Traffic Study

for the:

Used Auto Sales and Service Facility Project

In the City of Redlands

April 2024

Kimley»Horn

TRAFFIC STUDY
FOR THE PROPOSED
USED AUTO SALES AND SERVICE FACILITY PROJECT
IN THE CITY OF REDLANDS

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EXECUTIVE SUMMARY

This traffic study has been prepared to address the traffic-related effects of the proposed Used Auto Sales and Service Facility project in the City of Redlands. This traffic study has been conducted in accordance with the City of Redlands traffic study requirements, including Measure "U", and in accordance with the San Bernardino Association of Governments (SANBAG) Congestion Management Program (CMP) requirements.

In accordance with the traffic study requirements of the City of Redlands, the project will be evaluated in the morning and evening peak hours for the following conditions:

- Existing Conditions
- Existing Conditions Plus Project

Existing traffic volumes for the study intersections were collected in June 2023, while school was in session. Under Existing Conditions, all study intersections currently operate at an acceptable Level of Service during the morning and evening peak hours.

The project is estimated to generate approximately 552 trips on a daily basis, with 15 trips in the morning peak hour and 27 trips in the evening peak hour.

Project-related traffic volumes were added to existing volumes to establish the conditions for the Existing Conditions Plus Project scenario. With the addition of project traffic to existing volumes, all study intersections would continue to operate at an acceptable Level of Service.

Vehicular access provisions for the project site would be provided via one unsignalized full-movement driveway at the intersection of New York Street and Brockton Avenue.

Based on review of the VMT screening criteria, the proposed project meets the Project Type Screening thresholds. Therefore, the project would result in a less-than-significant transportation impact, and no additional VMT analysis is required for the proposed project.

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FOR THE PROPOSED
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IN THE CITY OF REDLANDS

INTRODUCTION

Purpose and Study Objectives

This traffic study has been prepared to address the traffic-related effects of the proposed Used Auto Sales and Service Facility project in the City of Redlands. This traffic study has been conducted in accordance with the City of Redlands traffic study requirements, including Measure "U", and in accordance with the San Bernardino Association of Governments (SANBAG) Congestion Management Program (CMP) requirements.

This report includes a description of existing traffic conditions in the surrounding area, estimated project trip generation and distribution, and an assessment of project-related effects on the roadway system. Where necessary, circulation system improvements have been identified to address the project's effect at the study locations.

Project Overview

The project site is located in the northwestern region of the City of Redlands, west of the intersection of New York Street and Brockton Avenue. The project site is currently vacant and is shown in its regional setting on Figure 1.

The applicant proposes to develop a Used Auto Sales and Service Facility with an approximately 7,098 square-foot (SF) sales area for Used Automobile sales and an approximately 42,393 SF building area for the Production portion of the project, for a total building square footage of 49,491 SF for the proposed project. It should be noted that the Production portion of the project has separate operations from the Used Automobile sales area of the project. The proposed site plan is shown on Figure 2.

Regional access to the project is provided by the State Route 210 (SR-210) and Interstate 10 (I-10) freeway systems. Vehicular access provisions for the project site would be provided via one unsignalized full-movement driveway at the intersection of New York Street and Brockton Avenue.

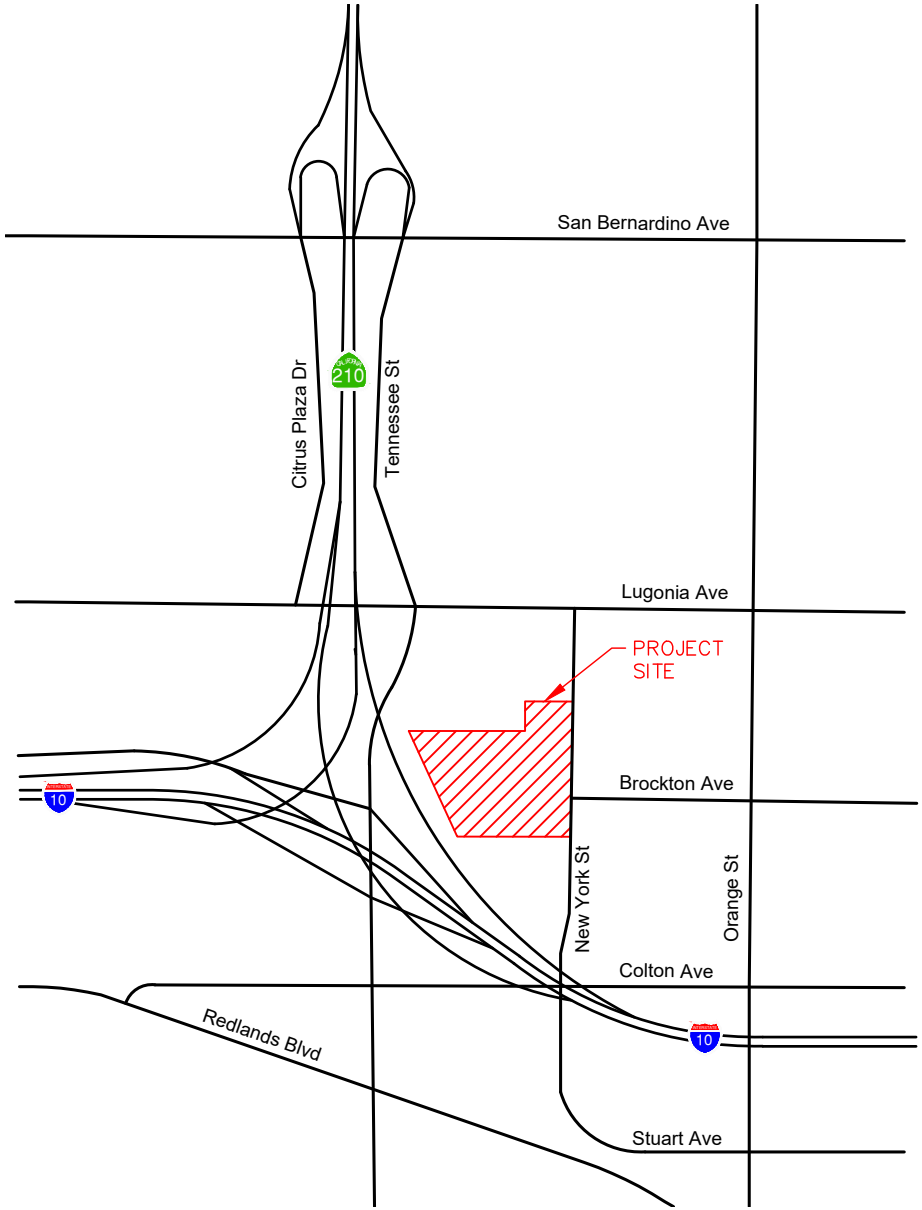


FIGURE 1
VICINITY MAP

NOT TO SCALE

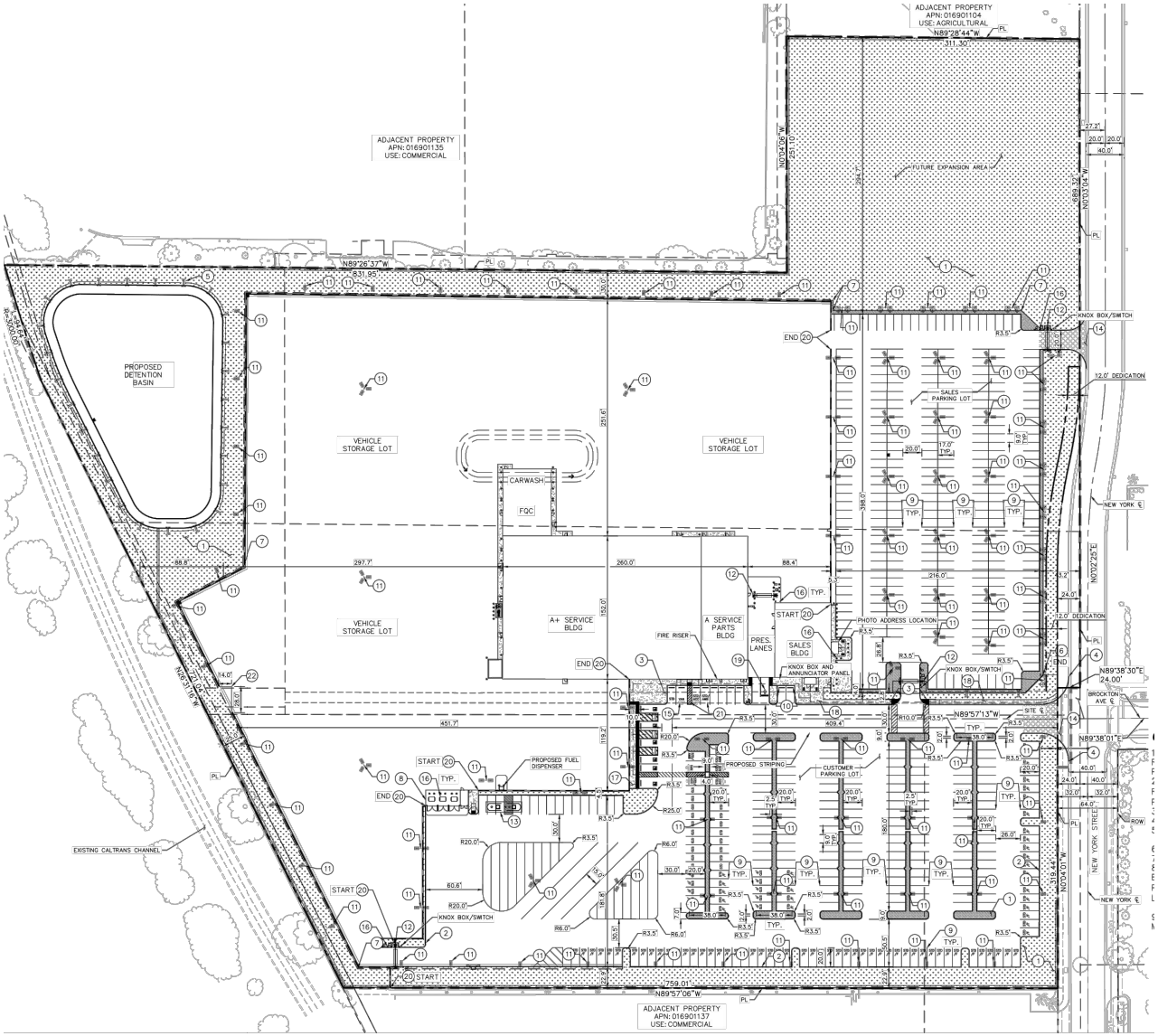


FIGURE 2
PROJECT SITE PLAN

ANALYSIS SCENARIOS AND METHODOLOGY

The analysis scenarios and methodology were established in consultation with City of Redlands staff through the Scoping Agreement process. A copy of the approved Scoping Agreement is provided in *Appendix A*.

Analysis Scenarios

In accordance with the traffic study requirements of the City of Redlands, the project will be evaluated in the morning and evening peak hours for the following conditions:

- Existing Conditions
- Existing Conditions Plus Project

Intersection Analysis – HCM Methodology

Peak hour intersection operations at the study intersections were evaluated using the methods prescribed in the Highway Capacity Manual 7th Edition (HCM), consistent with the traffic study requirements of the City of Redlands. The intersection analysis was conducted using the Vistro software program and using the input parameters specified in the San Bernardino County CMP.

For signalized intersections, the HCM methodology estimates the average delay (in average seconds per vehicle) for each of the movements through the intersection, considering a number of factors, including the number of lanes, volume of traffic, and the signal timing phasing.

For unsignalized intersections, the HCM methodology analysis determines the average total delay for each vehicle making any movement from the stop-controlled minor street, as well as left turns from the major street. Delay values are calculated based on the relationship between traffic on the major street and the availability of acceptable gaps in the traffic stream through which conflicting traffic movements can be made.

The HCM delay forecast translates to a Level of Service (LOS) designation, ranging from LOS A to LOS F. A summary of each LOS and the corresponding delay is provided in the following charts:

LEVEL OF SERVICE DEFINITIONS	
Level of Service	Description
A	No approach phase is fully utilized by traffic and no vehicle waits longer than one red indication. Typically, the approach appears quite open, turns are made easily and nearly all drivers find freedom of operation.
B	This service level represents stable operation, where an occasional approach phase is fully utilized, and a substantial number are approaching full use. Many drivers begin to feel restricted within platoons of vehicles.
C	This level still represents stable operating conditions. Occasionally drivers may have to wait through more than one red signal indication, and backups may develop behind turning vehicles. Most drivers feel somewhat restricted but not objectionably so.
D	This level encompasses a zone of increasing restriction, approaching instability at the intersection. Delays to approaching vehicles may be substantial during short peaks within the peak period; however, enough cycles with lower demand occur to permit periodic clearance of developing queues, thus preventing excessive backups.
E	Capacity occurs at the upper end of this service level. It represents the most vehicles that any particular intersection approach can accommodate. Full utilization of every signal cycle is seldom attained no matter how great the demand.
F	This level describes forced flow operations at low speeds, where volumes exceed capacity. These conditions usually result from queues of vehicles backing up from a restriction downstream. Speeds are reduced substantially, and stoppages may occur for short or long periods of time due to the congestion. In the extreme case, both speed and volume can drop to zero.

LEVEL OF SERVICE CRITERIA FOR SIGNALIZED AND UNSIGNALIZED INTERSECTIONS		
Level of Service	Signalized Intersection (Average delay per vehicle, in seconds) [1]	Unsignalized Intersections (Average delay per vehicle, in seconds) [2]
A	≤ 10	0 – 10
B	> 10 – 20	> 10 – 15
C	> 20 – 35	> 15 – 25
D	> 35 – 55	> 25 – 35
E	> 55 – 80	> 35 – 50
F	> 80	> 50

[1] Source: Highway Capacity Manual (HCM 7th Edition), Exhibit 19-8.

[2] Source: Highway Capacity Manual (HCM 7th Edition), Exhibit 20-2.

Level of Service Standards and Measure of Significance

The City of Redlands Measure "U" establishes minimum Level of Service standards, which require that City intersections be maintained at LOS C or better during the morning and evening peak hours.

Traffic effects at an intersection are considered to be significant if the addition of project traffic causes an intersection to operate deficiently (LOS D, E, or F). According to Measure "U", "…any location where the level of service is below LOS C at the time an application is submitted, mitigation shall be imposed on that development project to assure, at a minimum, that the level of traffic service is maintained at levels of service that are no worse than those existing at the time of application for development is filed, except as provided in Section 5.20b."

New development is required to offset effects where the project results in a significant effect according to the City of Redland's Measure "U" requirements, as shown above. The Level of Service with improvements must be improved to offset the project's effect.

STUDY AREA

This traffic study includes documentation of existing conditions, analysis of future traffic conditions, and identification of project-related effects at the following study intersections:

Intersections:

1. Lugonia Avenue at Tennessee Street
2. Lugonia Avenue at New York Street
3. I-10 WB Ramps at Tennessee Street
4. I-10 EB Ramps at Tennessee Street
5. Colton Avenue at Tennessee Street
6. Colton Avenue at New York Street
7. New York Street at Project Driveway/Brockton Avenue

The study locations were established in consultation with City staff through the Scoping Agreement process. A copy of the approved Scoping Agreement is provided in *Appendix A*.

AREA CONDITIONS

Existing Street System

Regional access to the site is provided by the State Route 210 (SR-210) Freeway, located just west of the project site, and the Interstate 10 (I-10) Freeway, located just south of the project site.

Existing lane configurations and intersection controls at the study intersections are shown on Figure 3. A copy of the City of Redlands General Plan Roadway Classification Map is provided on Figure 4. The following provides a description of the roadways surrounding the project site.

Tennessee Street is an undivided north-south roadway with one lane in each direction north of Lugonia Avenue and two lanes in each direction south of Lugonia Avenue within the project vicinity. The posted speed limit is 40 miles per hour (mph) and on-street parking is prohibited on both sides. Tennessee Street is designated as a Collector Street from Lugonia Avenue to the I-10 Freeway and a Minor Arterial south of the I-10 Freeway in the City of Redlands General Plan.

New York Street is an undivided north-south roadway with one lane in each direction within the project vicinity. The posted speed limit is 40 mph and on-street parking is prohibited on both sides. New York Street is designated as a Collector Street in the City of Redlands General Plan.

Lugonia Avenue is a divided east-west roadway with two lanes in the eastbound direction, one lane in the westbound direction, and a painted center median within the project vicinity. The posted speed limit is 45 mph and on-street parking is prohibited on both sides. Lugonia Avenue is designated as a Major Arterial from the SR-210 Freeway to Orange Street in the City of Redlands General Plan.

Brockton Avenue is an undivided east-west roadway with one lane in each direction within the project vicinity. The posted speed limit is 35 mph and on-street parking is permitted on both sides. Brockton Avenue is designated as a Local Road in the City of Redlands General Plan.

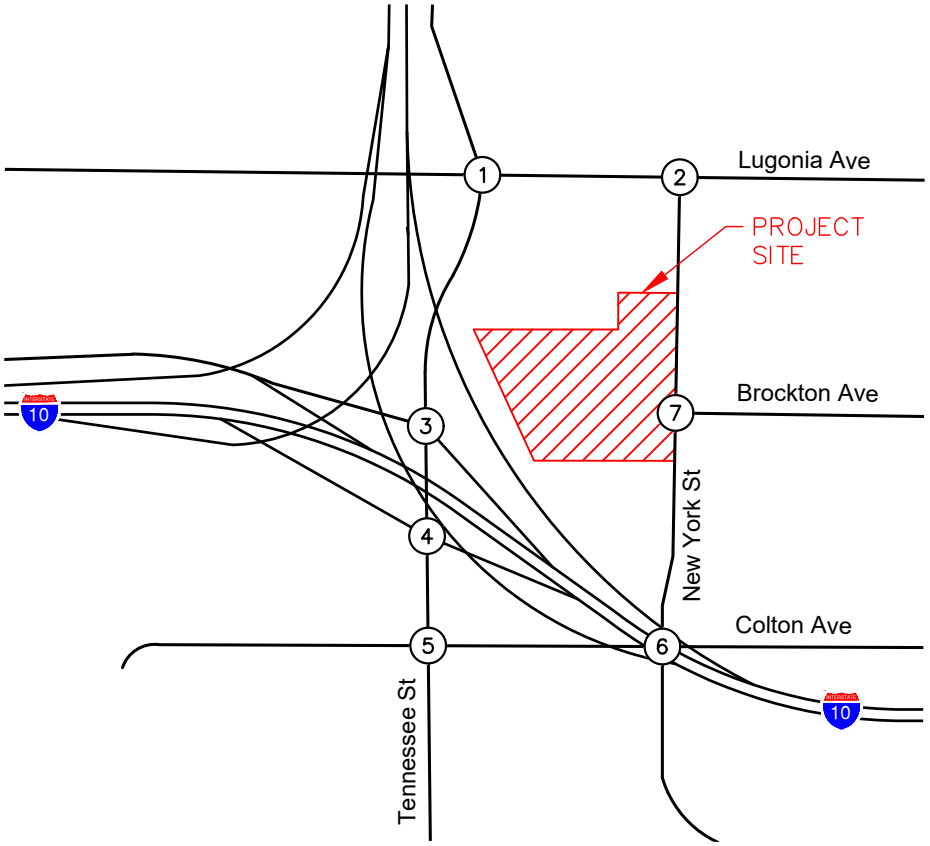
Colton Avenue is a divided east-west roadway with one to two lanes in each direction and a painted center median within the project vicinity. The posted speed limit is 35 mph and on-street parking is prohibited on both sides. Colton Avenue is designated as a Boulevard west of 6th Street and as a Minor Arterial east of 6th Street in the City of Redlands General Plan.

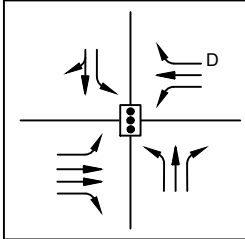
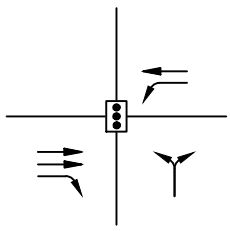
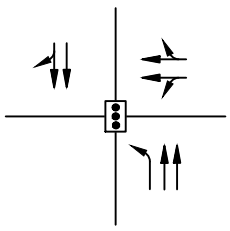
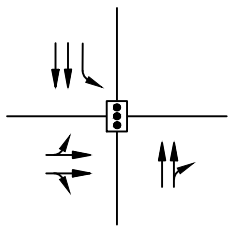
Existing Transit Service

Transit service within the project area is provided by OmniTrans, which serves the City of Redlands and surrounding cities. The OmniTrans bus stop closest to the project site is located on the south side of Lugonia Avenue, approximately 900 feet west of the intersection of Lugonia Avenue at New York Street.

A description of the bus route serving the project area is provided below.

OmniTrans Route 15 operates within the communities of Redlands and Fontana, traveling along Lugonia Avenue. Route 15 operates on weekdays from approximately 4:05 AM to 10:15 PM with approximately 60-minute headways (the time between bus arrivals), and on weekends from approximately 5:45 AM to 7:15 PM with approximately 60-minute headways.



1. Lugonia Ave at Tennessee St	2. Lugonia Ave at New York St	3. I-10 WB Ramps at Tennessee St	4. I-10 EB Ramps at Tennessee St
			
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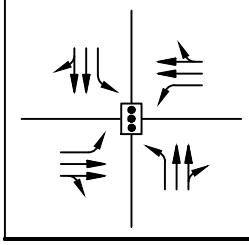
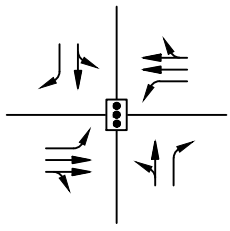
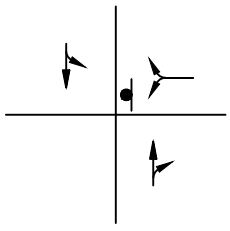
			

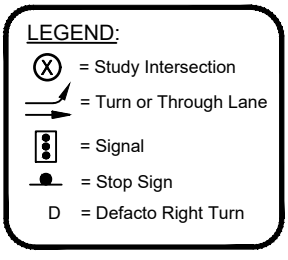


FIGURE 3
EXISTING LANE CONFIGURATION
AND TRAFFIC CONTROL

NOT TO SCALE

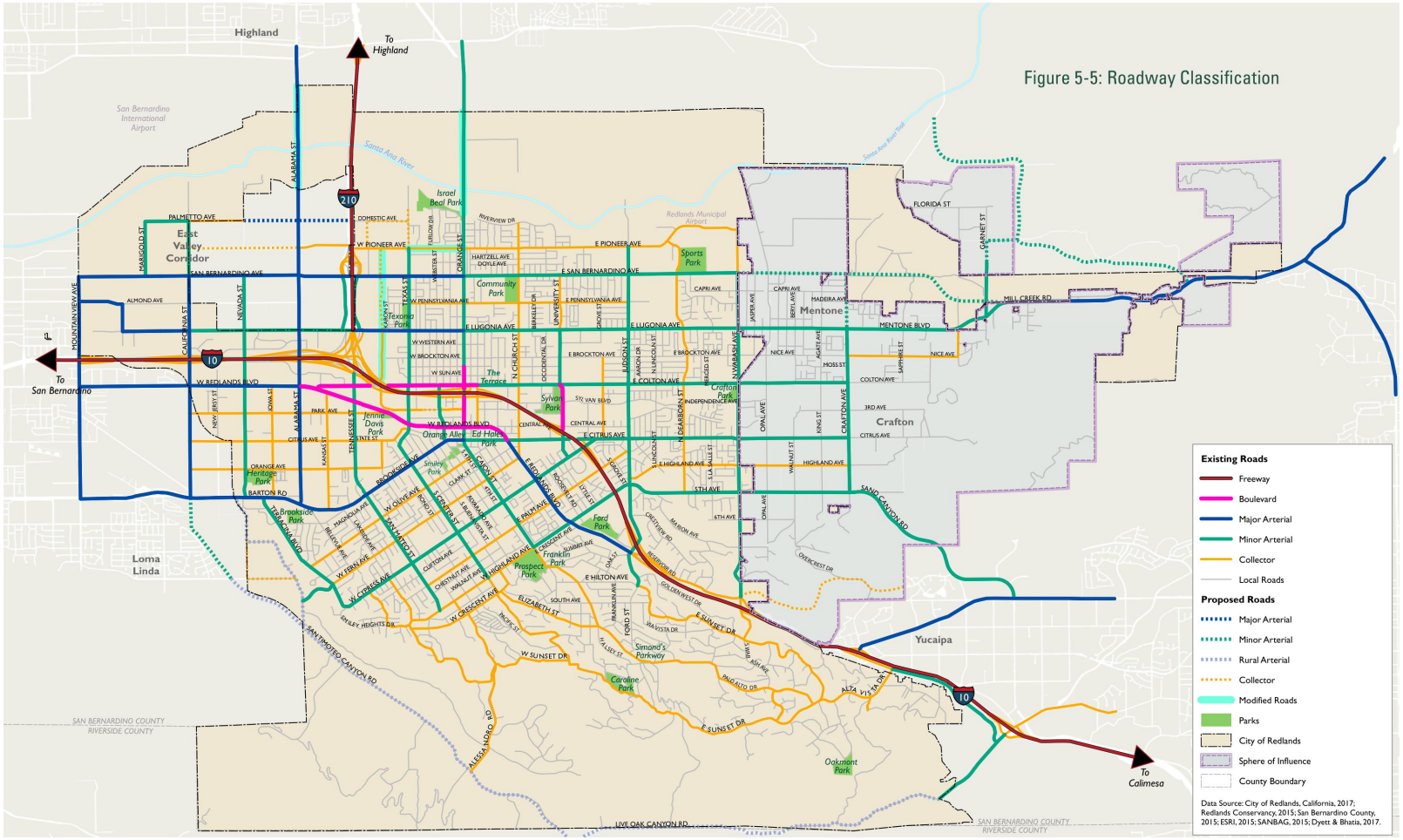


FIGURE 4
CITY OF REDLANDS ROADWAY CLASSIFICATION MAP

Existing Traffic Volumes

Existing morning peak hour and evening peak hour turning movement volumes were collected in June 2023, while school was in session, and are presented on Figure 5. Peak hour intersection traffic count worksheets are provided in *Appendix B*.

Peak Hour Operating Conditions

Intersection Level of Service analysis was conducted for the morning and evening peak hours using the analysis procedures and assumptions described previously in this report. Intersection analysis worksheets are provided in *Appendix C*. The results of the intersection analysis for Existing Conditions are shown on Table 1.

Review of this table indicates that all study intersections currently operate at an acceptable Level of Service during the morning and evening peak hours.

PROJECT TRAFFIC

Project Trip Generation

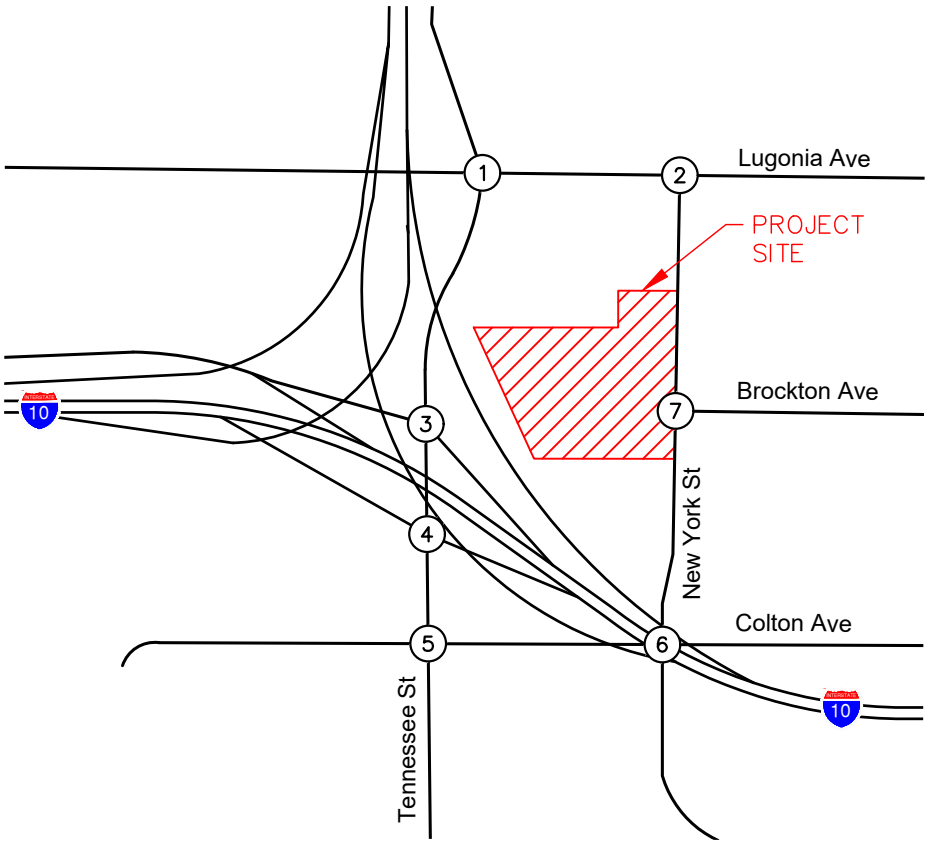
Trip generation estimates have been broken down into the following two categories based on the various uses proposed on-site by the applicant:

- Automobile Sales (Used)
    - ITE Trip Generation Manual (11th Edition)
- Production
    - Based on employee information provided by the applicant

Automobile Sales (Used) Trips

Trip generation estimates for the Automobile Sales (Used) portion of the project are based on the Institute of Transportation Engineers (ITE) Trip Generation Manual (11th Edition) trip rates for Automobile Sales (Used) (ITE Land Use 841).

The trip generation rates, and the resulting trip generation for the Automobile Sales (Used) portion of the project are shown on Table 2. The Automobile Sales (Used) portion of the proposed project is estimated to generate 192 total daily trips, with 15 total trips (11 inbound and 4 outbound) in the morning peak hour and 27 total trips (13 inbound and 14 outbound) in the evening peak hour.



1. Lugonia Ave at Tennessee St	2. Lugonia Ave at New York St	3. I-10 WB Ramps at Tennessee St	4. I-10 EB Ramps at Tennessee St
4/15, 103/147, 57/106 ← ↑ 86/107, 353/431, 105/90 →	← 478/469, 43/28 ↑	88/83, 309/631 ← ↑ 128/259, 6/8, 161/132 →	349/503, 114/263 ← ↑
20/55, 218/781, 149/464 → ↓	264/980, 92/219 → ↓	↓ 207/216, 384/701	↓ 104/297, 177/402, 383/329 →
↑ 120/305, 217/338, 68/242	96/187, 27/76 ↑		457/617, 122/149 ↑

5. Colton Ave at Tennessee St	6. Colton Ave at New York St	7. New York St at Project Driveway/Brockton Ave
164/154, 422/470, 98/206 ← ↑ 108/126, 200/282, 38/48 →	61/88, 30/115, 16/74 ← ↑ 55/94, 217/313, 8/12 →	118/197, 26/36 ← ↑ 30/34, 23/38 →
60/149, 130/472, 29/57 → ↓	34/89, 173/592, 40/82 → ↓	↓ 87/247, 17/17
↑ 53/67, 422/452, 41/80	56/27, 42/53, 9/6 ↑	

LEGEND:

Ⓧ = Study Intersection

XX/YY = AM/PM Peak Hour Turning Movement Volumes

FIGURE 5
EXISTING PEAK HOUR
TRAFFIC VOLUMES

TABLE 1
SUMMARY OF INTERSECTION OPERATION
EXISTING CONDITIONS

Int. #	Intersection	Traffic Control	AM Peak Hour		PM Peak Hour	
			Delay	LOS	Delay	LOS
1	Lugonia Avenue at Tennessee Street	S	33.1	C	34.9	C
2	Lugonia Avenue at New York Street	S	11.0	B	13.4	B
3	I-10 WB Ramps at Tennessee Street	S	20.9	C	19.7	B
4	I-10 EB Ramps at Tennessee Street	S	23.1	C	30.9	C
5	Colton Avenue at Tennessee Street	S	34.1	C	31.8	C
6	Colton Avenue at New York Street	S	20.7	C	20.9	C
7	New York Street at Project Driveway/Brockton Avenue	U	11.3	B	15.6	C

Notes:
- **Bold** values indicate intersections operating at an unacceptable Level of Service

- Delay values for unsignalized intersections represent the average vehicle delay on the worst (highest delay) intersection approach.

S = Signalized; U = Unsignalized

TABLE 2
SUMMARY OF PROJECT TRIP GENERATION
REDLANDS USED AUTO SALES AND SERVICE FACILITY PROJECT

ITE Land Use	ITE Code	Unit	Trip Generation Rates [1]						
			Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Automobile Sales (Used)	841	KSF	27.060	1.619	0.511	2.130	1.763	1.988	3.750

Project Land Use	Quantity	Unit	Trip Generation Estimates						
			Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Automobile Sales (Used)	7.098	KSF	192	11	4	15	13	14	27
Production[2]	42.393	KSF	360	--	--	--	--	--	--
Total Project Trips			552	11	4	15	13	14	27

[1] Source: Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition

[2] Trip estimates for the production portion of the proposed project are based on employee and truck information provided by the applicant . There is anticipated to be approximately 170 total production employees over 2 shifts (7am to 3pm; 3pm to 11pm) on a daily basis. It should be noted that employees would arrive and exit their shifts during non-peak hours of adjacent street traffic. As a result, the production portion of the project site does not generate additional peak hour traffic. The daily trips has been adjusted to account for the employee trips for the production portion of the project site. The production portion of the project is anticipated to generate approximately 10 car carrier trucks per day to the project site (20 total truck trips). The truck trips have been incorporated into the total daily trips.

Production Trips

As noted earlier in the report, the Production portion of the project has separate operations from the Used Automobile sales area of the project. As such, the trip generation estimates for the Production portion of the proposed project were based on employee and truck information provided by the applicant, which is provided in *Appendix E*. There is anticipated to be approximately 170 total production employees over two (2) shifts (7am to 3pm; 3pm to 11pm). It should be noted that employees for the Production portion of the project would arrive and exit their shifts during non-peak hours of adjacent street traffic. As a result, the Production portion of the project site does not generate additional peak hour traffic. On a typical weekday, the Production portion of the project is anticipated to generate approximately 10 car carrier trucks per day to the project site.

Based on the information noted above, the Production portion of the proposed project is estimated to generate approximately 360 total daily trips, with no trips during the morning and evening commute peak hours of adjacent street traffic.

Total Project Trips

The trip generation rates, and the resulting trip generation for the proposed project are shown on Table 2 (previously mentioned). The proposed project is estimated to generate approximately 552 total daily trips[1], with 15 total trips (11 inbound and 4 outbound) in the morning peak hour and 27 total trips (13 inbound and 14 outbound) in the evening peak hour.

