Appendix G

Traffic Study

Traffic Study

for:

Colton Ashley Furniture Expansion Project

In the City of Colton

November 2022

Kimley»Horn

TRAFFIC STUDY
FOR THE PROPOSED
COLTON ASHLEY FURNITURE EXPANSION PROJECT
IN THE CITY OF COLTON

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FOR THE PROPOSED
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IN THE CITY OF COLTON

INTRODUCTION

Purpose and Study Objectives

This traffic study has been prepared to address the traffic-related effects of the proposed Ashley Furniture Expansion Project ("Project") in the City of Colton. This traffic study has been conducted in accordance with the City of Colton *Vehicle Miles Traveled (VMT) Guidelines* (June 2020) and the San Bernardino Association of Governments (SANBAG) Congestion Management Program (CMP) (June 2016).

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

Project Overview

The project site is located approximately 800 feet south of the intersection of Ashley Way at E Cooley Drive in the City of Colton. The project site is shown in its regional setting on **Figure 1**. The project site is bounded by E Cooley Drive to the north, Ashley Way to the east and south, and S Cooley Drive to the west. The project site is currently used by the existing Ashley Furniture Store located on 755 and 855 Ashley Way.

The project applicant proposes to expand the existing Ashley Furniture Store located at 855 Ashley Way by constructing a 35,000 square-foot (SF) building addition. A copy of the project site plan is provided on **Figure 2**.

Vehicular access provisions for the project site would be provided via two existing full-movement unsignalized driveways on Ashley Way.

FIGURE 1
VICINITY MAP

NOT TO SCALE

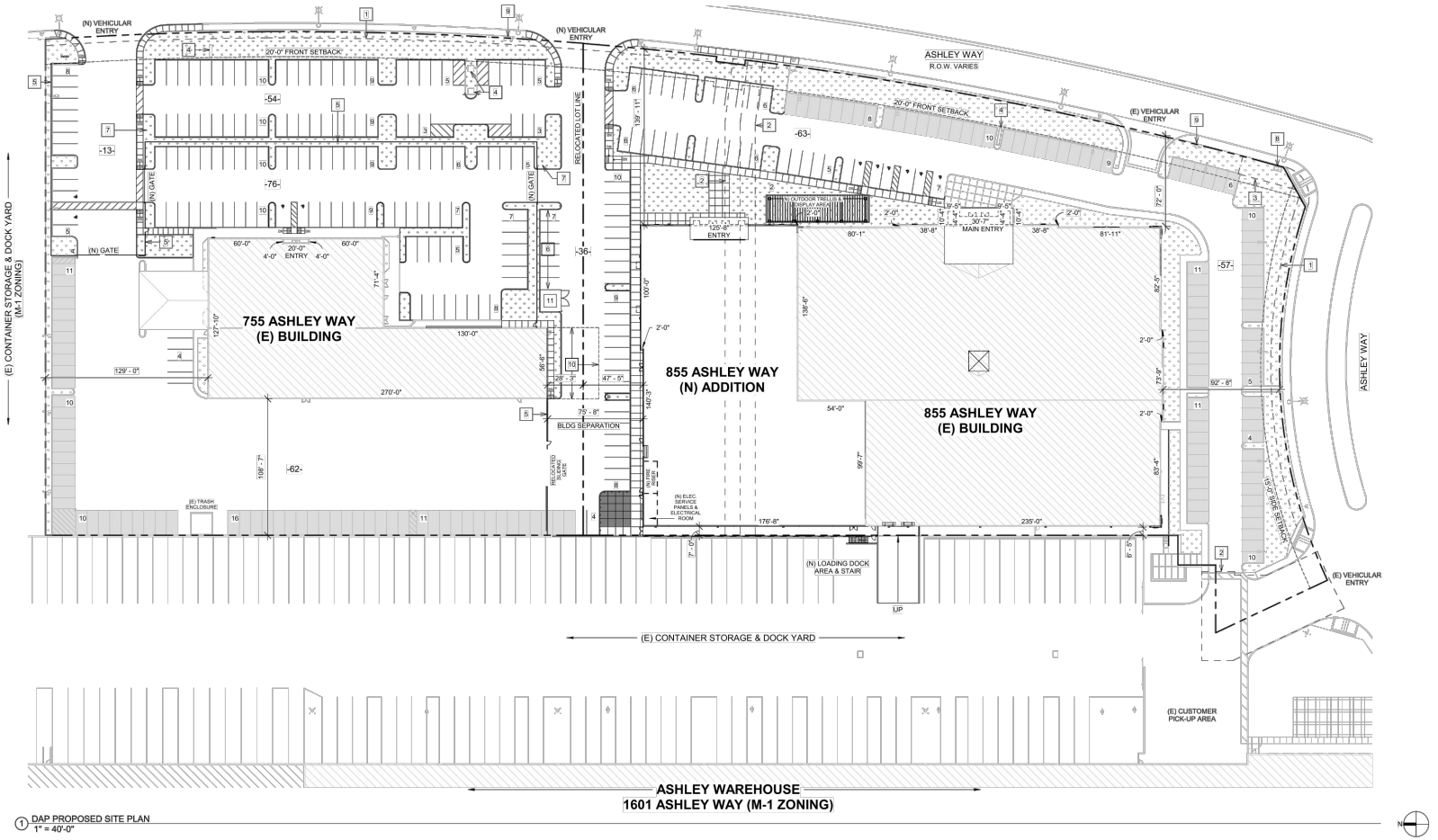


FIGURE 2
PROJECT SITE PLAN

ANALYSIS SCENARIOS AND METHODOLOGY

Analysis Scenarios

Based on the City of Colton traffic study requirements, the project will be evaluated in the morning and evening peak hours for the following conditions:

- Existing Conditions
- Opening Year 2024 Cumulative
- Opening Year 2024 Cumulative Plus Project

Intersection Analysis – HCM Methodology

Peak hour intersection operations at the signalized existing intersection and proposed unsignalized driveways were evaluated using the methods prescribed in the Highway Capacity Manual 7th Edition (HCM), consistent with the City's traffic study requirements. The intersection analysis for the proposed project has been accomplished using the Vistro software program and using the specified input parameters outlined in the City's traffic study requirements.

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 designation, ranging from LOS A to LOS F. A summary of each Level of Service 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

The Level of Service standard in the City of Colton for an intersection is LOS D or better, as outlined in the City of Colton's *Vehicle Miles Traveled (VMT) Guidelines* (June 2020) and the *City of Colton General Plan Mobility Element* (adopted August 20, 2013). The project is considered to create a significant impact when the addition of project-related trips causes a study location to degrade from acceptable (LOS D or better) to unacceptable (LOS E or F).

Study Area

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

Intersections:

1. Ashley Way at E Cooley Drive
2. S Cooley Drive at Ashley Way
3. S Mt Vernon Avenue at E Cooley Drive

The study intersections were established in consultation with City of Colton 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 primarily by the Riverside Freeway (I-215) and the San Bernardino Freeway (I-10). The I-215 Freeway is located approximately just east of the project site, and the I-10 Freeway is located approximately 0.5 miles north 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 Colton's Circulation Plan is provided on **Figure 4**. The following provides a description of the roadways surrounding the project site.

Ashley Way is a roadway with one lane in each direction within the project vicinity. There is no posted speed limit, and on-street parking is prohibited on both sides.

E Cooley Drive is an east-west roadway with two lanes in each direction west of S Cooley Drive and one lane in each direction east of S Cooley Drive. The posted speed limit is 40 miles per hour (mph), and on-street parking is permitted on both sides traveling between S Cooley Drive and S Mt Vernon Avenue. In the City of Colton General Plan Mobility Element, E Cooley Drive is designated as a Major Arterial.

S Cooley Drive is a north-south roadway with two lanes in each direction. There is no posted speed limit, and on-street parking is permitted traveling southbound. S Cooley Drive is designated as a Major Arterial.

Mt Vernon Avenue is a north-south roadway with one lane in each direction north of E Cooley Drive and three lanes in each direction south of E Cooley Drive. The posted speed limit is 35 mph, and on-street parking is prohibited on both sides. In the City of Colton General Plan Mobility Element, Mt Vernon Avenue is designated as a Major Arterial.

Existing Transit Service

Transit service to the project area is provided by OmniTrans, which serves San Bernardino County. The OmniTrans bus stop closest to the project site is located northeast of the intersection of S Mt Vernon Avenue and E Cooley Drive. A description of the bus route serving the project is provided below.

OmniTrans Route 19 operates through the Cities of Fontana, Colton, Grand Terrace, and Redlands, traveling along S Mt Vernon Avenue in the project vicinity. Route 19 operates weekdays from approximately 5:30 AM to 10:00 PM with approximately 1-hour headways, and weekends from approximately 6:30 AM to 8:00 PM with approximately 1-hour headways.

EXISTING CONDITIONS

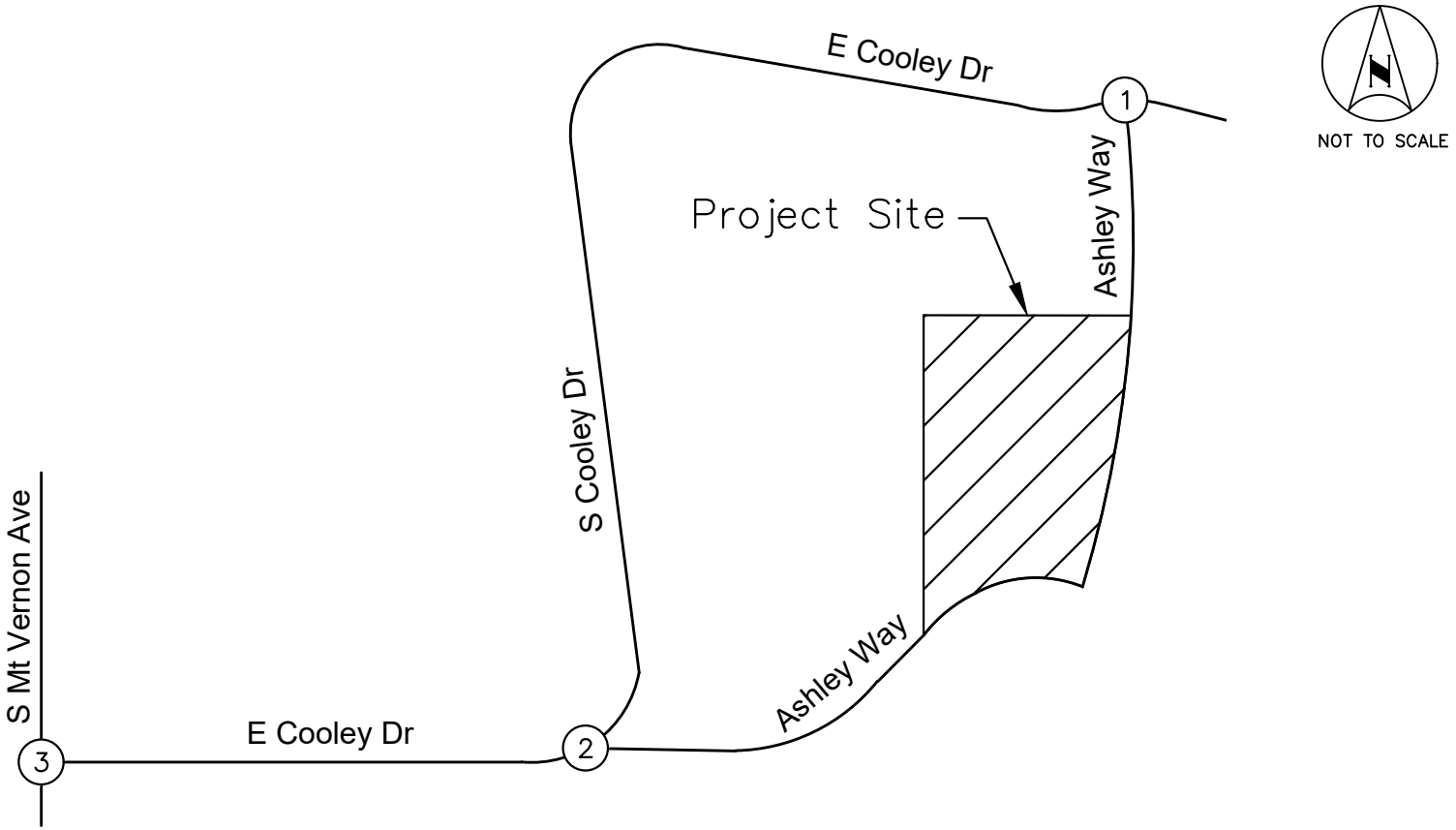
Existing Traffic Volumes

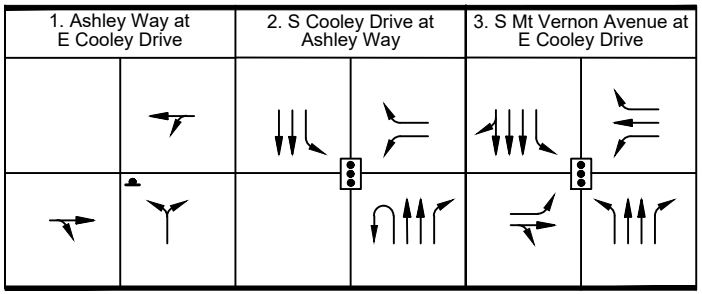
Existing peak hour turning movement volumes were collected in October 2022. Existing morning and evening peak hour volumes are presented on **Figure 5**. Peak hour intersection traffic count worksheets are provided in ***Appendix B***.

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. The results of the intersection analysis for Existing Conditions are shown on **Table 1**. Copies of Existing Conditions intersection analysis worksheets are provided in ***Appendix C***.

Review of this table indicates that all study intersections currently operate at an acceptable Level of Service.





LEGEND:
- X = Study Intersection
- = Turn or Through Lane
- = Signal
- = Stop Sign

FIGURE 3
EXISTING LANE CONFIGURATION AND TRAFFIC CONTROL

NOT TO SCALE

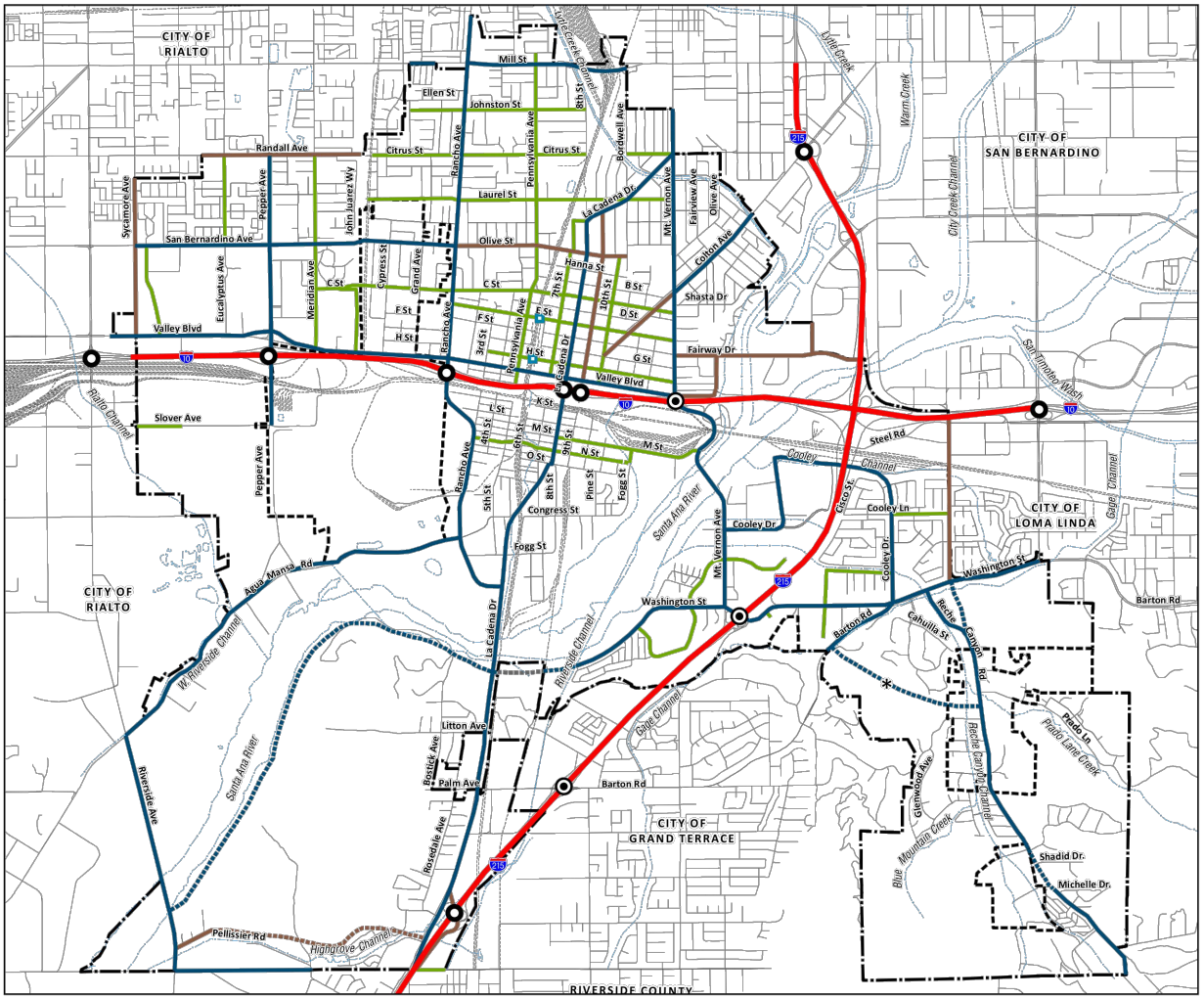
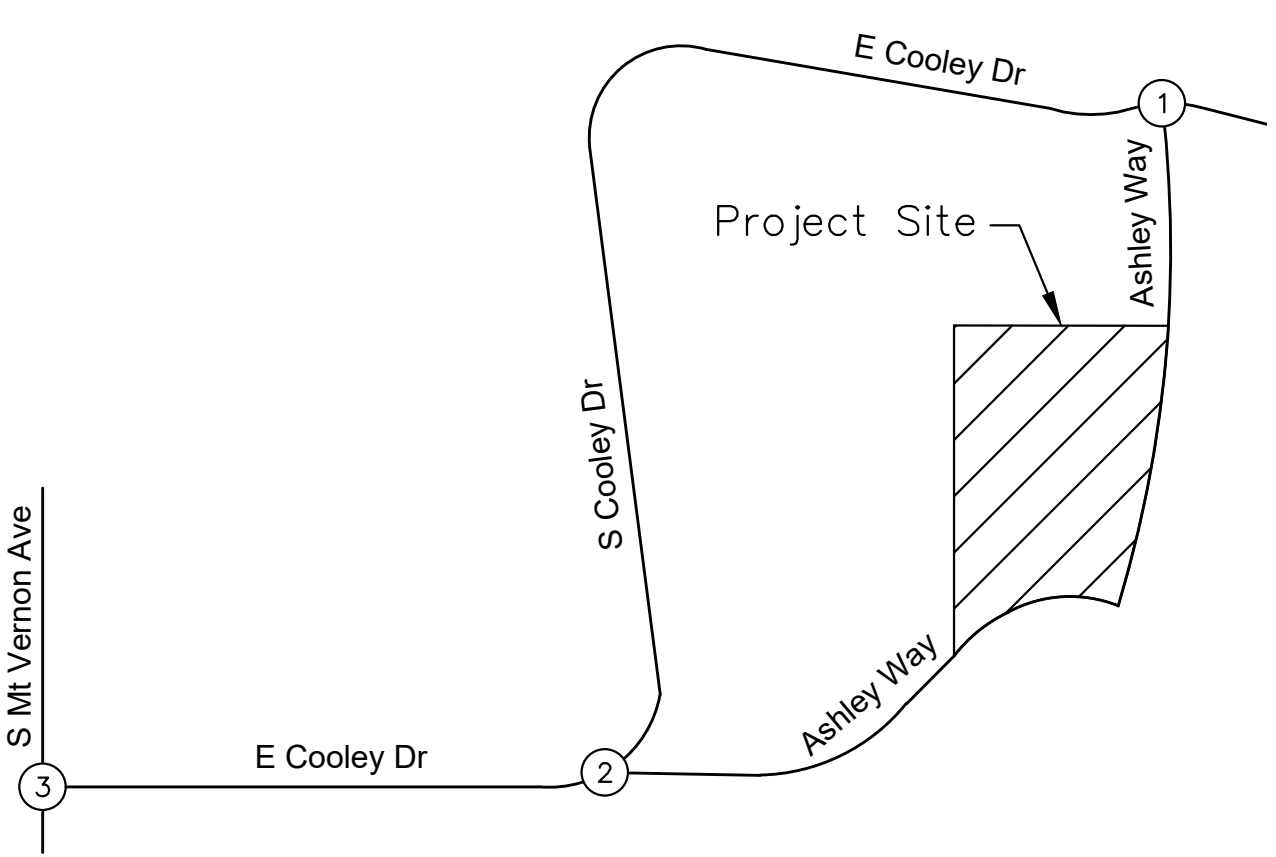


FIGURE 4
CITY OF COLTON CIRCULATION PLAN



1. Ashley Way at E Cooley Drive	2. S Cooley Drive at Ashley Way	3. S Mt Vernon Avenue at E Cooley Drive
182/468 3/5 1/0 18/28 292/248 17/7	253/302 3/9 75/73 202/419 85/35 5/2 31/72	64/22 435/739 315/306 7/55 4/16 8/33 70/19 370/547 258/173 214/338 8/11 118/274

LEGEND:

(X) = Study Intersection

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

FIGURE 5
EXISTING 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	Ashley Way at E Cooley Drive	U	13.1	B	11.9	B
2	S Cooley Drive at Ashley Way	S	10.5	B	11.0	B
3	S Mt Vernon Avenue at E Cooley Drive	S	24.0	C	25.4	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

FUTURE CONDITIONS

Opening Year 2024 Cumulative

The project Opening Year is anticipated to be Year 2024. Based on consultation with City staff, an ambient annual growth rate of 2.0% per year to Opening Year 2024 was applied to existing traffic volumes. Cumulative Project traffic was also added to Opening Year 2024 volumes and is detailed below.

Cumulative Projects

In addition to ambient growth, Cumulative Project traffic volumes are added to existing traffic volumes. Information regarding cumulative projects in the area was provided by the City of Colton. Cumulative Projects consist of development projects that have been approved but are not yet constructed/occupied, and projects that are in various stages of the application and approval process but have not yet been approved. A summary of Cumulative Projects in the project vicinity and the trip generation associated with each is provided on **Table 2**. The locations of the Cumulative Projects are shown on **Figure 6**.

Trip generation information for the Cumulative Projects was obtained from approved traffic studies, where available; or was developed by Kimley-Horn if approved traffic studies were not available. Likewise, trip distribution and assignment for the Cumulative Projects were either obtained from approved traffic studies, where available; or were developed by Kimley-Horn if approved traffic studies were not available. Project information and trip distribution assumptions for Cumulative Projects are provided in ***Appendix D***. Traffic volumes associated with Cumulative Projects were compiled for each of the study intersections and are shown on **Figure 7**.

