	58	0	0	51	8	0	0	0	3	101	51
Total Analysis Volume [veh/h]	86	231	0	0	203	31	0	0	0	12	405	202
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	834	761	893		730
Degree of Utilization, x	0.38	0.27	0.03		0.85

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	1.79	1.08	0.11		9.83
95th-Percentile Queue Length [ft]	44.80	26.90	2.70		245.75
Approach Delay [s/veh]	9.95	8.85	0.00		29.08
Approach LOS	A	A	A		D
Intersection Delay [s/veh]			19.85		
Intersection LOS			C		

**Intersection Level Of Service Report**  
**Intersection 5: Sonora Place at Lincoln Avenue**

Control Type:	Two-way stop	Delay (sec / veh):	20.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.036

**Intersection Setup**

Name	Sonora Place		Lincoln Avenue		Lincoln Avenue	
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

**Volumes**

Name	Sonora Place		Lincoln Avenue		Lincoln Avenue	
Base Volume Input [veh/h]	9	8	510	1	8	522
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00
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]	9	8	510	1	8	522
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	2	128	0	2	131
Total Analysis Volume [veh/h]	9	8	510	1	8	522
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
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	0.04	0.01	0.01	0.00	0.01	0.01
d_M, Delay for Movement [s/veh]	20.00	11.96	0.00	0.00	8.44	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.16	0.16	0.00	0.00	0.02	0.02
95th-Percentile Queue Length [ft/ln]	3.96	3.96	0.00	0.00	0.57	0.57
d_A, Approach Delay [s/veh]		16.21		0.00		0.13
Approach LOS		C		A		A
d_I, Intersection Delay [s/veh]				0.32		
Intersection LOS				C		

**Intersection Level Of Service Report**  
**Intersection 6: Collingwood Street/Project Driveway 3 at Lincoln Avenue**

Control Type:	Two-way stop	Delay (sec / veh):	37.5
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.434

**Intersection Setup**

Name	Collingwood St			Project Dwy 3			Lincoln Ave			Lincoln Ave		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

**Volumes**

Name	Collingwood St			Project Dwy 3			Lincoln Ave			Lincoln Ave		
Base Volume Input [veh/h]	10	0	20	91	0	106	17	510	8	9	416	11
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	10	0	20	91	0	106	17	510	8	9	416	11
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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	0	5	23	0	27	4	128	2	2	104	3
Total Analysis Volume [veh/h]	10	0	20	91	0	106	17	510	8	9	416	11
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	0.06	0.00	0.04	0.43	0.00	0.17	0.02	0.01	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	27.48	21.35	12.61	37.51	35.45	26.02	8.23	0.00	0.00	8.47	0.00	0.00
Movement LOS	D	C	B	E	E	D	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.31	0.31	0.31	3.70	3.70	3.70	0.05	0.05	0.05	0.03	0.03	0.03
95th-Percentile Queue Length [ft/ln]	7.79	7.79	7.79	92.44	92.44	92.44	1.14	1.14	1.14	0.65	0.65	0.65
d_A, Approach Delay [s/veh]		17.57			31.33			0.26			0.17	
Approach LOS		C			D			A			A	
d_I, Intersection Delay [s/veh]							5.77					
Intersection LOS							E					

**Intersection Level Of Service Report**  
**Intersection 7: Dorlen Street at Lincoln Avenue**

Control Type:	Two-way stop	Delay (sec / veh):	25.4
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.218

**Intersection Setup**

Name	Dorlen Street			Dorlen Street			Lincoln Avenue			Lincoln Avenue		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

**Volumes**

Name	Dorlen Street			Dorlen Street			Lincoln Avenue			Lincoln Avenue		
Base Volume Input [veh/h]	49	0	15	0	0	2	0	483	22	9	471	2
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	49	0	15	0	0	2	0	483	22	9	471	2
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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]	12	0	4	0	0	1	0	121	6	2	118	1
Total Analysis Volume [veh/h]	49	0	15	0	0	2	0	483	22	9	471	2
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	0.22	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	25.43	24.07	15.65	21.61	19.90	11.10	8.31	0.00	0.00	8.43	0.00	0.00
Movement LOS	D	C	C	C	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.94	0.94	0.94	0.01	0.01	0.01	0.00	0.00	0.00	0.03	0.03	0.03
95th-Percentile Queue Length [ft/ln]	23.38	23.38	23.38	0.25	0.25	0.25	0.00	0.00	0.00	0.64	0.64	0.64
d_A, Approach Delay [s/veh]		23.14			11.10			0.00			0.16	
Approach LOS		C			B			A			A	
d_I, Intersection Delay [s/veh]							1.50					
Intersection LOS								D				

**Intersection Level Of Service Report****Intersection 8: Washington Street at Indiana Avenue**

Control Type: Signalized Delay (sec / veh): 19.8  
 Analysis Method: HCM 6th Edition Level Of Service: B  
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.657

**Intersection Setup**

Name	Washington Street			Washington Street			Indiana Avenue			Indiana Avenue		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
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	Washington Street			Washington Street			Indiana Avenue			Indiana Avenue		
Base Volume Input [veh/h]	245	3	469	2	1	0	13	535	133	95	459	5
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	245	3	469	2	1	0	13	535	133	95	459	5
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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]	61	1	117	1	0	0	3	134	33	24	115	1
Total Analysis Volume [veh/h]	245	3	469	2	1	0	13	535	133	95	459	5
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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	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]	65											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Offset [s]	0.0											
Offset Reference	LeadGreen											
Permissive Mode	SingleBand											
Lost time [s]	12.00											

**Phasing & Timing**

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [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
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	32	0	0	32	0	11	22	0	11	22	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	18	0	0	18	0	0	11	0	0	11	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	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	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	L	C	L	C	C	L	C	C
C, Cycle Length [s]	65	65	65	65	65	65	65	65	65	65
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
I1_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	0.00
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	22	22	22	22	2	26	26	6	30	30
g / C, Green / Cycle	0.33	0.33	0.33	0.33	0.02	0.39	0.39	0.09	0.46	0.46
(v / s)_i Volume / Saturation Flow Rate	0.17	0.30	0.00	0.00	0.01	0.18	0.19	0.05	0.12	0.12
s, saturation flow rate [veh/h]	1416	1591	921	1870	1781	1870	1743	1781	1870	1863
c, Capacity [veh/h]	547	533	135	626	44	731	681	160	853	850
d1, Uniform Delay [s]	18.83	20.48	30.91	14.41	31.22	14.82	14.84	28.49	11.00	11.00
k, delay calibration	0.11	0.19	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.57	8.50	0.04	0.00	3.74	2.18	2.36	3.46	0.79	0.79
d3, Initial Queue Delay [s]	0.00	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	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

#### Lane Group Results

X, volume / capacity	0.45	0.89	0.01	0.00	0.30	0.47	0.47	0.59	0.27	0.27
d, Delay for Lane Group [s/veh]	19.41	28.98	30.95	14.41	34.96	17.00	17.20	31.96	11.78	11.79
Lane Group LOS	B	C	C	B	C	B	B	C	B	B
Critical Lane Group	No	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.94	7.40	0.03	0.01	0.24	3.87	3.66	1.52	2.02	2.02
50th-Percentile Queue Length [ft/ln]	73.49	184.96	0.78	0.23	5.97	96.67	91.60	37.92	50.55	50.42
95th-Percentile Queue Length [veh/ln]	5.29	11.86	0.06	0.02	0.43	6.96	6.60	2.73	3.64	3.63
95th-Percentile Queue Length [ft/ln]	132.28	296.48	1.40	0.42	10.74	174.01	164.88	68.26	90.99	90.75

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	19.41	28.98	28.98	30.95	14.41	14.41	34.96	17.07	17.20	31.96	11.79	11.79
Movement LOS	B	C	C	C	B	B	C	B	B	C	B	B
d_A, Approach Delay [s/veh]	25.71			25.44			17.44			15.21		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]				19.84								
Intersection LOS					B							
Intersection V/C				0.657								

