

Alexandra Owens

From: Molavi, Maryam@DOT <maryam.molavi@dot.ca.gov>
Sent: Monday, August 28, 2023 1:06 PM
To: Pezeshkpour, Ali; Meaghan Truman; OPR State Clearinghouse
Cc: Shelley, Scott@DOT
Subject: FW: City of Santa Ana Related Bristol Specific Plan - Caltrans NOP Comment Letter
Attachments: Caltrans NOP RTC Memorandum.pdf; 4410 Caltrans Response Memo 8-16-2023-c1.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Categories: Comments



Good afternoon,

Please see the comments below from Caltrans D-12 Traffic Operations and provide responses. Please confirm receipt of the comments below by replying to this email.

Thank you,

Maryam Molavi
Associate Transportation Planner
Planning Division
LDR Branch
1750 E. 4th Street
Santa Ana, Ca 92705

1. The Memorandum prepared by Linscott Law & Greenspan Engineers on August 16, 2023, Page 3, indicates that the intersection of Bear Street at SR-73 NB Ramps (Intersection No. 37) has forecasted to operate at unacceptable LOS E in the PM peak hour, without or with Project traffic and recommended improvements for Bear Street at SR-73 NB Ramps (Intersection No. 37). The recommended improvements include the following: No. 37 – Bear Street at SR-73 NB Ramps: Restripe the existing westbound left-turn lane to provide a shared left/right-turn lane. Modify the existing traffic signal as necessary. Please provide fair share calculation for this recommendation and contact information of the agency and company that is working on this improvement.

2. No maximum saturation flow rate (Veh/hr) per single lane for any movement should exceed 1800 (veh/hr). However, ATTACHMENT 1 APPENDIX E FROM REVISED TRAFFIC CIRCULATION ANALYSIS FOR THE RELATED BRISTOL DATED JUNE 2023, shows the following: Intersection 30: Bristol Street at I-405 NB Ramps, Scenario 1: 1 AM Existing shows 1863 (Veh/hr) for the Bristol Street Southbound Right/Through shared lane. Recommended improvements should be addressed in the Memorandum prepared by Linscott Law & Greenspan Engineers on August 16, 2023. Intersection 31: Bristol Street at I-405 SB Ramps, the saturation flow rate (veh/h) for the Bristol Street Southbound right lanes movement is not provided. Please provide missing information.

From: Meaghan Truman <Mtruman@epdsolutions.com>
Sent: Friday, August 18, 2023 3:45 PM
To: Molavi, Maryam@DOT <maryam.molavi@dot.ca.gov>
Cc: Pezeshkpour, Ali <APezeshkpour@santa-ana.org>; Alisha.Winterswyk@bbklaw.com; Hannah.Park@bbklaw.com; Soto, Ricardo <rsoto@santa-ana.org>; Konnie Dobрева <Konnie@epdsolutions.com>
Subject: City of Santa Ana Related Bristol Specific Plan - Caltrans NOP Comment Letter

EXTERNAL EMAIL. Links/attachments may not be safe.

Good Afternoon Maryam,

On behalf of the City of Santa Ana, as the City's environmental consultant for the Related Bristol Project, please see attached responses to Caltrans' comment letter submitted on the Notice of Preparation for the Related Bristol Specific Plan Project. In addition, I've attached the supporting Traffic Analysis for Caltrans Traffic Operations prepared by Linscott, Law, & Greenspan. Hopefully these two memos provide answers to the comments and questions provided by Caltrans in the NOP comment letter as well as the recent letter submitted on the Draft EIR. In addition, the following link contains the HCM/LOS worksheets (referenced as Attachment 1) for your review.

 [Attachment 1.pdf](#)

Please let us know if these responses alter any of your Agency's comments on the Draft EIR (as submitted on August 14, 2023). We are also happy to set up a meeting with your Agency if you have any additional questions or would like to discuss any of this further.

Thanks,

Meaghan Truman | Associate Environmental Planner

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Please note that the EPD office will be closed from Friday September 1st, through Labor Day, Monday September 4th, 2023. We will return to the office on Tuesday, September 5th

MEMORANDUM

To: Ali Pezeshkpour, Planning Manager
City of Santa Ana Planning Division

Date: August 16, 2023

xc: Zdenek “Zed” Kekula, P.E. Principal Civil Engineer
City of Santa Ana Public Works Agency – Traffic
Engineering

From: Richard Barretto, P.E., Principal
Linscott, Law & Greenspan, Engineers  LLG Ref: 2.21.4410

Subject: ***Response to Caltrans Traffic Operations Comments on Related Bristol
Specific Plan - Santa Ana, CA***

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Linscott, Law & Greenspan, Engineers (LLG) is pleased to provide the following responses to address the Traffic Operations division comments prepared by the California Department of Transportation (Caltrans) which were provided in a letter dated April 13, 2023 as it pertains to the *Notice of Preparation of a Supplemental Environmental Impact Report and Public Scoping Meeting for the Related Bristol Specific Plan Project*. The Caltrans NOP comment letter is attached and is referenced in our responses specifically to address the comments of the Traffic Operations division as provided below .

Caltrans Traffic Operations

Traffic Operations Comment 1: *A Vehicle Miles Traveled (VMT) Traffic Impact Study (TIS) should be provided for this project. Please use the Governor’s Office of Planning and Research guidance to identify VMT related impacts*

Response to Comment 1: The City of Santa Ana adopted new traffic impact criteria to be consistent with the Governor’s Office of Planning and Research (OPR) recommendations. These new guidelines are contained within the *City of Santa Ana Traffic Impact Study Guidelines (dated September 2019)* and provide screening criteria and methodology for VMT analysis. Since the City’s guidelines are generally consistent with OPR guidelines, no separate VMT analysis has been prepared for Caltrans’ review of the proposed project. The VMT analysis for this project is contained within a separate document (i.e. refer to the *Vehicle Miles Traveled (VMT) Screening Assessment for the Proposed Related Bristol Project, dated June 2023*).

Briefly, per the *City of Santa Ana Traffic Impact Study Guidelines (dated September 2019)* and based on the City’s VMT screening criteria and guidance from OPR, the proposed Project is located within a TPA and the land use is consistent with the RTP/SCS as contained in Southern California Association of Governments’ (SCAG) adopted Connect SoCal (2020–2045 Regional Transportation Plan/Sustainable Communities Strategy). Therefore, in accordance with the City of Santa Ana’s guidelines, the proposed Project would have a less than significant CEQA-related transportation impact related to VMT.

Traffic Operations Comment 2: *The TIS should identify the proposed project's near-term and long-term safety or operational impacts on or adjacent to any or proposed state facilities.*

Response to Comment 2: Although Caltrans has also formally adopted VMT as the metric for reviewing the transportation impacts of a land use development project, to address the Project's potential operational impacts, Level of Service (LOS) calculations for state-controlled study intersections have been prepared in conformance with the Caltrans *Guide for the Preparation of Traffic Impact Studies, dated December 2002* and in support of off-ramp vehicle queuing analysis as required by Caltrans. This evaluation is contained within traffic study for the Project, which has been prepared in accordance with the *City of Santa Ana Traffic Impact Study Guidelines (dated September 2019)* (i.e. refer to the *Revised Traffic Circulation Analysis for the Related Bristol, dated June 2023*).

The existing and projected peak hour operating conditions at the following nine (9) state-controlled study intersections have been evaluated using the *Highway Capacity Manual* operations method of analysis:

Key Study Intersection

12. SR-55 SB Ramps at MacArthur Boulevard (Santa Ana/Caltrans)
13. SR-55 NB Ramps at MacArthur Boulevard (Irvine/Caltrans)
25. I-405 NB Off-Ramp at S. Coast Drive (Costa Mesa/Caltrans)
28. Fairview Road at I-405 NB Ramps (Costa Mesa/Caltrans)
29. Fairview Road at I-405 SB Ramps (Costa Mesa/Caltrans)
30. Bristol Street at I-405 NB Ramps (Costa Mesa/Caltrans)
31. Bristol Street at I-405 SB Ramps (Costa Mesa/Caltrans)
37. Bear Street at SR-73 NB Ramps (Costa Mesa/Caltrans)
38. Bear Street at SR-73 SB Ramps (Costa Mesa/Caltrans)

Briefly, the results of the LOS analysis contained in the traffic study prepared for the Project indicate that proposed Project would not have an affect on the operating conditions (LOS) at the nine (9) state-controlled study intersections under the following scenarios:

- A. Existing Plus Project (Phase 1) Traffic Conditions;
- B. Existing Plus Project (Phase 1 and 2) Traffic Conditions;
- C. Existing Plus Project (Phase 1, 2 and 3) Traffic Conditions;

- D. Year 2030 Cumulative Traffic Conditions Project (Phase 1) Traffic Conditions;
- E. Year 2032 Cumulative Traffic Conditions;
- F. Year 2032 Cumulative Traffic Conditions Project (Phase 1 and 2) Traffic Conditions;
- G. Year 2036 Cumulative Traffic Conditions Project (Phase 1, 2 and 3) Traffic Conditions;

For a review of **Table 9-1** through **Table 9-6**, which are included Section 9 of the Project's traffic study, all nine (9) state-controlled study intersections are forecast operate at acceptable LOS during the AM and PM peak hours with the addition of Project traffic under future near-term (Year 2032 and Year 2036) traffic conditions. **Attachment 1**, which is *Appendix E* of the Project traffic study, presents the Year 2032 and Year 2036 HCM/LOS calculations for the nine (9) state-controlled study intersections.

For the following long-term traffic conditions, a review of columns (2) and (3) of **Table 9-7** indicates that the intersection of Bear Street at SR-73 NB Ramps (Intersection No. 37) is forecast to operate at unacceptable LOS E in the PM peak hour, without or with Project traffic.

- H. Year 2045 Buildout Plus Project (Phase 1, 2 and 3) Traffic Conditions.

The addition of Project traffic on the operating conditions would be negligible at the remaining eight (8) state-controlled study intersections are forecast to operate at an acceptable level of service during the AM and PM peak hours.

To offset the impact of future buildout traffic as well as Project-related traffic, the implementation of recommended improvements for Bear Street at SR-73 NB Ramps (Intersection No. 37) will result in acceptable operating conditions in the Year 2045 (See column (4) of **Table 9-7**). The recommended improvements include the following:

No. 37 – Bear Street at SR-73 NB Ramps: Restripe the existing westbound left-turn lane to provide a shared left/right-turn lane. Modify the existing traffic signal as necessary.

Attachment 1 also includes the Year 2045 HCM/LOS calculations for the nine (9) state-controlled study intersections.

Traffic Operations Comment 3: *The TIS needs to address potential impacts on storage capacity for the right-turn and left-turn pockets for the on-ramps and off-ramps from local city streets within the State right-of-way. In addition, all potential spill beyond designated storage lane must be addressed for safety concern.*

Response to Comment 3: Pursuant to requirements of Caltrans, off-ramp queuing was analyzed using the Highway Capacity Manual (HCM) method for signalized intersections. The off-ramp queuing calculations were prepared utilizing the HCM 7 operational methodology for signalized intersections. A *Vistro* network was created based on existing conditions field reviews at the nine (9) ramp intersections. In addition, specifics such as traffic volume data, lane configurations, available vehicle storage lengths, crosswalk locations, posted speed limits, traffic signal timing and phasing, etc., were coded to complete the existing network. The corresponding weekday AM peak hour and PM peak hour HCM 7 worksheets for purposes of determining the 95th percentile vehicle queues are contained in **Attachment 1**.

The queuing analysis was prepared for future near-term and long-term traffic conditions, consistent with the LOS calculations at the nine (9) ramp study intersections as presented in response to comment 2, above.

Similar to the LOS analysis, the queuing evaluation is contained within Section 9 of the *Revised Traffic Circulation Analysis for the Related Bristol, dated June 2023*.

Briefly, the results of the queuing analysis indicate that proposed Project will not cause or contribute towards vehicle queuing to extend back into the SR-55 Freeway or I-405 Freeway mainline travel lanes at the nine (9) state-controlled study intersections under the following scenarios:

- A. Existing Plus Project (Phase 1) Traffic Conditions;
- B. Existing Plus Project (Phase 1 and 2) Traffic Conditions;
- C. Existing Plus Project (Phase 1, 2 and 3) Traffic Conditions;
- D. Year 2030 Cumulative Traffic Conditions Project (Phase 1) Traffic Conditions;
- E. Year 2032 Cumulative Traffic Conditions;
- F. Year 2032 Cumulative Traffic Conditions Project (Phase 1 and 2) Traffic Conditions;
- G. Year 2036 Cumulative Traffic Conditions Project (Phase 1, 2 and 3) Traffic Conditions;

For a review of **Table 9-8** through **Table 9-13**, adequate storage is provided to accommodate the forecast 95th percentile queues under traffic conditions noted above at the nine (9) off-ramp locations. Therefore, the proposed Project is not anticipated to negatively affect traffic flow on the State Highway System as the existing vehicular storage capacity on the off-ramps are considered adequate.



However, under the following long-term traffic conditions, a review of columns (1) and (2) of **Table 9-14** indicates that the existing vehicular storage capacity is forecast to be inadequate for the westbound right-turn at Bear Street at SR-73 NB Ramps (Intersection No. 37) during the PM peak hour in the Year 2045 without or with the Project.

H. Year 2045 Buildout Plus Project (Phase 1, 2 and 3) Traffic Conditions.

However, the implementation of the recommended improvements noted in response to comment 2 will increase storage capacity and result in adequate storage to accommodate forecast vehicular queues in the Year 2045

At the eight (8) other ramp locations, the proposed Project is not anticipated to negatively affect traffic flow on the SRE-55 Freeway or I-405 Freeway as the existing vehicular storage capacity on the eight (8) other off-ramps are considered adequate.

* * * * *

We appreciate the opportunity to provide this Memorandum. Please let us know if you have any questions regarding this response memorandum.

Attachments

cc: Shane S. Green, P.E., LLG
File

**TABLES 9-1 THROUGH 9-14 FROM
REVISED TRAFFIC CIRCULATION ANALYSIS FOR THE RELATED BRISTOL
*DATED JUNE 2023***

TABLE 9-1
EXISTING PLUS PROJECT PHASE 1 PEAK HOUR INTERSECTION CAPACITY ANALYSIS – CALTRANS

Key Intersections	Time Period	(1) Existing Traffic Conditions		(2) Existing Plus Project Phase 1 Traffic Conditions		(3) Exceed LOS Criteria		(4) Existing Plus Project Phase 1 Traffic Conditions with Improvements		
		HCM (s/v)	LOS	HCM (s/v)	LOS	Increase	Yes/No	HCM (s/v)	LOS	
		12.	SR-55 SB Ramps at MacArthur Boulevard	AM	13.2	B	14.0	B	0.8	No
		PM	11.3	B	11.9	B	0.6	No	--	--
13.	SR-55 NB Ramps at MacArthur Boulevard	AM	18.0	B	19.2	B	1.2	No	--	--
		PM	8.5	A	8.5	A	0.0	No	--	--
25.	I-405 NB Off-Ramp at South Coast Drive	AM	21.8	C	22.9	C	1.1	No	--	--
		PM	21.2	C	21.2	C	0.0	No	--	--
28.	Fairview Road at I-405 NB Ramps	AM	25.5	C	25.5	C	0.0	No	--	--
		PM	30.2	C	30.2	C	0.0	No	--	--
29.	Fairview Road at I-405 SB Ramps	AM	35.1	D	35.1	D	0.0	No	--	--
		PM	19.8	B	20.5	C	0.7	No	--	--
30.	Bristol Street at I-405 NB Ramps	AM	6.3	A	6.3	A	0.0	No	--	--
		PM	13.9	B	14.1	B	0.2	No	--	--
31.	Bristol Street at I-405 SB Ramps	AM	14.2	B	14.4	B	0.2	No	--	--
		PM	15.1	B	15.5	B	0.4	No	--	--

TABLE 9-1 (CONTINUED)
EXISTING PLUS PROJECT PHASE 1 PEAK HOUR INTERSECTION CAPACITY ANALYSIS – CALTRANS

Key Intersections	Time Period	(1) Existing Traffic Conditions		(2) Existing Plus Project Phase 1 Traffic Conditions		(3) Exceed LOS Criteria		(4) Existing Plus Project Phase 1 Traffic Conditions with Improvements	
		HCM (s/v)	LOS	HCM (s/v)	LOS	Increase	Yes/No	HCM (s/v)	LOS
37. Bear Street at SR-73 NB Ramps	AM	22.7	C	23.0	C	0.3	No	--	--
	PM	41.9	D	43.4	D	1.5	No	--	--
38. Bear Street at SR-73 SB Ramps	AM	24.7	C	25.2	C	0.5	No	--	--
	PM	20.5	C	21.3	C	0.8	No	--	--

Notes:

- **BOLD HCM/LOS** indicates unacceptable service level
- s/v = seconds per vehicle (delay)

TABLE 9-2
EXISTING PLUS PROJECT PHASES 1 AND 2 PEAK HOUR INTERSECTION CAPACITY ANALYSIS – CALTRANS

Key Intersections	Time Period	(1) Existing Traffic Conditions		(2) Existing Plus Project Phases 1 and 2 Traffic Conditions		(3) Exceed LOS Criteria		(4) Existing Plus Project Phases 1 and 2 Traffic Conditions with Improvements	
		HCM (s/v)	LOS	HCM (s/v)	LOS	Increase	Yes/No	HCM (s/v)	LOS
12. SR-55 SB Ramps at MacArthur Boulevard	AM	13.2	B	14.3	B	1.1	No	--	--
	PM	11.3	B	12.4	B	1.1	No	--	--
13. SR-55 NB Ramps at MacArthur Boulevard	AM	18.0	B	20.5	C	2.5	No	--	--
	PM	8.5	A	8.7	A	0.2	No	--	--
25. I-405 NB Off-Ramp at South Coast Drive	AM	21.8	C	22.9	C	1.1	No	--	--
	PM	21.2	C	21.2	C	0.0	No	--	--
28. Fairview Road at I-405 NB Ramps	AM	25.5	C	25.5	C	0.0	No	--	--
	PM	30.2	C	30.2	C	0.0	No	--	--
29. Fairview Road at I-405 SB Ramps	AM	35.1	D	35.1	D	0.0	No	--	--
	PM	19.8	B	19.8	B	0.0	No	--	--
30. Bristol Street at I-405 NB Ramps	AM	6.3	A	6.3	A	0.0	No	--	--
	PM	13.9	B	14.4	A	0.5	No	--	--
31. Bristol Street at I-405 SB Ramps	AM	14.2	B	15.1	B	0.9	No	--	--
	PM	15.1	B	15.8	B	0.7	No	--	--

TABLE 9-2 (CONTINUED)
EXISTING PLUS PROJECT PHASES 1 AND 2 PEAK HOUR INTERSECTION CAPACITY ANALYSIS – CALTRANS

Key Intersections	Time Period	(1) Existing Traffic Conditions		(2) Existing Plus Project Phases 1 and 2 Traffic Conditions		(3) Exceed LOS Criteria		(4) Existing Plus Project Phases 1 and 2 Traffic Conditions with Improvements	
		HCM (s/v)	LOS	HCM (s/v)	LOS	Increase	Yes/No	HCM (s/v)	LOS
37. Bear Street at SR-73 NB Ramps	AM	22.7	C	23.0	C	0.3	No	--	--
	PM	41.9	D	43.5	D	1.6	No	--	--
38. Bear Street at SR-73 SB Ramps	AM	24.7	C	25.2	C	0.5	No	--	--
	PM	20.5	C	21.3	C	0.8	No	--	--

Notes:

- **BOLD HCM/LOS** indicates unacceptable service level
- s/v = seconds per vehicle (delay)

TABLE 9-3
EXISTING PLUS PROJECT PHASES 1, 2, AND 3 PEAK HOUR INTERSECTION CAPACITY ANALYSIS – CALTRANS

Key Intersections	Time Period	(1) Existing Traffic Conditions		(2) Existing Plus Project Phases 1, 2 and 3 Traffic Conditions		(3) Exceed LOS Criteria		(4) Existing Plus Project Phases 1, 2 and 3 Traffic Conditions with Improvements	
		HCM (s/v)	LOS	HCM (s/v)	LOS	Increase	Yes/No	HCM (s/v)	LOS
12. SR-55 SB Ramps at MacArthur Boulevard	AM	13.2	B	14.8	B	1.6	No	--	--
	PM	11.3	B	12.7	B	1.4	No	--	--
13. SR-55 NB Ramps at MacArthur Boulevard	AM	18.0	B	22.4	C	4.4	No	--	--
	PM	8.5	A	8.8	A	0.3	No	--	--
25. I-405 NB Off-Ramp at South Coast Drive	AM	21.8	C	22.8	C	1.0	No	--	--
	PM	21.2	C	21.2	C	0.0	No	--	--
28. Fairview Road at I-405 NB Ramps	AM	25.5	C	25.5	C	0.0	No	--	--
	PM	30.2	C	30.2	C	0.0	No	--	--
29. Fairview Road at I-405 SB Ramps	AM	35.1	D	35.2	D	0.1	No	--	--
	PM	19.8	B	19.8	B	0.0	No	--	--
30. Bristol Street at I-405 NB Ramps	AM	6.3	A	6.3	A	0.0	No	--	--
	PM	13.9	B	14.1	B	0.2	No	--	--
31. Bristol Street at I-405 SB Ramps	AM	14.2	B	14.6	B	0.4	No	--	--
	PM	15.1	B	16.0	B	0.9	No	--	--

TABLE 9-3 (CONTINUED)
EXISTING PLUS PROJECT PHASES 1, 2, AND 3 PEAK HOUR INTERSECTION CAPACITY ANALYSIS – CALTRANS

Key Intersections	Time Period	(1) Existing Traffic Conditions		(2) Existing Plus Project Phases 1, 2 and 3 Traffic Conditions		(3) Exceed LOS Criteria		(4) Existing Plus Project Phases 1, 2 and 3 Traffic Conditions with Improvements	
		HCM (s/v)	LOS	HCM (s/v)	LOS	Increase	Yes/No	HCM (s/v)	LOS
37. Bear Street at SR-73 NB Ramps	AM	22.7	C	23.0	C	0.3	No	--	--
	PM	41.9	D	43.4	D	1.5	No	--	--
38. Bear Street at SR-73 SB Ramps	AM	24.7	C	25.2	C	0.5	No	--	--
	PM	20.5	C	21.3	C	0.8	No	--	--

Notes:

- **BOLD HCM/LOS** indicates unacceptable service level
- s/v = seconds per vehicle (delay)

TABLE 9-4
YEAR 2030 CUMULATIVE PEAK HOUR INTERSECTION CAPACITY ANALYSIS – CALTRANS

Key Intersections	Time Period	(1) Existing Traffic Conditions		(2) Year 2030 Cumulative Traffic Conditions		(3) Year 2030 Cumulative Plus Project Phase 1 Traffic Conditions		(4) Exceed LOS Criteria		(5) Year 2030 Cumulative Plus Project Phase 1 Traffic Conditions with Improvements	
		HCM (s/v)	LOS	HCM (s/v)	LOS	HCM (s/v)	LOS	Increase	Yes/No	HCM (s/v)	LOS
12. SR-55 SB Ramps at MacArthur Boulevard	AM	13.2	B	14.4	B	15.0	B	0.6	No	--	--
	PM	11.3	B	11.5	B	12.0	B	0.5	No	--	--
13. SR-55 NB Ramps at MacArthur Boulevard	AM	18.0	B	17.4	B	18.4	B	1.0	No	--	--
	PM	8.5	A	8.8	A	8.8	A	0.0	No	--	--
25. I-405 NB Off-Ramp at South Coast Drive	AM	21.8	C	21.7	C	22.8	C	1.1	No	--	--
	PM	21.2	C	21.4	C	21.4	C	0.0	No	--	--
28. Fairview Road at I-405 NB Ramps	AM	25.5	C	25.2	C	25.2	C	0.0	No	--	--
	PM	30.2	C	31.6	C	31.6	C	0.0	No	--	--
29. Fairview Road at I-405 SB Ramps	AM	35.1	D	31.1	C	31.1	C	0.0	No	--	--
	PM	19.8	B	20.4	C	20.4	C	0.0	No	--	--
30. Bristol Street at I-405 NB Ramps	AM	6.3	A	6.4	A	6.4	A	0.0	No	--	--
	PM	13.9	B	15.0	B	15.0	B	0.0	No	--	--
31. Bristol Street at I-405 SB Ramps	AM	14.2	B	15.3	B	15.5	B	0.2	No	--	--
	PM	15.1	B	16.8	B	17.2	B	0.4	No	--	--

TABLE 9-4 (CONTINUED)
YEAR 2030 CUMULATIVE PEAK HOUR INTERSECTION CAPACITY ANALYSIS – CALTRANS

Key Intersections	Time Period	(1) Existing Traffic Conditions		(2) Year 2030 Cumulative Traffic Conditions		(3) Year 2030 Cumulative Plus Project Phase 1 Traffic Conditions		(4) Exceed LOS Criteria		(5) Year 2030 Cumulative Plus Project Phase 1 Traffic Conditions with Improvements	
		HCM (s/v)	LOS	HCM (s/v)	LOS	HCM (s/v)	LOS	Increase	Yes/No	HCM (s/v)	LOS
37. Bear Street at SR-73 NB Ramps	AM	22.7	C	21.3	C	21.5	C	0.2	No	--	--
	PM	41.9	D	41.9	D	43.3	D	1.4	No	--	--
38. Bear Street at SR-73 SB Ramps	AM	24.7	C	22.1	C	22.4	C	0.3	No	--	--
	PM	20.5	C	20.2	C	20.5	C	0.3	No	--	--

Notes:

- **BOLD HCM/LOS** indicates unacceptable service level
- s/v = seconds per vehicle (delay)

TABLE 9-5
YEAR 2032 CUMULATIVE PEAK HOUR INTERSECTION CAPACITY ANALYSIS – CALTRANS

Key Intersections	Time Period	(1) Existing Traffic Conditions		(2) Year 2032 Cumulative Traffic Conditions		(3) Year 2032 Cumulative Plus Project Phases 1 and 2 Traffic Conditions		(4) Exceed LOS Criteria		(5) Year 2032 Cumulative Plus Project Phases 1 and 2 Traffic Conditions with Improvements		
		HCM (s/v)	LOS	HCM (s/v)	LOS	HCM (s/v)	LOS	Increase	Yes/No	HCM (s/v)	LOS	
		12.	SR-55 SB Ramps at MacArthur Boulevard	AM	13.2	B	14.7	B	15.7	B	1.0	No
		PM	11.3	B	11.8	B	12.8	B	1.0	No	--	--
13.	SR-55 NB Ramps at MacArthur Boulevard	AM	18.0	B	20.3	C	23.5	C	3.2	No	--	--
		PM	8.5	A	9.0	A	9.2	A	0.2	No	--	--
25.	I-405 NB Off-Ramp at South Coast Drive	AM	21.8	C	21.6	C	22.6	C	1.0	No	--	--
		PM	21.2	C	21.5	C	21.5	C	0.0	No	--	--
28.	Fairview Road at I-405 NB Ramps	AM	25.5	C	25.7	C	25.8	C	0.1	No	--	--
		PM	30.2	C	29.3	C	29.3	C	0.0	No	--	--
29.	Fairview Road at I-405 SB Ramps	AM	35.1	D	32.9	C	32.9	C	0.0	No	--	--
		PM	19.8	B	20.7	C	20.7	C	0.0	No	--	--
30.	Bristol Street at I-405 NB Ramps	AM	6.3	A	6.4	A	6.4	A	0.0	No	--	--
		PM	13.9	B	15.2	B	15.3	B	0.1	No	--	--
31.	Bristol Street at I-405 SB Ramps	AM	14.2	B	14.8	B	15.1	B	0.3	No	--	--
		PM	15.1	B	17.0	B	17.7	B	0.7	No	--	--

TABLE 9-5 (CONTINUED)
YEAR 2032 CUMULATIVE PEAK HOUR INTERSECTION CAPACITY ANALYSIS – CALTRANS

Key Intersections	Time Period	(1) Existing Traffic Conditions		(2) Year 2032 Cumulative Traffic Conditions		(3) Year 2032 Cumulative Plus Project Phases 1 and 2 Traffic Conditions		(4) Exceed LOS Criteria		(5) Year 2032 Cumulative Plus Project Phases 1 and 2 Traffic Conditions with Improvements	
		HCM (s/v)	LOS	HCM (s/v)	LOS	HCM (s/v)	LOS	Increase	Yes/No	HCM (s/v)	LOS
37. Bear Street at SR-73 NB Ramps	AM	22.7	C	21.5	C	21.7	C	0.2	No	--	--
	PM	41.9	D	43.1	D	46.4	D	3.3	No	--	--
38. Bear Street at SR-73 SB Ramps	AM	24.7	C	22.3	C	22.6	C	0.3	No	--	--
	PM	20.5	C	20.4	C	20.5	C	0.1	No	--	--

Notes:

- **BOLD HCM/LOS** indicates unacceptable service level
- s/v = seconds per vehicle (delay)

TABLE 9-6
YEAR 2036 CUMULATIVE PEAK HOUR INTERSECTION CAPACITY ANALYSIS – CALTRANS

Key Intersections	Time Period	(1) Existing Traffic Conditions		(2) Year 2036 Cumulative Traffic Conditions		(3) Year 2036 Cumulative Plus Project Phases 1, 2 and 3 Traffic Conditions		(4) Exceed LOS Criteria		(5) Year 2036 Cumulative Plus Project Phases 1, 2 and 3 Traffic Conditions with Improvements		
		HCM (s/v)	LOS	HCM (s/v)	LOS	HCM (s/v)	LOS	Increase	Yes/No	HCM (s/v)	LOS	
		12.	SR-55 SB Ramps at MacArthur Boulevard	AM	13.2	B	15.8	B	17.1	B	1.3	No
		PM	11.3	B	12.7	B	14.1	B	1.4	No	--	--
13.	SR-55 NB Ramps at MacArthur Boulevard	AM	18.0	B	30.9	C	38.2	D	7.3	No	--	--
		PM	8.5	A	9.5	A	9.8	A	0.3	No	--	--
25.	I-405 NB Off-Ramp at South Coast Drive	AM	21.8	C	21.4	C	22.5	C	0.9	No	--	--
		PM	21.2	C	22.0	C	22.0	C	0.0	No	--	--
28.	Fairview Road at I-405 NB Ramps	AM	25.5	C	25.3	C	25.4	C	0.1	No	--	--
		PM	30.2	C	31.8	C	31.8	C	0.0	No	--	--
29.	Fairview Road at I-405 SB Ramps	AM	35.1	D	34.4	C	34.8	C	0.4	No	--	--
		PM	19.8	B	22.0	C	23.5	C	1.5	No	--	--
30.	Bristol Street at I-405 NB Ramps	AM	6.3	A	6.5	A	6.7	A	0.2	No	--	--
		PM	13.9	B	16.0	B	16.6	B	0.6	No	--	--
31.	Bristol Street at I-405 SB Ramps	AM	14.2	B	15.0	B	15.5	B	0.5	No	--	--
		PM	15.1	B	17.6	B	19.0	B	1.4	No	--	--

TABLE 9-6 (CONTINUED)
YEAR 2036 CUMULATIVE PEAK HOUR INTERSECTION CAPACITY ANALYSIS – CALTRANS

Key Intersections	Time Period	(1) Existing Traffic Conditions		(2) Year 2036 Cumulative Traffic Conditions		(3) Year 2036 Cumulative Plus Project Phases 1, 2 and 3 Traffic Conditions		(4) Exceed LOS Criteria		(5) Year 2036 Cumulative Plus Project Phases 1, 2 and 3 Traffic Conditions with Improvements	
		HCM (s/v)	LOS	HCM (s/v)	LOS	HCM (s/v)	LOS	Increase	Yes/No	HCM (s/v)	LOS
37. Bear Street at SR-73 NB Ramps	AM	22.7	C	21.8	C	22.1	C	0.3	No	--	--
	PM	41.9	D	51.2	D	53.8	D	2.6	No	--	--
38. Bear Street at SR-73 SB Ramps	AM	24.7	C	23.8	C	24.1	C	0.3	No	--	--
	PM	20.5	C	20.8	C	20.9	C	0.1	No	--	--