Trip Distribution and Assignment

Trip distribution assumptions for the project were developed taking into account the proposed site use, likely origins and destinations of employees and customers, and existing traffic patterns on the surrounding street system. Trip distribution assumptions are shown on Figure 6.

Trip distribution percentages at each study intersection were applied to the project trip generation to determine the project trips through each intersection. The resulting project-related peak hour trips are shown on Figure 7.

[1] It should be noted that other environmental technical studies (i.e. Greenhouse Gas, etc.) for the proposed project assumed up to 715 daily trips as a worst-case scenario for the respective analyses.

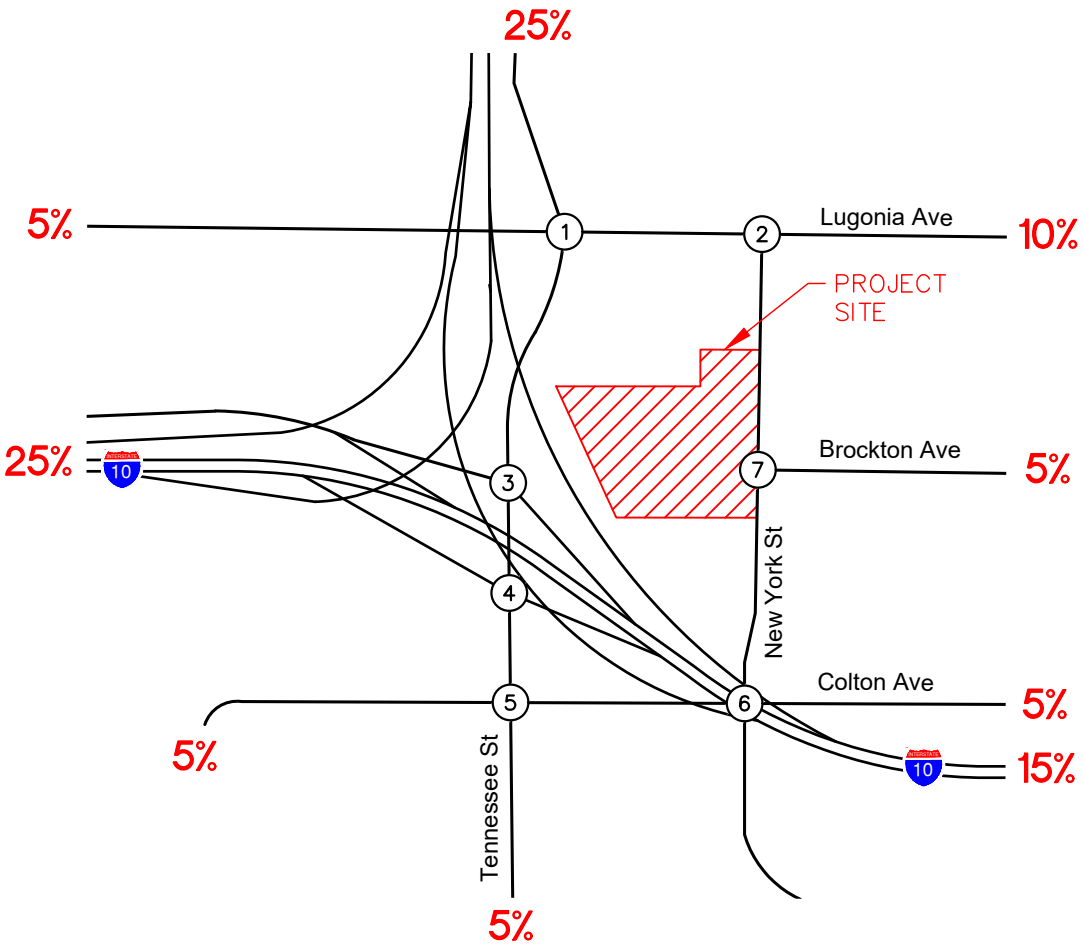
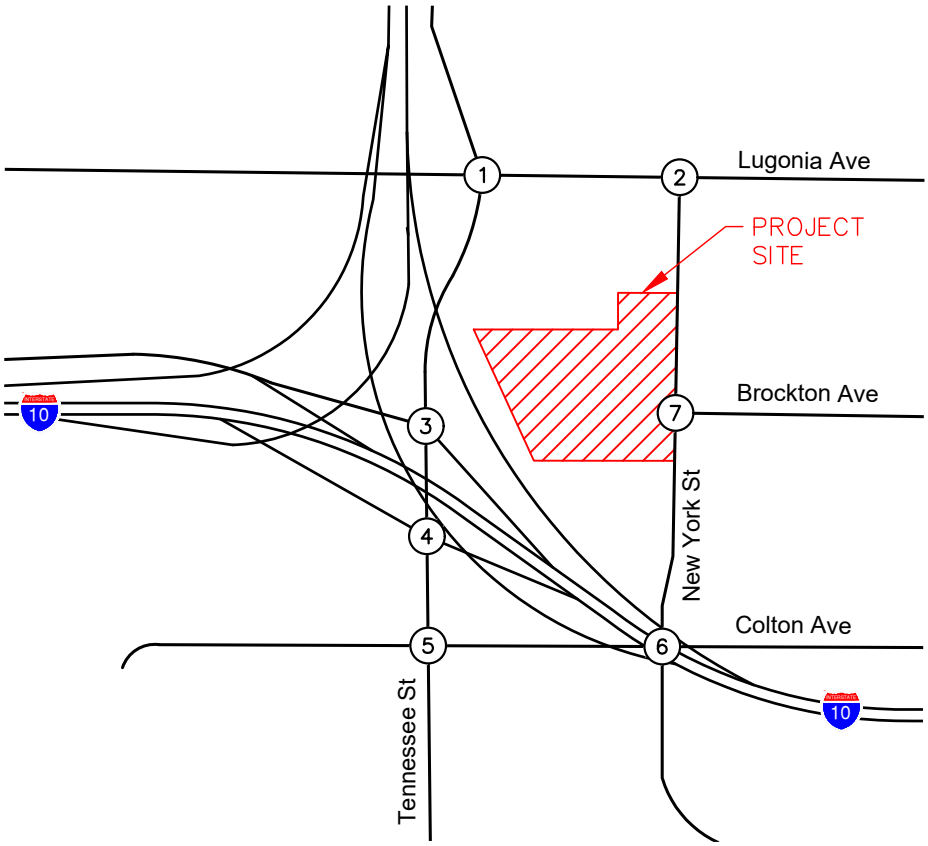


FIGURE 6
PROJECT TRIP DISTRIBUTION

NOT TO SCALE



1. Lugonia Ave at Tennessee St	2. Lugonia Ave at New York St	3. I-10 WB Ramps at Tennessee St	4. I-10 EB Ramps at Tennessee St
4/5 ↙ ↖ 1/5 ↗ 1/1	1/1 ↖ 5/6 ↘ 1/5 ↗ 0/1 ↗	1/1 ↖ 2/3 ↗	2/3 ↘ 2/3 ↗ 1/2 ↗

5. Colton Ave at Tennessee St	6. Colton Ave at New York St	7. New York St at Project Driveway/Brockton Ave
2/3 ↙ ↖ 3/5 ← 0/1 ↖ 0/1 1/1 → ↗ 1/1	3/7 ↙ 0/1 ↖ 1/1 4/5 ↘	6/7 ↙ 1/6 ↗ 3/8 ↘ 5/6 ↗

LEGEND:

Ⓧ = Study Intersection

XX/YY = AM/PM Peak Hour Turning Movement Volumes

FIGURE 7
PROJECT-RELATED
TRAFFIC VOLUMES

EXISTING CONDITIONS PLUS PROJECT

Project-related traffic was added to the Existing Conditions traffic volumes, and the resulting morning and evening peak hour volumes are presented on Figure 8.

Peak Hour Operating Conditions

Intersection Level of Service analysis was conducted for the morning and evening peak hours for the Existing Conditions Plus Project. Intersection analysis worksheets are provided in *Appendix C*. The results of the intersection analysis for Existing Conditions Plus Project are shown on Table 3.

Review of this table indicates that all study intersections would continue to operate at an acceptable Level of Service during the morning and evening peak hours.

It should be noted that other recent traffic studies for nearby projects (Neighborhoods at Lugonia Village; 1005 West Lugonia Commercial) yielded different intersection delay and Level of Service values than those noted in this Traffic Study at the intersections of Tennessee Street at Lugonia Avenue (#1) and Tennessee Street at the I-10 Ramps (#3 and #4). There are many variables that can affect the overall intersection delay value at a study intersection, such as turning movement volumes, peak hour factors, lane geometries, and signal timing parameters. Based on review of the results from the other traffic studies and the Traffic Study for the proposed project, while there is variability in the assumptions noted above, each traffic analysis was conducted in line with general traffic engineering principles and consistent with the City of Redlands traffic study requirements and the parameters noted in the San Bernardino County Congestion Management Program (CMP).

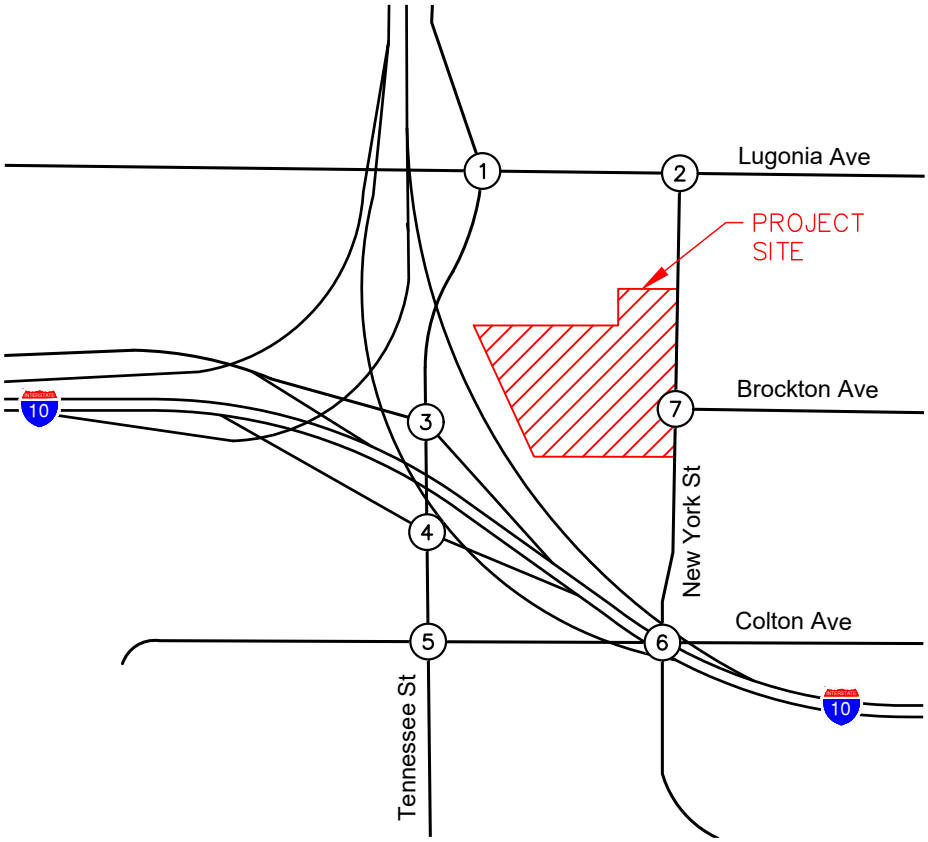
It should be noted that in the other traffic studies (Neighborhoods at Lugonia Village; 1005 West Lugonia Commercial), no improvements were recommended at the intersection of Tennessee Street at Lugonia Avenue (#1) since the addition of project traffic would not degrade the Level of Service to a lower Level of Service (LOS E or F), compared to the existing Level of Service (LOS D), consistent with the City of Redlands traffic analysis requirements. Also, no improvements were recommended at the intersections of Tennessee Street at I-10 Ramps since the intersections would operate at an acceptable Level of Service (LOS D or better for Caltrans intersections).

RECOMMENDED IMPROVEMENTS

Based on the City of Redland's Measure "U" requirements discussed previously, no improvements are required for the proposed project.

SITE ACCESS AND CIRCULATION

Vehicular access provisions for the project site would be provided via one unsignalized full-movement driveway at the intersection of New York Street and Brockton Avenue. A copy of the project site plan with truck turning templates on-site and at the project driveway are provided in *Appendix D*.



1. Lugonia Ave at Tennessee St	2. Lugonia Ave at New York St	3. I-10 WB Ramps at Tennessee St	4. I-10 EB Ramps at Tennessee St
4/15, 103/147, 61/111 ↖ ← ↙ / 87/112, 353/431, 105/90 ↑ ← ↖ 20/55 ↗ 218/781 → 149/464 ↘ 120/305 ↑, 217/338 →, 69/243 ↗	478/469 ← ↖ / 44/29 ↑ 264/980 → 97/225 ↘ 97/192 ↑, 27/77 ↗	88/83 ↖ / 309/631 ← ↙ / 129/260 ↑, 6/8 ←, 161/132 ↖ 209/219 ↑, 384/701 →	349/503 ← ↖ / 114/263 ← ↙ 104/297 ↗ 177/402 → 385/332 ↘ 459/620 ↑, 123/151 ↗

5. Colton Ave at Tennessee St	6. Colton Ave at New York St	7. New York St at Project Driveway/Brockton Ave
164/154, 422/470, 100/209 ↖ ← ↙ / 111/131, 200/283, 38/49 ↑ ← ↖ 60/149 ↗ 131/473 → 29/57 ↘ 53/67 ↑, 422/452 →, 42/81 ↗	64/95 ↖, 30/115 ←, 16/75 ↙ / 56/95 ↑, 217/313 ←, 8/12 ↖ 38/94 ↗ 173/592 → 40/82 ↘ 56/27 ↑, 42/53 →, 9/6 ↗	6/7 ↖, 118/197 ←, 26/36 ↙ / 30/34 ↑, 23/38 ← 1/6 ↗ 3/8 ↘ 5/6 ↑, 87/247 →, 17/17 ↗

LEGEND:

Ⓧ = Study Intersection

XX/YY = AM/PM Peak Hour Turning Movement Volumes

FIGURE 8
EXISTING CONDITIONS PLUS PROJECT TRAFFIC VOLUMES

TABLE 3
SUMMARY OF INTERSECTION OPERATION
EXISTING CONDITIONS PLUS PROJECT

Int. #	Intersection	Traffic Control	AM Peak Hour						PM Peak Hour					
			Without Project		With Project		Change Delay	Project Effect?	Without Project		With Project		Change Delay	Project Effect?
			Delay	LOS	Delay	LOS			Delay	LOS	Delay	LOS		
1	Lugonia Avenue at Tennessee Street	S	33.1	C	33.1	C	0.0	No	34.9	C	34.9	C	0.0	No
2	Lugonia Avenue at New York Street	S	11.0	B	11.1	B	0.1	No	13.4	B	13.6	B	0.2	No
3	I-10 WB Ramps at Tennessee Street	S	20.9	C	21.0	C	0.1	No	19.7	B	20.5	C	0.8	No
4	I-10 EB Ramps at Tennessee Street	S	23.1	C	23.1	C	0.0	No	30.9	C	31.1	C	0.2	No
5	Colton Avenue at Tennessee Street	S	34.1	C	34.2	C	0.1	No	31.8	C	31.8	C	0.0	No
6	Colton Avenue at New York Street	S	20.7	C	21.1	C	0.4	No	20.9	C	21.2	C	0.3	No
7	New York Street at Project Driveway/Brockton Avenue	U	11.3	B	11.5	B	0.2	No	15.6	C	16.2	C	0.6	No

Notes:
- **Bold** values indicate intersections operating at an unacceptable Level of Service
- Delay values for unsignalized intersections represent the average vehicle delay on the worst (highest delay) intersection approach.

S = Signalized; U = Unsignalized

VEHICLE MILES TRAVELED (VMT) ANALYSIS

Senate Bill 743 (SB 743) was approved by California legislature in September 2013. SB 743 requires changes to California Environmental Quality Act (CEQA), specifically directing the Governor's Office of Planning and Research (OPR) to develop alternative metrics to the use of vehicular "Level of Service" (LOS) for evaluating transportation projects. OPR has prepared a technical advisory ("OPR Technical Advisory") for evaluating transportation impacts in CEQA and has recommended that Vehicle Miles Traveled (VMT) replace LOS as the primary measure of transportation impacts. The Natural Resources Agency has adopted updates to CEQA Guidelines to incorporate SB 743 that requires VMT for the purposes of determining a significant transportation impact under CEQA.

The City of Redlands *CEQA Assessment VMT Analysis Guidelines* (VMT Guidelines) provide details on appropriate screening thresholds that can be used to identify when a proposed land use project is anticipated to result in a less-than-significant impact without conducting a more detailed level analysis. Screening thresholds are broken into the following three steps:

1. Transit Priority Area (TPA) Screening
2. Low VMT Area Screening
3. Project Type Screening

Land development projects that meet one or more of the above screening thresholds may be presumed to create a less-than-significant impact on transportation and circulation. The screening thresholds were reviewed and evaluated for this project.

Transit Priority Area (TPA) Screening

Projects located within a TPA may be presumed to have a less-than-significant impact. A TPA is defined as a half-mile area around an existing major transit stop of an existing stop along a high-quality transit corridor. 'Major transit stop' means a site containing an existing rail station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and evening peak commute periods. A 'high-quality transit corridor' means a corridor with a fixed route bus service with service intervals no longer than 15 minutes during the peak commute hours.

The City of Redlands VMT Guidelines also notes that the TPA screening may not be appropriate for a project if the project:

- Has a Floor Area Ratio (FAR) of less than 0.75
- Includes more parking for use by residents, customers, or employees of the project more than required by the jurisdiction
- Is inconsistent with the applicable Sustainable Communities Strategy
- Replaces affordable residential units with a smaller number of moderate- or high-income residential units.

Based on the San Bernardino County Transportation Authority (SBCTA) VMT Screening Tool (see the Approved Scoping Agreement in *Appendix A*), the project is located within a TPA. However, based on discussion with City staff, because the project has a FAR of less than 0.75 and includes more parking than required by the jurisdiction, the TPA screening would not apply to this project.

The TPA Screening criteria is not met.

Low VMT Area Screening

Projects located within a low VMT generating area (VMT per worker, 15% below County baseline) may be presumed to have a less-than-significant impact. Based on the SBCTA VMT Screening Tool, the project is not located in a Low VMT Area. The results of the SBCTA VMT Screening Tool are provided in the Approved Scoping Agreement in *Appendix A*.

The Low VMT Area Screening criteria is not met.

Project Type Screening

Projects which serve the local community and have the potential to reduce VMT should not be required to complete a VMT assessment. These local-serving projects include:

- Local-serving retail less than 50,000 SF
- K-12 schools
- Local parks
- Day care centers
- Local serving gas station
- Local serving banks
- Local-serving hotels
- Student housing projects
- Local serving community colleges

Projects which generate less than 3,000 MT CO2e per year can be presumed to have a less-than-significant impact on VMT. Projects which generate less than 3,000 MT CO2e per year include the following:

- Single family residential – 167 dwelling units or fewer
- Multi-family (low-rise) – 232 dwelling units or fewer
- Multi-family (mid-rise) – 299 dwelling units or fewer
- Office – 59,100 SF or less
- Local Serving Retail – 112,400 square feet or less
- Warehousing – 463,600 SF or less
- Light Industrial – 74,600 SF or less

Additional detail is provided in Attachment 1 (*Substantial Evidence for Trip-Based Screening Threshold)* of the City of Redlands *CEQA Assessment VMT Analysis Guidelines.*

The proposed Used Auto Sales and Service Facility project is intended to serve the local community. The nearest CarMax locations in the Redlands/Calimesa/Beaumont area (along the I-10 freeway) is approximately 20 to 30 miles away to the west in the City of Riverside (7980 Auto Drive) and even farther way to the east in the City of Palm Desert (73450 Dinah Shore Drive). With the proposed project location in the City of Redlands, residents and employees in the Redlands/Calimesa/Beaumont area would not need to travel as far to work or receive the services that the proposed project can provide. As a result, the overall VMT in the noted area would be reduced by providing a retail project that is local serving in nature. As such, the proposed project meets the intent of SB 743 and reducing VMT by providing a local-serving use.

With regards to the less than 3,000 MT CO2e per year threshold noted in this Project Type screening, a *Greenhouse Gas Emissions Assessment* (GHG Assessment, May 2023) was prepared for the proposed project. The GHG Assessment assumed up to 715 daily trips for the proposed project as a worst-case scenario. Based on the GHG Assessment, the proposed project would generate less than 3,000 MT CO2e per year (2,823.70 MT CO2e per year). Therefore, the proposed project can be presumed to have a less-than-significant impact on VMT and would meet the Project Type Screening criteria.

The Project Type Screening criteria is met.

Based on review of the VMT screening criteria, the project meets the Project Type Screening thresholds. Therefore, the project would result in a less-than-significant transportation impact, and no additional VMT analysis is required for the proposed project.

APPENDIX **A**

APPROVED SCOPING AGREEMENT

From: Ryan Murphy <rmurphy@cityofredlands.org>
Sent: Tuesday, November 7, 2023 3:58 PM
To: Briggs, Trevor <trevor.briggs@kimley-horn.com>
Cc: John Thatcher <jthatcher@centerpoint-is.com>; Katharine Ayerst <kayerst@centerpoint-is.com>; Pollock, John <john.pollock@kimley-horn.com>; Schwengler, Matt <Matt.Schwengler@kimley-horn.com>; Sadeghi, Pouya <Pouya.Sadeghi@kimley-horn.com>; Don Young <dyoung@cityofredlands.org>
Subject: RE: Traffic Scoping Letter - Proposed CarMax Project - City of Redlands

Good afternoon CarMax Team,

MUED has accepted your scoping letter. Please proceed with the study.

In addition, Planning is in receipt of the Data Needs response provided by your team and has routed it to the consultant for their use.

Sincerely,

Ryan Murphy
Senior Planner
City of Redlands
35 Cajon St., Ste. 20/P.O. Box 3005
Redlands, CA 92373
Office 909.798.7555 ext. 7308

From: Briggs, Trevor
Sent: Thursday, November 2, 2023 10:04 PM
To: Ryan Murphy
Cc: John Thatcher; Katharine Ayerst; Pollock, John; Schwengler, Matt; Sadeghi, Pouya; Don Young
Subject: RE: Traffic Scoping Letter - Proposed CarMax Project - City of Redlands

Hi Ryan and Don,

I just want to follow-up on the below email regarding the **updated Traffic Scoping Letter** with accompanying **Response to Comment (R2C) matrix** (see both attached) for the proposed **CarMax project** in the **City of Redlands**.

Let me know if you have any questions or comments. If no further comments on the Traffic Scoping Letter, please send email approval or a signed Traffic Scoping Letter for our records.

Thanks!

Kimley»Horn

October 26, 2023

Mr. Don Young
Engineering Manager
City of Redlands
35 Cajon Street, Suite 15-A
Redlands, CA 92373

RE: ***Scoping Letter Agreement for Traffic Study for the Proposed CarMax Project in the City of Redlands***

Dear Mr. Young:

Kimley-Horn and Associates, Inc. is submitting this Scoping Letter Agreement to the City of Redlands to provide a Traffic Study for the proposed CarMax project in the City of Redlands. The proposed scope for the Traffic Study is presented below.

PROJECT DESCRIPTION

The project site is located on the west side of the intersection of New York Street and Brockton Avenue. The site is currently an 18.63-acre vacant lot. The applicant proposes to develop a CarMax dealership with 7,098 square-foot sales area for Used Automobile sales. A copy of the project site plan is provided on **Attachment 1**.

Vehicular access provisions for the project site would be provided via one full-movement driveway at the unsignalized intersection of New York Street and Brockton Avenue. The proposed opening year for the project is Year 2025. The project will be developed in a single project phase.

SCOPE OF TRAFFIC STUDY

This scope is based on the City of Redlands traffic study requirements, including Measure "U", the City of Redlands *CEQA Assessment VMT Analysis Guidelines* and in accordance with the San Bernardino County Association of Governments (SANBAG) Congestion Management Program (CMP) requirements.

The following two traffic assessments will be evaluated for the proposed project: 1.) a VMT analysis for compliance with CEQA and 2.) a LOS analysis for compliance with Measure "U."

Trip Generation

Trip generation estimates for the automobile sales (used) area are based on the Institute of Transportation Engineers (ITE) Trip Generation Manual (11th Edition) trip rates for Automobile Sales (Used) (ITE Land Use 841).

The trip generation rates and the resulting trip generation estimates for the proposed project are summarized on **Attachment 2**. Based on Attachment 2, the proposed project (7,098 SF of Automobile Sales area) is estimated to generate 192 total daily trips, with 15 total trips (11 inbound and 4 outbound) in the morning peak hour and 27 total trips (13 inbound and 14 outbound) in the evening peak hour.

Trip Distribution

Project distribution assumptions were developed based on existing travel patterns, and the likely origins and destinations of site employees and patrons. Trip distribution assumptions are shown on **Attachment 3.**

Suggested Study Area

The following is a list of study intersections to be included in the study, as shown on Attachment 3 (previously mentioned).

Intersections:

1. Lugonia Avenue at Tennessee Street
2. Lugonia Avenue at New York Street
3. I-10 WB Ramps at Tennessee Street
4. I-10 EB Ramps at Tennessee Street
5. Colton Avenue at Tennessee Street
6. Colton Avenue at New York Street
7. Project Driveway/Brockton Avenue at New York Street

The study intersection will be analyzed using the Highway Capacity Manual (HCM) methodology. The intersection analysis for the traffic study will be accomplished using the Vistro software program.

Level of Service (LOS) standards for the traffic study will be in accordance with Measure "U" in the City of Redlands.

Study Scenarios

- Existing Conditions
- Existing Conditions Plus Project

VEHICLE MILES TRAVELED (VMT) ANALYSIS

The City of Redlands *CEQA Assessment VMT Analysis Guidelines* provide details on appropriate screening thresholds that can be used to identify when a proposed land use project is anticipated to result in a less-than-significant impact without conducting a more detailed level analysis. Screening thresholds are broken into the following three steps:

1. Transit Priority Area (TPA) Screening
2. Low VMT Area Screening
3. Project Type Screening

Transit Priority Area (TPA) Screening

Projects located within a TPA may be presumed to have a less-than-significant impact. A TPA is defined as a half-mile area around an existing major transit stop of an existing stop along a high-quality transit corridor. 'Major transit stop' means a site containing an existing rail station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and evening peak commute periods. A 'high-quality transit corridor' means a corridor with a fixed route bus service with service intervals no longer than 15 minutes during the peak commute hours.

Based on the San Bernardino County Transportation Authority (SBCTA) VMT Screening Tool (see **Attachment 4**), the project is located within a TPA.

The TPA Screening criteria is met.

Low VMT Area Screening

Projects located within a low VMT generating area (VMT per worker, 15% below County baseline) may be presumed to have a less-than-significant impact. Based on the SBCTA VMT Screening Tool, the project is not located in a Low VMT Area. The results of the SBCTA VMT Screening Tool are provided in Attachment 4 (previously mentioned).

The Low VMT Area Screening criteria is not met.

Project Type Screening

Projects which serve the local community and have the potential to reduce VMT should not be required to complete a VMT assessment. These local-serving projects include:

- Local-serving retail less than 50,000 SF
- K-12 schools
- Local parks
- Day care centers
- Local serving gas station
- Local serving banks
- Local-serving hotels
- Student housing projects
- Local serving community colleges

Projects which generate less than 3,000 MT CO2e per year can be presumed to have a less-than-significant impact on VMT. Projects which generate less than 3,000 MT CO2e per year include the following:

- Single family residential 0 167 dwelling units or fewer
- Multi-family (low-rise) – 232 dwelling units or fewer
- Multi-family (mid-rise) – 299 dwelling units or fewer
- Office – 59,100 SF or less
- Local Serving Retail – 112,400 square feet or less
- Warehousing – 463,600 SF or less
- Light Industrial – 74,600 SF or less

Additional detail is provided in Attachment 1 (*Substantial Evidence for Trip-Based Screening Threshold)* of the City of Redlands *CEQA Assessment VMT Analysis Guidelines.*

The proposed CarMax used car dealership is intended to serve the local community. In addition, per Attachment 1 of the City of Redlands *CEQA Assessment VMT Analysis Guidelines,* based on the proposed use and estimated daily trips for the project, the proposed project would generate less than 3,000 MT CO2e per year. As a result, the proposed project can be presumed to have a less-than-significant VMT impact and would meet the Project Type Screening criteria.

The Project Type Screening criteria is met.

Based on review of the VMT screening criteria, the project meets the TPA and Project Type screening thresholds. Therefore, the project would result in a less-than-significant transportation impact, and no additional VMT analysis is required.

Additional Items

A discussion of Measure "U," as it relates to traffic, will be included in the traffic study The traffic study will also include an evaluation of site access, on-site circulation, and truck turning templates.

Please contact me if you have any questions, comments, or concerns.

Sincerely,

KIMLEY-HORN AND ASSOCIATES, INC.

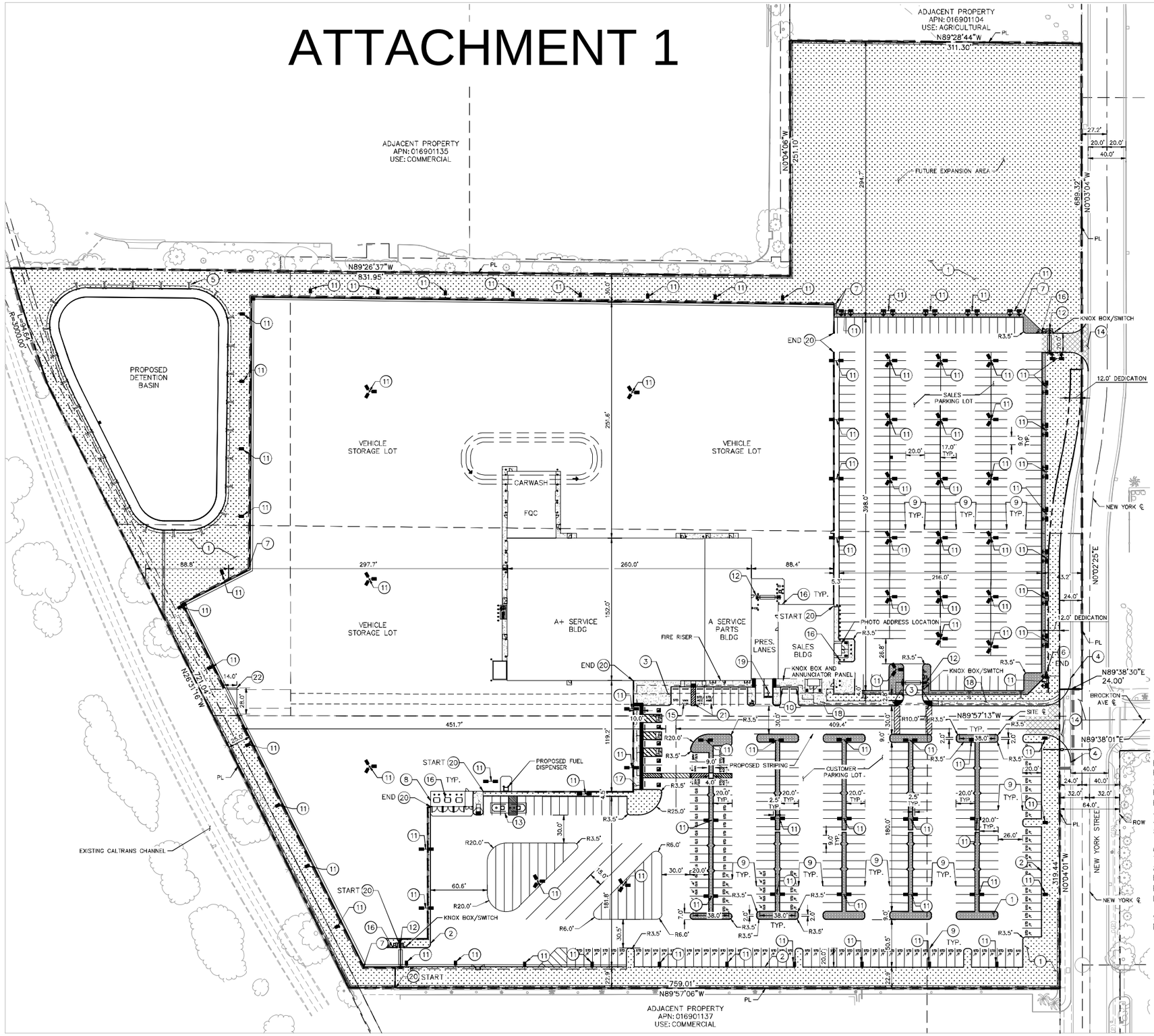
Trevor Briggs, P.E. (C87664)
Traffic Engineer

APPROVED:

By:

_____.
Don Young
Engineering Manager, City of Redlands

ATTACHMENT 1



LEGEND:

- CENTER LINE
- PROJECT PROPERTY LINE / RIGHT-OF-WAY
- DIVIDING PARCEL LINE LINE
- EASEMENT LINE / SETBACK LINE
- APPROXIMATE LIMIT OF WORK LINE
- LANDSCAPE/PLANTER AREA
- DETECTABLE WARNING SYSTEM
- GRAVEL AREA
- CONCRETE AREA
- ACCESSIBLE ROUTE (LOCATION PURPOSES ONLY, DO NOT PAINT)
- ACCESSIBLE PARKING SPACE
- SITE LIGHTING
- STD — STANDARD EV STALL
- STD/F — STANDARD EV/FUTURE STALL

CONSTRUCTION NOTES:

1. INSTALL LANDSCAPE/PLANTER AREA
2. CONSTRUCT CONCRETE CURB.
3. CONSTRUCT ACCESSIBLE RAMP WITH DETECTABLE WARNING PER DETAIL 8, SHEET C6.3.
4. JOIN EXISTING CURB, CURB & GUTTER, SIDEWALK.
5. INSTALL WROUGHT IRON FENCE FOR SECURITY SCREENING AROUND BASIN.
6. INSTALL GUARD RAIL PER DETAIL 18, SHEET C6.2.
7. INSTALL GUARD RAIL CORNER PER DETAIL 35, SHEET C6.2.
8. INSTALL DUMPSTER ENCLOSURE AND TIRE STORAGE PER DETAIL 1, SHEET C6.4
9. CONSTRUCT STANDARD 90° PARKING STALL STRIPING.
10. INSTALL WHEELSTOP PER DETAIL 25, SHEET C6.3.
11. INSTALL SITE LIGHTING.
12. INSTALL DROP BEAM GATE.
13. INSTALL UNDERGROUND TANK.
14. CONSTRUCT NEW COMMERCIAL DRIVEWAY APPROACH.
15. CONSTRUCT ACCESSIBLE PARKING STALL PER DETAIL 9, SHEET C6.3.
16. INSTALL BOLLARD PER DETAIL 22, SHEET C6.1.
17. CONSTRUCT SIDEWALK PER DETAIL 10, SHEET C6.3.
18. CONSTRUCT SIDEWALK WITH CURB PER DETAIL 18, SHEET C6.3.
19. INSTALL DIRECTIONAL SIGNAGE PER DETAIL 13, SHEET C6.3.
20. INSTALL CMU WALL, SEE TYPICAL SECTIONS ON SHEETS C4.1 AND C4.2 FOR HEIGHT, MATERIAL, THICKNESS.
21. INSTALL EVCS ACCESSIBLE STALLS PER DETAIL 9, SHEET C6.3.
22. CONSTRUCT GIBRALTAR G-6331 G-FORCE M30 P1 POST AND BEAM SYSTEM OVER SANITARY SEWER EASEMENT. SIZE PER PLAN.