The ambient growth and the project-related traffic volumes from the Cumulative Projects were added to the Existing peak hour volumes to develop Opening Year 2024 Cumulative traffic forecasts. The resulting traffic volumes are shown on **Figure 8**.

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. The results of the intersection analysis for Opening Year 2024 Cumulative conditions are shown on **Table 3**. Copies of Opening Year 2024 Cumulative intersection analysis worksheets are provided in ***Appendix C***.

Review of this table indicates that all study intersections would continue to operate at an acceptable Level of Service.

TABLE 2
SUMMARY OF CUMULATIVE PROJECTS TRIP GENERATION

Project #	Description	Location	Land Use	Quantity	Unit	Trip Generation Estimates						
						Daily	AM Peak Hour			PM Peak Hour		
							In	Out	Total	In	Out	Total
City of Colton												
1	Colton Community Soccer Park	SEC of Fernando Street and Congress Street	Soccer Complex	8	Field	571	5	3	8	87	45	132
2	Giant RV Repair and Preparation Facility	1020 Santo Antonio Drive	General Light Industrial	25.287	KSF	123	16	2	18	2	14	16
3	La Quinta Inn and Suites Hotel	1395 E Washington Street	Business Hotel	73	Occupied Room	371	19	18	37	17	13	30
City of San Bernardino												
4	Home 2 Suites by Hilton	Gifford Avenue at Brier Street	Hotel	113	Room	903	29	23	52	34	33	67
5	Taco Bell	SEC of Waterman Ave and Hospitality Lane	Fast-Food Restaurant w/ Drive-thru	2.050	KSF	958	47	45	92	35	33	68
6	7-11 Gas and Convenience Store	SEC of Hunts Lane and Redlands Boulevard	Convenience Store/Gasoline Station	12	Fueling Position	3,181	96	96	192	111	111	222
City of Grand Terrace												
7	Aegis Builders Community Development	11695 Canal Street	Multifamily Housing (Low-Rise)	16	DU	108	2	5	7	5	3	8
8	Medical Office	22805 Barton Road	Medical-Dental Office Building	3.500	KSF	126	9	2	11	4	10	14
	Coffee Shop		Coffee/Donut Shop w/o D.T.	2.000	KSF	-	95	91	186	32	32	64
9	Coffee Shop with Drive-Thru	22881 Barton Road	Coffee/Donut Shop w/ D.T.	5.000	KSF	2,668	219	210	429	97	97	194
10	Multi-Tenant Shopping Center	22200 Barton Road	Fast-Food Restaurant w/ Drive-thru	2.080	KSF	972	47	45	92	36	33	69
			Strip Retail Plaza (<40k)	3.352	KSF	183	5	3	8	11	11	22
Total Project Trips						**10,164**	**589**	**543**	**1,132**	**471**	**435**	**906**

KSF = Thousand Square Feet, DU = Dwelling Units

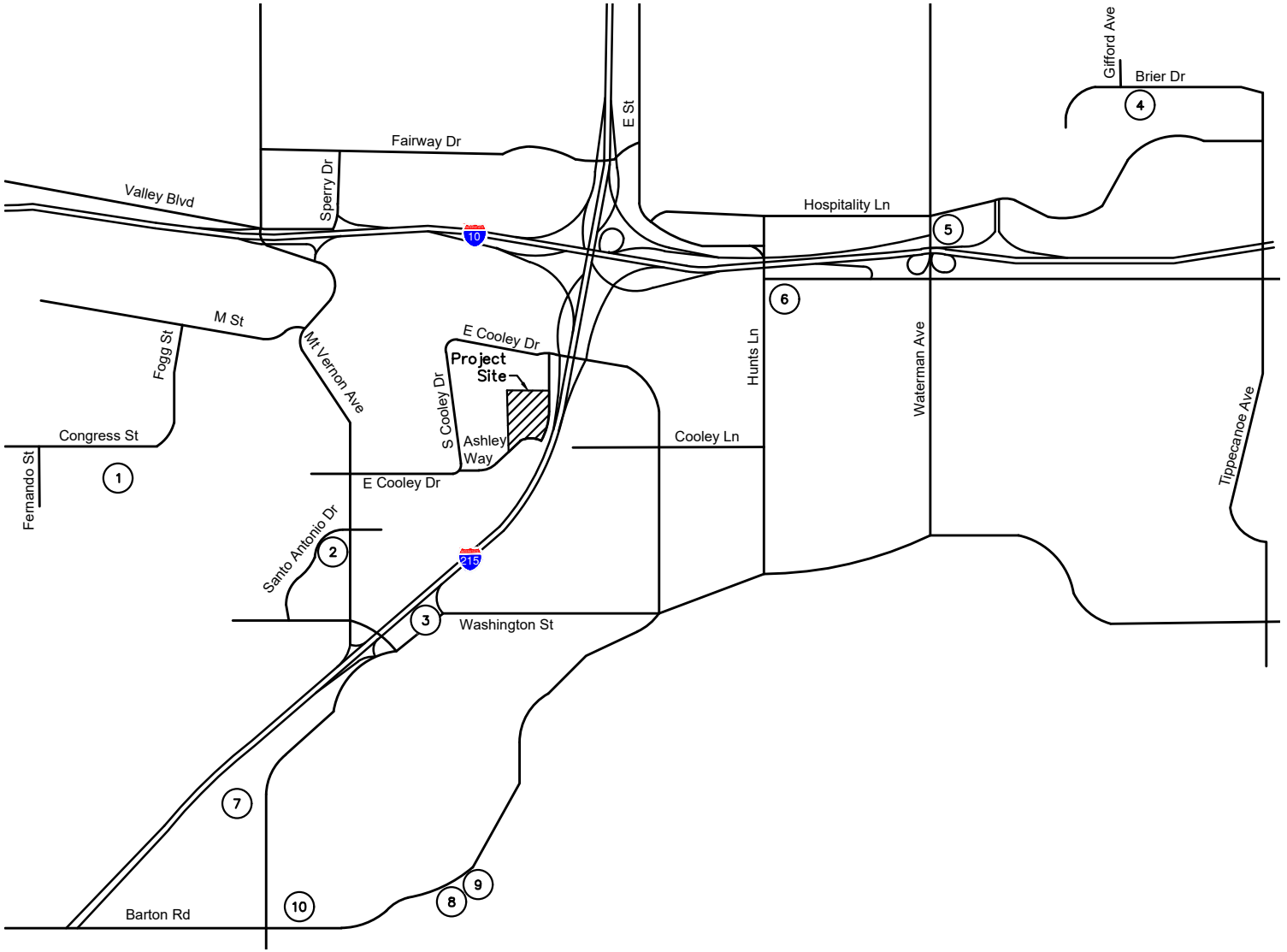
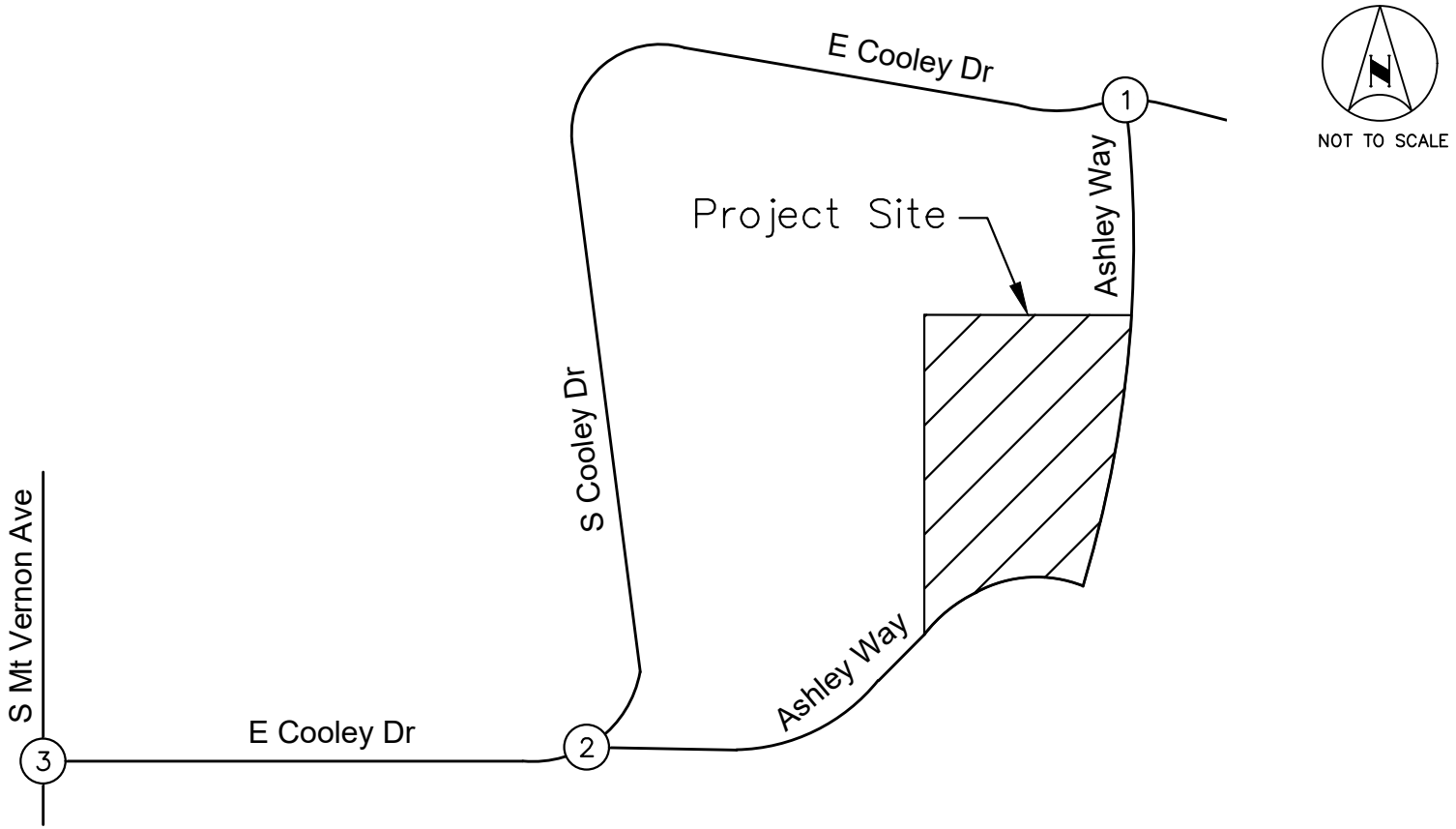


FIGURE 6
LOCATION OF CUMULATIVE PROJECTS



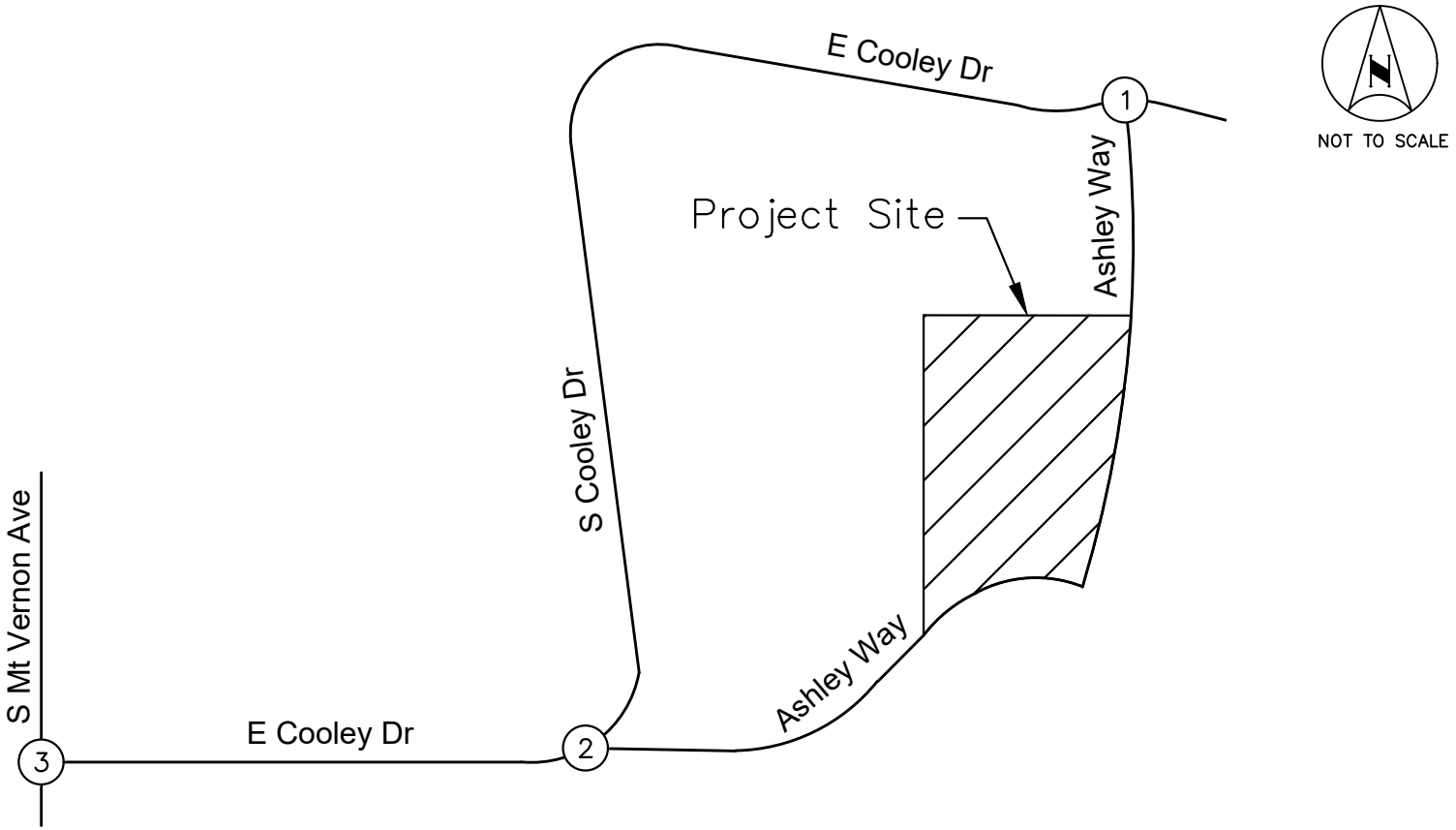
1. Ashley Way at E Cooley Drive	2. S Cooley Drive at Ashley Way	3. S Mt Vernon Avenue at E Cooley Drive
31/29 ↙ 30/39 ↗	31/29 ↙ 30/39 ↗	83/49 ← 1/9 ↙ 1/17 ↖ 30/29 ↙ 76/60 ↑ 29/30 ↑

LEGEND:

(X) = Study Intersection

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

FIGURE 7
CUMULATIVE PROJECTS TRAFFIC VOLUMES



1. Ashley Way at E Cooley Drive	2. S Cooley Drive at Ashley Way	3. S Mt Vernon Avenue at E Cooley Drive
189/487 → 3/5 ↘ ↑ 1/0 ↱ 49/68 ← 304/258 ↖ 49/36	263/314 ← 3/9 ↖ 78/76 ↑ 210/436 ↱ 118/75 ↱ 5/2 ← 63/104	67/23 → 535/818 ↓ 329/327 ↖ 7/57 → 4/17 ↘ 8/34 ↱ 73/20 ↑ 461/629 ↱ 297/210 ↱ 224/369 ← 8/11 ← 153/314

LEGEND:

(X) = Study Intersection

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

FIGURE 8
OPENING YEAR 2024 CUMULATIVE TRAFFIC VOLUMES

TABLE 3
SUMMARY OF INTERSECTION OPERATION
OPENING YEAR 2024 CUMULATIVE

Int. #	Intersection	AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS
1	Ashley Way at E Cooley Drive	14.8	B	12.8	B
2	S Cooley Drive at Ashley Way	12.2	B	12.0	B
3	S Mt Vernon Avenue at E Cooley Drive	24.0	C	27.3	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.

PROJECT TRAFFIC

Trip Generation

Trip generation estimates for the proposed Ashley Furniture Store expansion are based on daily and peak hour trip generation rates obtained from the Institute of Transportation Engineers (ITE) Trip Generation Manual (11th Edition) for the following use:

- ITE Land Use 869: Discount Home Furnishing Superstore

Daily, AM peak hour, and PM peak hour trips were estimated for the proposed project. Trip rates and the estimated project trip generation are shown on **Table 4**. The project is expected to generate 700 daily trips, 20 trips (13 inbound and 7 outbound) during the AM peak hour and 55 trips (29 inbound and 26 outbound) during the PM peak hour.

Trip Distribution and Assignment

Project trip distribution assumptions for the project site were developed taking into account existing travel patterns and the likely origins and destinations of residents. Trip distribution and assignment for project trips are shown on **Figure 9**. Project-related traffic volumes are shown on **Figure 10**.

FUTURE CONDITIONS PLUS PROJECT

Opening Year 2024 Cumulative Plus Project

Project-related traffic was added to the Opening Year 2024 Cumulative traffic volumes. Opening Year 2024 Cumulative Plus Project traffic volumes at study intersections are shown on **Figure 11**.

Peak Hour Operating Conditions

Intersection Level of Service analysis was conducted for the morning and evening peak hours for the Opening Year 2024 Cumulative Plus Project condition. The results are shown on **Table 5**. Intersection analysis worksheets for this scenario are provided in ***Appendix C***.

Review of this table indicates that all study intersections would continue to operate at an acceptable Level of Service.

TABLE 4
SUMMARY OF PROJECT TRIP GENERATION
COLTON ASHLEY FURNITURE EXPANSION

Land Use	ITE Code	Unit	Trip Generation Rates [1]						
			Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Discount Home Furnishing Superstore	869	KSF	20.000	0.365	0.205	0.570	0.832	0.738	1.570

Land Use	Quantity	Unit	Trip Generation Estimates						
			Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Discount Home Furnishing Superstore	35.000	KSF	700	13	7	20	29	26	55

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

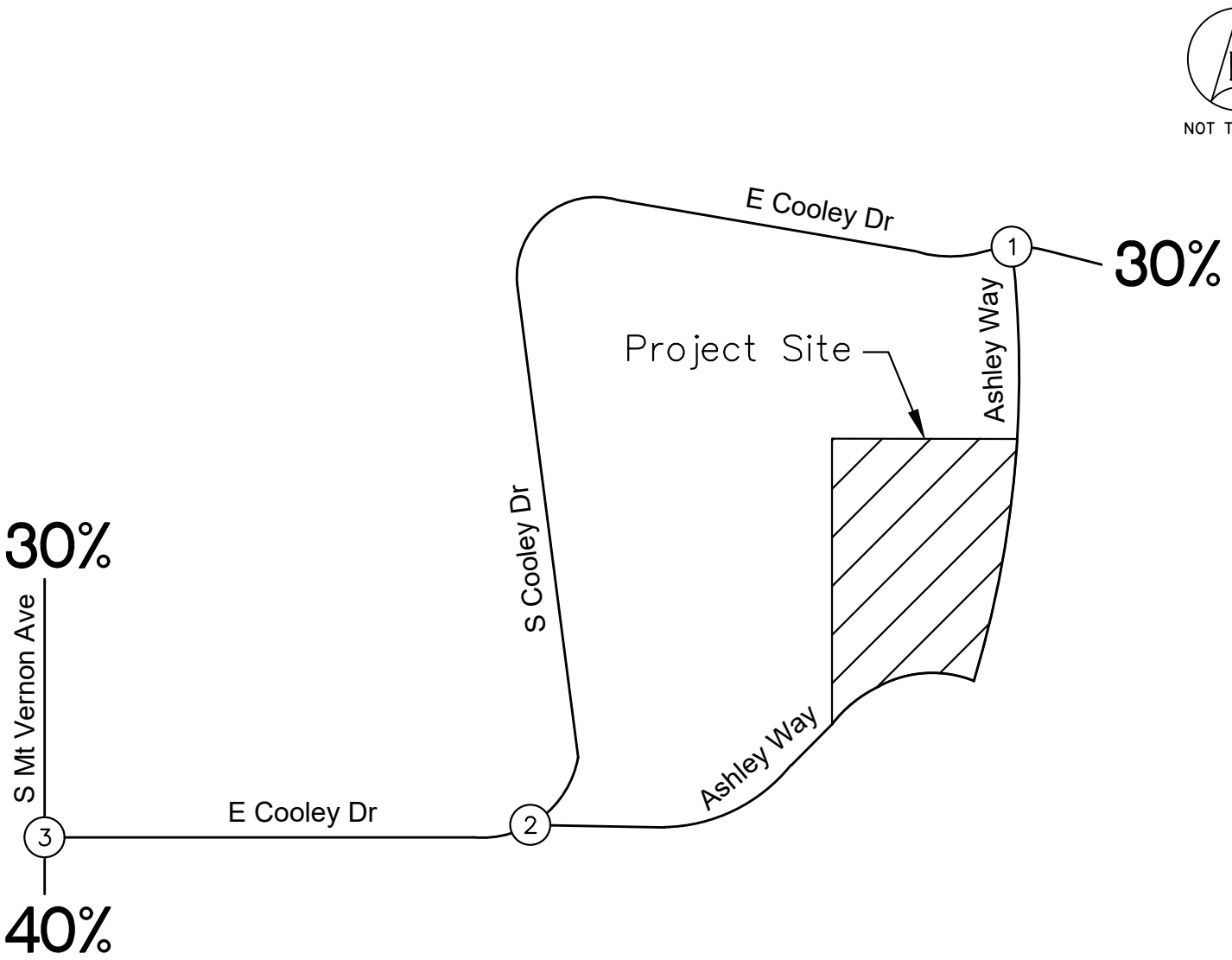
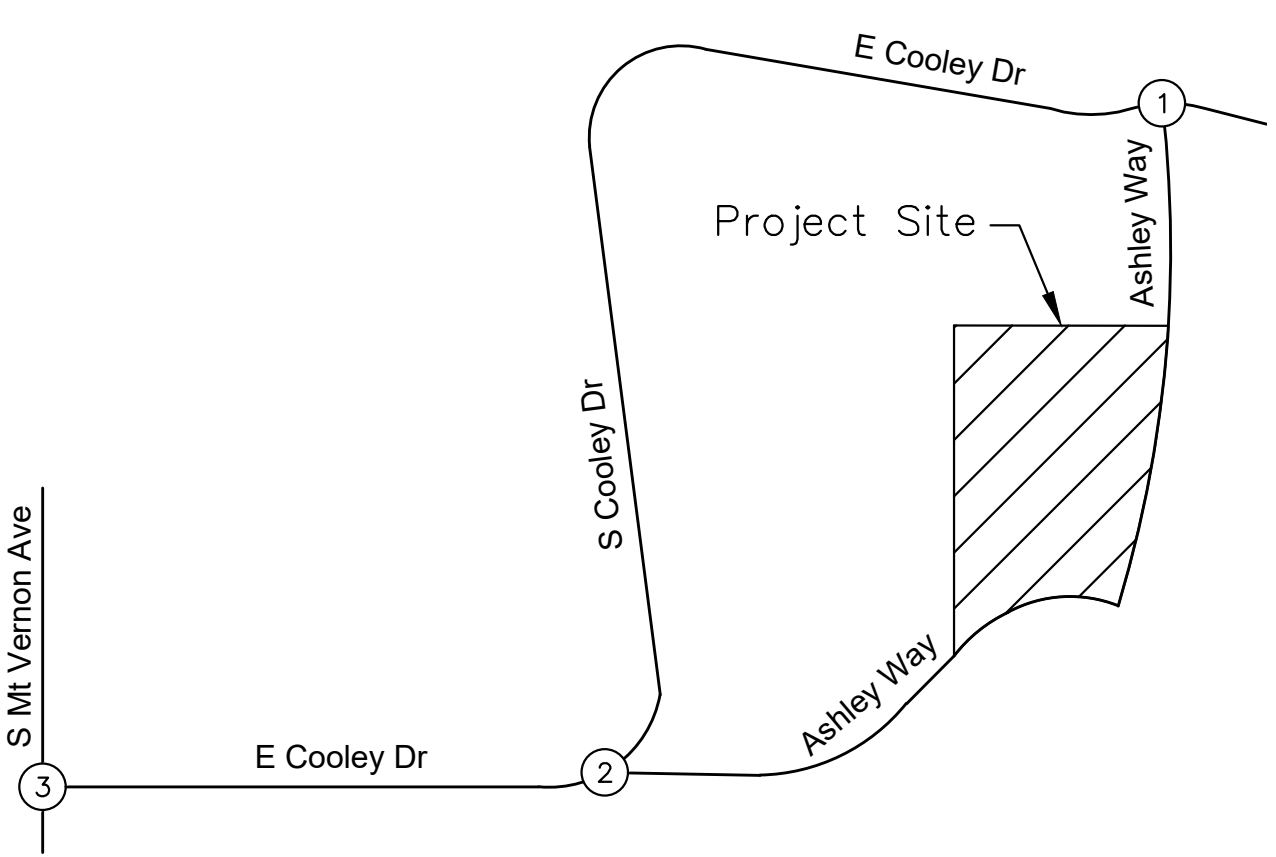