Notes:

- **BOLD HCM/LOS** indicates unacceptable service level
- s/v = seconds per vehicle (delay)

TABLE 9-7
YEAR 2045 BUILDOUT PEAK HOUR INTERSECTION CAPACITY ANALYSIS – CALTRANS

Key Intersections	Time Period	(1) Existing Traffic Conditions		(2) Year 2045 Buildout Traffic Conditions		(3) Year 2045 Buildout Plus Project Phases 1, 2 and 3 Traffic Conditions		(4) Exceed LOS Criteria		(5) Year 2045 Buildout Plus Project Phases 1, 2 and 3 Traffic Conditions with Improvements	
		HCM (s/v)	LOS	HCM (s/v)	LOS	HCM (s/v)	LOS	Increase	Yes/No	HCM (s/v)	LOS
		12. SR-55 SB Ramps at MacArthur Boulevard	AM	13.2	B	17.6	B	19.0	B	1.4	No
	PM	11.3	B	14.0	B	15.4	B	1.4	No	--	--
13. SR-55 NB Ramps at MacArthur Boulevard	AM	18.0	B	26.9	C	34.2	C	7.3	No	--	--
	PM	8.5	A	9.8	A	10.1	B	0.3	No	--	--
25. I-405 NB Off-Ramp at South Coast Drive	AM	21.8	C	21.3	C	21.3	C	0.0	No	--	--
	PM	21.2	C	22.6	C	22.6	C	0.0	No	--	--
28. Fairview Road at I-405 NB Ramps	AM	25.5	C	28.0	C	29.6	C	1.6	No	--	--
	PM	30.2	C	37.9	D	37.9	D	0.0	No	--	--
29. Fairview Road at I-405 SB Ramps	AM	35.1	D	41.7	D	42.7	D	1.0	No	--	--
	PM	19.8	B	30.9	C	31.0	C	0.1	No	--	--
30. Bristol Street at I-405 NB Ramps	AM	6.3	A	8.8	A	9.1	A	0.3	No	--	--
	PM	13.9	B	16.8	B	17.1	B	0.3	No	--	--
31. Bristol Street at I-405 SB Ramps	AM	14.2	B	15.6	B	16.1	B	0.5	No	--	--
	PM	15.1	B	19.8	B	20.3	C	0.5	No	--	--

TABLE 9-7 (CONTINUED)
YEAR 2045 BUILDOUT PEAK HOUR INTERSECTION CAPACITY ANALYSIS – CALTRANS

Key Intersections	Time Period	(1) Existing Traffic Conditions		(2) Year 2045 Buildout Traffic Conditions		(3) Year 2045 Buildout Plus Project Phases 1, 2 and 3 Traffic Conditions		(4) Exceed LOS Criteria		(5) Year 2045 Buildout Plus Project Phases 1, 2 and 3 Traffic Conditions with Improvements	
		HCM (s/v)	LOS	HCM (s/v)	LOS	HCM (s/v)	LOS	Increase	Yes/No	HCM (s/v)	LOS
37. Bear Street at SR-73 NB Ramps	AM	22.7	C	22.9	C	25.0	C	2.1	No	22.7	C
	PM	41.9	D	73.9	E	78.6	E	4.7	Yes	54.7	D
38. Bear Street at SR-73 SB Ramps	AM	24.7	C	26.6	C	30.7	C	4.1	No	--	--
	PM	20.5	C	22.0	C	23.0	C	1.0	No	--	--

Notes:

- **BOLD HCM/LOS** indicates unacceptable service level
- s/v = seconds per vehicle (delay)

TABLE 9-8
EXISTING PLUS PROJECT PHASE 1 CALTRANS OFF-RAMP PEAK HOUR QUEUING ANALYSIS¹

Key Intersections	Storage Provided (feet)	(1) Existing Traffic Conditions				(2) Existing Plus Project Phase 1 Traffic Conditions				(3) Existing Plus Project Phase 1 Traffic Conditions with Improvements				
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		
		Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	
12. SR-55 SB Ramps at MacArthur Boulevard														
	<i>Southbound Left-Turn</i> ²	1,415	187	Yes	50	Yes	202	Yes	52	Yes	--	--	--	--
	<i>Southbound Right-Turn</i> ²	265	180	Yes	159	Yes	203	Yes	176	Yes	--	--	--	--
13. SR-55 NB Ramps at MacArthur Boulevard														
	<i>Northbound Left-Turn</i> ²	1,190	241	Yes	105	Yes	241	Yes	107	Yes	--	--	--	--
25. I-405 NB Off-Ramp at South Coast Drive														
	<i>Northbound Left-Turn</i>	175	328	Yes ³	393	Yes ³	347	Yes ³	393	Yes ³	--	--	--	--
	<i>Northbound Through/Right-Turn</i>	645	36	Yes	69	Yes	38	Yes	69	Yes	--	--	--	--
	<i>Northbound Right-Turn</i>	175	35	Yes	67	Yes	37	Yes	67	Yes	--	--	--	--
28. Fairview Road at I-405 NB Ramps														
	<i>Westbound Left-Turn</i> ²	1,480	262	Yes	314	Yes	262	Yes	314	Yes	--	--	--	--
	<i>Westbound Right-Turn</i> ⁴	880	364	Yes	467	Yes	364	Yes	467	Yes	--	--	--	--
29. Fairview Road at I-405 SB Ramps														
	<i>Eastbound Left-Turn</i> ⁵	625	133	Yes	147	Yes	133	Yes	157	Yes	--	--	--	--
	<i>Eastbound Right-Turn</i> ⁶	625	270	Yes	182	Yes	270	Yes	192	Yes	--	--	--	--

¹ Queues are based on HCM 95th Percentile methodology.

² This movement consists of dual turn lanes.

³ The spillover queue can be accommodated upstream of the turn pocket.

⁴ The westbound right-turn consists of dual lanes. The first lane consists of approximately 1,480 feet of storage and the second lane consists of approximately 280 feet of storage. The storage reported is the average of both lanes.

⁵ The eastbound left-turn consists of dual lanes. The first lane consists of approximately 265 feet of storage and the second lane consists of approximately 985 feet of storage. The storage reported is the average of both lanes.

⁶ The eastbound right-turn consists of dual lanes. The first lane consists of approximately 265 feet of storage and the second lane consists of approximately 985 feet of storage. The storage reported is the average of both lanes.

TABLE 9-8 (CONTINUED)
EXISTING PLUS PROJECT PHASE 1 CALTRANS OFF-RAMP PEAK HOUR QUEUING ANALYSIS⁷

Key Intersections	Storage Provided (feet)	(1) Existing Cumulative Traffic Conditions				(2) Existing Plus Project Phase 1 Traffic Conditions				(3) Existing Plus Project Phase 1 Traffic Conditions with Improvements			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)
30. Bristol Street at I-405 NB Ramps													
<i>Westbound Left-Turn</i>	1,550	64	Yes	215	Yes	64	Yes	214	Yes	--	--	--	--
<i>Westbound Left-Through</i>	1,550	65	Yes	214	Yes	65	Yes	213	Yes	--	--	--	--
<i>Westbound Through</i>	1,195	68	Yes	218	Yes	68	Yes	217	Yes	--	--	--	--
<i>Westbound Right-Turn</i> ⁸	385	25	Yes	105	Yes	25	Yes	112	Yes	--	--	--	--
31. Bristol Street at I-405 SB Ramps													
<i>Eastbound Left-Turn</i> ⁹	1,012	197	Yes	234	Yes	204	Yes	243	Yes	--	--	--	--
37. Bear Street at SR-73 NB Ramps													
<i>Westbound Left-Turn</i>	470	179	Yes	295	Yes	176	Yes	295	Yes	--	--	--	--
<i>Westbound Right-Turn</i> ¹⁰	723	262	Yes	671	Yes	269	Yes	702	Yes	--	--	--	--
38. Bear Street at SR-73 SB Ramps													
<i>Eastbound Left-Turn</i>	350	145	Yes	205	Yes	145	Yes	210	Yes	--	--	--	--
<i>Eastbound Left/Right-Turn</i>	895	260	Yes	191	Yes	261	Yes	196	Yes	--	--	--	--

⁷ Queues are based on HCM 95th Percentile methodology.

⁸ The westbound right-turn consists of dual lanes. The first lane consists of approximately 340 feet of storage and the second lane consists of approximately 430 feet of storage. The storage reported is the average of both lanes.

⁹ The eastbound left-turn consists of triple lanes. The first lane consists of approximately 465 feet of storage, the second and third lanes consists of approximately 1,285 feet of storage. The storage reported is the average of the three lanes.

¹⁰ The westbound right-turn consists of dual lanes. The first lane consists of approximately 470 feet of storage and the second lane consists of approximately 975 feet of storage. The storage reported is the average of both lanes.

**TABLE 9-9
EXISTING PLUS PROJECT PHASES 1 AND 2 CALTRANS OFF-RAMP PEAK HOUR QUEUING ANALYSIS¹¹**

Key Intersections	Storage Provided (feet)	(1) Existing Traffic Conditions				(2) Existing Plus Project Phases 1 and 2 Traffic Conditions				(3) Existing Plus Project Phases 1 and 2 Traffic Conditions with Improvements			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)
12. SR-55 SB Ramps at MacArthur Boulevard													
	<i>Southbound Left-Turn¹²</i>	1,415	Yes	50	Yes	209	Yes	53	Yes	--	--	--	--
	<i>Southbound Right-Turn¹²</i>	265	Yes	159	Yes	213	Yes	190	Yes	--	--	--	--
13. SR-55 NB Ramps at MacArthur Boulevard													
	<i>Northbound Left-Turn¹²</i>	1,190	Yes	105	Yes	244	Yes	112	Yes	--	--	--	--
25. I-405 NB Off-Ramp at South Coast Drive													
	<i>Northbound Left-Turn</i>	175	Yes ¹³	393	Yes ¹³	347	Yes ¹³	393	Yes ¹³	--	--	--	--
	<i>Northbound Through/Right-Turn</i>	645	Yes	69	Yes	38	Yes	69	Yes	--	--	--	--
	<i>Northbound Right-Turn</i>	175	Yes	67	Yes	38	Yes	67	Yes	--	--	--	--
28. Fairview Road at I-405 NB Ramps													
	<i>Westbound Left-Turn¹²</i>	1,480	Yes	314	Yes	262	Yes	314	Yes	--	--	--	--
	<i>Westbound Right-Turn¹⁴</i>	880	Yes	467	Yes	364	Yes	467	Yes	--	--	--	--
29. Fairview Road at I-405 SB Ramps													
	<i>Eastbound Left-Turn¹⁵</i>	625	Yes	147	Yes	133	Yes	147	Yes	--	--	--	--
	<i>Eastbound Right-Turn¹⁶</i>	625	Yes	182	Yes	270	Yes	182	Yes	--	--	--	--

¹¹ Queues are based on HCM 95th Percentile methodology.

¹² This movement consists of dual turn lanes.

¹³ The spillover queue can be accommodated upstream of the turn pocket.

¹⁴ The westbound right-turn consists of dual lanes. The first lane consists of approximately 1,480 feet of storage and the second lane consists of approximately 280 feet of storage. The storage reported is the average of both lanes.

¹⁵ The eastbound left-turn consists of dual lanes. The first lane consists of approximately 265 feet of storage and the second lane consists of approximately 985 feet of storage. The storage reported is the average of both lanes.

¹⁶ The eastbound right-turn consists of dual lanes. The first lane consists of approximately 265 feet of storage and the second lane consists of approximately 985 feet of storage. The storage reported is the average of both lanes.

TABLE 9-9 (CONTINUED)
EXISTING PLUS PROJECT PHASES 1 AND 2 CALTRANS OFF-RAMP PEAK HOUR QUEUING ANALYSIS¹⁷

Key Intersections	Storage Provided (feet)	(1) Existing Traffic Conditions				(2) Existing Plus Project Phases 1 and 2 Traffic Conditions				(3) Existing Plus Project Phases 1 and 2 Traffic Conditions with Improvements			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)
30. Bristol Street at I-405 NB Ramps													
<i>Westbound Left-Turn</i>	1,550	64	Yes	215	Yes	64	Yes	225	Yes	--	--	--	--
<i>Westbound Left-Through</i>	1,550	65	Yes	214	Yes	65	Yes	224	Yes	--	--	--	--
<i>Westbound Through</i>	1,195	68	Yes	218	Yes	68	Yes	227	Yes	--	--	--	--
<i>Westbound Right-Turn</i> ¹⁸	385	25	Yes	105	Yes	25	Yes	122	Yes	--	--	--	--
31. Bristol Street at I-405 SB Ramps													
<i>Eastbound Left-Turn</i> ¹⁹	1,012	197	Yes	234	Yes	217	Yes	248	Yes	--	--	--	--
37. Bear Street at SR-73 NB Ramps													
<i>Westbound Left-Turn</i>	470	179	Yes	295	Yes	177	Yes	295	Yes	--	--	--	--
<i>Westbound Right-Turn</i> ²⁰	723	262	Yes	671	Yes	270	Yes	702	Yes	--	--	--	--
38. Bear Street at SR-73 SB Ramps													
<i>Eastbound Left-Turn</i>	350	145	Yes	205	Yes	145	Yes	210	Yes	--	--	--	--
<i>Eastbound Left/Right-Turn</i>	895	260	Yes	191	Yes	261	Yes	196	Yes	--	--	--	--

¹⁷ Queues are based on HCM 95th Percentile methodology.

¹⁸ The westbound right-turn consists of dual lanes. The first lane consists of approximately 340 feet of storage and the second lane consists of approximately 430 feet of storage. The storage reported is the average of both lanes.

¹⁹ The eastbound left-turn consists of triple lanes. The first lane consists of approximately 465 feet of storage, the second and third lanes consists of approximately 1,285 feet of storage. The storage reported is the average of the three lanes.

²⁰ The westbound right-turn consists of dual lanes. The first lane consists of approximately 470 feet of storage and the second lane consists of approximately 975 feet of storage. The storage reported is the average of both lanes.

TABLE 9-10
EXISTING PLUS PROJECT PHASES 1, 2 AND 3 CALTRANS OFF-RAMP PEAK HOUR QUEUING ANALYSIS²¹

Key Intersections	Storage Provided (feet)	(1) Existing Traffic Conditions				(2) Existing Plus Project Phases 1, 2 and 3 Traffic Conditions				(3) Existing Plus Project Phases 1, 2 and 3 Traffic Conditions with Improvements				
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		
		Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	
12. SR-55 SB Ramps at MacArthur Boulevard														
	<i>Southbound Left-Turn</i> ²²	1,415	187	Yes	50	Yes	219	Yes	54	Yes	--	--	--	--
	<i>Southbound Right-Turn</i> ²²	265	180	Yes	159	Yes	227	Yes	199	Yes	--	--	--	--
13. SR-55 NB Ramps at MacArthur Boulevard														
	<i>Northbound Left-Turn</i> ²²	1,190	241	Yes	105	Yes	245	Yes	115	Yes	--	--	--	--
25. I-405 NB Off-Ramp at South Coast Drive														
	<i>Northbound Left-Turn</i>	175	328	Yes ²³	393	Yes ²³	347	Yes ²³	393	Yes ²³	--	--	--	--
	<i>Northbound Through/Right-Turn</i>	645	36	Yes	69	Yes	38	Yes	69	Yes	--	--	--	--
	<i>Northbound Right-Turn</i>	175	35	Yes	67	Yes	37	Yes	67	Yes	--	--	--	--
28. Fairview Road at I-405 NB Ramps														
	<i>Westbound Left-Turn</i> ²²	1,480	262	Yes	314	Yes	262	Yes	314	Yes	--	--	--	--
	<i>Westbound Right-Turn</i> ²⁴	880	364	Yes	467	Yes	364	Yes	467	Yes	--	--	--	--
29. Fairview Road at I-405 SB Ramps														
	<i>Eastbound Left-Turn</i> ²⁵	625	133	Yes	147	Yes	133	Yes	147	Yes	--	--	--	--
	<i>Eastbound Right-Turn</i> ²⁶	625	270	Yes	182	Yes	270	Yes	182	Yes	--	--	--	--

²¹ Queues are based on HCM 95th Percentile methodology.

²² This movement consists of dual turn lanes.

²³ The spillover queue can be accommodated upstream of the turn pocket.

²⁴ The westbound right-turn consists of dual lanes. The first lane consists of approximately 1,480 feet of storage and the second lane consists of approximately 280 feet of storage. The storage reported is the average of both lanes.

²⁵ The eastbound left-turn consists of dual lanes. The first lane consists of approximately 265 feet of storage and the second lane consists of approximately 985 feet of storage. The storage reported is the average of both lanes.

²⁶ The eastbound right-turn consists of dual lanes. The first lane consists of approximately 265 feet of storage and the second lane consists of approximately 985 feet of storage. The storage reported is the average of both lanes.

TABLE 9-10 (CONTINUED)
EXISTING PLUS PROJECT PHASES 1, 2 AND 3 CALTRANS OFF-RAMP PEAK HOUR QUEUING ANALYSIS²⁷

Key Intersections	Storage Provided (feet)	(1) Existing Traffic Conditions				(2) Existing Plus Project Phases 1, 2 and 3 Traffic Conditions				(3) Existing Plus Project Phases 1, 2 and 3 Traffic Conditions with Improvements			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)
30. Bristol Street at I-405 NB Ramps													
<i>Westbound Left-Turn</i>	1,550	64	Yes	215	Yes	69	Yes	214	Yes	--	--	--	--
<i>Westbound Left-Through</i>	1,550	65	Yes	214	Yes	69	Yes	213	Yes	--	--	--	--
<i>Westbound Through</i>	1,195	68	Yes	218	Yes	73	Yes	217	Yes	--	--	--	--
<i>Westbound Right-Turn</i> ²⁸	385	25	Yes	105	Yes	25	Yes	120	Yes	--	--	--	--
31. Bristol Street at I-405 SB Ramps													
<i>Eastbound Left-Turn</i> ²⁹	1,012	197	Yes	234	Yes	208	Yes	252	Yes	--	--	--	--
37. Bear Street at SR-73 NB Ramps													
<i>Westbound Left-Turn</i>	470	179	Yes	295	Yes	177	Yes	295	Yes	--	--	--	--
<i>Westbound Right-Turn</i> ³⁰	723	262	Yes	671	Yes	270	Yes	702	Yes	--	--	--	--
38. Bear Street at SR-73 SB Ramps													
<i>Eastbound Left-Turn</i>	350	145	Yes	205	Yes	145	Yes	210	Yes	--	--	--	--
<i>Eastbound Left/Right-Turn</i>	895	260	Yes	191	Yes	261	Yes	196	Yes	--	--	--	--

²⁷ Queues are based on HCM 95th Percentile methodology.

²⁸ The westbound right-turn consists of dual lanes. The first lane consists of approximately 340 feet of storage and the second lane consists of approximately 430 feet of storage. The storage reported is the average of both lanes.

²⁹ The eastbound left-turn consists of triple lanes. The first lane consists of approximately 465 feet of storage, the second and third lanes consists of approximately 1,285 feet of storage. The storage reported is the average of the three lanes.

³⁰ The westbound right-turn consists of dual lanes. The first lane consists of approximately 470 feet of storage and the second lane consists of approximately 975 feet of storage. The storage reported is the average of both lanes.

TABLE 9-11
YEAR 2030 CUMULATIVE CALTRANS OFF-RAMP PEAK HOUR QUEUING ANALYSIS³¹

Key Intersections	Storage Provided (feet)	(1) Year 2030 Cumulative Traffic Conditions				(2) Year 2030 Cumulative Plus Project Phase 1 Traffic Conditions				(3) Year 2030 Cumulative Plus Project Phase 1 Traffic Conditions with Improvements			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)
12. SR-55 SB Ramps at MacArthur Boulevard <i>Southbound Left-Turn</i> ³² <i>Southbound Right-Turn</i> ³²	1,415	213	Yes	49	Yes	225	Yes	51	Yes	--	--	--	--
	265	212	Yes	164	Yes	231	Yes	180	Yes	--	--	--	--
13. SR-55 NB Ramps at MacArthur Boulevard <i>Northbound Left-Turn</i> ³²	1,190	238	Yes	115	Yes	238	Yes	117	Yes	--	--	--	--
25. I-405 NB Off-Ramp at South Coast Drive <i>Northbound Left-Turn</i> <i>Northbound Through/Right-Turn</i> <i>Northbound Right-Turn</i>	175	315	Yes ³³	401	Yes ³³	332	Yes ³³	401	Yes ³³	--	--	--	--
	645	34	Yes	69	Yes	37	Yes	69	Yes	--	--	--	--
	175	34	Yes	67	Yes	36	Yes	67	Yes	--	--	--	--
28. Fairview Road at I-405 NB Ramps <i>Westbound Left-Turn</i> ³² <i>Westbound Right-Turn</i> ³⁴	1,480	258	Yes	329	Yes	258	Yes	329	Yes	--	--	--	--
	880	362	Yes	491	Yes	362	Yes	491	Yes	--	--	--	--
29. Fairview Road at I-405 SB Ramps <i>Eastbound Left-Turn</i> ³⁵ <i>Eastbound Right-Turn</i> ³⁶	625	126	Yes	153	Yes	126	Yes	153	Yes	--	--	--	--
	625	231	Yes	191	Yes	231	Yes	191	Yes	--	--	--	--

³¹ Queues are based on HCM 95th Percentile methodology.

³² This movement consists of dual turn lanes.

³³ The spillover queue can be accommodated upstream of the turn pocket.

³⁴ The westbound right-turn consists of dual lanes. The first lane consists of approximately 1,480 feet of storage and the second lane consists of approximately 280 feet of storage. The storage reported is the average of both lanes.

³⁵ The eastbound left-turn consists of dual lanes. The first lane consists of approximately 265 feet of storage and the second lane consists of approximately 985 feet of storage. The storage reported is the average of both lanes.

³⁶ The eastbound right-turn consists of dual lanes. The first lane consists of approximately 265 feet of storage and the second lane consists of approximately 985 feet of storage. The storage reported is the average of both lanes.

TABLE 9-11 (CONTINUED)
YEAR 2030 CUMULATIVE CALTRANS OFF-RAMP PEAK HOUR QUEUING ANALYSIS³⁷

Key Intersections	Storage Provided (feet)	(1) Year 2030 Cumulative Traffic Conditions				(2) Year 2030 Cumulative Plus Project Phase 1 Traffic Conditions				(3) Year 2030 Cumulative Plus Project Phase 1 Traffic Conditions with Improvements			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)
30. Bristol Street at I-405 NB Ramps													
<i>Westbound Left-Turn</i>	1,550	66	Yes	220	Yes	66	Yes	220	Yes	--	--	--	--
<i>Westbound Left-Through</i>	1,550	67	Yes	219	Yes	67	Yes	219	Yes	--	--	--	--
<i>Westbound Through</i>	1,195	70	Yes	222	Yes	70	Yes	222	Yes	--	--	--	--
<i>Westbound Right-Turn</i> ³⁸	385	25	Yes	132	Yes	25	Yes	140	Yes	--	--	--	--
31. Bristol Street at I-405 SB Ramps													
<i>Eastbound Left-Turn</i> ³⁹	1,012	218	Yes	265	Yes	224	Yes	273	Yes	--	--	--	--
37. Bear Street at SR-73 NB Ramps													
<i>Westbound Left-Turn</i>	470	163	Yes	300	Yes	161	Yes	299	Yes	--	--	--	--
<i>Westbound Right-Turn</i> ⁴⁰	723	238	Yes	663	Yes	245	Yes	689	Yes	--	--	--	--
38. Bear Street at SR-73 SB Ramps													
<i>Eastbound Left-Turn</i>	350	120	Yes	203	Yes	120	Yes	207	Yes	--	--	--	--
<i>Eastbound Left/Right-Turn</i>	895	224	Yes	188	Yes	224	Yes	192	Yes	--	--	--	--

³⁷ Queues are based on HCM 95th Percentile methodology.

³⁸ The westbound right-turn consists of dual lanes. The first lane consists of approximately 340 feet of storage and the second lane consists of approximately 430 feet of storage. The storage reported is the average of both lanes.

³⁹ The eastbound left-turn consists of triple lanes. The first lane consists of approximately 465 feet of storage, the second and third lanes consists of approximately 1,285 feet of storage. The storage reported is the average of the three lanes.

⁴⁰ The westbound right-turn consists of dual lanes. The first lane consists of approximately 470 feet of storage and the second lane consists of approximately 975 feet of storage. The storage reported is the average of both lanes.

TABLE 9-12
YEAR 2032 CUMULATIVE CALTRANS OFF-RAMP PEAK HOUR QUEUING ANALYSIS⁴¹

Key Intersections	Storage Provided (feet)	(1) Year 2032 Cumulative Traffic Conditions				(2) Year 2032 Cumulative Plus Project Phases 1 and 2 Traffic Conditions				(3) Year 2032 Cumulative Plus Project Phases 1 and 2 Traffic Conditions with Improvements				
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		
		Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	
12. SR-55 SB Ramps at MacArthur Boulevard														
	<i>Southbound Left-Turn</i> ⁴²	1,415	223	Yes	52	Yes	240	Yes	55	Yes	--	--	--	--
	<i>Southbound Right-Turn</i> ⁴²	265	222	Yes	174	Yes	250	Yes	200	Yes	--	--	--	--
13. SR-55 NB Ramps at MacArthur Boulevard														
	<i>Northbound Left-Turn</i> ⁴²	1,190	243	Yes	123	Yes	245	Yes	130	Yes	--	--	--	--
25. I-405 NB Off-Ramp at South Coast Drive														
	<i>Northbound Left-Turn</i>	175	319	Yes ⁴³	408	Yes ⁴³	337	Yes ⁴³	408	Yes ⁴³	--	--	--	--
	<i>Northbound Through/Right-Turn</i>	645	35	Yes	70	Yes	38	Yes	70	Yes	--	--	--	--
	<i>Northbound Right-Turn</i>	175	34	Yes	68	Yes	37	Yes	68	Yes	--	--	--	--
28. Fairview Road at I-405 NB Ramps														
	<i>Westbound Left-Turn</i> ⁴²	1,480	260	Yes	271	Yes	260	Yes	271	Yes	--	--	--	--
	<i>Westbound Right-Turn</i> ⁴⁴	880	367	Yes	406	Yes	367	Yes	406	Yes	--	--	--	--
29. Fairview Road at I-405 SB Ramps														
	<i>Eastbound Left-Turn</i> ⁴⁵	625	135	Yes	156	Yes	135	Yes	156	Yes	--	--	--	--
	<i>Eastbound Right-Turn</i> ⁴⁶	625	242	Yes	194	Yes	242	Yes	194	Yes	--	--	--	--

⁴¹ Queues are based on HCM 95th Percentile methodology.

⁴² This movement consists of dual turn lanes.

⁴³ The spillover queue can be accommodated upstream of the turn pocket.

⁴⁴ The westbound right-turn consists of dual lanes. The first lane consists of approximately 1,480 feet of storage and the second lane consists of approximately 280 feet of storage. The storage reported is the average of both lanes.

⁴⁵ The eastbound left-turn consists of dual lanes. The first lane consists of approximately 265 feet of storage and the second lane consists of approximately 985 feet of storage. The storage reported is the average of both lanes.

⁴⁶ The eastbound right-turn consists of dual lanes. The first lane consists of approximately 265 feet of storage and the second lane consists of approximately 985 feet of storage. The storage reported is the average of both lanes.

TABLE 9-12 (CONTINUED)
YEAR 2032 CUMULATIVE CALTRANS OFF-RAMP PEAK HOUR QUEUING ANALYSIS⁴⁷

Key Intersections	Storage Provided (feet)	(1) Year 2032 Cumulative Traffic Conditions				(2) Year 2032 Cumulative Plus Project Phases 1 and 2 Traffic Conditions				(3) Year 2032 Cumulative Plus Project Phases 1 and 2 Traffic Conditions with Improvements			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)
30. Bristol Street at I-405 NB Ramps													
<i>Westbound Left-Turn</i>	1,550	67	Yes	223	Yes	72	Yes	223	Yes	--	--	--	--
<i>Westbound Left-Through</i>	1,550	68	Yes	223	Yes	73	Yes	223	Yes	--	--	--	--
<i>Westbound Through</i>	1,195	71	Yes	226	Yes	77	Yes	226	Yes	--	--	--	--
<i>Westbound Right-Turn</i> ⁴⁸	385	25	Yes	139	Yes	25	Yes	153	Yes	--	--	--	--
31. Bristol Street at I-405 SB Ramps													
<i>Eastbound Left-Turn</i> ⁴⁹	1,012	210	Yes	268	Yes	218	Yes	280	Yes	--	--	--	--
37. Bear Street at SR-73 NB Ramps													
<i>Westbound Left-Turn</i>	470	166	Yes	308	Yes	164	Yes	303	Yes	--	--	--	--
<i>Westbound Right-Turn</i> ⁵⁰	723	242	Yes	704	Yes	248	Yes	713	Yes	--	--	--	--
38. Bear Street at SR-73 SB Ramps													
<i>Eastbound Left-Turn</i>	350	121	Yes	206	Yes	121	Yes	206	Yes	--	--	--	--
<i>Eastbound Left/Right-Turn</i>	895	227	Yes	191	Yes	228	Yes	191	Yes	--	--	--	--

⁴⁷ Queues are based on HCM 95th Percentile methodology.

⁴⁸ The westbound right-turn consists of dual lanes. The first lane consists of approximately 340 feet of storage and the second lane consists of approximately 430 feet of storage. The storage reported is the average of both lanes.

⁴⁹ The eastbound left-turn consists of triple lanes. The first lane consists of approximately 465 feet of storage, the second and third lanes consists of approximately 1,285 feet of storage. The storage reported is the average of the three lanes.

⁵⁰ The westbound right-turn consists of dual lanes. The first lane consists of approximately 470 feet of storage and the second lane consists of approximately 975 feet of storage. The storage reported is the average of both lanes.

TABLE 9-13
YEAR 2036 CUMULATIVE CALTRANS OFF-RAMP PEAK HOUR QUEUING ANALYSIS⁵¹

Key Intersections	Storage Provided (feet)	(1) Year 2036 Cumulative Traffic Conditions				(2) Year 2036 Cumulative Plus Project Phases 1, 2 and 3 Traffic Conditions				(3) Year 2036 Cumulative Plus Project Phases 1, 2 and 3 Traffic Conditions with Improvements			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)
12. SR-55 SB Ramps at MacArthur Boulevard <i>Southbound Left-Turn⁵²</i> <i>Southbound Right-Turn⁵²</i>	1,415	247	Yes	58	Yes	263	Yes	61	Yes	--	--	--	--
	265	251	Yes	197	Yes	283	Yes ⁵³	228	Yes	--	--	--	--
13. SR-55 NB Ramps at MacArthur Boulevard <i>Northbound Left-Turn⁵²</i>	1,190	253	Yes	139	Yes	256	Yes	149	Yes	--	--	--	--
25. I-405 NB Off-Ramp at South Coast Drive <i>Northbound Left-Turn</i> <i>Northbound Through/Right-Turn</i> <i>Northbound Right-Turn</i>	175	327	Yes ⁵³	422	Yes ⁵³	345	Yes ⁵³	422	Yes ⁵³	--	--	--	--
	645	36	Yes	70	Yes	38	Yes	70	Yes	--	--	--	--
	175	35	Yes	69	Yes	38	Yes	69	Yes	--	--	--	--
28. Fairview Road at I-405 NB Ramps <i>Westbound Left-Turn⁵²</i> <i>Westbound Right-Turn⁵⁴</i>	1,480	238	Yes	312	Yes	238	Yes	312	Yes	--	--	--	--
	880	336	Yes	478	Yes	336	Yes	478	Yes	--	--	--	--
29. Fairview Road at I-405 SB Ramps <i>Eastbound Left-Turn⁵⁵</i> <i>Eastbound Right-Turn⁵⁶</i>	625	128	Yes	172	Yes	128	Yes	192	Yes	--	--	--	--
	625	247	Yes	209	Yes	247	Yes	229	Yes	--	--	--	--

⁵¹ Queues are based on HCM 95th Percentile methodology.