GENERAL NOTES

1. TOTAL CUSTOMER/EMPLOYEE PARKING SPACES:
REQUIRED = 83 SPACES PER JURISDICTION
PROVIDED = 304 SPACES
2. PARKING SPACE SIZE:
REQUIREMENT (PER JURISDICTION) = 9' X 19'
PROVIDED = 9' X 20'
3. PARCEL I.D. NO. = 0169-011-38 & 0169-011-39
4. SITE ZONING = LIGHT INDUSTRIAL
5. SITE ADDRESS = WEST BROCKTON AVE. & NEW YORK ST., REDLAND, CA 92374
6. TOTAL SITE ACREAGE = 18.56 ACRES.
7. TOTAL DISTURBED ACREAGE = 16.41 ACRES.
8. AREA BREAKDOWN:
BUILDING = 1.24 AC = 6.7 %
PAVEMENT/IMPERVIOUS = 11.92 AC = 65.2 %
LANDSCAPE/GRASSED AREA = 5.40 AC = 28.1 %
TOTAL = 18.56 AC
9. SITE IS NOT LOCATED IN A FLOOD PLAIN AS PER FIRM MAP 06071C8704H.

NORTH

GRAPHIC SCALE IN FEET
0 25 50 100

DIGALERT — DIAL BEFORE YOU DIG — TOLL FREE 1-800-227-2600 — A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

Kimley»Horn

3880 LEMON STREET, SUITE 420, RIVERSIDE, CA 92501
PHONE: 951-543-9868
WWW.KIMLEY-HORN.COM

ENTITLEMENT PLANS

JOHN POLLOCK R.C.E. 86160
NOT RELEASED FOR CONSTRUCTION
LATEST DA/PC
DRAWN BY:
CHECKED BY:

REVISIONS

REV#	DATE	DESCRIPTION	BY

CARMAX — THE AUTO SUPERSTORE

STORE NUMBER 4033
BROCKTON AVENUE &
NEW YORK STREET,
REDLANDS, US 92374

BENCHMARK: BRASS DISK IN TOP OF CURB @ SW CORNER TEXAS ST & LUGONIA AVENUE 12' WEST OF WEST END RETURN. ELEVATION 1318.59 FEET.

PROJECT NO.	195440002
DATE	1/6/2023
SHEET TITLE	PRELIMINARY SITE PLAN
SHEET NO.	C3.0

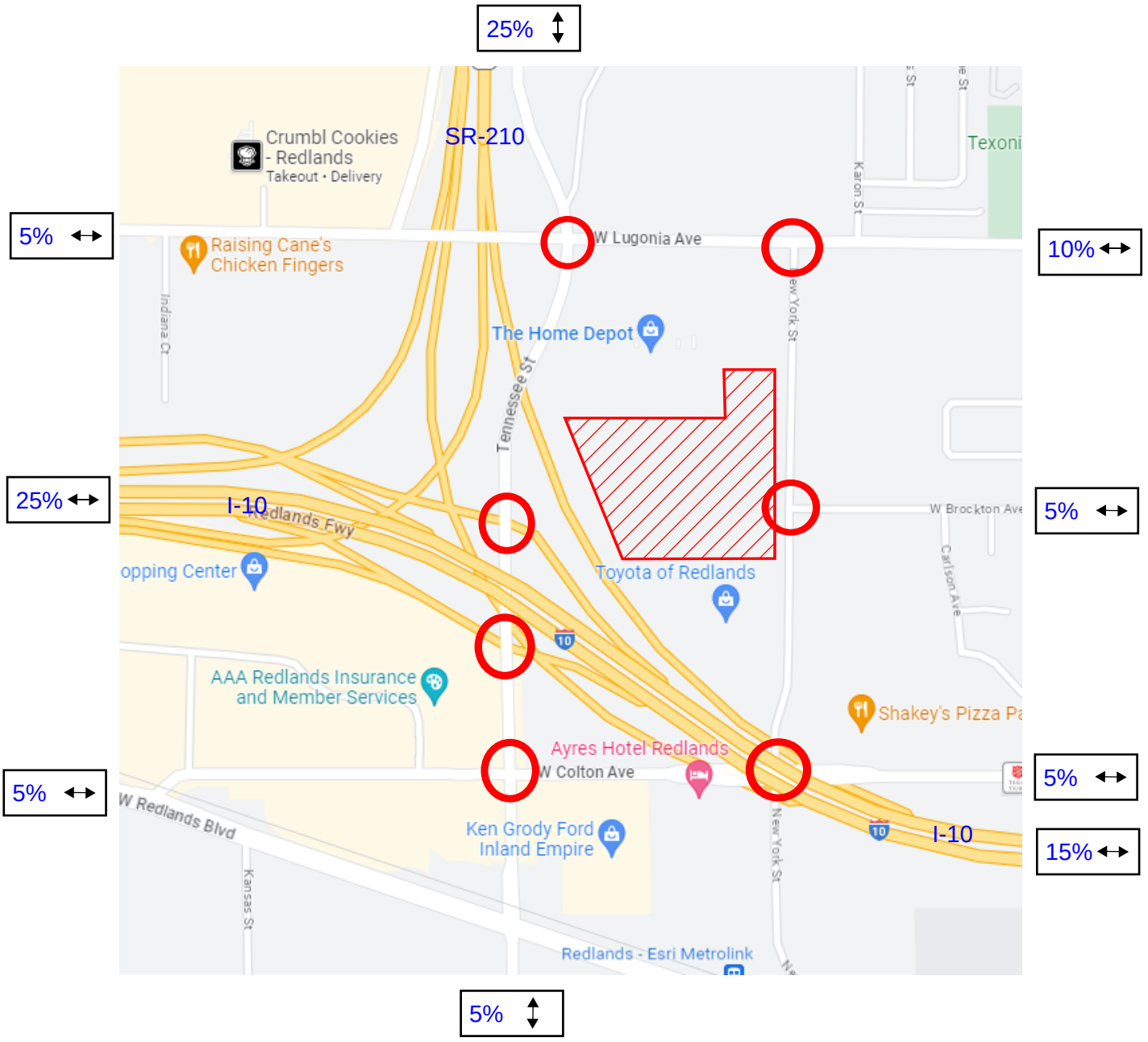
ATTACHMENT 2
SUMMARY OF PROJECT TRIP GENERATION
PROJECT: REDLANDS CARMAX

ITE Land Use	ITE Code	Unit	Trip Generation Rates [1]						
			Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Automobile Sales (Used)	841	KSF	27.060	1.619	0.511	2.130	1.763	1.988	3.750

Project Land Use	Quantity	Unit	Trip Generation Estimates						
			Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Automobile Sales (Used)	7.098	KSF	192	11	4	15	13	14	27
Total Project Trips			192	11	4	15	26	14	27

[1] Source: Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition

ATTACHMENT 3
PROJECT STUDY AREA
AND TRIP DISTRIBUTION RATES

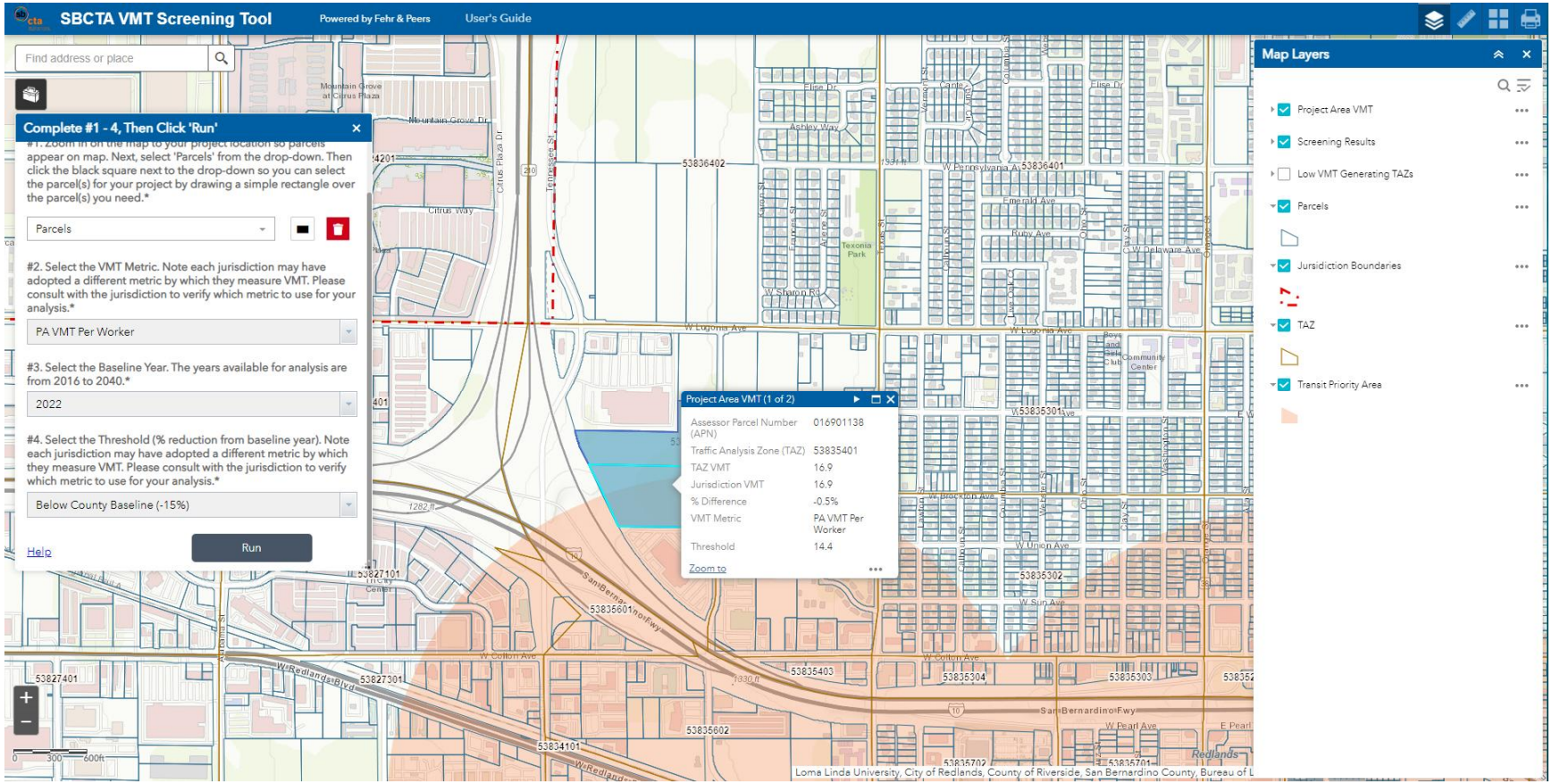


PROJECT SITE

XX% TRIP DISTRIBUTION

STUDY INTERSECTION

ATTACHMENT 4 - SBCTA VMT SCREENING TOOL



APPENDIX **B**

TRAFFIC COUNT DATA SHEETS

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Redlands
N/S: Tennessee Street
E/W: Lugonia Avenue
Weather: Clear

File Name : 01_RED_Ten_Lug AM
Site Code : 10823541
Start Date : 6/1/2023
Page No : 1

Groups Printed- Total Volume

	Tennessee Street Southbound				Lugonia Avenue Westbound				Tennessee Street Northbound				Lugonia Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	4	12	1	17	22	63	22	107	21	46	16	83	3	25	24	52	259
07:15 AM	13	16	1	30	34	75	24	133	18	39	22	79	6	37	24	67	309
07:30 AM	9	26	0	35	27	80	23	130	23	52	14	89	2	47	30	79	333
07:45 AM	14	25	1	40	28	93	20	141	23	42	16	81	5	55	50	110	372
Total	40	79	3	122	111	311	89	511	85	179	68	332	16	164	128	308	1273
08:00 AM	18	32	1	51	27	74	28	129	34	58	22	114	4	56	21	81	375
08:15 AM	10	29	1	40	21	90	22	133	32	55	11	98	7	51	43	101	372
08:30 AM	15	17	1	33	29	96	16	141	31	62	19	112	4	56	35	95	381
08:45 AM	12	25	1	38	26	81	25	132	42	43	11	96	3	51	52	106	372
Total	55	103	4	162	103	341	91	535	139	218	63	420	18	214	151	383	1500
Grand Total	95	182	7	284	214	652	180	1046	224	397	131	752	34	378	279	691	2773
Apprch %	33.5	64.1	2.5		20.5	62.3	17.2		29.8	52.8	17.4		4.9	54.7	40.4		
Total %	3.4	6.6	0.3	10.2	7.7	23.5	6.5	37.7	8.1	14.3	4.7	27.1	1.2	13.6	10.1	24.9	

	Tennessee Street Southbound				Lugonia Avenue Westbound				Tennessee Street Northbound				Lugonia Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	14	25	**1**	40	28	93	20	**141**	23	42	16	81	5	55	**50**	**110**	372
08:00 AM	**18**	**32**	1	**51**	27	74	**28**	129	**34**	58	**22**	**114**	4	**56**	21	81	375
08:15 AM	10	29	1	40	21	90	22	133	32	55	11	98	**7**	51	43	101	372
08:30 AM	15	17	1	33	**29**	**96**	16	141	31	**62**	19	112	4	56	35	95	**381**
Total Volume	57	103	4	164	105	353	86	544	120	217	68	405	20	218	149	387	1500
% App. Total	34.8	62.8	2.4		19.3	64.9	15.8		29.6	53.6	16.8		5.2	56.3	38.5		
PHF	.792	.805	1.00	.804	.905	.919	.768	.965	.882	.875	.773	.888	.714	.973	.745	.880	.984

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City of Redlands
N/S: Tennessee Street
E/W: Lugonia Avenue
Weather: Clear

File Name : 01_RED_Ten_Lug AM
Site Code : 10823541
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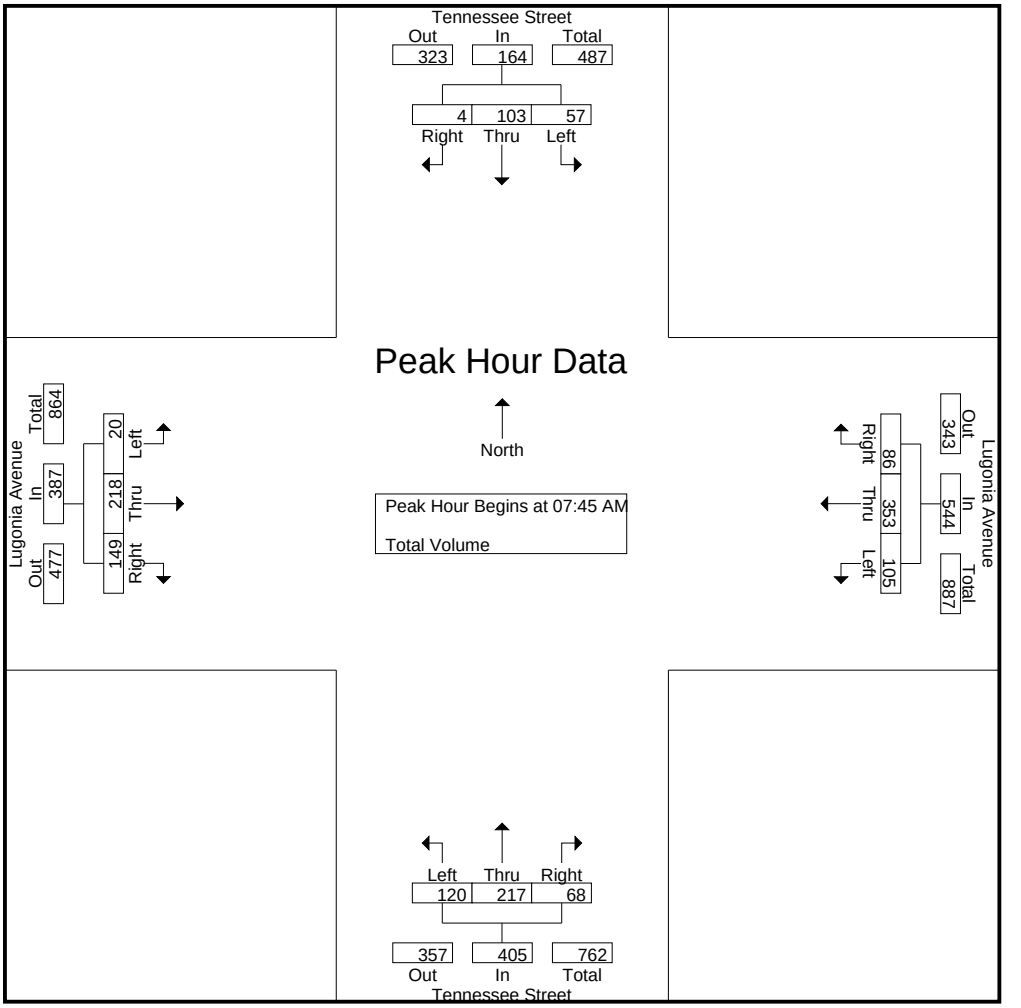

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM				07:45 AM				08:00 AM				07:45 AM			
+0 mins.	9	26	0	35	28	93	20	**141**	34	58	**22**	**114**	5	55	**50**	**110**
+15 mins.	14	25	**1**	40	27	74	**28**	129	32	55	11	98	4	**56**	21	81
+30 mins.	**18**	**32**	1	**51**	21	90	22	133	31	**62**	19	112	**7**	51	43	101
+45 mins.	10	29	1	40	**29**	**96**	16	141	**42**	43	11	96	4	56	35	95
Total Volume	51	112	3	166	105	353	86	544	139	218	63	420	20	218	149	387
% App. Total	30.7	67.5	1.8		19.3	64.9	15.8		33.1	51.9	15		5.2	56.3	38.5	
PHF	.708	.875	.750	.814	.905	.919	.768	.965	.827	.879	.716	.921	.714	.973	.745	.880

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N/S: Tennessee Street
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File Name : 01_RED_Ten_Lug PM
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Groups Printed- Total Volume

	Tennessee Street Southbound				Lugonia Avenue Westbound				Tennessee Street Northbound				Lugonia Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	20	17	1	38	17	123	39	179	89	79	52	220	14	191	115	320	757
04:15 PM	14	30	4	48	26	113	27	166	74	107	69	250	23	172	127	322	786
04:30 PM	21	26	7	54	21	100	32	153	72	80	52	204	17	179	106	302	713
04:45 PM	24	44	4	72	26	103	20	149	62	62	66	190	7	207	128	342	753
Total	79	117	16	212	90	439	118	647	297	328	239	864	61	749	476	1286	3009
05:00 PM	29	36	5	70	21	88	28	137	75	90	66	231	17	192	117	326	764
05:15 PM	24	37	6	67	18	119	34	171	90	114	53	257	12	181	113	306	801
05:30 PM	29	30	0	59	25	121	25	171	78	72	57	207	19	201	106	326	763
05:45 PM	15	24	0	39	30	118	32	180	73	54	54	181	12	182	105	299	699
Total	97	127	11	235	94	446	119	659	316	330	230	876	60	756	441	1257	3027
Grand Total	176	244	27	447	184	885	237	1306	613	658	469	1740	121	1505	917	2543	6036
Apprch %	39.4	54.6	6		14.1	67.8	18.1		35.2	37.8	27		4.8	59.2	36.1		
Total %	2.9	4	0.4	7.4	3	14.7	3.9	21.6	10.2	10.9	7.8	28.8	2	24.9	15.2	42.1	

	Tennessee Street Southbound				Lugonia Avenue Westbound				Tennessee Street Northbound				Lugonia Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	24	**44**	4	**72**	**26**	103	20	149	62	62	**66**	190	7	**207**	**128**	**342**	753
05:00 PM	**29**	36	5	70	21	88	28	137	75	90	66	231	17	192	117	326	764
05:15 PM	24	37	**6**	67	18	119	**34**	**171**	**90**	**114**	53	**257**	12	181	113	306	**801**
05:30 PM	29	30	0	59	25	**121**	25	171	78	72	57	207	**19**	201	106	326	763
Total Volume	106	147	15	268	90	431	107	628	305	338	242	885	55	781	464	1300	3081
% App. Total	39.6	54.9	5.6		14.3	68.6	17		34.5	38.2	27.3		4.2	60.1	35.7		
PHF	.914	.835	.625	.931	.865	.890	.787	.918	.847	.741	.917	.861	.724	.943	.906	.950	.962

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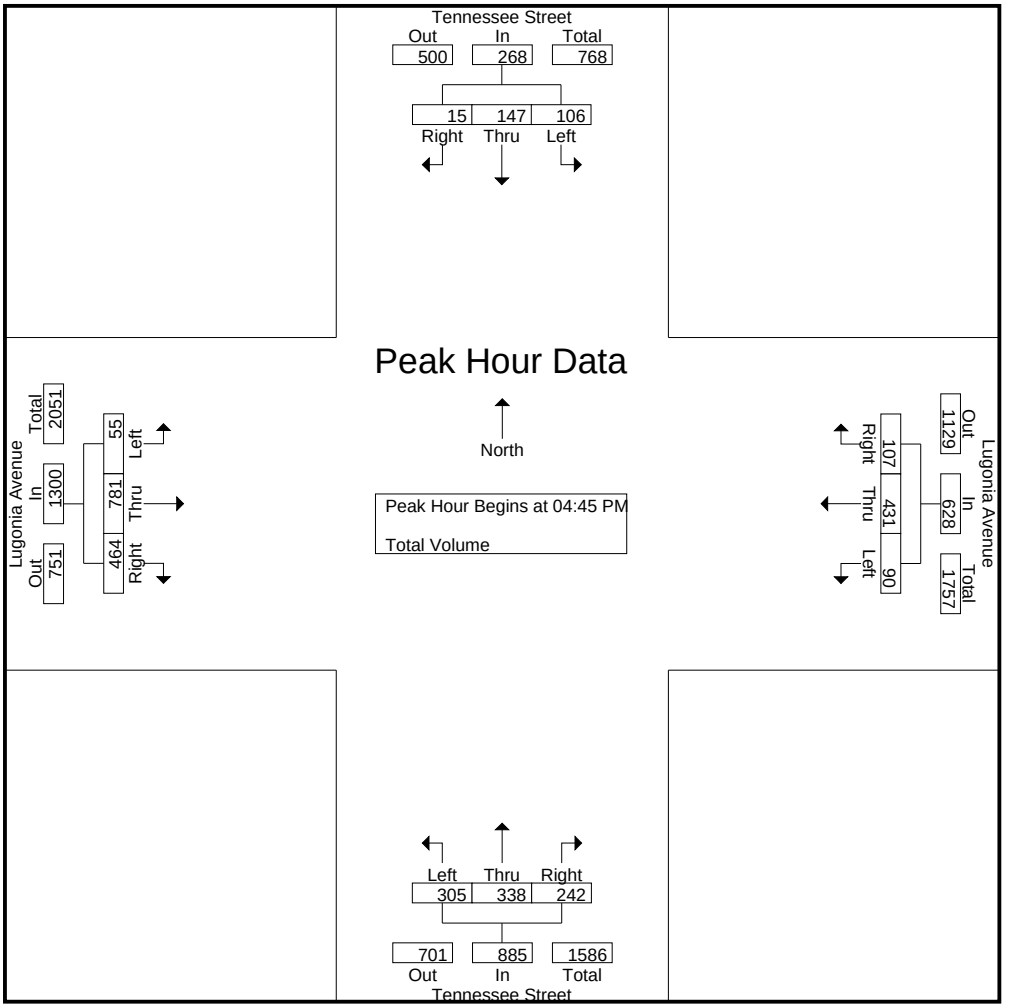

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				05:00 PM				04:45 PM				04:45 PM			
+0 mins.	24	**44**	4	**72**	21	88	28	137	62	62	**66**	190	7	**207**	**128**	**342**
+15 mins.	**29**	36	5	70	18	119	**34**	171	75	90	66	231	17	192	117	326
+30 mins.	24	37	**6**	67	25	**121**	25	171	**90**	**114**	53	**257**	12	181	113	306
+45 mins.	29	30	0	59	**30**	118	32	**180**	78	72	57	207	**19**	201	106	326
Total Volume	106	147	15	268	94	446	119	659	305	338	242	885	55	781	464	1300
% App. Total	39.6	54.9	5.6		14.3	67.7	18.1		34.5	38.2	27.3		4.2	60.1	35.7	
PHF	.914	.835	.625	.931	.783	.921	.875	.915	.847	.741	.917	.861	.724	.943	.906	.950

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City of Redlands
N/S: New York Street
E/W: Lugonia Avenue
Weather: Clear

File Name : 02_RED_NY_Lug AM
Site Code : 10823541
Start Date : 6/1/2023
Page No : 1

Groups Printed- Total Volume

	Lugonia Avenue Westbound			New York Street Northbound			Lugonia Avenue Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
07:00 AM	2	98	100	11	3	14	36	11	47	161
07:15 AM	6	117	123	19	5	24	48	14	62	209
07:30 AM	10	125	135	16	2	18	59	13	72	225
07:45 AM	10	117	127	22	2	24	61	28	89	240
Total	28	457	485	68	12	80	204	66	270	835
08:00 AM	10	112	122	35	9	44	66	30	96	262
08:15 AM	10	121	131	12	10	22	61	21	82	235
08:30 AM	11	130	141	21	3	24	68	22	90	255
08:45 AM	12	115	127	28	5	33	69	19	88	248
Total	43	478	521	96	27	123	264	92	356	1000
Grand Total	71	935	1006	164	39	203	468	158	626	1835
Apprch %	7.1	92.9		80.8	19.2		74.8	25.2		
Total %	3.9	51	54.8	8.9	2.1	11.1	25.5	8.6	34.1	

	Lugonia Avenue Westbound			New York Street Northbound			Lugonia Avenue Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:00 AM										
08:00 AM	10	112	122	**35**	9	**44**	66	**30**	**96**	**262**
08:15 AM	10	121	131	12	**10**	22	61	21	82	235
08:30 AM	11	**130**	**141**	21	3	24	68	22	90	255
08:45 AM	**12**	115	127	28	5	33	**69**	19	88	248
Total Volume	43	478	521	96	27	123	264	92	356	1000
% App. Total	8.3	91.7		78	22		74.2	25.8		
PHF	.896	.919	.924	.686	.675	.699	.957	.767	.927	.954

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Site Code : 10823541
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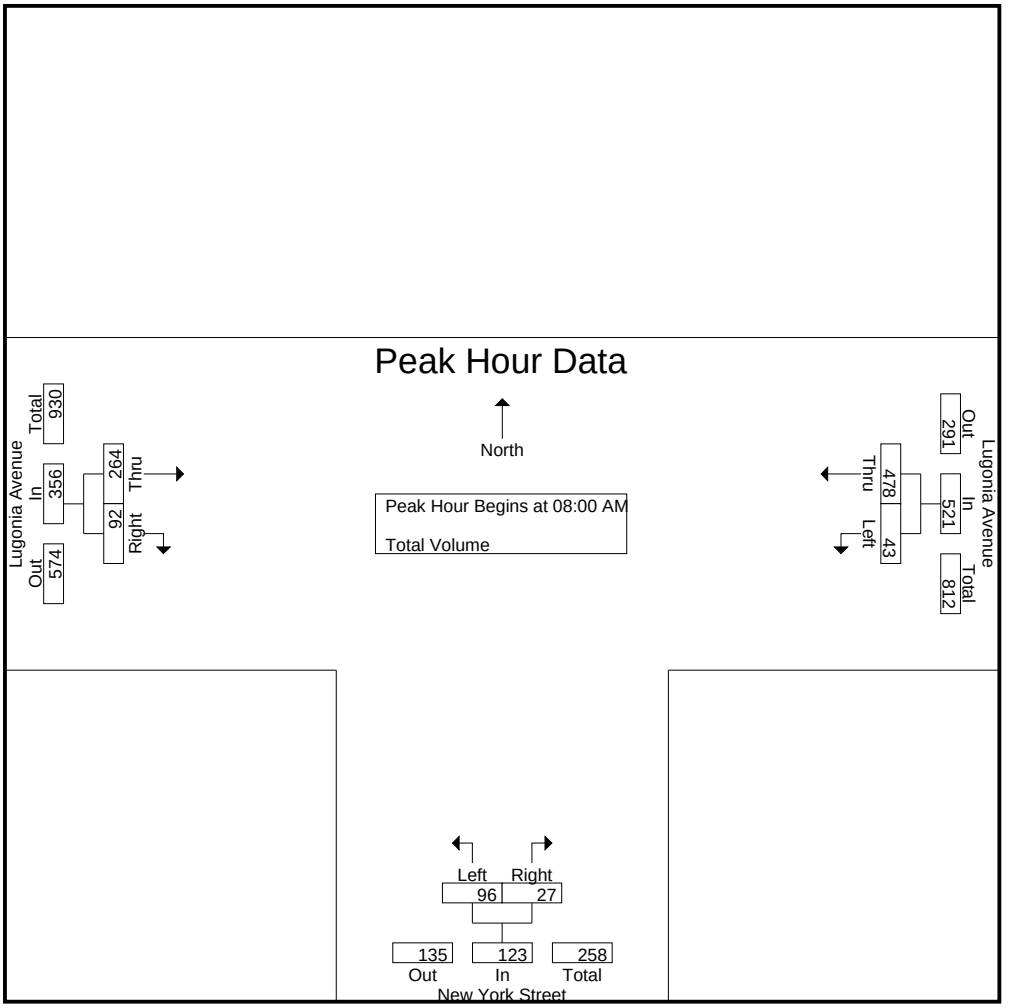

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM			08:00 AM			07:45 AM		
+0 mins.	10	117	127	**35**	9	**44**	61	28	89
+15 mins.	10	112	122	12	**10**	22	66	**30**	**96**
+30 mins.	10	121	131	21	3	24	61	21	82
+45 mins.	**11**	**130**	**141**	28	5	33	**68**	22	90
Total Volume	41	480	521	96	27	123	256	101	357
% App. Total	7.9	92.1		78	22		71.7	28.3	
PHF	.932	.923	.924	.686	.675	.699	.941	.842	.930

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City of Redlands
N/S: New York Street
E/W: Lugonia Avenue
Weather: Clear

File Name : 02_RED_NY_Lug PM
Site Code : 10823541
Start Date : 6/1/2023

Groups Printed- Total Volume

	Lugonia Avenue Westbound			New York Street Northbound			Lugonia Avenue Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
04:00 PM	6	128	134	45	22	67	234	53	287	488
04:15 PM	14	105	119	48	17	65	233	48	281	465
04:30 PM	8	113	121	35	19	54	224	50	274	449
04:45 PM	9	123	132	29	16	45	244	57	301	478
Total	37	469	506	157	74	231	935	208	1143	1880
05:00 PM	3	95	98	52	20	72	262	51	313	483
05:15 PM	8	133	141	61	23	84	240	57	297	522
05:30 PM	8	118	126	45	17	62	234	54	288	476
05:45 PM	12	121	133	46	17	63	218	42	260	456
Total	31	467	498	204	77	281	954	204	1158	1937
Grand Total	68	936	1004	361	151	512	1889	412	2301	3817
Apprch %	6.8	93.2		70.5	29.5		82.1	17.9		
Total %	1.8	24.5	26.3	9.5	4	13.4	49.5	10.8	60.3	

	Lugonia Avenue Westbound			New York Street Northbound			Lugonia Avenue Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:45 PM										
04:45 PM	**9**	123	132	29	16	45	244	**57**	301	478
05:00 PM	3	95	98	52	20	72	**262**	51	**313**	483
05:15 PM	8	**133**	**141**	**61**	**23**	**84**	240	57	297	**522**
05:30 PM	8	118	126	45	17	62	234	54	288	476
Total Volume	28	469	497	187	76	263	980	219	1199	1959
% App. Total	5.6	94.4		71.1	28.9		81.7	18.3		
PHF	.778	.882	.881	.766	.826	.783	.935	.961	.958	.938

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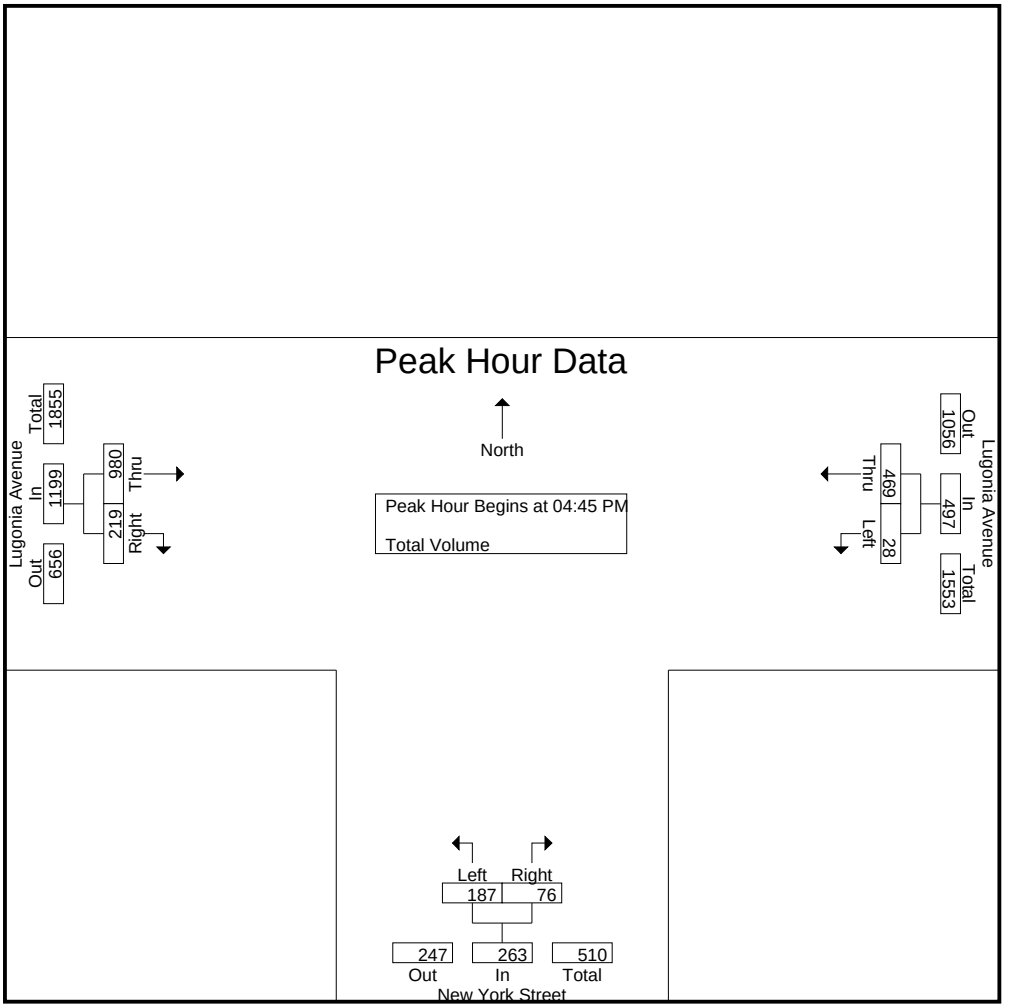
E/W: Lugonia Avenue
Weather: Clear