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	22.43	22.43	22.43	22.43
I_p,int, Pedestrian LOS Score for Intersection	2.230	1.930	2.900	2.590
Crosswalk LOS	B	A	C	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	862	862	554	554
d_b, Bicycle Delay [s]	10.53	10.53	16.99	16.99
I_b,int, Bicycle LOS Score for Intersection	2.743	1.565	2.121	2.021
Bicycle LOS	B	A	B	B

**Sequence**

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 9: Washington Street at Marguerita Avenue**

Control Type:	All-way stop	Delay (sec / veh):	54.8
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.085

**Intersection Setup**

Name	Washington Street			Washington Street			Marguerita Ave			Marguerita Ave		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

**Volumes**

Name	Washington Street			Washington Street			Marguerita Ave			Marguerita Ave		
Base Volume Input [veh/h]	34	668	66	13	170	17	32	71	42	40	42	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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	34	668	66	13	170	17	32	71	42	40	42	28
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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]	9	167	17	3	43	4	8	18	11	10	11	7
Total Analysis Volume [veh/h]	34	668	66	13	170	17	32	71	42	40	42	28
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	768	626	564	551
Degree of Utilization, x	1.08	0.32	0.26	0.20

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	21.14	1.37	1.02	0.74
95th-Percentile Queue Length [ft]	528.54	34.34	25.50	18.47
Approach Delay [s/veh]	80.58	11.43	11.59	11.16
Approach LOS	F	B	B	B
Intersection Delay [s/veh]	54.85			
Intersection LOS	F			

**Intersection Level Of Service Report**  
**Intersection 10: Washington Street at Lincoln Avenue**

Control Type:	All-way stop	Delay (sec / veh):	181.4
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.698

**Intersection Setup**

Name	Washington Street			Washington Street			Lincoln Avenue			Lincoln Avenue		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	35.00			35.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Washington Street			Washington Street			Lincoln Avenue			Lincoln Avenue		
Base Volume Input [veh/h]	67	570	54	72	136	117	111	348	48	39	298	96
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	67	570	54	72	136	117	111	348	48	39	298	96
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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]	17	143	14	18	34	29	28	87	12	10	75	24
Total Analysis Volume [veh/h]	67	570	54	72	136	117	111	348	48	39	298	96
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	691	395	507	384	417
Degree of Utilization, x	1.70	0.82	1.26	0.88	0.23

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	41.72	7.51	21.86	8.70	0.88
95th-Percentile Queue Length [ft]	1043.10	187.78	546.44	217.56	21.94
Approach Delay [s/veh]	346.28	42.80	163.47	43.19	
Approach LOS	F	E	F	E	
Intersection Delay [s/veh]	181.37				
Intersection LOS	F				

**Intersection Level Of Service Report**  
**Intersection 11: Washington Street at Victoria Avenue (West)**

Control Type:	All-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):	0.643

**Intersection Setup**

Name	Washington Street			Washington Street			Victoria Ave (West)			Victoria Ave (West)		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

**Volumes**

Name	Washington Street			Washington Street			Victoria Ave (West)			Victoria Ave (West)		
Base Volume Input [veh/h]	357	555	0	0	200	14	0	0	0	158	297	38
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	357	555	0	0	200	14	0	0	0	158	297	38
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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]	89	139	0	0	50	4	0	0	0	40	74	10
Total Analysis Volume [veh/h]	357	555	0	0	200	14	0	0	0	158	297	38
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	709	769	771		495	539
Degree of Utilization, x	0.64	0.59	0.28		0.32	0.62

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	4.70	3.97	1.13		1.36	4.23
95th-Percentile Queue Length [ft]	117.43	99.17	28.37		34.01	105.74
Approach Delay [s/veh]		15.19	9.46	0.00		17.68
Approach LOS	C		A	A		C
Intersection Delay [s/veh]				15.19		
Intersection LOS				C		

**Intersection Level Of Service Report****Intersection 15: Madison Street at Victoria Avenue (East)**

Control Type: All-way stop Delay (sec / veh): 11.2  
 Analysis Method: HCM 6th Edition Level Of Service: B  
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.559

**Intersection Setup**

Name	Madison Street			Madison Street			Victoria Ave (East)			Victoria Ave (East)		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Madison Street			Madison Street			Victoria Ave (East)			Victoria Ave (East)		
Base Volume Input [veh/h]	0	254	37	70	145	0	63	306	35	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	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	254	37	70	145	0	63	306	35	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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	64	9	18	36	0	16	77	9	0	0	0
Total Analysis Volume [veh/h]	0	254	37	70	145	0	63	306	35	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	885	843	722	
Degree of Utilization, x	0.33	0.26	0.56	

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	1.44	1.01	3.50	
95th-Percentile Queue Length [ft]	36.04	25.34	87.41	
Approach Delay [s/veh]	9.05	8.73	14.11	0.00
Approach LOS	A	A	B	A
Intersection Delay [s/veh]		11.22		
Intersection LOS		B		

**Intersection Level Of Service Report****Intersection 16: Washington Street at Victoria Avenue (East)**

Control Type:	All-way stop	Delay (sec / veh):	14.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.606

**Intersection Setup**

Name	Washington Street			Washington Street			Victoria Ave (East)			Victoria Ave (East)		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Washington Street			Washington Street			Victoria Ave (East)			Victoria Ave (East)		
Base Volume Input [veh/h]	0	898	473	24	333	0	14	263	98	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	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	898	473	24	333	0	14	263	98	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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	225	118	6	83	0	4	66	25	0	0	0
Total Analysis Volume [veh/h]	0	898	473	24	333	0	14	263	98	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	745	745	873	635	457	504	
Degree of Utilization, x	0.60	0.60	0.54	0.56	0.61	0.19	

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	4.09	4.09	3.33	3.50	3.93	0.71	
95th-Percentile Queue Length [ft]	102.32	102.32	83.29	87.58	98.15	17.85	
Approach Delay [s/veh]		13.55		15.71		19.23	0.00
Approach LOS		B		C		C	A
Intersection Delay [s/veh]					14.93		
Intersection LOS					B		

**Intersection Level Of Service Report**  
**Intersection 1: Madison Street at Indiana Avenue**

Control Type:	Signalized	Delay (sec / veh):	52.4
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.918

**Intersection Setup**

Name	Madison Street			Madison Street			Indiana Ave			Indiana Ave		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
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			No			Yes			Yes		

**Volumes**

Name	Madison Street			Madison Street			Indiana Ave			Indiana Ave		
Base Volume Input [veh/h]	39	599	34	352	635	168	352	624	86	56	346	507
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	39	599	34	352	635	168	352	624	86	56	346	507
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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	0.7500
Total 15-Minute Volume [veh/h]	10	150	9	88	159	42	88	156	22	14	87	95
Total Analysis Volume [veh/h]	39	599	34	352	635	168	352	624	86	56	346	380
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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing mi	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	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]	130											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Offset [s]	0.0											
Offset Reference	LeadGreen											
Permissive Mode	SingleBand											
Lost time [s]	16.00											