⁵² This movement consists of dual turn lanes.

⁵³ The spillover queue can be accommodated upstream of the turn pocket.

⁵⁴ The westbound right-turn consists of dual lanes. The first lane consists of approximately 1,480 feet of storage and the second lane consists of approximately 280 feet of storage. The storage reported is the average of both lanes.

⁵⁵ The eastbound left-turn consists of dual lanes. The first lane consists of approximately 265 feet of storage and the second lane consists of approximately 985 feet of storage. The storage reported is the average of both lanes.

⁵⁶ The eastbound right-turn consists of dual lanes. The first lane consists of approximately 265 feet of storage and the second lane consists of approximately 985 feet of storage. The storage reported is the average of both lanes.

TABLE 9-13 (CONTINUED)
YEAR 2036 CUMULATIVE CALTRANS OFF-RAMP PEAK HOUR QUEUING ANALYSIS⁵⁷

Key Intersections	Storage Provided (feet)	(1) Year 2036 Cumulative Traffic Conditions				(2) Year 2036 Cumulative Plus Project Phases 1, 2 and 3 Traffic Conditions				(3) Year 2036 Cumulative Plus Project Phases 1, 2 and 3 Traffic Conditions with Improvements				
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		
		Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	
30. Bristol Street at I-405 NB Ramps														
	<i>Westbound Left-Turn</i>	1,550	70	Yes	243	Yes	89	Yes	254	Yes	--	--	--	--
	<i>Westbound Left-Through</i>	1,550	70	Yes	242	Yes	89	Yes	253	Yes	--	--	--	--
	<i>Westbound Through</i>	1,195	74	Yes	246	Yes	94	Yes	257	Yes	--	--	--	--
	<i>Westbound Right-Turn</i> ⁵⁸	385	25	Yes	164	Yes	25	Yes	193	Yes	--	--	--	--
31. Bristol Street at I-405 SB Ramps														
	<i>Eastbound Left-Turn</i> ⁵⁹	1,012	218	Yes	276	Yes	227	Yes	311	Yes	--	--	--	--
37. Bear Street at SR-73 NB Ramps														
	<i>Westbound Left-Turn</i>	470	170	Yes	300	Yes	168	Yes	298	Yes	--	--	--	--
	<i>Westbound Right-Turn</i> ⁶⁰	723	250	Yes	698	Yes	256	Yes	720	Yes	--	--	--	--
38. Bear Street at SR-73 SB Ramps														
	<i>Eastbound Left-Turn</i>	350	133	Yes	216	Yes	133	Yes	216	Yes	--	--	--	--
	<i>Eastbound Left/Right-Turn</i>	895	245	Yes	200	Yes	246	Yes	200	Yes	--	--	--	--

⁵⁷ Queues are based on HCM 95th Percentile methodology.

⁵⁸ The westbound right-turn consists of dual lanes. The first lane consists of approximately 340 feet of storage and the second lane consists of approximately 430 feet of storage. The storage reported is the average of both lanes.

⁵⁹ The eastbound left-turn consists of triple lanes. The first lane consists of approximately 465 feet of storage, the second and third lanes consists of approximately 1,285 feet of storage. The storage reported is the average of the three lanes.

⁶⁰ The westbound right-turn consists of dual lanes. The first lane consists of approximately 470 feet of storage and the second lane consists of approximately 975 feet of storage. The storage reported is the average of both lanes.

TABLE 9-14
YEAR 2045 BUILDOUT CALTRANS OFF-RAMP PEAK HOUR QUEUING ANALYSIS⁶¹

Key Intersections	Storage Provided (feet)	(1) Year 2045 Buildout Traffic Conditions				(2) Year 2045 Buildout Plus Project Phases 1, 2 and 3 Traffic Conditions				(3) Year 2045 Buildout Plus Project Phases 1, 2 and 3 Traffic Conditions with Improvements			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)
12. SR-55 SB Ramps at MacArthur Boulevard <i>Southbound Left-Turn⁶²</i> <i>Southbound Right-Turn⁶²</i>	1,415	277	Yes	65	Yes	282	Yes	67	Yes	--	--	--	--
	265	304	Yes ⁶³	223	Yes	334	Yes ⁶³	254	Yes	--	--	--	--
13. SR-55 NB Ramps at MacArthur Boulevard <i>Northbound Left-Turn⁶²</i>	1,190	242	Yes	146	Yes	245	Yes	157	Yes	--	--	--	--
25. I-405 NB Off-Ramp at South Coast Drive <i>Northbound Left-Turn</i> <i>Northbound Through/Right-Turn</i> <i>Northbound Right-Turn</i>	175	341	Yes ⁶³	439	Yes ⁶³	342	Yes ⁶³	439	Yes ⁶³	--	--	--	--
	645	36	Yes	70	Yes	36	Yes	70	Yes	--	--	--	--
	175	36	Yes	69	Yes	36	Yes	69	Yes	--	--	--	--
28. Fairview Road at I-405 NB Ramps <i>Westbound Left-Turn⁶²</i> <i>Westbound Right-Turn⁶⁴</i>	1,480	258	Yes	367	Yes	305	Yes	367	Yes	--	--	--	--
	880	368	Yes	574	Yes	440	Yes	574	Yes	--	--	--	--
29. Fairview Road at I-405 SB Ramps <i>Eastbound Left-Turn⁶⁵</i> <i>Eastbound Right-Turn⁶⁶</i>	625	147	Yes	225	Yes	147	Yes	225	Yes	--	--	--	--
	625	278	Yes	271	Yes	278	Yes	271	Yes	--	--	--	--

⁶¹ Queues are based on HCM 95th Percentile methodology.

⁶² This movement consists of dual turn lanes.

⁶³ The spillover queue can be accommodated upstream of the turn pocket.

⁶⁴ The westbound right-turn consists of dual lanes. The first lane consists of approximately 1,480 feet of storage and the second lane consists of approximately 280 feet of storage. The storage reported is the average of both lanes.

⁶⁵ The eastbound left-turn consists of dual lanes. The first lane consists of approximately 265 feet of storage and the second lane consists of approximately 985 feet of storage. The storage reported is the average of both lanes.

⁶⁶ The eastbound right-turn consists of dual lanes. The first lane consists of approximately 265 feet of storage and the second lane consists of approximately 985 feet of storage. The storage reported is the average of both lanes.

TABLE 9-14 (CONTINUED)
YEAR 2045 BUILDOUT CALTRANS OFF-RAMP PEAK HOUR QUEUING ANALYSIS⁶⁷

Key Intersections	Storage Provided (feet)	(1) Year 2045 Buildout Traffic Conditions				(2) Year 2045 Buildout Plus Project Phases 1, 2 and 3 Traffic Conditions				(3) Year 2045 Buildout Plus Project Phases 1, 2 and 3 Traffic Conditions with Improvements			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)	Max. Queue/Min. Storage Required (feet)	Adequate Storage (Yes/No)
30. Bristol Street at I-405 NB Ramps													
<i>Westbound Left-Turn</i>	1,550	143	Yes	239	Yes	142	Yes	239	Yes	--	--	--	--
<i>Westbound Left-Through</i>	1,550	143	Yes	238	Yes	142	Yes	238	Yes	--	--	--	--
<i>Westbound Through</i>	1,195	79	Yes	242	Yes	78	Yes	242	Yes	--	--	--	--
<i>Westbound Right-Turn</i> ⁶⁸	385	25	Yes	181	Yes	25	Yes	200	Yes	--	--	--	--
31. Bristol Street at I-405 SB Ramps													
<i>Eastbound Left-Turn</i> ⁶⁹	1,012	235	Yes	321	Yes	245	Yes	322	Yes	--	--	--	--
37. Bear Street at SR-73 NB Ramps													
<i>Westbound Left-Turn</i>	470	172	Yes	356	Yes	192	Yes	338	Yes	--	--	--	--
<i>Westbound Left/Right-Turn</i> ⁷⁰	470	--	--	--	--	--	--	--	--	276	Yes	630	Yes ⁷¹
<i>Westbound Right-Turn</i> ⁷²	723	272	Yes	1,072	No	308	Yes	1,075	No	242	Yes	558	Yes
38. Bear Street at SR-73 SB Ramps													
<i>Eastbound Left-Turn</i>	350	151	Yes	220	Yes	177	Yes	236	Yes	--	--	--	--
<i>Eastbound Left/Right-Turn</i>	895	307	Yes	204	Yes	375	Yes	218	Yes	--	--	--	--

⁶⁷ Queues are based on HCM 95th Percentile methodology.

⁶⁸ The westbound right-turn consists of dual lanes. The first lane consists of approximately 340 feet of storage and the second lane consists of approximately 430 feet of storage. The storage reported is the average of both lanes.

⁶⁹ The eastbound left-turn consists of triple lanes. The first lane consists of approximately 465 feet of storage, the second and third lanes consists of approximately 1,285 feet of storage. The storage reported is the average of the three lanes.

⁷⁰ Proposed improvements include restriping the left-turn pocket to a shared left/right-turn pocket.

⁷¹ The spillover queue can be accommodated upstream of the turn pocket.

⁷² The westbound right-turn consists of dual lanes. The first lane consists of approximately 470 feet of storage and the second lane consists of approximately 975 feet of storage. The storage reported is the average of both lanes.

CALTRANS COMMENT LETTER

California Department of Transportation

DISTRICT 12

1750 East 4th Street, Suite 100 | SANTA ANA, CA 92705

(657) 328-6000 | FAX (657) 328-6522 TTY 711

<https://dot.ca.gov/caltrans-near-me/district-12>

April 13, 2023

Ali Pezeshkpour
City of Santa Ana Planning Division
20 Civic Center Plaza, M-20
Santa Ana, CA 92701

File: IGR/CEQA
SCH#2020029087
LDR LOG #2020-02243
I-405 & SR-55

Dear Mr. Pezeshkpour

Thank you for including the California Department of Transportation (Caltrans) in the review of the Notice of Preparation of a Supplemental Environmental Impact Report and Public Scoping Meeting for the Related Bristol Specific Plan Project. The Project proposes a Specific Plan to replace the existing General Commercial (C2) and Regional Commercial (CR) zoning on the Project site. The Specific Plan would include a site-specific plan for the Project site, identifying the allowable site uses, development standards, design guidelines, and the processes and procedures for the approval of future development within the Specific Plan area. In addition to the proposed Specific Plan, the Project also includes redevelopment of the site in three phases. The Project proposes to demolish the existing shopping center and related infrastructure and provide a mixed-use development with (i) up to 3,750 multi-family residential units; (ii) up to 350,000 sf of commercial uses; (iii) a hotel with up to 250 rooms; (iv) a senior living/continuum of care use with up to 200 units; and (v) approximately 13.1 acres of parks, pedestrian paseos, and common open space. The Project would result in a FAR of 2.7 and density of 92 du/ac. Parking would be provided by above- and below-ground parking structures providing shared parking as well as ground level parking. The nearest state facility to the project site is Interstate 405 (I-405-).

The mission of Caltrans is to provide a safe and reliable transportation network that serves all people and respects the environment. Caltrans is a responsible agency on this project and has the following comments:

Traffic Operations

1. A Vehicle Miles Traveled (VMT) based Traffic Impact Study (TIS) should be provided for this project. Please use the Governor's Office of Planning and research guidance to identify VMT related impacts.

2. The TIS should identify the proposed project's near term and long-term potential safety or operational impacts on or adjacent to any existing or proposed state facilities.
3. The TIS needs to address potential impacts on storage capacity for the right turn and left turn pockets for the on-ramps and off-ramps from local city streets within the State right of way. In addition, all potential spill beyond designated storage lane must be addressed for safety concern.

System Planning

4. Caltrans supports the inclusion of bicycle storage facilities pursuant to CALGreen code. Caltrans also recommends following bicycle parking best practices described in the "Essentials of Bike Parking" guide created by the Association of Pedestrian and Bicycle Professionals (link to online PDF: <https://www.apbp.org/Publications>). Bike parking should be installed a minimum of 24" away from walls and other objects (e.g., trash cans, plants, etc.). With the growing popularity of electric bikes and cargo/utility bikes (which tend to be bigger and heavier), Caltrans also recommends that bicycle storage facilities be designed to accommodate a range of bicycle styles, sizes, and weights.
5. Caltrans supports the design of Complete Streets that include high-quality pedestrian, bicycle, and transit facilities that are safe and comfortable for users of all ages and abilities. Improvements may include providing secure bicycle parking, pedestrian-oriented LED lighting, wayfinding signage, and comfortable connections to nearby active transportation and/or transit facilities. Complete Streets improvements also promote regional connectivity, improve air quality, reduce congestion, promote improved first-/last-mile connections, and increase safety for all modes of transportation. Continue to incorporate Complete Streets in project development.

Transportation Planning (Goods Movement/Freight)

6. Consider how many individual packages will be delivered daily to individual residences within the areas identified for increased housing production. Shared drop-off locations can help reduce the amount of driving done by delivery trucks and can increase the efficiency of deliveries in densely developed areas. Similarly, high-density residential developments should consider automated parcel systems (i.e., Amazon Lockers) so that deliveries can be made with one truck stop instead of multiple stops to individual residences.

7. As the General Plan is implemented, consider accounting for off-street truck parking to help free up on-street space for other modes, such as city traffic, walking, and bicycling. Similarly, utilize alley space or similar areas, if available, to reduce the need for on-street parking which may conflict with highway/street flows.
8. If truck parking (i.e., for home deliveries) is to be on-street, ensure the width of the parking lane is wide enough for freight trucks without encroaching on bicycle lanes or street lanes.
9. Please consider designated on-street freight-only parking and delivery time windows to reduce the need for double parking. This strategy also helps prevent street traffic congestion.
10. Please ensure that, throughout the individual study areas, the city provides posted speed signs for truckers to follow.
11. Bicycle parking design may need to accommodate cargo bikes, such as for food delivery services, to encourage and facilitate the growing use of food delivery services and parcel deliveries. This can alleviate the need for delivery trucks and associated GHG emissions.
12. Caltrans recognizes our responsibility to assist communities of color and under-served communities by removing barriers to provide a more equitable transportation system for all.

Equity

13. The Department firmly embraces racial equity, inclusion, and diversity. These values are foundational to achieving our vision of a cleaner, safer, and more accessible and more connected transportation system. Please consider including a discussion on equity in the environmental document.

Transit

14. Provide discussion about City's multimodal mobility strategies. City should look for transit opportunities to connect current bus services and expand services for regional connectivity to include connectivity to the closest train station for Metrolink and Amtrak Pacific Surfliner rail services.

15. Encourage the use of transit among future residents, visitors, and workers of the development. Increasing multimodal transportation will lead to a reduction to congestion, Vehicle Miles Traveled, and improve air quality.
16. Provide adequate wayfinding signage to transit stops within the project vicinity and local roadways.

Encroachment Permit

17. Any project work proposed in the vicinity of the State right of way would require an encroachment permit and all environmental concerns must be adequately addressed. If the environmental documentation for the project does not meet Caltrans's requirements for work done within State right of way, additional documentation would be required before approval of the encroachment permit. Please coordinate with Caltrans to meet requirements for any work within or near State right of way. For specific details for Encroachment Permits procedure, please refer to the Caltrans's Encroachment Permits Manual at: <http://www.dot.ca.gov/hq/traffops/developserv/permits>

Please continue to coordinate with Caltrans for any future developments that could potentially impact State transportation facilities. If you have any questions, please do not hesitate to contact Maryam Molavi, at Maryam.Molavi@dot.ca.gov.

Sincerely,



Scott Shelley
Branch Chief, Regional-LDR-Transit Planning
District 12

ATTACHMENT 1
APPENDIX E FROM
REVISED TRAFFIC CIRCULATION ANALYSIS FOR THE RELATED BRISTOL
DATED JUNE 2023

APPENDIX E

CALTRANS INTERSECTION LEVEL OF SERVICE CALCULATION WORKSHEETS

APPENDIX E-1

EXISTING TRAFFIC CONDITIONS

Intersection Level Of Service Report
Intersection 12: SR-55 SB Ramps at MacArthur Blvd

Control Type:	Signalized	Delay (sec / veh):	13.2
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.742

Intersection Setup

Name	SR-55 SB Ramp			MacArthur Blvd			MacArthur Blvd					
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration				T T T T			T T T T			T T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	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	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		
Crosswalk	No			Yes			No			No		

Volumes

Name				SR-55 SB Ramp			MacArthur Blvd			MacArthur Blvd		
Base Volume Input [veh/h]	0	0	0	971	0	879	0	1455	1037	0	1288	146
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	971	0	879	0	1455	1037	0	1288	146
Peak Hour Factor	1.0000	1.0000	1.0000	0.9470	1.0000	0.9470	1.0000	0.9470	0.9470	1.0000	0.9470	0.9470
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	256	0	232	0	384	274	0	340	39
Total Analysis Volume [veh/h]	0	0	0	1025	0	928	0	1536	1095	0	1360	154
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	0	0	0	5	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	6	0	0	0	10	0	0	10	0
Maximum Green [s]	0	0	0	30	0	0	0	30	0	0	30	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	58	0	0	0	52	0	0	52	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	14	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	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	R	C	C
C, Cycle Length [s]		54	54	54	54
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		23	23	22	22
g / C, Green / Cycle		0.43	0.43	0.42	0.42
(v / s)_i Volume / Saturation Flow Rate		0.30	0.33	0.30	0.27
s, saturation flow rate [veh/h]		3459	2813	5094	5094
c, Capacity [veh/h]		1502	1222	2124	2124
d1, Uniform Delay [s]		12.23	12.85	13.08	12.47
k, delay calibration		0.11	0.11	0.11	0.11
l, Upstream Filtering Factor		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		0.55	1.00	0.48	0.33
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.68	0.76	0.72	0.64
d, Delay for Lane Group [s/veh]		12.79	13.84	13.56	12.79
Lane Group LOS		B	B	B	B
Critical Lane Group		No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]		4.15	4.01	4.34	3.65
50th-Percentile Queue Length [ft/ln]		103.82	100.17	108.59	91.23
95th-Percentile Queue Length [veh/ln]		7.47	7.21	7.76	6.57
95th-Percentile Queue Length [ft/ln]		186.87	180.30	194.03	164.22

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	12.79	0.00	13.84	0.00	13.56	0.00	0.00	12.79	0.00
Movement LOS				B		B		B			B	
d_A, Approach Delay [s/veh]	0.00			13.29			13.56			12.79		
Approach LOS	A			B			B			B		
d_I, Intersection Delay [s/veh]	13.24											
Intersection LOS	B											
Intersection V/C	0.742											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	16.92	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	0.000	2.651	0.000	0.000
Crosswalk LOS	F	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	2015	1791	1791
d_b, Bicycle Delay [s]	26.80	0.00	0.29	0.29
I_b,int, Bicycle LOS Score for Intersection	4.132	1.560	2.404	2.308
Bicycle LOS	D	A	B	B

Sequence

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



Intersection Level Of Service Report
Intersection 13: SR-55 NB Ramps at MacArthur Blvd

Control Type:	Signalized	Delay (sec / veh):	18.0
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.920

Intersection Setup

Name	SR-55 NB Ramp						MacArthur Blvd			MacArthur Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	⇐⇐⇐						⇐⇐⇐			⇐⇐⇐		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	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		
Crosswalk	No			No			No			Yes		

Volumes

Name	SR-55 NB Ramp						MacArthur Blvd			MacArthur Blvd		
Base Volume Input [veh/h]	917	0	986	0	0	0	0	1625	804	0	522	246
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	917	0	986	0	0	0	0	1625	804	0	522	246
Peak Hour Factor	0.9080	1.0000	0.9080	1.0000	1.0000	1.0000	1.0000	0.9080	0.9080	1.0000	0.9080	0.9080
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	252	0	271	0	0	0	0	447	221	0	144	68
Total Analysis Volume [veh/h]	1010	0	1086	0	0	0	0	1790	885	0	575	271
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	1	0	0	0	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	6	0	0	0	0	0	0	10	0	0	10	0
Maximum Green [s]	30	0	0	0	0	0	0	30	0	0	30	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	46	0	0	0	0	0	0	44	0	0	44	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	7	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	21	0	0	0	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No							No			No	
Maximum Recall	No							No			No	
Pedestrian Recall	No							No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L		C	C
C, Cycle Length [s]	59		59	59
L, Total Lost Time per Cycle [s]	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00		2.00	2.00
g_i, Effective Green Time [s]	21		30	30
g / C, Green / Cycle	0.35		0.51	0.51
(v / s)_i Volume / Saturation Flow Rate	0.29		0.50	0.11
s, saturation flow rate [veh/h]	3459		3560	5094
c, Capacity [veh/h]	1218		1821	2605
d1, Uniform Delay [s]	17.39		14.08	7.89
k, delay calibration	0.11		0.11	0.11
l, Upstream Filtering Factor	1.00		1.00	1.00
d2, Incremental Delay [s]	1.52		6.61	0.04
d3, Initial Queue Delay [s]	0.00		0.00	0.00
Rp, platoon ratio	1.00		1.00	1.00
PF, progression factor	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.83		0.98	0.22
d, Delay for Lane Group [s/veh]	18.91		20.69	7.93
Lane Group LOS	B		C	A
Critical Lane Group	Yes		Yes	No
50th-Percentile Queue Length [veh/ln]	5.73		10.78	1.10
50th-Percentile Queue Length [ft/ln]	143.23		269.57	27.59
95th-Percentile Queue Length [veh/ln]	9.65		16.17	1.99
95th-Percentile Queue Length [ft/ln]	241.37		404.21	49.67

Movement, Approach, & Intersection Results

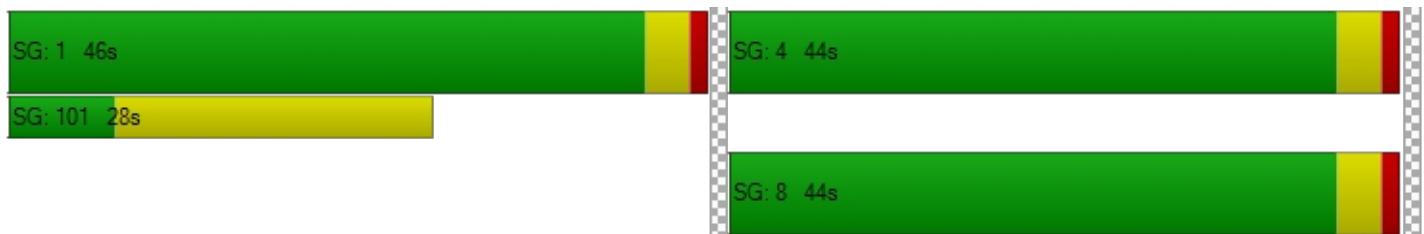
d_M, Delay for Movement [s/veh]	18.91	0.00	0.00	0.00	0.00	0.00	0.00	20.69	0.00	0.00	7.93	0.00
Movement LOS	B							C			A	
d_A, Approach Delay [s/veh]	18.91			0.00			20.69			7.93		
Approach LOS	B			A			C			A		
d_I, Intersection Delay [s/veh]	17.98											
Intersection LOS	B											
Intersection V/C	0.920											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	19.33
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	2.813
Crosswalk LOS	F	F	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1433	0	1365	1365
d_b, Bicycle Delay [s]	2.35	29.30	2.95	2.95
I_b,int, Bicycle LOS Score for Intersection	1.560	4.132	3.036	1.876
Bicycle LOS	A	D	C	A

Sequence

Ring 1	1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 25: I-405 NB Off-Ramp at South Coast Drive

Control Type:	Signalized	Delay (sec / veh):	21.8
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.433

Intersection Setup

Name	I-405 NB Off-Ramp			The Cape Dwy			South Coast Drive			South Coast 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	1	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	I-405 NB Off-Ramp			The Cape Dwy			South Coast Drive			South Coast Drive		
Base Volume Input [veh/h]	352	6	92	48	0	72	19	214	0	0	88	17
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
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]	352	6	92	48	0	72	19	214	0	0	88	17
Peak Hour Factor	0.8740	0.8740	0.8740	0.8740	1.0000	0.8740	0.8740	0.8740	1.0000	1.0000	0.8740	0.8740
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	101	2	26	14	0	21	5	61	0	0	25	5
Total Analysis Volume [veh/h]	403	7	105	55	0	82	22	245	0	0	101	19
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	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Permiss	Split	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	7	0	0	5	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	10	0	6	0	0	6	10	0	0	10	0
Maximum Green [s]	0	30	0	30	0	0	30	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	58	0	58	0	0	10	32	0	0	22	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	14	0	0	0	0	0	11	0	0	11	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No		No				No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	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	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	R	L	C	C	C
C, Cycle Length [s]	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
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	32	32	32	32	32	3	50	44	44
g / C, Green / Cycle	0.35	0.35	0.35	0.35	0.35	0.03	0.56	0.49	0.49
(v / s)_i Volume / Saturation Flow Rate	0.31	0.03	0.03	0.04	0.05	0.01	0.07	0.03	0.03
s, saturation flow rate [veh/h]	1316	1620	1589	1281	1589	1781	3560	1870	1771
c, Capacity [veh/h]	519	571	561	477	561	51	1988	908	860
d1, Uniform Delay [s]	28.81	19.54	19.54	22.37	19.88	43.01	9.43	12.31	12.34
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.54	0.07	0.08	0.11	0.12	5.72	0.13	0.14	0.16
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.78	0.10	0.10	0.12	0.15	0.43	0.12	0.07	0.07
d, Delay for Lane Group [s/veh]	31.36	19.61	19.61	22.47	20.00	48.73	9.55	12.45	12.49
Lane Group LOS	C	B	B	C	B	D	A	B	B
Critical Lane Group	Yes	No	No	No	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	8.38	0.79	0.78	0.84	1.17	0.56	1.11	0.65	0.66
50th-Percentile Queue Length [ft/ln]	209.57	19.80	19.44	21.01	29.25	13.94	27.64	16.31	16.40
95th-Percentile Queue Length [veh/ln]	13.13	1.43	1.40	1.51	2.11	1.00	1.99	1.17	1.18
95th-Percentile Queue Length [ft/ln]	328.28	35.64	34.99	37.82	52.66	25.09	49.74	29.36	29.51

Movement, Approach, & Intersection Results

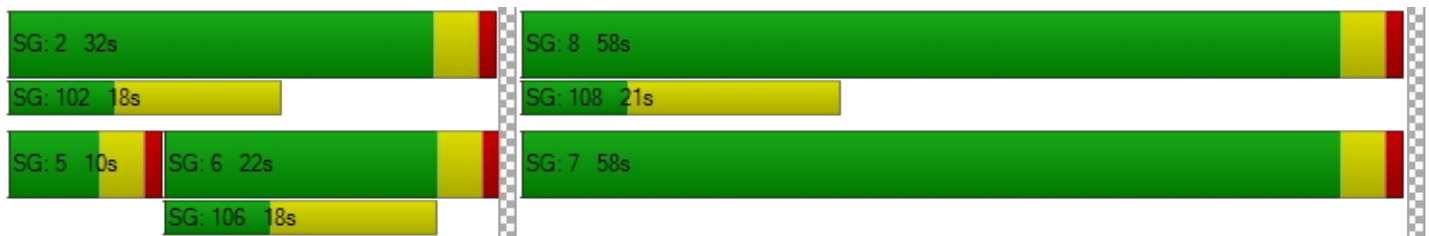
d_M, Delay for Movement [s/veh]	31.36	19.61	19.61	22.47	0.00	20.00	48.73	9.55	0.00	0.00	12.47	12.49
Movement LOS	C	B	B	C		B	D	A			B	B
d_A, Approach Delay [s/veh]	28.80			20.99			12.78			12.47		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]	21.77											
Intersection LOS	C											
Intersection V/C	0.433											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.68	34.68	0.00	34.68
I_p,int, Pedestrian LOS Score for Intersection	2.256	2.000	0.000	2.337
Crosswalk LOS	B	A	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1200	1200	622	400
d_b, Bicycle Delay [s]	7.20	7.20	21.36	28.80
I_b,int, Bicycle LOS Score for Intersection	2.409	1.560	1.780	1.659
Bicycle LOS	B	A	A	A

Sequence

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



Intersection Level Of Service Report
Intersection 28: Fairview Road at I-405 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	25.5
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.772

Intersection Setup

Name	Fairview Road			Fairview Road			I-405 NB Ramps			I-405 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	1	0	0	0	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		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Fairview Road			Fairview Road			I-405 NB Ramps			I-405 NB Ramps		
Base Volume Input [veh/h]	179	839	0	0	2441	296	0	0	0	614	0	776
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	179	839	0	0	2441	296	0	0	0	614	0	776
Peak Hour Factor	0.9070	0.9070	1.0000	1.0000	0.9070	0.9070	1.0000	1.0000	1.0000	0.9070	1.0000	0.9070
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	49	231	0	0	673	82	0	0	0	169	0	214
Total Analysis Volume [veh/h]	197	925	0	0	2691	326	0	0	0	677	0	856
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Permiss	Split
Signal Group	1	6	0	0	2	0	0	0	0	0	7	0	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	6	10	0	0	10	0	0	0	0	0	6	0	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	23	41	0	0	18	0	0	0	0	0	59	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	14	0	0	7	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall	No	No			No						No		
Maximum Recall	No	No			No						No		
Pedestrian Recall	No	No			No						No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	R		L	R
C, Cycle Length [s]	100	100	100	100		100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	13	56	39	39		36	36
g / C, Green / Cycle	0.13	0.56	0.39	0.39		0.36	0.36
(v / s)_i Volume / Saturation Flow Rate	0.11	0.18	0.26	0.21		0.20	0.30
s, saturation flow rate [veh/h]	1781	5094	10188	1589		3459	2813
c, Capacity [veh/h]	232	2862	3991	623		1238	1007
d1, Uniform Delay [s]	42.54	11.72	25.14	23.27		25.62	29.62
k, delay calibration	0.11	0.50	0.50	0.50		0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	8.44	0.30	0.93	3.13		0.38	2.12
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.85	0.32	0.67	0.52		0.55	0.85
d, Delay for Lane Group [s/veh]	50.98	12.02	26.07	26.40		26.00	31.73
Lane Group LOS	D	B	C	C		C	C
Critical Lane Group	Yes	No	Yes	No		No	Yes
50th-Percentile Queue Length [veh/ln]	5.26	3.58	8.71	6.29		6.36	9.49
50th-Percentile Queue Length [ft/ln]	131.44	89.44	217.72	157.15		158.91	237.30
95th-Percentile Queue Length [veh/ln]	9.02	6.44	13.55	10.40		10.49	14.54
95th-Percentile Queue Length [ft/ln]	225.45	160.98	338.71	259.94		262.28	363.61