File Name : 02_RED_NY_Lug PM
Site Code : 10823541
Start Date : 6/1/2023



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM			05:00 PM			04:45 PM		
+0 mins.	6	**128**	**134**	52	20	72	244	**57**	301
+15 mins.	**14**	105	119	**61**	**23**	**84**	**262**	51	**313**
+30 mins.	8	113	121	45	17	62	240	57	297
+45 mins.	9	123	132	46	17	63	234	54	288
Total Volume	37	469	506	204	77	281	980	219	1199
% App. Total	7.3	92.7		72.6	27.4		81.7	18.3	
PHF	.661	.916	.944	.836	.837	.836	.935	.961	.958

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City of Redlands
N/S: Tennessee Street
E/W: I-10 Westbound Ramps
Weather: Clear

File Name : 03_RED_Ten_10W AM
Site Code : 10823541
Start Date : 6/1/2023
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Groups Printed- Total Volume

	Tennessee Street Southbound				I-10 Westbound Off Ramp Westbound				Tennessee Street Northbound				I-10 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	52	21	73	38	0	21	59	36	72	0	108	0	0	0	0	240
07:15 AM	0	55	27	82	41	1	28	70	57	64	0	121	0	0	0	0	273
07:30 AM	0	68	27	95	44	1	23	68	64	92	0	156	0	0	0	0	319
07:45 AM	0	83	27	110	46	0	36	82	50	70	0	120	0	0	0	0	312
Total	0	258	102	360	169	2	108	279	207	298	0	505	0	0	0	0	1144
08:00 AM	0	67	15	82	32	2	33	67	36	116	0	152	0	0	0	0	301
08:15 AM	0	90	25	115	37	0	33	70	57	82	0	139	0	0	0	0	324
08:30 AM	0	69	20	89	40	3	22	65	55	101	0	156	0	0	0	0	310
08:45 AM	0	83	28	111	52	1	40	93	59	85	0	144	0	0	0	0	348
Total	0	309	88	397	161	6	128	295	207	384	0	591	0	0	0	0	1283
Grand Total	0	567	190	757	330	8	236	574	414	682	0	1096	0	0	0	0	2427
Apprch %	0	74.9	25.1		57.5	1.4	41.1		37.8	62.2	0		0	0	0		
Total %	0	23.4	7.8	31.2	13.6	0.3	9.7	23.7	17.1	28.1	0	45.2	0	0	0	0	

	Tennessee Street Southbound				I-10 Westbound Off Ramp Westbound				Tennessee Street Northbound				I-10 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	0	67	15	82	32	2	33	67	36	**116**	0	152	0	0	0	0	301
08:15 AM	0	**90**	25	**115**	37	0	33	70	57	82	0	139	0	0	0	0	324
08:30 AM	0	69	20	89	40	**3**	22	65	55	101	0	**156**	0	0	0	0	310
08:45 AM	0	83	**28**	111	**52**	1	**40**	**93**	**59**	85	0	144	0	0	0	0	**348**
Total Volume	0	309	88	397	161	6	128	295	207	384	0	591	0	0	0	0	1283
% App. Total	0	77.8	22.2		54.6	2	43.4		35	65	0		0	0	0		
PHF	.000	.858	.786	.863	.774	.500	.800	.793	.877	.828	.000	.947	.000	.000	.000	.000	.922

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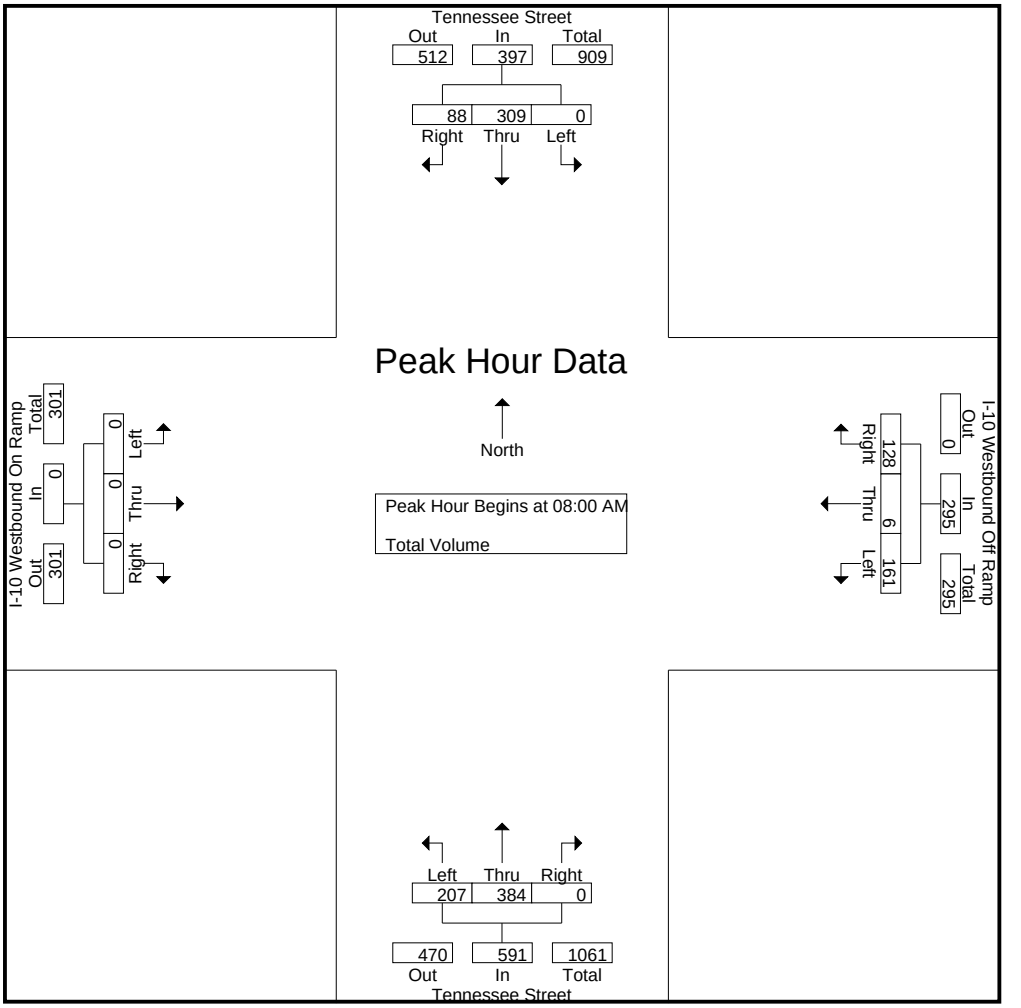

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM				08:00 AM				08:00 AM				07:00 AM			
+0 mins.	0	68	**27**	95	32	2	33	67	36	**116**	0	152	0	0	0	0
+15 mins.	0	83	27	110	37	0	33	70	57	82	0	139	0	0	0	0
+30 mins.	0	67	15	82	40	**3**	22	65	55	101	0	**156**	0	0	0	0
+45 mins.	0	**90**	25	**115**	**52**	1	**40**	**93**	**59**	85	0	144	0	0	0	0
Total Volume	0	308	94	402	161	6	128	295	207	384	0	591	0	0	0	0
% App. Total	0	76.6	23.4		54.6	2	43.4		35	65	0		0	0	0	
PHF	.000	.856	.870	.874	.774	.500	.800	.793	.877	.828	.000	.947	.000	.000	.000	.000

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City of Redlands
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Weather: Clear

File Name : 03_RED_Ten_10W PM
Site Code : 10823541
Start Date : 6/1/2023
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Groups Printed- Total Volume

	Tennessee Street Southbound				I-10 Westbound Off Ramp Westbound				Tennessee Street Northbound				I-10 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	132	21	153	30	6	82	118	49	153	0	202	0	0	0	0	473
04:15 PM	0	161	21	182	26	4	101	131	43	168	0	211	0	0	0	0	524
04:30 PM	0	153	12	165	32	1	73	106	62	156	0	218	0	0	0	0	489
04:45 PM	0	168	30	198	48	1	55	104	48	164	0	212	0	0	0	0	514
Total	0	614	84	698	136	12	311	459	202	641	0	843	0	0	0	0	2000
05:00 PM	0	165	18	183	21	3	48	72	49	191	0	240	0	0	0	0	495
05:15 PM	0	145	23	168	31	3	83	117	57	190	0	247	0	0	0	0	532
05:30 PM	0	145	20	165	25	1	66	92	41	151	0	192	0	0	0	0	449
05:45 PM	0	133	23	156	38	3	57	98	42	147	0	189	0	0	0	0	443
Total	0	588	84	672	115	10	254	379	189	679	0	868	0	0	0	0	1919
Grand Total	0	1202	168	1370	251	22	565	838	391	1320	0	1711	0	0	0	0	3919
Apprch %	0	87.7	12.3		30	2.6	67.4		22.9	77.1	0		0	0	0		
Total %	0	30.7	4.3	35	6.4	0.6	14.4	21.4	10	33.7	0	43.7	0	0	0	0	

	Tennessee Street Southbound				I-10 Westbound Off Ramp Westbound				Tennessee Street Northbound				I-10 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	153	12	165	32	1	73	106	**62**	156	0	218	0	0	0	0	489
04:45 PM	0	**168**	**30**	**198**	**48**	1	55	104	48	164	0	212	0	0	0	0	514
05:00 PM	0	165	18	183	21	**3**	48	72	49	**191**	0	240	0	0	0	0	495
05:15 PM	0	145	23	168	31	3	**83**	**117**	57	190	0	**247**	0	0	0	0	**532**
Total Volume	0	631	83	714	132	8	259	399	216	701	0	917	0	0	0	0	2030
% App. Total	0	88.4	11.6		33.1	2	64.9		23.6	76.4	0		0	0	0		
PHF	.000	.939	.692	.902	.688	.667	.780	.853	.871	.918	.000	.928	.000	.000	.000	.000	.954

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City of Redlands
N/S: Tennessee Street
E/W: I-10 Westbound Ramps
Weather: Clear

File Name : 03_RED_Ten_10W PM
Site Code : 10823541
Start Date : 6/1/2023
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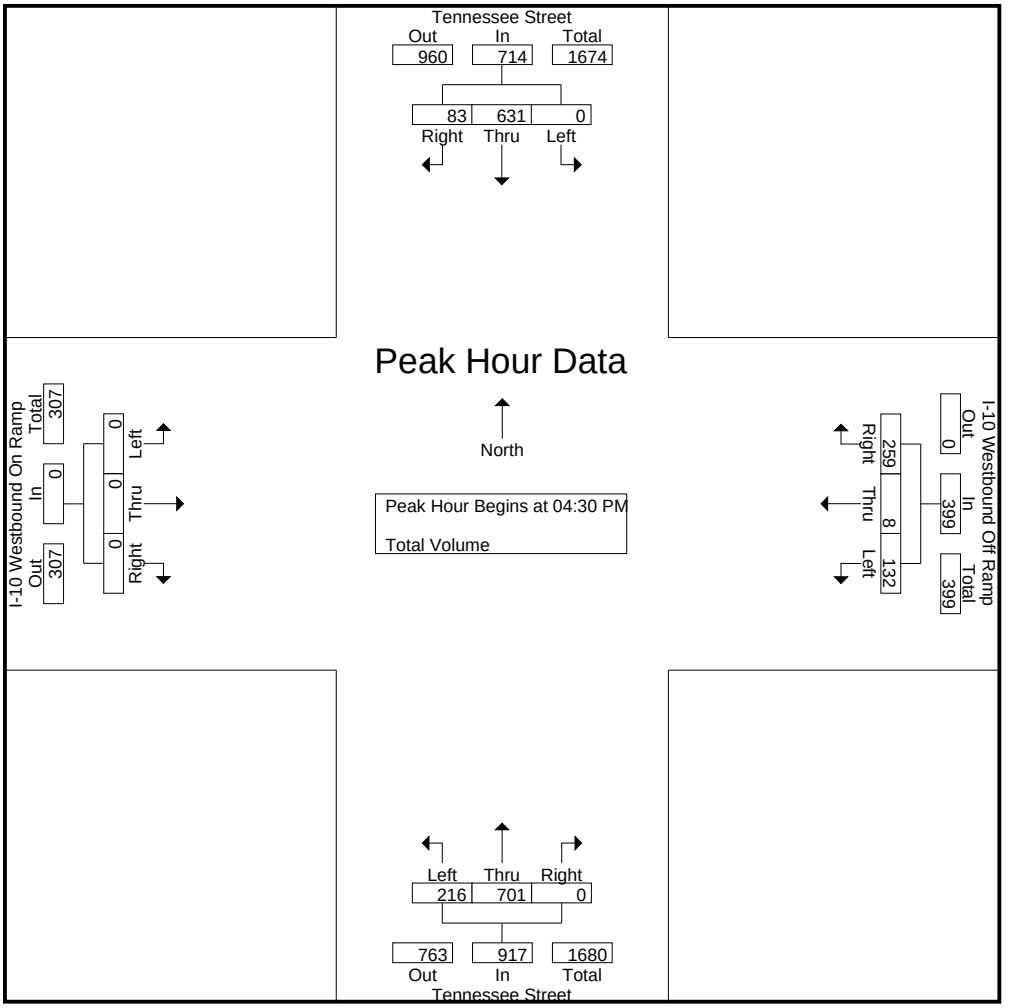

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:15 PM				04:00 PM				04:30 PM				04:00 PM			
+0 mins.	0	161	21	182	30	**6**	82	118	**62**	156	0	218	0	0	0	0
+15 mins.	0	153	12	165	26	4	**101**	**131**	48	164	0	212	0	0	0	0
+30 mins.	0	**168**	**30**	**198**	32	1	73	106	49	**191**	0	240	0	0	0	0
+45 mins.	0	165	18	183	**48**	1	55	104	57	190	0	**247**	0	0	0	0
Total Volume	0	647	81	728	136	12	311	459	216	701	0	917	0	0	0	0
% App. Total	0	88.9	11.1		29.6	2.6	67.8		23.6	76.4	0		0	0	0	
PHF	.000	.963	.675	.919	.708	.500	.770	.876	.871	.918	.000	.928	.000	.000	.000	.000

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City of Redlands
N/S: Tennessee Street
E/W: I-10 Eastbound Ramps
Weather: Clear

File Name : 04_RED_Ten_10E AM
Site Code : 10823541
Start Date : 6/1/2023
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Groups Printed- Total Volume

	Tennessee Street Southbound				I-10 Eastbound On Ramp Westbound				Tennessee Street Northbound				I-10 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	17	74	0	91	0	0	0	0	0	93	25	118	24	26	58	108	317
07:15 AM	15	81	0	96	0	0	0	0	0	90	22	112	30	34	76	140	348
07:30 AM	24	88	0	112	0	0	0	0	0	118	23	141	28	28	94	150	403
07:45 AM	23	105	0	128	0	0	0	0	0	113	33	146	18	52	102	172	446
Total	79	348	0	427	0	0	0	0	0	414	103	517	100	140	330	570	1514
08:00 AM	31	70	0	101	0	0	0	0	0	120	38	158	37	36	90	163	422
08:15 AM	36	86	0	122	0	0	0	0	0	106	28	134	21	61	97	179	435
08:30 AM	34	80	0	114	0	0	0	0	0	122	24	146	28	41	69	138	398
08:45 AM	20	115	0	135	0	0	0	0	0	113	29	142	28	42	92	162	439
Total	121	351	0	472	0	0	0	0	0	461	119	580	114	180	348	642	1694
Grand Total	200	699	0	899	0	0	0	0	0	875	222	1097	214	320	678	1212	3208
Apprch %	22.2	77.8	0		0	0	0		0	79.8	20.2		17.7	26.4	55.9		
Total %	6.2	21.8	0	28	0	0	0	0	0	27.3	6.9	34.2	6.7	10	21.1	37.8	

	Tennessee Street Southbound				I-10 Eastbound On Ramp Westbound				Tennessee Street Northbound				I-10 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	24	88	0	112	0	0	0	0	0	118	23	141	28	28	94	150	403
07:45 AM	23	**105**	0	**128**	0	0	0	0	0	113	33	146	18	52	**102**	172	**446**
08:00 AM	31	70	0	101	0	0	0	0	0	**120**	**38**	**158**	**37**	36	90	163	422
08:15 AM	**36**	86	0	122	0	0	0	0	0	106	28	134	21	**61**	97	**179**	435
Total Volume	114	349	0	463	0	0	0	0	0	457	122	579	104	177	383	664	1706
% App. Total	24.6	75.4	0		0	0	0		0	78.9	21.1		15.7	26.7	57.7		
PHF	.792	.831	.000	.904	.000	.000	.000	.000	.000	.952	.803	.916	.703	.725	.939	.927	.956

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File Name : 04_RED_Ten_10E AM
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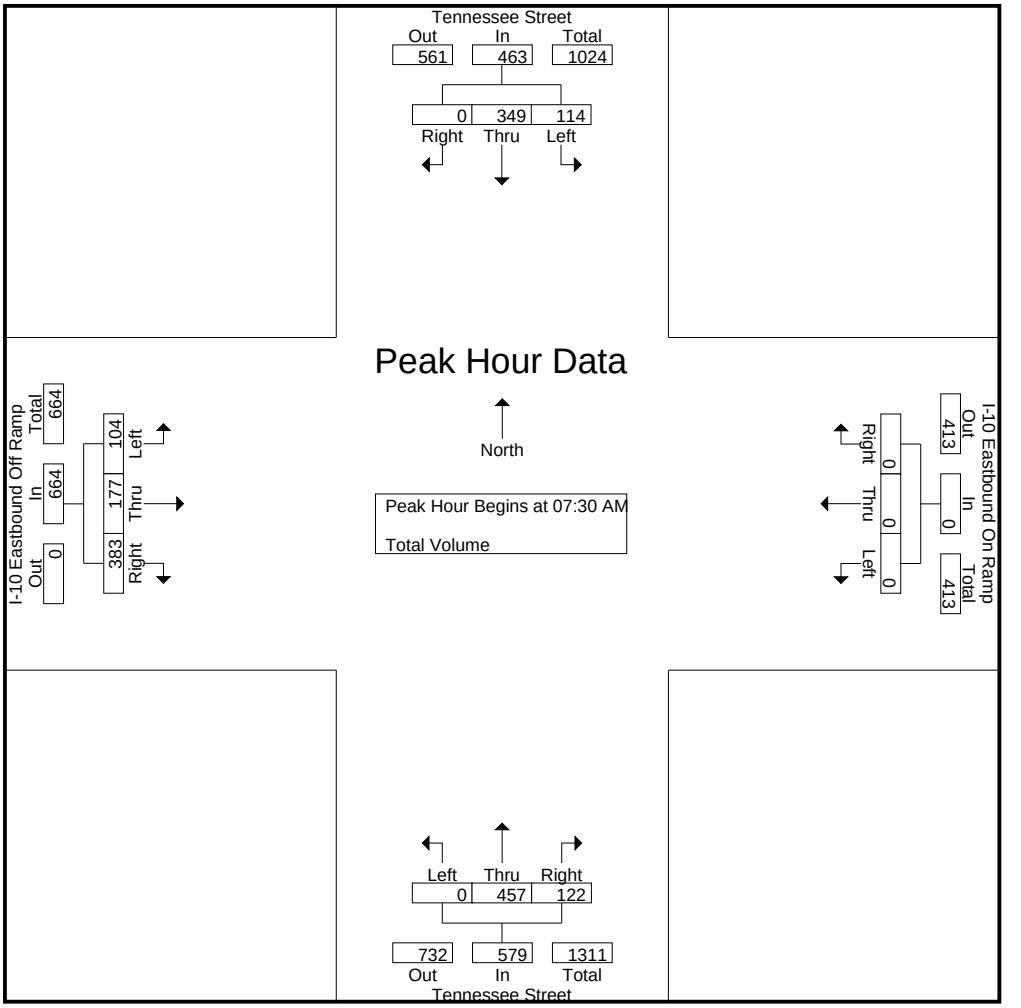

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	08:00 AM				07:00 AM				07:45 AM				07:30 AM			
+0 mins.	31	70	0	101	0	0	0	0	0	113	33	146	28	28	94	150
+15 mins.	**36**	86	0	122	0	0	0	0	0	120	**38**	**158**	18	52	**102**	172
+30 mins.	34	80	0	114	0	0	0	0	0	106	28	134	**37**	36	90	163
+45 mins.	20	**115**	0	**135**	0	0	0	0	0	**122**	24	146	21	**61**	97	**179**
Total Volume	121	351	0	472	0	0	0	0	0	461	123	584	104	177	383	664
% App. Total	25.6	74.4	0		0	0	0		0	78.9	21.1		15.7	26.7	57.7	
PHF	.840	.763	.000	.874	.000	.000	.000	.000	.000	.945	.809	.924	.703	.725	.939	.927

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City of Redlands
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Weather: Clear

File Name : 04_RED_Ten_10E PM
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Groups Printed- Total Volume

	Tennessee Street Southbound				I-10 Eastbound On Ramp Westbound				Tennessee Street Northbound				I-10 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	57	106	0	163	0	0	0	0	0	138	52	190	64	89	80	233	586
04:15 PM	68	115	0	183	0	0	0	0	0	141	34	175	68	77	78	223	581
04:30 PM	58	118	0	176	0	0	0	0	0	159	43	202	64	96	80	240	618
04:45 PM	72	148	0	220	0	0	0	0	0	126	31	157	77	114	87	278	655
Total	255	487	0	742	0	0	0	0	0	564	160	724	273	376	325	974	2440
05:00 PM	69	118	0	187	0	0	0	0	0	158	34	192	85	83	75	243	622
05:15 PM	64	119	0	183	0	0	0	0	0	174	41	215	71	109	87	267	665
05:30 PM	51	123	0	174	0	0	0	0	0	127	40	167	60	87	89	236	577
05:45 PM	48	128	0	176	0	0	0	0	0	131	49	180	59	79	92	230	586
Total	232	488	0	720	0	0	0	0	0	590	164	754	275	358	343	976	2450
Grand Total	487	975	0	1462	0	0	0	0	0	1154	324	1478	548	734	668	1950	4890
Apprch %	33.3	66.7	0		0	0	0		0	78.1	21.9		28.1	37.6	34.3		
Total %	10	19.9	0	29.9	0	0	0	0	0	23.6	6.6	30.2	11.2	15	13.7	39.9	

	Tennessee Street Southbound				I-10 Eastbound On Ramp Westbound				Tennessee Street Northbound				I-10 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	58	118	0	176	0	0	0	0	0	159	**43**	202	64	96	80	240	618
04:45 PM	**72**	**148**	0	**220**	0	0	0	0	0	126	31	157	77	**114**	**87**	**278**	655
05:00 PM	69	118	0	187	0	0	0	0	0	158	34	192	**85**	83	75	243	622
05:15 PM	64	119	0	183	0	0	0	0	0	**174**	41	**215**	71	109	87	267	**665**
Total Volume	263	503	0	766	0	0	0	0	0	617	149	766	297	402	329	1028	2560
% App. Total	34.3	65.7	0		0	0	0		0	80.5	19.5		28.9	39.1	32		
PHF	.913	.850	.000	.870	.000	.000	.000	.000	.000	.886	.866	.891	.874	.882	.945	.924	.962

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File Name : 04_RED_Ten_10E PM
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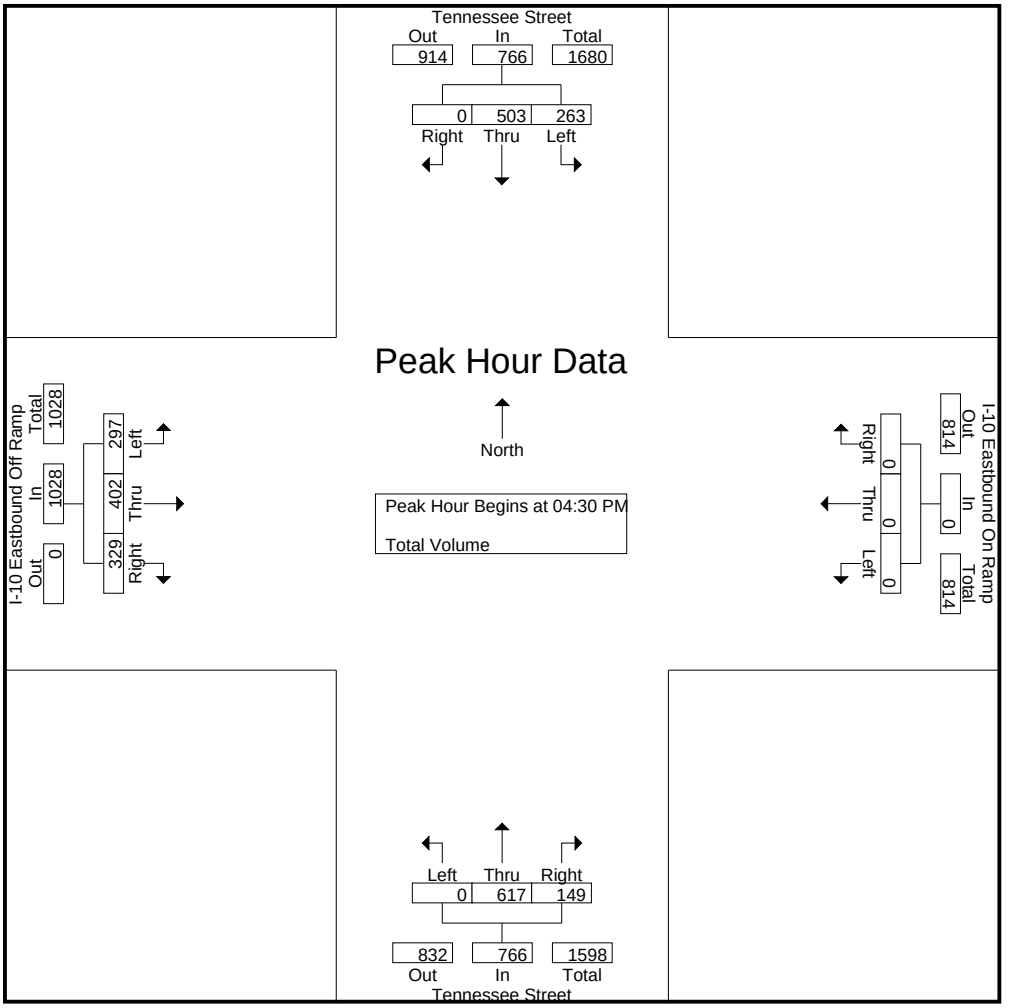

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:15 PM				04:00 PM				04:30 PM				04:30 PM			
+0 mins.	68	115	0	183	0	0	0	0	0	159	**43**	202	64	96	80	240
+15 mins.	58	118	0	176	0	0	0	0	0	126	31	157	77	**114**	**87**	**278**
+30 mins.	**72**	**148**	0	**220**	0	0	0	0	0	158	34	192	**85**	83	75	243
+45 mins.	69	118	0	187	0	0	0	0	0	**174**	41	**215**	71	109	87	267
Total Volume	267	499	0	766	0	0	0	0	0	617	149	766	297	402	329	1028
% App. Total	34.9	65.1	0		0	0	0		0	80.5	19.5		28.9	39.1	32	
PHF	.927	.843	.000	.870	.000	.000	.000	.000	.000	.886	.866	.891	.874	.882	.945	.924

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City of Redlands
N/S: Tennessee Street
E/W: Colton Avenue
Weather: Clear

File Name : 05_RED_Ten_Col AM
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Start Date : 6/1/2023
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Groups Printed- Total Volume

	Tennessee Street Southbound				Colton Avenue Westbound				Tennessee Street Northbound				Colton Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	24	84	18	126	4	18	16	38	3	95	9	107	7	5	2	14	285
07:15 AM	26	104	27	157	3	18	15	36	3	88	12	103	11	14	3	28	324
07:30 AM	26	126	20	172	8	37	13	58	7	117	9	133	11	18	2	31	394
07:45 AM	40	131	29	200	10	48	15	73	7	113	10	130	16	21	4	41	444
Total	116	445	94	655	25	121	59	205	20	413	40	473	45	58	11	114	1447
08:00 AM	27	95	38	160	6	34	32	72	12	125	14	151	8	30	4	42	425
08:15 AM	16	123	39	178	8	51	36	95	9	91	6	106	6	26	9	41	420
08:30 AM	29	94	27	150	11	52	23	86	23	106	12	141	20	38	7	65	442
08:45 AM	26	110	60	196	13	63	17	93	9	100	9	118	26	36	9	71	478
Total	98	422	164	684	38	200	108	346	53	422	41	516	60	130	29	219	1765
Grand Total	214	867	258	1339	63	321	167	551	73	835	81	989	105	188	40	333	3212
Apprch %	16	64.7	19.3		11.4	58.3	30.3		7.4	84.4	8.2		31.5	56.5	12		
Total %	6.7	27	8	41.7	2	10	5.2	17.2	2.3	26	2.5	30.8	3.3	5.9	1.2	10.4	

	Tennessee Street Southbound				Colton Avenue Westbound				Tennessee Street Northbound				Colton Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	27	95	38	160	6	34	32	72	12	**125**	**14**	**151**	8	30	4	42	425
08:15 AM	16	**123**	39	178	8	51	**36**	**95**	9	91	6	106	6	26	**9**	41	420
08:30 AM	**29**	94	27	150	11	52	23	86	**23**	106	12	141	20	**38**	7	65	442
08:45 AM	26	110	**60**	**196**	**13**	**63**	17	93	9	100	9	118	**26**	36	9	**71**	**478**
Total Volume	98	422	164	684	38	200	108	346	53	422	41	516	60	130	29	219	1765
% App. Total	14.3	61.7	24		11	57.8	31.2		10.3	81.8	7.9		27.4	59.4	13.2		
PHF	.845	.858	.683	.872	.731	.794	.750	.911	.576	.844	.732	.854	.577	.855	.806	.771	.923

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File Name : 05_RED_Ten_Col AM
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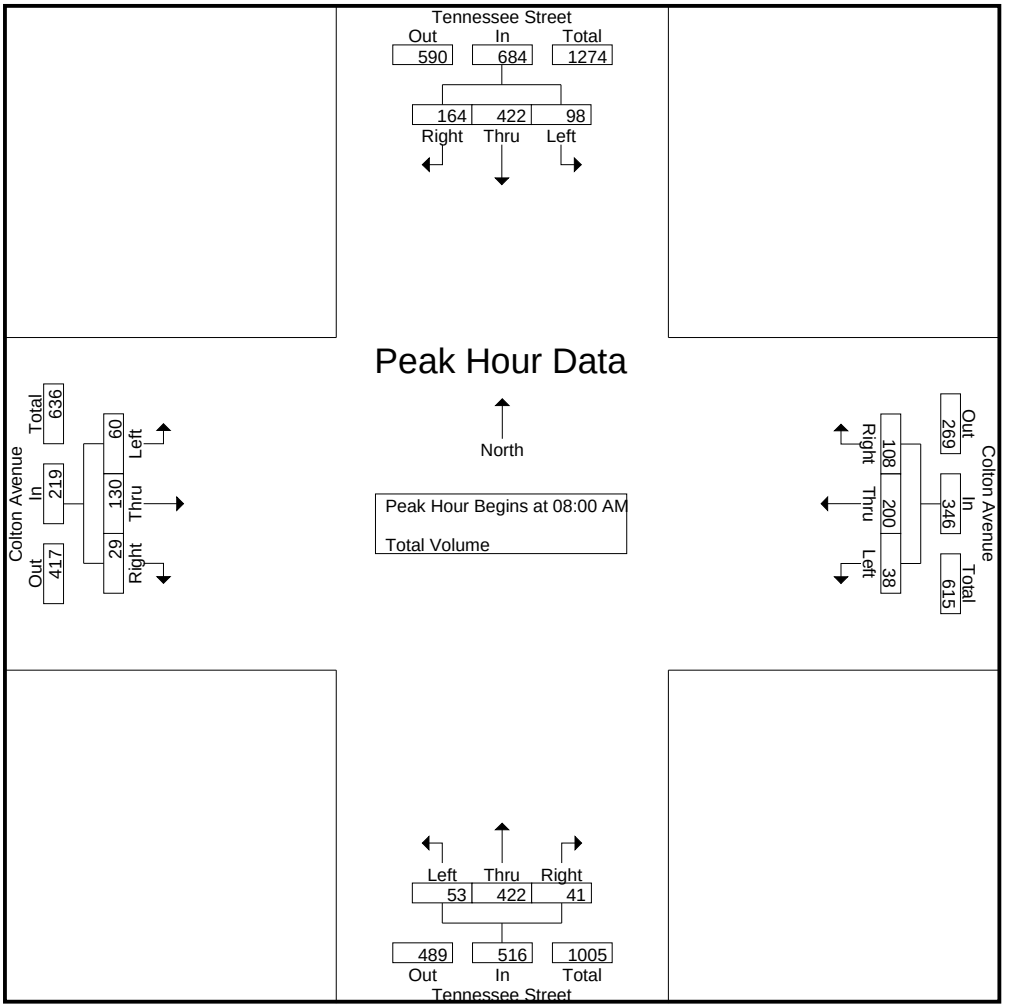