**Phasing & Timing**

Control Type	Protecte	Permiss	Permiss									
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-									
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [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
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	29	0	39	57	0	33	50	0	12	29	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]	0	7	0	0	7	0	0	7	0	0	0	0
Pedestrian Clearance [s]	0	18	0	0	18	0	0	18	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No										
Maximum Recall	No	No										
Pedestrian Recall	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	C	L	C	C	L	C	C
C, Cycle Length [s]	130	130	130	130	130	130	130	130	130	130	130	130
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
I1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	25	25	28	47	47	28	55	55	6	34	34
g / C, Green / Cycle	0.04	0.19	0.19	0.21	0.36	0.36	0.21	0.43	0.43	0.05	0.26	0.26
(v / s)_i Volume / Saturation Flow Rate	0.02	0.17	0.17	0.20	0.22	0.22	0.20	0.19	0.19	0.03	0.19	0.24
s, saturation flow rate [veh/h]	1781	1870	1835	1781	1870	1737	1781	1870	1792	1781	1870	1589
c, Capacity [veh/h]	74	357	350	380	679	631	381	795	761	85	483	411
d1, Uniform Delay [s]	61.07	51.31	51.33	50.11	33.91	33.93	50.07	26.67	26.67	60.90	43.86	46.98
k, delay calibration	0.11	0.22	0.23	0.26	0.12	0.12	0.24	0.50	0.50	0.11	0.50	0.50
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
d2, Incremental Delay [s]	5.75	14.62	15.05	19.38	0.98	1.07	18.12	1.89	1.97	8.56	8.78	29.02
d3, Initial Queue Delay [s]	0.00	0.00	0.00	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	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	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.53	0.89	0.90	0.93	0.61	0.61	0.92	0.46	0.46	0.66	0.72	0.92
d, Delay for Lane Group [s/veh]	66.82	65.93	66.38	69.49	34.89	35.00	68.20	28.55	28.64	69.46	52.64	75.99
Lane Group LOS	E	E	E	E	C	D	E	C	C	E	D	E
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.38	11.59	11.43	13.24	10.94	10.21	13.11	8.45	8.12	2.02	11.32	15.24
50th-Percentile Queue Length [ft/ln]	34.59	289.68	285.84	331.08	273.38	255.13	327.70	211.28	202.96	50.60	283.02	381.04
95th-Percentile Queue Length [veh/ln]	2.49	17.17	16.98	19.21	16.36	15.44	19.05	13.22	12.79	3.64	16.84	21.64
95th-Percentile Queue Length [ft/ln]	62.27	429.24	424.48	480.29	408.96	386.11	476.14	330.47	319.78	91.08	420.97	541.11

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	66.82	66.14	66.38	69.49	34.93	35.00	68.20	28.59	28.64	69.46	52.64	75.99
Movement LOS	E	E	E	E	C	D	E	C	C	E	D	E
d_A, Approach Delay [s/veh]	66.19			45.47			41.72			65.19		
Approach LOS	E			D			D			E		
d_I, Intersection Delay [s/veh]				52.38								
Intersection LOS				D								
Intersection V/C				0.918								

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	54.47	0.00	54.47	54.47
I_p,int, Pedestrian LOS Score for Intersection	2.600	0.000	2.632	2.667
Crosswalk LOS	B	F	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	385	815	708	385
d_b, Bicycle Delay [s]	42.40	22.80	27.14	42.40
I_b,int, Bicycle LOS Score for Intersection	2.114	2.512	2.436	2.205
Bicycle LOS	B	B	B	B

**Sequence**

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 2: Madison Street at Emerald Street**

Control Type:	All-way stop	Delay (sec / veh):	29.8
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.930

**Intersection Setup**

Name	Madison Street			Madison Street			Emerald Street			Emerald Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

**Volumes**

Name	Madison Street			Madison Street			Emerald Street			Emerald Street		
Base Volume Input [veh/h]	8	430	16	21	621	30	13	2	5	22	0	27
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	430	16	21	621	30	13	2	5	22	0	27
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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	108	4	5	155	8	3	1	1	6	0	7
Total Analysis Volume [veh/h]	8	430	16	21	621	30	13	2	5	22	0	27
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	615	675	634	700	536	563
Degree of Utilization, x	0.01	0.66	0.03	0.93	0.04	0.09

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	0.04	4.98	0.10	12.86	0.12	0.28
95th-Percentile Queue Length [ft]	0.99	124.42	2.57	321.62	2.90	7.12
Approach Delay [s/veh]		17.63		40.10		9.98
Approach LOS	C		E		A	B
Intersection Delay [s/veh]				29.83		
Intersection LOS				D		

**Intersection Level Of Service Report**  
**Intersection 3: Madison Street at Lincoln Avenue**

Control Type:	Signalized	Delay (sec / veh):	29.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.631

**Intersection Setup**

Name	Madison Street			Madison Street			Lincoln Avenue			Lincoln Avenue		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
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	Madison Street			Madison Street			Lincoln Avenue			Lincoln Avenue		
Base Volume Input [veh/h]	23	186	15	139	426	94	183	304	37	20	180	127
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	23	186	15	139	426	94	183	304	37	20	180	127
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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]	6	47	4	35	107	24	46	76	9	5	45	32
Total Analysis Volume [veh/h]	23	186	15	139	426	94	183	304	37	20	180	127
Presence of On-Street Parking	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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing m	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	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]	75											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Offset [s]	0.0											
Offset Reference	LeadGreen											
Permissive Mode	SingleBand											
Lost time [s]	16.00											

**Phasing & Timing**

Control Type	Protecte	Permiss	Permiss									
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-									
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [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
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	25	0	17	31	0	11	22	0	11	22	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]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	14	0	0	14	0	0	11	0	0	11	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]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No										
Maximum Recall	No	No										
Pedestrian Recall	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
C, Cycle Length [s]	75	75	75	75	75	75	75	75	75
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
I1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	3	19	7	24	10	30	2	23	23
g / C, Green / Cycle	0.04	0.25	0.10	0.32	0.13	0.40	0.03	0.31	0.31
(v / s)_i Volume / Saturation Flow Rate	0.01	0.11	0.08	0.29	0.10	0.19	0.01	0.09	0.09
s, saturation flow rate [veh/h]	1781	1846	1781	1812	1781	1835	1781	1870	1623
c, Capacity [veh/h]	67	467	179	573	227	734	60	573	497
d1, Uniform Delay [s]	35.31	23.57	33.00	24.67	31.92	16.62	35.53	19.79	19.91
k, delay calibration	0.11	0.11	0.11	0.23	0.11	0.50	0.11	0.50	0.50
I, 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]	3.04	0.63	6.98	11.12	6.62	2.11	3.24	1.21	1.52
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	0.34	0.43	0.77	0.91	0.81	0.46	0.33	0.28	0.30
d, Delay for Lane Group [s/veh]	38.35	24.20	39.97	35.79	38.54	18.73	38.77	21.01	21.43
Lane Group LOS	D	C	D	D	D	B	D	C	C
Critical Lane Group	Yes	No	No	Yes	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.46	2.95	2.74	10.08	3.55	4.45	0.40	2.21	2.08
50th-Percentile Queue Length [ft/ln]	11.44	73.72	68.62	251.91	88.63	111.23	10.09	55.31	52.04
95th-Percentile Queue Length [veh/ln]	0.82	5.31	4.94	15.28	6.38	7.91	0.73	3.98	3.75
95th-Percentile Queue Length [ft/ln]	20.59	132.70	123.51	382.06	159.54	197.71	18.16	99.56	93.66

#### Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	38.35	24.20	24.20	39.97	35.79	35.79	38.54	18.73	18.73	38.77	21.05	21.43
Movement LOS	D	C	C	D	D	D	D	B	B	D	C	C
d_A, Approach Delay [s/veh]	25.65			36.67			25.65			22.28		
Approach LOS	C			D			C			C		
d_I, Intersection Delay [s/veh]				29.20								
Intersection LOS				C								
Intersection V/C				0.631								

#### Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	27.31	27.31	27.31	27.31
I_p,int, Pedestrian LOS Score for Intersection	2.160	2.305	2.321	2.312
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	560	720	480	480
d_b, Bicycle Delay [s]	19.44	15.36	21.66	21.66
I_b,int, Bicycle LOS Score for Intersection	1.929	2.647	2.424	1.829
Bicycle LOS	A	B	B	A

#### Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report****Intersection 4: Madison Street at Victoria Avenue (West)**

Control Type:	All-way stop	Delay (sec / veh):	12.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.564