Movement, Approach, & Intersection Results

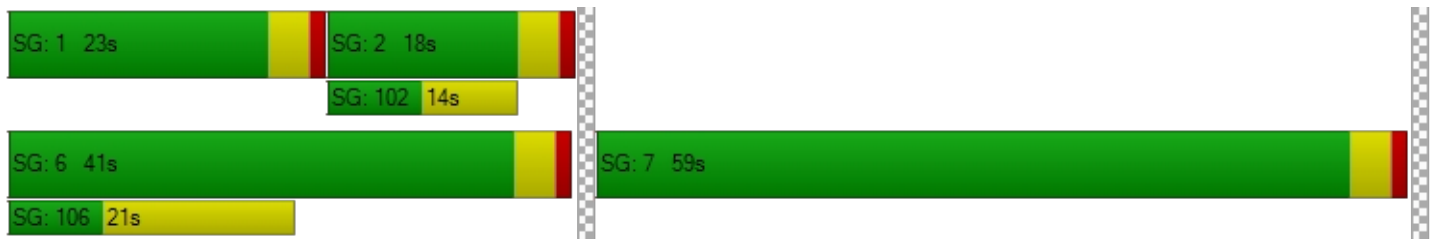
d_M, Delay for Movement [s/veh]	50.98	12.02	0.00	0.00	26.07	26.40	0.00	0.00	0.00	26.00	0.00	31.73
Movement LOS	D	B			C	C				C		C
d_A, Approach Delay [s/veh]	18.86				26.10		0.00		29.20			
Approach LOS	B				C		A		C			
d_I, Intersection Delay [s/veh]	25.51											
Intersection LOS	C											
Intersection V/C	0.772											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	39.61	39.61
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	1.938	2.604
Crosswalk LOS	F	F	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	740	280	0	1100
d_b, Bicycle Delay [s]	19.85	36.98	50.00	10.13
I_b,int, Bicycle LOS Score for Intersection	2.177	2.389	4.132	1.560
Bicycle LOS	B	B	D	A

Sequence

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



Intersection Level Of Service Report
Intersection 29: Fairview Road at I-405 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	35.1
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.974

Intersection Setup

Name	Fairview Rd			Fairview Rd			I-405 SB Ramps			I-405 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↑↑↑↑↑			↑↑↑↑↑			↑↑↑↑↑					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	1	0	0	1	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Fairview Rd			Fairview Rd			I-405 SB Ramps			I-405 SB Ramps		
Base Volume Input [veh/h]	0	853	1129	1544	1640	0	185	0	326	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	853	1129	1544	1640	0	185	0	326	0	0	0
Peak Hour Factor	1.0000	0.8770	0.8770	0.8770	0.8770	1.0000	0.8770	1.0000	0.8770	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	243	322	440	468	0	53	0	93	0	0	0
Total Analysis Volume [veh/h]	0	973	1287	1761	1870	0	211	0	372	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Permiss
Signal Group	0	6	0	5	2	0	3	0	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	10	0	6	10	0	6	0	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	30	0	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Split [s]	0	54	0	46	100	0	20	0	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	11	0	0	14	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No		No					
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No		No					
Maximum Recall		No		No	No		No					
Pedestrian Recall		No		No	No		No					
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	R	L	C	L	R	
C, Cycle Length [s]	120	120	120	120	120	120	120	
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]	50	50	50	42	96	16	16	
g / C, Green / Cycle	0.42	0.42	0.42	0.35	0.80	0.13	0.13	
(v / s)_i Volume / Saturation Flow Rate	0.19	0.40	0.40	0.34	0.37	0.06	0.13	
s, saturation flow rate [veh/h]	5094	1589	1589	5188	5094	3459	2813	
c, Capacity [veh/h]	2122	662	662	1815	4074	462	376	
d1, Uniform Delay [s]	25.24	34.31	34.31	38.39	3.80	47.95	51.89	
k, delay calibration	0.50	0.50	0.50	0.11	0.50	0.11	0.11	
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	0.72	28.73	28.73	5.08	0.37	0.71	19.30	
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	0.46	0.97	0.97	0.97	0.46	0.46	0.99	
d, Delay for Lane Group [s/veh]	25.96	63.03	63.03	43.47	4.18	48.66	71.19	
Lane Group LOS	C	E	E	D	A	D	E	
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	6.78	23.19	23.19	17.54	3.87	2.97	6.58	
50th-Percentile Queue Length [ft/ln]	169.49	579.70	579.70	438.61	96.75	74.15	164.49	
95th-Percentile Queue Length [veh/ln]	11.05	31.09	31.09	24.41	6.97	5.34	10.79	
95th-Percentile Queue Length [ft/ln]	276.24	777.13	777.13	610.34	174.15	133.47	269.65	

Movement, Approach, & Intersection Results

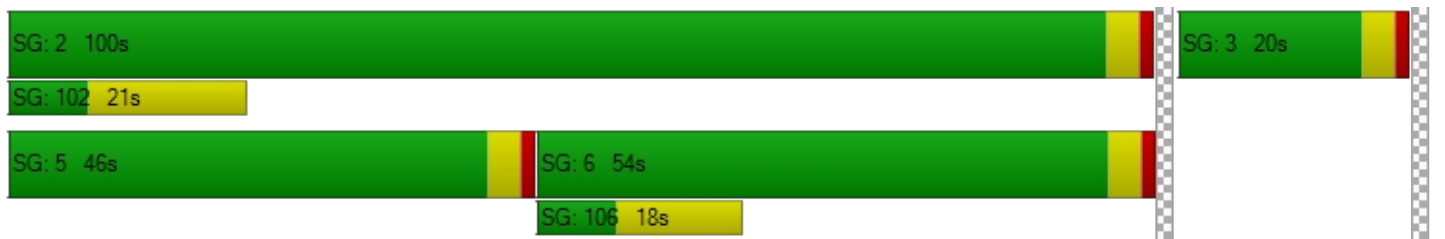
d_M, Delay for Movement [s/veh]	0.00	25.96	63.03	43.47	4.18	0.00	48.66	0.00	71.19	0.00	0.00	0.00
Movement LOS		C	E	D	A		D		E			
d_A, Approach Delay [s/veh]	47.07			23.23			63.03			0.00		
Approach LOS	D			C			E			A		
d_I, Intersection Delay [s/veh]	35.14											
Intersection LOS	D											
Intersection V/C	0.974											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0			0.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	0.00			0.00			49.50			49.50		
I_p,int, Pedestrian LOS Score for Intersection	0.000			0.000			2.427			2.945		
Crosswalk LOS	F			F			B			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	833			1600			267			0		
d_b, Bicycle Delay [s]	20.41			2.40			45.06			59.99		
I_b,int, Bicycle LOS Score for Intersection	2.492			3.557			1.560			4.132		
Bicycle LOS	B			D			A			D		

Sequence

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



Intersection Level Of Service Report
Intersection 30: Bristol Street at I-405 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	6.3
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.353

Intersection Setup

Name	Bristol Street			Bristol Street			I-405 NB Ramps			I-405 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	0	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	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	No			No			Yes			Yes		

Volumes

Name	Bristol Street			Bristol Street			I-405 NB Ramps			I-405 NB Ramps		
Base Volume Input [veh/h]	0	1504	193	0	1987	8	0	0	34	122	74	672
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1504	193	0	1987	8	0	0	34	122	74	672
Peak Hour Factor	1.0000	0.9380	0.9380	1.0000	0.9380	0.9380	1.0000	1.0000	0.9380	0.9380	0.9380	0.9380
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	401	51	0	530	2	0	0	9	33	20	179
Total Analysis Volume [veh/h]	0	1603	206	0	2118	9	0	0	36	130	79	716
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	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss	Split	Permiss	Split	Split	Split	Overlap
Signal Group	0	6	0	0	2	0	0	0	8	0	4	4
Auxiliary Signal Groups												2,4
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	0	10	0	0	0	6	0	10	10
Maximum Green [s]	0	30	0	0	30	0	0	0	30	0	30	30
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0
Split [s]	0	29	0	0	29	0	0	0	10	0	51	51
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	18	0	0	14	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No				No		No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0
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	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	C	R	L	C	C	R
C, Cycle Length [s]	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
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	64	64	64	4	10	10	10	78
g / C, Green / Cycle	0.71	0.71	0.71	0.04	0.11	0.11	0.11	0.87
(v / s)_i Volume / Saturation Flow Rate	0.24	0.25	0.23	0.01	0.04	0.04	0.04	0.25
s, saturation flow rate [veh/h]	6792	6792	1863	2813	1781	1790	1702	2813
c, Capacity [veh/h]	4846	4846	1329	115	200	201	191	2449
d1, Uniform Delay [s]	4.84	4.93	4.79	41.96	36.89	36.89	37.03	1.01
k, delay calibration	0.50	0.50	0.50	0.11	0.11	0.11	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.18	0.20	0.64	1.54	1.00	1.00	1.22	0.30
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.33	0.35	0.32	0.31	0.34	0.34	0.38	0.29
d, Delay for Lane Group [s/veh]	5.02	5.13	5.42	43.51	37.89	37.89	38.25	1.32
Lane Group LOS	A	A	A	D	D	D	D	A
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.29	2.48	2.58	0.41	1.43	1.44	1.51	0.27
50th-Percentile Queue Length [ft/ln]	57.26	61.98	64.43	10.24	35.78	35.95	37.85	6.69
95th-Percentile Queue Length [veh/ln]	4.12	4.46	4.64	0.74	2.58	2.59	2.73	0.48
95th-Percentile Queue Length [ft/ln]	103.07	111.56	115.97	18.43	64.40	64.70	68.13	12.05

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	5.02	0.00	0.00	5.19	5.42	0.00	0.00	43.51	37.89	38.22	1.32
Movement LOS		A			A	A			D	D	D	A
d_A, Approach Delay [s/veh]	5.02		5.19		43.51		9.61					
Approach LOS	A		A		D		A					
d_I, Intersection Delay [s/veh]	6.30											
Intersection LOS	A											
Intersection V/C	0.353											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	34.68	34.68
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.161	2.603
Crosswalk LOS	F	F	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	555	555	133	1044
d_b, Bicycle Delay [s]	23.48	23.48	39.21	10.28
I_b,int, Bicycle LOS Score for Intersection	2.221	2.262	1.560	2.323
Bicycle LOS	B	B	A	B

Sequence

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



Intersection Level Of Service Report
Intersection 31: Bristol Street at I-405 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	14.2
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.462

Intersection Setup

Name	Bristol Street		Bristol Street		I-405 SB Ramps	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration	↵		↵↵		↵↵↵↵	
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	1	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		Yes	

Volumes

Name	Bristol Street		Bristol Street		I-405 SB Ramps	
Base Volume Input [veh/h]	114	1119	995	855	579	529
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	114	1119	995	855	579	529
Peak Hour Factor	0.9270	0.9270	0.9270	0.9270	0.9270	0.9270
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	31	302	268	231	156	0
Total Analysis Volume [veh/h]	123	1207	1073	922	625	0
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Unsignalized	Permissive	Unsignalized
Signal Group	1	6	2	0	3	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	6	10	10	0	6	0
Maximum Green [s]	30	30	30	0	30	0
Amber [s]	3.0	3.0	3.0	0.0	3.0	0.0
All red [s]	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	35	57	22	0	33	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	0	7	0	0	0
Pedestrian Clearance [s]	0	0	11	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No	No		No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
Minimum Recall	No	No	No		No	
Maximum Recall	No	No	No		No	
Pedestrian Recall	No	No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L
C, Cycle Length [s]	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	68	56	14
g / C, Green / Cycle	0.09	0.75	0.62	0.16
(v / s)_i Volume / Saturation Flow Rate	0.07	0.18	0.21	0.12
s, saturation flow rate [veh/h]	1781	6792	5094	5188
c, Capacity [veh/h]	158	5111	3154	823
d1, Uniform Delay [s]	40.14	3.35	8.27	36.24
k, delay calibration	0.11	0.50	0.50	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.90	0.11	0.29	1.47
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.78	0.24	0.34	0.76
d, Delay for Lane Group [s/veh]	48.04	3.46	8.57	37.71
Lane Group LOS	D	A	A	D
Critical Lane Group	Yes	No	Yes	Yes
50th-Percentile Queue Length [veh/ln]	2.98	1.25	3.09	4.41
50th-Percentile Queue Length [ft/ln]	74.45	31.23	77.19	110.36
95th-Percentile Queue Length [veh/ln]	5.36	2.25	5.56	7.86
95th-Percentile Queue Length [ft/ln]	134.01	56.21	138.94	196.50

Movement, Approach, & Intersection Results

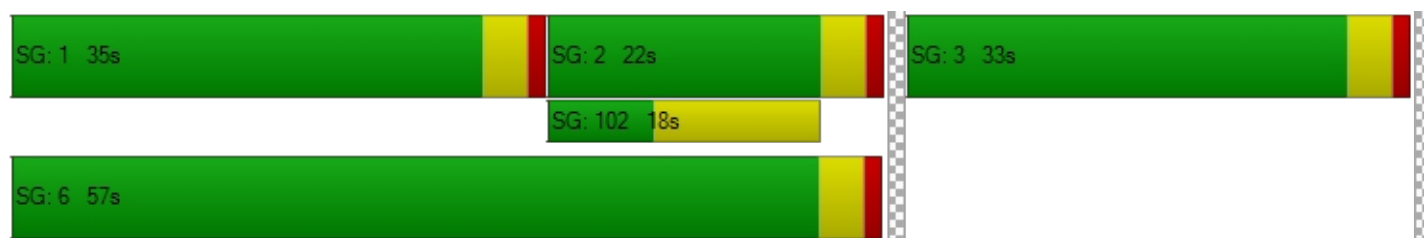
d_M, Delay for Movement [s/veh]	48.04	3.46	8.57	0.00	37.71	0.00
Movement LOS	D	A	A		D	
d_A, Approach Delay [s/veh]	7.58		8.57		37.71	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	14.15					
Intersection LOS	B					
Intersection V/C	0.462					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	34.68
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.574
Crosswalk LOS	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1177	400	644
d_b, Bicycle Delay [s]	7.61	28.81	20.68
I_b,int, Bicycle LOS Score for Intersection	2.108	2.150	1.560
Bicycle LOS	B	B	A

Sequence

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



Intersection Level Of Service Report
Intersection 37: Bear St at SR-73 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	22.7
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.648

Intersection Setup

Name	Bear St			Bear St			SR-73 NB Ramps			SR-73 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0	0	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		
Crosswalk	No			No			No			Yes		

Volumes

Name	Bear St			Bear St			SR-73 NB Ramps			SR-73 NB Ramps		
Base Volume Input [veh/h]	159	314	0	0	931	97	0	0	0	175	0	490
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	159	314	0	0	931	97	0	0	0	175	0	490
Peak Hour Factor	0.8120	0.8120	1.0000	1.0000	0.8120	0.8120	1.0000	1.0000	1.0000	0.8120	1.0000	0.8120
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	49	97	0	0	287	30	0	0	0	54	0	151
Total Analysis Volume [veh/h]	196	387	0	0	1147	119	0	0	0	216	0	603
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Permiss	Split
Signal Group	1	6	0	0	2	0	0	0	0	0	7	0	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	6	10	0	0	10	0	0	0	0	0	6	0	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	17	31	0	0	14	0	0	0	0	0	59	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	11	0	0	0	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall	No	No			No						No		
Maximum Recall	No	No			No						No		
Pedestrian Recall	No	No			No						No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C		L	R
C, Cycle Length [s]	90	90	90	90		90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	12	59	44	44		23	23
g / C, Green / Cycle	0.13	0.66	0.48	0.48		0.25	0.25
(v / s)_i Volume / Saturation Flow Rate	0.11	0.11	0.24	0.24		0.12	0.21
s, saturation flow rate [veh/h]	1781	3560	3560	1781		1781	2813
c, Capacity [veh/h]	232	2342	1721	861		451	713
d1, Uniform Delay [s]	38.28	5.91	15.75	15.75		28.57	31.95
k, delay calibration	0.11	0.50	0.50	0.50		0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	8.23	0.15	1.00	1.99		0.79	2.88
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.85	0.17	0.49	0.49		0.48	0.85
d, Delay for Lane Group [s/veh]	46.51	6.06	16.76	17.74		29.36	34.84
Lane Group LOS	D	A	B	B		C	C
Critical Lane Group	Yes	No	Yes	No		No	Yes
50th-Percentile Queue Length [veh/ln]	4.69	1.28	5.78	6.02		3.98	6.35
50th-Percentile Queue Length [ft/ln]	117.17	32.00	144.62	150.52		99.52	158.64
95th-Percentile Queue Length [veh/ln]	8.24	2.30	9.73	10.04		7.17	10.48
95th-Percentile Queue Length [ft/ln]	205.93	57.60	243.24	251.12		179.14	261.92

Movement, Approach, & Intersection Results

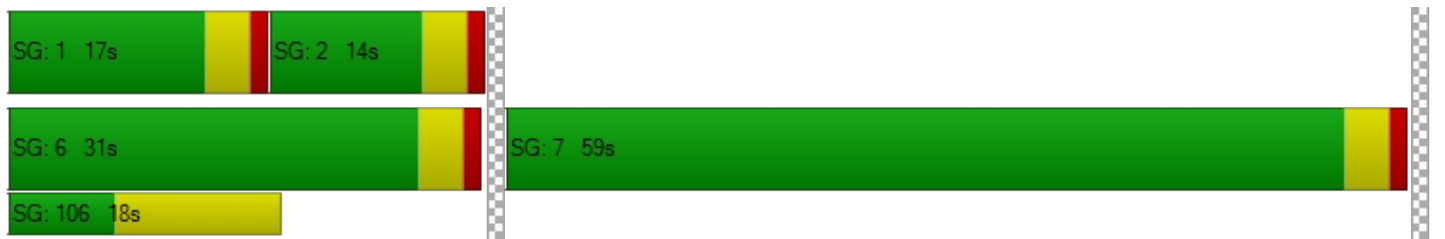
d_M, Delay for Movement [s/veh]	46.51	6.06	0.00	0.00	17.02	17.74	0.00	0.00	0.00	29.36	0.00	34.84
Movement LOS	D	A			B	B				C		C
d_A, Approach Delay [s/veh]	19.66				17.08		0.00		33.39			
Approach LOS	B				B		A		C			
d_I, Intersection Delay [s/veh]	22.65											
Intersection LOS	C											
Intersection V/C	0.648											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	34.68
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	2.330
Crosswalk LOS	F	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	600	222	0	1222
d_b, Bicycle Delay [s]	22.06	35.57	45.01	6.81
I_b,int, Bicycle LOS Score for Intersection	2.041	2.256	4.132	1.560
Bicycle LOS	B	B	D	A

Sequence

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



Intersection Level Of Service Report
Intersection 38: Bear St at SR-73 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	24.7
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.767

Intersection Setup

Name	Bear St			Bear St			SR-73 SB Ramps			SR-73 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↑↑			↑↑↑↑			↑↑↑					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Bear St			Bear St			SR-73 SB Ramps			SR-73 SB Ramps		
Base Volume Input [veh/h]	0	342	381	577	600	0	123	1	206	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	342	381	577	600	0	123	1	206	0	0	0
Peak Hour Factor	1.0000	0.8010	0.8010	0.8010	0.8010	1.0000	0.8010	0.8010	0.8010	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	107	119	180	187	0	38	0	64	0	0	0
Total Analysis Volume [veh/h]	0	427	476	720	749	0	154	1	257	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Permiss	Permiss
Signal Group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	6	10	0	0	10	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	18	0	40	58	0	0	37	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	7	0	0	7	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	L	C	L	C	
C, Cycle Length [s]	95	95	95	95	95	95	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	42	42	23	69	18	18	
g / C, Green / Cycle	0.44	0.44	0.24	0.73	0.19	0.19	
(v / s)_i Volume / Saturation Flow Rate	0.23	0.30	0.21	0.21	0.09	0.16	
s, saturation flow rate [veh/h]	1870	1589	3459	3560	1781	1590	
c, Capacity [veh/h]	828	704	838	2589	336	300	
d1, Uniform Delay [s]	19.11	21.05	34.46	4.48	34.24	37.33	
k, delay calibration	0.50	0.50	0.11	0.50	0.11	0.11	
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	2.29	5.16	2.73	0.28	0.98	7.14	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	0.52	0.68	0.86	0.29	0.46	0.86	
d, Delay for Lane Group [s/veh]	21.40	26.21	37.19	4.76	35.21	44.47	
Lane Group LOS	C	C	D	A	D	D	
Critical Lane Group	No	Yes	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	7.06	9.04	8.10	2.15	3.22	6.30	
50th-Percentile Queue Length [ft/ln]	176.61	225.90	202.52	53.70	80.38	157.55	
95th-Percentile Queue Length [veh/ln]	11.42	13.97	12.77	3.87	5.79	10.42	
95th-Percentile Queue Length [ft/ln]	285.58	349.15	319.21	96.66	144.68	260.47	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	21.40	26.21	37.19	4.76	0.00	35.21	44.47	44.47	0.00	0.00	0.00
Movement LOS		C	C	D	A		D	D	D			
d_A, Approach Delay [s/veh]		23.94		20.66			41.01			0.00		
Approach LOS		C		C			D			A		
d_I, Intersection Delay [s/veh]	24.73											
Intersection LOS	C											
Intersection V/C	0.767											

Other Modes

g_Walk,mi, Effective Walk Time [s]		0.0		0.0		11.0		11.0
M_corner, Corner Circulation Area [ft ² /ped]		0.00		0.00		0.00		0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]		0.00		0.00		0.00		0.00
d_p, Pedestrian Delay [s]		0.00		0.00		37.14		37.14
I_p,int, Pedestrian LOS Score for Intersection		0.000		0.000		2.076		2.301
Crosswalk LOS		F		F		B		B
s_b, Saturation Flow Rate of the bicycle lane		2000		2000		2000		2000
c_b, Capacity of the bicycle lane [bicycles/h]		295		1137		695		0
d_b, Bicycle Delay [s]		34.54		8.85		20.24		47.51
I_b,int, Bicycle LOS Score for Intersection		2.305		2.772		2.239		4.132
Bicycle LOS		B		C		B		D

Sequence

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



Intersection Level Of Service Report
Intersection 12: SR-55 SB Ramps at MacArthur Blvd

Control Type:	Signalized	Delay (sec / veh):	11.3
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.734

Intersection Setup

Name	SR-55 SB Ramp			MacArthur Blvd			MacArthur Blvd					
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration				T T T T			T T T T			T T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	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	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		
Crosswalk	No			Yes			No			No		

Volumes

Name				SR-55 SB Ramp			MacArthur Blvd			MacArthur Blvd		
Base Volume Input [veh/h]	0	0	0	291	0	704	0	1179	1050	0	1547	608
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	291	0	704	0	1179	1050	0	1547	608
Peak Hour Factor	1.0000	1.0000	1.0000	0.8960	1.0000	0.8960	1.0000	0.8960	0.8960	1.0000	0.8960	0.8960
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	81	0	196	0	329	293	0	432	170
Total Analysis Volume [veh/h]	0	0	0	325	0	786	0	1316	1172	0	1727	679
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	0	0	0	5	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	6	0	0	0	10	0	0	10	0
Maximum Green [s]	0	0	0	30	0	0	0	30	0	0	30	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	47	0	0	0	53	0	0	53	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	14	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	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	R	C	C
C, Cycle Length [s]		51	51	51	51
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		18	18	25	25
g / C, Green / Cycle		0.36	0.36	0.48	0.48
(v / s)_i Volume / Saturation Flow Rate		0.09	0.28	0.26	0.34
s, saturation flow rate [veh/h]		3459	2813	5094	5094
c, Capacity [veh/h]		1242	1011	2463	2463
d1, Uniform Delay [s]		11.52	14.49	9.15	10.27
k, delay calibration		0.11	0.11	0.11	0.11
l, Upstream Filtering Factor		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		0.11	1.33	0.18	0.37
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.26	0.78	0.53	0.70
d, Delay for Lane Group [s/veh]		11.63	15.82	9.33	10.63
Lane Group LOS		B	B	A	B
Critical Lane Group		No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]		1.12	3.54	2.64	3.90
50th-Percentile Queue Length [ft/ln]		28.03	88.42	65.88	97.60
95th-Percentile Queue Length [veh/ln]		2.02	6.37	4.74	7.03
95th-Percentile Queue Length [ft/ln]		50.45	159.16	118.59	175.68

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	11.63	0.00	15.82	0.00	9.33	0.00	0.00	10.63	0.00
Movement LOS				B		B		A			B	
d_A, Approach Delay [s/veh]	0.00			14.59			9.33			10.63		
Approach LOS	A			B			A			B		
d_I, Intersection Delay [s/veh]	11.28											
Intersection LOS	B											
Intersection V/C	0.734											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	15.53	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	0.000	2.484	0.000	0.000
Crosswalk LOS	F	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	1697	1934	1934
d_b, Bicycle Delay [s]	25.34	0.58	0.03	0.03
I_b,int, Bicycle LOS Score for Intersection	4.132	1.560	2.283	2.509
Bicycle LOS	D	A	B	B

Sequence

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



Intersection Level Of Service Report
Intersection 13: SR-55 NB Ramps at MacArthur Blvd

Control Type:	Signalized	Delay (sec / veh):	8.5
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.656

Intersection Setup

Name	SR-55 NB Ramp						MacArthur Blvd			MacArthur Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	⇐⇐⇐						⇐⇐⇐			⇐⇐⇐		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	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		
Crosswalk	No			No			No			Yes		

Volumes

Name	SR-55 NB Ramp						MacArthur Blvd			MacArthur Blvd		
	Base Volume Input [veh/h]	647	0	430	0	0	0	0	718	738	0	1516
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	647	0	430	0	0	0	0	718	738	0	1516	1092
Peak Hour Factor	0.9240	1.0000	0.9240	1.0000	1.0000	1.0000	1.0000	0.9240	0.9240	1.0000	0.9240	0.9240
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	175	0	116	0	0	0	0	194	200	0	410	295
Total Analysis Volume [veh/h]	700	0	465	0	0	0	0	777	799	0	1641	1182
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	1	0	0	0	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	6	0	0	0	0	0	0	10	0	0	10	0
Maximum Green [s]	30	0	0	0	0	0	0	30	0	0	30	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	47	0	0	0	0	0	0	73	0	0	73	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	7	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	21	0	0	0	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No							No			No	
Maximum Recall	No							No			No	
Pedestrian Recall	No							No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L		C	C
C, Cycle Length [s]	40		40	40
L, Total Lost Time per Cycle [s]	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00		2.00	2.00
g_i, Effective Green Time [s]	11		20	20
g / C, Green / Cycle	0.29		0.51	0.51
(v / s)_i Volume / Saturation Flow Rate	0.20		0.22	0.32
s, saturation flow rate [veh/h]	3459		3560	5094
c, Capacity [veh/h]	995		1826	2613
d1, Uniform Delay [s]	12.76		6.09	7.02
k, delay calibration	0.11		0.11	0.11
l, Upstream Filtering Factor	1.00		1.00	1.00
d2, Incremental Delay [s]	0.92		0.16	0.25
d3, Initial Queue Delay [s]	0.00		0.00	0.00
Rp, platoon ratio	1.00		1.00	1.00
PF, progression factor	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.70		0.43	0.63
d, Delay for Lane Group [s/veh]	13.68		6.24	7.27
Lane Group LOS	B		A	A
Critical Lane Group	Yes		No	Yes
50th-Percentile Queue Length [veh/ln]	2.33		1.29	2.09
50th-Percentile Queue Length [ft/ln]	58.34		32.31	52.36
95th-Percentile Queue Length [veh/ln]	4.20		2.33	3.77
95th-Percentile Queue Length [ft/ln]	105.01		58.16	94.25

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	13.68	0.00	0.00	0.00	0.00	0.00	0.00	6.24	0.00	0.00	7.27	0.00
Movement LOS	B							A			A	
d_A, Approach Delay [s/veh]	13.68			0.00			6.24			7.27		
Approach LOS	B			A			A			A		
d_I, Intersection Delay [s/veh]	8.45											
Intersection LOS	A											
Intersection V/C	0.656											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	10.48
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	2.797
Crosswalk LOS	F	F	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	2153	0	3455	3455
d_b, Bicycle Delay [s]	0.12	19.97	10.57	10.57
I_b,int, Bicycle LOS Score for Intersection	1.560	4.132	2.201	2.462
Bicycle LOS	A	D	B	B

Sequence

Ring 1	1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 25: I-405 NB Off-Ramp at South Coast Drive

Control Type:	Signalized	Delay (sec / veh):	21.2
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.587

Intersection Setup

Name	I-405 NB Off-Ramp			The Cape Dwy			South Coast Drive			South Coast 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	1	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	I-405 NB Off-Ramp			The Cape Dwy			South Coast Drive			South Coast Drive		
Base Volume Input [veh/h]	476	30	193	28	0	39	43	397	0	0	370	33
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
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]	476	30	193	28	0	39	43	397	0	0	370	33
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	1.0000	0.9500	0.9500	0.9500	1.0000	1.0000	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	125	8	51	7	0	10	11	104	0	0	97	9
Total Analysis Volume [veh/h]	501	32	203	29	0	41	45	418	0	0	389	35
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	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Permiss	Split	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	7	0	0	5	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	10	0	6	0	0	6	10	0	0	10	0
Maximum Green [s]	0	30	0	30	0	0	30	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	58	0	58	0	0	10	32	0	0	22	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	14	0	0	0	0	0	11	0	0	11	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No		No				No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	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	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	R	L	C	C	C
C, Cycle Length [s]	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
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	37	37	37	37	37	4	45	37	37
g / C, Green / Cycle	0.41	0.41	0.41	0.41	0.41	0.05	0.50	0.41	0.41
(v / s)_i Volume / Saturation Flow Rate	0.37	0.07	0.07	0.03	0.03	0.03	0.12	0.11	0.12
s, saturation flow rate [veh/h]	1366	1656	1589	1145	1589	1781	3560	1870	1817
c, Capacity [veh/h]	619	684	657	480	657	80	1773	764	742
d1, Uniform Delay [s]	26.05	16.70	16.72	19.53	15.91	42.09	12.85	17.77	17.83
k, delay calibration	0.18	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.20	0.12	0.13	0.05	0.04	5.96	0.31	0.90	0.97
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.81	0.17	0.18	0.06	0.06	0.56	0.24	0.28	0.29
d, Delay for Lane Group [s/veh]	30.25	16.82	16.84	19.58	15.95	48.05	13.16	18.67	18.80
Lane Group LOS	C	B	B	B	B	D	B	B	B
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	10.42	1.54	1.49	0.41	0.50	1.10	2.36	3.04	3.06
50th-Percentile Queue Length [ft/ln]	260.52	38.49	37.35	10.13	12.59	27.55	59.12	75.93	76.39
95th-Percentile Queue Length [veh/ln]	15.71	2.77	2.69	0.73	0.91	1.98	4.26	5.47	5.50
95th-Percentile Queue Length [ft/ln]	392.87	69.28	67.23	18.23	22.66	49.59	106.42	136.67	137.50