FIGURE 9
PROJECT TRIP DISTRIBUTION



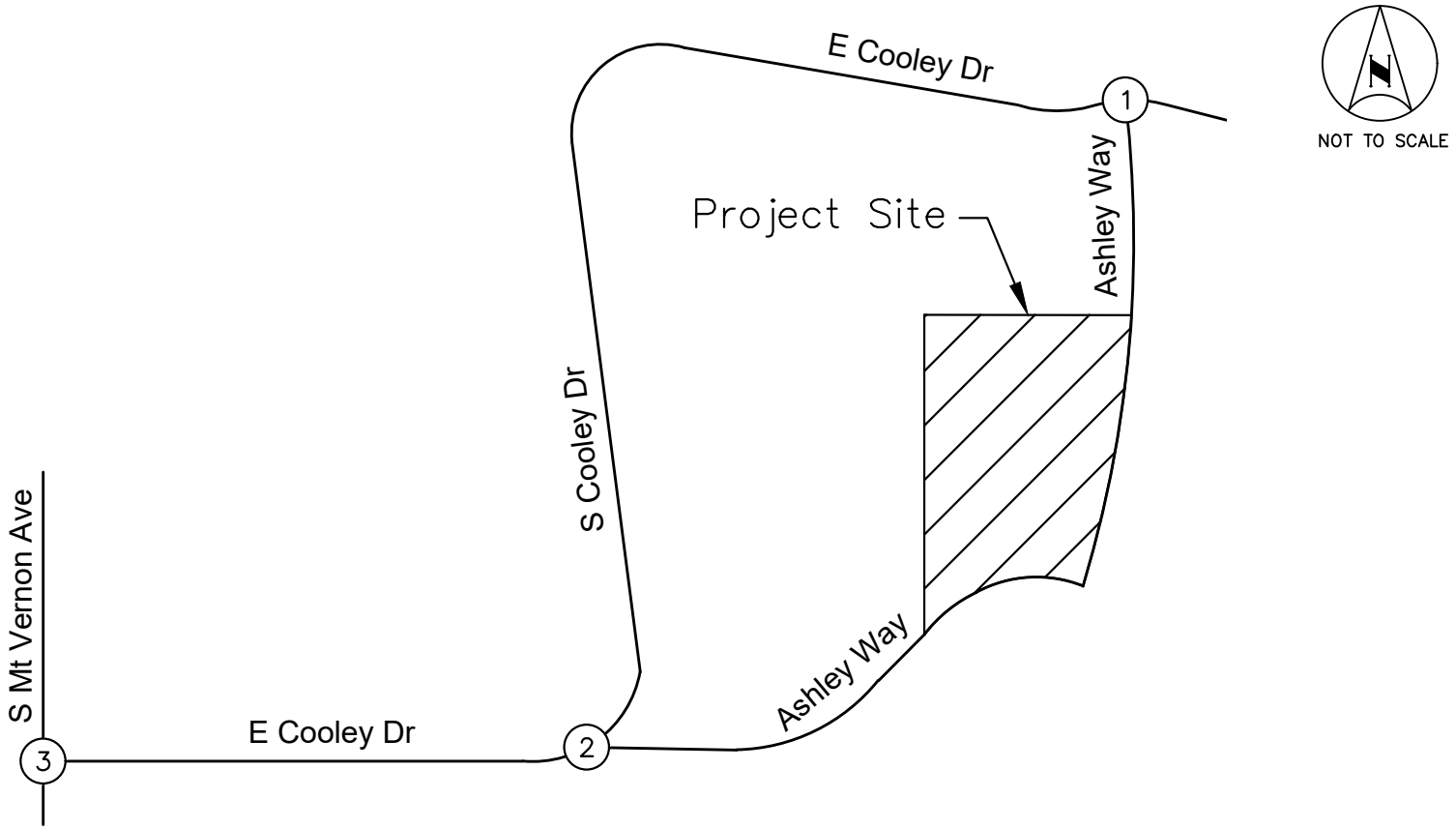
1. Ashley Way at E Cooley Drive	2. S Cooley Drive at Ashley Way	3. S Mt Vernon Avenue at E Cooley Drive
4/9 ↙ ↗ 2/8	5/18 ↙ ↗ 9/21	4/9 ↙ 2/8 ↖ 3/10 ↖ ↗ 5/12

LEGEND:

(X) = Study Intersection

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

FIGURE 10
PROJECT-RELATED TRAFFIC VOLUMES



1. Ashley Way at E Cooley Drive	2. S Cooley Drive at Ashley Way	3. S Mt Vernon Avenue at E Cooley Drive
304/258 53/45 189/487 3/5 1/0 51/76	263/314 3/9 5/2 68/122 78/76 210/436 127/96	67/23 535/818 333/336 226/377 8/11 156/324 7/57 4/17 8/34 73/20 461/629 302/222

LEGEND:

X = Study Intersection

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

FIGURE 11
OPENING YEAR 2024 CUMULATIVE PLUS PROJECT TRAFFIC VOLUMES

TABLE 5
SUMMARY OF INTERSECTION OPERATION
OPENING YEAR 2024 CUMULATIVE PLUS PROJECT

Int. #	Intersection	AM Peak Hour						PM Peak Hour					
		Without Project		With Project		Change in Delay	Project-Related Effect?	Without Project		With Project		Change in Delay	Project-Related Effect?
		Delay	LOS	Delay	LOS			Delay	LOS	Delay	LOS		
1	Ashley Way at E Cooley Drive	14.8	B	15.0	C	0.2	No	12.8	B	13.0	B	0.2	No
2	S Cooley Drive at Ashley Way	12.2	B	12.4	B	0.2	No	12.0	B	12.6	B	0.6	No
3	S Mt Vernon Avenue at E Cooley Drive	24.0	C	24.2	C	0.2	No	27.3	C	28.0	C	0.7	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.

RECOMMENDED IMPROVEMENTS

Based on the significance criteria presented earlier in the report (page 6), the project would not have a project-related effect on any of the study intersections. No improvements are required at any of the study intersections.

SITE ACCESS

Vehicular access for the project site would be provided via two existing full-movement unsignalized driveways on Ashley Way.

VEHICLE MILES TRAVELED (VMT) SCREENING

Senate Bill (SB) 743 was approved by the 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 updated guidelines for CEQA and written a technical advisory for evaluating transportation impacts in CEQA and has set a deadline of July 1, 2020 for local agencies to update their CEQA transportation procedures. OPR has recommended that Vehicle Miles Traveled (VMT) replace LOS as the primary measure of transportation impacts. The City of Colton has adopted new Transportation Impact Guidelines and now relies on VMT as the measure for determining a project significant transportation impact under the CEQA process.

The City of Colton's *Vehicle Miles Traveled (VMT) Guidelines* (June 2020) 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 down into the following criteria:

1. Trip Screening
2. Land Use Types Screening
3. High Quality Transit Areas (HQTA) Screening
4. Low VMT Areas 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.

Trip Screening

The City's TIA Guidelines identify that a project with a net daily trip generation of less than 110 ADT can be screened out. The Project is expected to generate 700 new daily trips, surpassing the maximum 110 ADT screening limit.

The Trip Screening criteria is not met.

Land Use Type Screening

The City presumes certain local project types have a negligible impact upon the City's VMT. The assumption is based upon local serving projects redirecting and encouraging local traffic from traveling to further locations, lowering the VMT for the City. Project types falling under the screening criteria includes the following:

- K-12 Schools
- Local-serving retail less than 50,000 square feet
- Local parks
- Day care centers
- Local serving gas stations
- Local serving banks
- Student housing projects
- Local serving community colleges

The proposed Ashley Furniture Expansion would be less than 50,000 SF. Therefore, the project would be considered local-serving retail.

The Land Use Type Screening threshold is met.

High Quality Transit Area (HQTA) Screening

As described in the City's TIA Guidelines, projects located within a half (½) mile from an existing major transit stop or within half (½) of a mile from an existing stop along a high-quality transit corridor can be screened out. Based on the Southern California Association of Governments (SCAG) HQTA Map provided in the City's TIA Guidelines, the project site is not located within a HQTA. The HQTA Map is provided in the approved Scoping Agreement in ***Appendix A***.

The HQTA Screening criteria is not met.

Low VMT Area Screening

The Project is located in TAZ number 53779301. Based on the SBCTA VMT Screening tool, the Project is not located in a Low VMT (15% below County Average) zone. The SBCTA VMT Screening tool results are provided in the approved Scoping Agreement in ***Appendix A***.

The Low VMT Area Screening threshold is not met.

Based on review of the VMT screening thresholds, the project meets the Land Use Type Screening threshold. Therefore, the project would result in a less-than-significant VMT impact, and no additional VMT analysis is required.

SUMMARY OF FINDINGS AND CONCLUSIONS

- The project is located approximately 800 feet south of the intersection of Ashley Way at E Cooley Drive in the City of Colton.
- The project involves the construction of a 35,000 SF building addition of the existing Ashley Furniture Store located at 855 Ashley Way.
- The project is estimated to generate 700 daily trips, with 20 trips during the AM peak hour and 55 trips during the PM peak hour.
- Under Existing conditions, all study intersections operate at an acceptable Level of Service.
- The project opening year is anticipated to be Year 2024. With the addition of ambient growth and Cumulative Projects, all study intersections would continue to operate at an acceptable Level of Service.
- Project-related traffic was added to the Opening Year 2024 Cumulative volumes to establish conditions for the Opening Year 2024 Cumulative Plus Project conditions. With the addition of project traffic, all study intersections would continue to operate at an acceptable Level of Service.
- Based on review of the VMT screening thresholds, the project meets the Land Use Type Screening threshold. Therefore, the project would result in a less-than-significant VMT impact, and no additional VMT analysis is required.

APPENDIX A

APPROVED SCOPING AGREEMENT

MINAGAR & ASSOCIATES, INC.
Traffic Engineering – Transportation Planning – Intelligent Transportation Systems (ITS) – Civil/Electrical Engineering & CEM Consultants

September 20, 2022

Mr. Moises Peralta
Associate Engineer
City of Colton
Public Works Department
160 S. 10th Street
Colton, CA 92324

Subject: TO#313 – 1st Review of Scoping Agreement for the Colton Ashley Furniture's 35,000 SF Expansion at 855 & 755 Ashley Way, APN#0276-131-92 and #0276-131-90 - Trip Generation & VMT Analysis, Colton, CA

Dear Moises,

We have completed our 1st review of the subject project's Trip Generation & VMT Analysis Scoping and have the following comments:

A. Trip Generation

1. The trip generation, distribution and locations of the study intersections are acceptable.

B. VMT Analysis

2. The VMT Analysis is approved. Therefore, there will be no need for any additional analysis.

Should you have any questions, I can be contacted conveniently via e-mail at minagarf@minagrinc.com.

Thank you.

Sincerely,

MINAGAR & ASSOCIATES, INC.
(A California Corporation)

Fred Minagar, MS, RCE, PE, FITE
President/Contract City Traffic Engineer

SCOPING AGREEMENT FOR TRAFFIC IMPACT STUDY

This form acknowledges the City of Colton Engineering Division requirements for traffic impact analysis of the following project. The analysis must comply with SBCTA CMP TIA Guidelines, as applicable.

Case No. _____

Related Cases: _____

APN(S): 0276-131-92 and 0276-131-90

Project Name: Colton Ashley Furniture Expansion

Project Address: 855 & 755 Ashley Way

Project Description: Expansion of the existing furniture store located at 855 Ashley Way

Project Size: 35,000 SF addition (See Attachment A)

	Traffic Consultant	Developer
Name:	Kimley-Horn & Associates, Inc.	HMC Construction, Inc.
Address:	1100 W Town and Country Rd, Suite 700	1461 E Cooley Drive, Ste 230
	Orange, CA 92868	Colton, CA 92324
Telephone:	(714) 939-1030	(909) 783-3020
e-mail:	Trevor.Briggs@Kimley-Horn.com	

A. Technical Methodology

Technical methodology to comply with SBCTA CMP guidelines. However, mitigation on nonstate facilities to maintain Vehicle Miles Traveled (VMT) threshold.
Traffic count data must be current or within previous 12 months. Provide traffic count dates.

B. Trip Generation Source: ITE Trip Generation Manual, 11th Edition

Current GP Land Use: General Commercial Proposed Land Use: General Commercial

Current Zoning: General Commercial (C-2) / Light Industrial (M-1) Proposed Zoning: General Commercial (C-2) / Light Industrial (M-1)

	Current Trip Generation			Proposed Trip Generation		
	In	Out	Total	In	Out	Total
AM Trips:				13	7	20
PM Trips:				29	26	55

Internal Trip Allowance: N/A

Pass-By Trip Allowance: N/A

See Attachment B

Traffic impact study to quantify change in project trip generation in comparison with pre-existing uses on project site when fully occupied.

C. Trip Geographic Distribution: To be submitted for approval by city staff. Cite source. Attach exhibit of detailed assignment. See Attachment C

D. Scenario Analysis

Project year of completion: 2024

Phase Year(s) _____

Annual Ambient Growth rate: 2.0%

City staff to provide cumulative background projects list.

Scenarios:

Existing Conditions
Opening Year 2024 Cumulative
Opening Year 2024 Cumulative Plus Project

E. Preliminary Study Intersections: (See SBCTA CMP guidelines or comments from other agencies.) See Attachment C

1. Ashley Way at E Cooley Drive
2. Ashley Way at S Cooley Drive
3. E Cooley Drive at S Mt Vernon Ave
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

F. Preliminary Study Roadway Segments: (See SBCTA CMP guidelines or comments from other agencies.)

1. _____
6. _____

2._____ 7._____

3. _____ 8. _____

4._____ 9. _____

5._____ 10. _____

G. Freeways - See SBCTA CMP guidelines.

H. Other Jurisdictional Impacts

Is this project within a one-mile radius of City or County boundaries? ☒ Yes ☐ No

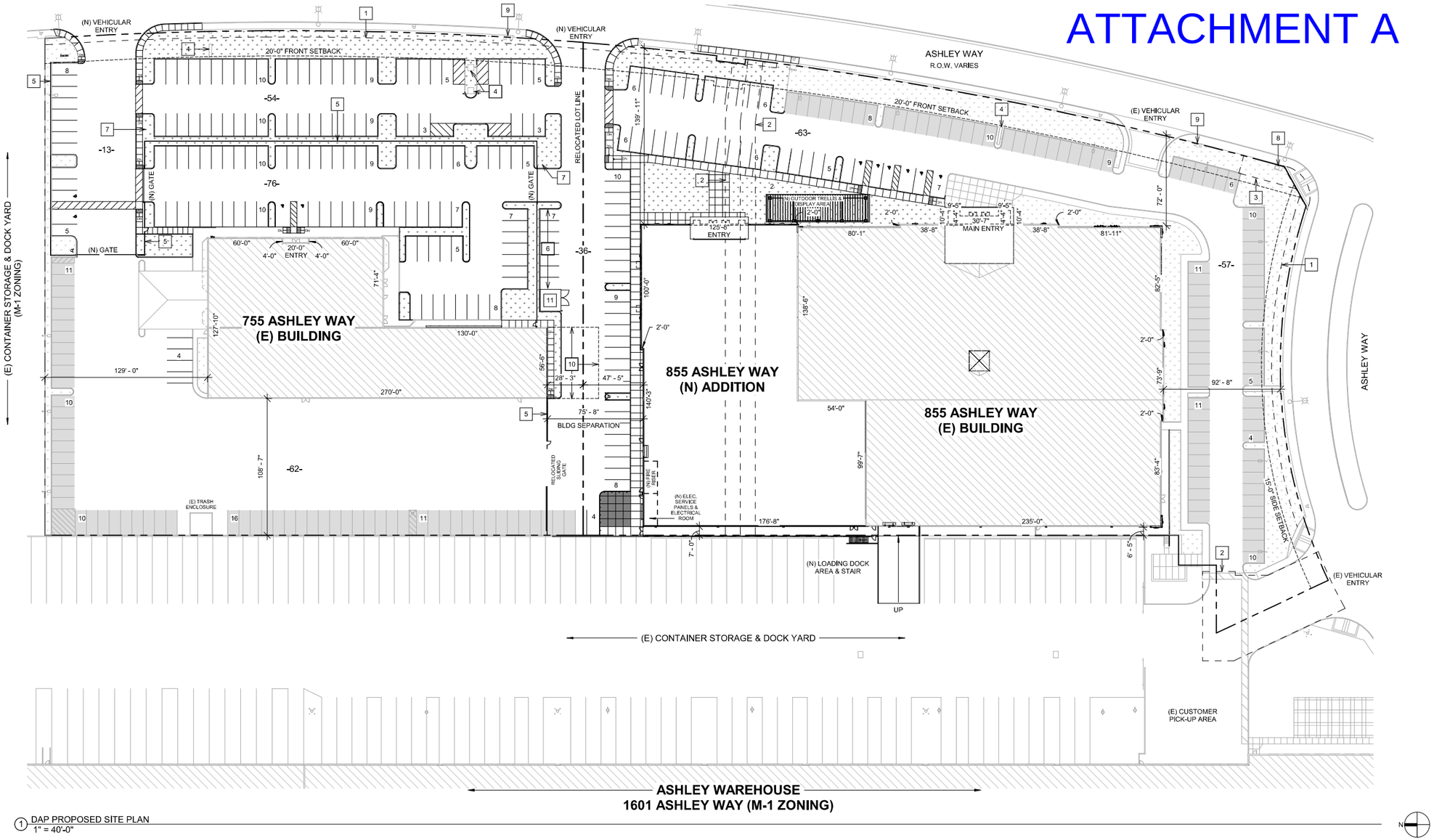
If so, name of City Jurisdiction: City of Grand Terrace, City of San Bernardino

I. Site Plan (please attach reduced copy) See Attachment A

J. Specific issues to be addressed in the Study

Recommended by:		Approved Scoping Agreement:	
Trevor Briggs, P.E.	09/19/2022		
Consultant's Representative	Date	City of Colton Engineering Division	Date

ATTACHMENT A



1 DAP PROPOSED SITE PLAN
1" = 40'-0"

KEYNOTES

#	KEYNOTE TEXT
1	(E) UTILITY EASEMENT. RE: ALTA/ACSM LAND TITLE SURVEY
2	(E) ACCESS EASEMENT. RE: ALTA/ACSM LAND TITLE SURVEY
3	(E) ELECTRICAL EASEMENT. RE: ALTA/ACSM LAND TITLE SURVEY
4	(E) MONUMENT SIGN TO REMAIN. PROTECT IN PLACE
5	(N) 6'-0" HEIGHT METAL FENCE
6	(N) COMPACT PARKING SPACE(S)
7	(N) ELECTRIC JUNCTION BOX AND CONDUIT LOCATION
8	(E) ELECTRIC TRANSFORMER TO REMAIN
9	(E) WATER METER(S) & IRRIGATION WATER EQUIPMENT TO REMAIN. PROTECT IN PLACE.
10	PORTION OF (E) 755 ASHLEY WAY BUILDING TO BE DEMOLISHED. SEE DEMO ELEVATIONS.
11	(N) 6'-8" HEIGHT CONCRETE PANEL TRASH ENCLOSURE WITH STEEL DECK ROOF.

SITE INFORMATION & PARKING SUMMARY

PROPOSED LOT SIZES

855 ASHLEY WAY LOT =	220,482 SF (~5.06 ACRES)
755 ASHLEY WAY LOT =	152,335 SF (~3.50 ACRES)
COMBINED LOT AREA =	372,817 SF (~8.56 ACRES)

PARKING CALCULATIONS

(E) BUILDING AREA =	65,154 SF
(N) ADDITION AREA =	35,000 SF
TOTAL BUILDING AREA =	100,154 SF
REQUIRED PARKING = (1/250 SF PARKING RATIO)	400 SPACES
(10% REDUCTION ALLOWED BY AHJ) =	- 40 SPACES

TOTAL REQUIRED PARKING = 360 SPACES

TOTAL PARKING PROVIDED = 363 SPACES

COMPACT PARKING SPACES ALLOWED = 72 SPACES MAX (20% OF REQUIRED PARKING)

COMPACT PARKING SPACES PROVIDED = 17 SPACES

ACESSIBLE PARKING REQUIRED = 8 SPACES (2% OF TOTAL REQUIRED PARKING)

ACESSIBLE PARKING PROVIDED = 8 SPACES

NOTE: 855 & 755 ASHLEY WAY ARE OWNED AND OCCUPIED BY THE SAME TENANT. BOTH BUILDINGS SHALL HAVE A SHARED PARKING AND ACCESS AGREEMENT.