**Intersection Setup**

Name	Madison Street			Madison Street			Victoria Ave (West)			Victoria Ave (West)		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Madison Street			Madison Street			Victoria Ave (West)			Victoria Ave (West)		
Base Volume Input [veh/h]	80	156	0	0	433	55	0	0	0	8	267	68
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	80	156	0	0	433	55	0	0	0	8	267	68
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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	39	0	0	108	14	0	0	0	2	67	17
Total Analysis Volume [veh/h]	80	156	0	0	433	55	0	0	0	8	267	68
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	788	768	902		668
Degree of Utilization, x	0.30	0.56	0.06		0.51

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	1.26	3.58	0.19		2.95
95th-Percentile Queue Length [ft]	31.50	89.49	4.86		73.68
Approach Delay [s/veh]	9.51	12.58	0.00		13.92
Approach LOS	A	B	A		B
Intersection Delay [s/veh]			12.33		
Intersection LOS			B		

**Intersection Level Of Service Report****Intersection 5: Sonora Place at Lincoln Avenue**

Control Type:	Two-way stop	Delay (sec / veh):	15.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.008

**Intersection Setup**

Name	Sonora Place		Lincoln Avenue		Lincoln Avenue	
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

**Volumes**

Name	Sonora Place		Lincoln Avenue		Lincoln Avenue	
Base Volume Input [veh/h]	3	5	440	10	7	322
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00
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]	3	5	440	10	7	322
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	1	110	3	2	81
Total Analysis Volume [veh/h]	3	5	440	10	7	322
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
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	0.01	0.01	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	15.11	11.00	0.00	0.00	8.26	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.05	0.05	0.00	0.00	0.02	0.02
95th-Percentile Queue Length [ft/ln]	1.26	1.26	0.00	0.00	0.48	0.48
d_A, Approach Delay [s/veh]	12.54		0.00		0.18	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]			0.20			
Intersection LOS			C			

**Intersection Level Of Service Report****Intersection 6: Collingwood Street/Project Driveway 3 at Lincoln Avenue**

Control Type:	Two-way stop	Delay (sec / veh):	17.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.041

**Intersection Setup**

Name	Collingwood St			Project Dwy 3			Lincoln Ave			Lincoln Ave		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

**Volumes**

Name	Collingwood St			Project Dwy 3			Lincoln Ave			Lincoln Ave		
Base Volume Input [veh/h]	13	0	4	26	0	31	4	428	14	4	278	3
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	13	0	4	26	0	31	4	428	14	4	278	3
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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	0	1	7	0	8	1	107	4	1	70	1
Total Analysis Volume [veh/h]	13	0	4	26	0	31	4	428	14	4	278	3
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	0.04	0.00	0.01	0.08	0.00	0.04	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	16.97	15.93	11.30	16.85	16.51	10.76	7.82	0.00	0.00	8.23	0.00
Movement LOS	C	C	B	C	C	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.15	0.15	0.15	0.40	0.40	0.40	0.01	0.01	0.01	0.01	0.01
95th-Percentile Queue Length [ft/ln]	3.75	3.75	3.75	10.06	10.06	10.06	0.23	0.23	0.23	0.27	0.27
d_A, Approach Delay [s/veh]		15.64			13.54			0.07			0.12
Approach LOS		C			B			A			A
d_I, Intersection Delay [s/veh]							1.37				
Intersection LOS							C				

**Intersection Level Of Service Report**  
**Intersection 7: Dorlen Street at Lincoln Avenue**

Control Type:	Two-way stop	Delay (sec / veh):	16.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.061

**Intersection Setup**

Name	Dorlen Street			Dorlen Street			Lincoln Avenue			Lincoln Avenue		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

**Volumes**

Name	Dorlen Street			Dorlen Street			Lincoln Avenue			Lincoln Avenue		
Base Volume Input [veh/h]	21	0	8	0	0	2	1	400	28	12	264	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 [%]	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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	21	0	8	0	0	2	1	400	28	12	264	1
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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	0	2	0	0	1	0	100	7	3	66	0
Total Analysis Volume [veh/h]	21	0	8	0	0	2	1	400	28	12	264	1
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	0.06	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	16.11	15.82	11.36	15.56	15.30	9.66	7.77	0.00	0.00	8.22	0.00	0.00
Movement LOS	C	C	B	C	C	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.24	0.24	0.24	0.01	0.01	0.01	0.00	0.00	0.00	0.03	0.03	0.03
95th-Percentile Queue Length [ft/ln]	5.89	5.89	5.89	0.19	0.19	0.19	0.06	0.06	0.06	0.80	0.80	0.80
d_A, Approach Delay [s/veh]		14.80			9.66			0.02			0.36	
Approach LOS		B			A			A			A	
d_I, Intersection Delay [s/veh]						0.75						
Intersection LOS							C					

## Intersection Level Of Service Report

## Intersection 8: Washington Street at Indiana Avenue

Control Type: Signalized Delay (sec / veh): 17.3  
 Analysis Method: HCM 6th Edition Level Of Service: B  
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.644

## Intersection Setup

Name	Washington Street			Washington Street			Indiana Avenue			Indiana Avenue		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
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	Washington Street			Washington Street			Indiana Avenue			Indiana Avenue		
Base Volume Input [veh/h]	210	0	197	15	16	10	5	763	211	184	595	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 [%]	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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	210	0	197	15	16	10	5	763	211	184	595	1
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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]	53	0	49	4	4	3	1	191	53	46	149	0
Total Analysis Volume [veh/h]	210	0	197	15	16	10	5	763	211	184	595	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	0			0			0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0			0			0		0		0	
v_co, Outbound Pedestrian Volume crossing	0			0			0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0		0		0	
Bicycle Volume [bicycles/h]	0			0			0		0		0	

**Intersection Settings**

Located in CBD	No											
Signal Coordination Group	-											
Cycle Length [s]	65											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Offset [s]	0.0											
Offset Reference	LeadGreen											
Permissive Mode	SingleBand											
Lost time [s]	12.00											

**Phasing & Timing**

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [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
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	29	0	0	29	0	11	22	0	14	25	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	18	0	0	18	0	0	11	0	0	11	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	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	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	L	C	L	C	C	L	C	C
C, Cycle Length [s]	65	65	65	65	65	65	65	65	65	65
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
I1_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	0.00
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	15	15	15	1	29	29	9	37	37
g / C, Green / Cycle	0.23	0.23	0.23	0.23	0.01	0.45	0.45	0.13	0.57	0.57
(v / s)_i Volume / Saturation Flow Rate	0.15	0.12	0.01	0.01	0.00	0.27	0.27	0.10	0.16	0.16
s, saturation flow rate [veh/h]	1384	1589	1185	1751	1781	1870	1732	1781	1870	1869
c, Capacity [veh/h]	370	370	217	408	17	845	782	233	1071	1071
d1, Uniform Delay [s]	25.30	21.85	27.31	19.43	31.98	13.40	13.40	27.38	7.06	7.06
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.37	1.19	0.13	0.06	8.76	3.12	3.37	5.85	0.65	0.65
d3, Initial Queue Delay [s]	0.00	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	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

#### Lane Group Results

X, volume / capacity	0.57	0.53	0.07	0.06	0.29	0.60	0.60	0.79	0.28	0.28
d, Delay for Lane Group [s/veh]	26.67	23.04	27.45	19.50	40.73	16.53	16.77	33.23	7.70	7.70
Lane Group LOS	C	C	C	B	D	B	B	C	A	A
Critical Lane Group	Yes	No	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.06	2.59	0.21	0.30	0.12	5.60	5.24	3.01	1.91	1.91
50th-Percentile Queue Length [ft/ln]	76.42	64.70	5.35	7.42	2.94	140.01	131.03	75.21	47.66	47.63
95th-Percentile Queue Length [veh/ln]	5.50	4.66	0.39	0.53	0.21	9.48	9.00	5.42	3.43	3.43
95th-Percentile Queue Length [ft/ln]	137.56	116.46	9.63	13.35	5.29	237.04	224.89	135.38	85.79	85.74

#### Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	26.67	23.04	23.04	27.45	19.50	19.50	40.73	16.61	16.77	33.23	7.70	7.70
Movement LOS	C	C	C	C	B	B	D	B	B	C	A	A
d_A, Approach Delay [s/veh]	24.91			22.40			16.77			13.72		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]					17.30							
Intersection LOS						B						
Intersection V/C					0.644							

#### Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	22.43	22.43	22.43	22.43
I_p,int, Pedestrian LOS Score for Intersection	2.188	1.938	2.930	2.645
Crosswalk LOS	B	A	C	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	769	769	554	646
d_b, Bicycle Delay [s]	12.31	12.31	16.99	14.89
I_b,int, Bicycle LOS Score for Intersection	2.231	1.627	2.367	2.203
Bicycle LOS	B	A	B	B

#### Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 9: Washington Street at Marguerita Avenue**

Control Type:	All-way stop	Delay (sec / veh):	14.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.648

**Intersection Setup**

Name	Washington Street			Washington Street			Marguerita Ave			Marguerita Ave		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

**Volumes**

Name	Washington Street			Washington Street			Marguerita Ave			Marguerita Ave		
Base Volume Input [veh/h]	39	407	25	24	343	13	16	37	27	20	48	14
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	407	25	24	343	13	16	37	27	20	48	14
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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	102	6	6	86	3	4	9	7	5	12	4
Total Analysis Volume [veh/h]	39	407	25	24	343	13	16	37	27	20	48	14
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	727	711	595	585
Degree of Utilization, x	0.65	0.53	0.13	0.14

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	4.79	3.20	0.46	0.49
95th-Percentile Queue Length [ft]	119.84	79.99	11.58	12.14
Approach Delay [s/veh]	16.57	13.73	10.00	10.16
Approach LOS	C	B	A	B
Intersection Delay [s/veh]	14.47			
Intersection LOS	B			

**Intersection Level Of Service Report****Intersection 10: Washington Street at Lincoln Avenue**

Control Type:	All-way stop	Delay (sec / veh):	70.2
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.161

**Intersection Setup**

Name	Washington Street			Washington Street			Lincoln Avenue			Lincoln Avenue		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	35.00			35.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Washington Street			Washington Street			Lincoln Avenue			Lincoln Avenue		
Base Volume Input [veh/h]	27	314	18	74	372	49	37	329	38	44	196	58
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	27	314	18	74	372	49	37	329	38	44	196	58
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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]	7	79	5	19	93	12	9	82	10	11	49	15
Total Analysis Volume [veh/h]	27	314	18	74	372	49	37	329	38	44	196	58
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	419	495	426	383	419
Degree of Utilization, x	0.86	1.16	0.95	0.63	0.14

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	8.44	18.57	11.05	4.09	0.48
95th-Percentile Queue Length [ft]	211.06	464.19	276.16	102.25	11.94
Approach Delay [s/veh]	45.32	123.24	61.37	23.87	
Approach LOS	E	F	F	C	
Intersection Delay [s/veh]		70.17			
Intersection LOS		F			

**Intersection Level Of Service Report****Intersection 11: Washington Street at Victoria Avenue (West)**

Control Type:	All-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):	0.657

**Intersection Setup**

Name	Washington Street			Washington Street			Victoria Ave (West)			Victoria Ave (West)		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

**Volumes**

Name	Washington Street			Washington Street			Victoria Ave (West)			Victoria Ave (West)		
Base Volume Input [veh/h]	87	278	0	0	389	13	0	0	0	354	240	27
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	87	278	0	0	389	13	0	0	0	354	240	27
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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]	22	70	0	0	97	3	0	0	0	89	60	7
Total Analysis Volume [veh/h]	87	278	0	0	389	13	0	0	0	354	240	27
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	716	752	826		539	590
Degree of Utilization, x	0.26	0.24	0.49		0.66	0.45

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	1.01	0.95	2.71		4.76	2.35
95th-Percentile Queue Length [ft]	25.29	23.74	67.69		118.98	58.63
Approach Delay [s/veh]	9.23		11.42	0.00		18.02
Approach LOS	A		B	A		C
Intersection Delay [s/veh]				13.80		
Intersection LOS				B		

**Intersection Level Of Service Report****Intersection 15: Madison Street at Victoria Avenue (East)**

Control Type:	All-way stop	Delay (sec / veh):	20.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.853

**Intersection Setup**

Name	Madison Street			Madison Street			Victoria Ave (East)			Victoria Ave (East)		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Madison Street			Madison Street			Victoria Ave (East)			Victoria Ave (East)		
Base Volume Input [veh/h]	0	175	17	188	253	0	61	480	42	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	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	175	17	188	253	0	61	480	42	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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	44	4	47	63	0	15	120	11	0	0	0
Total Analysis Volume [veh/h]	0	175	17	188	253	0	61	480	42	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	836	856	684	
Degree of Utilization, x	0.23	0.52	0.85	

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	0.88	3.02	9.79	
95th-Percentile Queue Length [ft]	22.11	75.41	244.69	
Approach Delay [s/veh]	8.58	11.60	31.02	0.00
Approach LOS	A	B	D	A
Intersection Delay [s/veh]			20.44	
Intersection LOS			C	

**Intersection Level Of Service Report****Intersection 16: Washington Street at Victoria Avenue (East)**

Control Type:	All-way stop	Delay (sec / veh):	34.6
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.029

**Intersection Setup**

Name	Washington Street			Washington Street			Victoria Ave (East)			Victoria Ave (East)		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Washington Street			Washington Street			Victoria Ave (East)			Victoria Ave (East)		
Base Volume Input [veh/h]	0	356	228	12	732	0	9	320	382	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	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	356	228	12	732	0	9	320	382	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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	89	57	3	183	0	2	80	96	0	0	0
Total Analysis Volume [veh/h]	0	356	228	12	732	0	9	320	382	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	718	718	834	744	476	525	
Degree of Utilization, x	0.25	0.25	0.27	1.03	0.69	0.73	

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	0.98	0.98	1.11	18.08	5.23	6.00	
95th-Percentile Queue Length [ft]	24.39	24.39	27.84	452.02	130.77	150.10	
Approach Delay [s/veh]		9.08		63.06		25.66	0.00
Approach LOS		A		F		D	A
Intersection Delay [s/veh]					34.56		
Intersection LOS					D		

*APPENDIX F-III*

**YEAR 2040 BUILDOUT PLUS PROJECT  
WITH MITIGATION LEVEL OF SERVICE  
CALCULATION WORKSHEETS**

## Intersection Level Of Service Report

## Intersection 10: Washington Street at Lincoln Avenue

Control Type:	Signalized	Delay (sec / veh):	17.8
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.896

## Intersection Setup

Name	Washington Street			Washington Street			Lincoln Avenue			Lincoln Avenue		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	35.00			35.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

## Volumes

Name	Washington Street			Washington Street			Lincoln Avenue			Lincoln Avenue		
Base Volume Input [veh/h]	67	570	54	72	136	117	111	348	48	39	298	96
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	67	570	54	72	136	117	111	348	48	39	298	96
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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]	17	143	14	18	34	29	28	87	12	10	75	24
Total Analysis Volume [veh/h]	67	570	54	72	136	117	111	348	48	39	298	96
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	0				0			0			0	
v_di, Inbound Pedestrian Volume crossing m	0				0			0			0	
v_co, Outbound Pedestrian Volume crossing	0				0			0			0	
v_ci, Inbound Pedestrian Volume crossing mi	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]	55											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Offset [s]	0.0											
Offset Reference	LeadGreen											
Permissive Mode	SingleBand											
Lost time [s]	8.00											