Movement, Approach, & Intersection Results

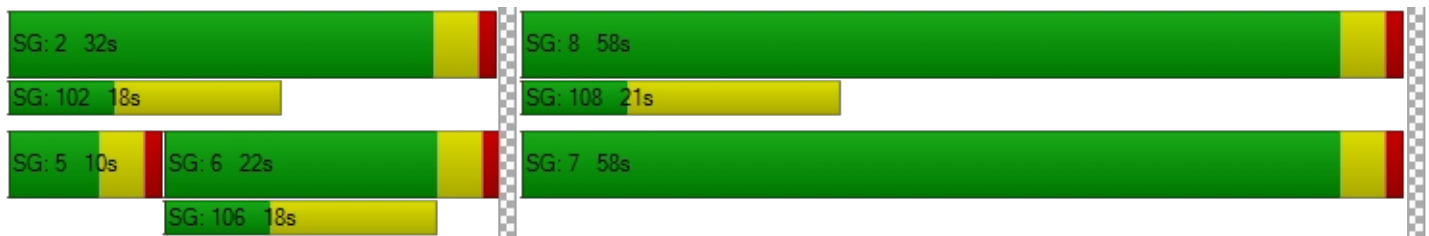
d_M, Delay for Movement [s/veh]	30.25	16.82	16.83	19.58	0.00	15.95	48.05	13.16	0.00	0.00	18.73	18.80
Movement LOS	C	B	B	B		B	D	B			B	B
d_A, Approach Delay [s/veh]	25.97			17.46			16.55			18.74		
Approach LOS	C			B			B			B		
d_I, Intersection Delay [s/veh]	21.23											
Intersection LOS	C											
Intersection V/C	0.587											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.67	34.67	0.00	34.67
I_p,int, Pedestrian LOS Score for Intersection	2.310	1.999	0.000	2.434
Crosswalk LOS	B	A	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1200	1200	622	400
d_b, Bicycle Delay [s]	7.20	7.20	21.36	28.80
I_b,int, Bicycle LOS Score for Intersection	2.774	1.560	1.942	1.909
Bicycle LOS	C	A	A	A

Sequence

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



Intersection Level Of Service Report
Intersection 28: Fairview Road at I-405 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	30.2
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.838

Intersection Setup

Name	Fairview Road			Fairview Road			I-405 NB Ramps			I-405 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	1	0	0	0	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		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Fairview Road			Fairview Road			I-405 NB Ramps			I-405 NB Ramps		
Base Volume Input [veh/h]	225	1322	0	0	1842	258	0	0	0	846	0	1072
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	225	1322	0	0	1842	258	0	0	0	846	0	1072
Peak Hour Factor	0.9270	0.9270	1.0000	1.0000	0.9270	0.9270	1.0000	1.0000	1.0000	0.9270	1.0000	0.9270
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	61	357	0	0	497	70	0	0	0	228	0	289
Total Analysis Volume [veh/h]	243	1426	0	0	1987	278	0	0	0	913	0	1156
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	105
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Permiss	Split
Signal Group	1	6	0	0	2	0	0	0	0	0	7	0	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	6	10	0	0	10	0	0	0	0	0	6	0	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	26	44	0	0	18	0	0	0	0	0	61	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	14	0	0	7	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall	No	No			No						No		
Maximum Recall	No	No			No						No		
Pedestrian Recall	No	No			No						No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	R		L	R
C, Cycle Length [s]	105	105	105	105		105	105
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	16	48	28	28		49	49
g / C, Green / Cycle	0.16	0.46	0.26	0.26		0.47	0.47
(v / s)_i Volume / Saturation Flow Rate	0.14	0.28	0.20	0.17		0.26	0.41
s, saturation flow rate [veh/h]	1781	5094	10188	1589		3459	2813
c, Capacity [veh/h]	276	2328	2687	419		1614	1313
d1, Uniform Delay [s]	43.38	21.49	35.35	34.49		20.28	25.34
k, delay calibration	0.11	0.50	0.50	0.50		0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	8.79	1.21	1.87	8.03		0.31	2.10
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.88	0.61	0.74	0.66		0.57	0.88
d, Delay for Lane Group [s/veh]	52.17	22.70	37.23	42.52		20.60	27.44
Lane Group LOS	D	C	D	D		C	C
Critical Lane Group	Yes	No	Yes	No		No	Yes
50th-Percentile Queue Length [veh/ln]	6.80	8.81	7.88	7.20		7.93	12.81
50th-Percentile Queue Length [ft/ln]	169.92	220.28	197.01	179.95		198.17	320.28
95th-Percentile Queue Length [veh/ln]	11.07	13.68	12.48	11.60		12.54	18.68
95th-Percentile Queue Length [ft/ln]	276.81	341.99	312.11	289.95		313.61	467.03

Movement, Approach, & Intersection Results

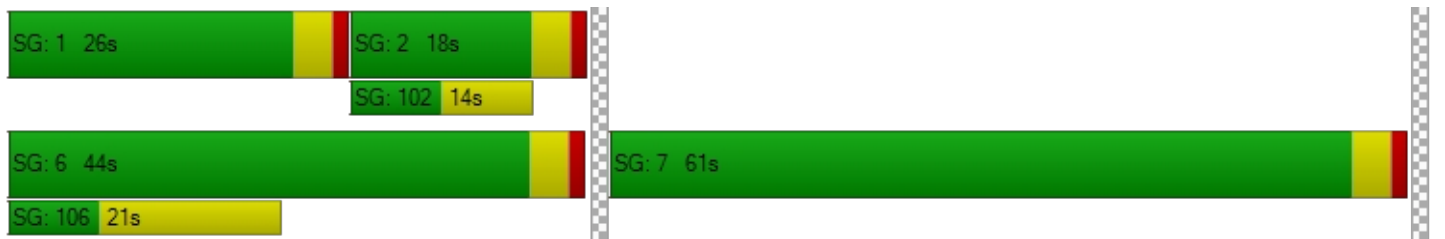
d_M, Delay for Movement [s/veh]	52.17	22.70	0.00	0.00	37.23	42.52	0.00	0.00	0.00	20.60	0.00	27.44
Movement LOS	D	C			D	D				C		C
d_A, Approach Delay [s/veh]	26.99				37.88		0.00		24.42			
Approach LOS	C				D		A		C			
d_I, Intersection Delay [s/veh]	30.21											
Intersection LOS	C											
Intersection V/C	0.838											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	42.07	42.07
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	1.939	2.711
Crosswalk LOS	F	F	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	762	267	0	1086
d_b, Bicycle Delay [s]	20.12	39.43	52.50	10.97
I_b,int, Bicycle LOS Score for Intersection	2.478	2.182	4.132	1.560
Bicycle LOS	B	B	D	A

Sequence

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



Intersection Level Of Service Report
Intersection 29: Fairview Road at I-405 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	19.8
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.656

Intersection Setup

Name	Fairview Rd			Fairview Rd			I-405 SB Ramps			I-405 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↑↑↑↓			↑↑↑↑			↑↑↓					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	1	0	0	1	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Fairview Rd			Fairview Rd			I-405 SB Ramps			I-405 SB Ramps		
Base Volume Input [veh/h]	0	1134	649	1037	1602	0	312	0	357	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1134	649	1037	1602	0	312	0	357	0	0	0
Peak Hour Factor	1.0000	0.9690	0.9690	0.9690	0.9690	1.0000	0.9690	1.0000	0.9690	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	293	167	268	413	0	80	0	92	0	0	0
Total Analysis Volume [veh/h]	0	1170	670	1070	1653	0	322	0	368	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Permiss
Signal Group	0	6	0	5	2	0	3	0	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	10	0	6	10	0	6	0	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	30	0	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Split [s]	0	22	0	44	66	0	24	0	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	11	0	0	14	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No		No					
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No		No					
Maximum Recall		No		No	No		No					
Pedestrian Recall		No		No	No		No					
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	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]	40	40	40	23	67	15	15	
g / C, Green / Cycle	0.45	0.45	0.45	0.26	0.75	0.16	0.16	
(v / s)_i Volume / Saturation Flow Rate	0.22	0.23	0.23	0.21	0.32	0.09	0.13	
s, saturation flow rate [veh/h]	5094	1589	1589	5188	5094	3459	2813	
c, Capacity [veh/h]	2281	712	712	1328	3812	563	458	
d1, Uniform Delay [s]	17.52	17.86	17.86	31.39	4.22	34.80	36.30	
k, delay calibration	0.50	0.50	0.50	0.11	0.50	0.11	0.11	
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	0.74	2.67	2.67	1.20	0.36	0.92	3.34	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	0.48	0.52	0.52	0.81	0.43	0.57	0.80	
d, Delay for Lane Group [s/veh]	18.26	20.53	20.53	32.59	4.58	35.71	39.65	
Lane Group LOS	B	C	C	C	A	D	D	
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	5.28	5.75	5.75	7.21	2.90	3.28	4.04	
50th-Percentile Queue Length [ft/ln]	132.08	143.86	143.86	180.31	72.59	81.94	100.88	
95th-Percentile Queue Length [veh/ln]	9.05	9.69	9.69	11.62	5.23	5.90	7.26	
95th-Percentile Queue Length [ft/ln]	226.31	242.22	242.22	290.42	130.66	147.48	181.58	

Movement, Approach, & Intersection Results

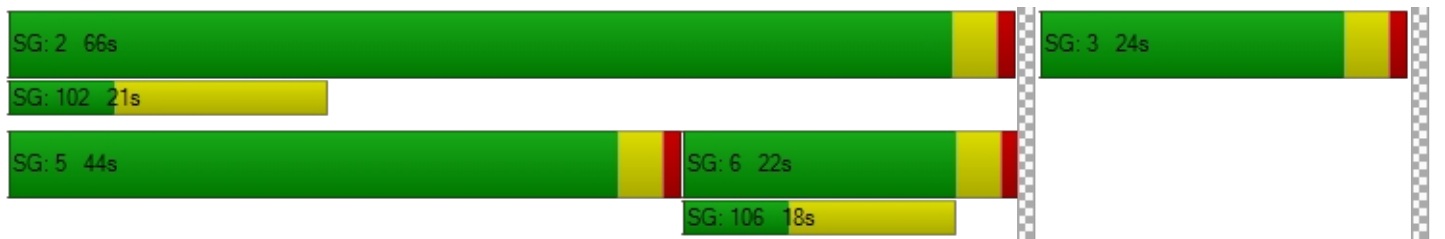
d_M, Delay for Movement [s/veh]	0.00	18.26	20.53	32.59	4.58	0.00	35.71	0.00	39.65	0.00	0.00	0.00
Movement LOS		B	C	C	A		D		D			
d_A, Approach Delay [s/veh]		19.17		15.59			37.81			0.00		
Approach LOS		B		B			D			A		
d_I, Intersection Delay [s/veh]	19.76											
Intersection LOS	B											
Intersection V/C	0.656											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	34.68	34.68
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.434	2.505
Crosswalk LOS	F	F	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	400	1377	444	0
d_b, Bicycle Delay [s]	28.81	4.36	27.23	45.01
I_b,int, Bicycle LOS Score for Intersection	2.319	3.057	1.560	4.132
Bicycle LOS	B	C	A	D

Sequence

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



Intersection Level Of Service Report
Intersection 30: Bristol Street at I-405 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	13.9
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.650

Intersection Setup

Name	Bristol Street			Bristol Street			I-405 NB Ramps			I-405 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	0	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	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	No			No			Yes			Yes		

Volumes

Name	Bristol Street			Bristol Street			I-405 NB Ramps			I-405 NB Ramps		
Base Volume Input [veh/h]	0	2115	185	0	2169	20	0	0	196	361	309	1196
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	2115	185	0	2169	20	0	0	196	361	309	1196
Peak Hour Factor	1.0000	0.9540	0.9540	1.0000	0.9540	0.9540	1.0000	1.0000	0.9540	0.9540	0.9540	0.9540
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	554	48	0	568	5	0	0	51	95	81	313
Total Analysis Volume [veh/h]	0	2217	194	0	2274	21	0	0	205	378	324	1254
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	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss	Split	Permiss	Split	Split	Split	Overlap
Signal Group	0	6	0	0	2	0	0	0	8	0	4	4
Auxiliary Signal Groups												2,4
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	0	10	0	0	0	6	0	10	10
Maximum Green [s]	0	30	0	0	30	0	0	0	30	0	30	30
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0
Split [s]	0	29	0	0	29	0	0	0	40	0	21	21
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	18	0	0	14	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No				No		No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0
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	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	C	R	L	C	C	R
C, Cycle Length [s]	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
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	52	52	52	9	17	17	17	73
g / C, Green / Cycle	0.58	0.58	0.58	0.10	0.19	0.19	0.19	0.81
(v / s)_i Volume / Saturation Flow Rate	0.33	0.27	0.25	0.07	0.13	0.13	0.14	0.45
s, saturation flow rate [veh/h]	6792	6792	1855	2813	1781	1814	1702	2813
c, Capacity [veh/h]	3951	3951	1079	278	332	338	317	2286
d1, Uniform Delay [s]	11.70	10.80	10.47	39.45	34.31	34.22	34.55	2.86
k, delay calibration	0.50	0.50	0.50	0.11	0.11	0.11	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.58	0.39	1.23	3.83	2.74	2.54	3.35	0.95
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.56	0.46	0.43	0.74	0.70	0.69	0.74	0.55
d, Delay for Lane Group [s/veh]	12.28	11.19	11.70	43.29	37.05	36.75	37.91	3.81
Lane Group LOS	B	B	B	D	D	D	D	A
Critical Lane Group	No	No	No	Yes	No	No	Yes	Yes
50th-Percentile Queue Length [veh/ln]	6.38	4.86	4.98	2.32	4.96	4.93	5.04	2.34
50th-Percentile Queue Length [ft/ln]	159.40	121.52	124.41	58.04	124.0	123.3	125.9	58.38
95th-Percentile Queue Length [veh/ln]	10.52	8.48	8.63	4.18	8.61	8.58	8.72	4.20
95th-Percentile Queue Length [ft/ln]	262.92	211.91	215.87	104.48	215.3	214.3	217.9	105.0

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	12.28	0.00	0.00	11.29	11.70	0.00	0.00	43.29	37.05	37.59	3.81
Movement LOS		B			B	B			D	D	D	A
d_A, Approach Delay [s/veh]	12.28			11.29			43.29			15.81		
Approach LOS	B			B			D			B		
d_I, Intersection Delay [s/veh]	13.93											
Intersection LOS	B											
Intersection V/C	0.650											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0			0.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	0.00			0.00			34.68			34.68		
I_p,int, Pedestrian LOS Score for Intersection	0.000			0.000			2.265			2.770		
Crosswalk LOS	F			F			B			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	555			555			800			378		
d_b, Bicycle Delay [s]	23.48			23.48			16.21			29.62		
I_b,int, Bicycle LOS Score for Intersection	2.474			2.317			1.560			3.173		
Bicycle LOS	B			B			A			C		

Sequence

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



Intersection Level Of Service Report
Intersection 31: Bristol Street at I-405 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	15.1
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.629

Intersection Setup

Name	Bristol Street		Bristol Street		I-405 SB Ramps	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration	↵		↵↵		↵↵↵↵	
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	1	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		Yes	

Volumes

Name	Bristol Street		Bristol Street		I-405 SB Ramps	
Base Volume Input [veh/h]	128	1571	1521	889	747	334
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	128	1571	1521	889	747	334
Peak Hour Factor	0.9440	0.9440	0.9440	0.9440	0.9440	0.9440
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	34	416	403	235	198	0
Total Analysis Volume [veh/h]	136	1664	1611	942	791	0
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Unsignalized	Permissive	Unsignalized
Signal Group	1	6	2	0	3	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	6	10	10	0	6	0
Maximum Green [s]	30	30	30	0	30	0
Amber [s]	3.0	3.0	3.0	0.0	3.0	0.0
All red [s]	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	33	55	22	0	35	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	0	7	0	0	0
Pedestrian Clearance [s]	0	0	11	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No	No		No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
Minimum Recall	No	No	No		No	
Maximum Recall	No	No	No		No	
Pedestrian Recall	No	No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L
C, Cycle Length [s]	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	65	52	17
g / C, Green / Cycle	0.10	0.72	0.58	0.19
(v / s)_i Volume / Saturation Flow Rate	0.08	0.25	0.32	0.15
s, saturation flow rate [veh/h]	1781	6792	5094	5188
c, Capacity [veh/h]	173	4869	2931	1008
d1, Uniform Delay [s]	39.74	4.78	11.87	34.49
k, delay calibration	0.11	0.50	0.50	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.65	0.19	0.75	1.39
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.79	0.34	0.55	0.78
d, Delay for Lane Group [s/veh]	47.39	4.97	12.62	35.88
Lane Group LOS	D	A	B	D
Critical Lane Group	Yes	No	Yes	Yes
50th-Percentile Queue Length [veh/ln]	3.27	2.37	6.27	5.50
50th-Percentile Queue Length [ft/ln]	81.72	59.34	156.69	137.56
95th-Percentile Queue Length [veh/ln]	5.88	4.27	10.37	9.35
95th-Percentile Queue Length [ft/ln]	147.09	106.82	259.33	233.73

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	47.39	4.97	12.62	0.00	35.88	0.00
Movement LOS	D	A	B		D	
d_A, Approach Delay [s/veh]	8.18		12.62		35.88	
Approach LOS	A		B		D	
d_I, Intersection Delay [s/veh]	15.10					
Intersection LOS	B					
Intersection V/C	0.629					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	34.68
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.603
Crosswalk LOS	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1133	400	689
d_b, Bicycle Delay [s]	8.46	28.81	19.35
I_b,int, Bicycle LOS Score for Intersection	2.302	2.446	1.560
Bicycle LOS	B	B	A

Sequence

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



Intersection Level Of Service Report
Intersection 37: Bear St at SR-73 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	41.9
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.951

Intersection Setup

Name	Bear St			Bear St			SR-73 NB Ramps			SR-73 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0	0	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		
Crosswalk	No			No			No			Yes		

Volumes

Name	Bear St			Bear St			SR-73 NB Ramps			SR-73 NB Ramps		
Base Volume Input [veh/h]	153	591	0	0	1020	152	0	0	0	408	0	1340
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	153	591	0	0	1020	152	0	0	0	408	0	1340
Peak Hour Factor	0.9180	0.9180	1.0000	1.0000	0.9180	0.9180	1.0000	1.0000	1.0000	0.9180	1.0000	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]	42	161	0	0	278	41	0	0	0	111	0	365
Total Analysis Volume [veh/h]	167	644	0	0	1111	166	0	0	0	444	0	1460
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Permiss	Split
Signal Group	1	6	0	0	2	0	0	0	0	0	7	0	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	6	10	0	0	10	0	0	0	0	0	6	0	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	16	49	0	0	33	0	0	0	0	0	71	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	11	0	0	0	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall	No	No			No						No		
Maximum Recall	No	No			No						No		
Pedestrian Recall	No	No			No						No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C		L	R
C, Cycle Length [s]	120	120	120	120		120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	12	47	31	31		65	65
g / C, Green / Cycle	0.10	0.39	0.26	0.26		0.54	0.54
(v / s)_i Volume / Saturation Flow Rate	0.09	0.18	0.24	0.24		0.25	0.52
s, saturation flow rate [veh/h]	1781	3560	3560	1750		1781	2813
c, Capacity [veh/h]	179	1385	908	446		969	1531
d1, Uniform Delay [s]	53.53	27.33	43.74	43.98		16.59	25.89
k, delay calibration	0.11	0.50	0.50	0.50		0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	18.55	1.12	18.09	32.52		0.34	4.31
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.93	0.46	0.94	0.95		0.46	0.95
d, Delay for Lane Group [s/veh]	72.08	28.45	61.83	76.50		16.93	30.20
Lane Group LOS	E	C	E	E		B	C
Critical Lane Group	Yes	No	No	Yes		No	Yes
50th-Percentile Queue Length [veh/ln]	5.92	7.09	14.56	16.37		7.36	19.57
50th-Percentile Queue Length [ft/ln]	147.92	177.25	363.88	409.30		184.03	489.26
95th-Percentile Queue Length [veh/ln]	9.91	11.46	20.81	23.01		11.81	26.83
95th-Percentile Queue Length [ft/ln]	247.64	286.41	520.30	575.19		295.27	670.64

Movement, Approach, & Intersection Results

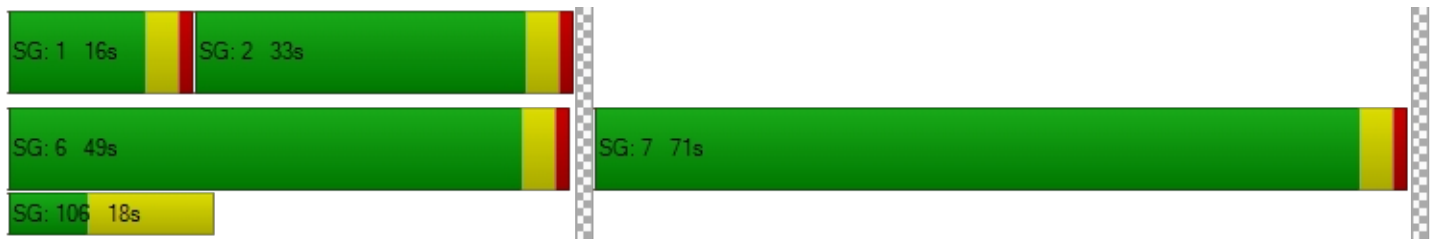
d_M, Delay for Movement [s/veh]	72.08	28.45	0.00	0.00	65.26	76.50	0.00	0.00	0.00	16.93	0.00	30.20
Movement LOS	E	C			E	E				B		C
d_A, Approach Delay [s/veh]	37.44				66.72		0.00		27.10			
Approach LOS	D				E		A		C			
d_I, Intersection Delay [s/veh]	41.88											
Intersection LOS	D											
Intersection V/C	0.951											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	49.49
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	2.609
Crosswalk LOS	F	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	750	483	0	1117
d_b, Bicycle Delay [s]	23.42	34.49	59.98	11.69
I_b,int, Bicycle LOS Score for Intersection	2.229	2.262	4.132	1.560
Bicycle LOS	B	B	D	A

Sequence

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



Intersection Level Of Service Report
Intersection 38: Bear St at SR-73 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	20.5
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.607

Intersection Setup

Name	Bear St			Bear St			SR-73 SB Ramps			SR-73 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↑↑			←↑↑			←↑↑					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Bear St			Bear St			SR-73 SB Ramps			SR-73 SB Ramps		
Base Volume Input [veh/h]	0	563	172	599	835	0	188	1	159	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	563	172	599	835	0	188	1	159	0	0	0
Peak Hour Factor	1.0000	0.9290	0.9290	0.9290	0.9290	1.0000	0.9290	0.9290	0.9290	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	152	46	161	225	0	51	0	43	0	0	0
Total Analysis Volume [veh/h]	0	606	185	645	899	0	202	1	171	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Permiss	Permiss
Signal Group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	6	10	0	0	10	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	28	0	45	73	0	0	17	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	7	0	0	7	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	L	C	L	C	
C, Cycle Length [s]	90	90	90	90	90	90	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	46	46	20	70	12	12	
g / C, Green / Cycle	0.51	0.51	0.22	0.78	0.13	0.13	
(v / s)_i Volume / Saturation Flow Rate	0.21	0.23	0.19	0.25	0.11	0.11	
s, saturation flow rate [veh/h]	1870	1727	3459	3560	1781	1596	
c, Capacity [veh/h]	956	883	770	2771	237	212	
d1, Uniform Delay [s]	13.64	13.95	33.44	2.96	38.06	38.09	
k, delay calibration	0.50	0.50	0.11	0.50	0.11	0.11	
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	1.32	1.64	2.52	0.31	7.40	8.40	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	0.41	0.45	0.84	0.32	0.83	0.84	
d, Delay for Lane Group [s/veh]	14.96	15.59	35.96	3.27	45.46	46.49	
Lane Group LOS	B	B	D	A	D	D	
Critical Lane Group	No	Yes	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	5.03	5.19	6.83	1.72	4.65	4.24	
50th-Percentile Queue Length [ft/ln]	125.74	129.68	170.84	42.88	116.16	106.12	
95th-Percentile Queue Length [veh/ln]	8.71	8.92	11.12	3.09	8.18	7.62	
95th-Percentile Queue Length [ft/ln]	217.69	223.06	278.02	77.18	204.53	190.60	

Movement, Approach, & Intersection Results

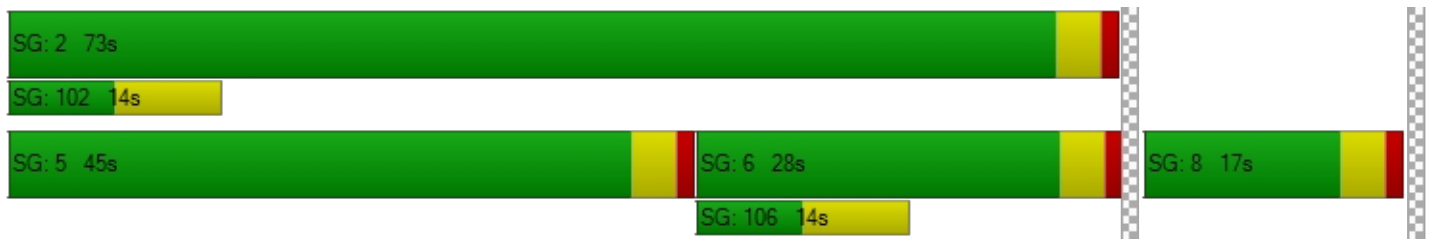
d_M, Delay for Movement [s/veh]	0.00	15.18	15.59	35.96	3.27	0.00	45.53	46.49	46.49	0.00	0.00	0.00
Movement LOS		B	B	D	A		D	D	D			
d_A, Approach Delay [s/veh]		15.28		16.93			45.95			0.00		
Approach LOS		B		B			D			A		
d_I, Intersection Delay [s/veh]	20.45											
Intersection LOS	C											
Intersection V/C	0.607											

Other Modes

g_Walk,mi, Effective Walk Time [s]		0.0		0.0		11.0		11.0
M_corner, Corner Circulation Area [ft ² /ped]		0.00		0.00		0.00		0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]		0.00		0.00		0.00		0.00
d_p, Pedestrian Delay [s]		0.00		0.00		34.68		34.68
I_p,int, Pedestrian LOS Score for Intersection		0.000		0.000		2.061		2.119
Crosswalk LOS		F		F		B		B
s_b, Saturation Flow Rate of the bicycle lane		2000		2000		2000		2000
c_b, Capacity of the bicycle lane [bicycles/h]		533		1533		289		0
d_b, Bicycle Delay [s]		24.21		2.45		32.95		45.01
I_b,int, Bicycle LOS Score for Intersection		2.212		2.833		2.177		4.132
Bicycle LOS		B		C		B		D

Sequence

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



APPENDIX E-II

**EXISTING PLUS PROJECT PHASE 1
TRAFFIC CONDITIONS**

Intersection Level Of Service Report
Intersection 12: SR-55 SB Ramps at MacArthur Blvd

Control Type:	Signalized	Delay (sec / veh):	14.0
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.764

Intersection Setup

Name	SR-55 SB Ramp			MacArthur Blvd			MacArthur Blvd					
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration				T T T T			T T T T			T T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	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	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		
Crosswalk	No			Yes			No			No		

Volumes

Name				SR-55 SB Ramp			MacArthur Blvd			MacArthur Blvd		
Base Volume Input [veh/h]	0	0	0	971	0	903	0	1533	1037	0	1295	146
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	971	0	903	0	1533	1037	0	1295	146
Peak Hour Factor	1.0000	1.0000	1.0000	0.9470	1.0000	0.9470	1.0000	0.9470	0.9470	1.0000	0.9470	0.9470
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	256	0	238	0	405	274	0	342	39
Total Analysis Volume [veh/h]	0	0	0	1025	0	954	0	1619	1095	0	1367	154
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	0	0	0	5	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	6	0	0	0	10	0	0	10	0
Maximum Green [s]	0	0	0	30	0	0	0	30	0	0	30	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	44	0	0	0	46	0	0	46	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	14	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	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	R	C	C
C, Cycle Length [s]		57	57	57	57
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		25	25	24	24
g / C, Green / Cycle		0.43	0.43	0.43	0.43
(v / s)_i Volume / Saturation Flow Rate		0.30	0.34	0.32	0.27
s, saturation flow rate [veh/h]		3459	2813	5094	5094
c, Capacity [veh/h]		1494	1216	2179	2179
d1, Uniform Delay [s]		13.09	13.93	13.70	12.77
k, delay calibration		0.11	0.11	0.11	0.11
l, Upstream Filtering Factor		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		0.57	1.15	0.51	0.30
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.69	0.78	0.74	0.63
d, Delay for Lane Group [s/veh]		13.65	15.09	14.21	13.07
Lane Group LOS		B	B	B	B
Critical Lane Group		No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]		4.56	4.60	4.98	3.90
50th-Percentile Queue Length [ft/ln]		113.97	114.89	124.46	97.46
95th-Percentile Queue Length [veh/ln]		8.06	8.11	8.64	7.02
95th-Percentile Queue Length [ft/ln]		201.51	202.78	215.95	175.43

Movement, Approach, & Intersection Results

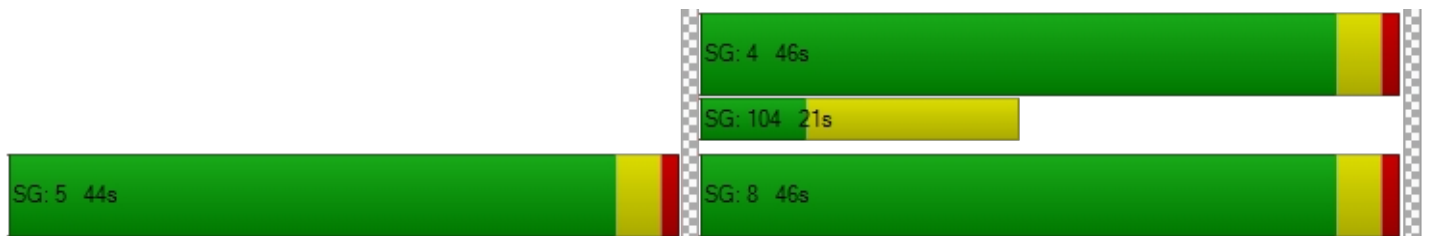
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	13.65	0.00	15.09	0.00	14.21	0.00	0.00	13.07	0.00
Movement LOS				B		B		B			B	
d_A, Approach Delay [s/veh]	0.00			14.34			14.21			13.07		
Approach LOS	A			B			B			B		
d_I, Intersection Delay [s/veh]	13.95											
Intersection LOS	B											
Intersection V/C	0.764											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	18.51	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	0.000	2.660	0.000	0.000
Crosswalk LOS	F	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	1406	1476	1476
d_b, Bicycle Delay [s]	28.45	2.51	1.95	1.95
I_b,int, Bicycle LOS Score for Intersection	4.132	1.560	2.450	2.311
Bicycle LOS	D	A	B	B

Sequence

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



Intersection Level Of Service Report
Intersection 13: SR-55 NB Ramps at MacArthur Blvd

Control Type:	Signalized	Delay (sec / veh):	19.2
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.928

Intersection Setup

Name	SR-55 NB Ramp						MacArthur Blvd			MacArthur Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	⇐⇐⇐						⇐⇐⇐			⇐⇐⇐		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	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		
Crosswalk	No			No			No			Yes		

Volumes

Name	SR-55 NB Ramp						MacArthur Blvd			MacArthur Blvd		
Base Volume Input [veh/h]	917	0	986	0	0	0	0	1645	863	0	529	246
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	917	0	986	0	0	0	0	1645	863	0	529	246
Peak Hour Factor	0.9080	1.0000	0.9080	1.0000	1.0000	1.0000	1.0000	0.9080	0.9080	1.0000	0.9080	0.9080
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	252	0	271	0	0	0	0	453	238	0	146	68
Total Analysis Volume [veh/h]	1010	0	1086	0	0	0	0	1812	950	0	583	271
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	1	0	0	0	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	6	0	0	0	0	0	0	10	0	0	10	0
Maximum Green [s]	30	0	0	0	0	0	0	30	0	0	30	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	46	0	0	0	0	0	0	44	0	0	44	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	7	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	21	0	0	0	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No							No			No	
Maximum Recall	No							No			No	
Pedestrian Recall	No							No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L		C	C
C, Cycle Length [s]	59		59	59
L, Total Lost Time per Cycle [s]	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00		2.00	2.00
g_i, Effective Green Time [s]	21		30	30
g / C, Green / Cycle	0.35		0.51	0.51
(v / s)_i Volume / Saturation Flow Rate	0.29		0.51	0.11
s, saturation flow rate [veh/h]	3459		3560	5094
c, Capacity [veh/h]	1218		1821	2605
d1, Uniform Delay [s]	17.39		14.25	7.90
k, delay calibration	0.11		0.11	0.11
l, Upstream Filtering Factor	1.00		1.00	1.00
d2, Incremental Delay [s]	1.52		8.73	0.04
d3, Initial Queue Delay [s]	0.00		0.00	0.00
Rp, platoon ratio	1.00		1.00	1.00
PF, progression factor	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.83		1.00	0.22
d, Delay for Lane Group [s/veh]	18.91		22.98	7.95
Lane Group LOS	B		C	A
Critical Lane Group	Yes		Yes	No
50th-Percentile Queue Length [veh/ln]	5.73		11.55	1.12
50th-Percentile Queue Length [ft/ln]	143.23		288.63	28.03
95th-Percentile Queue Length [veh/ln]	9.65		17.12	2.02
95th-Percentile Queue Length [ft/ln]	241.37		427.94	50.45