LANDSCAPE AREA

COMBINED LOT AREA =	372,817 SF (~8.56 ACRES)
REQUIRED LANDSCAPE AREA = (15% OF LOT AREA)	55,923 SF
TOTAL LANDSCAPE AREA PROVIDED =	**49,904 SF (13.4% OF LOT AREA)**

SITE PLAN LEGEND

- EXISTING PARKING SPACE TO REMAIN
- (N) GENERATOR & TRANSFORMER AREA
- LANDSCAPING AREA - N.I.C.
- AREA NOT IN CONTRACT
- (E) LIGHT POLES / STREETLIGHTS
- (N) LIGHT POLES / STREETLIGHTS
- (N) ACCESSIBLE PARKING SPACE
- (E) BACKFLOW PREVENTER LOCATION
- (N) BACKFLOW PREVENTER LOCATION
- (E) FIRE HYDRANT LOCATION
- (N) FIRE HYDRANT LOCATION

adc architecture design collaborative
7375 W. 52nd Ave. – Suite 210
Arvada, CO 80002
www.adcollaborative.com
949.267.1660

ADC Project No: 21033

Project Contact: Dan Mitchell
Email: dmitchell@adcollaborative.com
Principal: Craig Chinn
Project Manager: Kent Denton

Client

Company: HMC Construction, Inc.
Address: 1461 E. Cooley Drive, Ste 230
Colton, CA 92324
Phone No. 909-783-3020

ASHLEY HOMESTORE

755 & 855 ASHLEY WAY, COLTON, CA 92324

ISSUED FOR: DEVELOPMENT APPLICATION PROCESS
ISSUE DATE: 2022-03-10

No.	Date	Description

SHEET TITLE:
PROPOSED SITE PLAN

DAP A-102

ATTACHMENT B
SUMMARY OF PROJECT TRIP GENERATION
COLTON ASHLEY FURNITURE EXPANSION

Land Use	ITE Code	Unit	Trip Generation Rates [1]						
			Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Discount Home Furnishing Superstore	869	KSF	20.000	0.365	0.205	0.570	0.832	0.738	1.570

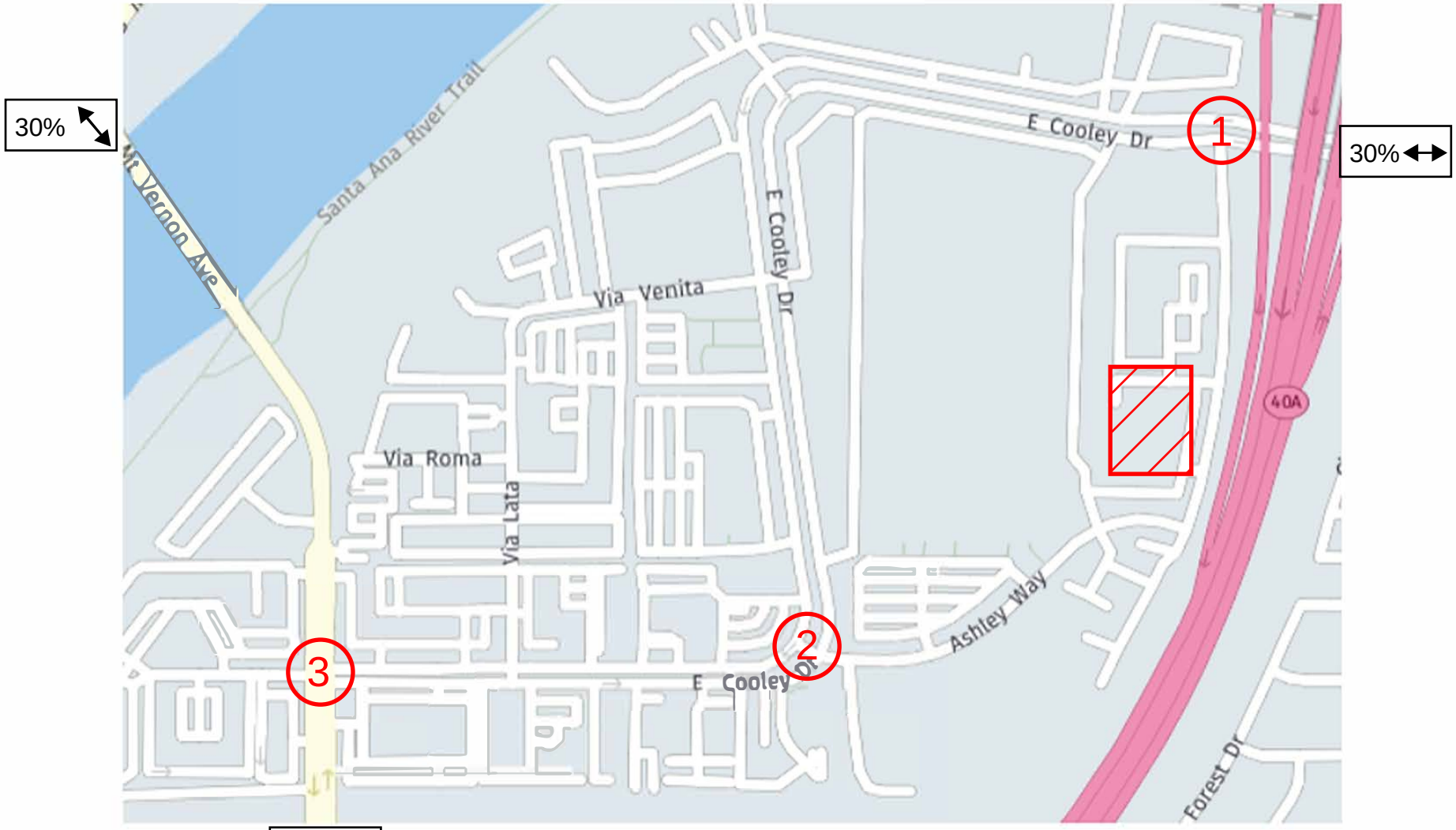
Proposed Expansion

Land Use	Quantity	Unit	Trip Generation Estimates						
			Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Discount Home Furnishing Superstore	35.000	KSF	700	13	7	20	29	26	55

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

ATTACHMENT C

PROJECT TRIP DISTRIBUTION AND STUDY INTERSECTIONS



PROJECT SITE

STUDY INTERSECTION

XX% PASSENGER CAR TRIP DISTRIBUTION

VEHICLE MILE TRAVELED ANALYSIS
FOR THE PROPOSED
ASHLEY FURNITURE STORE EXPANSION
IN THE CITY OF COLTON

INTRODUCTION

Senate Bill (SB) 743 was approved by the 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 updated guidelines for CEQA and written a technical advisory for evaluating transportation impacts in CEQA and has set a deadline of July 1, 2020 for local agencies to update their CEQA transportation procedures. OPR has recommended that Vehicle Miles Traveled (VMT) replace LOS as the primary measure of transportation impacts. The City of Colton has adopted new Transportation Impact Guidelines and now relies on VMT as the measure for determining a project significant transportation impact under the CEQA process.

This technical report was prepared to document the VMT analysis for the Ashley Furniture Store Expansion following the *City of Colton VMT Guidelines* (June 2020).

VEHICLE MILES TRAVELED SCREENING

This section documents Vehicle Miles Traveled (VMT)/ SB 743 considerations for the Project. The City's 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 four steps:

1. Trip Screening
2. Land Use Types Screening
3. High Quality Transit Areas (HQTA) Screening
4. Low VMT Areas Screening

A land use project needs only to meet one of the above screening thresholds to be presumed to result in a less-than-significant impact under CEQA pursuant to SB 743.

Trip Screening

The City's TIA Guidelines identify that a project with a net daily trip generation of less than 110 ADT can be screened out. The Project is expected to generate 700 new daily trips, surpassing the maximum 110 ADT screening limit.

The Trip Screening criteria is not met.

Land Use Type Screening

The City presumes certain local project types have a negligible impact upon the City's VMT. The assumption is based upon local serving projects redirecting and encouraging local traffic from traveling to further locations, lowering the VMT for the City. Project types falling under the screening criteria includes the following:

- K-12 Schools
- Local-serving retail less than 50,000 square feet
- Local parks
- Day care centers
- Local serving gas stations
- Local serving banks
- Student housing projects
- Local serving community colleges

The proposed Ashley Furniture Expansion would be less than 50,000 SF. Therefore, the project would be considered local-serving retail.

The Low Project Type screening threshold is met.

High Quality Transit Area (HQTA) Screening

As described in the City's TIA Guidelines, projects located within a half (½) mile from an existing major transit stop or within half (½) of a mile from an existing stop along a high-quality transit corridor can be screened out. Based on the Southern California Association of Governments (SCAG) HQTA Map provided in the City's TIA Guidelines, the project site is not located within a HQTA. The HQTA Map is provided on **Figure 1**.

The HQTA screening criteria is not met.

Low VMT Area Screening

The Project is located in TAZ number 53779301. Based on the SBCTA VMT Screening tool, the Project is not located in a Low VMT (15% below County Average) zone. The SBCTA VMT Screening tool results are provided on **Figure 2**.

The Low VMT Area screening threshold is not met.

CONCLUSION

The Project was evaluated based on the City of Colton *VMT Guidelines* (June 2020) and by using the SBCTA VMT Screening Tool. The proposed project meets the Land Use Type Screening criteria as local-serving retail. Therefore, the Project's transportation impact is presumed to have a less than significant impact and no further VMT analysis is required.

Figure 1 - HQTA Map

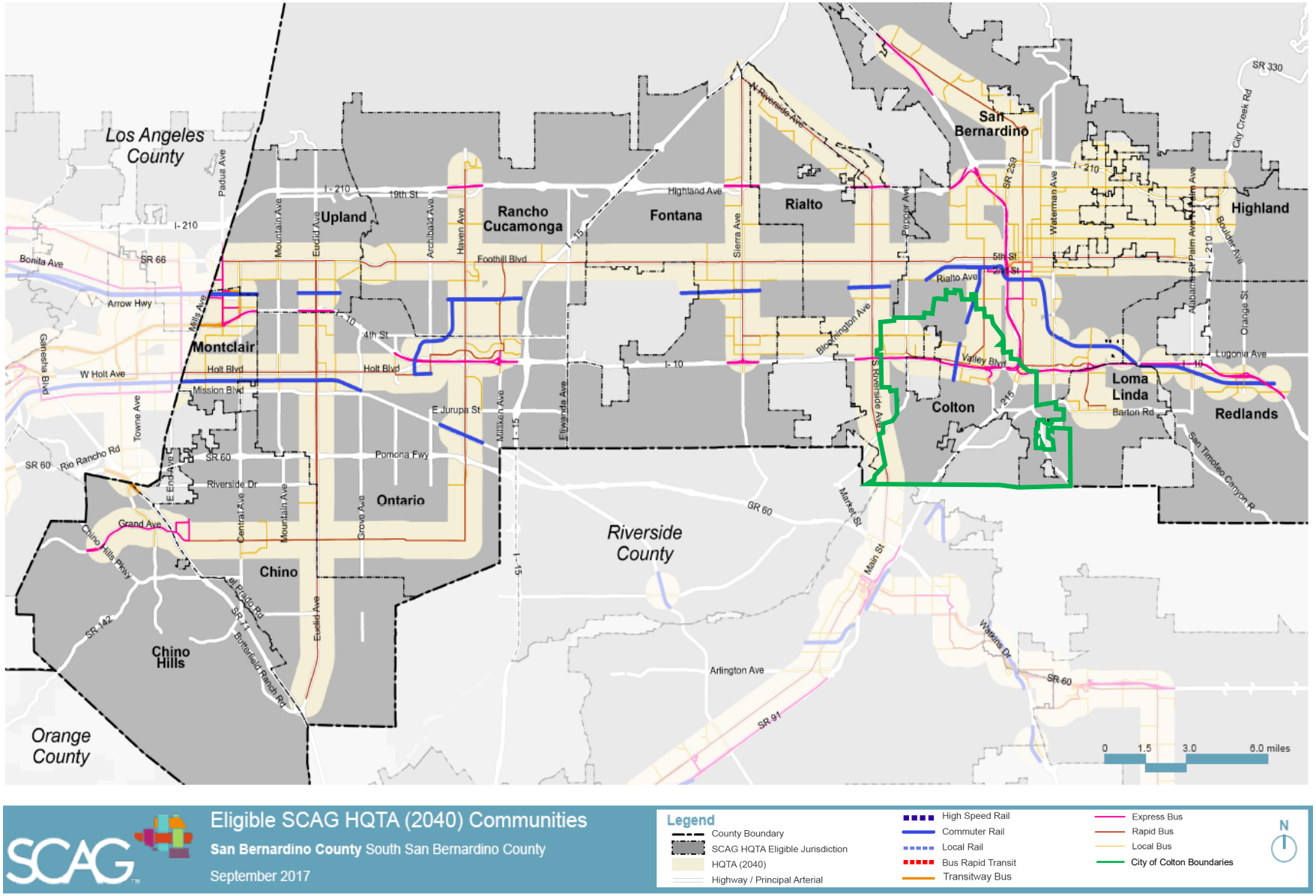
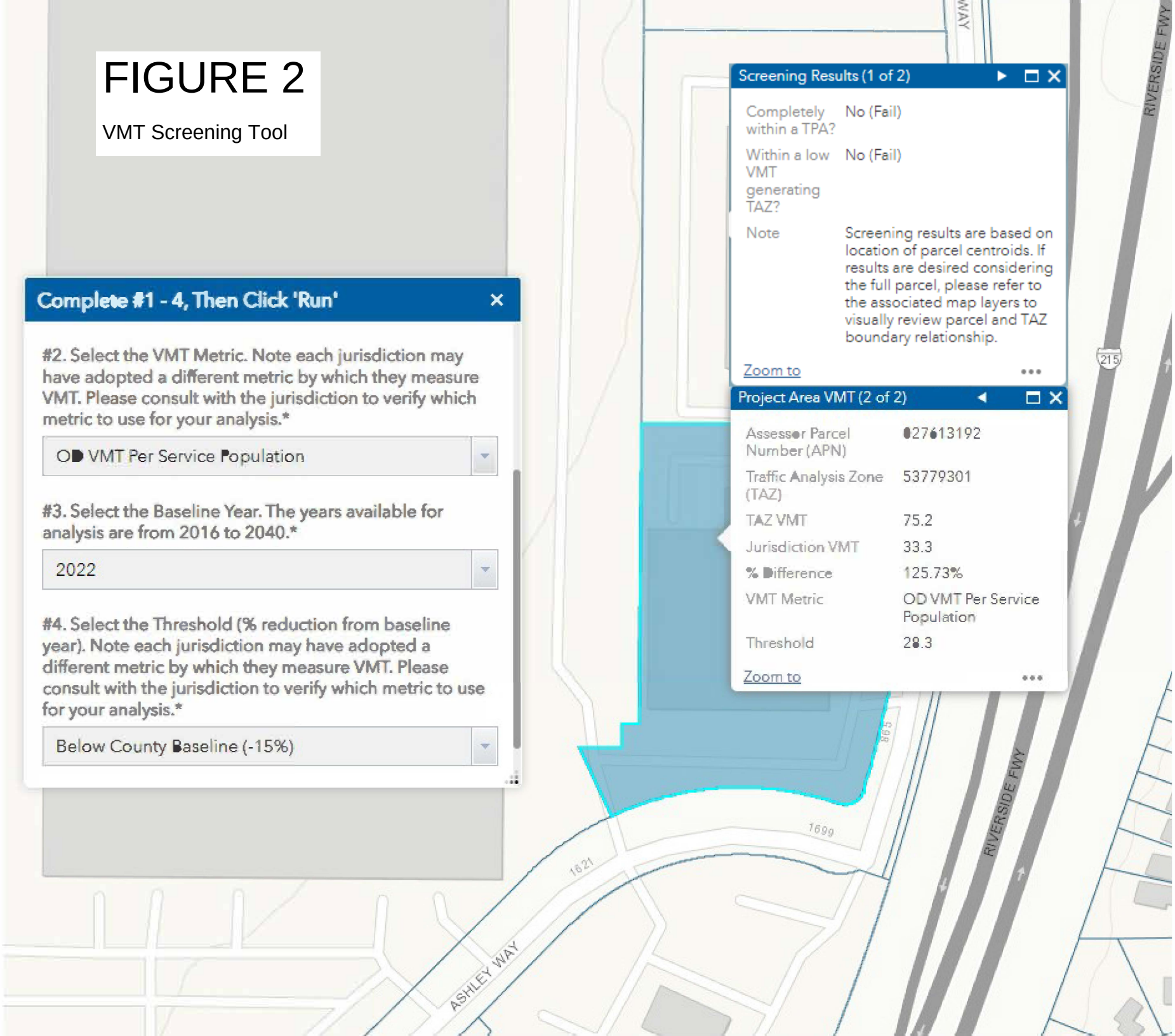


Figure 10: Southern California Association of Governments (SCAG) High Quality Transit Area (HQTA) Map

FIGURE 2

VMT Screening Tool



APPENDIX B

TRAFFIC COUNT DATA SHEETS

National Data & Surveying Services

Intersection Turning Movement Count

Location: Ashley Way & E Cooley Dr
City: Colton
Control: 1-Way Stop(NB)

Project ID: 22-030059-001
Date: 10/6/2022

Data - Total

NS/EW Streets:	Ashley Way				Ashley Way				E Cooley Dr				E Cooley Dr				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	2	0	0	1	0	0	0	0	0	29	0	0	6	32	0	0	70
7:15 AM	0	0	3	0	0	0	0	0	0	36	1	0	1	50	0	0	91
7:30 AM	1	0	5	0	0	0	0	0	0	51	0	0	2	69	0	0	128
7:45 AM	0	0	4	0	0	0	0	0	0	46	2	0	8	93	0	0	153
8:00 AM	0	0	6	0	0	0	0	0	0	52	1	0	3	63	0	0	125
8:15 AM	0	0	3	0	0	0	0	0	0	33	0	0	4	67	0	0	107
8:30 AM	1	0	2	0	0	0	0	0	0	39	1	0	3	47	0	1	94
8:45 AM	0	0	3	0	0	0	0	0	0	33	1	0	3	35	0	0	75
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	4	0	26	1	0	0	0	0	0	319	6	0	30	456	0	1	843
APPROACH %'s :	12.90%	0.00%	83.87%	3.23%					0.00%	98.15%	1.85%	0.00%	6.16%	93.63%	0.00%	0.21%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	1	0	18	0	0	0	0	0	0	182	3	0	17	292	0	0	513
PEAK HR FACTOR :	0.250	0.000	0.750	0.000	0.000	0.000	0.000	0.000	0.000	0.875	0.375	0.000	0.531	0.785	0.000	0.000	0.838
	0.792								0.873				0.765				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	10	0	0	0	0	0	0	119	1	0	3	67	0	0	200
4:15 PM	0	0	15	0	0	0	0	0	0	89	0	0	1	75	0	0	180
4:30 PM	0	0	12	0	0	0	0	0	0	107	0	2	1	71	0	0	193
4:45 PM	0	0	9	0	0	0	0	0	0	93	0	0	1	58	0	0	161
5:00 PM	0	0	10	0	0	0	0	0	0	136	1	0	2	63	0	0	212
5:15 PM	0	0	5	0	0	0	0	0	0	103	2	0	1	74	0	0	185
5:30 PM	0	0	6	0	0	0	0	0	0	127	0	0	3	60	0	0	196
5:45 PM	0	0	7	0	0	0	0	0	0	102	2	0	1	51	0	0	163
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	74	0	0	0	0	0	0	876	6	2	13	519	0	0	1490
APPROACH %'s :	0.00%	0.00%	100.00%	0.00%					0.00%	99.10%	0.68%	0.23%	2.44%	97.56%	0.00%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	0	0	28	0	0	0	0	0	0	468	5	0	7	248	0	0	756
PEAK HR FACTOR :	0.000	0.000	0.700	0.000	0.000	0.000	0.000	0.000	0.000	0.860	0.625	0.000	0.583	0.838	0.000	0.000	0.892
	0.700								0.863				0.850				

Prepared by National Data & Surveying Services

Ashley Way & E Cooley Dr

Peak Hour Turning Movement Count

ID: 22-030059-001
City: Colton

Day: Thursday
Date: 10/6/2022

PEAK HOURS		COUNT PERIODS
AM	07:30 AM - 08:30 AM	7:00 AM - 09:00 AM
NOON	NONE	NONE
PM	05:00 PM - 06:00 PM	4:00 PM - 06:00 PM

SOUTHBOUND (Ashley Way)

AM	0	0	0	0	0	AM
NOON	0	0	0	0	0	NOON
PM	0	0	0	0	0	PM

EASTBOUND (E Cooley Dr)

AM	NOON	PM		
293	0	248	⇦	
0	0	0	↶	0
0	0	0	↱	0
182	0	468	→	1
3	0	5	↷	0
AM	NOON	PM		

WESTBOUND (E Cooley Dr)

PM	NOON	AM		
0	0	0	↰	0
248	0	292	←	1
7	0	17	↰	0
0	0	0	↶	0
496	0	200	⇨	
PM	NOON	AM		

CONTROL

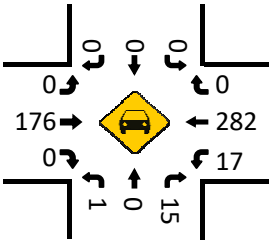
1-Way Stop(NB)

TEV	513 AM	0 NOON	756 PM
PHF	0.84		0.89

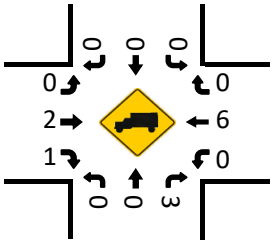
NORTHBOUND (Ashley Way)

PM	12	0	0	0	28	PM
NOON	0	0	0	0	0	NOON
AM	20	0	1	0	18	AM

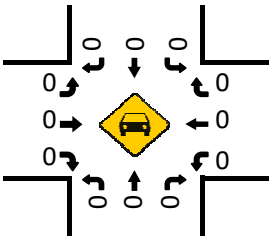
Cars (AM)



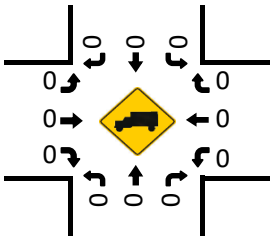
2axle (AM)



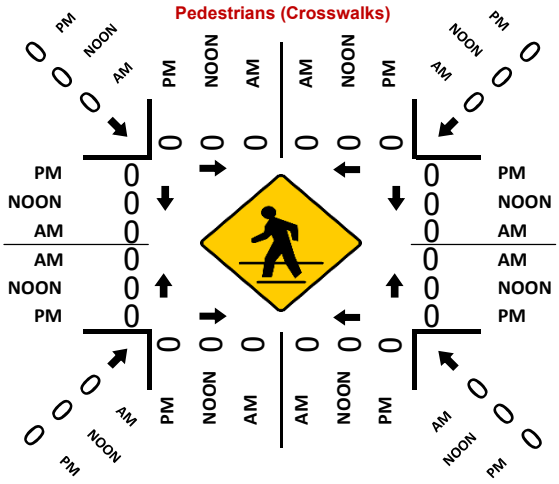
Cars (NOON)



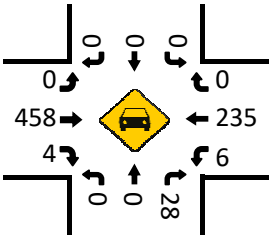
2axle (NOON)



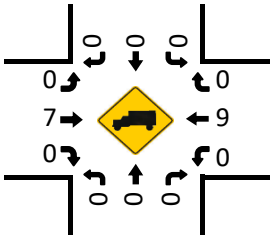
Pedestrians (Crosswalks)



Cars (PM)



2axle (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: E Cooley Dr & Ashley Way
City: Colton
Control: Signalized