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM				08:00 AM				07:45 AM				08:00 AM			
+0 mins.	26	126	20	172	6	34	32	72	7	113	10	130	8	30	4	42
+15 mins.	**40**	**131**	29	**200**	8	51	**36**	**95**	12	**125**	**14**	**151**	6	26	**9**	41
+30 mins.	27	95	38	160	11	52	23	86	9	91	6	106	20	**38**	7	65
+45 mins.	16	123	**39**	178	**13**	**63**	17	93	**23**	106	12	141	**26**	36	9	**71**
Total Volume	109	475	126	710	38	200	108	346	51	435	42	528	60	130	29	219
% App. Total	15.4	66.9	17.7		11	57.8	31.2		9.7	82.4	8		27.4	59.4	13.2	
PHF	.681	.906	.808	.888	.731	.794	.750	.911	.554	.870	.750	.874	.577	.855	.806	.771

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City of Redlands
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Groups Printed- Total Volume

	Tennessee Street Southbound				Colton Avenue Westbound				Tennessee Street Northbound				Colton Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	39	93	34	166	19	81	30	130	14	131	16	161	40	132	17	189	646
04:15 PM	61	116	39	216	12	75	30	117	21	108	13	142	32	107	12	151	626
04:30 PM	58	108	30	196	11	68	27	106	11	115	18	144	44	82	21	147	593
04:45 PM	41	139	52	232	8	69	27	104	25	104	21	150	38	116	12	166	652
Total	199	456	155	810	50	293	114	457	71	458	68	597	154	437	62	653	2517
05:00 PM	48	112	36	196	15	66	35	116	17	128	18	163	37	119	15	171	646
05:15 PM	58	109	35	202	13	71	32	116	14	129	17	160	35	100	19	154	632
05:30 PM	59	110	31	200	12	76	32	120	11	91	24	126	39	137	11	187	633
05:45 PM	49	130	38	217	13	55	27	95	14	102	16	132	48	114	11	173	617
Total	214	461	140	815	53	268	126	447	56	450	75	581	159	470	56	685	2528
Grand Total	413	917	295	1625	103	561	240	904	127	908	143	1178	313	907	118	1338	5045
Apprch %	25.4	56.4	18.2		11.4	62.1	26.5		10.8	77.1	12.1		23.4	67.8	8.8		
Total %	8.2	18.2	5.8	32.2	2	11.1	4.8	17.9	2.5	18	2.8	23.3	6.2	18	2.3	26.5	

	Tennessee Street Southbound				Colton Avenue Westbound				Tennessee Street Northbound				Colton Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	41	**139**	**52**	**232**	8	69	27	104	**25**	104	21	150	38	116	12	166	**652**
05:00 PM	48	112	36	196	**15**	66	**35**	116	17	128	18	**163**	37	119	15	171	646
05:15 PM	58	109	35	202	13	71	32	116	14	**129**	17	160	35	100	**19**	154	632
05:30 PM	**59**	110	31	200	12	**76**	32	**120**	11	91	**24**	126	**39**	**137**	11	**187**	633
Total Volume	206	470	154	830	48	282	126	456	67	452	80	599	149	472	57	678	2563
% App. Total	24.8	56.6	18.6		10.5	61.8	27.6		11.2	75.5	13.4		22	69.6	8.4		
PHF	.873	.845	.740	.894	.800	.928	.900	.950	.670	.876	.833	.919	.955	.861	.750	.906	.983

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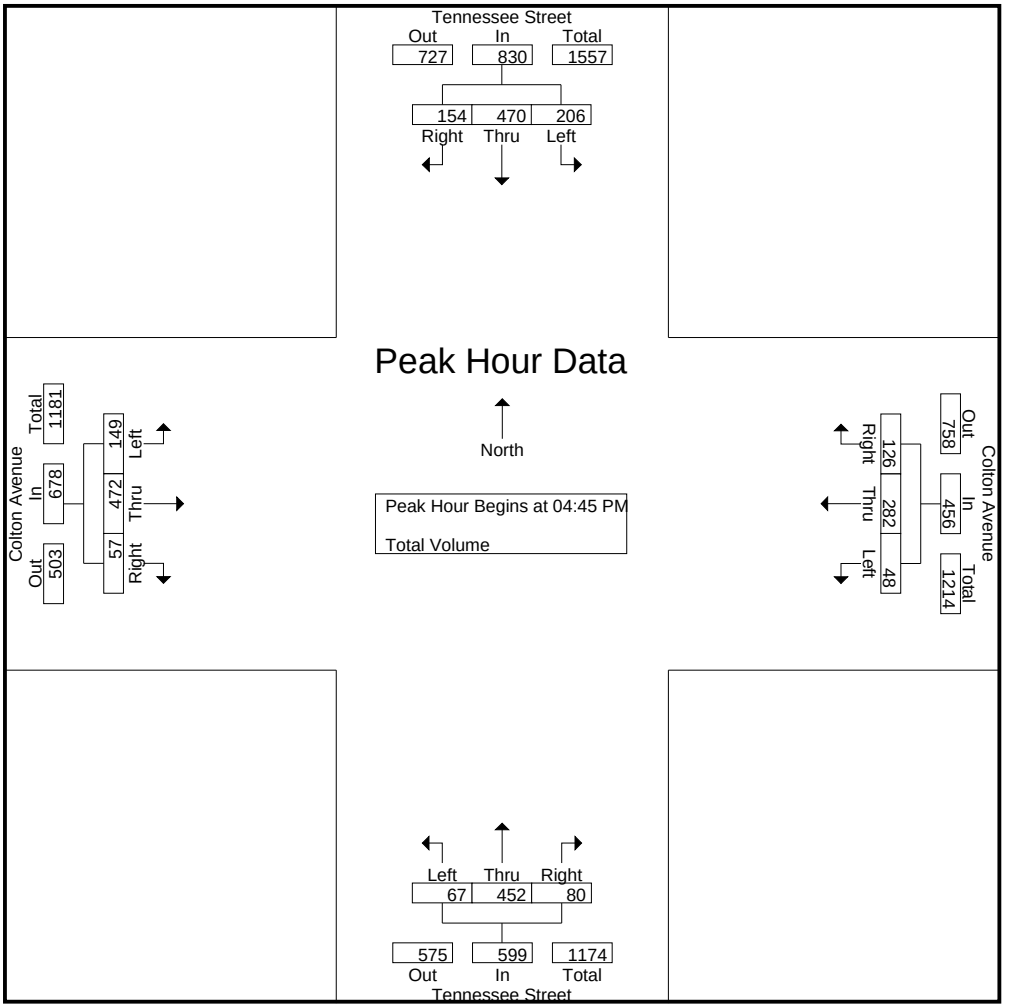

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:15 PM				04:00 PM				04:30 PM				05:00 PM			
+0 mins.	**61**	116	39	216	**19**	**81**	**30**	**130**	11	115	18	144	37	119	15	171
+15 mins.	58	108	30	196	12	75	30	117	**25**	104	**21**	150	35	100	**19**	154
+30 mins.	41	**139**	**52**	**232**	11	68	27	106	17	128	18	**163**	39	**137**	11	**187**
+45 mins.	48	112	36	196	8	69	27	104	14	**129**	17	160	**48**	114	11	173
Total Volume	208	475	157	840	50	293	114	457	67	476	74	617	159	470	56	685
% App. Total	24.8	56.5	18.7		10.9	64.1	24.9		10.9	77.1	12		23.2	68.6	8.2	
PHF	.852	.854	.755	.905	.658	.904	.950	.879	.670	.922	.881	.946	.828	.858	.737	.916

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Corona, CA 92878
(951) 268-6268

City of Redlands
N/S: New York Street
E/W: Colton Avenue
Weather: Clear

File Name : 06_RED_NY_Col AM
Site Code : 10823541
Start Date : 6/1/2023
Page No : 1

Groups Printed- Total Volume

	New York Street Southbound				Colton Avenue Westbound				New York Street Northbound				Colton Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	1	3	4	8	1	21	10	32	5	3	0	8	7	15	2	24	72
07:15 AM	0	3	12	15	1	27	6	34	2	8	1	11	12	35	2	49	109
07:30 AM	1	6	15	22	0	40	7	47	2	3	1	6	10	32	6	48	123
07:45 AM	6	8	15	29	2	58	13	73	10	7	1	18	19	31	7	57	177
Total	8	20	46	74	4	146	36	186	19	21	3	43	48	113	17	178	481
08:00 AM	5	8	11	24	2	42	16	60	11	14	4	29	14	44	17	75	188
08:15 AM	4	6	17	27	4	57	6	67	22	10	1	33	2	45	11	58	185
08:30 AM	2	12	18	32	2	52	17	71	10	6	1	17	11	42	9	62	182
08:45 AM	5	4	15	24	0	66	16	82	13	12	3	28	7	42	3	52	186
Total	16	30	61	107	8	217	55	280	56	42	9	107	34	173	40	247	741
Grand Total	24	50	107	181	12	363	91	466	75	63	12	150	82	286	57	425	1222
Apprch %	13.3	27.6	59.1		2.6	77.9	19.5		50	42	8		19.3	67.3	13.4		
Total %	2	4.1	8.8	14.8	1	29.7	7.4	38.1	6.1	5.2	1	12.3	6.7	23.4	4.7	34.8	

	New York Street Southbound				Colton Avenue Westbound				New York Street Northbound				Colton Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	**5**	8	11	24	2	42	16	60	11	**14**	**4**	29	**14**	44	**17**	**75**	**188**
08:15 AM	4	6	17	27	**4**	57	6	67	**22**	10	1	**33**	2	**45**	11	58	185
08:30 AM	2	**12**	**18**	**32**	2	52	**17**	71	10	6	1	17	11	42	9	62	182
08:45 AM	5	4	15	24	0	**66**	16	**82**	13	12	3	28	7	42	3	52	186
Total Volume	16	30	61	107	8	217	55	280	56	42	9	107	34	173	40	247	741
% App. Total	15	28	57		2.9	77.5	19.6		52.3	39.3	8.4		13.8	70	16.2		
PHF	.800	.625	.847	.836	.500	.822	.809	.854	.636	.750	.563	.811	.607	.961	.588	.823	.985

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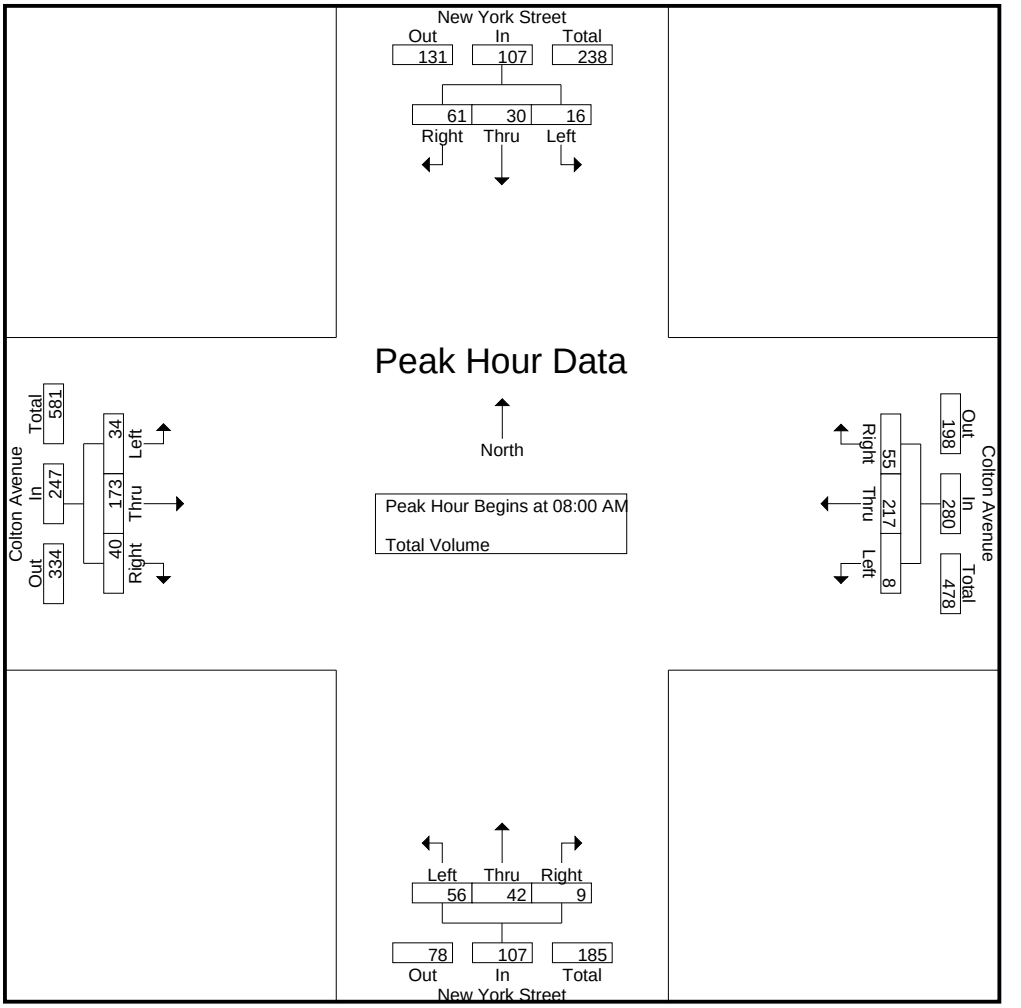

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				08:00 AM				08:00 AM				07:45 AM			
+0 mins.	**6**	8	15	29	2	42	16	60	11	**14**	**4**	29	**19**	31	7	57
+15 mins.	5	8	11	24	**4**	57	6	67	**22**	10	1	**33**	14	44	**17**	**75**
+30 mins.	4	6	17	27	2	52	**17**	71	10	6	1	17	2	**45**	11	58
+45 mins.	2	**12**	**18**	**32**	0	**66**	16	**82**	13	12	3	28	11	42	9	62
Total Volume	17	34	61	112	8	217	55	280	56	42	9	107	46	162	44	252
% App. Total	15.2	30.4	54.5		2.9	77.5	19.6		52.3	39.3	8.4		18.3	64.3	17.5	
PHF	.708	.708	.847	.875	.500	.822	.809	.854	.636	.750	.563	.811	.605	.900	.647	.840

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Groups Printed- Total Volume

	New York Street Southbound				Colton Avenue Westbound				New York Street Northbound				Colton Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	17	44	22	83	3	84	12	99	6	17	1	24	26	134	21	181	387
04:15 PM	28	27	25	80	2	80	18	100	12	17	1	30	23	140	18	181	391
04:30 PM	15	30	16	61	0	81	22	103	10	10	2	22	22	133	13	168	354
04:45 PM	21	27	21	69	1	79	23	103	7	9	2	18	16	138	11	165	355
Total	81	128	84	293	6	324	75	405	35	53	6	94	87	545	63	695	1487
05:00 PM	17	27	17	61	3	72	25	100	5	13	2	20	26	153	25	204	385
05:15 PM	20	30	26	76	6	82	24	112	9	20	1	30	29	134	18	181	399
05:30 PM	16	31	24	71	2	80	22	104	6	11	1	18	18	167	28	213	406
05:45 PM	19	18	30	67	1	64	21	86	6	10	0	16	21	133	15	169	338
Total	72	106	97	275	12	298	92	402	26	54	4	84	94	587	86	767	1528
Grand Total	153	234	181	568	18	622	167	807	61	107	10	178	181	1132	149	1462	3015
Apprch %	26.9	41.2	31.9		2.2	77.1	20.7		34.3	60.1	5.6		12.4	77.4	10.2		
Total %	5.1	7.8	6	18.8	0.6	20.6	5.5	26.8	2	3.5	0.3	5.9	6	37.5	4.9	48.5	

	New York Street Southbound				Colton Avenue Westbound				New York Street Northbound				Colton Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	**21**	27	21	69	1	79	23	103	7	9	**2**	18	16	138	11	165	355
05:00 PM	17	27	17	61	3	72	**25**	100	5	13	2	20	26	153	25	204	385
05:15 PM	20	30	**26**	**76**	**6**	**82**	24	**112**	**9**	**20**	1	**30**	**29**	134	18	181	399
05:30 PM	16	**31**	24	71	2	80	22	104	6	11	1	18	18	**167**	**28**	**213**	**406**
Total Volume	74	115	88	277	12	313	94	419	27	53	6	86	89	592	82	763	1545
% App. Total	26.7	41.5	31.8		2.9	74.7	22.4		31.4	61.6	7		11.7	77.6	10.7		
PHF	.881	.927	.846	.911	.500	.954	.940	.935	.750	.663	.750	.717	.767	.886	.732	.896	.951

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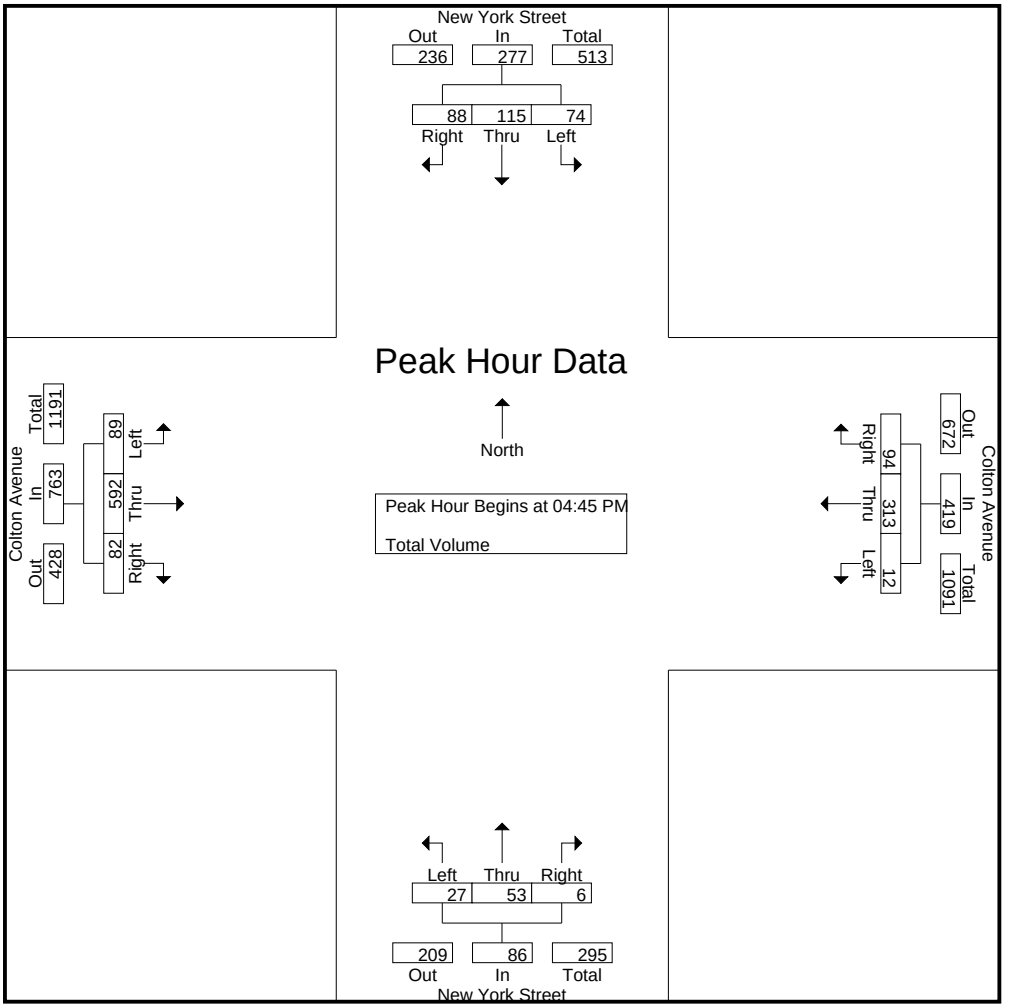

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				04:45 PM				04:00 PM				05:00 PM			
+0 mins.	17	**44**	22	**83**	1	79	23	103	6	**17**	1	24	26	153	25	204
+15 mins.	**28**	27	**25**	80	3	72	**25**	100	**12**	17	1	**30**	**29**	134	18	181
+30 mins.	15	30	16	61	**6**	**82**	24	**112**	10	10	**2**	22	18	**167**	**28**	**213**
+45 mins.	21	27	21	69	2	80	22	104	7	9	2	18	21	133	15	169
Total Volume	81	128	84	293	12	313	94	419	35	53	6	94	94	587	86	767
% App. Total	27.6	43.7	28.7		2.9	74.7	22.4		37.2	56.4	6.4		12.3	76.5	11.2	
PHF	.723	.727	.840	.883	.500	.954	.940	.935	.729	.779	.750	.783	.810	.879	.768	.900

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Site Code : 10823541
Start Date : 6/1/2023

Groups Printed- Total Volume

	New York Street Southbound			Brockton Avenue Westbound			New York Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
07:00 AM	4	8	12	4	5	9	9	2	11	32
07:15 AM	3	18	21	3	10	13	14	2	16	50
07:30 AM	1	22	23	5	8	13	11	7	18	54
07:45 AM	7	33	40	6	10	16	16	7	23	79
Total	15	81	96	18	33	51	50	18	68	215
08:00 AM	11	29	40	3	10	13	33	5	38	91
08:15 AM	4	27	31	5	6	11	16	2	18	60
08:30 AM	4	29	33	9	4	13	22	3	25	71
08:45 AM	7	24	31	6	6	12	25	3	28	71
Total	26	109	135	23	26	49	96	13	109	293
Grand Total	41	190	231	41	59	100	146	31	177	508
Apprch %	17.7	82.3		41	59		82.5	17.5		
Total %	8.1	37.4	45.5	8.1	11.6	19.7	28.7	6.1	34.8	

	New York Street Southbound			Brockton Avenue Westbound			New York Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:45 AM										
07:45 AM	7	**33**	**40**	6	**10**	**16**	16	**7**	23	79
08:00 AM	**11**	29	40	3	10	13	**33**	5	**38**	**91**
08:15 AM	4	27	31	5	6	11	16	2	18	60
08:30 AM	4	29	33	**9**	4	13	22	3	25	71
Total Volume	26	118	144	23	30	53	87	17	104	301
% App. Total	18.1	81.9		43.4	56.6		83.7	16.3		
PHF	.591	.894	.900	.639	.750	.828	.659	.607	.684	.827

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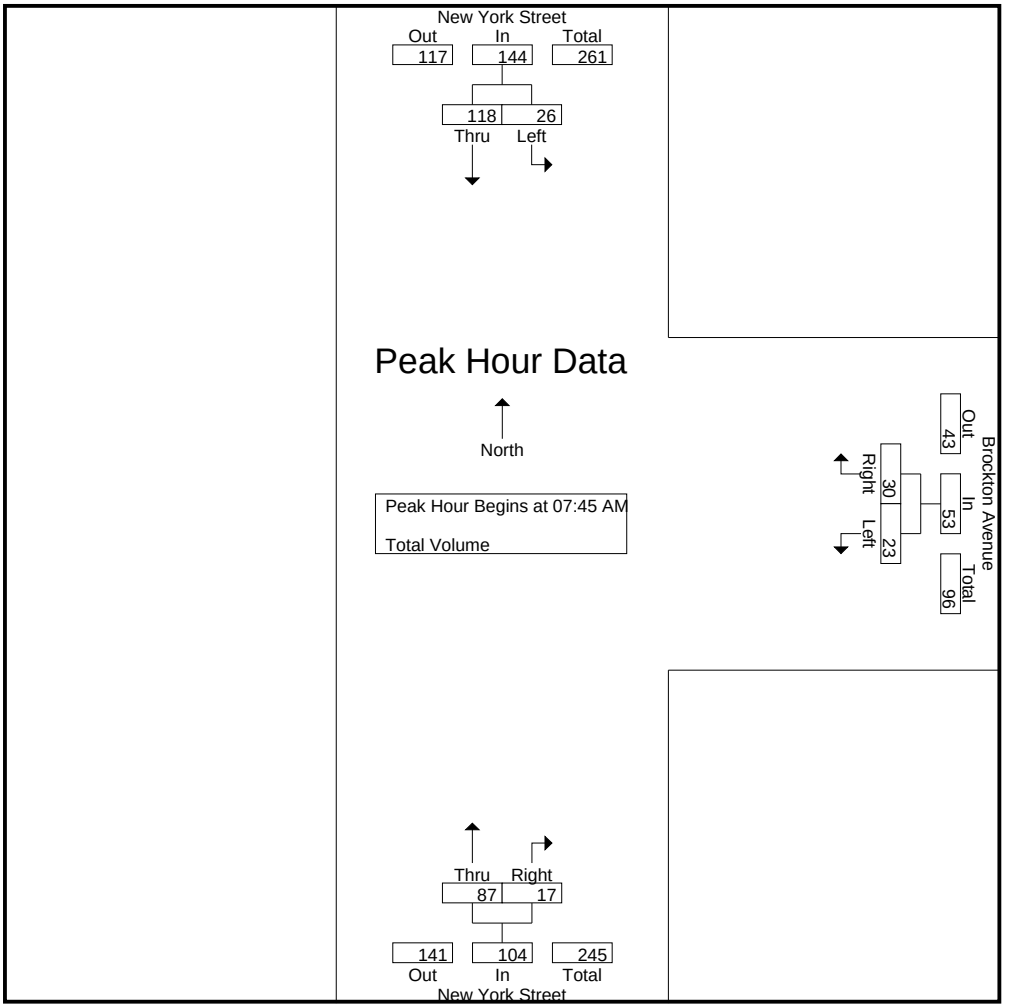

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM			07:15 AM			08:00 AM		
+0 mins.	7	**33**	**40**	3	**10**	13	**33**	**5**	**38**
+15 mins.	**11**	29	40	5	8	13	16	2	18
+30 mins.	4	27	31	**6**	10	**16**	22	3	25
+45 mins.	4	29	33	3	10	13	25	3	28
Total Volume	26	118	144	17	38	55	96	13	109
% App. Total	18.1	81.9		30.9	69.1		88.1	11.9	
PHF	.591	.894	.900	.708	.950	.859	.727	.650	.717

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Groups Printed- Total Volume

	New York Street Southbound			Brockton Avenue Westbound			New York Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
04:00 PM	5	56	61	9	12	21	49	8	57	139
04:15 PM	4	58	62	7	7	14	57	9	66	142
04:30 PM	7	51	58	5	4	9	54	3	57	124
04:45 PM	10	54	64	7	6	13	40	5	45	122
Total	26	219	245	28	29	57	200	25	225	527
05:00 PM	6	50	56	4	7	11	62	3	65	132
05:15 PM	13	51	64	7	9	16	81	4	85	165
05:30 PM	9	53	62	10	6	16	57	8	65	143
05:45 PM	8	43	51	17	12	29	47	2	49	129
Total	36	197	233	38	34	72	247	17	264	569
Grand Total	62	416	478	66	63	129	447	42	489	1096
Apprch %	13	87		51.2	48.8		91.4	8.6		
Total %	5.7	38	43.6	6	5.7	11.8	40.8	3.8	44.6	

	New York Street Southbound			Brockton Avenue Westbound			New York Street Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 05:00 PM										
05:00 PM	6	50	56	4	7	11	62	3	65	132
05:15 PM	**13**	51	**64**	7	9	16	**81**	4	**85**	**165**
05:30 PM	9	**53**	62	10	6	16	57	**8**	65	143
05:45 PM	8	43	51	**17**	**12**	**29**	47	2	49	129
Total Volume	36	197	233	38	34	72	247	17	264	569
% App. Total	15.5	84.5		52.8	47.2		93.6	6.4		
PHF	.692	.929	.910	.559	.708	.621	.762	.531	.776	.862

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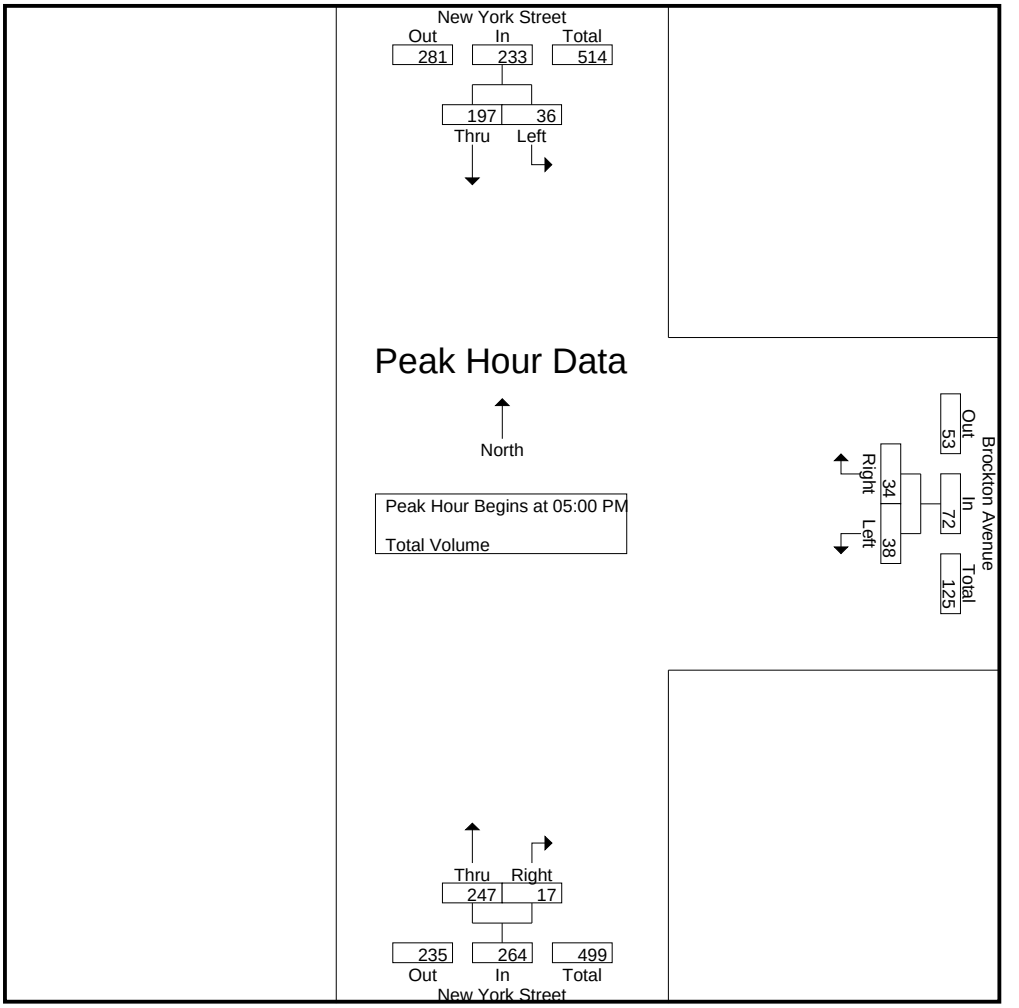


Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM			05:00 PM			05:00 PM		
+0 mins.	10	**54**	**64**	4	7	11	62	3	65
+15 mins.	6	50	56	7	9	16	**81**	4	**85**
+30 mins.	**13**	51	64	10	6	16	57	**8**	65
+45 mins.	9	53	62	**17**	**12**	**29**	47	2	49
Total Volume	38	208	246	38	34	72	247	17	264
% App. Total	15.4	84.6		52.8	47.2		93.6	6.4	
PHF	.731	.963	.961	.559	.708	.621	.762	.531	.776

APPENDIX **C**

INTERSECTION ANALYSIS
WORKSHEETS

APPENDIX C-1

INTERSECTION ANALYSIS
WORKSHEETS –
EXISTING CONDITIONS

Redlands CarMax Project

Vistro File: K:\...\CarMax Redlands AM.vistro
Report File: K:\...\1. EX AM.pdf

Scenario 1 EX AM
11/13/2023

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Lugonia Ave at Tennessee St	Signalized	HCM 7th Edition	SB Left	0.374	33.1	C
2	Lugonia Ave at New York St	Signalized	HCM 7th Edition	WB Left	0.361	11.0	B
3	I-10 WB Ramps at Tennessee St	Signalized	HCM 7th Edition	WB Left	0.368	20.9	C
4	I-10 EB Ramps at Tennessee St	Signalized	HCM 7th Edition	SB Left	0.521	23.1	C
5	Colton Ave at Tennessee St	Signalized	HCM 7th Edition	NB Left	0.363	34.1	C
6	Colton Ave at New York St	Signalized	HCM 7th Edition	WB Left	0.202	20.7	C
7	New York St at Project Driveway/Brockton Ave	Two-way stop	HCM 7th Edition	WB Left	0.045	11.3	B

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

Intersection Level Of Service Report
Intersection 1: Lugonia Ave at Tennessee St

Control Type:	Signalized	Delay (sec / veh):	33.1
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.374

Intersection Setup

Name							Lugonia 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 Entry Pocket	1	0	1	1	0	0	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.21
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							Lugonia Ave					
Base Volume Input [veh/h]	120	217	68	57	103	4	20	218	149	105	353	86
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	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
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	120	217	68	57	103	4	20	218	149	105	353	86
Peak Hour Factor	0.9840	0.9840	0.9840	0.9840	0.9840	0.9840	0.9840	0.9840	0.9840	0.9840	0.9840	0.9840
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	30	55	17	14	26	1	5	55	38	27	90	22
Total Analysis Volume [veh/h]	122	221	69	58	105	4	20	222	151	107	359	87
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]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	5	2	0	1	6	0	7	4	0	3	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	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]	17	27	0	11	21	0	9	23	0	29	43	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	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	12	0	0	12	0	0	6	0	0	6	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
l1, 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
l2, 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		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		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	R	L	C	L	C	R	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90
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
l1_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
l2, 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
g_i, Effective Green Time [s]	8	47	47	4	43	2	15	15	7	21	21
g / C, Green / Cycle	0.09	0.53	0.53	0.04	0.48	0.02	0.17	0.17	0.08	0.23	0.23
(v / s)_i Volume / Saturation Flow Rate	0.07	0.12	0.05	0.03	0.06	0.01	0.07	0.10	0.06	0.20	0.06
s, saturation flow rate [veh/h]	1687	1772	1506	1687	1760	1687	3373	1506	1687	1772	1506
c, Capacity [veh/h]	152	932	792	74	844	38	573	256	139	407	346
d1, Uniform Delay [s]	40.15	11.54	10.59	42.62	12.99	43.52	33.20	34.47	40.44	33.46	28.32
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.11	0.11	0.11	0.11	0.11	0.11
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
d2, Incremental Delay [s]	9.33	0.60	0.22	16.67	0.32	11.02	0.43	2.17	8.54	6.32	0.38
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
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
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

Lane Group Results

X, volume / capacity	0.80	0.24	0.09	0.79	0.13	0.53	0.39	0.59	0.77	0.88	0.25
d, Delay for Lane Group [s/veh]	49.48	12.14	10.80	59.30	13.31	54.54	33.63	36.64	48.97	39.78	28.69
Lane Group LOS	D	B	B	E	B	D	C	D	D	D	C
Critical Lane Group	No	Yes	No	Yes	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	3.01	2.41	0.69	1.60	1.25	0.55	2.16	3.15	2.62	8.09	1.55
50th-Percentile Queue Length [ft/ln]	75.19	60.31	17.35	40.11	31.20	13.80	53.90	78.78	65.61	202.19	38.70
95th-Percentile Queue Length [veh/ln]	5.41	4.34	1.25	2.89	2.25	0.99	3.88	5.67	4.72	12.75	2.79
95th-Percentile Queue Length [ft/ln]	135.34	108.56	31.24	72.19	56.16	24.84	97.02	141.80	118.09	318.79	69.66