Movement, Approach, & Intersection Results

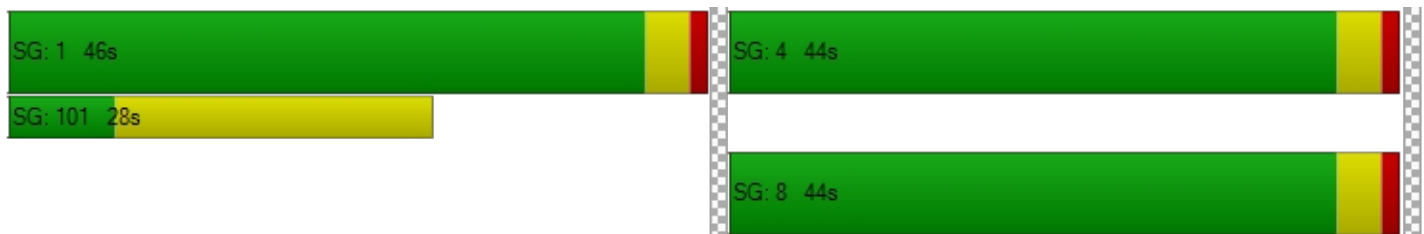
d_M, Delay for Movement [s/veh]	18.91	0.00	0.00	0.00	0.00	0.00	0.00	22.98	0.00	0.00	7.95	0.00
Movement LOS	B							C			A	
d_A, Approach Delay [s/veh]	18.91			0.00			22.98			7.95		
Approach LOS	B			A			C			A		
d_I, Intersection Delay [s/veh]	19.20											
Intersection LOS	B											
Intersection V/C	0.928											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	19.33
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	2.818
Crosswalk LOS	F	F	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1433	0	1365	1365
d_b, Bicycle Delay [s]	2.35	29.30	2.95	2.95
I_b,int, Bicycle LOS Score for Intersection	1.560	4.132	3.055	1.880
Bicycle LOS	A	D	C	A

Sequence

Ring 1	1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 25: I-405 NB Off-Ramp at South Coast Drive

Control Type:	Signalized	Delay (sec / veh):	22.9
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.430

Intersection Setup

Name	I-405 NB Off-Ramp			The Cape Dwy			South Coast Drive			South Coast 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	1	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	I-405 NB Off-Ramp			The Cape Dwy			South Coast Drive			South Coast Drive		
Base Volume Input [veh/h]	352	6	92	48	0	72	19	215	0	0	92	17
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
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]	352	6	92	48	0	72	19	215	0	0	92	17
Peak Hour Factor	0.8740	0.8740	0.8740	0.8740	1.0000	0.8740	0.8740	0.8740	1.0000	1.0000	0.8740	0.8740
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	101	2	26	14	0	21	5	61	0	0	26	5
Total Analysis Volume [veh/h]	403	7	105	55	0	82	22	246	0	0	105	19
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]	95
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Permiss	Split	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	7	0	0	5	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	10	0	6	0	0	6	10	0	0	10	0
Maximum Green [s]	0	30	0	30	0	0	30	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	63	0	63	0	0	10	32	0	0	22	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	14	0	0	0	0	0	11	0	0	11	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No		No				No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	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	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	R	L	C	C	C
C, Cycle Length [s]	95	95	95	95	95	95	95	95	95
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	33	33	33	33	33	3	54	47	47
g / C, Green / Cycle	0.35	0.35	0.35	0.35	0.35	0.03	0.57	0.50	0.50
(v / s)_i Volume / Saturation Flow Rate	0.31	0.03	0.03	0.04	0.05	0.01	0.07	0.03	0.03
s, saturation flow rate [veh/h]	1316	1620	1589	1281	1589	1781	3560	1870	1774
c, Capacity [veh/h]	513	567	557	471	557	50	2014	927	879
d1, Uniform Delay [s]	30.55	20.78	20.78	23.72	21.14	45.44	9.63	12.51	12.53
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.71	0.08	0.08	0.11	0.12	6.04	0.12	0.14	0.16
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.79	0.10	0.10	0.12	0.15	0.44	0.12	0.07	0.07
d, Delay for Lane Group [s/veh]	33.26	20.85	20.86	23.83	21.27	51.48	9.76	12.65	12.68
Lane Group LOS	C	C	C	C	C	D	A	B	B
Critical Lane Group	Yes	No	No	No	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	8.96	0.85	0.83	0.90	1.25	0.59	1.17	0.70	0.71
50th-Percentile Queue Length [ft/ln]	224.02	21.21	20.82	22.45	31.33	14.77	29.15	17.58	17.67
95th-Percentile Queue Length [veh/ln]	13.87	1.53	1.50	1.62	2.26	1.06	2.10	1.27	1.27
95th-Percentile Queue Length [ft/ln]	346.75	38.17	37.48	40.41	56.40	26.58	52.48	31.65	31.80

Movement, Approach, & Intersection Results

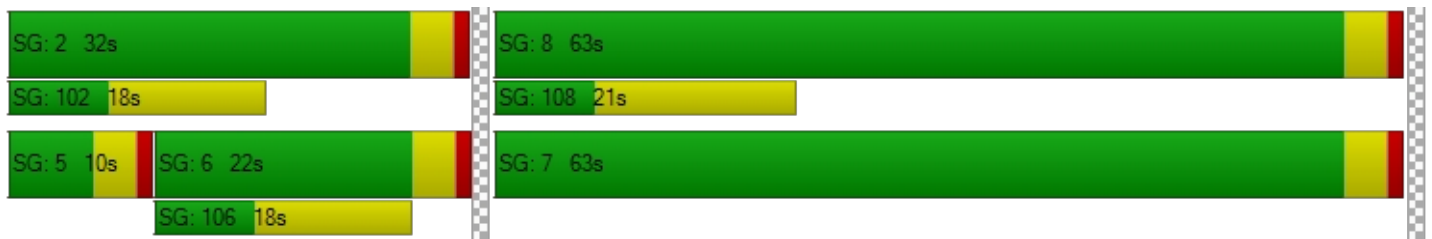
d_M, Delay for Movement [s/veh]	33.26	20.85	20.86	23.83	0.00	21.27	51.48	9.76	0.00	0.00	12.66	12.68
Movement LOS	C	C	C	C		C	D	A			B	B
d_A, Approach Delay [s/veh]	30.56			22.29			13.18			12.67		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]	22.89											
Intersection LOS	C											
Intersection V/C	0.430											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	37.14	37.14	0.00	37.14
I_p,int, Pedestrian LOS Score for Intersection	2.259	2.003	0.000	2.341
Crosswalk LOS	B	B	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1242	1242	589	379
d_b, Bicycle Delay [s]	6.82	6.82	23.63	31.21
I_b,int, Bicycle LOS Score for Intersection	2.409	1.560	1.781	1.662
Bicycle LOS	B	A	A	A

Sequence

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



Intersection Level Of Service Report
Intersection 28: Fairview Road at I-405 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	25.5
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.773

Intersection Setup

Name	Fairview Road			Fairview Road			I-405 NB Ramps			I-405 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	1	0	0	0	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		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Fairview Road			Fairview Road			I-405 NB Ramps			I-405 NB Ramps		
Base Volume Input [veh/h]	179	841	0	0	2448	296	0	0	0	614	0	776
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	179	841	0	0	2448	296	0	0	0	614	0	776
Peak Hour Factor	0.9070	0.9070	1.0000	1.0000	0.9070	0.9070	1.0000	1.0000	1.0000	0.9070	1.0000	0.9070
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	49	232	0	0	675	82	0	0	0	169	0	214
Total Analysis Volume [veh/h]	197	927	0	0	2699	326	0	0	0	677	0	856
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Permiss	Split
Signal Group	1	6	0	0	2	0	0	0	0	0	7	0	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	6	10	0	0	10	0	0	0	0	0	6	0	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	23	41	0	0	18	0	0	0	0	0	59	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	14	0	0	7	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall	No	No			No						No		
Maximum Recall	No	No			No						No		
Pedestrian Recall	No	No			No						No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	R		L	R
C, Cycle Length [s]	100	100	100	100		100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	13	56	39	39		36	36
g / C, Green / Cycle	0.13	0.56	0.39	0.39		0.36	0.36
(v / s)_i Volume / Saturation Flow Rate	0.11	0.18	0.26	0.21		0.20	0.30
s, saturation flow rate [veh/h]	1781	5094	10188	1589		3459	2813
c, Capacity [veh/h]	232	2862	3991	623		1238	1007
d1, Uniform Delay [s]	42.54	11.73	25.17	23.27		25.62	29.62
k, delay calibration	0.11	0.50	0.50	0.50		0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	8.44	0.30	0.94	3.13		0.38	2.12
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.85	0.32	0.68	0.52		0.55	0.85
d, Delay for Lane Group [s/veh]	50.98	12.03	26.10	26.40		26.00	31.73
Lane Group LOS	D	B	C	C		C	C
Critical Lane Group	Yes	No	Yes	No		No	Yes
50th-Percentile Queue Length [veh/ln]	5.26	3.59	8.74	6.29		6.36	9.49
50th-Percentile Queue Length [ft/ln]	131.44	89.67	218.62	157.15		158.91	237.30
95th-Percentile Queue Length [veh/ln]	9.02	6.46	13.59	10.40		10.49	14.54
95th-Percentile Queue Length [ft/ln]	225.45	161.41	339.86	259.94		262.28	363.61

Movement, Approach, & Intersection Results

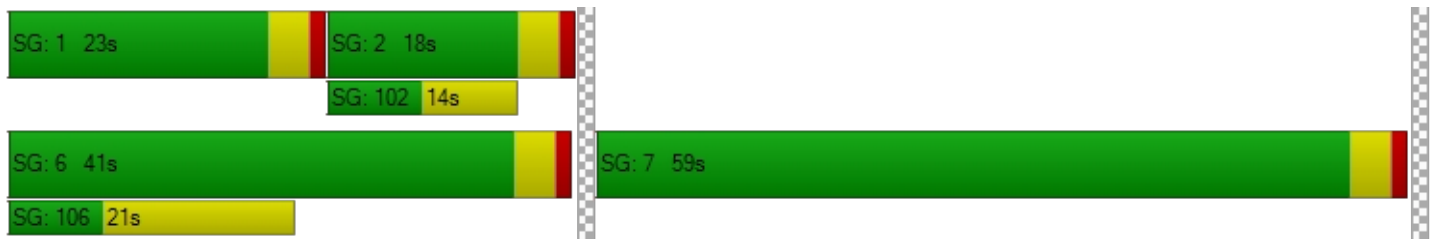
d_M, Delay for Movement [s/veh]	50.98	12.03	0.00	0.00	26.10	26.40	0.00	0.00	0.00	26.00	0.00	31.73
Movement LOS	D	B			C	C				C		C
d_A, Approach Delay [s/veh]	18.86				26.13		0.00		29.20			
Approach LOS	B				C		A		C			
d_I, Intersection Delay [s/veh]	25.52											
Intersection LOS	C											
Intersection V/C	0.773											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	39.61	39.61
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	1.938	2.604
Crosswalk LOS	F	F	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	740	280	0	1100
d_b, Bicycle Delay [s]	19.85	36.98	50.00	10.13
I_b,int, Bicycle LOS Score for Intersection	2.178	2.391	4.132	1.560
Bicycle LOS	B	B	D	A

Sequence

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



Intersection Level Of Service Report
Intersection 29: Fairview Road at I-405 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	35.1
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.974

Intersection Setup

Name	Fairview Rd			Fairview Rd			I-405 SB Ramps			I-405 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↑↑↑↓			↑↑↑↑			↑↑↓					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	1	0	0	1	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Fairview Rd			Fairview Rd			I-405 SB Ramps			I-405 SB Ramps		
Base Volume Input [veh/h]	0	855	1129	1544	1647	0	185	0	326	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	855	1129	1544	1647	0	185	0	326	0	0	0
Peak Hour Factor	1.0000	0.8770	0.8770	0.8770	0.8770	1.0000	0.8770	1.0000	0.8770	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	244	322	440	469	0	53	0	93	0	0	0
Total Analysis Volume [veh/h]	0	975	1287	1761	1878	0	211	0	372	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Permiss
Signal Group	0	6	0	5	2	0	3	0	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	10	0	6	10	0	6	0	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	30	0	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Split [s]	0	54	0	46	100	0	20	0	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	11	0	0	14	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No		No					
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No		No					
Maximum Recall		No		No	No		No					
Pedestrian Recall		No		No	No		No					
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	R	L	C	L	R
C, Cycle Length [s]	120	120	120	120	120	120	120
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]	50	50	50	42	96	16	16
g / C, Green / Cycle	0.42	0.42	0.42	0.35	0.80	0.13	0.13
(v / s)_i Volume / Saturation Flow Rate	0.19	0.40	0.40	0.34	0.37	0.06	0.13
s, saturation flow rate [veh/h]	5094	1589	1589	5188	5094	3459	2813
c, Capacity [veh/h]	2122	662	662	1815	4074	462	376
d1, Uniform Delay [s]	25.25	34.31	34.31	38.39	3.81	47.95	51.89
k, delay calibration	0.50	0.50	0.50	0.11	0.50	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.72	28.73	28.73	5.08	0.38	0.71	19.30
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	0.46	0.97	0.97	0.97	0.46	0.46	0.99
d, Delay for Lane Group [s/veh]	25.97	63.03	63.03	43.47	4.19	48.66	71.19
Lane Group LOS	C	E	E	D	A	D	E
Critical Lane Group	No	Yes	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	6.80	23.19	23.19	17.54	3.90	2.97	6.58
50th-Percentile Queue Length [ft/ln]	169.92	579.70	579.70	438.61	97.41	74.15	164.49
95th-Percentile Queue Length [veh/ln]	11.07	31.09	31.09	24.41	7.01	5.34	10.79
95th-Percentile Queue Length [ft/ln]	276.81	777.13	777.13	610.34	175.34	133.47	269.65

Movement, Approach, & Intersection Results

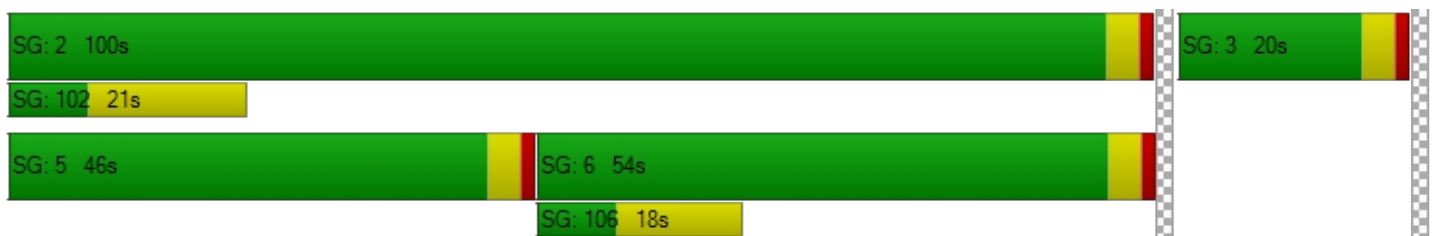
d_M, Delay for Movement [s/veh]	0.00	25.97	63.03	43.47	4.19	0.00	48.66	0.00	71.19	0.00	0.00	0.00
Movement LOS		C	E	D	A		D		E			
d_A, Approach Delay [s/veh]	47.06			23.20			63.03			0.00		
Approach LOS	D			C			E			A		
d_I, Intersection Delay [s/veh]	35.10											
Intersection LOS	D											
Intersection V/C	0.974											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0			0.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	0.00			0.00			49.50			49.50		
I_p,int, Pedestrian LOS Score for Intersection	0.000			0.000			2.427			2.945		
Crosswalk LOS	F			F			B			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	833			1600			267			0		
d_b, Bicycle Delay [s]	20.41			2.40			45.06			59.99		
I_b,int, Bicycle LOS Score for Intersection	2.493			3.561			1.560			4.132		
Bicycle LOS	B			D			A			D		

Sequence

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



Intersection Level Of Service Report
Intersection 30: Bristol Street at I-405 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	6.3
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.373

Intersection Setup

Name	Bristol Street			Bristol Street			I-405 NB Ramps			I-405 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	0	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	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	No			No			Yes			Yes		

Volumes

Name	Bristol Street			Bristol Street			I-405 NB Ramps			I-405 NB Ramps		
Base Volume Input [veh/h]	0	1540	193	0	2127	8	0	0	34	122	74	699
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1540	193	0	2127	8	0	0	34	122	74	699
Peak Hour Factor	1.0000	0.9380	0.9380	1.0000	0.9380	0.9380	1.0000	1.0000	0.9380	0.9380	0.9380	0.9380
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	410	51	0	567	2	0	0	9	33	20	186
Total Analysis Volume [veh/h]	0	1642	206	0	2268	9	0	0	36	130	79	745
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	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss	Split	Permiss	Split	Split	Split	Overlap
Signal Group	0	6	0	0	2	0	0	0	8	0	4	4
Auxiliary Signal Groups												2,4
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	0	10	0	0	0	6	0	10	10
Maximum Green [s]	0	30	0	0	30	0	0	0	30	0	30	30
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0
Split [s]	0	53	0	0	53	0	0	0	10	0	27	27
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	18	0	0	14	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No				No		No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0
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	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	C	R	L	C	C	R
C, Cycle Length [s]	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
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	64	64	64	4	10	10	10	78
g / C, Green / Cycle	0.71	0.71	0.71	0.04	0.11	0.11	0.11	0.87
(v / s)_i Volume / Saturation Flow Rate	0.24	0.27	0.24	0.01	0.04	0.04	0.04	0.26
s, saturation flow rate [veh/h]	6792	6792	1863	2813	1781	1790	1702	2813
c, Capacity [veh/h]	4848	4848	1330	114	200	201	191	2449
d1, Uniform Delay [s]	4.86	5.04	4.88	41.98	36.89	36.89	37.04	1.03
k, delay calibration	0.50	0.50	0.50	0.11	0.11	0.11	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.19	0.22	0.70	1.56	1.01	1.00	1.22	0.32
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.34	0.38	0.34	0.32	0.34	0.34	0.38	0.30
d, Delay for Lane Group [s/veh]	5.05	5.26	5.58	43.53	37.90	37.89	38.26	1.35
Lane Group LOS	A	A	A	D	D	D	D	A
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.36	2.72	2.82	0.41	1.43	1.44	1.51	0.28
50th-Percentile Queue Length [ft/ln]	59.06	67.93	70.46	10.24	35.78	35.95	37.86	7.05
95th-Percentile Queue Length [veh/ln]	4.25	4.89	5.07	0.74	2.58	2.59	2.73	0.51
95th-Percentile Queue Length [ft/ln]	106.31	122.28	126.83	18.44	64.40	64.71	68.15	12.68

Movement, Approach, & Intersection Results

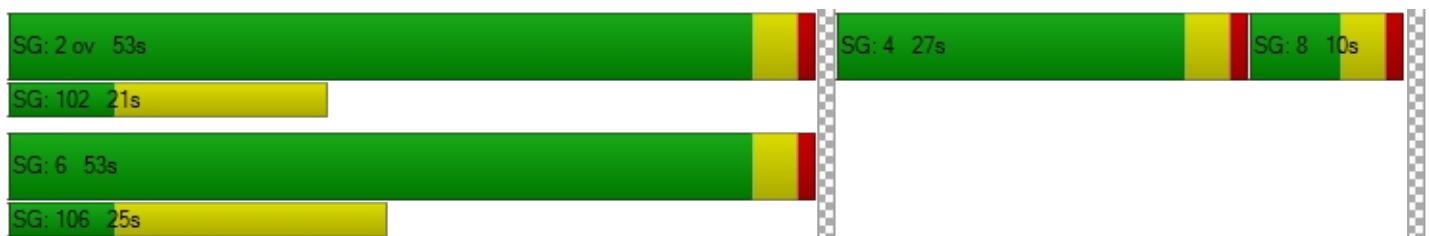
d_M, Delay for Movement [s/veh]	0.00	5.05	0.00	0.00	5.33	5.58	0.00	0.00	43.53	37.90	38.23	1.35
Movement LOS		A			A	A			D	D	D	A
d_A, Approach Delay [s/veh]	5.05			5.33			43.53			9.38		
Approach LOS	A			A			D			A		
d_I, Intersection Delay [s/veh]	6.30											
Intersection LOS	A											
Intersection V/C	0.373											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0			0.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	0.00			0.00			34.68			34.68		
I_p,int, Pedestrian LOS Score for Intersection	0.000			0.000			2.161			2.607		
Crosswalk LOS	F			F			B			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	1089			1089			133			511		
d_b, Bicycle Delay [s]	9.35			9.35			39.21			24.95		
I_b,int, Bicycle LOS Score for Intersection	2.237			2.311			1.560			2.347		
Bicycle LOS	B			B			A			B		

Sequence

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



Intersection Level Of Service Report
Intersection 31: Bristol Street at I-405 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	14.4
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.473

Intersection Setup

Name	Bristol Street		Bristol Street		I-405 SB Ramps	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration	↵ ↑ ↑ ↑		↑ ↑ ↵		↵↵↵↵	
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	1	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		Yes	

Volumes

Name	Bristol Street		Bristol Street		I-405 SB Ramps	
Base Volume Input [veh/h]	114	1128	1016	916	606	529
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	114	1128	1016	916	606	529
Peak Hour Factor	0.9270	0.9270	0.9270	0.9270	0.9270	0.9270
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	31	304	274	247	163	0
Total Analysis Volume [veh/h]	123	1217	1096	988	654	0
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Unsignalized	Permissive	Unsignalized
Signal Group	1	6	2	0	3	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	6	10	10	0	6	0
Maximum Green [s]	30	30	30	0	30	0
Amber [s]	3.0	3.0	3.0	0.0	3.0	0.0
All red [s]	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	39	61	22	0	29	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	0	7	0	0	0
Pedestrian Clearance [s]	0	0	11	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No	No		No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
Minimum Recall	No	No	No		No	
Maximum Recall	No	No	No		No	
Pedestrian Recall	No	No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L
C, Cycle Length [s]	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	67	55	15
g / C, Green / Cycle	0.09	0.75	0.62	0.16
(v / s)_i Volume / Saturation Flow Rate	0.07	0.18	0.22	0.13
s, saturation flow rate [veh/h]	1781	6792	5094	5188
c, Capacity [veh/h]	159	5080	3130	846
d1, Uniform Delay [s]	40.13	3.48	8.52	36.08
k, delay calibration	0.11	0.50	0.50	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.85	0.11	0.31	1.54
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.78	0.24	0.35	0.77
d, Delay for Lane Group [s/veh]	47.98	3.59	8.83	37.62
Lane Group LOS	D	A	A	D
Critical Lane Group	Yes	No	Yes	Yes
50th-Percentile Queue Length [veh/ln]	2.98	1.30	3.23	4.62
50th-Percentile Queue Length [ft/ln]	74.40	32.59	80.68	115.57
95th-Percentile Queue Length [veh/ln]	5.36	2.35	5.81	8.15
95th-Percentile Queue Length [ft/ln]	133.91	58.67	145.23	203.73

Movement, Approach, & Intersection Results

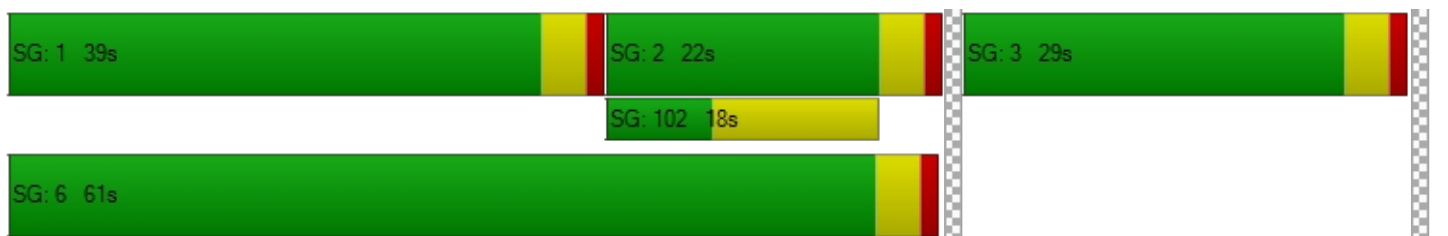
d_M, Delay for Movement [s/veh]	47.98	3.59	8.83	0.00	37.62	0.00
Movement LOS	D	A	A		D	
d_A, Approach Delay [s/veh]	7.67		8.83		37.62	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	14.42					
Intersection LOS	B					
Intersection V/C	0.473					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	34.68
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.579
Crosswalk LOS	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1266	400	555
d_b, Bicycle Delay [s]	6.06	28.81	23.48
I_b,int, Bicycle LOS Score for Intersection	2.112	2.162	1.560
Bicycle LOS	B	B	A

Sequence

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



Intersection Level Of Service Report
Intersection 37: Bear St at SR-73 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	23.0
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.670

Intersection Setup

Name	Bear St			Bear St			SR-73 NB Ramps			SR-73 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0	0	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		
Crosswalk	No			No			No			Yes		

Volumes

Name	Bear St			Bear St			SR-73 NB Ramps			SR-73 NB Ramps		
Base Volume Input [veh/h]	159	315	0	0	976	97	0	0	0	175	0	509
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	159	315	0	0	976	97	0	0	0	175	0	509
Peak Hour Factor	0.8120	0.8120	1.0000	1.0000	0.8120	0.8120	1.0000	1.0000	1.0000	0.8120	1.0000	0.8120
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	49	97	0	0	300	30	0	0	0	54	0	157
Total Analysis Volume [veh/h]	196	388	0	0	1202	119	0	0	0	216	0	627
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Permiss	Split
Signal Group	1	6	0	0	2	0	0	0	0	0	7	0	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	6	10	0	0	10	0	0	0	0	0	6	0	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	17	31	0	0	14	0	0	0	0	0	59	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	11	0	0	0	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall	No	No			No						No		
Maximum Recall	No	No			No						No		
Pedestrian Recall	No	No			No						No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C		L	R
C, Cycle Length [s]	90	90	90	90		90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	12	58	43	43		24	24
g / C, Green / Cycle	0.13	0.65	0.47	0.47		0.26	0.26
(v / s)_i Volume / Saturation Flow Rate	0.11	0.11	0.25	0.25		0.12	0.22
s, saturation flow rate [veh/h]	1781	3560	3560	1785		1781	2813
c, Capacity [veh/h]	232	2310	1689	847		467	738
d1, Uniform Delay [s]	38.28	6.23	16.53	16.52		27.88	31.53
k, delay calibration	0.11	0.50	0.50	0.50		0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	8.23	0.16	1.16	2.28		0.71	2.86
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.85	0.17	0.52	0.52		0.46	0.85
d, Delay for Lane Group [s/veh]	46.51	6.39	17.69	18.80		28.60	34.38
Lane Group LOS	D	A	B	B		C	C
Critical Lane Group	Yes	No	Yes	No		No	Yes
50th-Percentile Queue Length [veh/ln]	4.69	1.33	6.27	6.53		3.92	6.57
50th-Percentile Queue Length [ft/ln]	117.17	33.34	156.71	163.22		97.98	164.31
95th-Percentile Queue Length [veh/ln]	8.24	2.40	10.37	10.72		7.05	10.78
95th-Percentile Queue Length [ft/ln]	205.93	60.02	259.37	267.98		176.36	269.42

Movement, Approach, & Intersection Results

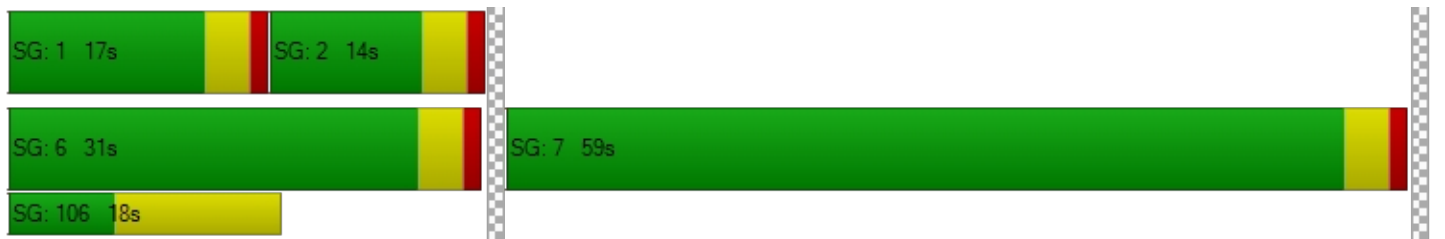
d_M, Delay for Movement [s/veh]	46.51	6.39	0.00	0.00	17.98	18.80	0.00	0.00	0.00	28.60	0.00	34.38
Movement LOS	D	A			B	B				C		C
d_A, Approach Delay [s/veh]	19.85				18.06		0.00		32.90			
Approach LOS	B				B		A		C			
d_I, Intersection Delay [s/veh]	22.99											
Intersection LOS	C											
Intersection V/C	0.670											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	34.68
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	2.336
Crosswalk LOS	F	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	600	222	0	1222
d_b, Bicycle Delay [s]	22.06	35.57	45.01	6.81
I_b,int, Bicycle LOS Score for Intersection	2.041	2.286	4.132	1.560
Bicycle LOS	B	B	D	A

Sequence

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



Intersection Level Of Service Report
Intersection 38: Bear St at SR-73 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	25.2
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.784

Intersection Setup

Name	Bear St			Bear St			SR-73 SB Ramps			SR-73 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↑↑			↑↑↑			↑↑					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Bear St			Bear St			SR-73 SB Ramps			SR-73 SB Ramps		
Base Volume Input [veh/h]	0	343	381	618	604	0	123	1	206	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	343	381	618	604	0	123	1	206	0	0	0
Peak Hour Factor	1.0000	0.8010	0.8010	0.8010	0.8010	1.0000	0.8010	0.8010	0.8010	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	107	119	193	189	0	38	0	64	0	0	0
Total Analysis Volume [veh/h]	0	428	476	772	754	0	154	1	257	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Permiss	Permiss
Signal Group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	6	10	0	0	10	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	18	0	44	62	0	0	33	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	7	0	0	7	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	L	C	L	C	
C, Cycle Length [s]	95	95	95	95	95	95	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	41	41	25	69	18	18	
g / C, Green / Cycle	0.43	0.43	0.26	0.73	0.19	0.19	
(v / s)_i Volume / Saturation Flow Rate	0.23	0.30	0.22	0.21	0.09	0.16	
s, saturation flow rate [veh/h]	1870	1589	3459	3560	1781	1590	
c, Capacity [veh/h]	799	679	895	2592	335	299	
d1, Uniform Delay [s]	20.23	22.27	33.61	4.46	34.30	37.40	
k, delay calibration	0.50	0.50	0.11	0.50	0.11	0.11	
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	2.57	5.96	2.62	0.28	0.99	7.34	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	0.54	0.70	0.86	0.29	0.46	0.86	
d, Delay for Lane Group [s/veh]	22.80	28.23	36.23	4.75	35.29	44.74	
Lane Group LOS	C	C	D	A	D	D	
Critical Lane Group	No	Yes	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	7.36	9.44	8.61	2.16	3.22	6.32	
50th-Percentile Queue Length [ft/ln]	184.00	235.89	215.37	53.91	80.48	158.06	
95th-Percentile Queue Length [veh/ln]	11.81	14.47	13.43	3.88	5.79	10.45	
95th-Percentile Queue Length [ft/ln]	295.23	361.83	335.71	97.04	144.86	261.15	