Project ID: 22-030059-002
Date: 10/6/2022

Data - Total

NS/EW Streets:	E Cooley Dr				E Cooley Dr				Ashley Way				Ashley Way				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0 NL	2 NT	1 NR	1 NU	1 SL	2 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	1 WL	0 WT	1 WR	0 WU	TOTAL
7:00 AM	0	39	22	8	1	40	0	0	0	0	0	0	6	0	3	0	119
7:15 AM	0	44	19	12	0	54	0	0	0	0	0	0	1	0	2	0	132
7:30 AM	0	55	21	20	0	60	0	0	0	0	0	0	6	0	1	0	163
7:45 AM	0	53	24	14	0	81	0	0	0	0	0	0	11	0	2	0	185
8:00 AM	0	53	22	20	0	65	0	1	0	0	0	0	11	0	1	0	173
8:15 AM	0	41	18	21	2	47	0	0	0	0	0	0	3	0	1	0	133
8:30 AM	0	45	9	15	1	46	0	1	0	0	0	0	7	0	2	0	126
8:45 AM	0	45	13	21	1	36	0	0	0	0	0	0	4	0	3	0	123
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	375	148	131	5	429	0	2	0	0	0	0	49	0	15	0	1154
APPROACH %'s :	0.00%	57.34%	22.63%	20.03%	1.15%	98.39%	0.00%	0.46%					76.56%	0.00%	23.44%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	202	85	75	2	253	0	1	0	0	0	0	31	0	5	0	654
PEAK HR FACTOR :	0.000	0.918	0.885	0.893	0.250	0.781	0.000	0.250	0.000	0.000	0.000	0.000	0.705	0.000	0.625	0.000	0.884
		0.943				0.790								0.692			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0 NL	2 NT	1 NR	1 NU	1 SL	2 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	1 WL	0 WT	1 WR	0 WU	TOTAL
4:00 PM	0	120	12	19	2	74	0	0	0	0	0	0	12	0	2	0	241
4:15 PM	0	83	11	9	1	85	0	1	0	0	0	0	17	0	1	0	208
4:30 PM	0	104	10	11	0	90	0	1	0	0	0	0	32	0	0	0	248
4:45 PM	0	92	10	11	1	71	0	2	0	0	0	0	13	0	0	0	200
5:00 PM	0	116	9	30	1	74	0	2	0	0	0	0	14	0	1	0	247
5:15 PM	0	107	6	21	0	67	0	2	0	0	0	0	13	0	1	0	217
5:30 PM	0	123	10	7	0	67	0	0	0	0	0	0	12	0	0	0	219
5:45 PM	0	106	13	4	3	56	0	1	0	0	0	0	11	0	2	0	196
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	851	81	112	8	584	0	9	0	0	0	0	124	0	7	0	1776
APPROACH %'s :	0.00%	81.51%	7.76%	10.73%	1.33%	97.17%	0.00%	1.50%					94.66%	0.00%	5.34%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	419	35	73	2	302	0	7	0	0	0	0	72	0	2	0	912
PEAK HR FACTOR :	0.000	0.903	0.875	0.608	0.500	0.839	0.000	0.875	0.000	0.000	0.000	0.000	0.563	0.000	0.500	0.000	0.919
		0.850				0.854								0.578			

Prepared by National Data & Surveying Services

E Cooley Dr & Ashley Way

Peak Hour Turning Movement Count

ID: 22-030059-002
City: Colton

Day: Thursday
Date: 10/6/2022

PEAK HOURS

AM: 07:30 AM - 08:30 AM
NOON: NONE
PM: 04:30 PM - 05:30 PM

COUNT PERIODS

AM: 7:00 AM - 09:00 AM
NOON: NONE
PM: 4:00 PM - 06:00 PM

SOUTHBOUND (E Cooley Dr)

AM	0	253	2	1	208	AM
NOON	0	0	0	0	0	NOON
PM	0	302	2	7	428	PM

EASTBOUND (Ashley Way)

	AM	NOON	PM
	0	0	0
	0	0	0
	0	0	0
	0	0	0
	0	0	0

WESTBOUND (Ashley Way)

	PM	NOON	AM
	2	0	5
	0	0	0
	72	0	31
	0	0	0
	37	0	87

NORTHBOUND (E Cooley Dr)

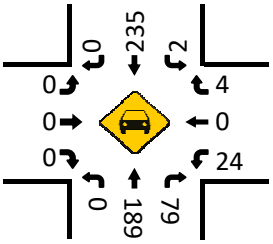
PM	447	73	0	419	35	PM
NOON	0	0	0	0	0	NOON
AM	359	75	0	202	85	AM

CONTROL

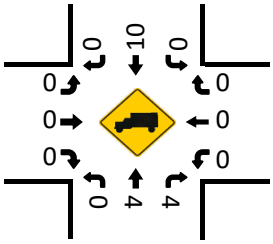
Signalized

TEV	654 AM	0 NOON	912 PM
PHF	0.88		0.92

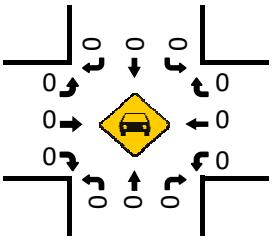
Cars (AM)



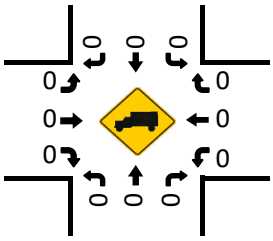
2axle (AM)



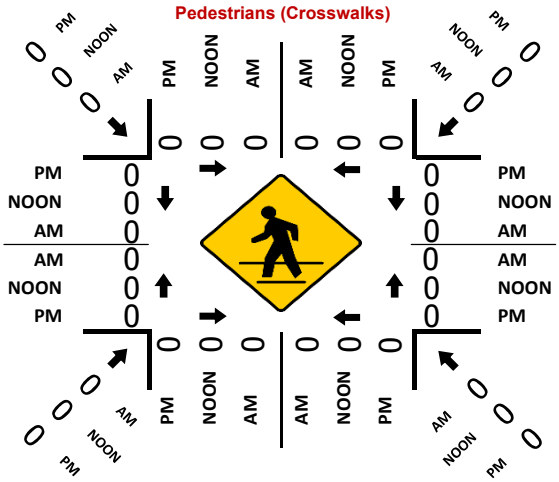
Cars (NOON)



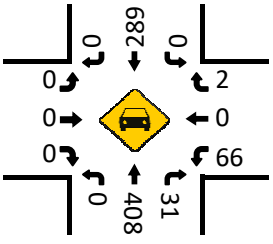
2axle (NOON)



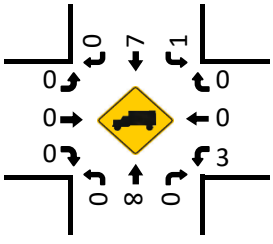
Pedestrians (Crosswalks)



Cars (PM)



2axle (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: S Mt Vernon Ave & E Cooley Dr
City: Colton
Control: Signalized

Project ID: 22-030059-003
Date: 10/6/2022

Data - Total

NS/EW Streets:	S Mt Vernon Ave				S Mt Vernon Ave				E Cooley Dr				E Cooley Dr				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	3	0	0	1	1	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	93	55	0	42	45	5	1	4	1	2	0	25	2	27	1	303
7:15 AM	3	96	48	2	54	89	3	1	5	0	1	0	20	2	36	0	360
7:30 AM	8	103	69	4	78	116	6	3	0	0	1	0	18	1	59	1	467
7:45 AM	13	99	56	1	88	113	24	2	0	1	0	0	40	4	70	0	511
8:00 AM	17	79	62	1	79	124	16	1	1	3	4	0	37	2	44	2	472
8:15 AM	25	89	71	1	62	82	18	2	6	0	3	0	19	1	41	1	421
8:30 AM	12	78	51	1	58	92	13	3	2	2	5	0	32	5	44	0	398
8:45 AM	11	89	80	0	58	106	13	2	2	0	3	0	23	1	35	0	423
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	89	726	492	10	519	767	98	15	20	7	19	0	214	18	356	5	3355
APPROACH %'s :	6.76%	55.13%	37.36%	0.76%	37.10%	54.82%	7.01%	1.07%	43.48%	15.22%	41.30%	0.00%	36.09%	3.04%	60.03%	0.84%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	63	370	258	7	307	435	64	8	7	4	8	0	114	8	214	4	1871
PEAK HR FACTOR :	0.630	0.898	0.908	0.438	0.872	0.877	0.667	0.667	0.292	0.333	0.500	0.000	0.713	0.500	0.764	0.500	0.915
	0.938				0.896				0.528				0.746				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	3	0	0	1	1	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	2	122	44	1	103	167	4	1	12	6	12	0	70	3	99	0	646
4:15 PM	1	105	24	0	74	183	5	1	4	5	6	0	61	3	71	0	543
4:30 PM	3	115	55	1	78	174	4	0	6	4	5	0	76	3	95	0	619
4:45 PM	5	136	37	0	71	193	3	1	12	5	3	0	50	4	72	0	592
5:00 PM	4	148	37	0	74	195	3	1	27	6	16	0	81	1	97	0	690
5:15 PM	5	148	44	1	81	177	12	0	10	1	9	0	67	3	74	0	632
5:30 PM	3	128	44	0	94	177	5	1	5	3	2	0	59	1	47	0	569
5:45 PM	6	133	38	2	88	191	7	0	9	0	4	0	43	2	38	1	562
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	29	1035	323	5	663	1457	43	5	85	30	57	0	507	20	593	1	4853
APPROACH %'s :	2.08%	74.35%	23.20%	0.36%	30.58%	67.20%	1.98%	0.23%	49.42%	17.44%	33.14%	0.00%	45.23%	1.78%	52.90%	0.09%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	17	547	173	2	304	739	22	2	55	16	33	0	274	11	338	0	2533
PEAK HR FACTOR :	0.850	0.924	0.786	0.500	0.938	0.947	0.458	0.500	0.509	0.667	0.516	0.000	0.846	0.688	0.871	0.000	0.918
	0.933				0.977				0.531				0.870				

Prepared by National Data & Surveying Services

S Mt Vernon Ave & E Cooley Dr

Peak Hour Turning Movement Count

ID: 22-030059-003
City: Colton

Day: Thursday
Date: 10/6/2022

PEAK HOURS	COUNT PERIODS
07:30 AM - 08:30 AM	7:00 AM - 09:00 AM
NONE	NONE
04:30 PM - 05:30 PM	4:00 PM - 06:00 PM

SOUTHBOUND (S Mt Vernon Ave)

AM	64	435	307	8	599	AM
NOON	0	0	0	0	0	NOON
PM	22	739	304	2	942	PM
	0	3	1	0		

EASTBOUND (E Cooley Dr)

AM	NOON	PM	
135	0	50	
0	0	0	0
7	0	55	1
4	0	16	1
8	0	33	0
AM	NOON	PM	

WESTBOUND (E Cooley Dr)

PM	NOON	AM	
338	0	214	0
11	0	8	2
274	0	114	1
0	0	4	0
493	0	573	
PM	NOON	AM	

NORTHBOUND (S Mt Vernon Ave)

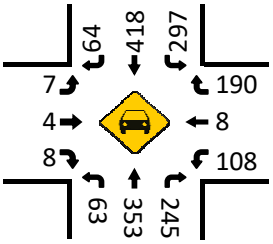
PM	1048	2	17	547	173	PM
NOON	0	0	0	0	0	NOON
AM	564	7	63	370	258	AM
	0	1	2	1		

CONTROL

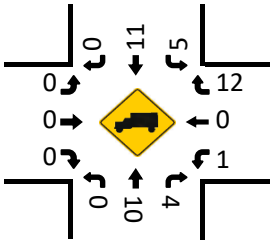
Signalized

TEV	1871	0	2533
	AM	NOON	PM
PHF	0.92		0.92

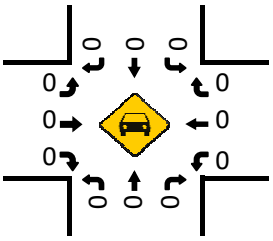
Cars (AM)



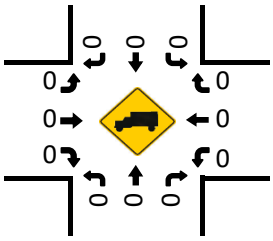
2axle (AM)



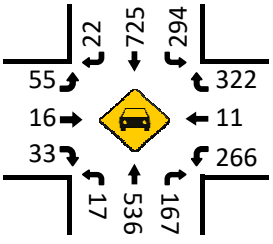
Cars (NOON)



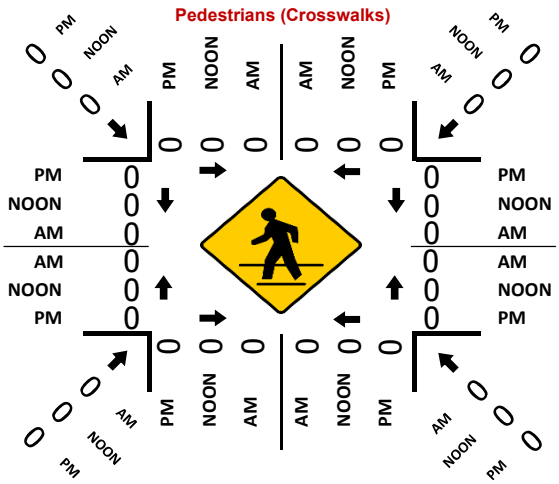
2axle (NOON)



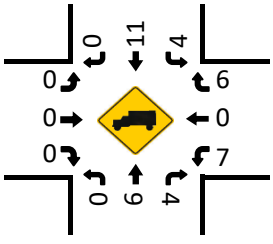
Cars (PM)



Pedestrians (Crosswalks)



2axle (PM)



APPENDIX C

INTERSECTION ANALYSIS WORKSHEETS

Colton Ashley Furniture Expansion

Vistro File: K:\...\Colton Ashley Furniture Expansion_AM.vistro

Scenario 1 EX AM

Report File: K:\...\1. EX AM.pdf

10/12/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Ashley Way at E Cooley Drive	Two-way stop	HCM 7th Edition	NB Left	0.002	13.1	B
2	S Cooley Drive at Ashley Way	Signalized	HCM 7th Edition	SB Left	0.148	10.5	B
3	S Mt Vernon Avenue at E Cooley Drive	Signalized	HCM 7th Edition	NB Left	0.518	24.0	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: Ashley Way at E Cooley Drive

Control Type:	Two-way stop	Delay (sec / veh):	13.1
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

Intersection Setup

Name	Ashley Way		E Cooley Drive		E Cooley Drive	
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	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Ashley Way		E Cooley Drive		E Cooley Drive	
Base Volume Input [veh/h]	1	18	182	3	17	292
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	18	182	3	17	292
Peak Hour Factor	0.8380	0.8380	0.8380	0.8380	0.8380	0.8380
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	5	54	1	5	87
Total Analysis Volume [veh/h]	1	21	217	4	20	348
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.03	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	13.11	9.52	0.00	0.00	7.69	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.09	0.09	0.00	0.00	0.03	0.03
95th-Percentile Queue Length [ft/ln]	2.14	2.14	0.00	0.00	0.84	0.84
d_A, Approach Delay [s/veh]	9.68		0.00		0.42	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.60					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 2: S Cooley Drive at Ashley Way

Control Type:	Signalized	Delay (sec / veh):	10.5
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.148

Intersection Setup

Name	E Cooley Drive			S Cooley Drive		Ashley Way	
Approach	Northbound			Southbound		Westbound	
Lane Configuration							
Turning Movement	U-turn	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	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
Entry Pocket Length [ft]	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	1
Exit Pocket Length [ft]	0.00	0.00	100.00	0.00	0.00	0.00	100.00
Speed [mph]	30.00			30.00		30.00	
Grade [%]	0.00			0.00		0.00	
Curb Present	No			No		No	
Crosswalk	Yes			No		Yes	

Volumes

Name	E Cooley Drive			S Cooley Drive		Ashley Way	
Base Volume Input [veh/h]	75	202	85	3	253	31	5
Base Volume Adjustment Factor	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
Proportion of CAVs [%]	0.00						
Growth Factor	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
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	75	202	85	3	253	31	5
Peak Hour Factor	0.8840	0.8840	0.8840	0.8840	0.8840	0.8840	0.8840
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	57	24	1	72	9	1
Total Analysis Volume [veh/h]	85	229	96	3	286	35	6
Presence of On-Street Parking	No		No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	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
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	Protected	Permissive	Permissive	Protected	Permissive	Split	Split
Signal Group	1	6	0	5	2	7	0
Auxiliary Signal Groups							
Lead / Lag	Lead	-	-	Lead	-	Lead	-
Minimum Green [s]	5	10	0	5	10	5	0
Maximum Green [s]	30	30	0	30	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	1.0	0.0
Split [s]	46	28	0	32	14	30	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	5	0
Pedestrian Clearance [s]	0	14	0	0	10	21	0
Delayed Vehicle Green [s]	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	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No	No	
Maximum Recall	No	No		No	No	No	
Pedestrian Recall	No	No		No	No	No	
Detector Location [ft]	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
I, Upstream Filtering Factor	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	R
C, Cycle Length [s]	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
l1_p, Permitted Start-Up Lost Time [s]	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
g_i, Effective Green Time [s]	6	74	74	0	69	3	3
g / C, Green / Cycle	0.06	0.83	0.83	0.00	0.77	0.04	0.04
(v / s)_i Volume / Saturation Flow Rate	0.05	0.06	0.06	0.00	0.08	0.02	0.00
s, saturation flow rate [veh/h]	1781	3560	1589	1781	3560	1781	1589
c, Capacity [veh/h]	114	2937	1311	9	2728	65	58
d1, Uniform Delay [s]	41.42	1.48	1.47	44.61	2.67	42.60	41.92
k, delay calibration	0.11	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	1.00
d2, Incremental Delay [s]	9.42	0.05	0.11	18.83	0.08	6.70	0.77
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.75	0.08	0.07	0.32	0.10	0.54	0.10
d, Delay for Lane Group [s/veh]	50.85	1.53	1.58	63.43	2.75	49.30	42.69
Lane Group LOS	D	A	A	E	A	D	D
Critical Lane Group	Yes	No	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	2.13	0.20	0.19	0.11	0.49	0.88	0.14
50th-Percentile Queue Length [ft/ln]	53.26	5.02	4.74	2.87	12.13	21.97	3.50
95th-Percentile Queue Length [veh/ln]	3.83	0.36	0.34	0.21	0.87	1.58	0.25
95th-Percentile Queue Length [ft/ln]	95.86	9.03	8.52	5.16	21.83	39.54	6.31

Movement, Approach, & Intersection Results

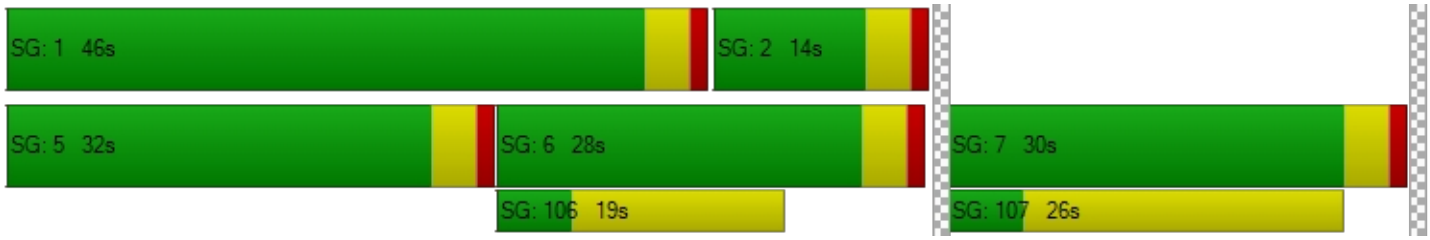
d_M, Delay for Movement [s/veh]	50.85	1.53	1.58	63.43	2.75	49.30	42.69
Movement LOS	D	A	A	E	A	D	D
d_A, Approach Delay [s/veh]	11.76			3.38		48.33	
Approach LOS	B			A		D	
d_I, Intersection Delay [s/veh]	10.52						
Intersection LOS	B						
Intersection V/C	0.148						

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	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	0.00	36.45
l_p,int, Pedestrian LOS Score for Intersection	2.573	0.000	2.167
Crosswalk LOS	B	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	533	222	578
d_b, Bicycle Delay [s]	24.20	35.56	22.76
l_b,int, Bicycle LOS Score for Intersection	1.898	1.798	1.560
Bicycle LOS	A	A	A

Sequence

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



Intersection Level Of Service Report
Intersection 3: S Mt Vernon Avenue at E Cooley Drive

Control Type:	Signalized	Delay (sec / veh):	24.0
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.518

Intersection Setup

Name	S Mt Vernon Avenue			S Mt Vernon Avenue			E Cooley Drive			E Cooley Drive		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	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	0	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			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	S Mt Vernon Avenue			S Mt Vernon Avenue			E Cooley Drive			E Cooley Drive		
Base Volume Input [veh/h]	70	370	258	315	435	64	7	4	8	118	8	214
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	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]	70	370	258	315	435	64	7	4	8	118	8	214
Peak Hour Factor	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	19	101	70	86	119	17	2	1	2	32	2	58
Total Analysis Volume [veh/h]	77	404	282	344	475	70	8	4	9	129	9	234
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
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	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	10	0	5	10	0	0	10	0	0	10	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	38	30	0	27	19	0	0	33	0	0	33	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	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	10	0	0	24	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			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	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	2.00	0.00	2.00	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]	5	43	43	19	57	57	16	16	16	16	16
g / C, Green / Cycle	0.06	0.48	0.48	0.21	0.64	0.64	0.17	0.17	0.17	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.04	0.11	0.18	0.19	0.10	0.10	0.01	0.01	0.09	0.00	0.15
s, saturation flow rate [veh/h]	1781	3560	1589	1781	3560	1750	1137	1666	1401	1870	1589
c, Capacity [veh/h]	103	1703	760	382	2261	1111	250	290	286	326	277
d1, Uniform Delay [s]	41.77	13.81	14.89	34.43	6.68	6.69	32.80	30.94	36.08	30.84	35.99
k, delay calibration	0.11	0.50	0.50	0.14	0.50	0.50	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]	10.39	0.33	1.39	10.00	0.15	0.31	0.05	0.06	1.12	0.03	6.99
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
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	0.75	0.24	0.37	0.90	0.16	0.16	0.03	0.04	0.45	0.03	0.85
d, Delay for Lane Group [s/veh]	52.16	14.14	16.28	44.44	6.83	7.00	32.85	31.00	37.20	30.88	42.99
Lane Group LOS	D	B	B	D	A	A	C	C	D	C	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.96	2.39	3.78	8.21	1.31	1.35	0.15	0.24	2.71	0.16	5.41
50th-Percentile Queue Length [ft/ln]	49.03	59.79	94.38	205.14	32.79	33.83	3.79	5.95	67.75	4.09	135.30
95th-Percentile Queue Length [veh/ln]	3.53	4.31	6.80	12.90	2.36	2.44	0.27	0.43	4.88	0.29	9.23
95th-Percentile Queue Length [ft/ln]	88.25	107.63	169.88	322.59	59.02	60.89	6.83	10.70	121.94	7.37	230.69