Movement, Approach, & Intersection Results

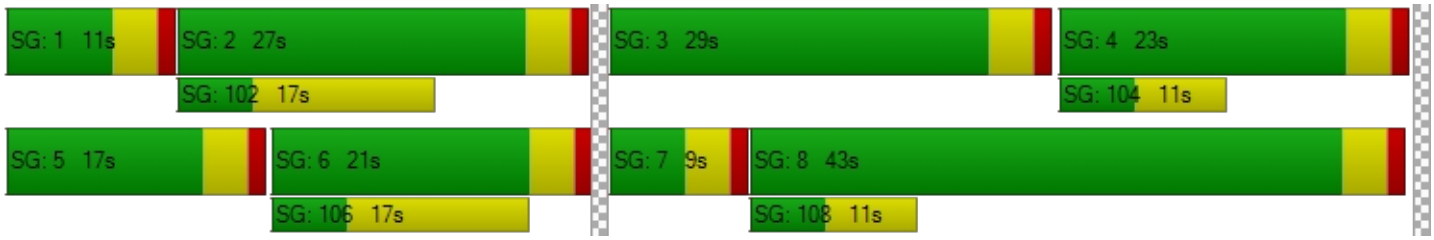
d_M, Delay for Movement [s/veh]	49.48	12.14	10.80	59.30	13.31	13.31	54.54	33.63	36.64	48.97	39.78	28.69
Movement LOS	D	B	B	E	B	B	D	C	D	D	D	C
d_A, Approach Delay [s/veh]	22.98			29.28			35.85			39.81		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	33.09											
Intersection LOS	C											
Intersection V/C	0.374											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	36.45	36.45	36.45
l_p,int, Pedestrian LOS Score for Intersectio	2.321	2.253	2.597	2.601
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]	511	378	422	867
d_b, Bicycle Delay [s]	24.94	29.61	28.01	14.45
l_b,int, Bicycle LOS Score for Intersection	2.239	1.835	1.884	2.472
Bicycle LOS	B	A	A	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: Lugonia Ave at New York St

Control Type:	Signalized	Delay (sec / veh):	11.0
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.361

Intersection Setup

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

Volumes

Name						
Base Volume Input [veh/h]	96	27	264	92	43	478
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
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	96	27	264	92	43	478
Peak Hour Factor	0.9540	0.9540	0.9540	0.9540	0.9540	0.9540
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	25	7	69	24	11	125
Total Analysis Volume [veh/h]	101	28	277	96	45	501
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal Group	3	0	2	0	1	6
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	5	0	5	0	5	5
Maximum Green [s]	30	0	30	0	30	30
Amber [s]	3.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Split [s]	26	0	53	0	11	64
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	5	0	5	0	0	5
Pedestrian Clearance [s]	14	0	7	0	0	10
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	R	L	C
C, Cycle Length [s]	90	90	90	90	90
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]	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	66	66	3	73
g / C, Green / Cycle	0.10	0.73	0.73	0.04	0.81
(v / s)_i Volume / Saturation Flow Rate	0.08	0.08	0.06	0.03	0.28
s, saturation flow rate [veh/h]	1644	3373	1506	1687	1772
c, Capacity [veh/h]	162	2462	1099	64	1439
d1, Uniform Delay [s]	39.67	3.58	3.51	42.77	2.21
k, delay calibration	0.11	0.50	0.50	0.11	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.51	0.09	0.16	12.83	0.67
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	0.79	0.11	0.09	0.70	0.35
d, Delay for Lane Group [s/veh]	48.17	3.67	3.67	55.60	2.87
Lane Group LOS	D	A	A	E	A
Critical Lane Group	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	3.14	0.61	0.44	1.21	1.51
50th-Percentile Queue Length [ft/ln]	78.41	15.29	11.05	30.20	37.86
95th-Percentile Queue Length [veh/ln]	5.65	1.10	0.80	2.17	2.73
95th-Percentile Queue Length [ft/ln]	141.14	27.52	19.89	54.36	68.15

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	48.17	48.17	3.67	3.67	55.60	2.87
Movement LOS	D	D	A	A	E	A
d_A, Approach Delay [s/veh]	48.17		3.67		7.22	
Approach LOS	D		A		A	
d_I, Intersection Delay [s/veh]	11.00					
Intersection LOS	B					
Intersection V/C	0.361					

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	36.45	36.45
l_p,int, Pedestrian LOS Score for Intersectio	1.848	2.370	2.340
Crosswalk LOS	A	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	489	1089	1333
d_b, Bicycle Delay [s]	25.69	9.34	5.00
l_b,int, Bicycle LOS Score for Intersection	1.772	1.867	2.461
Bicycle LOS	A	A	B

Sequence

Ring 1	1	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 3: I-10 WB Ramps at Tennessee St

Control Type:	Signalized	Delay (sec / veh):	20.9
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.368

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	1	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	1	0	0	1	0	0	1	0	0	0
Exit Pocket Length [ft]	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	49.21	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No						No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	207	384	0	0	309	88	0	0	0	161	6	128
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	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
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	207	384	0	0	309	88	0	0	0	161	6	128
Peak Hour Factor	0.9220	0.9220	1.0000	1.0000	0.9220	0.9220	1.0000	1.0000	1.0000	0.9220	0.9220	0.9220
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	56	104	0	0	84	24	0	0	0	44	2	35
Total Analysis Volume [veh/h]	225	416	0	0	335	95	0	0	0	175	7	139
Presence of On-Street Parking	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]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	5	2	0	0	6	0	0	0	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	0	5	0	0	0	0	0	5	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	44	60	0	0	16	0	0	0	0	0	30	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	7	0	0	7	0	0	0	0	0	21	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	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	L	C	C	C		C	C
C, Cycle Length [s]	90	90	90	90		90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	14	70	52	52		12	12
g / C, Green / Cycle	0.16	0.78	0.58	0.58		0.13	0.13
(v / s)_i Volume / Saturation Flow Rate	0.13	0.12	0.12	0.13		0.10	0.10
s, saturation flow rate [veh/h]	1687	3373	1772	1643		1687	1517
c, Capacity [veh/h]	266	2631	1024	950		221	199
d1, Uniform Delay [s]	36.84	2.48	9.12	9.22		37.91	37.60
k, delay calibration	0.11	0.50	0.50	0.50		0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	7.26	0.13	0.47	0.55		6.27	5.19
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.85	0.16	0.21	0.23		0.79	0.73
d, Delay for Lane Group [s/veh]	44.10	2.61	9.59	9.77		44.18	42.79
Lane Group LOS	D	A	A	A		D	D
Critical Lane Group	Yes	No	No	Yes		Yes	No
50th-Percentile Queue Length [veh/ln]	5.26	0.67	2.00	2.04		4.06	3.33
50th-Percentile Queue Length [ft/ln]	131.43	16.63	50.11	50.95		101.62	83.29
95th-Percentile Queue Length [veh/ln]	9.02	1.20	3.61	3.67		7.32	6.00
95th-Percentile Queue Length [ft/ln]	225.43	29.94	90.20	91.72		182.92	149.92

Movement, Approach, & Intersection Results

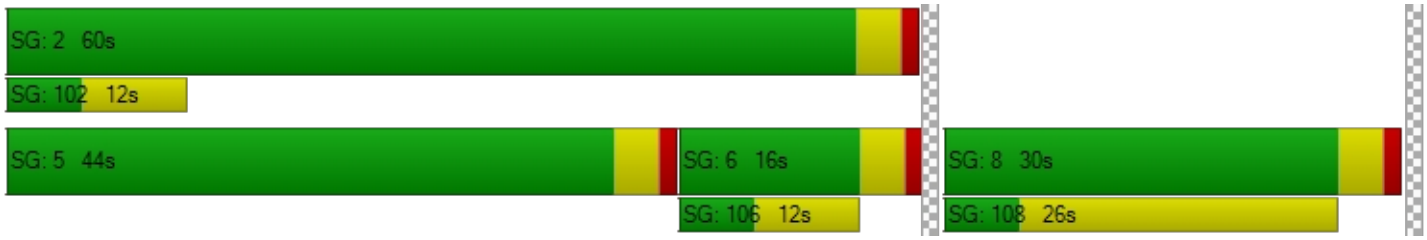
d_M, Delay for Movement [s/veh]	44.10	2.61	0.00	0.00	9.66	9.77	0.00	0.00	0.00	44.18	42.79	42.79
Movement LOS	D	A			A	A				D	D	D
d_A, Approach Delay [s/veh]	17.17			9.68			0.00			43.55		
Approach LOS	B			A			A			D		
d_I, Intersection Delay [s/veh]	20.94											
Intersection LOS	C											
Intersection V/C	0.368											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	36.45	36.45	36.45
l_p,int, Pedestrian LOS Score for Intersectio	2.641	2.373	1.876	1.873
Crosswalk LOS	B	B	A	A
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1244	267	0	578
d_b, Bicycle Delay [s]	6.42	33.80	45.00	22.76
l_b,int, Bicycle LOS Score for Intersection	2.088	1.914	4.132	1.824
Bicycle LOS	B	A	D	A

Sequence

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



Intersection Level Of Service Report
Intersection 4: I-10 EB Ramps at Tennessee St

Control Type:	Signalized	Delay (sec / veh):	23.1
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.521

Intersection Setup

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

Volumes

Name												
Base Volume Input [veh/h]	0	457	122	114	349	0	104	177	383	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
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	457	122	114	349	0	104	177	383	0	0	0
Peak Hour Factor	1.0000	0.9560	0.9560	0.9560	0.9560	1.0000	0.9560	0.9560	0.9560	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	120	32	30	91	0	27	46	100	0	0	0
Total Analysis Volume [veh/h]	0	478	128	119	365	0	109	185	401	0	0	0
Presence of On-Street Parking	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]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	2	0	1	6	0	0	4	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	5	5	0	0	5	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	16	0	15	31	0	0	59	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	0
Pedestrian Clearance [s]	0	7	0	0	7	0	0	17	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	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	L	C	C	C	
C, Cycle Length [s]	90	90	90	90	90	90	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	43	43	8	55	27	27	
g / C, Green / Cycle	0.48	0.48	0.09	0.61	0.30	0.30	
(v / s)_i Volume / Saturation Flow Rate	0.17	0.18	0.07	0.11	0.17	0.27	
s, saturation flow rate [veh/h]	1772	1649	1687	3373	1739	1506	
c, Capacity [veh/h]	849	790	149	2064	520	450	
d1, Uniform Delay [s]	14.71	14.94	40.26	7.60	26.60	30.12	
k, delay calibration	0.50	0.50	0.11	0.50	0.11	0.11	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	1.17	1.41	9.48	0.19	0.97	6.21	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	0.36	0.38	0.80	0.18	0.57	0.89	
d, Delay for Lane Group [s/veh]	15.89	16.35	49.74	7.79	27.56	36.34	
Lane Group LOS	B	B	D	A	C	D	
Critical Lane Group	No	Yes	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	3.97	4.06	2.94	1.45	5.32	8.79	
50th-Percentile Queue Length [ft/ln]	99.23	101.50	73.56	36.13	133.11	219.67	
95th-Percentile Queue Length [veh/ln]	7.14	7.31	5.30	2.60	9.11	13.65	
95th-Percentile Queue Length [ft/ln]	178.62	182.71	132.41	65.03	227.71	341.20	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	16.06	16.35	49.74	7.79	0.00	27.56	27.56	36.34	0.00	0.00	0.00
Movement LOS		B	B	D	A		C	C	D			
d_A, Approach Delay [s/veh]	16.12			18.10			32.63			0.00		
Approach LOS	B			B			C			A		
d_I, Intersection Delay [s/veh]	23.08											
Intersection LOS	C											
Intersection V/C	0.521											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	36.45	36.45	36.45
l_p,int, Pedestrian LOS Score for Intersectio	2.569	2.510	2.055	1.927
Crosswalk LOS	B	B	B	A
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	267	600	1222	0
d_b, Bicycle Delay [s]	33.80	22.05	6.81	45.00
l_b,int, Bicycle LOS Score for Intersection	2.060	1.959	2.133	4.132
Bicycle LOS	B	A	B	D

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 5: Colton Ave at Tennessee St

Control Type:	Signalized	Delay (sec / veh):	34.1
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.363

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00
Speed [mph]	30.00			30.00			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												
Base Volume Input [veh/h]	53	422	41	98	422	164	60	130	29	38	200	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
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	53	422	41	98	422	164	60	130	29	38	200	108
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]	14	114	11	27	114	44	16	35	8	10	54	29
Total Analysis Volume [veh/h]	57	457	44	106	457	178	65	141	31	41	217	117
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]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	5	2	0	1	6	0	7	4	0	3	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	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]	9	35	0	20	46	0	9	26	0	9	26	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	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	21	0	0	17	0	0	17	0	0	17	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	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		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
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
l1_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
l2, 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	7	20	20	4	47	47	3	46	46
g / C, Green / Cycle	0.04	0.18	0.18	0.08	0.22	0.22	0.05	0.52	0.52	0.04	0.51	0.51
(v / s)_i Volume / Saturation Flow Rate	0.03	0.14	0.14	0.06	0.19	0.19	0.04	0.05	0.05	0.02	0.10	0.10
s, saturation flow rate [veh/h]	1687	1772	1718	1687	1772	1605	1687	1772	1664	1687	1772	1570
c, Capacity [veh/h]	72	325	315	135	392	355	83	925	869	61	902	799
d1, Uniform Delay [s]	42.70	35.00	35.03	40.62	33.58	33.62	42.29	10.80	10.82	42.87	12.03	12.09
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]	17.66	4.06	4.29	9.45	5.12	5.79	14.41	0.20	0.22	12.35	0.47	0.57
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	0.80	0.78	0.78	0.78	0.85	0.85	0.78	0.09	0.10	0.68	0.19	0.20
d, Delay for Lane Group [s/veh]	60.36	39.06	39.32	50.07	38.69	39.41	56.70	11.00	11.04	55.22	12.51	12.66
Lane Group LOS	E	D	D	D	D	D	E	B	B	E	B	B
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.59	5.56	5.44	2.63	7.34	6.76	1.75	0.88	0.86	1.10	1.92	1.80
50th-Percentile Queue Length [ft/ln]	39.85	138.90	135.98	65.79	183.62	169.03	43.63	22.01	21.55	27.49	48.04	45.07
95th-Percentile Queue Length [veh/ln]	2.87	9.42	9.26	4.74	11.79	11.03	3.14	1.58	1.55	1.98	3.46	3.25
95th-Percentile Queue Length [ft/ln]	71.73	235.54	231.60	118.42	294.74	275.64	78.54	39.62	38.78	49.49	86.47	81.13

Movement, Approach, & Intersection Results

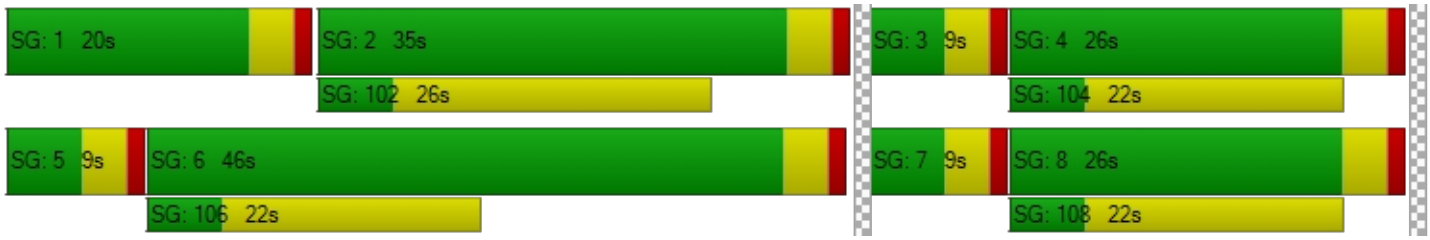
d_M, Delay for Movement [s/veh]	60.36	39.18	39.32	50.07	38.89	39.41	56.70	11.01	11.04	55.22	12.54	12.66
Movement LOS	E	D	D	D	D	D	E	B	B	E	B	B
d_A, Approach Delay [s/veh]	41.35			40.61			23.55			17.24		
Approach LOS	D			D			C			B		
d_I, Intersection Delay [s/veh]	34.13											
Intersection LOS	C											
Intersection V/C	0.363											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	36.45	36.45	36.45
l_p,int, Pedestrian LOS Score for Intersectio	2.513	2.570	2.436	2.563
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]	689	933	489	489
d_b, Bicycle Delay [s]	19.34	12.80	25.69	25.69
l_b,int, Bicycle LOS Score for Intersection	2.020	2.171	1.755	1.869
Bicycle LOS	B	B	A	A

Sequence

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



Intersection Level Of Service Report
Intersection 6: Colton Ave at New York St

Control Type:	Signalized	Delay (sec / veh):	20.7
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.202

Intersection Setup

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

Volumes

Name												
Base Volume Input [veh/h]	56	42	9	16	30	61	34	173	40	8	217	55
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	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
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	56	42	9	16	30	61	34	173	40	8	217	55
Peak Hour Factor	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850
Other Adjustment Factor	1.0000	1.0000	1.0000	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	11	2	4	8	15	9	44	10	2	55	14
Total Analysis Volume [veh/h]	57	43	9	16	30	62	35	176	41	8	220	56
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]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	2	0	0	6	0	7	4	0	3	8	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	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	26	0	9	23	0	9	23	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	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	17	0	0	17	0	0	14	0	0	14	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
l1, 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
l2, 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	C	R	C	R	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90
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
l1_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
l2, 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]	7	7	6	6	3	61	61	1	59	59
g / C, Green / Cycle	0.08	0.08	0.06	0.06	0.03	0.67	0.67	0.01	0.65	0.65
(v / s)_i Volume / Saturation Flow Rate	0.06	0.01	0.03	0.04	0.02	0.06	0.06	0.00	0.08	0.08
s, saturation flow rate [veh/h]	1722	1506	1741	1506	1687	1772	1659	1687	1772	1651
c, Capacity [veh/h]	132	115	107	93	55	1194	1118	17	1155	1076
d1, Uniform Delay [s]	40.74	38.60	40.72	41.34	43.02	5.10	5.11	44.29	5.93	5.95
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]	8.57	0.29	2.71	8.10	11.69	0.15	0.17	18.02	0.22	0.24
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	0.76	0.08	0.43	0.67	0.64	0.09	0.10	0.46	0.12	0.13
d, Delay for Lane Group [s/veh]	49.31	38.89	43.43	49.45	54.71	5.25	5.28	62.32	6.14	6.19
Lane Group LOS	D	D	D	D	D	A	A	E	A	A
Critical Lane Group	Yes	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.46	0.19	1.05	1.54	0.94	0.67	0.65	0.26	0.96	0.93
50th-Percentile Queue Length [ft/ln]	61.49	4.80	26.33	38.48	23.49	16.68	16.31	6.56	23.88	23.24
95th-Percentile Queue Length [veh/ln]	4.43	0.35	1.90	2.77	1.69	1.20	1.17	0.47	1.72	1.67
95th-Percentile Queue Length [ft/ln]	110.67	8.65	47.40	69.27	42.28	30.03	29.36	11.80	42.98	41.83

Movement, Approach, & Intersection Results

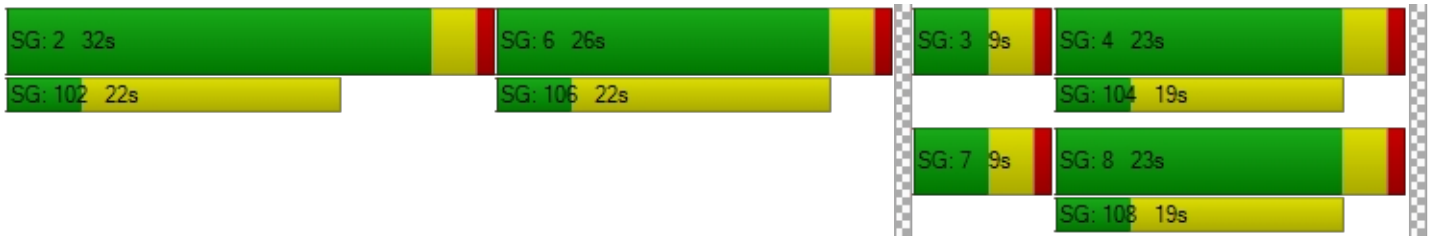
d_M, Delay for Movement [s/veh]	49.31	49.31	38.89	43.43	43.43	49.45	54.71	5.26	5.28	62.32	6.16	6.19
Movement LOS	D	D	D	D	D	D	D	A	A	E	A	A
d_A, Approach Delay [s/veh]	48.45			46.88			12.13			7.75		
Approach LOS	D			D			B			A		
d_I, Intersection Delay [s/veh]	20.72											
Intersection LOS	C											
Intersection V/C	0.202											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	36.45	36.45	36.45
l_p,int, Pedestrian LOS Score for Intersectio	2.178	2.192	2.417	2.396
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]	622	489	422	422
d_b, Bicycle Delay [s]	21.36	25.69	28.01	28.01
l_b,int, Bicycle LOS Score for Intersection	1.739	1.738	1.768	1.794
Bicycle LOS	A	A	A	A

Sequence

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



Intersection Level Of Service Report
Intersection 7: New York St at Project Driveway/Brockton Ave

Control Type:	Two-way stop	Delay (sec / veh):	11.3
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.045

Intersection Setup

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

Volumes

Name												
Base Volume Input [veh/h]	0	87	17	26	118	0	0	0	0	23	0	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 Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	87	17	26	118	0	0	0	0	23	0	30
Peak Hour Factor	1.0000	0.8270	0.8270	0.8270	0.8270	1.0000	0.8270	0.8270	0.8270	0.8270	1.0000	0.8270
Other Adjustment Factor	1.0000	1.0000	1.0000	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	26	5	8	36	0	0	0	0	7	0	9
Total Analysis Volume [veh/h]	0	105	21	31	143	0	0	0	0	28	0	36
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.04
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	7.50	0.00	0.00	0.00	0.00	0.00	11.26	11.61	9.27
Movement LOS		A	A	A	A					B	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.05	0.05	0.00	0.00	0.00	0.00	0.27	0.27	0.27
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	1.31	1.31	0.00	0.00	0.00	0.00	6.83	6.83	6.83
d_A, Approach Delay [s/veh]	0.00			1.34			0.00			10.14		
Approach LOS	A			A			A			B		
d_I, Intersection Delay [s/veh]	2.42											
Intersection LOS	B											

Redlands CarMax Project

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Scenario 1 EX PM
11/13/2023

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Lugonia Ave at Tennessee St	Signalized	HCM 7th Edition	EB Left	0.661	34.9	C
2	Lugonia Ave at New York St	Signalized	HCM 7th Edition	WB Left	0.499	13.4	B
3	I-10 WB Ramps at Tennessee St	Signalized	HCM 7th Edition	NB Left	0.534	19.7	B
4	I-10 EB Ramps at Tennessee St	Signalized	HCM 7th Edition	SB Left	0.725	30.9	C
5	Colton Ave at Tennessee St	Signalized	HCM 7th Edition	WB Left	0.497	31.8	C
6	Colton Ave at New York St	Signalized	HCM 7th Edition	WB Left	0.375	20.9	C
7	New York St at Project Driveway/Brockton Ave	Two-way stop	HCM 7th Edition	WB Left	0.113	15.6	C

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

Intersection Level Of Service Report
Intersection 1: Lugonia Ave at Tennessee St

Control Type:	Signalized	Delay (sec / veh):	34.9
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.661

Intersection Setup

Name							Lugonia 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 Entry Pocket	1	0	1	1	0	0	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.21
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							Lugonia Ave					
Base Volume Input [veh/h]	305	338	242	106	147	15	55	781	464	90	431	107
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	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
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	305	338	242	106	147	15	55	781	464	90	431	107
Peak Hour Factor	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	79	88	63	28	38	4	14	203	121	23	112	28
Total Analysis Volume [veh/h]	317	351	252	110	153	16	57	812	482	94	448	111
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]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	5	2	0	1	6	0	7	4	0	3	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	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]	23	32	0	12	21	0	9	36	0	10	37	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	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	12	0	0	12	0	0	6	0	0	6	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	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		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		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	R	L	C	L	C	R	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90
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
l1_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
l2, 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
g_i, Effective Green Time [s]	19	30	30	7	19	4	31	31	6	33	33
g / C, Green / Cycle	0.21	0.33	0.33	0.08	0.21	0.04	0.34	0.34	0.07	0.37	0.37
(v / s)_i Volume / Saturation Flow Rate	0.19	0.20	0.17	0.07	0.10	0.03	0.24	0.32	0.06	0.25	0.07
s, saturation flow rate [veh/h]	1687	1772	1506	1687	1742	1687	3373	1506	1687	1772	1506
c, Capacity [veh/h]	349	585	497	138	358	74	1159	518	112	649	552
d1, Uniform Delay [s]	34.88	25.18	24.25	40.60	31.47	42.58	25.53	28.51	41.51	24.17	19.50
k, delay calibration	0.13	0.50	0.50	0.11	0.50	0.11	0.11	0.38	0.11	0.21	0.11
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
d2, Incremental Delay [s]	10.71	4.50	3.66	10.05	4.42	15.31	0.78	21.26	14.67	2.58	0.18
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
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
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

Lane Group Results

X, volume / capacity	0.91	0.60	0.51	0.80	0.47	0.77	0.70	0.93	0.84	0.69	0.20
d, Delay for Lane Group [s/veh]	45.59	29.68	27.91	50.65	35.90	57.89	26.31	49.77	56.19	26.76	19.68
Lane Group LOS	D	C	C	D	D	E	C	D	E	C	B
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	7.66	6.79	4.69	2.75	3.62	1.56	7.36	12.65	2.49	8.23	1.58
50th-Percentile Queue Length [ft/ln]	191.38	169.76	117.36	68.70	90.39	38.90	184.05	316.25	62.35	205.67	39.46
95th-Percentile Queue Length [veh/ln]	12.19	11.06	8.25	4.95	6.51	2.80	11.81	18.48	4.49	12.93	2.84
95th-Percentile Queue Length [ft/ln]	304.82	276.59	206.19	123.67	162.70	70.02	295.30	462.08	112.24	323.27	71.02

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	45.59	29.68	27.91	50.65	35.90	35.90	57.89	26.31	49.77	56.19	26.76	19.68
Movement LOS	D	C	C	D	D	D	E	C	D	E	C	B
d_A, Approach Delay [s/veh]	34.68			41.71			36.01			29.79		
Approach LOS	C			D			D			C		
d_I, Intersection Delay [s/veh]	34.86											
Intersection LOS	C											
Intersection V/C	0.661											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	36.45	36.45	36.45
l_p,int, Pedestrian LOS Score for Intersectio	2.535	2.327	2.801	2.751
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	622	378	711	733
d_b, Bicycle Delay [s]	21.36	29.61	18.69	18.05
l_b,int, Bicycle LOS Score for Intersection	3.078	2.020	2.674	2.637
Bicycle LOS	C	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: Lugonia Ave at New York St

Control Type:	Signalized	Delay (sec / veh):	13.4
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.499

Intersection Setup

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

Volumes

Name						
Base Volume Input [veh/h]	187	76	980	219	28	469
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
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	187	76	980	219	28	469
Peak Hour Factor	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
Total 15-Minute Volume [veh/h]	50	20	261	58	7	125
Total Analysis Volume [veh/h]	199	81	1045	233	30	500
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal Group	3	0	2	0	1	6
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	5	0	5	0	5	5
Maximum Green [s]	30	0	30	0	30	30
Amber [s]	3.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Split [s]	31	0	50	0	9	59
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	5	0	5	0	0	5
Pedestrian Clearance [s]	14	0	7	0	0	10
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
l1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
l2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	R	L	C
C, Cycle Length [s]	90	90	90	90	90
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]	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	18	58	58	3	64
g / C, Green / Cycle	0.20	0.64	0.64	0.03	0.72
(v / s)_i Volume / Saturation Flow Rate	0.17	0.31	0.15	0.02	0.28
s, saturation flow rate [veh/h]	1630	3373	1506	1687	1772
c, Capacity [veh/h]	319	2162	965	51	1267
d1, Uniform Delay [s]	35.15	8.41	6.87	43.10	5.08
k, delay calibration	0.11	0.50	0.50	0.11	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.68	0.78	0.59	10.42	0.92
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	0.88	0.48	0.24	0.59	0.39
d, Delay for Lane Group [s/veh]	42.83	9.19	7.46	53.52	6.00
Lane Group LOS	D	A	A	D	A
Critical Lane Group	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	6.51	4.83	1.83	0.80	3.26
50th-Percentile Queue Length [ft/ln]	162.72	120.67	45.79	20.00	81.50
95th-Percentile Queue Length [veh/ln]	10.69	8.43	3.30	1.44	5.87
95th-Percentile Queue Length [ft/ln]	267.31	210.74	82.42	36.00	146.70

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	42.83	42.83	9.19	7.46	53.52	6.00
Movement LOS	D	D	A	A	D	A
d_A, Approach Delay [s/veh]	42.83		8.87		8.69	
Approach LOS	D		A		A	
d_I, Intersection Delay [s/veh]	13.38					
Intersection LOS	B					
Intersection V/C	0.499					

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	36.45	36.45
l_p,int, Pedestrian LOS Score for Intersectio	1.981	2.614	2.536
Crosswalk LOS	A	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	600	1022	1222
d_b, Bicycle Delay [s]	22.05	10.76	6.81
l_b,int, Bicycle LOS Score for Intersection	2.022	2.614	2.434
Bicycle LOS	B	B	B

Sequence

Ring 1	1	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 3: I-10 WB Ramps at Tennessee St

Control Type:	Signalized	Delay (sec / veh):	19.7
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.534

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	1	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	1	0	0	1	0	0	1	0	0	0
Exit Pocket Length [ft]	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	49.21	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No						No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	216	701	0	0	631	83	0	0	0	132	8	259
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	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
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	216	701	0	0	631	83	0	0	0	132	8	259
Peak Hour Factor	0.9540	0.9540	1.0000	1.0000	0.9540	0.9540	1.0000	1.0000	1.0000	0.9540	0.9540	0.9540
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	57	184	0	0	165	22	0	0	0	35	2	68
Total Analysis Volume [veh/h]	226	735	0	0	661	87	0	0	0	138	8	271
Presence of On-Street Parking	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]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	5	2	0	0	6	0	0	0	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	0	5	0	0	0	0	0	5	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	23	58	0	0	35	0	0	0	0	0	32	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	7	0	0	7	0	0	0	0	0	21	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	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	L	C	C	C		C	C
C, Cycle Length [s]	90	90	90	90		90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	14	63	45	45		19	19
g / C, Green / Cycle	0.16	0.70	0.50	0.50		0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.13	0.22	0.21	0.22		0.09	0.18
s, saturation flow rate [veh/h]	1687	3373	1772	1702		1692	1506
c, Capacity [veh/h]	263	2375	893	858		350	312
d1, Uniform Delay [s]	37.03	5.04	14.04	14.19		30.97	34.51
k, delay calibration	0.11	0.50	0.50	0.50		0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	8.05	0.34	1.45	1.61		0.79	7.69
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.86	0.31	0.42	0.44		0.42	0.87
d, Delay for Lane Group [s/veh]	45.08	5.38	15.48	15.81		31.77	42.20
Lane Group LOS	D	A	B	B		C	D
Critical Lane Group	Yes	No	No	Yes		No	Yes
50th-Percentile Queue Length [veh/ln]	5.35	2.22	4.86	4.93		2.79	6.27
50th-Percentile Queue Length [ft/ln]	133.63	55.62	121.46	123.35		69.67	156.73
95th-Percentile Queue Length [veh/ln]	9.14	4.00	8.47	8.58		5.02	10.38
95th-Percentile Queue Length [ft/ln]	228.43	100.12	211.83	214.42		125.40	259.39

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	45.08	5.38	0.00	0.00	15.62	15.81	0.00	0.00	0.00	31.77	31.77	42.20
Movement LOS	D	A			B	B				C	C	D
d_A, Approach Delay [s/veh]	14.71			15.65			0.00			38.55		
Approach LOS	B			B			A			D		
d_I, Intersection Delay [s/veh]	19.72											
Intersection LOS	B											
Intersection V/C	0.534											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	36.45	36.45	36.45
l_p,int, Pedestrian LOS Score for Intersectio	2.740	2.560	1.873	1.920
Crosswalk LOS	B	B	A	A
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1200	689	0	622
d_b, Bicycle Delay [s]	7.20	19.34	45.00	21.36
l_b,int, Bicycle LOS Score for Intersection	2.352	2.177	4.132	1.904
Bicycle LOS	B	B	D	A

Sequence

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

Intersection Level Of Service Report
Intersection 4: I-10 EB Ramps at Tennessee St

Control Type:	Signalized	Delay (sec / veh):	30.9
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.725

Intersection Setup

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

Volumes

Name												
Base Volume Input [veh/h]	0	617	149	263	503	0	297	402	329	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
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	617	149	263	503	0	297	402	329	0	0	0
Peak Hour Factor	1.0000	0.9620	0.9620	0.9620	0.9620	1.0000	0.9620	0.9620	0.9620	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	160	39	68	131	0	77	104	85	0	0	0
Total Analysis Volume [veh/h]	0	641	155	273	523	0	309	418	342	0	0	0
Presence of On-Street Parking	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]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	2	0	1	6	0	0	4	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	5	5	0	0	5	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	16	0	21	37	0	0	53	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	0
Pedestrian Clearance [s]	0	7	0	0	7	0	0	17	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	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	L	C	C	C	
C, Cycle Length [s]	90	90	90	90	90	90	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	29	29	16	50	32	32	
g / C, Green / Cycle	0.33	0.33	0.18	0.55	0.36	0.36	
(v / s)_i Volume / Saturation Flow Rate	0.22	0.24	0.16	0.16	0.32	0.32	
s, saturation flow rate [veh/h]	1772	1658	1687	3373	1724	1585	
c, Capacity [veh/h]	575	538	305	1854	623	573	
d1, Uniform Delay [s]	26.50	27.04	36.01	10.79	27.11	27.12	
k, delay calibration	0.50	0.50	0.11	0.50	0.16	0.16	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	6.74	8.87	9.01	0.38	6.93	7.52	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	0.69	0.74	0.89	0.28	0.89	0.89	
d, Delay for Lane Group [s/veh]	33.23	35.91	45.02	11.18	34.04	34.64	
Lane Group LOS	C	D	D	B	C	C	
Critical Lane Group	No	Yes	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	8.26	8.65	6.49	2.68	11.97	11.11	
50th-Percentile Queue Length [ft/ln]	206.38	216.28	162.37	67.09	299.27	277.78	
95th-Percentile Queue Length [veh/ln]	12.97	13.48	10.67	4.83	17.64	16.58	
95th-Percentile Queue Length [ft/ln]	324.19	336.88	266.85	120.76	441.12	414.45	