**Phasing & Timing**

Control Type	Permiss											
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	0	7	0	0	7	0	0	7	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	26	0	0	26	0	0	29	0	0	29	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	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	11	0	0	7	0	0	7	0	0	7	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	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	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	C	C	C	C	R
C, Cycle Length [s]	55	55	55	55	55
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00
I1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	2.00	2.00	0.00
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	24	24	23	23	23
g / C, Green / Cycle	0.44	0.44	0.41	0.41	0.41
(v / s)_i Volume / Saturation Flow Rate	0.39	0.24	0.38	0.20	0.06
s, saturation flow rate [veh/h]	1776	1378	1345	1718	1589
c, Capacity [veh/h]	860	691	632	779	653
d1, Uniform Delay [s]	13.76	10.46	15.99	11.66	10.17
k, delay calibration	0.50	0.50	0.23	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.86	2.29	4.91	0.38	0.10
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.80	0.47	0.80	0.43	0.15
d, Delay for Lane Group [s/veh]	21.63	12.75	20.90	12.04	10.27
Lane Group LOS	C	B	C	B	B
Critical Lane Group	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/in]	7.91	2.60	5.79	2.41	0.60
50th-Percentile Queue Length [ft/in]	197.79	64.96	144.79	60.13	14.90
95th-Percentile Queue Length [veh/in]	12.52	4.68	9.74	4.33	1.07
95th-Percentile Queue Length [ft/in]	313.11	116.92	243.46	108.23	26.82

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	21.63	21.63	21.63	12.75	12.75	12.75	20.90	20.90	20.90	12.04	12.04	10.27
Movement LOS	C	C	C	B	B	B	C	C	C	B	B	B
d_A, Approach Delay [s/veh]	21.63			12.75			20.90			11.65		
Approach LOS	C			B			C			B		
d_I, Intersection Delay [s/veh]				17.75								
Intersection LOS				B								
Intersection V/C				0.896								

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	17.60	17.60	17.60	17.60
I_p,int, Pedestrian LOS Score for Intersection	2.262	2.472	2.425	2.408
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	800	800	909	909
d_b, Bicycle Delay [s]	9.90	9.90	8.18	8.18
I_b,int, Bicycle LOS Score for Intersection	2.700	2.096	2.396	2.274
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 10: Washington Street at Lincoln Avenue

Control Type:	Signalized	Delay (sec / veh):	12.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.635

## Intersection Setup

Name	Washington Street			Washington Street			Lincoln Avenue			Lincoln Avenue		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	35.00			35.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

## Volumes

Name	Washington Street			Washington Street			Lincoln Avenue			Lincoln Avenue		
Base Volume Input [veh/h]	27	314	18	74	372	49	37	329	38	44	196	58
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	27	314	18	74	372	49	37	329	38	44	196	58
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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]	7	79	5	19	93	12	9	82	10	11	49	15
Total Analysis Volume [veh/h]	27	314	18	74	372	49	37	329	38	44	196	58
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	0				0			0			0	
v_di, Inbound Pedestrian Volume crossing m	0				0			0			0	
v_co, Outbound Pedestrian Volume crossing	0				0			0			0	
v_ci, Inbound Pedestrian Volume crossing mi	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]	50											
Coordination Type	Time of Day Pattern Coordinated											
Actuation Type	Fully actuated											
Offset [s]	0.0											
Offset Reference	LeadGreen											
Permissive Mode	SingleBand											
Lost time [s]	8.00											

**Phasing & Timing**

Control Type	Permiss											
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	0	7	0	0	7	0	0	7	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	22	0	0	22	0	0	28	0	0	28	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	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	11	0	0	7	0	0	7	0	0	7	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	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	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	C	C	C	C	R
C, Cycle Length [s]	50	50	50	50	50
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00
I1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	2.00	2.00	0.00
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	28	28	14	14	14
g / C, Green / Cycle	0.55	0.55	0.29	0.29	0.29
(v / s)_i Volume / Saturation Flow Rate	0.20	0.29	0.24	0.14	0.04
s, saturation flow rate [veh/h]	1800	1713	1650	1683	1589
c, Capacity [veh/h]	1071	1028	554	570	458
d1, Uniform Delay [s]	6.24	6.88	16.70	14.54	13.16
k, delay calibration	0.50	0.50	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.85	1.61	1.86	0.49	0.12
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

#### Lane Group Results

X, volume / capacity	0.34	0.48	0.73	0.42	0.13
d, Delay for Lane Group [s/veh]	7.08	8.50	18.55	15.04	13.28
Lane Group LOS	A	A	B	B	B
Critical Lane Group	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/in]	1.64	2.57	3.85	1.88	0.41
50th-Percentile Queue Length [ft/in]	41.02	64.37	96.17	47.06	10.25
95th-Percentile Queue Length [veh/in]	2.95	4.63	6.92	3.39	0.74
95th-Percentile Queue Length [ft/in]	73.83	115.87	173.10	84.71	18.45

#### Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	7.08	7.08	7.08	8.50	8.50	8.50	18.55	18.55	18.55	15.04	15.04	13.28
Movement LOS	A	A	A	A	A	A	B	B	B	B	B	B
d_A, Approach Delay [s/veh]	7.08			8.50			18.55			14.70		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]				11.97								
Intersection LOS				B								
Intersection V/C				0.635								

#### Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	15.21	15.21	15.21	15.21
I_p,int, Pedestrian LOS Score for Intersection	2.206	2.248	2.159	2.323
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	720	720	960	960
d_b, Bicycle Delay [s]	10.24	10.24	6.76	6.76
I_b,int, Bicycle LOS Score for Intersection	2.152	2.376	2.226	2.051
Bicycle LOS	B	B	B	B

#### Sequence

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



## APPENDIX G

### PROJECT DRIVEWAYS LEVEL OF SERVICE CALCULATION WORKSHEETS

**Intersection Key**  
**Casa Blanca Elementary School Project, Riverside**

Vistro Model Number	Report Number	Key Study Intersections
1	1	Madison Street at Indiana Avenue (traffic signal)
2	2	Madison Street at Emerald Street (all-way stop)
3	3	Madison Street at Lincoln Avenue (traffic signal)
4	4A	Madison Street at Victoria Avenue (West)
5	5	Sonora Place at Lincoln Avenue (one-way stop)
6	6	Collingwood Street/ProjectDwy 3 at Lincoln Avenue (one-way stop)
7	7	Dorlen Street at Lincoln Avenue (two-way stop)
8	8	Washington Street at Indiana Avenue (traffic signal)
9	9	Washington Street at Marguerita Avenue (all-way stop)
10	10	Washington Street at Lincoln Avenue (all-way stop)
11	11A	Washington Street at Victoria Avenue (West)
12	A	Project Driveway 1 at Lincoln Avenue
13	B	Project Driveway 2 at Lincoln Avenue
14	C	Project Driveway 4 at Lincoln Avenue
15	4B	Madison Street at Victoria Avenue (East)
16	11B	Washington Street at Victoria Avenue (East)

*APPENDIX G-I*

**YEAR 2022 CUMULATIVE PLUS PROJECT  
LEVEL OF SERVICE CALCULATION WORKSHEETS**

**Intersection Level Of Service Report**  
**Intersection 6: Collingwood Street/Project Driveway 3 at Lincoln Avenue**

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):	0.409

**Intersection Setup**

Name	Collingwood St			Project Dwy 3			Lincoln Ave			Lincoln Ave		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

**Volumes**

Name	Collingwood St			Project Dwy 3			Lincoln Ave			Lincoln Ave		
Base Volume Input [veh/h]	10	0	20	91	0	106	17	452	8	9	356	11
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	10	0	20	91	0	106	17	452	8	9	356	11
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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	0	5	24	0	28	4	119	2	2	94	3
Total Analysis Volume [veh/h]	11	0	21	96	0	112	18	476	8	9	375	12
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	0.06	0.00	0.04	0.41	0.00	0.17	0.02	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	25.20	19.84	12.24	33.13	31.49	23.19	8.12	0.00	0.00	8.37	0.00	0.00
Movement LOS	D	C	B	D	D	C	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.31	0.31	0.31	3.47	3.47	3.47	0.04	0.04	0.04	0.03	0.03	0.03
95th-Percentile Queue Length [ft/ln]	7.74	7.74	7.74	86.66	86.66	86.66	1.10	1.10	1.10	0.63	0.63	0.63
d_A, Approach Delay [s/veh]		16.70			27.78			0.29			0.19	
Approach LOS		C			D			A			A	
d_I, Intersection Delay [s/veh]						5.74						
Intersection LOS							D					