Movement, Approach, & Intersection Results

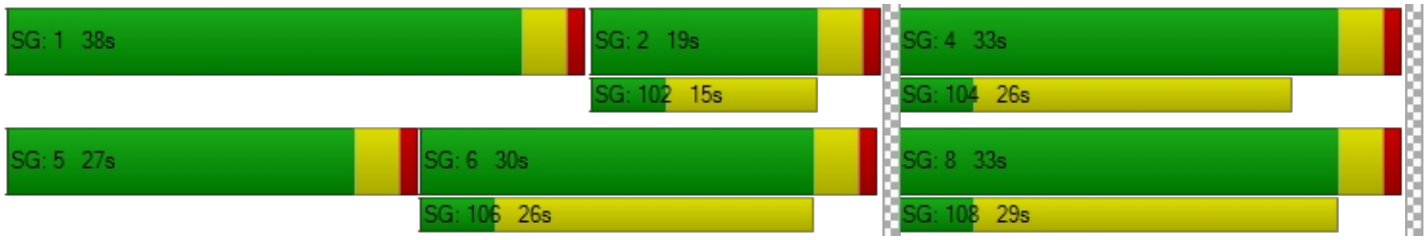
d_M, Delay for Movement [s/veh]	52.16	14.14	16.28	44.44	6.87	7.00	32.85	31.00	31.00	37.20	30.88	42.99
Movement LOS	D	B	B	D	A	A	C	C	C	D	C	D
d_A, Approach Delay [s/veh]	18.77			21.42			31.71			40.69		
Approach LOS	B			C			C			D		
d_I, Intersection Delay [s/veh]	24.04											
Intersection LOS	C											
Intersection V/C	0.518											

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 Intersection	2.971	2.715	1.999	2.617
Crosswalk LOS	C	B	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	578	333	644	644
d_b, Bicycle Delay [s]	22.76	31.25	20.67	20.67
l_b,int, Bicycle LOS Score for Intersection	2.189	2.049	1.594	2.173
Bicycle LOS	B	B	A	B

Sequence

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



Colton Ashley Furniture Expansion

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Scenario 1 EX PM
10/12/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Ashley Way at E Cooley Drive	Two-way stop	HCM 7th Edition	NB Right	0.056	11.9	B
2	S Cooley Drive at Ashley Way	Signalized	HCM 7th Edition	SB Left	0.181	11.0	B
3	S Mt Vernon Avenue at E Cooley Drive	Signalized	HCM 7th Edition	NB Left	0.586	25.4	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: Ashley Way at E Cooley Drive

Control Type:	Two-way stop	Delay (sec / veh):	11.9
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.056

Intersection Setup

Name	Ashley Way		E Cooley Drive		E Cooley Drive	
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	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Ashley Way		E Cooley Drive		E Cooley Drive	
Base Volume Input [veh/h]	0	28	468	5	7	248
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	28	468	5	7	248
Peak Hour Factor	0.8920	0.8920	0.8920	0.8920	0.8920	0.8920
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	8	131	1	2	70
Total Analysis Volume [veh/h]	0	31	525	6	8	278
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.06	0.01	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	15.96	11.93	0.00	0.00	8.48	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.18	0.18	0.00	0.00	0.01	0.01
95th-Percentile Queue Length [ft/ln]	4.46	4.46	0.00	0.00	0.33	0.33
d_A, Approach Delay [s/veh]	11.93		0.00		0.24	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.52					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 2: S Cooley Drive at Ashley Way

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):	0.181

Intersection Setup

Name	E Cooley Drive			S Cooley Drive		Ashley Way	
Approach	Northbound			Southbound		Westbound	
Lane Configuration							
Turning Movement	U-turn	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	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
Entry Pocket Length [ft]	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	1
Exit Pocket Length [ft]	0.00	0.00	100.00	0.00	0.00	0.00	100.00
Speed [mph]	30.00			30.00		30.00	
Grade [%]	0.00			0.00		0.00	
Curb Present	No			No		No	
Crosswalk	Yes			No		Yes	

Volumes

Name	E Cooley Drive			S Cooley Drive		Ashley Way	
Base Volume Input [veh/h]	73	419	35	9	302	72	2
Base Volume Adjustment Factor	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
Proportion of CAVs [%]	0.00						
Growth Factor	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
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	73	419	35	9	302	72	2
Peak Hour Factor	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	20	114	10	2	82	20	1
Total Analysis Volume [veh/h]	79	456	38	10	329	78	2
Presence of On-Street Parking	No		No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	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
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	Protected	Permissive	Permissive	Protected	Permissive	Split	Split
Signal Group	1	6	0	5	2	7	0
Auxiliary Signal Groups							
Lead / Lag	Lead	-	-	Lead	-	Lead	-
Minimum Green [s]	5	10	0	5	10	5	0
Maximum Green [s]	30	30	0	30	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	1.0	0.0
Split [s]	43	23	0	34	14	33	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	5	0
Pedestrian Clearance [s]	0	14	0	0	10	21	0
Delayed Vehicle Green [s]	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	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No	No	
Maximum Recall	No	No		No	No	No	
Pedestrian Recall	No	No		No	No	No	
Detector Location [ft]	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
I, Upstream Filtering Factor	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	R
C, Cycle Length [s]	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
l1_p, Permitted Start-Up Lost Time [s]	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
g_i, Effective Green Time [s]	5	72	72	1	67	5	5
g / C, Green / Cycle	0.06	0.80	0.80	0.01	0.75	0.06	0.06
(v / s)_i Volume / Saturation Flow Rate	0.04	0.13	0.02	0.01	0.09	0.04	0.00
s, saturation flow rate [veh/h]	1781	3560	1589	1781	3560	1781	1589
c, Capacity [veh/h]	106	2829	1263	24	2666	104	93
d1, Uniform Delay [s]	41.67	2.18	1.95	44.04	3.13	41.71	39.93
k, delay calibration	0.11	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	1.00
d2, Incremental Delay [s]	10.01	0.12	0.04	10.96	0.10	10.12	0.09
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.75	0.16	0.03	0.41	0.12	0.75	0.02
d, Delay for Lane Group [s/veh]	51.68	2.30	1.99	55.00	3.23	51.83	40.02
Lane Group LOS	D	A	A	E	A	D	D
Critical Lane Group	Yes	No	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	2.00	0.63	0.10	0.29	0.65	1.98	0.04
50th-Percentile Queue Length [ft/ln]	50.02	15.76	2.56	7.32	16.17	49.47	1.09
95th-Percentile Queue Length [veh/ln]	3.60	1.13	0.18	0.53	1.16	3.56	0.08
95th-Percentile Queue Length [ft/ln]	90.03	28.37	4.60	13.17	29.10	89.04	1.97

Movement, Approach, & Intersection Results

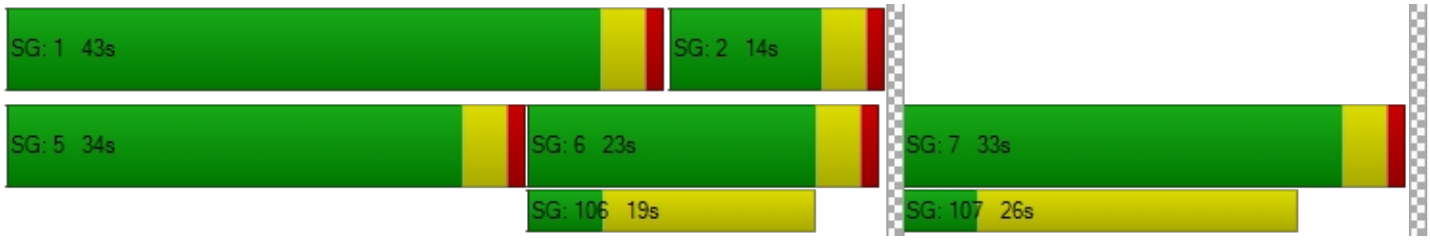
d_M, Delay for Movement [s/veh]	51.68	2.30	1.99	55.00	3.23	51.83	40.02
Movement LOS	D	A	A	E	A	D	D
d_A, Approach Delay [s/veh]	9.09			4.75		51.53	
Approach LOS	A			A		D	
d_I, Intersection Delay [s/veh]	11.03						
Intersection LOS	B						
Intersection V/C	0.181						

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	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	0.00	36.45
l_p,int, Pedestrian LOS Score for Intersection	2.614	0.000	2.164
Crosswalk LOS	B	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	422	222	644
d_b, Bicycle Delay [s]	28.01	35.56	20.67
l_b,int, Bicycle LOS Score for Intersection	2.032	1.839	1.560
Bicycle LOS	B	A	A

Sequence

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



Intersection Level Of Service Report
Intersection 3: S Mt Vernon Avenue at E Cooley Drive

Control Type:	Signalized	Delay (sec / veh):	25.4
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.586

Intersection Setup

Name	S Mt Vernon Avenue			S Mt Vernon Avenue			E Cooley Drive			E Cooley Drive		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	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	0	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			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	S Mt Vernon Avenue			S Mt Vernon Avenue			E Cooley Drive			E Cooley Drive		
Base Volume Input [veh/h]	19	547	173	306	739	22	55	16	33	274	11	338
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	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]	19	547	173	306	739	22	55	16	33	274	11	338
Peak Hour Factor	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	149	47	83	201	6	15	4	9	75	3	92
Total Analysis Volume [veh/h]	21	596	188	333	805	24	60	17	36	298	12	368
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
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	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	10	0	5	10	0	0	10	0	0	10	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	32	30	0	27	25	0	0	33	0	0	33	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	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	10	0	0	24	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			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	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	2.00	0.00	2.00	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]	2	33	33	19	50	50	26	26	26	26	26
g / C, Green / Cycle	0.02	0.37	0.37	0.21	0.55	0.55	0.29	0.29	0.29	0.29	0.29
(v / s)_i Volume / Saturation Flow Rate	0.01	0.17	0.12	0.19	0.15	0.15	0.06	0.03	0.22	0.01	0.23
s, saturation flow rate [veh/h]	1781	3560	1589	1781	3560	1842	1003	1670	1351	1870	1589
c, Capacity [veh/h]	42	1306	583	371	1963	1016	344	487	410	545	463
d1, Uniform Delay [s]	43.39	21.67	20.46	34.68	10.70	10.70	25.99	23.33	32.96	22.74	29.40
k, delay calibration	0.11	0.50	0.50	0.13	0.50	0.50	0.11	0.11	0.20	0.11	0.23
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]	8.66	1.15	1.46	9.08	0.35	0.68	0.24	0.10	4.55	0.02	6.36
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
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	0.50	0.46	0.32	0.90	0.28	0.28	0.17	0.11	0.73	0.02	0.79
d, Delay for Lane Group [s/veh]	52.05	22.82	21.92	43.77	11.05	11.38	26.23	23.43	37.51	22.75	35.76
Lane Group LOS	D	C	C	D	B	B	C	C	D	C	D
Critical Lane Group	No	Yes	No	Yes	No	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.56	4.84	3.00	7.86	2.78	2.97	1.01	0.82	6.64	0.18	7.92
50th-Percentile Queue Length [ft/ln]	13.99	121.09	74.95	196.53	69.52	74.32	25.35	20.62	165.89	4.54	197.94
95th-Percentile Queue Length [veh/ln]	1.01	8.45	5.40	12.46	5.01	5.35	1.83	1.48	10.86	0.33	12.53
95th-Percentile Queue Length [ft/ln]	25.18	211.33	134.91	311.48	125.13	133.77	45.63	37.11	271.50	8.17	313.31

Movement, Approach, & Intersection Results

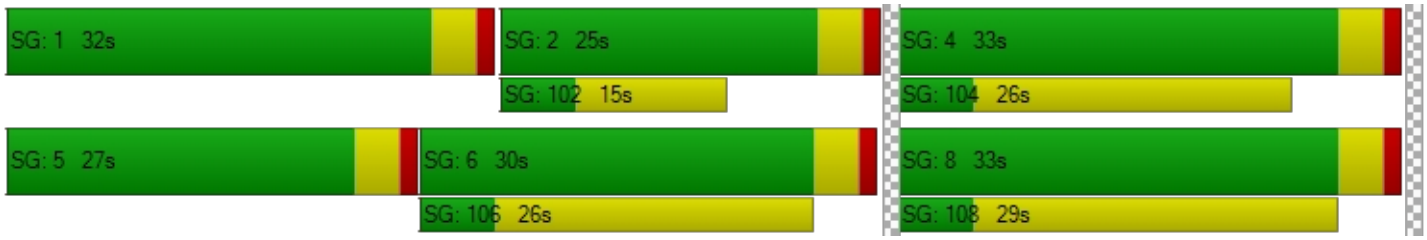
d_M, Delay for Movement [s/veh]	52.05	22.82	21.92	43.77	11.16	11.38	26.23	23.43	23.43	37.51	22.75	35.76
Movement LOS	D	C	C	D	B	B	C	C	C	D	C	D
d_A, Approach Delay [s/veh]	23.37			20.51			24.91			36.30		
Approach LOS	C			C			C			D		
d_I, Intersection Delay [s/veh]	25.41											
Intersection LOS	C											
Intersection V/C	0.586											

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 Intersection	3.290	2.895	1.997	2.652
Crosswalk LOS	C	C	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	578	467	644	644
d_b, Bicycle Delay [s]	22.76	26.45	20.67	20.67
l_b,int, Bicycle LOS Score for Intersection	2.224	2.199	1.746	2.678
Bicycle LOS	B	B	A	B

Sequence

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



Colton Ashley Furniture Expansion

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Scenario 2 OY CUM AM

Report File: K:\...\2. OY CUM AM.pdf

10/13/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Ashley Way at E Cooley Drive	Two-way stop	HCM 7th Edition	NB Left	0.003	14.8	B
2	S Cooley Drive at Ashley Way	Signalized	HCM 7th Edition	SB Left	0.173	12.2	B
3	S Mt Vernon Avenue at E Cooley Drive	Signalized	HCM 7th Edition	NB Left	0.561	24.0	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: Ashley Way at E Cooley Drive

Control Type:	Two-way stop	Delay (sec / veh):	14.8
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

Intersection Setup

Name	Ashley Way		E Cooley Drive		E Cooley Drive	
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	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Ashley Way		E Cooley Drive		E Cooley Drive	
Base Volume Input [veh/h]	1	18	182	3	17	292
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	30	0	0	31	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	49	189	3	49	304
Peak Hour Factor	0.8380	0.8380	0.8380	0.8380	0.8380	0.8380
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	15	56	1	15	91
Total Analysis Volume [veh/h]	1	58	226	4	58	363
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.07	0.00	0.00	0.04	0.00
d_M, Delay for Movement [s/veh]	14.84	9.80	0.00	0.00	7.76	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.24	0.24	0.00	0.00	0.10	0.10
95th-Percentile Queue Length [ft/ln]	5.99	5.99	0.00	0.00	2.50	2.50
d_A, Approach Delay [s/veh]	9.88		0.00		1.07	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.46					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 2: S Cooley Drive at Ashley Way

Control Type:	Signalized	Delay (sec / veh):	12.2
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.173

Intersection Setup

Name	E Cooley Drive			S Cooley Drive		Ashley Way	
Approach	Northbound			Southbound		Westbound	
Lane Configuration							
Turning Movement	U-turn	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	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
Entry Pocket Length [ft]	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	1
Exit Pocket Length [ft]	0.00	0.00	100.00	0.00	0.00	0.00	100.00
Speed [mph]	30.00			30.00		30.00	
Grade [%]	0.00			0.00		0.00	
Curb Present	No			No		No	
Crosswalk	Yes			No		Yes	

Volumes

Name	E Cooley Drive			S Cooley Drive		Ashley Way	
Base Volume Input [veh/h]	75	202	85	3	253	31	5
Base Volume Adjustment Factor	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
Proportion of CAVs [%]	0.00						
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	30	0	0	31	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	78	210	118	3	263	63	5
Peak Hour Factor	0.8840	0.8840	0.8840	0.8840	0.8840	0.8840	0.8840
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	59	33	1	74	18	1
Total Analysis Volume [veh/h]	88	238	133	3	298	71	6
Presence of On-Street Parking	No		No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	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
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	Protected	Permissive	Permissive	Protected	Permissive	Split	Split
Signal Group	1	6	0	5	2	7	0
Auxiliary Signal Groups							
Lead / Lag	Lead	-	-	Lead	-	Lead	-
Minimum Green [s]	5	10	0	5	10	5	0
Maximum Green [s]	30	30	0	30	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	1.0	0.0
Split [s]	46	28	0	32	14	30	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	5	0
Pedestrian Clearance [s]	0	14	0	0	10	21	0
Delayed Vehicle Green [s]	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	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No	No	
Maximum Recall	No	No		No	No	No	
Pedestrian Recall	No	No		No	No	No	
Detector Location [ft]	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
I, Upstream Filtering Factor	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	R
C, Cycle Length [s]	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
l1_p, Permitted Start-Up Lost Time [s]	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
g_i, Effective Green Time [s]	6	73	73	0	67	5	5
g / C, Green / Cycle	0.07	0.81	0.81	0.00	0.75	0.05	0.05
(v / s)_i Volume / Saturation Flow Rate	0.05	0.07	0.08	0.00	0.08	0.04	0.00
s, saturation flow rate [veh/h]	1781	3560	1589	1781	3560	1781	1589
c, Capacity [veh/h]	117	2873	1283	9	2657	97	86
d1, Uniform Delay [s]	41.31	1.80	1.83	44.61	3.16	41.91	40.39
k, delay calibration	0.11	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	1.00
d2, Incremental Delay [s]	9.21	0.06	0.16	18.83	0.09	10.14	0.33
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.75	0.08	0.10	0.32	0.11	0.73	0.07
d, Delay for Lane Group [s/veh]	50.52	1.85	1.99	63.43	3.24	52.05	40.72
Lane Group LOS	D	A	A	E	A	D	D
Critical Lane Group	Yes	No	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	2.20	0.27	0.34	0.11	0.59	1.81	0.13
50th-Percentile Queue Length [ft/ln]	54.91	6.67	8.40	2.87	14.74	45.21	3.33
95th-Percentile Queue Length [veh/ln]	3.95	0.48	0.60	0.21	1.06	3.26	0.24
95th-Percentile Queue Length [ft/ln]	98.83	12.01	15.12	5.16	26.54	81.38	5.99

Movement, Approach, & Intersection Results

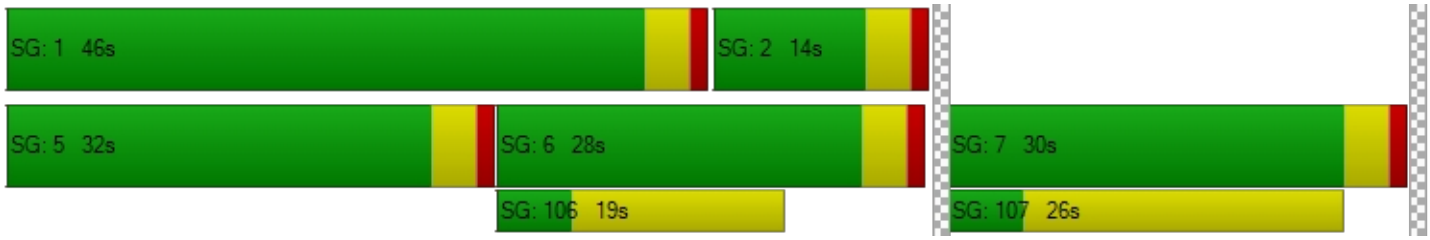
d_M, Delay for Movement [s/veh]	50.52	1.85	1.99	63.43	3.24	52.05	40.72
Movement LOS	D	A	A	E	A	D	D
d_A, Approach Delay [s/veh]	11.22			3.84		51.16	
Approach LOS	B			A		D	
d_I, Intersection Delay [s/veh]	12.24						
Intersection LOS	B						
Intersection V/C	0.173						

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	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	0.00	36.45
l_p,int, Pedestrian LOS Score for Intersection	2.589	0.000	2.185
Crosswalk LOS	B	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	533	222	578
d_b, Bicycle Delay [s]	24.20	35.56	22.76
l_b,int, Bicycle LOS Score for Intersection	1.938	1.808	1.560
Bicycle LOS	A	A	A

Sequence

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



Intersection Level Of Service Report
Intersection 3: S Mt Vernon Avenue at E Cooley Drive

Control Type:	Signalized	Delay (sec / veh):	24.0
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.561

Intersection Setup

Name	S Mt Vernon Avenue			S Mt Vernon Avenue			E Cooley Drive			E Cooley Drive		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	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	0	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			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	S Mt Vernon Avenue			S Mt Vernon Avenue			E Cooley Drive			E Cooley Drive		
Base Volume Input [veh/h]	70	370	258	315	435	64	7	4	8	118	8	214
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	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	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	76	29	1	83	0	0	0	0	30	0	1
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	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]	73	461	297	329	535	67	7	4	8	153	8	224
Peak Hour Factor	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	20	126	81	90	146	18	2	1	2	42	2	61
Total Analysis Volume [veh/h]	80	504	325	360	585	73	8	4	9	167	9	245
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
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	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	10	0	5	10	0	0	10	0	0	10	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	38	30	0	27	19	0	0	33	0	0	33	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	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	10	0	0	24	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			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	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	2.00	0.00	2.00	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]	5	42	42	20	56	56	16	16	16	16	16
g / C, Green / Cycle	0.06	0.46	0.46	0.22	0.63	0.63	0.18	0.18	0.18	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.04	0.14	0.20	0.20	0.12	0.12	0.01	0.01	0.12	0.00	0.15
s, saturation flow rate [veh/h]	1781	3560	1589	1781	3560	1766	1125	1666	1401	1870	1589
c, Capacity [veh/h]	107	1646	735	397	2225	1104	257	303	296	340	289
d1, Uniform Delay [s]	41.65	15.16	16.36	34.08	7.22	7.22	32.22	30.36	36.53	30.27	35.61
k, delay calibration	0.11	0.50	0.50	0.16	0.50	0.50	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]	10.10	0.48	1.93	11.34	0.20	0.40	0.05	0.06	1.68	0.03	6.82
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	0.75	0.31	0.44	0.91	0.20	0.20	0.03	0.04	0.56	0.03	0.85
d, Delay for Lane Group [s/veh]	51.75	15.65	18.29	45.42	7.42	7.62	32.27	30.42	38.21	30.30	42.43
Lane Group LOS	D	B	B	D	A	A	C	C	D	C	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.03	3.21	4.71	8.72	1.68	1.74	0.15	0.24	3.60	0.16	5.64
50th-Percentile Queue Length [ft/ln]	50.67	80.25	117.69	217.91	42.08	43.55	3.75	5.88	89.99	4.05	140.93
95th-Percentile Queue Length [veh/ln]	3.65	5.78	8.27	13.56	3.03	3.14	0.27	0.42	6.48	0.29	9.53
95th-Percentile Queue Length [ft/ln]	91.21	144.45	206.65	338.96	75.75	78.38	6.75	10.58	161.99	7.28	238.27