Movement, Approach, & Intersection Results

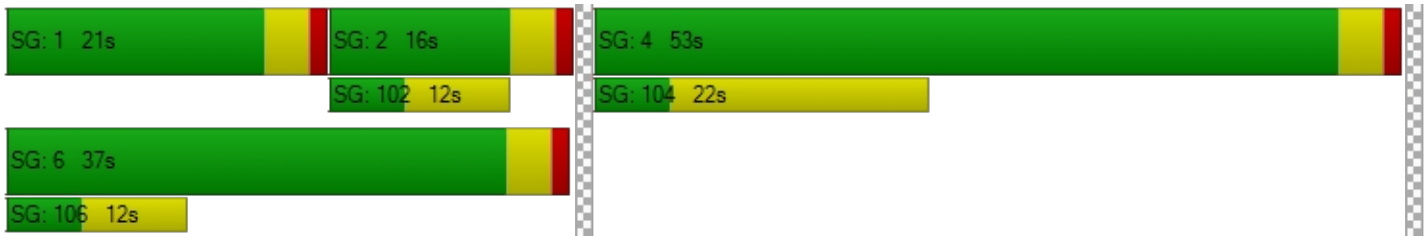
d_M, Delay for Movement [s/veh]	0.00	34.25	35.91	45.02	11.18	0.00	34.04	34.28	34.64	0.00	0.00	0.00
Movement LOS		C	D	D	B		C	C	C			
d_A, Approach Delay [s/veh]	34.57			22.78			34.33			0.00		
Approach LOS	C			C			C			A		
d_I, Intersection Delay [s/veh]	30.95											
Intersection LOS	C											
Intersection V/C	0.725											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	36.45	36.45	36.45
l_p,int, Pedestrian LOS Score for Intersectio	2.625	2.642	2.238	2.129
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]	267	733	1089	0
d_b, Bicycle Delay [s]	33.80	18.05	9.34	45.00
l_b,int, Bicycle LOS Score for Intersection	2.216	2.216	2.442	4.132
Bicycle LOS	B	B	B	D

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 5: Colton Ave at Tennessee St

Control Type:	Signalized	Delay (sec / veh):	31.8
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.497

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00
Speed [mph]	30.00			30.00			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												
Base Volume Input [veh/h]	67	452	80	206	470	154	149	472	57	48	282	126
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	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
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	67	452	80	206	470	154	149	472	57	48	282	126
Peak Hour Factor	0.9830	0.9830	0.9830	0.9830	0.9830	0.9830	0.9830	0.9830	0.9830	0.9830	0.9830	0.9830
Other Adjustment Factor	1.0000	1.0000	1.0000	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	115	20	52	120	39	38	120	14	12	72	32
Total Analysis Volume [veh/h]	68	460	81	210	478	157	152	480	58	49	287	128
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]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	5	2	0	1	6	0	7	4	0	3	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	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]	29	30	0	25	26	0	9	26	0	9	26	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	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	21	0	0	17	0	0	17	0	0	17	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	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		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
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
l1_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
l2, 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	13	25	25	10	40	40	4	34	34
g / C, Green / Cycle	0.05	0.19	0.19	0.15	0.28	0.28	0.11	0.45	0.45	0.04	0.38	0.38
(v / s)_i Volume / Saturation Flow Rate	0.04	0.16	0.16	0.12	0.19	0.19	0.09	0.15	0.15	0.03	0.12	0.13
s, saturation flow rate [veh/h]	1687	1772	1681	1687	1772	1624	1687	1772	1706	1687	1772	1591
c, Capacity [veh/h]	88	332	315	247	498	456	185	796	767	66	672	604
d1, Uniform Delay [s]	42.11	35.22	35.27	37.47	28.60	28.61	39.22	16.13	16.14	42.77	19.74	19.82
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]	13.12	5.48	5.98	8.07	1.53	1.68	8.82	1.18	1.23	14.75	1.26	1.46
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	0.77	0.83	0.84	0.85	0.66	0.67	0.82	0.34	0.34	0.74	0.32	0.33
d, Delay for Lane Group [s/veh]	55.24	40.70	41.25	45.54	30.13	30.29	48.04	17.31	17.37	57.53	21.00	21.28
Lane Group LOS	E	D	D	D	C	C	D	B	B	E	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.80	6.22	5.99	4.98	6.35	5.85	3.69	3.78	3.66	1.34	3.34	3.13
50th-Percentile Queue Length [ft/ln]	44.92	155.51	149.80	124.54	158.84	146.28	92.19	94.53	91.60	33.46	83.52	78.15
95th-Percentile Queue Length [veh/ln]	3.23	10.31	10.01	8.64	10.49	9.82	6.64	6.81	6.60	2.41	6.01	5.63
95th-Percentile Queue Length [ft/ln]	80.85	257.77	250.16	216.05	262.18	245.45	165.93	170.16	164.88	60.22	150.34	140.67

Movement, Approach, & Intersection Results

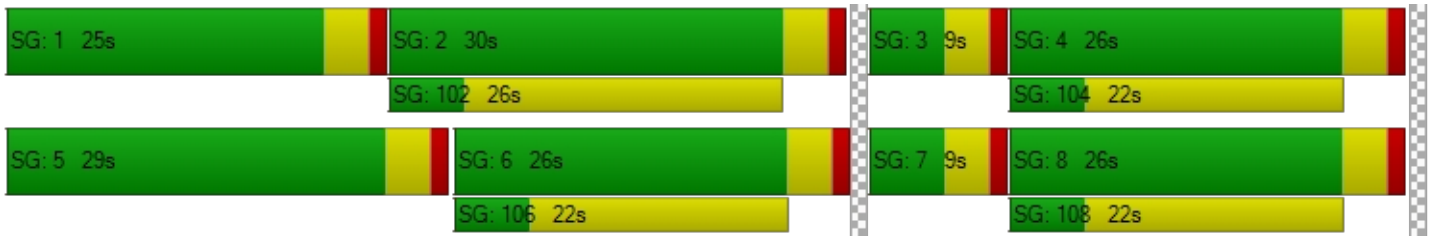
d_M, Delay for Movement [s/veh]	55.24	40.92	41.25	45.54	30.18	30.29	48.04	17.34	17.37	57.53	21.07	21.28
Movement LOS	E	D	D	D	C	C	D	B	B	E	C	C
d_A, Approach Delay [s/veh]	42.56			34.02			24.10			24.98		
Approach LOS	D			C			C			C		
d_I, Intersection Delay [s/veh]	31.78											
Intersection LOS	C											
Intersection V/C	0.497											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	36.45	36.45	36.45
l_p,int, Pedestrian LOS Score for Intersectio	2.534	2.610	2.536	2.655
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]	578	489	489	489
d_b, Bicycle Delay [s]	22.76	25.69	25.69	25.69
l_b,int, Bicycle LOS Score for Intersection	2.062	2.257	2.129	1.942
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 6: Colton Ave at New York St

Control Type:	Signalized	Delay (sec / veh):	20.9
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.375

Intersection Setup

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

Volumes

Name												
Base Volume Input [veh/h]	27	53	6	74	115	88	89	592	82	12	313	94
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	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
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	27	53	6	74	115	88	89	592	82	12	313	94
Peak Hour Factor	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510
Other Adjustment Factor	1.0000	1.0000	1.0000	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	14	2	19	30	23	23	156	22	3	82	25
Total Analysis Volume [veh/h]	28	56	6	78	121	93	94	623	86	13	329	99
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]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	2	0	0	6	0	7	4	0	3	8	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	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	26	0	0	32	0	9	23	0	9	23	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	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	17	0	0	17	0	0	14	0	0	14	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	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	C	R	C	R	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90
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
l1_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
l2, 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]	6	6	13	13	6	54	54	1	49	49
g / C, Green / Cycle	0.06	0.06	0.14	0.14	0.07	0.60	0.60	0.02	0.55	0.55
(v / s)_i Volume / Saturation Flow Rate	0.05	0.00	0.11	0.06	0.06	0.20	0.20	0.01	0.12	0.13
s, saturation flow rate [veh/h]	1743	1506	1738	1506	1687	1772	1697	1687	1772	1634
c, Capacity [veh/h]	113	97	246	213	121	1064	1019	27	965	890
d1, Uniform Delay [s]	41.37	39.53	37.47	35.36	41.07	9.03	9.03	43.93	10.66	10.70
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]	9.38	0.26	6.29	1.41	10.19	0.87	0.91	13.30	0.55	0.62
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	0.75	0.06	0.81	0.44	0.78	0.34	0.34	0.49	0.23	0.23
d, Delay for Lane Group [s/veh]	50.74	39.79	43.75	36.77	51.26	9.90	9.94	57.24	11.21	11.31
Lane Group LOS	D	D	D	D	D	A	A	E	B	B
Critical Lane Group	Yes	No	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.10	0.13	4.61	1.93	2.37	3.48	3.35	0.38	2.28	2.17
50th-Percentile Queue Length [ft/ln]	52.59	3.27	115.16	48.14	59.14	86.91	83.67	9.57	57.00	54.31
95th-Percentile Queue Length [veh/ln]	3.79	0.24	8.13	3.47	4.26	6.26	6.02	0.69	4.10	3.91
95th-Percentile Queue Length [ft/ln]	94.67	5.88	203.16	86.66	106.45	156.43	150.61	17.22	102.59	97.76

Movement, Approach, & Intersection Results

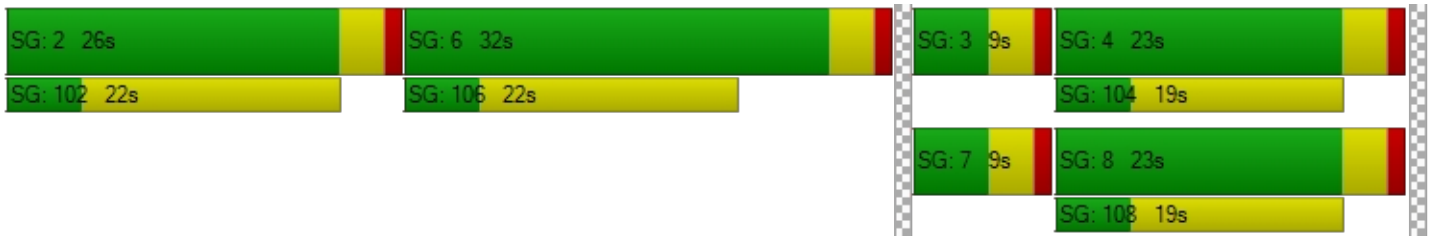
d_M, Delay for Movement [s/veh]	50.74	50.74	39.79	43.75	43.75	36.77	51.26	9.91	9.94	57.24	11.24	11.31
Movement LOS	D	D	D	D	D	D	D	A	A	E	B	B
d_A, Approach Delay [s/veh]	50.01			41.53			14.76			12.61		
Approach LOS	D			D			B			B		
d_I, Intersection Delay [s/veh]	20.93											
Intersection LOS	C											
Intersection V/C	0.375											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	36.45	36.45	36.45
l_p,int, Pedestrian LOS Score for Intersectio	2.208	2.264	2.546	2.525
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]	489	622	422	422
d_b, Bicycle Delay [s]	25.69	21.36	28.01	28.01
l_b,int, Bicycle LOS Score for Intersection	1.708	2.041	2.222	1.923
Bicycle LOS	A	B	B	A

Sequence

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



Intersection Level Of Service Report
Intersection 7: New York St at Project Driveway/Brockton Ave

Control Type:	Two-way stop	Delay (sec / veh):	15.6
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.113

Intersection Setup

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

Volumes

Name												
Base Volume Input [veh/h]	0	247	17	36	197	0	0	0	0	38	0	34
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	247	17	36	197	0	0	0	0	38	0	34
Peak Hour Factor	1.0000	0.8620	0.8620	0.8620	0.8620	1.0000	0.8620	0.8620	0.8620	0.8620	1.0000	0.8620
Other Adjustment Factor	1.0000	1.0000	1.0000	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	72	5	10	57	0	0	0	0	11	0	10
Total Analysis Volume [veh/h]	0	287	20	42	229	0	0	0	0	44	0	39
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.05
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	7.92	0.00	0.00	0.00	0.00	0.00	15.62	15.56	11.26
Movement LOS		A	A	A	A					C	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.07	0.07	0.00	0.00	0.00	0.00	0.59	0.59	0.59
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	1.79	1.79	0.00	0.00	0.00	0.00	14.67	14.67	14.67
d_A, Approach Delay [s/veh]	0.00			1.23			0.00			13.57		
Approach LOS	A			A			A			B		
d_I, Intersection Delay [s/veh]	2.21											
Intersection LOS	C											

APPENDIX C-2

INTERSECTION ANALYSIS
WORKSHEETS –
EXISTING CONDITIONS PLUS PROJECT

Redlands CarMax Project

Vistro File: K:\...\CarMax Redlands AM.vistro
Report File: K:\...\2. EX WP AM.pdf

Scenario 2 EX WP AM
11/13/2023

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Lugonia Ave at Tennessee St	Signalized	HCM 7th Edition	SB Left	0.376	33.1	C
2	Lugonia Ave at New York St	Signalized	HCM 7th Edition	WB Left	0.362	11.1	B
3	I-10 WB Ramps at Tennessee St	Signalized	HCM 7th Edition	WB Left	0.369	21.0	C
4	I-10 EB Ramps at Tennessee St	Signalized	HCM 7th Edition	SB Left	0.523	23.1	C
5	Colton Ave at Tennessee St	Signalized	HCM 7th Edition	NB Left	0.364	34.2	C
6	Colton Ave at New York St	Signalized	HCM 7th Edition	WB Left	0.207	21.1	C
7	New York St at Project Driveway/Brockton Ave	Two-way stop	HCM 7th Edition	WB Left	0.047	11.5	B

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

Intersection Level Of Service Report
Intersection 1: Lugonia Ave at Tennessee St

Control Type:	Signalized	Delay (sec / veh):	33.1
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.376

Intersection Setup

Name							Lugonia 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 Entry Pocket	1	0	1	1	0	0	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.21
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							Lugonia Ave					
Base Volume Input [veh/h]	120	217	68	57	103	4	20	218	149	105	353	86
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	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
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	1	4	0	0	0	0	0	0	0	1
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	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]	120	217	69	61	103	4	20	218	149	105	353	87
Peak Hour Factor	0.9840	0.9840	0.9840	0.9840	0.9840	0.9840	0.9840	0.9840	0.9840	0.9840	0.9840	0.9840
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	30	55	18	15	26	1	5	55	38	27	90	22
Total Analysis Volume [veh/h]	122	221	70	62	105	4	20	222	151	107	359	88
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]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	5	2	0	1	6	0	7	4	0	3	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	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]	17	27	0	11	21	0	9	23	0	29	43	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	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	12	0	0	12	0	0	6	0	0	6	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
l1, 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
l2, 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		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		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	R	L	C	L	C	R	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90
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
l1_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
l2, 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
g_i, Effective Green Time [s]	8	47	47	4	43	2	15	15	7	21	21
g / C, Green / Cycle	0.09	0.52	0.52	0.05	0.48	0.02	0.17	0.17	0.08	0.23	0.23
(v / s)_i Volume / Saturation Flow Rate	0.07	0.12	0.05	0.04	0.06	0.01	0.07	0.10	0.06	0.20	0.06
s, saturation flow rate [veh/h]	1687	1772	1506	1687	1760	1687	3373	1506	1687	1772	1506
c, Capacity [veh/h]	152	927	788	79	844	38	573	256	139	408	346
d1, Uniform Delay [s]	40.15	11.69	10.73	42.46	12.99	43.52	33.20	34.47	40.44	33.46	28.33
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.11	0.11	0.11	0.11	0.11	0.11
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
d2, Incremental Delay [s]	9.33	0.61	0.22	15.69	0.32	11.02	0.43	2.17	8.54	6.32	0.38
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
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
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

Lane Group Results

X, volume / capacity	0.80	0.24	0.09	0.79	0.13	0.53	0.39	0.59	0.77	0.88	0.25
d, Delay for Lane Group [s/veh]	49.48	12.30	10.96	58.15	13.31	54.54	33.63	36.64	48.97	39.77	28.72
Lane Group LOS	D	B	B	E	B	D	C	D	D	D	C
Critical Lane Group	No	Yes	No	Yes	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	3.01	2.43	0.71	1.69	1.25	0.55	2.16	3.15	2.62	8.09	1.57
50th-Percentile Queue Length [ft/ln]	75.19	60.83	17.77	42.30	31.20	13.80	53.90	78.77	65.61	202.17	39.18
95th-Percentile Queue Length [veh/ln]	5.41	4.38	1.28	3.05	2.25	0.99	3.88	5.67	4.72	12.75	2.82
95th-Percentile Queue Length [ft/ln]	135.34	109.49	31.98	76.14	56.17	24.84	97.02	141.79	118.09	318.77	70.52

Movement, Approach, & Intersection Results

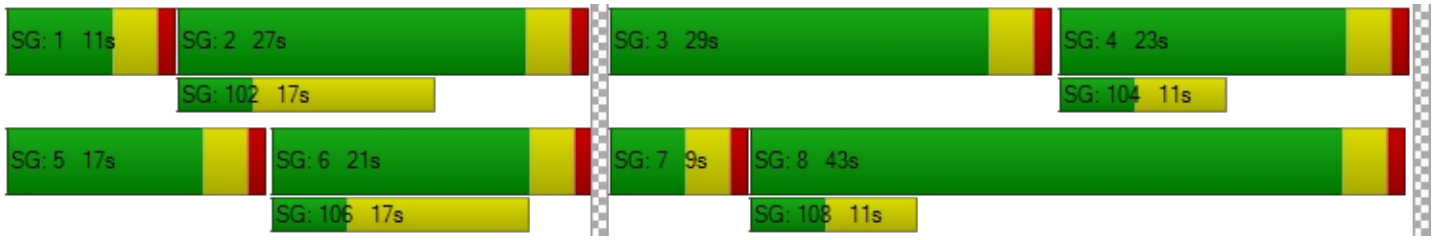
d_M, Delay for Movement [s/veh]	49.48	12.30	10.96	58.15	13.31	13.31	54.54	33.63	36.64	48.97	39.77	28.72
Movement LOS	D	B	B	E	B	B	D	C	D	D	D	C
d_A, Approach Delay [s/veh]	23.06			29.57			35.85			39.79		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	33.12											
Intersection LOS	C											
Intersection V/C	0.376											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	36.45	36.45	36.45
l_p,int, Pedestrian LOS Score for Intersectio	2.322	2.254	2.597	2.602
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]	511	378	422	867
d_b, Bicycle Delay [s]	24.94	29.61	28.01	14.45
l_b,int, Bicycle LOS Score for Intersection	2.241	1.842	1.884	2.474
Bicycle LOS	B	A	A	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: Lugonia Ave at New York St

Control Type:	Signalized	Delay (sec / veh):	11.1
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.362

Intersection Setup

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

Volumes

Name						
Base Volume Input [veh/h]	96	27	264	92	43	478
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
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	1	0	0	5	1	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	97	27	264	97	44	478
Peak Hour Factor	0.9540	0.9540	0.9540	0.9540	0.9540	0.9540
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	25	7	69	25	12	125
Total Analysis Volume [veh/h]	102	28	277	102	46	501
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal Group	3	0	2	0	1	6
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	5	0	5	0	5	5
Maximum Green [s]	30	0	30	0	30	30
Amber [s]	3.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Split [s]	26	0	53	0	11	64
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	5	0	5	0	0	5
Pedestrian Clearance [s]	14	0	7	0	0	10
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	R	L	C
C, Cycle Length [s]	90	90	90	90	90
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]	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	66	66	3	73
g / C, Green / Cycle	0.10	0.73	0.73	0.04	0.81
(v / s)_i Volume / Saturation Flow Rate	0.08	0.08	0.07	0.03	0.28
s, saturation flow rate [veh/h]	1645	3373	1506	1687	1772
c, Capacity [veh/h]	163	2458	1097	65	1438
d1, Uniform Delay [s]	39.64	3.61	3.55	42.76	2.22
k, delay calibration	0.11	0.50	0.50	0.11	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.49	0.09	0.17	13.09	0.67
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	0.11	0.09	0.71	0.35
d, Delay for Lane Group [s/veh]	48.12	3.70	3.72	55.85	2.89
Lane Group LOS	D	A	A	E	A
Critical Lane Group	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	3.16	0.62	0.47	1.24	1.53
50th-Percentile Queue Length [ft/ln]	78.97	15.40	11.87	30.93	38.16
95th-Percentile Queue Length [veh/ln]	5.69	1.11	0.85	2.23	2.75
95th-Percentile Queue Length [ft/ln]	142.15	27.71	21.36	55.68	68.69

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	48.12	48.12	3.70	3.72	55.85	2.89
Movement LOS	D	D	A	A	E	A
d_A, Approach Delay [s/veh]	48.12		3.71		7.34	
Approach LOS	D		A		A	
d_I, Intersection Delay [s/veh]	11.06					
Intersection LOS	B					
Intersection V/C	0.362					

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	36.45	36.45
l_p,int, Pedestrian LOS Score for Intersectio	1.852	2.372	2.340
Crosswalk LOS	A	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	489	1089	1333
d_b, Bicycle Delay [s]	25.69	9.34	5.00
l_b,int, Bicycle LOS Score for Intersection	1.774	1.872	2.462
Bicycle LOS	A	A	B

Sequence

Ring 1	1	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 3: I-10 WB Ramps at Tennessee St

Control Type:	Signalized	Delay (sec / veh):	21.0
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.369

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	1	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	1	0	0	1	0	0	1	0	0	0
Exit Pocket Length [ft]	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	49.21	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No						No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	207	384	0	0	309	88	0	0	0	161	6	128
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	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
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	0	0	0	0	0	0	0	0	0	0	1
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	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]	209	384	0	0	309	88	0	0	0	161	6	129
Peak Hour Factor	0.9220	0.9220	1.0000	1.0000	0.9220	0.9220	1.0000	1.0000	1.0000	0.9220	0.9220	0.9220
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	57	104	0	0	84	24	0	0	0	44	2	35
Total Analysis Volume [veh/h]	227	416	0	0	335	95	0	0	0	175	7	140
Presence of On-Street Parking	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]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	5	2	0	0	6	0	0	0	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	0	5	0	0	0	0	0	5	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	44	60	0	0	16	0	0	0	0	0	30	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	7	0	0	7	0	0	0	0	0	21	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	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	L	C	C	C		C	C
C, Cycle Length [s]	90	90	90	90		90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	14	70	52	52		12	12
g / C, Green / Cycle	0.16	0.78	0.58	0.58		0.13	0.13
(v / s)_i Volume / Saturation Flow Rate	0.13	0.12	0.12	0.13		0.10	0.10
s, saturation flow rate [veh/h]	1687	3373	1772	1643		1687	1517
c, Capacity [veh/h]	268	2631	1022	948		221	199
d1, Uniform Delay [s]	36.78	2.48	9.18	9.28		37.91	37.63
k, delay calibration	0.11	0.50	0.50	0.50		0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	7.25	0.13	0.47	0.56		6.26	5.32
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.85	0.16	0.21	0.23		0.79	0.74
d, Delay for Lane Group [s/veh]	44.04	2.61	9.64	9.83		44.17	42.94
Lane Group LOS	D	A	A	A		D	D
Critical Lane Group	Yes	No	No	Yes		Yes	No
50th-Percentile Queue Length [veh/ln]	5.30	0.67	2.01	2.05		4.06	3.36
50th-Percentile Queue Length [ft/ln]	132.54	16.64	50.31	51.16		101.61	84.04
95th-Percentile Queue Length [veh/ln]	9.08	1.20	3.62	3.68		7.32	6.05
95th-Percentile Queue Length [ft/ln]	226.94	29.94	90.56	92.08		182.90	151.26

Movement, Approach, & Intersection Results

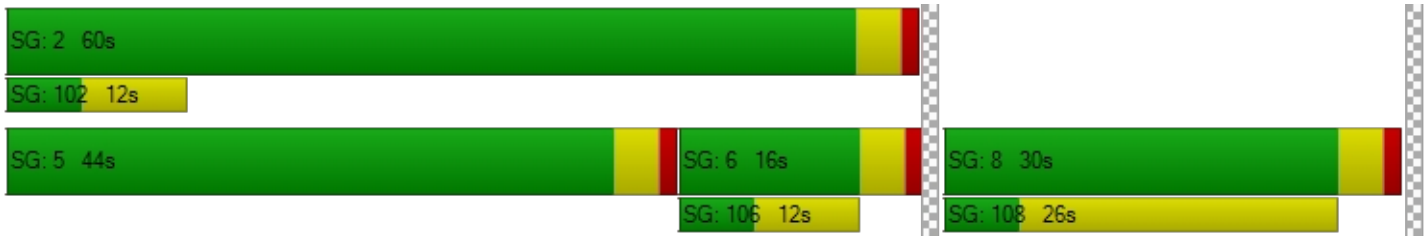
d_M, Delay for Movement [s/veh]	44.04	2.61	0.00	0.00	9.71	9.83	0.00	0.00	0.00	44.17	42.94	42.94
Movement LOS	D	A			A	A				D	D	D
d_A, Approach Delay [s/veh]	17.24			9.74			0.00			43.61		
Approach LOS	B			A			A			D		
d_I, Intersection Delay [s/veh]	21.01											
Intersection LOS	C											
Intersection V/C	0.369											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	36.45	36.45	36.45
l_p,int, Pedestrian LOS Score for Intersectio	2.642	2.373	1.877	1.873
Crosswalk LOS	B	B	A	A
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1244	267	0	578
d_b, Bicycle Delay [s]	6.42	33.80	45.00	22.76
l_b,int, Bicycle LOS Score for Intersection	2.090	1.914	4.132	1.825
Bicycle LOS	B	A	D	A

Sequence

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



Intersection Level Of Service Report
Intersection 4: I-10 EB Ramps at Tennessee St

Control Type:	Signalized	Delay (sec / veh):	23.1
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.523

Intersection Setup

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

Volumes

Name												
Base Volume Input [veh/h]	0	457	122	114	349	0	104	177	383	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
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	1	0	0	0	0	0	2	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	459	123	114	349	0	104	177	385	0	0	0
Peak Hour Factor	1.0000	0.9560	0.9560	0.9560	0.9560	1.0000	0.9560	0.9560	0.9560	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	120	32	30	91	0	27	46	101	0	0	0
Total Analysis Volume [veh/h]	0	480	129	119	365	0	109	185	403	0	0	0
Presence of On-Street Parking	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]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	2	0	1	6	0	0	4	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	5	5	0	0	5	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	16	0	15	31	0	0	59	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	0
Pedestrian Clearance [s]	0	7	0	0	7	0	0	17	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	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	L	C	C	C	
C, Cycle Length [s]	90	90	90	90	90	90	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	43	43	8	55	27	27	
g / C, Green / Cycle	0.48	0.48	0.09	0.61	0.30	0.30	
(v / s)_i Volume / Saturation Flow Rate	0.17	0.18	0.07	0.11	0.17	0.27	
s, saturation flow rate [veh/h]	1772	1648	1687	3373	1739	1506	
c, Capacity [veh/h]	847	788	149	2060	523	452	
d1, Uniform Delay [s]	14.80	15.04	40.26	7.65	26.50	30.07	
k, delay calibration	0.50	0.50	0.11	0.50	0.11	0.11	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	1.19	1.43	9.48	0.19	0.95	6.22	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	0.36	0.39	0.80	0.18	0.56	0.89	
d, Delay for Lane Group [s/veh]	15.99	16.47	49.74	7.84	27.45	36.29	
Lane Group LOS	B	B	D	A	C	D	
Critical Lane Group	No	Yes	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	4.01	4.10	2.94	1.45	5.31	8.83	
50th-Percentile Queue Length [ft/ln]	100.17	102.48	73.56	36.30	132.78	220.68	
95th-Percentile Queue Length [veh/ln]	7.21	7.38	5.30	2.61	9.09	13.70	
95th-Percentile Queue Length [ft/ln]	180.31	184.47	132.41	65.34	227.27	342.49	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	16.17	16.47	49.74	7.84	0.00	27.45	27.45	36.29	0.00	0.00	0.00
Movement LOS		B	B	D	A		C	C	D			
d_A, Approach Delay [s/veh]	16.23			18.14			32.56			0.00		
Approach LOS	B			B			C			A		
d_I, Intersection Delay [s/veh]	23.10											
Intersection LOS	C											
Intersection V/C	0.523											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	36.45	36.45	36.45
l_p,int, Pedestrian LOS Score for Intersectio	2.570	2.511	2.056	1.927
Crosswalk LOS	B	B	B	A
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	267	600	1222	0
d_b, Bicycle Delay [s]	33.80	22.05	6.81	45.00
l_b,int, Bicycle LOS Score for Intersection	2.062	1.959	2.135	4.132
Bicycle LOS	B	A	B	D

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 5: Colton Ave at Tennessee St

Control Type:	Signalized	Delay (sec / veh):	34.2
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.364

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00
Speed [mph]	30.00			30.00			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												
Base Volume Input [veh/h]	53	422	41	98	422	164	60	130	29	38	200	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
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	1	2	0	0	0	1	0	0	0	3
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	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]	53	422	42	100	422	164	60	131	29	38	200	111
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]	14	114	11	27	114	44	16	35	8	10	54	30
Total Analysis Volume [veh/h]	57	457	46	108	457	178	65	142	31	41	217	120
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]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	5	2	0	1	6	0	7	4	0	3	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	31	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]	9	35	0	20	46	0	9	26	0	9	26	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	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	21	0	0	17	0	0	17	0	0	17	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	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		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
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
l1_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
l2, 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	7	20	20	4	47	47	3	46	46
g / C, Green / Cycle	0.04	0.18	0.18	0.08	0.22	0.22	0.05	0.52	0.52	0.04	0.51	0.51
(v / s)_i Volume / Saturation Flow Rate	0.03	0.14	0.14	0.06	0.19	0.19	0.04	0.05	0.05	0.02	0.10	0.10
s, saturation flow rate [veh/h]	1687	1772	1715	1687	1772	1605	1687	1772	1665	1687	1772	1567
c, Capacity [veh/h]	72	323	313	138	392	355	83	925	870	61	902	797
d1, Uniform Delay [s]	42.70	35.14	35.18	40.55	33.58	33.62	42.29	10.80	10.82	42.87	12.04	12.10
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]	17.66	4.31	4.56	9.38	5.12	5.78	14.41	0.20	0.23	12.35	0.48	0.57
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	0.80	0.79	0.79	0.78	0.85	0.85	0.78	0.09	0.10	0.68	0.19	0.20
d, Delay for Lane Group [s/veh]	60.36	39.45	39.73	49.93	38.69	39.40	56.70	11.00	11.05	55.22	12.52	12.68
Lane Group LOS	E	D	D	D	D	D	E	B	B	E	B	B
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.59	5.61	5.49	2.68	7.35	6.76	1.75	0.89	0.87	1.10	1.94	1.82
50th-Percentile Queue Length [ft/ln]	39.85	140.32	137.27	66.92	183.64	169.01	43.63	22.15	21.68	27.49	48.57	45.50
95th-Percentile Queue Length [veh/ln]	2.87	9.50	9.33	4.82	11.79	11.02	3.14	1.59	1.56	1.98	3.50	3.28
95th-Percentile Queue Length [ft/ln]	71.73	237.46	233.34	120.45	294.75	275.62	78.54	39.86	39.02	49.49	87.42	81.90

Movement, Approach, & Intersection Results

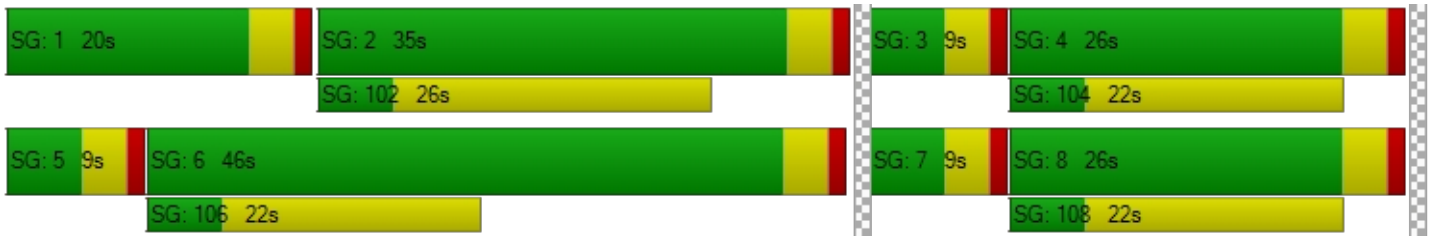
d_M, Delay for Movement [s/veh]	60.36	39.57	39.73	49.93	38.89	39.40	56.70	11.02	11.05	55.22	12.55	12.68
Movement LOS	E	D	D	D	D	D	E	B	B	E	B	B
d_A, Approach Delay [s/veh]	41.70			40.62			23.50			17.22		
Approach LOS	D			D			C			B		
d_I, Intersection Delay [s/veh]	34.20											
Intersection LOS	C											
Intersection V/C	0.364											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	36.45	36.45	36.45
l_p,int, Pedestrian LOS Score for Intersectio	2.514	2.571	2.436	2.564
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]	689	933	489	489
d_b, Bicycle Delay [s]	19.34	12.80	25.69	25.69
l_b,int, Bicycle LOS Score for Intersection	2.022	2.173	1.756	1.871
Bicycle LOS	B	B	A	A

Sequence

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



Intersection Level Of Service Report
Intersection 6: Colton Ave at New York St

Control Type:	Signalized	Delay (sec / veh):	21.1
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.207