**Intersection Level Of Service Report****Intersection 12: Project Driveway 1 at Lincoln Avenue**

Control Type:	Two-way stop	Delay (sec / veh):	18.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.018

**Intersection Setup**

Name	Project Dwy 1		Lincoln Avenue		Lincoln Avenue	
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

**Volumes**

Name	Project Dwy 1		Lincoln Avenue		Lincoln Avenue	
Base Volume Input [veh/h]	5	8	9	451	464	6
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00
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]	5	8	9	451	464	6
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	2	2	119	122	2
Total Analysis Volume [veh/h]	5	8	9	475	488	6
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
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	0.02	0.01	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	18.52	11.53	8.39	0.00	0.00	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.10	0.10	0.03	0.03	0.00	0.00
95th-Percentile Queue Length [ft/ln]	2.49	2.49	0.64	0.64	0.00	0.00
d_A, Approach Delay [s/veh]		14.22		0.16		0.00
Approach LOS		B		A		A
d_I, Intersection Delay [s/veh]				0.26		
Intersection LOS				C		

**Intersection Level Of Service Report**  
**Intersection 13: Project Driveway 2 at Lincoln Avenue**

Control Type:	Two-way stop	Delay (sec / veh):	18.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.018

**Intersection Setup**

Name	Project Dwy 2		Lincoln Avenue		Lincoln Avenue	
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

**Volumes**

Name	Project Dwy 2		Lincoln Avenue		Lincoln Avenue	
Base Volume Input [veh/h]	5	7	9	454	463	6
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00
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]	5	7	9	454	463	6
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	2	2	119	122	2
Total Analysis Volume [veh/h]	5	7	9	478	487	6
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
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	0.02	0.01	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	18.54	11.51	8.39	0.00	0.00	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.09	0.09	0.03	0.03	0.00	0.00
95th-Percentile Queue Length [ft/ln]	2.36	2.36	0.64	0.64	0.00	0.00
d_A, Approach Delay [s/veh]	14.44		0.16		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]			0.25			
Intersection LOS			C			

**Intersection Level Of Service Report**  
**Intersection 14: Project Driveway 4 at Lincoln Avenue**

Control Type:	Two-way stop	Delay (sec / veh):	23.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.053

**Intersection Setup**

Name	Project Dwy 4		Lincoln Avenue		Lincoln Avenue	
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

**Volumes**

Name	Project Dwy 4		Lincoln Avenue		Lincoln Avenue	
Base Volume Input [veh/h]	10	15	124	348	362	107
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00
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]	10	15	124	348	362	107
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	4	33	92	95	28
Total Analysis Volume [veh/h]	11	16	131	366	381	113
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
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	0.05	0.03	0.12	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	23.17	11.71	8.83	0.00	0.00	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.25	0.25	0.39	0.39	0.00	0.00
95th-Percentile Queue Length [ft/ln]	6.36	6.36	9.80	9.80	0.00	0.00
d_A, Approach Delay [s/veh]	16.38		2.33		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]			1.57			
Intersection LOS			C			

**Intersection Level Of Service Report****Intersection 6: Collingwood Street/Project Driveway 3 at Lincoln Avenue**

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):	0.040

**Intersection Setup**

Name	Collingwood St			Project Dwy 3			Lincoln Ave			Lincoln Ave		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

**Volumes**

Name	Collingwood St			Project Dwy 3			Lincoln Ave			Lincoln Ave		
Base Volume Input [veh/h]	13	0	4	26	0	31	4	367	14	3	236	3
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	13	0	4	26	0	31	4	367	14	3	236	3
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
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	0	1	7	0	8	1	97	4	1	62	1
Total Analysis Volume [veh/h]	14	0	4	27	0	33	4	386	15	3	248	3
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	0.04	0.00	0.01	0.07	0.00	0.04	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	15.69	14.89	10.93	15.54	15.40	10.44	7.75	0.00	0.00	8.12	0.00
Movement LOS	C	B	B	C	C	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.14	0.14	0.14	0.38	0.38	0.38	0.01	0.01	0.01	0.01	0.01
95th-Percentile Queue Length [ft/ln]	3.60	3.60	3.60	9.61	9.61	9.61	0.23	0.23	0.23	0.19	0.19
d_A, Approach Delay [s/veh]		14.63			12.74			0.08			0.10
Approach LOS		B		B			A			A	
d_I, Intersection Delay [s/veh]							1.47				
Intersection LOS							C				

**Intersection Level Of Service Report****Intersection 12: Project Driveway 1 at Lincoln Avenue**

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):	0.005

**Intersection Setup**

Name	Project Dwy 1		Lincoln Avenue		Lincoln Avenue	
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

**Volumes**

Name	Project Dwy 1		Lincoln Avenue		Lincoln Avenue	
Base Volume Input [veh/h]	2	2	2	386	280	1
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00
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]	2	2	2	386	280	1
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	1	1	102	74	0
Total Analysis Volume [veh/h]	2	2	2	406	295	1
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
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	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	14.02	9.89	7.85	0.00	0.00	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.02	0.02	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.58	0.58	0.12	0.12	0.00	0.00
d_A, Approach Delay [s/veh]	11.95		0.04		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]			0.09			
Intersection LOS			B			

**Intersection Level Of Service Report**  
**Intersection 13: Project Driveway 2 at Lincoln Avenue**

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):	0.002

**Intersection Setup**

Name	Project Dwy 2		Lincoln Avenue		Lincoln Avenue	
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

**Volumes**

Name	Project Dwy 2		Lincoln Avenue		Lincoln Avenue	
Base Volume Input [veh/h]	1	2	2	381	282	1
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00
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]	1	2	2	381	282	1
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	1	1	100	74	0
Total Analysis Volume [veh/h]	1	2	2	401	297	1
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
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	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	13.96	9.88	7.85	0.00	0.00	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.02	0.02	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.39	0.39	0.12	0.12	0.00	0.00
d_A, Approach Delay [s/veh]	11.24		0.04		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]			0.07			
Intersection LOS			B			

**Intersection Level Of Service Report****Intersection 14: Project Driveway 4 at Lincoln Avenue**

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	Project Dwy 4		Lincoln Avenue		Lincoln Avenue	
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

**Volumes**

Name	Project Dwy 4		Lincoln Avenue		Lincoln Avenue	
Base Volume Input [veh/h]	3	4	28	344	238	24
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00
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]	3	4	28	344	238	24
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	1	7	91	63	6
Total Analysis Volume [veh/h]	3	4	29	362	251	25
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
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	0.01	0.01	0.02	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	14.02	9.73	7.86	0.00	0.00	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.04	0.04	0.07	0.07	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.96	0.96	1.67	1.67	0.00	0.00
d_A, Approach Delay [s/veh]	11.57		0.58		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]			0.46			
Intersection LOS			B			

*APPENDIX G-II*

**YEAR 2040 BUILDOUT PLUS PROJECT  
LEVEL OF SERVICE CALCULATION WORKSHEETS**

**Intersection Level Of Service Report**  
**Intersection 6: Collingwood Street/Project Driveway 3 at Lincoln Avenue**

Control Type:	Two-way stop	Delay (sec / veh):	37.5
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.434

**Intersection Setup**

Name	Collingwood St			Project Dwy 3			Lincoln Ave			Lincoln Ave		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