Movement, Approach, & Intersection Results

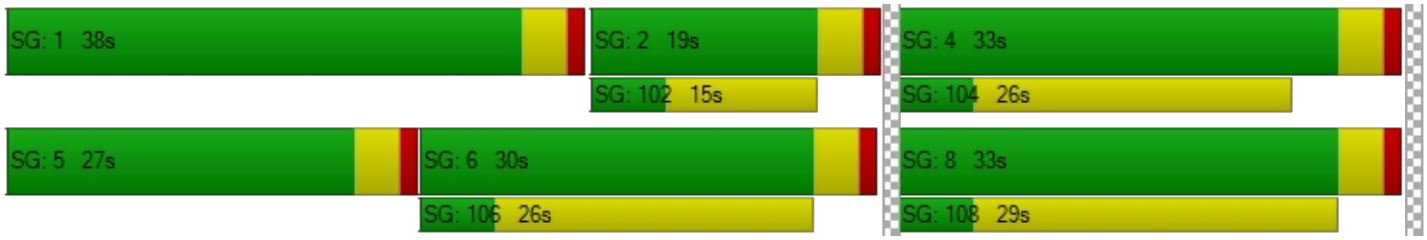
d_M, Delay for Movement [s/veh]	51.75	15.65	18.29	45.42	7.47	7.62	32.27	30.42	30.42	38.21	30.30	42.43
Movement LOS	D	B	B	D	A	A	C	C	C	D	C	D
d_A, Approach Delay [s/veh]	19.77			20.90			31.12			40.50		
Approach LOS	B			C			C			D		
d_I, Intersection Delay [s/veh]	24.04											
Intersection LOS	C											
Intersection V/C	0.561											

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 Intersection	3.066	2.754	2.001	2.635
Crosswalk LOS	C	C	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	333	644	644
d_b, Bicycle Delay [s]	22.76	31.25	20.67	20.67
l_b,int, Bicycle LOS Score for Intersection	2.310	2.120	1.594	2.254
Bicycle LOS	B	B	A	B

Sequence

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



Colton Ashley Furniture Expansion

Vistro File: K:\...\Colton Ashley Furniture Expansion_PM.vistro

Scenario 2 OY CUM PM

Report File: K:\...\2. OY CUM PM.pdf

10/13/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Ashley Way at E Cooley Drive	Two-way stop	HCM 7th Edition	NB Right	0.142	12.8	B
2	S Cooley Drive at Ashley Way	Signalized	HCM 7th Edition	SB Left	0.206	12.0	B
3	S Mt Vernon Avenue at E Cooley Drive	Signalized	HCM 7th Edition	NB Left	0.646	27.3	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: Ashley Way at E Cooley Drive

Control Type:	Two-way stop	Delay (sec / veh):	12.8
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.142

Intersection Setup

Name	Ashley Way		E Cooley Drive		E Cooley Drive	
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	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Ashley Way		E Cooley Drive		E Cooley Drive	
Base Volume Input [veh/h]	0	28	468	5	7	248
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	39	0	0	29	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	68	487	5	36	258
Peak Hour Factor	0.8920	0.8920	0.8920	0.8920	0.8920	0.8920
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	19	136	1	10	72
Total Analysis Volume [veh/h]	0	76	546	6	40	289
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.14	0.01	0.00	0.04	0.00
d_M, Delay for Movement [s/veh]	18.63	12.83	0.00	0.00	8.58	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.49	0.49	0.00	0.00	0.07	0.07
95th-Percentile Queue Length [ft/ln]	12.30	12.30	0.00	0.00	1.70	1.70
d_A, Approach Delay [s/veh]	12.83		0.00		1.04	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	1.38					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 2: S Cooley Drive at Ashley Way

Control Type:	Signalized	Delay (sec / veh):	12.0
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.206

Intersection Setup

Name	E Cooley Drive			S Cooley Drive		Ashley Way	
Approach	Northbound			Southbound		Westbound	
Lane Configuration							
Turning Movement	U-turn	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	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
Entry Pocket Length [ft]	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	1
Exit Pocket Length [ft]	0.00	0.00	100.00	0.00	0.00	0.00	100.00
Speed [mph]	30.00			30.00		30.00	
Grade [%]	0.00			0.00		0.00	
Curb Present	No			No		No	
Crosswalk	Yes			No		Yes	

Volumes

Name	E Cooley Drive			S Cooley Drive		Ashley Way	
Base Volume Input [veh/h]	73	419	35	9	302	72	2
Base Volume Adjustment Factor	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
Proportion of CAVs [%]	0.00						
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	39	0	0	29	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	76	436	75	9	314	104	2
Peak Hour Factor	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	119	20	2	85	28	1
Total Analysis Volume [veh/h]	83	474	82	10	342	113	2
Presence of On-Street Parking	No		No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	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
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	Protected	Permissive	Permissive	Protected	Permissive	Split	Split
Signal Group	1	6	0	5	2	7	0
Auxiliary Signal Groups							
Lead / Lag	Lead	-	-	Lead	-	Lead	-
Minimum Green [s]	5	10	0	5	10	5	0
Maximum Green [s]	30	30	0	30	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	1.0	0.0
Split [s]	43	23	0	34	14	33	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	5	0
Pedestrian Clearance [s]	0	14	0	0	10	21	0
Delayed Vehicle Green [s]	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	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No	No	
Maximum Recall	No	No		No	No	No	
Pedestrian Recall	No	No		No	No	No	
Detector Location [ft]	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
I, Upstream Filtering Factor	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	R
C, Cycle Length [s]	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
l1_p, Permitted Start-Up Lost Time [s]	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
g_i, Effective Green Time [s]	6	69	69	1	65	7	7
g / C, Green / Cycle	0.06	0.77	0.77	0.01	0.72	0.08	0.08
(v / s)_i Volume / Saturation Flow Rate	0.05	0.13	0.05	0.01	0.10	0.06	0.00
s, saturation flow rate [veh/h]	1781	3560	1589	1781	3560	1781	1589
c, Capacity [veh/h]	111	2744	1225	24	2571	147	131
d1, Uniform Delay [s]	41.51	2.73	2.50	44.04	3.85	40.45	37.93
k, delay calibration	0.11	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	1.00
d2, Incremental Delay [s]	9.67	0.14	0.11	10.96	0.11	8.20	0.05
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.75	0.17	0.07	0.41	0.13	0.77	0.02
d, Delay for Lane Group [s/veh]	51.18	2.87	2.60	55.00	3.95	48.65	37.98
Lane Group LOS	D	A	A	E	A	D	D
Critical Lane Group	Yes	No	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	2.09	0.82	0.28	0.29	0.80	2.75	0.04
50th-Percentile Queue Length [ft/ln]	52.21	20.62	7.00	7.32	20.09	68.87	1.05
95th-Percentile Queue Length [veh/ln]	3.76	1.48	0.50	0.53	1.45	4.96	0.08
95th-Percentile Queue Length [ft/ln]	93.99	37.12	12.61	13.17	36.16	123.97	1.88

Movement, Approach, & Intersection Results

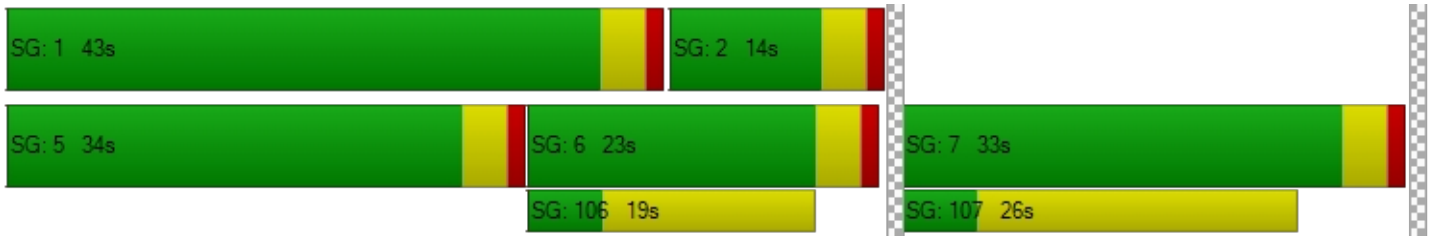
d_M, Delay for Movement [s/veh]	51.18	2.87	2.60	55.00	3.95	48.65	37.98
Movement LOS	D	A	A	E	A	D	D
d_A, Approach Delay [s/veh]	9.11			5.40		48.46	
Approach LOS	A			A		D	
d_I, Intersection Delay [s/veh]	12.02						
Intersection LOS	B						
Intersection V/C	0.206						

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	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	0.00	36.45
l_p,int, Pedestrian LOS Score for Intersection	2.632	0.000	2.183
Crosswalk LOS	B	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	422	222	644
d_b, Bicycle Delay [s]	28.01	35.56	20.67
l_b,int, Bicycle LOS Score for Intersection	2.087	1.850	1.560
Bicycle LOS	B	A	A

Sequence

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



Intersection Level Of Service Report
Intersection 3: S Mt Vernon Avenue at E Cooley Drive

Control Type:	Signalized	Delay (sec / veh):	27.3
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.646

Intersection Setup

Name	S Mt Vernon Avenue			S Mt Vernon Avenue			E Cooley Drive			E Cooley Drive		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	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	0	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			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	S Mt Vernon Avenue			S Mt Vernon Avenue			E Cooley Drive			E Cooley Drive		
Base Volume Input [veh/h]	19	547	173	306	739	22	55	16	33	274	11	338
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	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	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	60	30	9	49	0	0	0	0	29	0	17
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	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]	20	629	210	327	818	23	57	17	34	314	11	369
Peak Hour Factor	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	171	57	89	223	6	16	5	9	86	3	100
Total Analysis Volume [veh/h]	22	685	229	356	891	25	62	19	37	342	12	402
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
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	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	10	0	5	10	0	0	10	0	0	10	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	32	30	0	27	25	0	0	33	0	0	33	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	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	10	0	0	24	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			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	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	2.00	0.00	2.00	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]	2	30	30	20	47	47	29	29	29	29	29
g / C, Green / Cycle	0.02	0.33	0.33	0.22	0.52	0.52	0.32	0.32	0.32	0.32	0.32
(v / s)_i Volume / Saturation Flow Rate	0.01	0.19	0.14	0.20	0.17	0.17	0.06	0.03	0.25	0.01	0.25
s, saturation flow rate [veh/h]	1781	3560	1589	1781	3560	1844	972	1675	1347	1870	1589
c, Capacity [veh/h]	44	1168	521	393	1866	966	363	533	446	595	506
d1, Uniform Delay [s]	43.35	25.16	23.74	34.17	12.28	12.28	24.15	21.65	31.97	21.06	28.01
k, delay calibration	0.11	0.50	0.50	0.16	0.50	0.50	0.11	0.11	0.28	0.11	0.27
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]	8.60	2.16	2.68	11.01	0.46	0.89	0.22	0.09	6.84	0.01	7.03
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
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	0.50	0.59	0.44	0.91	0.32	0.32	0.17	0.11	0.77	0.02	0.80
d, Delay for Lane Group [s/veh]	51.94	27.32	26.42	45.17	12.74	13.17	24.37	21.74	38.81	21.08	35.04
Lane Group LOS	D	C	C	D	B	B	C	C	D	C	D
Critical Lane Group	No	Yes	No	Yes	No	No	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.58	6.25	4.11	8.59	3.39	3.63	1.00	0.83	7.87	0.17	8.61
50th-Percentile Queue Length [ft/ln]	14.60	156.29	102.75	214.69	84.73	90.66	25.12	20.83	196.73	4.33	215.24
95th-Percentile Queue Length [veh/ln]	1.05	10.35	7.40	13.39	6.10	6.53	1.81	1.50	12.47	0.31	13.42
95th-Percentile Queue Length [ft/ln]	26.28	258.80	184.96	334.84	152.51	163.18	45.22	37.50	311.74	7.80	335.54

Movement, Approach, & Intersection Results

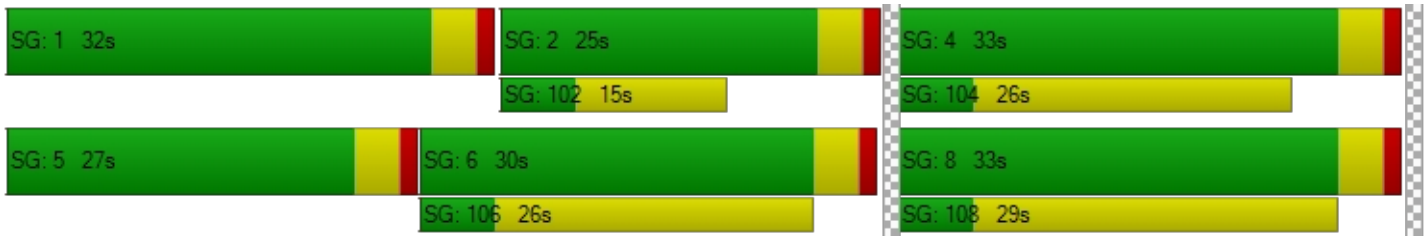
d_M, Delay for Movement [s/veh]	51.94	27.32	26.42	45.17	12.88	13.17	24.37	21.74	21.74	38.81	21.08	35.04
Movement LOS	D	C	C	D	B	B	C	C	C	D	C	D
d_A, Approach Delay [s/veh]	27.68			21.92			23.12			36.52		
Approach LOS	C			C			C			D		
d_I, Intersection Delay [s/veh]	27.30											
Intersection LOS	C											
Intersection V/C	0.646											

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 Intersection	3.389	2.936	1.999	2.675
Crosswalk LOS	C	C	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	578	467	644	644
d_b, Bicycle Delay [s]	22.76	26.45	20.67	20.67
l_b,int, Bicycle LOS Score for Intersection	2.332	2.259	1.754	2.807
Bicycle LOS	B	B	A	C

Sequence

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



Colton Ashley Furniture Expansion

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Report File: K:\...\3. OY CUM WP AM.pdf

Scenario 3 OY CUM WP AM
10/13/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Ashley Way at E Cooley Drive	Two-way stop	HCM 7th Edition	NB Left	0.003	15.0	C
2	S Cooley Drive at Ashley Way	Signalized	HCM 7th Edition	SB Left	0.176	12.4	B
3	S Mt Vernon Avenue at E Cooley Drive	Signalized	HCM 7th Edition	NB Left	0.567	24.2	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: Ashley Way at E Cooley Drive

Control Type:	Two-way stop	Delay (sec / veh):	15.0
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

Intersection Setup

Name	Ashley Way		E Cooley Drive		E Cooley Drive	
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	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Ashley Way		E Cooley Drive		E Cooley Drive	
Base Volume Input [veh/h]	1	18	182	3	17	292
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	30	0	0	31	0
Site-Generated Trips [veh/h]	0	2	0	0	4	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	51	189	3	53	304
Peak Hour Factor	0.8380	0.8380	0.8380	0.8380	0.8380	0.8380
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	15	56	1	16	91
Total Analysis Volume [veh/h]	1	61	226	4	63	363
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.08	0.00	0.00	0.05	0.00
d_M, Delay for Movement [s/veh]	15.04	9.82	0.00	0.00	7.76	0.00
Movement LOS	C	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.25	0.25	0.00	0.00	0.11	0.11
95th-Percentile Queue Length [ft/ln]	6.32	6.32	0.00	0.00	2.72	2.72
d_A, Approach Delay [s/veh]	9.90		0.00		1.15	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.54					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 2: S Cooley Drive at Ashley Way

Control Type:	Signalized	Delay (sec / veh):	12.4
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.176

Intersection Setup

Name	E Cooley Drive			S Cooley Drive		Ashley Way	
Approach	Northbound			Southbound		Westbound	
Lane Configuration							
Turning Movement	U-turn	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	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
Entry Pocket Length [ft]	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	1
Exit Pocket Length [ft]	0.00	0.00	100.00	0.00	0.00	0.00	100.00
Speed [mph]	30.00			30.00		30.00	
Grade [%]	0.00			0.00		0.00	
Curb Present	No			No		No	
Crosswalk	Yes			No		Yes	

Volumes

Name	E Cooley Drive			S Cooley Drive		Ashley Way	
Base Volume Input [veh/h]	75	202	85	3	253	31	5
Base Volume Adjustment Factor	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
Proportion of CAVs [%]	0.00						
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	30	0	0	31	0
Site-Generated Trips [veh/h]	0	0	9	0	0	5	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	78	210	127	3	263	68	5
Peak Hour Factor	0.8840	0.8840	0.8840	0.8840	0.8840	0.8840	0.8840
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	59	36	1	74	19	1
Total Analysis Volume [veh/h]	88	238	144	3	298	77	6
Presence of On-Street Parking	No		No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	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
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	Protected	Permissive	Permissive	Protected	Permissive	Split	Split
Signal Group	1	6	0	5	2	7	0
Auxiliary Signal Groups							
Lead / Lag	Lead	-	-	Lead	-	Lead	-
Minimum Green [s]	5	10	0	5	10	5	0
Maximum Green [s]	30	30	0	30	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	1.0	0.0
Split [s]	46	28	0	32	14	30	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	5	0
Pedestrian Clearance [s]	0	14	0	0	10	21	0
Delayed Vehicle Green [s]	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	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No	No	
Maximum Recall	No	No		No	No	No	
Pedestrian Recall	No	No		No	No	No	
Detector Location [ft]	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
I, Upstream Filtering Factor	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	R
C, Cycle Length [s]	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
l1_p, Permitted Start-Up Lost Time [s]	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
g_i, Effective Green Time [s]	6	72	72	0	67	5	5
g / C, Green / Cycle	0.07	0.80	0.80	0.00	0.74	0.06	0.06
(v / s)_i Volume / Saturation Flow Rate	0.05	0.07	0.09	0.00	0.08	0.04	0.00
s, saturation flow rate [veh/h]	1781	3560	1589	1781	3560	1781	1589
c, Capacity [veh/h]	117	2858	1276	9	2642	104	93
d1, Uniform Delay [s]	41.31	1.88	1.92	44.61	3.26	41.68	40.03
k, delay calibration	0.11	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	1.00
d2, Incremental Delay [s]	9.21	0.06	0.18	18.83	0.09	9.66	0.29
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.75	0.08	0.11	0.32	0.11	0.74	0.06
d, Delay for Lane Group [s/veh]	50.52	1.93	2.10	63.43	3.35	51.34	40.32
Lane Group LOS	D	A	A	E	A	D	D
Critical Lane Group	Yes	No	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	2.20	0.28	0.38	0.11	0.61	1.94	0.13
50th-Percentile Queue Length [ft/ln]	54.91	7.01	9.59	2.87	15.18	48.57	3.30
95th-Percentile Queue Length [veh/ln]	3.95	0.51	0.69	0.21	1.09	3.50	0.24
95th-Percentile Queue Length [ft/ln]	98.83	12.63	17.27	5.16	27.32	87.43	5.93

Movement, Approach, & Intersection Results

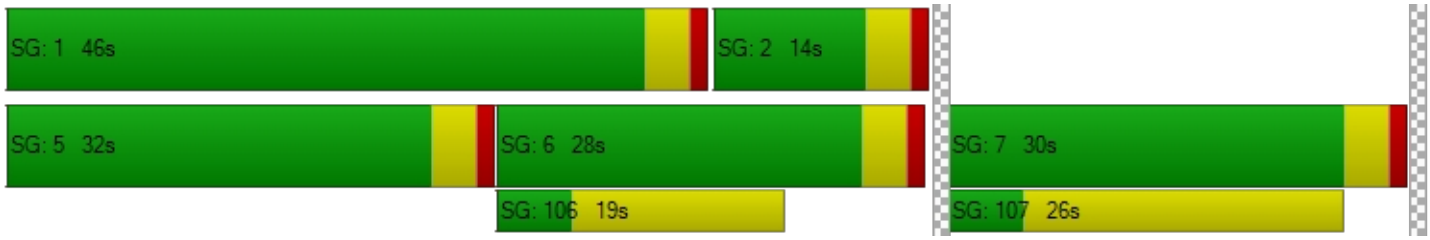
d_M, Delay for Movement [s/veh]	50.52	1.93	2.10	63.43	3.35	51.34	40.32
Movement LOS	D	A	A	E	A	D	D
d_A, Approach Delay [s/veh]	11.08			3.95		50.54	
Approach LOS	B			A		D	
d_I, Intersection Delay [s/veh]	12.40						
Intersection LOS	B						
Intersection V/C	0.176						

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	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	0.00	36.45
l_p,int, Pedestrian LOS Score for Intersection	2.592	0.000	2.189
Crosswalk LOS	B	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	533	222	578
d_b, Bicycle Delay [s]	24.20	35.56	22.76
l_b,int, Bicycle LOS Score for Intersection	1.947	1.808	1.560
Bicycle LOS	A	A	A

Sequence

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



Intersection Level Of Service Report
Intersection 3: S Mt Vernon Avenue at E Cooley Drive

Control Type:	Signalized	Delay (sec / veh):	24.2
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.567

Intersection Setup

Name	S Mt Vernon Avenue			S Mt Vernon Avenue			E Cooley Drive			E Cooley Drive		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	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	0	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			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	S Mt Vernon Avenue			S Mt Vernon Avenue			E Cooley Drive			E Cooley Drive		
Base Volume Input [veh/h]	70	370	258	315	435	64	7	4	8	118	8	214
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	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	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	76	29	1	83	0	0	0	0	30	0	1
Site-Generated Trips [veh/h]	0	0	5	4	0	0	0	0	0	3	0	2
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	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]	73	461	302	333	535	67	7	4	8	156	8	226
Peak Hour Factor	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	20	126	83	91	146	18	2	1	2	43	2	62
Total Analysis Volume [veh/h]	80	504	330	364	585	73	8	4	9	170	9	247
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
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	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	10	0	5	10	0	0	10	0	0	10	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	38	30	0	27	19	0	0	33	0	0	33	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	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	10	0	0	24	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			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	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	2.00	0.00	2.00	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]	5	41	41	20	56	56	16	16	16	16	16
g / C, Green / Cycle	0.06	0.46	0.46	0.22	0.62	0.62	0.18	0.18	0.18	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.04	0.14	0.21	0.20	0.12	0.12	0.01	0.01	0.12	0.00	0.16
s, saturation flow rate [veh/h]	1781	3560	1589	1781	3560	1766	1123	1666	1401	1870	1589
c, Capacity [veh/h]	107	1633	729	400	2221	1102	258	305	298	342	291
d1, Uniform Delay [s]	41.65	15.36	16.64	33.99	7.27	7.27	32.12	30.26	36.50	30.17	35.55
k, delay calibration	0.11	0.50	0.50	0.17	0.50	0.50	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]	10.10	0.49	2.02	11.68	0.20	0.40	0.05	0.06	1.71	0.03	6.81
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	0.75	0.31	0.45	0.91	0.20	0.20	0.03	0.04	0.57	0.03	0.85
d, Delay for Lane Group [s/veh]	51.75	15.85	18.66	45.67	7.47	7.68	32.17	30.32	38.22	30.20	42.36
Lane Group LOS	D	B	B	D	A	A	C	C	D	C	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.03	3.24	4.84	8.85	1.69	1.75	0.15	0.23	3.67	0.16	5.68
50th-Percentile Queue Length [ft/ln]	50.67	80.91	121.08	221.15	42.29	43.76	3.75	5.87	91.70	4.04	142.00
95th-Percentile Queue Length [veh/ln]	3.65	5.83	8.45	13.72	3.05	3.15	0.27	0.42	6.60	0.29	9.59
95th-Percentile Queue Length [ft/ln]	91.21	145.63	211.31	343.09	76.13	78.76	6.74	10.56	165.06	7.27	239.71