Movement, Approach, & Intersection Results

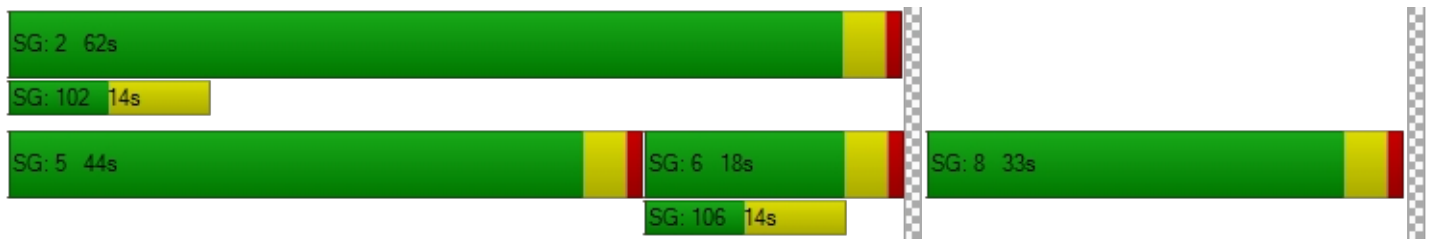
d_M, Delay for Movement [s/veh]	0.00	22.80	28.23	36.23	4.75	0.00	35.29	44.74	44.74	0.00	0.00	0.00
Movement LOS		C	C	D	A		D	D	D			
d_A, Approach Delay [s/veh]		25.66		20.67			41.20			0.00		
Approach LOS		C		C			D			A		
d_I, Intersection Delay [s/veh]	25.23											
Intersection LOS	C											
Intersection V/C	0.784											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	37.14	37.14
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.076	2.326
Crosswalk LOS	F	F	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	295	1221	610	0
d_b, Bicycle Delay [s]	34.54	7.21	22.93	47.51
I_b,int, Bicycle LOS Score for Intersection	2.305	2.819	2.239	4.132
Bicycle LOS	B	C	B	D

Sequence




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



Intersection Level Of Service Report
Intersection 12: SR-55 SB Ramps at MacArthur Blvd

Control Type:	Signalized	Delay (sec / veh):	11.9
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.750

Intersection Setup

Name	SR-55 SB Ramp			MacArthur Blvd			MacArthur Blvd					
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	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	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		
Crosswalk	No			Yes			No			No		

Volumes

Name				SR-55 SB Ramp			MacArthur Blvd			MacArthur Blvd		
Base Volume Input [veh/h]	0	0	0	291	0	742	0	1208	1050	0	1558	608
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	291	0	742	0	1208	1050	0	1558	608
Peak Hour Factor	1.0000	1.0000	1.0000	0.8960	1.0000	0.8960	1.0000	0.8960	0.8960	1.0000	0.8960	0.8960
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	81	0	207	0	337	293	0	435	170
Total Analysis Volume [veh/h]	0	0	0	325	0	828	0	1348	1172	0	1739	679
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	115
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	0	0	0	5	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	6	0	0	0	10	0	0	10	0
Maximum Green [s]	0	0	0	30	0	0	0	30	0	0	30	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	55	0	0	0	60	0	0	60	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	14	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	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	R	C	C
C, Cycle Length [s]		53	53	53	53
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		19	19	25	25
g / C, Green / Cycle		0.37	0.37	0.48	0.48
(v / s)_i Volume / Saturation Flow Rate		0.09	0.29	0.26	0.34
s, saturation flow rate [veh/h]		3459	2813	5094	5094
c, Capacity [veh/h]		1284	1044	2431	2431
d1, Uniform Delay [s]		11.52	14.79	9.81	10.95
k, delay calibration		0.11	0.11	0.11	0.11
l, Upstream Filtering Factor		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		0.10	1.41	0.20	0.40
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.25	0.79	0.55	0.72
d, Delay for Lane Group [s/veh]		11.62	16.20	10.01	11.35
Lane Group LOS		B	B	B	B
Critical Lane Group		No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]		1.15	3.91	2.95	4.27
50th-Percentile Queue Length [ft/ln]		28.77	97.70	73.73	106.84
95th-Percentile Queue Length [veh/ln]		2.07	7.03	5.31	7.66
95th-Percentile Queue Length [ft/ln]		51.79	175.87	132.71	191.60

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	11.62	0.00	16.20	0.00	10.01	0.00	0.00	11.35	0.00
Movement LOS				B		B		B			B	
d_A, Approach Delay [s/veh]	0.00			14.91			10.01			11.35		
Approach LOS	A			B			B			B		
d_I, Intersection Delay [s/veh]	11.89											
Intersection LOS	B											
Intersection V/C	0.750											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	16.45	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	0.000	2.494	0.000	0.000
Crosswalk LOS	F	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	1939	2129	2129
d_b, Bicycle Delay [s]	26.30	0.02	0.11	0.11
I_b,int, Bicycle LOS Score for Intersection	4.132	1.560	2.301	2.516
Bicycle LOS	D	A	B	B

Sequence

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



Intersection Level Of Service Report
Intersection 13: SR-55 NB Ramps at MacArthur Blvd

Control Type:	Signalized	Delay (sec / veh):	8.5
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.657

Intersection Setup

Name	SR-55 NB Ramp						MacArthur Blvd			MacArthur Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	⇐⇐⇐						⇐⇐⇐			⇐⇐⇐		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	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		
Crosswalk	No			No			No			Yes		

Volumes

Name	SR-55 NB Ramp						MacArthur Blvd			MacArthur Blvd		
Base Volume Input [veh/h]	647	0	430	0	0	0	0	723	761	0	1527	1092
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	647	0	430	0	0	0	0	723	761	0	1527	1092
Peak Hour Factor	0.9240	1.0000	0.9240	1.0000	1.0000	1.0000	1.0000	0.9240	0.9240	1.0000	0.9240	0.9240
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	175	0	116	0	0	0	0	196	206	0	413	295
Total Analysis Volume [veh/h]	700	0	465	0	0	0	0	782	824	0	1653	1182
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	1	0	0	0	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	6	0	0	0	0	0	0	10	0	0	10	0
Maximum Green [s]	30	0	0	0	0	0	0	30	0	0	30	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	47	0	0	0	0	0	0	73	0	0	73	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	7	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	21	0	0	0	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No							No			No	
Maximum Recall	No							No			No	
Pedestrian Recall	No							No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L		C	C
C, Cycle Length [s]	40		40	40
L, Total Lost Time per Cycle [s]	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00		2.00	2.00
g_i, Effective Green Time [s]	12		21	21
g / C, Green / Cycle	0.29		0.52	0.52
(v / s)_i Volume / Saturation Flow Rate	0.20		0.22	0.32
s, saturation flow rate [veh/h]	3459		3560	5094
c, Capacity [veh/h]	992		1835	2626
d1, Uniform Delay [s]	12.90		6.09	7.03
k, delay calibration	0.11		0.11	0.11
l, Upstream Filtering Factor	1.00		1.00	1.00
d2, Incremental Delay [s]	0.93		0.16	0.25
d3, Initial Queue Delay [s]	0.00		0.00	0.00
Rp, platoon ratio	1.00		1.00	1.00
PF, progression factor	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.71		0.43	0.63
d, Delay for Lane Group [s/veh]	13.84		6.24	7.28
Lane Group LOS	B		A	A
Critical Lane Group	Yes		No	Yes
50th-Percentile Queue Length [veh/ln]	2.37		1.31	2.13
50th-Percentile Queue Length [ft/ln]	59.23		32.81	53.31
95th-Percentile Queue Length [veh/ln]	4.26		2.36	3.84
95th-Percentile Queue Length [ft/ln]	106.62		59.06	95.96

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	13.84	0.00	0.00	0.00	0.00	0.00	0.00	6.24	0.00	0.00	7.28	0.00
Movement LOS	B							A			A	
d_A, Approach Delay [s/veh]	13.84			0.00			6.24			7.28		
Approach LOS	B			A			A			A		
d_I, Intersection Delay [s/veh]	8.49											
Intersection LOS	A											
Intersection V/C	0.657											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	10.65
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	2.801
Crosswalk LOS	F	F	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	2135	0	3425	3425
d_b, Bicycle Delay [s]	0.09	20.14	10.23	10.23
I_b,int, Bicycle LOS Score for Intersection	1.560	4.132	2.205	2.469
Bicycle LOS	A	D	B	B

Sequence

Ring 1	1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 25: I-405 NB Off-Ramp at South Coast Drive

Control Type:	Signalized	Delay (sec / veh):	21.2
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.587

Intersection Setup

Name	I-405 NB Off-Ramp			The Cape Dwy			South Coast Drive			South Coast 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	1	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	I-405 NB Off-Ramp			The Cape Dwy			South Coast Drive			South Coast Drive		
Base Volume Input [veh/h]	476	30	193	28	0	39	43	398	0	0	370	33
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
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]	476	30	193	28	0	39	43	398	0	0	370	33
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	1.0000	0.9500	0.9500	0.9500	1.0000	1.0000	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	125	8	51	7	0	10	11	105	0	0	97	9
Total Analysis Volume [veh/h]	501	32	203	29	0	41	45	419	0	0	389	35
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	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Permiss	Split	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	7	0	0	5	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	10	0	6	0	0	6	10	0	0	10	0
Maximum Green [s]	0	30	0	30	0	0	30	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	58	0	58	0	0	10	32	0	0	22	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	14	0	0	0	0	0	11	0	0	11	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No		No				No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	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	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	R	L	C	C	C
C, Cycle Length [s]	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
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	37	37	37	37	37	4	45	37	37
g / C, Green / Cycle	0.41	0.41	0.41	0.41	0.41	0.05	0.50	0.41	0.41
(v / s)_i Volume / Saturation Flow Rate	0.37	0.07	0.07	0.03	0.03	0.03	0.12	0.11	0.12
s, saturation flow rate [veh/h]	1366	1656	1589	1145	1589	1781	3560	1870	1817
c, Capacity [veh/h]	619	684	657	480	657	80	1773	764	742
d1, Uniform Delay [s]	26.05	16.70	16.72	19.53	15.91	42.09	12.86	17.77	17.83
k, delay calibration	0.18	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.20	0.12	0.13	0.05	0.04	5.96	0.31	0.90	0.97
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.81	0.17	0.18	0.06	0.06	0.56	0.24	0.28	0.29
d, Delay for Lane Group [s/veh]	30.25	16.82	16.84	19.58	15.95	48.05	13.17	18.67	18.80
Lane Group LOS	C	B	B	B	B	D	B	B	B
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	10.42	1.54	1.49	0.41	0.50	1.10	2.37	3.04	3.06
50th-Percentile Queue Length [ft/ln]	260.52	38.49	37.35	10.13	12.59	27.55	59.29	75.93	76.39
95th-Percentile Queue Length [veh/ln]	15.71	2.77	2.69	0.73	0.91	1.98	4.27	5.47	5.50
95th-Percentile Queue Length [ft/ln]	392.87	69.28	67.23	18.23	22.66	49.59	106.71	136.67	137.50

Movement, Approach, & Intersection Results

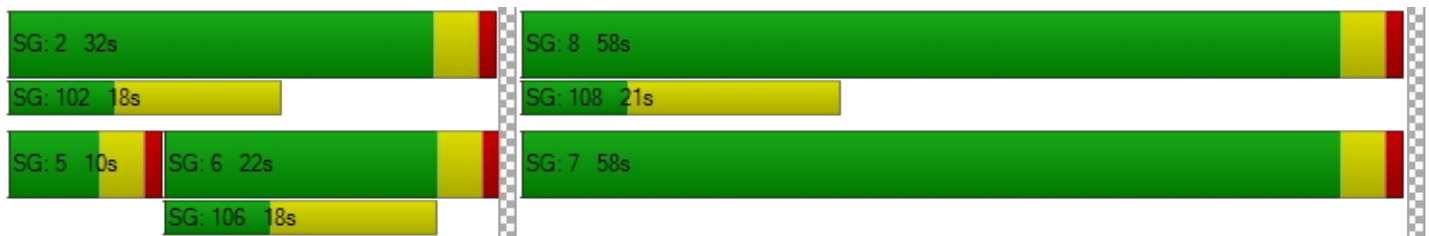
d_M, Delay for Movement [s/veh]	30.25	16.82	16.83	19.58	0.00	15.95	48.05	13.17	0.00	0.00	18.73	18.80
Movement LOS	C	B	B	B		B	D	B			B	B
d_A, Approach Delay [s/veh]	25.97			17.46			16.55			18.74		
Approach LOS	C			B			B			B		
d_I, Intersection Delay [s/veh]	21.23											
Intersection LOS	C											
Intersection V/C	0.587											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.67	34.67	0.00	34.67
I_p,int, Pedestrian LOS Score for Intersection	2.310	1.999	0.000	2.434
Crosswalk LOS	B	A	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1200	1200	622	400
d_b, Bicycle Delay [s]	7.20	7.20	21.36	28.80
I_b,int, Bicycle LOS Score for Intersection	2.774	1.560	1.942	1.909
Bicycle LOS	C	A	A	A

Sequence

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



Intersection Level Of Service Report
Intersection 28: Fairview Road at I-405 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	30.2
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.838

Intersection Setup

Name	Fairview Road			Fairview Road			I-405 NB Ramps			I-405 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	1	0	0	0	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		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Fairview Road			Fairview Road			I-405 NB Ramps			I-405 NB Ramps		
	Base Volume Input [veh/h]	225	1325	0	0	1843	258	0	0	0	846	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	225	1325	0	0	1843	258	0	0	0	846	0	1072
Peak Hour Factor	0.9270	0.9270	1.0000	1.0000	0.9270	0.9270	1.0000	1.0000	1.0000	0.9270	1.0000	0.9270
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	61	357	0	0	497	70	0	0	0	228	0	289
Total Analysis Volume [veh/h]	243	1429	0	0	1988	278	0	0	0	913	0	1156
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	105
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Permiss	Split
Signal Group	1	6	0	0	2	0	0	0	0	0	7	0	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	6	10	0	0	10	0	0	0	0	0	6	0	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	26	44	0	0	18	0	0	0	0	0	61	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	14	0	0	7	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall	No	No			No						No		
Maximum Recall	No	No			No						No		
Pedestrian Recall	No	No			No						No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	R		L	R
C, Cycle Length [s]	105	105	105	105		105	105
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	16	48	28	28		49	49
g / C, Green / Cycle	0.16	0.46	0.26	0.26		0.47	0.47
(v / s)_i Volume / Saturation Flow Rate	0.14	0.28	0.20	0.17		0.26	0.41
s, saturation flow rate [veh/h]	1781	5094	10188	1589		3459	2813
c, Capacity [veh/h]	276	2328	2687	419		1614	1313
d1, Uniform Delay [s]	43.38	21.51	35.36	34.49		20.28	25.34
k, delay calibration	0.11	0.50	0.50	0.50		0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	8.79	1.22	1.88	8.03		0.31	2.10
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.88	0.61	0.74	0.66		0.57	0.88
d, Delay for Lane Group [s/veh]	52.17	22.73	37.23	42.52		20.60	27.44
Lane Group LOS	D	C	D	D		C	C
Critical Lane Group	Yes	No	Yes	No		No	Yes
50th-Percentile Queue Length [veh/ln]	6.80	8.84	7.89	7.20		7.93	12.81
50th-Percentile Queue Length [ft/ln]	169.92	220.95	197.14	179.95		198.17	320.28
95th-Percentile Queue Length [veh/ln]	11.07	13.71	12.49	11.60		12.54	18.68
95th-Percentile Queue Length [ft/ln]	276.81	342.83	312.28	289.95		313.61	467.03

Movement, Approach, & Intersection Results

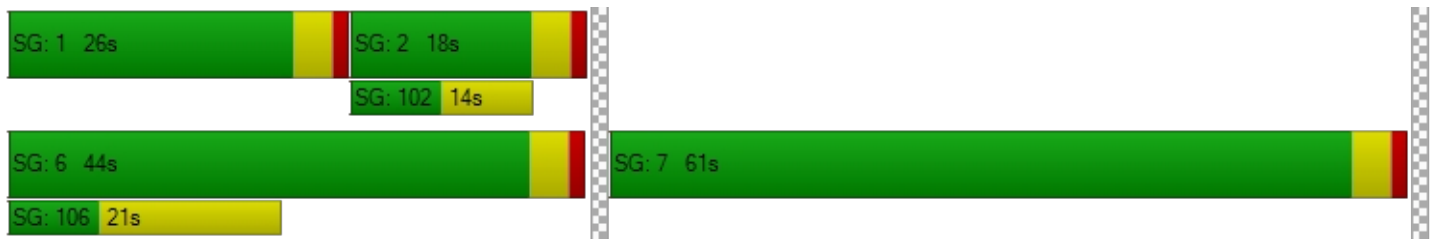
d_M, Delay for Movement [s/veh]	52.17	22.73	0.00	0.00	37.23	42.52	0.00	0.00	0.00	20.60	0.00	27.44
Movement LOS	D	C			D	D				C		C
d_A, Approach Delay [s/veh]	27.01				37.88		0.00		24.42			
Approach LOS	C				D		A		C			
d_I, Intersection Delay [s/veh]	30.22											
Intersection LOS	C											
Intersection V/C	0.838											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	42.07	42.07
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	1.939	2.711
Crosswalk LOS	F	F	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	762	267	0	1086
d_b, Bicycle Delay [s]	20.12	39.43	52.50	10.97
I_b,int, Bicycle LOS Score for Intersection	2.479	2.183	4.132	1.560
Bicycle LOS	B	B	D	A

Sequence

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



Intersection Level Of Service Report
Intersection 29: Fairview Road at I-405 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	20.5
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.651

Intersection Setup

Name	Fairview Rd			Fairview Rd			I-405 SB Ramps			I-405 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T			T			T					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	1	0	0	1	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Fairview Rd			Fairview Rd			I-405 SB Ramps			I-405 SB Ramps		
Base Volume Input [veh/h]	0	1137	649	1037	1603	0	312	0	357	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1137	649	1037	1603	0	312	0	357	0	0	0
Peak Hour Factor	1.0000	0.9690	0.9690	0.9690	0.9690	1.0000	0.9690	1.0000	0.9690	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	293	167	268	414	0	80	0	92	0	0	0
Total Analysis Volume [veh/h]	0	1173	670	1070	1654	0	322	0	368	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Permiss
Signal Group	0	6	0	5	2	0	3	0	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	10	0	6	10	0	6	0	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	30	0	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Split [s]	0	22	0	48	70	0	25	0	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	11	0	0	14	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No		No					
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No		No					
Maximum Recall		No		No	No		No					
Pedestrian Recall		No		No	No		No					
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	R	L	C	L	R	
C, Cycle Length [s]	95	95	95	95	95	95	95	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	
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]	44	44	44	24	72	15	15	
g / C, Green / Cycle	0.46	0.46	0.46	0.25	0.75	0.16	0.16	
(v / s)_i Volume / Saturation Flow Rate	0.22	0.23	0.23	0.21	0.32	0.09	0.13	
s, saturation flow rate [veh/h]	5094	1589	1589	5188	5094	3459	2813	
c, Capacity [veh/h]	2335	729	729	1318	3843	558	454	
d1, Uniform Delay [s]	17.80	18.15	18.15	33.31	4.24	36.85	38.45	
k, delay calibration	0.50	0.50	0.50	0.11	0.50	0.11	0.11	
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	0.69	2.50	2.50	1.26	0.35	0.95	3.52	
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	0.47	0.51	0.51	0.81	0.43	0.58	0.81	
d, Delay for Lane Group [s/veh]	18.49	20.65	20.65	34.57	4.60	37.79	41.97	
Lane Group LOS	B	C	C	C	A	D	D	
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	5.52	5.98	5.98	7.71	3.06	3.49	4.30	
50th-Percentile Queue Length [ft/ln]	137.97	149.47	149.47	192.64	76.46	87.29	107.45	
95th-Percentile Queue Length [veh/ln]	9.37	9.99	9.99	12.26	5.51	6.28	7.70	
95th-Percentile Queue Length [ft/ln]	234.28	249.73	249.73	306.46	137.64	157.12	192.45	

Movement, Approach, & Intersection Results

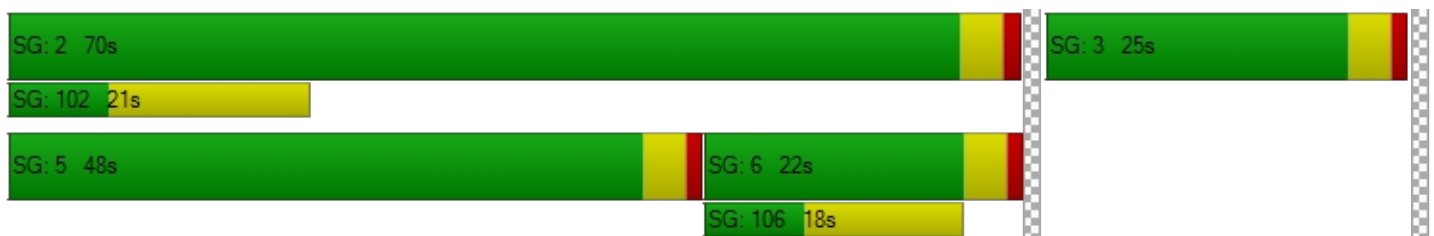
d_M, Delay for Movement [s/veh]	0.00	18.49	20.65	34.57	4.60	0.00	37.79	0.00	41.97	0.00	0.00	0.00
Movement LOS		B	C	C	A		D		D			
d_A, Approach Delay [s/veh]		19.36		16.37			40.02			0.00		
Approach LOS		B		B			D			A		
d_I, Intersection Delay [s/veh]	20.52											
Intersection LOS	C											
Intersection V/C	0.651											

Other Modes

g_Walk,mi, Effective Walk Time [s]		0.0		0.0		11.0		11.0
M_corner, Corner Circulation Area [ft ² /ped]		0.00		0.00		0.00		0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]		0.00		0.00		0.00		0.00
d_p, Pedestrian Delay [s]		0.00		0.00		37.14		37.14
I_p,int, Pedestrian LOS Score for Intersection		0.000		0.000		2.437		2.508
Crosswalk LOS		F		F		B		B
s_b, Saturation Flow Rate of the bicycle lane		2000		2000		2000		2000
c_b, Capacity of the bicycle lane [bicycles/h]		379		1389		442		0
d_b, Bicycle Delay [s]		31.21		4.43		28.83		47.51
I_b,int, Bicycle LOS Score for Intersection		2.320		3.058		1.560		4.132
Bicycle LOS		B		C		A		D

Sequence

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



Intersection Level Of Service Report
Intersection 30: Bristol Street at I-405 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	14.1
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.662

Intersection Setup

Name	Bristol Street			Bristol Street			I-405 NB Ramps			I-405 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	0	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	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	No			No			Yes			Yes		

Volumes

Name	Bristol Street			Bristol Street			I-405 NB Ramps			I-405 NB Ramps		
Base Volume Input [veh/h]	0	2166	185	0	2229	20	0	0	196	361	309	1236
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	2166	185	0	2229	20	0	0	196	361	309	1236
Peak Hour Factor	1.0000	0.9540	0.9540	1.0000	0.9540	0.9540	1.0000	1.0000	0.9540	0.9540	0.9540	0.9540
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	568	48	0	584	5	0	0	51	95	81	324
Total Analysis Volume [veh/h]	0	2270	194	0	2336	21	0	0	205	378	324	1296
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	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss	Split	Permiss	Split	Split	Split	Overlap
Signal Group	0	6	0	0	2	0	0	0	8	0	4	4
Auxiliary Signal Groups												2,4
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	0	10	0	0	0	6	0	10	10
Maximum Green [s]	0	30	0	0	30	0	0	0	30	0	30	30
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0
Split [s]	0	30	0	0	30	0	0	0	39	0	21	21
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	18	0	0	14	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No				No		No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0
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	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	C	R	L	C	C	R
C, Cycle Length [s]	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
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	52	52	52	9	17	17	17	73
g / C, Green / Cycle	0.58	0.58	0.58	0.10	0.19	0.19	0.19	0.81
(v / s)_i Volume / Saturation Flow Rate	0.33	0.28	0.25	0.07	0.13	0.13	0.14	0.46
s, saturation flow rate [veh/h]	6792	6792	1855	2813	1781	1814	1702	2813
c, Capacity [veh/h]	3927	3927	1073	279	337	343	322	2284
d1, Uniform Delay [s]	12.04	11.09	10.74	39.42	34.08	33.99	34.33	2.95
k, delay calibration	0.50	0.50	0.50	0.11	0.11	0.11	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.63	0.42	1.31	3.72	2.57	2.38	3.13	1.03
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.58	0.48	0.44	0.73	0.69	0.68	0.73	0.57
d, Delay for Lane Group [s/veh]	12.66	11.52	12.05	43.14	36.65	36.37	37.45	3.98
Lane Group LOS	B	B	B	D	D	D	D	A
Critical Lane Group	No	No	No	Yes	No	No	Yes	Yes
50th-Percentile Queue Length [veh/ln]	6.68	5.10	5.21	2.32	4.93	4.91	5.00	2.49
50th-Percentile Queue Length [ft/ln]	166.90	127.39	130.33	57.96	123.2	122.6	125.1	62.37
95th-Percentile Queue Length [veh/ln]	10.91	8.80	8.96	4.17	8.57	8.54	8.67	4.49
95th-Percentile Queue Length [ft/ln]	272.84	219.94	223.94	104.32	214.3	213.4	216.8	112.2

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	12.66	0.00	0.00	11.62	12.05	0.00	0.00	43.14	36.65	37.15	3.98
Movement LOS		B			B	B			D	D	D	A
d_A, Approach Delay [s/veh]	12.66			11.62			43.14			15.52		
Approach LOS	B			B			D			B		
d_I, Intersection Delay [s/veh]	14.06											
Intersection LOS	B											
Intersection V/C	0.662											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	34.70	34.70
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.265	2.777
Crosswalk LOS	F	F	B	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	577	577	777	378
d_b, Bicycle Delay [s]	22.78	22.78	16.83	29.63
I_b,int, Bicycle LOS Score for Intersection	2.496	2.337	1.560	3.208
Bicycle LOS	B	B	A	C

Sequence

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



Intersection Level Of Service Report
Intersection 31: Bristol Street at I-405 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	15.5
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.640

Intersection Setup

Name	Bristol Street		Bristol Street		I-405 SB Ramps	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration	↵ ↑ ↑ ↑		↑ ↑ ↵		↵↵↵↵	
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	1	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		Yes	

Volumes

Name	Bristol Street		Bristol Street		I-405 SB Ramps	
Base Volume Input [veh/h]	128	1583	1528	915	787	334
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	128	1583	1528	915	787	334
Peak Hour Factor	0.9440	0.9440	0.9440	0.9440	0.9440	0.9440
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	34	419	405	242	208	0
Total Analysis Volume [veh/h]	136	1677	1619	969	834	0
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Unsignalized	Permissive	Unsignalized
Signal Group	1	6	2	0	3	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	6	10	10	0	6	0
Maximum Green [s]	30	30	30	0	30	0
Amber [s]	3.0	3.0	3.0	0.0	3.0	0.0
All red [s]	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	30	52	22	0	38	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	0	7	0	0	0
Pedestrian Clearance [s]	0	0	11	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No	No		No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
Minimum Recall	No	No	No		No	
Maximum Recall	No	No	No		No	
Pedestrian Recall	No	No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L
C, Cycle Length [s]	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	64	51	18
g / C, Green / Cycle	0.10	0.71	0.57	0.20
(v / s)_i Volume / Saturation Flow Rate	0.08	0.25	0.32	0.16
s, saturation flow rate [veh/h]	1781	6792	5094	5188
c, Capacity [veh/h]	173	4801	2880	1060
d1, Uniform Delay [s]	39.75	5.14	12.46	33.97
k, delay calibration	0.11	0.50	0.50	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.71	0.20	0.80	1.34
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.79	0.35	0.56	0.79
d, Delay for Lane Group [s/veh]	47.46	5.34	13.26	35.30
Lane Group LOS	D	A	B	D
Critical Lane Group	Yes	No	Yes	Yes
50th-Percentile Queue Length [veh/ln]	3.27	2.54	6.52	5.77
50th-Percentile Queue Length [ft/ln]	81.79	63.50	162.95	144.21
95th-Percentile Queue Length [veh/ln]	5.89	4.57	10.70	9.71
95th-Percentile Queue Length [ft/ln]	147.22	114.30	267.62	242.69

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	47.46	5.34	13.26	0.00	35.30	0.00
Movement LOS	D	A	B		D	
d_A, Approach Delay [s/veh]	8.50		13.26		35.30	
Approach LOS	A		B		D	
d_I, Intersection Delay [s/veh]	15.55					
Intersection LOS	B					
Intersection V/C	0.640					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	34.68
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.610
Crosswalk LOS	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1066	400	755
d_b, Bicycle Delay [s]	9.81	28.81	17.43
I_b,int, Bicycle LOS Score for Intersection	2.307	2.450	1.560
Bicycle LOS	B	B	A

Sequence

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



Intersection Level Of Service Report
Intersection 37: Bear St at SR-73 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	43.4
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.965

Intersection Setup

Name	Bear St			Bear St			SR-73 NB Ramps			SR-73 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0	0	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		
Crosswalk	No			No			No			Yes		

Volumes

Name	Bear St			Bear St			SR-73 NB Ramps			SR-73 NB Ramps		
Base Volume Input [veh/h]	153	592	0	0	1035	152	0	0	0	408	0	1366
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	153	592	0	0	1035	152	0	0	0	408	0	1366
Peak Hour Factor	0.9180	0.9180	1.0000	1.0000	0.9180	0.9180	1.0000	1.0000	1.0000	0.9180	1.0000	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]	42	161	0	0	282	41	0	0	0	111	0	372
Total Analysis Volume [veh/h]	167	645	0	0	1127	166	0	0	0	444	0	1488
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Permiss	Split
Signal Group	1	6	0	0	2	0	0	0	0	0	7	0	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	6	10	0	0	10	0	0	0	0	0	6	0	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	16	50	0	0	34	0	0	0	0	0	70	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	11	0	0	0	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall	No	No			No						No		
Maximum Recall	No	No			No						No		
Pedestrian Recall	No	No			No						No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C		L	R
C, Cycle Length [s]	120	120	120	120		120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	12	47	31	31		65	65
g / C, Green / Cycle	0.10	0.39	0.25	0.25		0.55	0.55
(v / s)_i Volume / Saturation Flow Rate	0.09	0.18	0.24	0.25		0.25	0.53
s, saturation flow rate [veh/h]	1781	3560	3560	1751		1781	2813
c, Capacity [veh/h]	179	1384	907	446		970	1532
d1, Uniform Delay [s]	53.53	27.37	43.95	44.19		16.56	26.39
k, delay calibration	0.11	0.50	0.50	0.50		0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	18.55	1.13	20.09	35.06		0.34	5.87
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.93	0.47	0.95	0.97		0.46	0.97
d, Delay for Lane Group [s/veh]	72.08	28.50	64.05	79.25		16.90	32.25
Lane Group LOS	E	C	E	E		B	C
Critical Lane Group	Yes	No	No	Yes		No	Yes
50th-Percentile Queue Length [veh/ln]	5.92	7.11	15.02	16.90		7.35	20.63
50th-Percentile Queue Length [ft/ln]	147.92	177.81	375.47	422.44		183.71	515.66
95th-Percentile Queue Length [veh/ln]	9.91	11.49	21.37	23.64		11.79	28.07
95th-Percentile Queue Length [ft/ln]	247.64	287.16	534.36	590.98		294.85	701.86