**Volumes**

Name	Collingwood St			Project Dwy 3			Lincoln Ave			Lincoln Ave		
Base Volume Input [veh/h]	10	0	20	91	0	106	17	510	8	9	416	11
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	10	0	20	91	0	106	17	510	8	9	416	11
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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	0	5	23	0	27	4	128	2	2	104	3
Total Analysis Volume [veh/h]	10	0	20	91	0	106	17	510	8	9	416	11
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	0.06	0.00	0.04	0.43	0.00	0.17	0.02	0.01	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	27.48	21.35	12.61	37.51	35.45	26.02	8.23	0.00	0.00	8.47	0.00	0.00
Movement LOS	D	C	B	E	E	D	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.31	0.31	0.31	3.70	3.70	3.70	0.05	0.05	0.05	0.03	0.03	0.03
95th-Percentile Queue Length [ft/ln]	7.79	7.79	7.79	92.44	92.44	92.44	1.14	1.14	1.14	0.65	0.65	0.65
d_A, Approach Delay [s/veh]		17.57			31.33			0.26			0.17	
Approach LOS		C			D			A			A	
d_I, Intersection Delay [s/veh]							5.77					
Intersection LOS								E				

**Intersection Level Of Service Report****Intersection 12: Project Driveway 1 at Lincoln Avenue**

Control Type:	Two-way stop	Delay (sec / veh):	19.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.020

**Intersection Setup**

Name	Project Dwy 1		Lincoln Avenue		Lincoln Avenue	
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

**Volumes**

Name	Project Dwy 1		Lincoln Avenue		Lincoln Avenue	
Base Volume Input [veh/h]	5	8	9	507	526	6
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00
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]	5	8	9	507	526	6
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	2	2	127	132	2
Total Analysis Volume [veh/h]	5	8	9	507	526	6
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
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	0.02	0.01	0.01	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	19.91	11.90	8.51	0.00	0.00	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.11	0.11	0.03	0.03	0.00	0.00
95th-Percentile Queue Length [ft/ln]	2.70	2.70	0.66	0.66	0.00	0.00
d_A, Approach Delay [s/veh]	14.98		0.15		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]			0.26			
Intersection LOS			C			

**Intersection Level Of Service Report****Intersection 13: Project Driveway 2 at Lincoln Avenue**

Control Type:	Two-way stop	Delay (sec / veh):	19.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.020

**Intersection Setup**

Name	Project Dwy 2		Lincoln Avenue		Lincoln Avenue	
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

**Volumes**

Name	Project Dwy 2		Lincoln Avenue		Lincoln Avenue	
Base Volume Input [veh/h]	5	7	9	510	524	6
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00
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]	5	7	9	510	524	6
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	2	2	128	131	2
Total Analysis Volume [veh/h]	5	7	9	510	524	6
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
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	0.02	0.01	0.01	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	19.92	11.87	8.50	0.00	0.00	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.10	0.10	0.03	0.03	0.00	0.00
95th-Percentile Queue Length [ft/ln]	2.55	2.55	0.66	0.66	0.00	0.00
d_A, Approach Delay [s/veh]		15.22		0.15		0.00
Approach LOS		C		A		A
d_I, Intersection Delay [s/veh]				0.24		
Intersection LOS				C		

**Intersection Level Of Service Report****Intersection 14: Project Driveway 4 at Lincoln Avenue**

Control Type:	Two-way stop	Delay (sec / veh):	24.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.053

**Intersection Setup**

Name	Project Dwy 4		Lincoln Avenue		Lincoln Avenue	
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

**Volumes**

Name	Project Dwy 4		Lincoln Avenue		Lincoln Avenue	
Base Volume Input [veh/h]	10	15	124	409	423	107
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00
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]	10	15	124	409	423	107
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	4	31	102	106	27
Total Analysis Volume [veh/h]	10	15	124	409	423	107
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
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	0.05	0.03	0.12	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	24.95	12.07	8.94	0.00	0.00	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.25	0.25	0.41	0.41	0.00	0.00
95th-Percentile Queue Length [ft/ln]	6.32	6.32	10.15	10.15	0.00	0.00
d_A, Approach Delay [s/veh]	17.22		2.08		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]			1.41			
Intersection LOS			C			

**Intersection Level Of Service Report**  
**Intersection 6: Collingwood Street/Project Driveway 3 at Lincoln Avenue**

Control Type:	Two-way stop	Delay (sec / veh):	17.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.041

**Intersection Setup**

Name	Collingwood St			Project Dwy 3			Lincoln Ave			Lincoln Ave		
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 Pocket	0	0	0	0	0	0	0	0	0	0	0	0
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
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

**Volumes**

Name	Collingwood St			Project Dwy 3			Lincoln Ave			Lincoln Ave		
Base Volume Input [veh/h]	13	0	4	26	0	31	4	428	14	4	278	3
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	13	0	4	26	0	31	4	428	14	4	278	3
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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	0	1	7	0	8	1	107	4	1	70	1
Total Analysis Volume [veh/h]	13	0	4	26	0	31	4	428	14	4	278	3
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	0.04	0.00	0.01	0.08	0.00	0.04	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	16.97	15.93	11.30	16.85	16.51	10.76	7.82	0.00	0.00	8.23	0.00
Movement LOS	C	C	B	C	C	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.15	0.15	0.15	0.40	0.40	0.40	0.01	0.01	0.01	0.01	0.01
95th-Percentile Queue Length [ft/ln]	3.75	3.75	3.75	10.06	10.06	10.06	0.23	0.23	0.23	0.27	0.27
d_A, Approach Delay [s/veh]		15.64			13.54			0.07			0.12
Approach LOS		C			B			A			A
d_I, Intersection Delay [s/veh]							1.37				
Intersection LOS							C				

**Intersection Level Of Service Report**  
**Intersection 12: Project Driveway 1 at Lincoln Avenue**

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):	0.005

**Intersection Setup**

Name	Project Dwy 1		Lincoln Avenue		Lincoln Avenue	
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

**Volumes**

Name	Project Dwy 1		Lincoln Avenue		Lincoln Avenue	
Base Volume Input [veh/h]	2	2	2	450	324	1
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00
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]	2	2	2	450	324	1
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	1	1	113	81	0
Total Analysis Volume [veh/h]	2	2	2	450	324	1
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
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	0.01	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	14.96	10.09	7.92	0.00	0.00	0.00
Movement LOS	B	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.03	0.03	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.63	0.63	0.12	0.12	0.00	0.00
d_A, Approach Delay [s/veh]	12.52		0.04		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]			0.08			
Intersection LOS			B			

**Intersection Level Of Service Report****Intersection 13: Project Driveway 2 at Lincoln Avenue**

Control Type:	Two-way stop	Delay (sec / veh):	14.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

**Intersection Setup**

Name	Project Dwy 2		Lincoln Avenue		Lincoln Avenue	
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

**Volumes**

Name	Project Dwy 2		Lincoln Avenue		Lincoln Avenue	
Base Volume Input [veh/h]	1	2	2	444	326	1
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00
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]	1	2	2	444	326	1
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	1	1	111	82	0
Total Analysis Volume [veh/h]	1	2	2	444	326	1
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
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	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	14.88	10.07	7.93	0.00	0.00	0.00
Movement LOS	B	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.02	0.02	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.42	0.42	0.12	0.12	0.00	0.00
d_A, Approach Delay [s/veh]	11.68		0.04		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]			0.07			
Intersection LOS			B			

**Intersection Level Of Service Report**  
**Intersection 14: Project Driveway 4 at Lincoln Avenue**

Control Type:	Two-way stop	Delay (sec / veh):	14.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.008

**Intersection Setup**

Name	Project Dwy 4		Lincoln Avenue		Lincoln Avenue	
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

**Volumes**

Name	Project Dwy 4		Lincoln Avenue		Lincoln Avenue	
Base Volume Input [veh/h]	3	4	28	405	280	24
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 Rate	1.00	1.00	1.00	1.00	1.00	1.00
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]	3	4	28	405	280	24
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	1	7	101	70	6
Total Analysis Volume [veh/h]	3	4	28	405	280	24
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
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	0.01	0.01	0.02	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	14.92	9.91	7.93	0.00	0.00	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.04	0.04	0.07	0.07	0.00	0.00
95th-Percentile Queue Length [ft/ln]	1.03	1.03	1.71	1.71	0.00	0.00
d_A, Approach Delay [s/veh]	12.06		0.51		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]			0.41			
Intersection LOS			B			

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