Movement, Approach, & Intersection Results

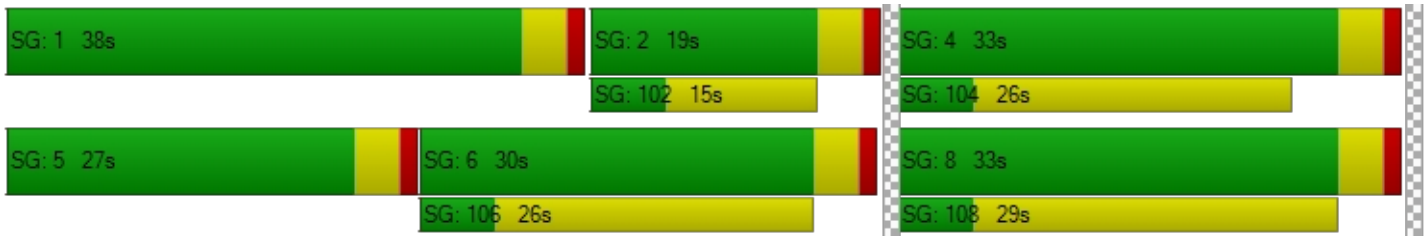
d_M, Delay for Movement [s/veh]	51.75	15.85	18.66	45.67	7.52	7.68	32.17	30.32	30.32	38.22	30.20	42.36
Movement LOS	D	B	B	D	A	A	C	C	C	D	C	D
d_A, Approach Delay [s/veh]	20.00			21.12			31.02			40.45		
Approach LOS	C			C			C			D		
d_I, Intersection Delay [s/veh]	24.23											
Intersection LOS	C											
Intersection V/C	0.567											

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 Intersection	3.071	2.755	2.001	2.637
Crosswalk LOS	C	C	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	333	644	644
d_b, Bicycle Delay [s]	22.76	31.25	20.67	20.67
l_b,int, Bicycle LOS Score for Intersection	2.314	2.122	1.594	2.263
Bicycle LOS	B	B	A	B

Sequence

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



Colton Ashley Furniture Expansion

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Report File: K:\...\3. OY CUM WP PM.pdf

Scenario 3 OY CUM WP PM
10/13/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Ashley Way at E Cooley Drive	Two-way stop	HCM 7th Edition	NB Right	0.159	13.0	B
2	S Cooley Drive at Ashley Way	Signalized	HCM 7th Edition	SB Left	0.217	12.6	B
3	S Mt Vernon Avenue at E Cooley Drive	Signalized	HCM 7th Edition	NB Left	0.660	28.0	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: Ashley Way at E Cooley Drive

Control Type:	Two-way stop	Delay (sec / veh):	13.0
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.159

Intersection Setup

Name	Ashley Way		E Cooley Drive		E Cooley Drive	
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	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Ashley Way		E Cooley Drive		E Cooley Drive	
Base Volume Input [veh/h]	0	28	468	5	7	248
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	39	0	0	29	0
Site-Generated Trips [veh/h]	0	8	0	0	9	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	76	487	5	45	258
Peak Hour Factor	0.8920	0.8920	0.8920	0.8920	0.8920	0.8920
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	21	136	1	13	72
Total Analysis Volume [veh/h]	0	85	546	6	50	289
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.16	0.01	0.00	0.05	0.00
d_M, Delay for Movement [s/veh]	19.30	12.99	0.00	0.00	8.59	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.56	0.56	0.00	0.00	0.09	0.09
95th-Percentile Queue Length [ft/ln]	14.01	14.01	0.00	0.00	2.14	2.14
d_A, Approach Delay [s/veh]	12.99		0.00		1.27	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	1.57					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 2: S Cooley Drive at Ashley Way

Control Type:	Signalized	Delay (sec / veh):	12.6
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.217

Intersection Setup

Name	E Cooley Drive			S Cooley Drive		Ashley Way	
Approach	Northbound			Southbound		Westbound	
Lane Configuration							
Turning Movement	U-turn	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	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
Entry Pocket Length [ft]	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	1
Exit Pocket Length [ft]	0.00	0.00	100.00	0.00	0.00	0.00	100.00
Speed [mph]	30.00			30.00		30.00	
Grade [%]	0.00			0.00		0.00	
Curb Present	No			No		No	
Crosswalk	Yes			No		Yes	

Volumes

Name	E Cooley Drive			S Cooley Drive		Ashley Way	
Base Volume Input [veh/h]	73	419	35	9	302	72	2
Base Volume Adjustment Factor	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
Proportion of CAVs [%]	0.00						
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	39	0	0	29	0
Site-Generated Trips [veh/h]	0	0	21	0	0	18	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	76	436	96	9	314	122	2
Peak Hour Factor	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190	0.9190
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	119	26	2	85	33	1
Total Analysis Volume [veh/h]	83	474	104	10	342	133	2
Presence of On-Street Parking	No		No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	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
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	Protected	Permissive	Permissive	Protected	Permissive	Split	Split
Signal Group	1	6	0	5	2	7	0
Auxiliary Signal Groups							
Lead / Lag	Lead	-	-	Lead	-	Lead	-
Minimum Green [s]	5	10	0	5	10	5	0
Maximum Green [s]	30	30	0	30	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	1.0	0.0
Split [s]	43	23	0	34	14	33	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	5	0
Pedestrian Clearance [s]	0	14	0	0	10	21	0
Delayed Vehicle Green [s]	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	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No	No	
Maximum Recall	No	No		No	No	No	
Pedestrian Recall	No	No		No	No	No	
Detector Location [ft]	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
I, Upstream Filtering Factor	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	R
C, Cycle Length [s]	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
l1_p, Permitted Start-Up Lost Time [s]	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
g_i, Effective Green Time [s]	6	68	68	1	64	9	9
g / C, Green / Cycle	0.06	0.76	0.76	0.01	0.71	0.09	0.09
(v / s)_i Volume / Saturation Flow Rate	0.05	0.13	0.07	0.01	0.10	0.07	0.00
s, saturation flow rate [veh/h]	1781	3560	1589	1781	3560	1781	1589
c, Capacity [veh/h]	111	2698	1205	24	2525	170	151
d1, Uniform Delay [s]	41.51	3.04	2.82	44.04	4.21	39.81	36.88
k, delay calibration	0.11	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	1.00
d2, Incremental Delay [s]	9.67	0.14	0.14	10.96	0.11	7.72	0.03
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.75	0.18	0.09	0.41	0.14	0.78	0.01
d, Delay for Lane Group [s/veh]	51.18	3.19	2.96	55.00	4.32	47.53	36.92
Lane Group LOS	D	A	A	E	A	D	D
Critical Lane Group	Yes	No	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	2.09	0.91	0.40	0.29	0.86	3.20	0.04
50th-Percentile Queue Length [ft/ln]	52.21	22.84	9.93	7.32	21.62	80.03	1.02
95th-Percentile Queue Length [veh/ln]	3.76	1.64	0.72	0.53	1.56	5.76	0.07
95th-Percentile Queue Length [ft/ln]	93.99	41.11	17.88	13.17	38.92	144.05	1.84

Movement, Approach, & Intersection Results

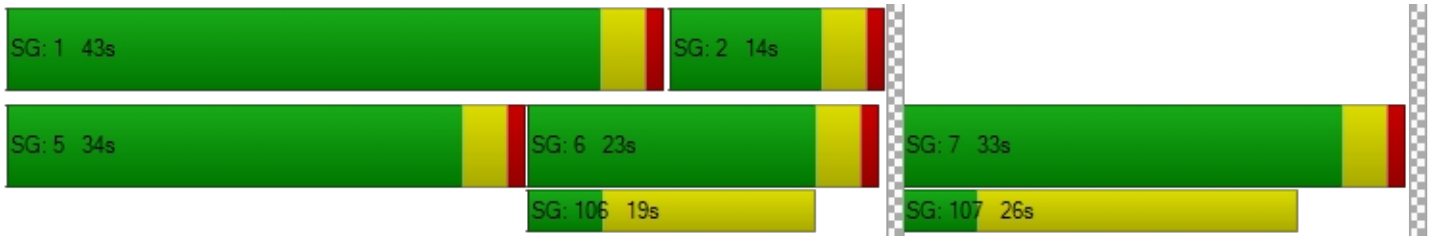
d_M, Delay for Movement [s/veh]	51.18	3.19	2.96	55.00	4.32	47.53	36.92
Movement LOS	D	A	A	E	A	D	D
d_A, Approach Delay [s/veh]	9.18			5.76		47.37	
Approach LOS	A			A		D	
d_I, Intersection Delay [s/veh]	12.62						
Intersection LOS	B						
Intersection V/C	0.217						

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	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	0.00	36.45
l_p,int, Pedestrian LOS Score for Intersection	2.639	0.000	2.193
Crosswalk LOS	B	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	422	222	644
d_b, Bicycle Delay [s]	28.01	35.56	20.67
l_b,int, Bicycle LOS Score for Intersection	2.105	1.850	1.560
Bicycle LOS	B	A	A

Sequence

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



Intersection Level Of Service Report
Intersection 3: S Mt Vernon Avenue at E Cooley Drive

Control Type:	Signalized	Delay (sec / veh):	28.0
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.660

Intersection Setup

Name	S Mt Vernon Avenue			S Mt Vernon Avenue			E Cooley Drive			E Cooley Drive		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	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	0	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			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	S Mt Vernon Avenue			S Mt Vernon Avenue			E Cooley Drive			E Cooley Drive		
Base Volume Input [veh/h]	19	547	173	306	739	22	55	16	33	274	11	338
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	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	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	60	30	9	49	0	0	0	0	29	0	17
Site-Generated Trips [veh/h]	0	0	12	9	0	0	0	0	0	10	0	8
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	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]	20	629	222	336	818	23	57	17	34	324	11	377
Peak Hour Factor	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180	0.9180
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	171	60	92	223	6	16	5	9	88	3	103
Total Analysis Volume [veh/h]	22	685	242	366	891	25	62	19	37	353	12	411
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
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	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	10	0	5	10	0	0	10	0	0	10	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	32	30	0	27	25	0	0	33	0	0	33	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	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	10	0	0	24	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			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	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	2.00	0.00	2.00	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]	2	29	29	20	47	47	29	29	29	29	29
g / C, Green / Cycle	0.02	0.32	0.32	0.23	0.52	0.52	0.32	0.32	0.32	0.32	0.32
(v / s)_i Volume / Saturation Flow Rate	0.01	0.19	0.15	0.21	0.17	0.17	0.06	0.03	0.26	0.01	0.26
s, saturation flow rate [veh/h]	1781	3560	1589	1781	3560	1844	964	1675	1347	1870	1589
c, Capacity [veh/h]	44	1134	506	402	1851	959	365	540	453	603	512
d1, Uniform Delay [s]	43.35	25.87	24.64	33.95	12.49	12.49	23.87	21.39	31.92	20.81	27.88
k, delay calibration	0.11	0.50	0.50	0.17	0.50	0.50	0.11	0.11	0.29	0.11	0.29
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]	8.60	2.39	3.21	11.85	0.47	0.91	0.22	0.08	7.69	0.01	7.54
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	0.50	0.60	0.48	0.91	0.33	0.33	0.17	0.10	0.78	0.02	0.80
d, Delay for Lane Group [s/veh]	51.94	28.26	27.85	45.79	12.96	13.40	24.08	21.47	39.61	20.82	35.42
Lane Group LOS	D	C	C	D	B	B	C	C	D	C	D
Critical Lane Group	No	Yes	No	Yes	No	No	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.58	6.38	4.49	8.91	3.43	3.67	1.00	0.83	8.24	0.17	8.87
50th-Percentile Queue Length [ft/ln]	14.60	159.42	112.27	222.77	85.72	91.71	24.95	20.68	205.97	4.30	221.66
95th-Percentile Queue Length [veh/ln]	1.05	10.52	7.97	13.81	6.17	6.60	1.80	1.49	12.95	0.31	13.75
95th-Percentile Queue Length [ft/ln]	26.28	262.96	199.15	345.16	154.30	165.09	44.91	37.22	323.65	7.74	343.74

Movement, Approach, & Intersection Results

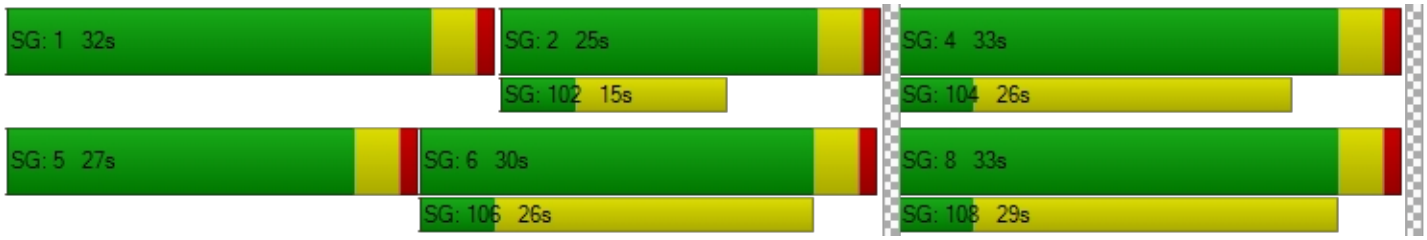
d_M, Delay for Movement [s/veh]	51.94	28.26	27.85	45.79	13.10	13.40	24.08	21.47	21.47	39.61	20.82	35.42
Movement LOS	D	C	C	D	B	B	C	C	C	D	C	D
d_A, Approach Delay [s/veh]	28.70			22.44			22.84			37.10		
Approach LOS	C			C			C			D		
d_I, Intersection Delay [s/veh]	28.00											
Intersection LOS	C											
Intersection V/C	0.660											

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 Intersection	3.408	2.939	1.999	2.682
Crosswalk LOS	C	C	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	578	467	644	644
d_b, Bicycle Delay [s]	22.76	26.45	20.67	20.67
l_b,int, Bicycle LOS Score for Intersection	2.343	2.265	1.754	2.840
Bicycle LOS	B	B	A	C

Sequence

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



APPENDIX D

CUMULATIVE PROJECTS INFORMATION

TOTAL CUMULATIVE PROJECTS TRAFFIC

AM Peak Hour

		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
1	Ashley Way at E Cooley Drive	0	0	30	0	0	0	0	0	0	31	0	0
2	S Cooley Drive at Ashley Way	0	0	30	0	0	0	0	0	0	31	0	0
3	S Mt Vernon Avenue at E Cooley Drive	0	76	29	1	83	0	0	0	0	30	0	1

PM Peak Hour

		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
1	Ashley Way at E Cooley Drive	0	0	39	0	0	0	0	0	0	29	0	0
2	S Cooley Drive at Ashley Way	0	0	39	0	0	0	0	0	0	29	0	0
3	S Mt Vernon Avenue at E Cooley Drive	0	60	30	9	49	0	0	0	0	29	0	17

Enter only in blue cells		Yellow cells calculate

Int. #:	1	Ashley Way at E Cooley Drive

Mirror distribution? Y Entire Intersection

Mirror distribution?

TOTAL CUMULATIVE PROJECTS TRAFFIC

Pk Hr		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In		0	0	29	0	0	0	0	0	0	3	0	0
AM Out		0	0	1	0	0	0	0	0	0	28	0	0
AM Tot		0	0	30	0	0	0	0	0	0	31	0	0
PM In		0	0	29	0	0	0	0	0	0	0	0	0
PM Out		0	0	10	0	0	0	0	0	0	29	0	0
PM Tot		0	0	39	0	0	0	0	0	0	29	0	0

Zone #	1	Colton Community Soccer Park

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In										20%		
Y	0%	0%	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%		0%	0%
PM Out	0%	0%	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	5	0	0	0	0	0	0	0	0	0	1	0	0
AM Out	3	0	0	1	0	0	0	0	0	0	0	0	0
PM In	87	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	45	0	0	9	0	0	0	0	0	0	0	0	0

Zone #	2	Giant RV Repair and Preparation Facility

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In										10%		
Y	0%	0%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	0%	0%
PM Out	0%	0%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	16	0	0	0	0	0	0	0	0	0	2	0	0
AM Out	2	0	0	0	0	0	0	0	0	0	0	0	0
PM In	2	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	14	0	0	1	0	0	0	0	0	0	0	0	0

Zone #	3	La Quinta Inn and Suites Hotel

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	19	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	18	0	0	0	0	0	0	0	0	0	0	0	0
PM In	17	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	13	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	4	Home 2 Suites by Hilton

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	29	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	23	0	0	0	0	0	0	0	0	0	0	0	0
PM In	34	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	33	0	0	0	0	0	0	0	0	0	0	0	0

Int. #:	1	Ashley Way at E Cooley Drive

Zone #	5	Cumulative Projects 5 and 6

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In			20%									
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%	0%	0%
AM Out												
PM In	0%	0%	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	143	0	0	29	0	0	0	0	0	0	0	0	0
AM Out	141	0	0	0	0	0	0	0	0	0	28	0	0
PM In	146	0	0	29	0	0	0	0	0	0	0	0	0
PM Out	144	0	0	0	0	0	0	0	0	0	29	0	0

Zone #	6	Cumulative Projects 7, 8, 9, and 10

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	377	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	356	0	0	0	0	0	0	0	0	0	0	0	0
PM In	185	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	186	0	0	0	0	0	0	0	0	0	0	0	0

Enter only in blue cells		Yellow cells calculate

Int. #:	2	S Cooley Drive at Ashley Way

Y

TOTAL CUMULATIVE PROJECTS TRAFFIC

Pk Hr		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In		0	0	29	0	0	0	0	0	0	3	0	0
AM Out		0	0	1	0	0	0	0	0	0	28	0	0
AM Tot		0	0	30	0	0	0	0	0	0	31	0	0
PM In		0	0	29	0	0	0	0	0	0	0	0	0
PM Out		0	0	10	0	0	0	0	0	0	29	0	0
PM Tot		0	0	39	0	0	0	0	0	0	29	0	0

Zone #	1	Colton Community Soccer Park

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In										20%		
Y	0%	0%	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%		0%	0%
PM Out	0%	0%	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	5	0	0	0	0	0	0	0	0	0	1	0	0
AM Out	3	0	0	1	0	0	0	0	0	0	0	0	0
PM In	87	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	45	0	0	9	0	0	0	0	0	0	0	0	0

Zone #	2	Giant RV Repair and Preparation Facility

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In										10%		
Y	0%	0%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	0%	0%
PM Out	0%	0%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	16	0	0	0	0	0	0	0	0	0	2	0	0
AM Out	2	0	0	0	0	0	0	0	0	0	0	0	0
PM In	2	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	14	0	0	1	0	0	0	0	0	0	0	0	0

Zone #	3	La Quinta Inn and Suites Hotel

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	19	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	18	0	0	0	0	0	0	0	0	0	0	0	0
PM In	17	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	13	0	0	0	0	0	0	0	0	0	0	0	0

Zone #	4	Home 2 Suites by Hilton

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	29	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	23	0	0	0	0	0	0	0	0	0	0	0	0
PM In	34	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	33	0	0	0	0	0	0	0	0	0	0	0	0

Int. #:	2	S Cooley Drive at Ashley Way

Zone #	5	Cumulative Projects 5 and 6

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In			20%									
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%	0%	0%
AM Out												
PM In	0%	0%	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	143	0	0	29	0	0	0	0	0	0	0	0	0
AM Out	141	0	0	0	0	0	0	0	0	0	28	0	0
PM In	146	0	0	29	0	0	0	0	0	0	0	0	0
PM Out	144	0	0	0	0	0	0	0	0	0	29	0	0

Zone #	6	Cumulative Projects 7, 8, 9, and 10

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	377	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	356	0	0	0	0	0	0	0	0	0	0	0	0
PM In	185	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	186	0	0	0	0	0	0	0	0	0	0	0	0

Enter only in blue cells		Yellow cells calculate

Int. #:	3	S Mt Vernon Avenue at E Cooley Drive

Y

TOTAL CUMULATIVE PROJECTS TRAFFIC

Pk Hr		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In		0	1	29	0	82	0	0	0	0	2	0	1
AM Out		0	75	0	1	1	0	0	0	0	28	0	0
AM Tot		0	76	29	1	83	0	0	0	0	30	0	1
PM In		0	17	29	0	40	0	0	0	0	0	0	17
PM Out		0	43	1	9	9	0	0	0	0	29	0	0
PM Tot		0	60	30	9	49	0	0	0	0	29	0	17

Zone #	1	Colton Community Soccer Park

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In		20%										20%
Y	0%	0%	0%	20%	20%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	20%	0%	0%	0%	0%	0%	0%	0%		0%	20%
PM Out	0%	0%	0%	20%	20%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	5	0	1	0	0	0	0	0	0	0	0	0	1
AM Out	3	0	0	0	1	1	0	0	0	0	0	0	0
PM In	87	0	17	0	0	0	0	0	0	0	0	0	17
PM Out	45	0	0	0	9	9	0	0	0	0	0	0	0

Zone #	2	Giant RV Repair and Preparation Facility

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					20%					10%		
Y	0%	20%	10%	0%	0%	0%	0%	0%	0%	0%	0%	
AM Out												
PM In	0%	0%	0%	0%	20%	0%	0%	0%	0%	10%	0%	0%
PM Out	0%	20%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	16	0	0	0	0	3	0	0	0	0	2	0	0
AM Out	2	0	0	0	0	0	0	0	0	0	0	0	0
PM In	2	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	14	0	3	1	0	0	0	0	0	0	0	0	0

Zone #	3	La Quinta Inn and Suites Hotel

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					20%							
Y	0%	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	20%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	19	0	0	0	0	4	0	0	0	0	0	0	0
AM Out	18	0	4	0	0	0	0	0	0	0	0	0	0
PM In	17	0	0	0	0	3	0	0	0	0	0	0	0
PM Out	13	0	3	0	0	0	0	0	0	0	0	0	0

Zone #	4	Home 2 Suites by Hilton

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In												
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	29	0	0	0	0	0	0	0	0	0	0	0	0
AM Out	23	0	0	0	0	0	0	0	0	0	0	0	0
PM In	34	0	0	0	0	0	0	0	0	0	0	0	0
PM Out	33	0	0	0	0	0	0	0	0	0	0	0	0

Int. #:	3	S Mt Vernon Avenue at E Cooley Drive

Zone #	5	Cumulative Projects 5 and 6

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In			20%									
Y	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%	0%	0%
AM Out												
PM In	0%	0%	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	143	0	0	29	0	0	0	0	0	0	0	0	0
AM Out	141	0	0	0	0	0	0	0	0	0	28	0	0
PM In	146	0	0	29	0	0	0	0	0	0	0	0	0
PM Out	144	0	0	0	0	0	0	0	0	0	29	0	0

Zone #	6	Cumulative Projects 7, 8, 9, and 10

Pk Hr	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In					20%							
Y	0%	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AM Out												
PM In	0%	0%	0%	0%	20%	0%	0%	0%	0%	0%	0%	0%
PM Out	0%	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Pk Hr	T Gen	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM In	377	0	0	0	0	75	0	0	0	0	0	0	0
AM Out	356	0	71	0	0	0	0	0	0	0	0	0	0
PM In	185	0	0	0	0	37	0	0	0	0	0	0	0
PM Out	186	0	37	0	0	0	0	0	0	0	0	0	0