Intersection Setup

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

Volumes

Name												
Base Volume Input [veh/h]	56	42	9	16	30	61	34	173	40	8	217	55
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	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
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	3	4	0	0	0	0	1
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	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]	56	42	9	16	30	64	38	173	40	8	217	56
Peak Hour Factor	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850	0.9850
Other Adjustment Factor	1.0000	1.0000	1.0000	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	11	2	4	8	16	10	44	10	2	55	14
Total Analysis Volume [veh/h]	57	43	9	16	30	65	39	176	41	8	220	57
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]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	2	0	0	6	0	7	4	0	3	8	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	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	26	0	9	23	0	9	23	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	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	17	0	0	17	0	0	14	0	0	14	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
l1, 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
l2, 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	C	R	C	R	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90
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
l1_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
l2, 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]	7	7	6	6	3	61	61	1	58	58
g / C, Green / Cycle	0.08	0.08	0.06	0.06	0.03	0.67	0.67	0.01	0.65	0.65
(v / s)_i Volume / Saturation Flow Rate	0.06	0.01	0.03	0.04	0.02	0.06	0.06	0.00	0.08	0.08
s, saturation flow rate [veh/h]	1722	1506	1741	1506	1687	1772	1659	1687	1772	1650
c, Capacity [veh/h]	132	115	111	96	59	1190	1115	17	1147	1068
d1, Uniform Delay [s]	40.74	38.60	40.53	41.23	42.92	5.17	5.18	44.29	6.08	6.10
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]	8.57	0.29	2.47	8.10	12.28	0.15	0.17	18.02	0.22	0.25
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	0.76	0.08	0.42	0.68	0.67	0.09	0.10	0.46	0.12	0.13
d, Delay for Lane Group [s/veh]	49.31	38.89	42.99	49.34	55.20	5.32	5.35	62.32	6.30	6.35
Lane Group LOS	D	D	D	D	E	A	A	E	A	A
Critical Lane Group	Yes	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.46	0.19	1.05	1.61	1.05	0.67	0.66	0.26	0.98	0.95
50th-Percentile Queue Length [ft/ln]	61.49	4.80	26.15	40.26	26.20	16.85	16.47	6.56	24.42	23.75
95th-Percentile Queue Length [veh/ln]	4.43	0.35	1.88	2.90	1.89	1.21	1.19	0.47	1.76	1.71
95th-Percentile Queue Length [ft/ln]	110.67	8.65	47.07	72.47	47.16	30.34	29.65	11.80	43.95	42.75

Movement, Approach, & Intersection Results

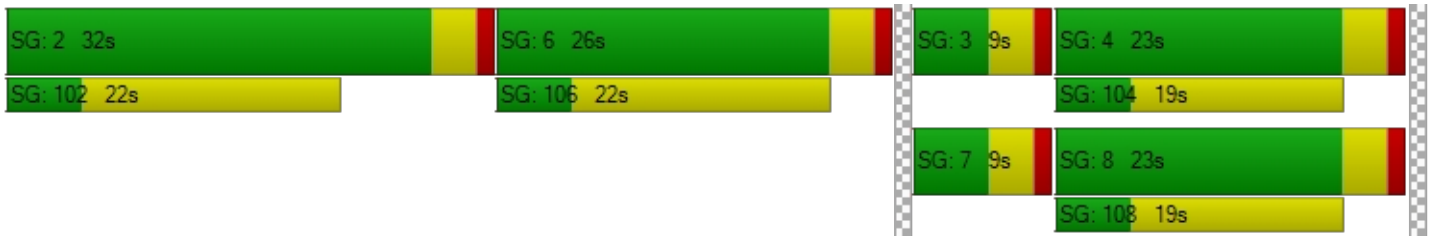
d_M, Delay for Movement [s/veh]	49.31	49.31	38.89	42.99	42.99	49.34	55.20	5.33	5.35	62.32	6.32	6.35
Movement LOS	D	D	D	D	D	D	E	A	A	E	A	A
d_A, Approach Delay [s/veh]	48.45			46.71			12.93			7.89		
Approach LOS	D			D			B			A		
d_I, Intersection Delay [s/veh]	21.06											
Intersection LOS	C											
Intersection V/C	0.207											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	36.45	36.45	36.45
l_p,int, Pedestrian LOS Score for Intersectio	2.178	2.194	2.418	2.396
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]	622	489	422	422
d_b, Bicycle Delay [s]	21.36	25.69	28.01	28.01
l_b,int, Bicycle LOS Score for Intersection	1.739	1.743	1.771	1.795
Bicycle LOS	A	A	A	A

Sequence

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



Intersection Level Of Service Report
Intersection 7: New York St at Project Driveway/Brockton Ave

Control Type:	Two-way stop	Delay (sec / veh):	11.5
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.047

Intersection Setup

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

Volumes

Name												
Base Volume Input [veh/h]	0	87	17	26	118	0	0	0	0	23	0	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 Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	5	0	0	0	0	6	1	0	3	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	5	87	17	26	118	6	1	0	3	23	0	30
Peak Hour Factor	1.0000	0.8270	0.8270	0.8270	0.8270	1.0000	0.8270	0.8270	0.8270	0.8270	1.0000	0.8270
Other Adjustment Factor	1.0000	1.0000	1.0000	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	26	5	8	36	2	0	0	1	7	0	9
Total Analysis Volume [veh/h]	5	105	21	31	143	6	1	0	4	28	0	36
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.04
d_M, Delay for Movement [s/veh]	7.52	0.00	0.00	7.50	0.00	0.00	11.40	11.42	9.02	11.46	11.78	9.29
Movement LOS	A	A	A	A	A	A	B	B	A	B	B	A
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.01	0.05	0.05	0.05	0.02	0.02	0.02	0.28	0.28	0.28
95th-Percentile Queue Length [ft/ln]	0.22	0.22	0.22	1.32	1.32	1.32	0.47	0.47	0.47	6.96	6.96	6.96
d_A, Approach Delay [s/veh]	0.29			1.29			9.50			10.24		
Approach LOS	A			A			A			B		
d_I, Intersection Delay [s/veh]	2.56											
Intersection LOS	B											

Redlands CarMax Project

Vistro File: K:\...\CarMax Redlands PM.vistro
Report File: K:\...\2. EX WP PM.pdf

Scenario 2 EX WP PM
11/13/2023

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Lugonia Ave at Tennessee St	Signalized	HCM 7th Edition	EB Left	0.661	34.9	C
2	Lugonia Ave at New York St	Signalized	HCM 7th Edition	WB Left	0.504	13.6	B
3	I-10 WB Ramps at Tennessee St	Signalized	HCM 7th Edition	NB Left	0.537	20.5	C
4	I-10 EB Ramps at Tennessee St	Signalized	HCM 7th Edition	SB Left	0.728	31.1	C
5	Colton Ave at Tennessee St	Signalized	HCM 7th Edition	WB Left	0.501	31.8	C
6	Colton Ave at New York St	Signalized	HCM 7th Edition	WB Left	0.376	21.2	C
7	New York St at Project Driveway/Brockton Ave	Two-way stop	HCM 7th Edition	WB Left	0.118	16.2	C

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

Intersection Level Of Service Report
Intersection 1: Lugonia Ave at Tennessee St

Control Type:	Signalized	Delay (sec / veh):	34.9
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.661

Intersection Setup

Name							Lugonia 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 Entry Pocket	1	0	1	1	0	0	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.21
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							Lugonia Ave					
Base Volume Input [veh/h]	305	338	242	106	147	15	55	781	464	90	431	107
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	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
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	1	5	0	0	0	0	0	0	0	5
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	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]	305	338	243	111	147	15	55	781	464	90	431	112
Peak Hour Factor	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620	0.9620
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	79	88	63	29	38	4	14	203	121	23	112	29
Total Analysis Volume [veh/h]	317	351	253	115	153	16	57	812	482	94	448	116
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]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	5	2	0	1	6	0	7	4	0	3	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	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]	23	32	0	12	21	0	9	36	0	10	37	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	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	12	0	0	12	0	0	6	0	0	6	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	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		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		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	R	L	C	L	C	R	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90
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
l1_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
l2, 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
g_i, Effective Green Time [s]	19	30	30	8	19	4	31	31	6	33	33
g / C, Green / Cycle	0.21	0.33	0.33	0.08	0.21	0.04	0.34	0.34	0.07	0.37	0.37
(v / s)_i Volume / Saturation Flow Rate	0.19	0.20	0.17	0.07	0.10	0.03	0.24	0.32	0.06	0.25	0.08
s, saturation flow rate [veh/h]	1687	1772	1506	1687	1742	1687	3373	1506	1687	1772	1506
c, Capacity [veh/h]	349	580	493	143	358	74	1159	518	112	649	552
d1, Uniform Delay [s]	34.88	25.40	24.48	40.46	31.47	42.58	25.53	28.51	41.51	24.17	19.57
k, delay calibration	0.13	0.50	0.50	0.11	0.50	0.11	0.11	0.38	0.11	0.21	0.11
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
d2, Incremental Delay [s]	10.71	4.64	3.79	10.09	4.42	15.31	0.78	21.26	14.67	2.58	0.19
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
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
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

Lane Group Results

X, volume / capacity	0.91	0.61	0.51	0.81	0.47	0.77	0.70	0.93	0.84	0.69	0.21
d, Delay for Lane Group [s/veh]	45.59	30.05	28.27	50.55	35.90	57.89	26.31	49.77	56.19	26.76	19.76
Lane Group LOS	D	C	C	D	D	E	C	D	E	C	B
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	7.66	6.84	4.75	2.87	3.62	1.56	7.36	12.65	2.49	8.23	1.66
50th-Percentile Queue Length [ft/ln]	191.38	171.02	118.79	71.73	90.39	38.90	184.05	316.25	62.35	205.67	41.39
95th-Percentile Queue Length [veh/ln]	12.19	11.13	8.33	5.16	6.51	2.80	11.81	18.48	4.49	12.93	2.98
95th-Percentile Queue Length [ft/ln]	304.82	278.26	208.16	129.12	162.70	70.02	295.30	462.08	112.24	323.27	74.50

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	45.59	30.05	28.27	50.55	35.90	35.90	57.89	26.31	49.77	56.19	26.76	19.76
Movement LOS	D	C	C	D	D	D	E	C	D	E	C	B
d_A, Approach Delay [s/veh]	34.91			41.83			36.01			29.73		
Approach LOS	C			D			D			C		
d_I, Intersection Delay [s/veh]	34.92											
Intersection LOS	C											
Intersection V/C	0.661											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	36.45	36.45	36.45
l_p,int, Pedestrian LOS Score for Intersectio	2.535	2.330	2.801	2.753
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	622	378	711	733
d_b, Bicycle Delay [s]	21.36	29.61	18.69	18.05
l_b,int, Bicycle LOS Score for Intersection	3.079	2.028	2.674	2.645
Bicycle LOS	C	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: Lugonia Ave at New York St

Control Type:	Signalized	Delay (sec / veh):	13.6
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.504

Intersection Setup

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

Volumes

Name						
Base Volume Input [veh/h]	187	76	980	219	28	469
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
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	5	1	0	6	1	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	192	77	980	225	29	469
Peak Hour Factor	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
Total 15-Minute Volume [veh/h]	51	21	261	60	8	125
Total Analysis Volume [veh/h]	205	82	1045	240	31	500
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal Group	3	0	2	0	1	6
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	5	0	5	0	5	5
Maximum Green [s]	30	0	30	0	30	30
Amber [s]	3.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Split [s]	31	0	50	0	9	59
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	5	0	5	0	0	5
Pedestrian Clearance [s]	14	0	7	0	0	10
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
l1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
l2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	R	L	C
C, Cycle Length [s]	90	90	90	90	90
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]	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	18	57	57	3	64
g / C, Green / Cycle	0.20	0.64	0.64	0.03	0.71
(v / s)_i Volume / Saturation Flow Rate	0.18	0.31	0.16	0.02	0.28
s, saturation flow rate [veh/h]	1631	3373	1506	1687	1772
c, Capacity [veh/h]	326	2146	958	52	1260
d1, Uniform Delay [s]	34.97	8.63	7.09	43.07	5.22
k, delay calibration	0.11	0.50	0.50	0.11	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.71	0.79	0.63	10.51	0.94
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	0.88	0.49	0.25	0.60	0.40
d, Delay for Lane Group [s/veh]	42.68	9.43	7.71	53.57	6.16
Lane Group LOS	D	A	A	D	A
Critical Lane Group	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	6.67	4.92	1.93	0.83	3.34
50th-Percentile Queue Length [ft/ln]	166.66	123.02	48.33	20.65	83.38
95th-Percentile Queue Length [veh/ln]	10.90	8.56	3.48	1.49	6.00
95th-Percentile Queue Length [ft/ln]	272.52	213.96	87.00	37.17	150.08

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	42.68	42.68	9.43	7.71	53.57	6.16
Movement LOS	D	D	A	A	D	A
d_A, Approach Delay [s/veh]	42.68		9.11		8.93	
Approach LOS	D		A		A	
d_I, Intersection Delay [s/veh]	13.64					
Intersection LOS	B					
Intersection V/C	0.504					

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	36.45	36.45
l_p,int, Pedestrian LOS Score for Intersectio	1.988	2.618	2.537
Crosswalk LOS	A	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	600	1022	1222
d_b, Bicycle Delay [s]	22.05	10.76	6.81
l_b,int, Bicycle LOS Score for Intersection	2.033	2.620	2.436
Bicycle LOS	B	B	B

Sequence

Ring 1	1	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 3: I-10 WB Ramps at Tennessee St

Control Type:	Signalized	Delay (sec / veh):	20.5
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.537

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	1	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	1	0	0	1	0	0	1	0	0	0
Exit Pocket Length [ft]	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	49.21	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No						No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	216	701	0	0	631	83	0	0	0	132	8	259
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	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
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	0	0	0	0	0	0	0	0	0	0	1
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	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]	219	701	0	0	631	83	0	0	0	132	8	260
Peak Hour Factor	0.9540	0.9540	1.0000	1.0000	0.9540	0.9540	1.0000	1.0000	1.0000	0.9540	0.9540	0.9540
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	57	184	0	0	165	22	0	0	0	35	2	68
Total Analysis Volume [veh/h]	230	735	0	0	661	87	0	0	0	138	8	273
Presence of On-Street Parking	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]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	5	2	0	0	6	0	0	0	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	0	5	0	0	0	0	0	5	0
Maximum Green [s]	19	30	0	0	31	0	0	0	0	0	28	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	23	58	0	0	35	0	0	0	0	0	32	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	7	0	0	7	0	0	0	0	0	21	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	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	L	C	C	C		C	C
C, Cycle Length [s]	90	90	90	90		90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	14	63	45	45		19	19
g / C, Green / Cycle	0.16	0.70	0.50	0.50		0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.14	0.22	0.21	0.22		0.09	0.18
s, saturation flow rate [veh/h]	1687	3373	1772	1702		1692	1506
c, Capacity [veh/h]	267	2371	886	851		352	314
d1, Uniform Delay [s]	36.93	5.08	14.24	14.40		30.88	34.46
k, delay calibration	0.17	0.50	0.50	0.50		0.11	0.14
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	12.28	0.34	1.47	1.65		0.78	9.47
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.86	0.31	0.42	0.44		0.41	0.87
d, Delay for Lane Group [s/veh]	49.21	5.42	15.71	16.04		31.65	43.93
Lane Group LOS	D	A	B	B		C	D
Critical Lane Group	Yes	No	No	Yes		No	Yes
50th-Percentile Queue Length [veh/ln]	5.75	2.24	4.91	4.98		2.78	6.47
50th-Percentile Queue Length [ft/ln]	143.74	56.01	122.64	124.55		69.52	161.71
95th-Percentile Queue Length [veh/ln]	9.68	4.03	8.54	8.64		5.01	10.64
95th-Percentile Queue Length [ft/ln]	242.05	100.81	213.44	216.07		125.13	265.98

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	49.21	5.42	0.00	0.00	15.86	16.04	0.00	0.00	0.00	31.65	31.65	43.93
Movement LOS	D	A			B	B				C	C	D
d_A, Approach Delay [s/veh]	15.86			15.88			0.00			39.65		
Approach LOS	B			B			A			D		
d_I, Intersection Delay [s/veh]	20.54											
Intersection LOS	C											
Intersection V/C	0.537											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	36.45	36.45	36.45
l_p,int, Pedestrian LOS Score for Intersectio	2.741	2.561	1.875	1.921
Crosswalk LOS	B	B	A	A
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1200	689	0	622
d_b, Bicycle Delay [s]	7.20	19.34	45.00	21.36
l_b,int, Bicycle LOS Score for Intersection	2.356	2.177	4.132	1.905
Bicycle LOS	B	B	D	A

Sequence

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

Intersection Level Of Service Report
Intersection 4: I-10 EB Ramps at Tennessee St

Control Type:	Signalized	Delay (sec / veh):	31.1
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.728

Intersection Setup

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

Volumes

Name												
Base Volume Input [veh/h]	0	617	149	263	503	0	297	402	329	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
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	2	0	0	0	0	0	3	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	620	151	263	503	0	297	402	332	0	0	0
Peak Hour Factor	1.0000	0.9620	0.9620	0.9620	0.9620	1.0000	0.9620	0.9620	0.9620	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	161	39	68	131	0	77	104	86	0	0	0
Total Analysis Volume [veh/h]	0	644	157	273	523	0	309	418	345	0	0	0
Presence of On-Street Parking	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]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	2	0	1	6	0	0	4	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	5	5	0	0	5	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	16	0	21	37	0	0	53	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	0
Pedestrian Clearance [s]	0	7	0	0	7	0	0	17	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	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	L	C	C	C	
C, Cycle Length [s]	90	90	90	90	90	90	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	29	29	16	49	33	33	
g / C, Green / Cycle	0.32	0.32	0.18	0.55	0.36	0.36	
(v / s)_i Volume / Saturation Flow Rate	0.23	0.24	0.16	0.16	0.32	0.32	
s, saturation flow rate [veh/h]	1772	1657	1687	3373	1724	1584	
c, Capacity [veh/h]	573	536	305	1851	625	574	
d1, Uniform Delay [s]	26.63	27.18	36.01	10.84	27.07	27.08	
k, delay calibration	0.50	0.50	0.11	0.50	0.16	0.16	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	6.95	9.21	9.01	0.38	6.97	7.58	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	0.70	0.75	0.89	0.28	0.89	0.89	
d, Delay for Lane Group [s/veh]	33.58	36.38	45.02	11.23	34.04	34.65	
Lane Group LOS	C	D	D	B	C	C	
Critical Lane Group	No	Yes	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	8.36	8.77	6.49	2.69	12.01	11.14	
50th-Percentile Queue Length [ft/ln]	208.94	219.29	162.37	67.29	300.27	278.57	
95th-Percentile Queue Length [veh/ln]	13.10	13.63	10.67	4.85	17.69	16.62	
95th-Percentile Queue Length [ft/ln]	327.47	340.72	266.85	121.13	442.36	415.44	

Movement, Approach, & Intersection Results

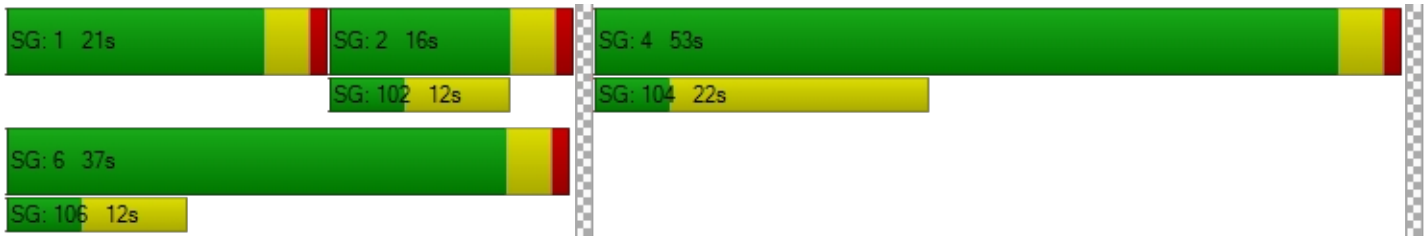
d_M, Delay for Movement [s/veh]	0.00	34.64	36.38	45.02	11.23	0.00	34.04	34.29	34.65	0.00	0.00	0.00
Movement LOS		C	D	D	B		C	C	C			
d_A, Approach Delay [s/veh]	34.98			22.82			34.33			0.00		
Approach LOS	C			C			C			A		
d_I, Intersection Delay [s/veh]	31.09											
Intersection LOS	C											
Intersection V/C	0.728											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	36.45	36.45	36.45
l_p,int, Pedestrian LOS Score for Intersectio	2.627	2.642	2.239	2.130
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]	267	733	1089	0
d_b, Bicycle Delay [s]	33.80	18.05	9.34	45.00
l_b,int, Bicycle LOS Score for Intersection	2.220	2.216	2.444	4.132
Bicycle LOS	B	B	B	D

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 5: Colton Ave at Tennessee St

Control Type:	Signalized	Delay (sec / veh):	31.8
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.501

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00
Speed [mph]	30.00			30.00			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												
Base Volume Input [veh/h]	67	452	80	206	470	154	149	472	57	48	282	126
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	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
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	1	3	0	0	0	1	0	1	1	5
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	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	452	81	209	470	154	149	473	57	49	283	131
Peak Hour Factor	0.9830	0.9830	0.9830	0.9830	0.9830	0.9830	0.9830	0.9830	0.9830	0.9830	0.9830	0.9830
Other Adjustment Factor	1.0000	1.0000	1.0000	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	115	21	53	120	39	38	120	14	12	72	33
Total Analysis Volume [veh/h]	68	460	82	213	478	157	152	481	58	50	288	133
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]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	5	2	0	1	6	0	7	4	0	3	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	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]	29	30	0	25	26	0	9	26	0	9	26	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	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	21	0	0	17	0	0	17	0	0	17	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	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		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
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
l1_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
l2, 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	13	26	26	10	40	40	4	34	34
g / C, Green / Cycle	0.05	0.19	0.19	0.15	0.28	0.28	0.11	0.45	0.45	0.04	0.38	0.38
(v / s)_i Volume / Saturation Flow Rate	0.04	0.16	0.16	0.13	0.19	0.19	0.09	0.15	0.16	0.03	0.12	0.13
s, saturation flow rate [veh/h]	1687	1772	1680	1687	1772	1624	1687	1772	1706	1687	1772	1587
c, Capacity [veh/h]	88	332	315	250	502	460	185	792	762	67	668	599
d1, Uniform Delay [s]	42.11	35.21	35.25	37.39	28.43	28.44	39.22	16.28	16.29	42.77	19.92	20.00
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]	13.12	5.48	5.98	8.07	1.49	1.63	8.83	1.20	1.25	15.10	1.31	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	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	0.77	0.83	0.84	0.85	0.66	0.66	0.82	0.35	0.35	0.75	0.33	0.34
d, Delay for Lane Group [s/veh]	55.24	40.68	41.24	45.46	29.92	30.07	48.05	17.48	17.55	57.86	21.23	21.52
Lane Group LOS	E	D	D	D	C	C	D	B	B	E	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.80	6.23	6.00	5.05	6.33	5.83	3.69	3.81	3.69	1.37	3.42	3.19
50th-Percentile Queue Length [ft/ln]	44.92	155.82	150.03	126.25	158.19	145.66	92.20	95.31	92.36	34.23	85.43	79.75
95th-Percentile Queue Length [veh/ln]	3.23	10.33	10.02	8.74	10.45	9.78	6.64	6.86	6.65	2.46	6.15	5.74
95th-Percentile Queue Length [ft/ln]	80.85	258.18	250.47	218.38	261.32	244.62	165.96	171.56	166.24	61.62	153.78	143.55

Movement, Approach, & Intersection Results

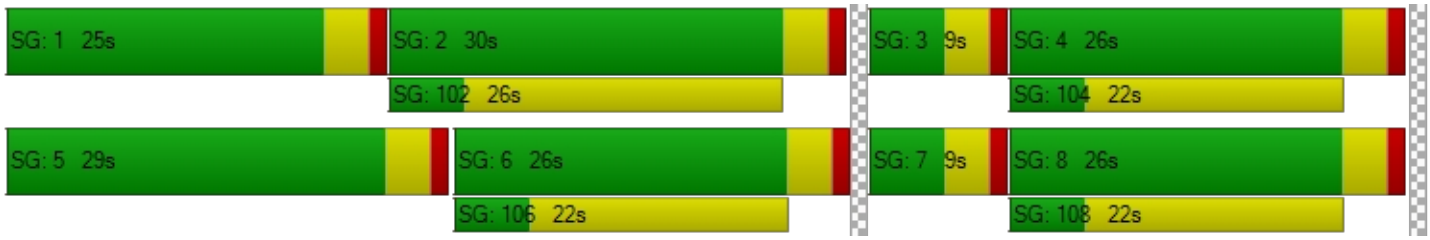
d_M, Delay for Movement [s/veh]	55.24	40.90	41.24	45.46	29.97	30.07	48.05	17.51	17.55	57.86	21.30	21.52
Movement LOS	E	D	D	D	C	C	D	B	B	E	C	C
d_A, Approach Delay [s/veh]	42.55			33.88			24.23			25.24		
Approach LOS	D			C			C			C		
d_I, Intersection Delay [s/veh]	31.80											
Intersection LOS	C											
Intersection V/C	0.501											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	36.45	36.45	36.45
l_p,int, Pedestrian LOS Score for Intersectio	2.535	2.612	2.536	2.657
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]	578	489	489	489
d_b, Bicycle Delay [s]	22.76	25.69	25.69	25.69
l_b,int, Bicycle LOS Score for Intersection	2.063	2.259	2.130	1.948
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 6: Colton Ave at New York St

Control Type:	Signalized	Delay (sec / veh):	21.2
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.376

Intersection Setup

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

Volumes

Name												
Base Volume Input [veh/h]	27	53	6	74	115	88	89	592	82	12	313	94
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	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
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	1	0	7	5	0	0	0	0	1
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	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	53	6	75	115	95	94	592	82	12	313	95
Peak Hour Factor	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510
Other Adjustment Factor	1.0000	1.0000	1.0000	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	14	2	20	30	25	25	156	22	3	82	25
Total Analysis Volume [veh/h]	28	56	6	79	121	100	99	623	86	13	329	100
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]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	2	0	0	6	0	7	4	0	3	8	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	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	26	0	0	32	0	9	23	0	9	23	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	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	17	0	0	17	0	0	14	0	0	14	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
l1, 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
l2, 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	C	R	C	R	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90
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
l1_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
l2, 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]	6	6	13	13	7	54	54	1	49	49
g / C, Green / Cycle	0.06	0.06	0.14	0.14	0.08	0.60	0.60	0.02	0.54	0.54
(v / s)_i Volume / Saturation Flow Rate	0.05	0.00	0.12	0.07	0.06	0.20	0.20	0.01	0.12	0.13
s, saturation flow rate [veh/h]	1743	1506	1737	1506	1687	1772	1697	1687	1772	1633
c, Capacity [veh/h]	113	97	247	214	127	1062	1018	27	957	882
d1, Uniform Delay [s]	41.37	39.53	37.42	35.47	40.88	9.06	9.07	43.93	10.87	10.91
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]	9.38	0.26	6.24	1.58	9.85	0.87	0.91	13.30	0.56	0.63
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	0.75	0.06	0.81	0.47	0.78	0.34	0.34	0.49	0.23	0.24
d, Delay for Lane Group [s/veh]	50.74	39.79	43.66	37.05	50.73	9.94	9.98	57.24	11.43	11.54
Lane Group LOS	D	D	D	D	D	A	A	E	B	B
Critical Lane Group	Yes	No	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.10	0.13	4.62	2.08	2.48	3.49	3.36	0.38	2.32	2.21
50th-Percentile Queue Length [ft/ln]	52.59	3.27	115.62	52.07	61.88	87.15	83.90	9.57	57.90	55.15
95th-Percentile Queue Length [veh/ln]	3.79	0.24	8.15	3.75	4.46	6.28	6.04	0.69	4.17	3.97
95th-Percentile Queue Length [ft/ln]	94.67	5.88	203.80	93.73	111.39	156.88	151.02	17.22	104.22	99.27

Movement, Approach, & Intersection Results

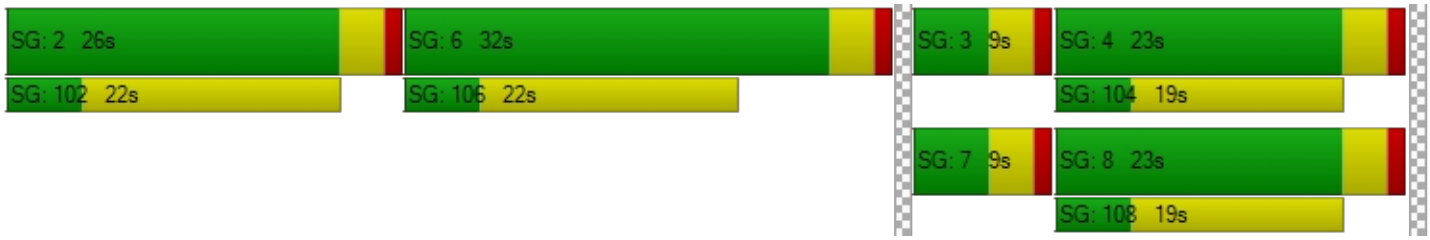
d_M, Delay for Movement [s/veh]	50.74	50.74	39.79	43.66	43.66	37.05	50.73	9.95	9.98	57.24	11.47	11.54
Movement LOS	D	D	D	D	D	D	D	A	A	E	B	B
d_A, Approach Delay [s/veh]	50.01			41.46			14.95			12.83		
Approach LOS	D			D			B			B		
d_I, Intersection Delay [s/veh]	21.15											
Intersection LOS	C											
Intersection V/C	0.376											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	36.45	36.45	36.45
l_p,int, Pedestrian LOS Score for Intersectio	2.208	2.268	2.548	2.526
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]	489	622	422	422
d_b, Bicycle Delay [s]	25.69	21.36	28.01	28.01
l_b,int, Bicycle LOS Score for Intersection	1.708	2.055	2.226	1.924
Bicycle LOS	A	B	B	A

Sequence

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



Intersection Level Of Service Report
Intersection 7: New York St at Project Driveway/Brockton Ave

Control Type:	Two-way stop	Delay (sec / veh):	16.2
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.118

Intersection Setup

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

Volumes

Name												
Base Volume Input [veh/h]	0	247	17	36	197	0	0	0	0	38	0	34
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	0	0	0	0	7	6	0	8	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	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	247	17	36	197	7	6	0	8	38	0	34
Peak Hour Factor	1.0000	0.8620	0.8620	0.8620	0.8620	1.0000	0.8620	0.8620	0.8620	0.8620	1.0000	0.8620
Other Adjustment Factor	1.0000	1.0000	1.0000	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	72	5	10	57	2	2	0	2	11	0	10
Total Analysis Volume [veh/h]	6	287	20	42	229	7	7	0	9	44	0	39
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.03	0.00	0.00	0.02	0.00	0.01	0.12	0.00	0.05
d_M, Delay for Movement [s/veh]	7.71	0.00	0.00	7.92	0.00	0.00	15.54	14.74	9.69	16.17	15.95	11.36
Movement LOS	A	A	A	A	A	A	C	B	A	C	C	B
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.01	0.07	0.07	0.07	0.10	0.10	0.10	0.61	0.61	0.61
95th-Percentile Queue Length [ft/ln]	0.25	0.25	0.25	1.80	1.80	1.80	2.41	2.41	2.41	15.24	15.24	15.24
d_A, Approach Delay [s/veh]	0.15			1.20			12.25			13.91		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	2.51											
Intersection LOS	C											

APPENDIX D

TRUCK TURNING DIAGRAM

ADJACENT PROPERTY
APN: 016901104
USE: AGRICULTURAL

ADJACENT PROPERTY
APN: 016901135
USE: COMMERCIAL

PROPOSED
DETENTION
BASIN

VEHICLE
STORAGE LOT

VEHICLE
STORAGE LOT

CARWASH

FQC

VEHICLE
STORAGE LOT

A+ SERVICE
BLDG

A SERVICE
PARTS
BLDG

PRES.
LANES

SALES
BLDG

TYP.

START

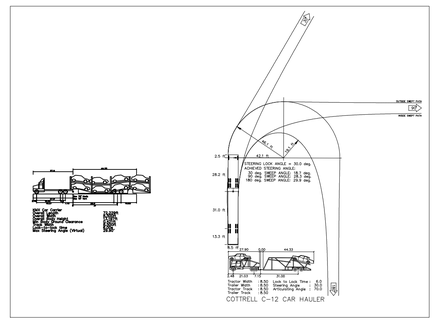
START

NEW YORK STREET

ADJACENT PROPERTY
APN: 016901137
USE: COMMERCIAL

LEGEND:

- CENTER LINE
- PROJECT PROPERTY LINE / RIGHT-OF-WAY
- DIVIDING PARCEL LINE LINE
- EASEMENT LINE / SETBACK LINE
- LANDSCAPE/PLANTER AREA
- DETECTABLE WARNING SYSTEM
- GRAVEL AREA
- CONCRETE AREA
- ACCESSIBLE ROUTE (LOCATION PURPOSES ONLY, DO NOT PAINT)
- ACCESSIBLE PARKING SPACE
- SITE LIGHTING
- STD — STANDARD EV STALL
- STD/F — STANDARD EV/FUTURE STALL



GRAPHIC SCALE IN FEET
0 25 50 100

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ENTITLEMENT PLANS

JOHN POLLOCK R.C.E. 86160

NOT RELEASED FOR CONSTRUCTION

LATEST DA/PC

DRAWN BY:

CHECKED BY:

REVISIONS

REV#	DATE	DESCRIPTION	BY

CARMAX
THE AUTO SUPERSTORE
CARMAX, THE AUTO SUPERSTORES, INC.
12800 TUCKAHOE CREEK PARKWAY RICHMOND, VA 23238

STORE NUMBER 4033
BROCKTON AVENUE &
NEW YORK STREET,
REDLANDS, US 92374

BENCHMARK: BRASS DISK IN TOP OF CURB
@ SW CORNER TEXAS ST & LUGONIA AVENUE
12' WEST OF WEST END RETURN.
ELEVATION 1318.59 FEET.

PROJECT NO. 195440002
DATE 1/6/2023
SHEET TITLE
TRUCK TURN EXHIBIT
SHEET NO. C3.0

APPENDIX E

PRODUCTION FACILITY
TRAFFIC INFORMATION

Redlands, CA - Production Facility

Employee and Traffic Data

Employees

Production: 170 Total Employees (Managers, Mechanical, Logistics, Reconditioning, Clerical)
50% 7am-3pm shift
50% 3pm-11pm shift

Truck Traffic

Inbound Trucks to Supply Production	Total Cars on Trucks per Week	330	cars to be delivered to Redlands site per week
	Daily Inbound Trucks	7.8	(6 cars per truck, avg over 7 days)
Outbound Trucks to Transfer Cars	Total Cars on Trucks per Week	260	cars to be carried out of Redlands site per week for transfers
	Daily Outbound Trucks (Transfer)	6.2	(6 cars per truck, avg over 7 days)
Outbound Trucks for Trade Ins	Total Cars on Trucks per Week	140	cars to be carried out of Redlands site per week for trade-ins
	Daily Outbound Trucks (Trade-In)	3.3	(6 cars per truck, avg over 7 days)

*Truck trips are assumed to come in with vehicles and leave with vehicles.

9.5 outbound trucks = approximately 20 total truck trips (inbound and outbound) per day

**Total truck trips estimated from the greater of either inbound or outbound trucks used for the site