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	72.08	28.50	0.00	0.00	67.62	79.25	0.00	0.00	0.00	16.90	0.00	32.25
Movement LOS	E	C			E	E				B		C
d_A, Approach Delay [s/veh]	37.47				69.11		0.00		28.72			
Approach LOS	D				E		A		C			
d_I, Intersection Delay [s/veh]	43.42											
Intersection LOS	D											
Intersection V/C	0.965											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	49.49
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	2.616
Crosswalk LOS	F	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	767	500	0	1100
d_b, Bicycle Delay [s]	22.80	33.73	59.98	12.14
I_b,int, Bicycle LOS Score for Intersection	2.230	2.271	4.132	1.560
Bicycle LOS	B	B	D	A

Sequence

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



Intersection Level Of Service Report
Intersection 38: Bear St at SR-73 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	21.3
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.608

Intersection Setup

Name	Bear St			Bear St			SR-73 SB Ramps			SR-73 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↑↑			↑↑↑			↑↑					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Bear St			Bear St			SR-73 SB Ramps			SR-73 SB Ramps		
Base Volume Input [veh/h]	0	564	172	614	835	0	188	1	159	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	564	172	614	835	0	188	1	159	0	0	0
Peak Hour Factor	1.0000	0.9290	0.9290	0.9290	0.9290	1.0000	0.9290	0.9290	0.9290	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	152	46	165	225	0	51	0	43	0	0	0
Total Analysis Volume [veh/h]	0	607	185	661	899	0	202	1	171	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Permiss	Permiss
Signal Group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	6	10	0	0	10	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	18	0	48	66	0	0	29	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	7	0	0	7	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	L	C	L	C	
C, Cycle Length [s]	95	95	95	95	95	95	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	49	49	21	74	13	13	
g / C, Green / Cycle	0.51	0.51	0.23	0.78	0.14	0.14	
(v / s)_i Volume / Saturation Flow Rate	0.21	0.23	0.19	0.25	0.11	0.11	
s, saturation flow rate [veh/h]	1870	1728	3459	3560	1781	1596	
c, Capacity [veh/h]	955	882	781	2771	245	219	
d1, Uniform Delay [s]	14.44	14.77	35.22	3.12	39.74	39.76	
k, delay calibration	0.50	0.50	0.11	0.50	0.11	0.11	
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	1.33	1.65	2.65	0.31	6.08	6.90	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	0.41	0.45	0.85	0.32	0.80	0.81	
d, Delay for Lane Group [s/veh]	15.77	16.42	37.87	3.43	45.82	46.66	
Lane Group LOS	B	B	D	A	D	D	
Critical Lane Group	No	Yes	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	5.39	5.56	7.46	1.90	4.81	4.39	
50th-Percentile Queue Length [ft/ln]	134.74	138.90	186.51	47.52	120.29	109.64	
95th-Percentile Queue Length [veh/ln]	9.20	9.42	11.94	3.42	8.41	7.82	
95th-Percentile Queue Length [ft/ln]	229.92	235.54	298.49	85.53	210.23	195.50	

Movement, Approach, & Intersection Results

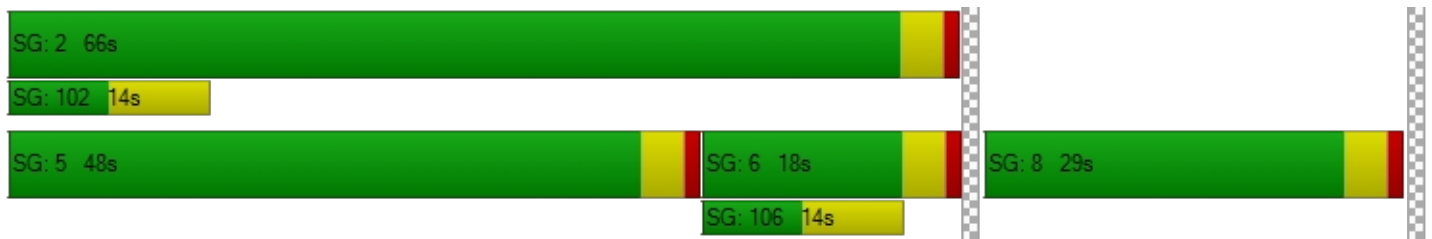
d_M, Delay for Movement [s/veh]	0.00	16.00	16.42	37.87	3.43	0.00	45.87	46.66	46.66	0.00	0.00	0.00
Movement LOS		B	B	D	A		D	D	D			
d_A, Approach Delay [s/veh]		16.09		18.03			46.22			0.00		
Approach LOS		B		B			D			A		
d_I, Intersection Delay [s/veh]	21.33											
Intersection LOS	C											
Intersection V/C	0.608											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	37.14	37.14
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.064	2.130
Crosswalk LOS	F	F	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	295	1305	526	0
d_b, Bicycle Delay [s]	34.54	5.74	25.80	47.51
I_b,int, Bicycle LOS Score for Intersection	2.213	2.847	2.177	4.132
Bicycle LOS	B	C	B	D

Sequence

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






APPENDIX E-III

**EXISTING PLUS PROJECT PHASES 1 AND 2
TRAFFIC CONDITIONS**

Intersection Level Of Service Report
Intersection 12: SR-55 SB Ramps at MacArthur Blvd

Control Type:	Signalized	Delay (sec / veh):	14.3
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.776

Intersection Setup

Name	SR-55 SB Ramp			MacArthur Blvd			MacArthur Blvd					
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	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	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		
Crosswalk	No			Yes			No			No		

Volumes

Name				SR-55 SB Ramp			MacArthur Blvd			MacArthur Blvd		
Base Volume Input [veh/h]	0	0	0	971	0	913	0	1578	1060	0	1305	146
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	971	0	913	0	1578	1060	0	1305	146
Peak Hour Factor	1.0000	1.0000	1.0000	0.9470	1.0000	0.9470	1.0000	0.9470	0.9470	1.0000	0.9470	0.9470
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	256	0	241	0	417	280	0	345	39
Total Analysis Volume [veh/h]	0	0	0	1025	0	964	0	1666	1119	0	1378	154
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	105
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	0	0	0	5	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	6	0	0	0	10	0	0	10	0
Maximum Green [s]	0	0	0	30	0	0	0	30	0	0	30	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	54	0	0	0	51	0	0	51	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	14	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	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	R	C	C
C, Cycle Length [s]		58	58	58	58
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		25	25	25	25
g / C, Green / Cycle		0.43	0.43	0.43	0.43
(v / s)_i Volume / Saturation Flow Rate		0.30	0.34	0.33	0.27
s, saturation flow rate [veh/h]		3459	2813	5094	5094
c, Capacity [veh/h]		1487	1210	2209	2209
d1, Uniform Delay [s]		13.54	14.50	13.99	12.90
k, delay calibration		0.11	0.11	0.11	0.11
l, Upstream Filtering Factor		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		0.58	1.24	0.54	0.29
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.69	0.80	0.75	0.62
d, Delay for Lane Group [s/veh]		14.12	15.74	14.52	13.19
Lane Group LOS		B	B	B	B
Critical Lane Group		No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]		4.77	4.89	5.33	4.04
50th-Percentile Queue Length [ft/ln]		119.17	122.19	133.17	101.01
95th-Percentile Queue Length [veh/ln]		8.35	8.51	9.11	7.27
95th-Percentile Queue Length [ft/ln]		208.69	212.84	227.80	181.81

Movement, Approach, & Intersection Results

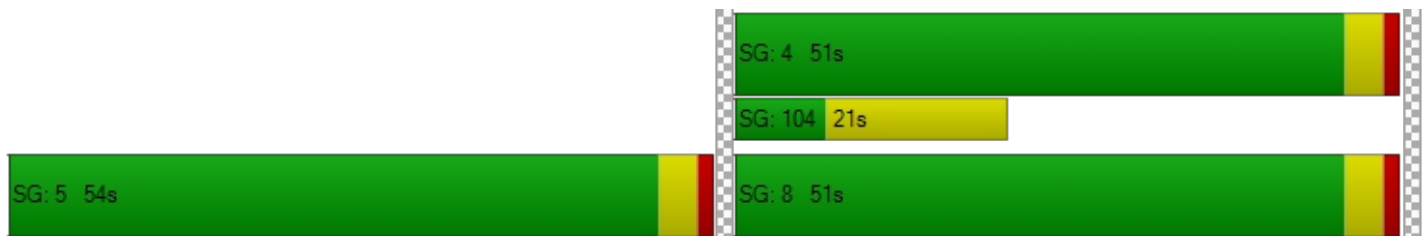
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	14.12	0.00	15.74	0.00	14.52	0.00	0.00	13.19	0.00
Movement LOS				B		B		B			B	
d_A, Approach Delay [s/veh]	0.00			14.90			14.52			13.19		
Approach LOS	A			B			B			B		
d_I, Intersection Delay [s/veh]	14.31											
Intersection LOS	B											
Intersection V/C	0.776											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	19.28	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	0.000	2.664	0.000	0.000
Crosswalk LOS	F	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	1710	1607	1607
d_b, Bicycle Delay [s]	29.25	0.62	1.13	1.13
I_b,int, Bicycle LOS Score for Intersection	4.132	1.560	2.476	2.318
Bicycle LOS	D	A	B	B

Sequence

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



Intersection Level Of Service Report
Intersection 13: SR-55 NB Ramps at MacArthur Blvd

Control Type:	Signalized	Delay (sec / veh):	20.5
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.934

Intersection Setup

Name	SR-55 NB Ramp						MacArthur Blvd			MacArthur Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	⇐⇐⇐						⇐⇐⇐			⇐⇐⇐		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	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		
Crosswalk	No			No			No			Yes		

Volumes

Name	SR-55 NB Ramp						MacArthur Blvd			MacArthur Blvd		
Base Volume Input [veh/h]	924	0	986	0	0	0	0	1656	897	0	532	246
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	924	0	986	0	0	0	0	1656	897	0	532	246
Peak Hour Factor	0.9080	1.0000	0.9080	1.0000	1.0000	1.0000	1.0000	0.9080	0.9080	1.0000	0.9080	0.9080
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	254	0	271	0	0	0	0	456	247	0	146	68
Total Analysis Volume [veh/h]	1018	0	1086	0	0	0	0	1824	988	0	586	271
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	1	0	0	0	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	6	0	0	0	0	0	0	10	0	0	10	0
Maximum Green [s]	30	0	0	0	0	0	0	30	0	0	30	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	46	0	0	0	0	0	0	44	0	0	44	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	7	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	21	0	0	0	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No							No			No	
Maximum Recall	No							No			No	
Pedestrian Recall	No							No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L		C	C
C, Cycle Length [s]	59		59	59
L, Total Lost Time per Cycle [s]	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00		2.00	2.00
g_i, Effective Green Time [s]	21		30	30
g / C, Green / Cycle	0.35		0.51	0.51
(v / s)_i Volume / Saturation Flow Rate	0.29		0.51	0.12
s, saturation flow rate [veh/h]	3459		3560	5094
c, Capacity [veh/h]	1225		1815	2597
d1, Uniform Delay [s]	17.39		14.42	7.99
k, delay calibration	0.11		0.11	0.11
l, Upstream Filtering Factor	1.00		1.00	1.00
d2, Incremental Delay [s]	1.53		10.98	0.04
d3, Initial Queue Delay [s]	0.00		0.00	0.00
Rp, platoon ratio	1.00		1.00	1.00
PF, progression factor	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.83		1.00	0.23
d, Delay for Lane Group [s/veh]	18.92		25.40	8.03
Lane Group LOS	B		F	A
Critical Lane Group	Yes		Yes	No
50th-Percentile Queue Length [veh/ln]	5.79		12.24	1.14
50th-Percentile Queue Length [ft/ln]	144.85		305.93	28.48
95th-Percentile Queue Length [veh/ln]	9.74		18.04	2.05
95th-Percentile Queue Length [ft/ln]	243.53		450.94	51.26

Movement, Approach, & Intersection Results

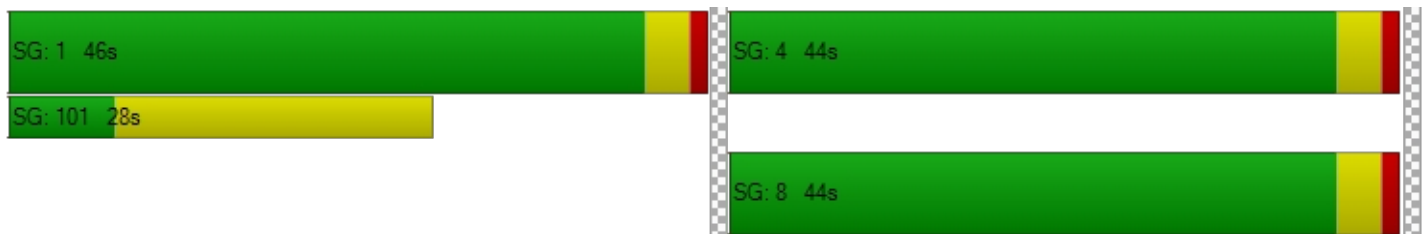
d_M, Delay for Movement [s/veh]	18.92	0.00	0.00	0.00	0.00	0.00	0.00	25.40	0.00	0.00	8.03	0.00
Movement LOS	B							F			A	
d_A, Approach Delay [s/veh]	18.92			0.00			25.40			8.03		
Approach LOS	B			A			C			A		
d_I, Intersection Delay [s/veh]	20.51											
Intersection LOS	C											
Intersection V/C	0.934											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	19.42
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	2.821
Crosswalk LOS	F	F	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1429	0	1361	1361
d_b, Bicycle Delay [s]	2.40	29.40	3.00	3.00
I_b,int, Bicycle LOS Score for Intersection	1.560	4.132	3.064	1.882
Bicycle LOS	A	D	C	A

Sequence

Ring 1	1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 25: I-405 NB Off-Ramp at South Coast Drive

Control Type:	Signalized	Delay (sec / veh):	22.9
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.430

Intersection Setup

Name	I-405 NB Off-Ramp			The Cape Dwy			South Coast Drive			South Coast 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	1	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	I-405 NB Off-Ramp			The Cape Dwy			South Coast Drive			South Coast Drive		
Base Volume Input [veh/h]	352	6	92	48	0	72	19	216	0	0	94	17
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
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]	352	6	92	48	0	72	19	216	0	0	94	17
Peak Hour Factor	0.8740	0.8740	0.8740	0.8740	1.0000	0.8740	0.8740	0.8740	1.0000	1.0000	0.8740	0.8740
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	101	2	26	14	0	21	5	62	0	0	27	5
Total Analysis Volume [veh/h]	403	7	105	55	0	82	22	247	0	0	108	19
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]	95
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Permiss	Split	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	7	0	0	5	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	10	0	6	0	0	6	10	0	0	10	0
Maximum Green [s]	0	30	0	30	0	0	30	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	63	0	63	0	0	10	32	0	0	22	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	14	0	0	0	0	0	11	0	0	11	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No		No				No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	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	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	R	L	C	C	C
C, Cycle Length [s]	95	95	95	95	95	95	95	95	95
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	33	33	33	33	33	3	54	47	47
g / C, Green / Cycle	0.35	0.35	0.35	0.35	0.35	0.03	0.57	0.50	0.50
(v / s)_i Volume / Saturation Flow Rate	0.31	0.03	0.03	0.04	0.05	0.01	0.07	0.03	0.04
s, saturation flow rate [veh/h]	1316	1620	1589	1281	1589	1781	3560	1870	1776
c, Capacity [veh/h]	513	567	557	471	557	50	2014	927	880
d1, Uniform Delay [s]	30.55	20.78	20.78	23.72	21.14	45.44	9.63	12.52	12.54
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.71	0.08	0.08	0.11	0.12	6.04	0.12	0.14	0.16
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.79	0.10	0.10	0.12	0.15	0.44	0.12	0.07	0.07
d, Delay for Lane Group [s/veh]	33.26	20.85	20.86	23.83	21.27	51.48	9.76	12.66	12.70
Lane Group LOS	C	C	C	C	C	D	A	B	B
Critical Lane Group	Yes	No	No	No	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	8.96	0.85	0.83	0.90	1.25	0.59	1.17	0.72	0.72
50th-Percentile Queue Length [ft/ln]	224.02	21.21	20.82	22.45	31.33	14.77	29.28	18.03	18.11
95th-Percentile Queue Length [veh/ln]	13.87	1.53	1.50	1.62	2.26	1.06	2.11	1.30	1.30
95th-Percentile Queue Length [ft/ln]	346.75	38.17	37.48	40.41	56.40	26.58	52.71	32.45	32.60

Movement, Approach, & Intersection Results

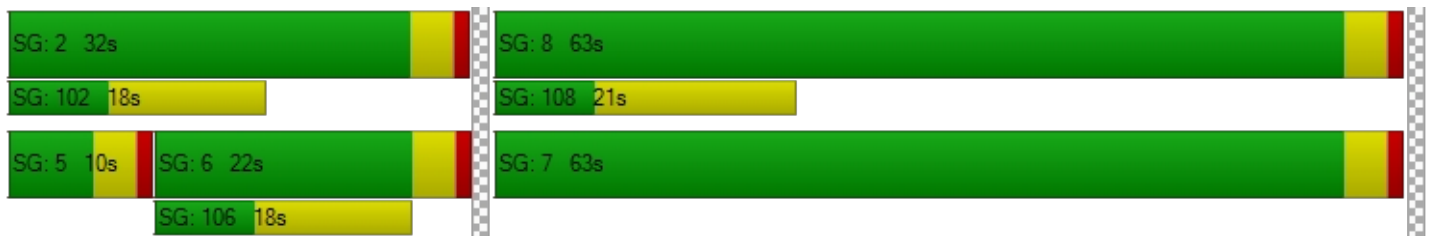
d_M, Delay for Movement [s/veh]	33.26	20.85	20.86	23.83	0.00	21.27	51.48	9.76	0.00	0.00	12.68	12.70
Movement LOS	C	C	C	C		C	D	A			B	B
d_A, Approach Delay [s/veh]	30.56			22.29			13.17			12.68		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]	22.85											
Intersection LOS	C											
Intersection V/C	0.430											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	37.14	37.14	0.00	37.14
I_p,int, Pedestrian LOS Score for Intersection	2.259	2.003	0.000	2.342
Crosswalk LOS	B	B	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1242	1242	589	379
d_b, Bicycle Delay [s]	6.82	6.82	23.63	31.21
I_b,int, Bicycle LOS Score for Intersection	2.409	1.560	1.782	1.664
Bicycle LOS	B	A	A	A

Sequence

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



Intersection Level Of Service Report
Intersection 28: Fairview Road at I-405 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	25.5
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.773

Intersection Setup

Name	Fairview Road			Fairview Road			I-405 NB Ramps			I-405 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	1	0	0	0	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		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Fairview Road			Fairview Road			I-405 NB Ramps			I-405 NB Ramps		
Base Volume Input [veh/h]	179	842	0	0	2452	296	0	0	0	614	0	776
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	179	842	0	0	2452	296	0	0	0	614	0	776
Peak Hour Factor	0.9070	0.9070	1.0000	1.0000	0.9070	0.9070	1.0000	1.0000	1.0000	0.9070	1.0000	0.9070
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	49	232	0	0	676	82	0	0	0	169	0	214
Total Analysis Volume [veh/h]	197	928	0	0	2703	326	0	0	0	677	0	856
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Permiss	Split
Signal Group	1	6	0	0	2	0	0	0	0	0	7	0	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	6	10	0	0	10	0	0	0	0	0	6	0	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	23	41	0	0	18	0	0	0	0	0	59	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	14	0	0	7	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall	No	No			No						No		
Maximum Recall	No	No			No						No		
Pedestrian Recall	No	No			No						No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	R		L	R
C, Cycle Length [s]	100	100	100	100		100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	13	56	39	39		36	36
g / C, Green / Cycle	0.13	0.56	0.39	0.39		0.36	0.36
(v / s)_i Volume / Saturation Flow Rate	0.11	0.18	0.27	0.21		0.20	0.30
s, saturation flow rate [veh/h]	1781	5094	10188	1589		3459	2813
c, Capacity [veh/h]	232	2862	3991	623		1238	1007
d1, Uniform Delay [s]	42.54	11.73	25.18	23.27		25.62	29.62
k, delay calibration	0.11	0.50	0.50	0.50		0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	8.44	0.30	0.94	3.13		0.38	2.12
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.85	0.32	0.68	0.52		0.55	0.85
d, Delay for Lane Group [s/veh]	50.98	12.03	26.12	26.40		26.00	31.73
Lane Group LOS	D	B	C	C		C	C
Critical Lane Group	Yes	No	Yes	No		No	Yes
50th-Percentile Queue Length [veh/ln]	5.26	3.59	8.76	6.29		6.36	9.49
50th-Percentile Queue Length [ft/ln]	131.44	89.79	219.07	157.15		158.91	237.30
95th-Percentile Queue Length [veh/ln]	9.02	6.47	13.62	10.40		10.49	14.54
95th-Percentile Queue Length [ft/ln]	225.45	161.63	340.44	259.94		262.28	363.61

Movement, Approach, & Intersection Results

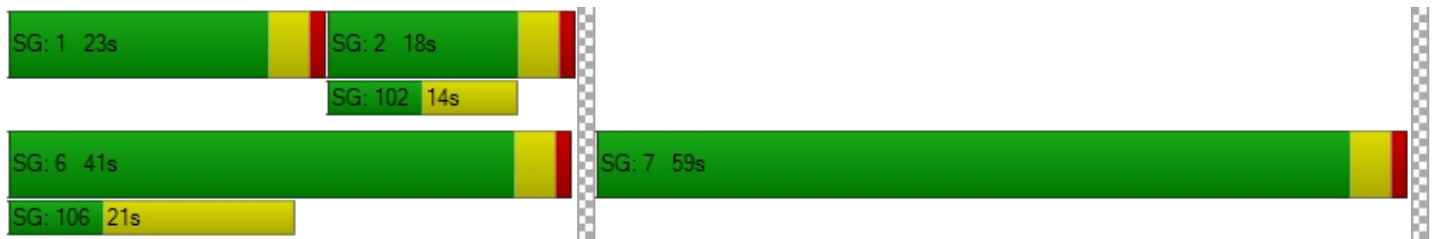
d_M, Delay for Movement [s/veh]	50.98	12.03	0.00	0.00	26.12	26.40	0.00	0.00	0.00	26.00	0.00	31.73
Movement LOS	D	B			C	C				C		C
d_A, Approach Delay [s/veh]	18.85				26.15		0.00		29.20			
Approach LOS	B				C		A		C			
d_I, Intersection Delay [s/veh]	25.53											
Intersection LOS	C											
Intersection V/C	0.773											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	39.61	39.61
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	1.938	2.604
Crosswalk LOS	F	F	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	740	280	0	1100
d_b, Bicycle Delay [s]	19.85	36.98	50.00	10.13
I_b,int, Bicycle LOS Score for Intersection	2.178	2.393	4.132	1.560
Bicycle LOS	B	B	D	A

Sequence

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



Intersection Level Of Service Report
Intersection 29: Fairview Road at I-405 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	35.1
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.974

Intersection Setup

Name	Fairview Rd			Fairview Rd			I-405 SB Ramps			I-405 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	Lr			r			r					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	1	0	0	1	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Fairview Rd			Fairview Rd			I-405 SB Ramps			I-405 SB Ramps		
Base Volume Input [veh/h]	0	856	1129	1544	1651	0	185	0	326	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	856	1129	1544	1651	0	185	0	326	0	0	0
Peak Hour Factor	1.0000	0.8770	0.8770	0.8770	0.8770	1.0000	0.8770	1.0000	0.8770	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	244	322	440	471	0	53	0	93	0	0	0
Total Analysis Volume [veh/h]	0	976	1287	1761	1883	0	211	0	372	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Permiss
Signal Group	0	6	0	5	2	0	3	0	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	10	0	6	10	0	6	0	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	30	0	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Split [s]	0	54	0	46	100	0	20	0	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	11	0	0	14	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No		No					
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No		No					
Maximum Recall		No		No	No		No					
Pedestrian Recall		No		No	No		No					
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	R	L	C	L	R	
C, Cycle Length [s]	120	120	120	120	120	120	120	
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]	50	50	50	42	96	16	16	
g / C, Green / Cycle	0.42	0.42	0.42	0.35	0.80	0.13	0.13	
(v / s)_i Volume / Saturation Flow Rate	0.19	0.40	0.40	0.34	0.37	0.06	0.13	
s, saturation flow rate [veh/h]	5094	1589	1589	5188	5094	3459	2813	
c, Capacity [veh/h]	2122	662	662	1815	4074	462	376	
d1, Uniform Delay [s]	25.26	34.31	34.31	38.39	3.82	47.95	51.89	
k, delay calibration	0.50	0.50	0.50	0.11	0.50	0.11	0.11	
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	0.72	28.73	28.73	5.08	0.38	0.71	19.30	
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	0.46	0.97	0.97	0.97	0.46	0.46	0.99	
d, Delay for Lane Group [s/veh]	25.98	63.03	63.03	43.47	4.20	48.66	71.19	
Lane Group LOS	C	E	E	D	A	D	E	
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	6.81	23.19	23.19	17.54	3.91	2.97	6.58	
50th-Percentile Queue Length [ft/ln]	170.14	579.70	579.70	438.61	97.83	74.15	164.49	
95th-Percentile Queue Length [veh/ln]	11.08	31.09	31.09	24.41	7.04	5.34	10.79	
95th-Percentile Queue Length [ft/ln]	277.10	777.13	777.13	610.34	176.09	133.47	269.65	

Movement, Approach, & Intersection Results

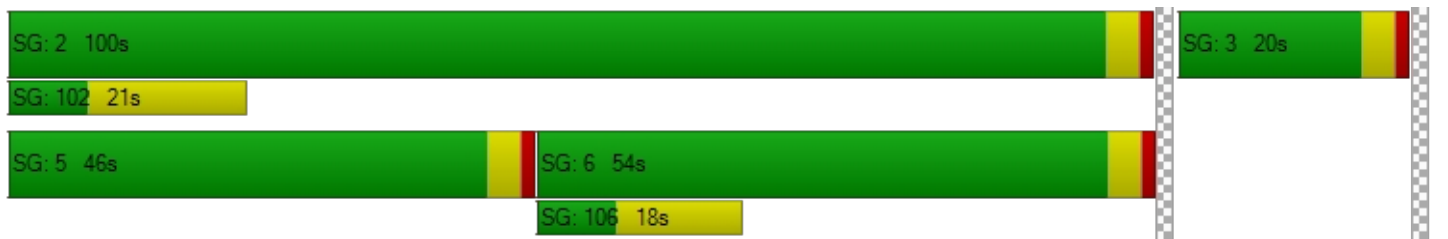
d_M, Delay for Movement [s/veh]	0.00	25.98	63.03	43.47	4.20	0.00	48.66	0.00	71.19	0.00	0.00	0.00
Movement LOS		C	E	D	A		D		E			
d_A, Approach Delay [s/veh]	47.05			23.17			63.03			0.00		
Approach LOS	D			C			E			A		
d_I, Intersection Delay [s/veh]	35.08											
Intersection LOS	D											
Intersection V/C	0.974											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0			0.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	0.00			0.00			49.50			49.50		
I_p,int, Pedestrian LOS Score for Intersection	0.000			0.000			2.427			2.945		
Crosswalk LOS	F			F			B			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	833			1600			267			0		
d_b, Bicycle Delay [s]	20.41			2.40			45.06			59.99		
I_b,int, Bicycle LOS Score for Intersection	2.493			3.564			1.560			4.132		
Bicycle LOS	B			D			A			D		

Sequence

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



Intersection Level Of Service Report
Intersection 30: Bristol Street at I-405 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	6.3
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.384

Intersection Setup

Name	Bristol Street			Bristol Street			I-405 NB Ramps			I-405 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	0	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	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	No			No			Yes			Yes		

Volumes

Name	Bristol Street			Bristol Street			I-405 NB Ramps			I-405 NB Ramps		
Base Volume Input [veh/h]	0	1554	193	0	2205	8	0	0	34	122	74	709
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1554	193	0	2205	8	0	0	34	122	74	709
Peak Hour Factor	1.0000	0.9380	0.9380	1.0000	0.9380	0.9380	1.0000	1.0000	0.9380	0.9380	0.9380	0.9380
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	414	51	0	588	2	0	0	9	33	20	189
Total Analysis Volume [veh/h]	0	1657	206	0	2351	9	0	0	36	130	79	756
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	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss	Split	Permiss	Split	Split	Split	Overlap
Signal Group	0	6	0	0	2	0	0	0	8	0	4	4
Auxiliary Signal Groups												2,4
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	0	10	0	0	0	6	0	10	10
Maximum Green [s]	0	30	0	0	30	0	0	0	30	0	30	30
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0
Split [s]	0	63	0	0	63	0	0	0	10	0	17	17
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	18	0	0	14	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No				No		No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0
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	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	C	R	L	C	C	R
C, Cycle Length [s]	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
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	64	64	64	4	10	10	10	78
g / C, Green / Cycle	0.72	0.72	0.72	0.04	0.11	0.11	0.11	0.87
(v / s)_i Volume / Saturation Flow Rate	0.24	0.28	0.25	0.01	0.04	0.04	0.04	0.27
s, saturation flow rate [veh/h]	6792	6792	1864	2813	1781	1790	1702	2813
c, Capacity [veh/h]	4852	4852	1332	113	200	201	191	2450
d1, Uniform Delay [s]	4.86	5.08	4.92	42.01	36.92	36.92	37.06	1.03
k, delay calibration	0.50	0.50	0.50	0.11	0.11	0.11	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.19	0.24	0.74	1.59	1.01	1.01	1.23	0.33
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.34	0.39	0.35	0.32	0.34	0.34	0.38	0.31
d, Delay for Lane Group [s/veh]	5.05	5.32	5.66	43.60	37.93	37.93	38.29	1.35
Lane Group LOS	A	A	A	D	D	D	D	A
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.39	2.85	2.95	0.41	1.43	1.44	1.51	0.29
50th-Percentile Queue Length [ft/ln]	59.66	71.24	73.80	10.26	35.79	35.96	37.87	7.13
95th-Percentile Queue Length [veh/ln]	4.30	5.13	5.31	0.74	2.58	2.59	2.73	0.51
95th-Percentile Queue Length [ft/ln]	107.39	128.23	132.85	18.46	64.42	64.73	68.17	12.83

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	5.05	0.00	0.00	5.39	5.66	0.00	0.00	43.60	37.93	38.26	1.35
Movement LOS		A			A	A			D	D	D	A
d_A, Approach Delay [s/veh]	5.05			5.39			43.60			9.30		
Approach LOS	A			A			D			A		
d_I, Intersection Delay [s/veh]	6.30											
Intersection LOS	A											
Intersection V/C	0.384											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0			0.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	0.00			0.00			34.68			34.68		
I_p,int, Pedestrian LOS Score for Intersection	0.000			0.000			2.161			2.609		
Crosswalk LOS	F			F			B			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	1311			1311			133			289		
d_b, Bicycle Delay [s]	5.35			5.35			39.21			32.95		
I_b,int, Bicycle LOS Score for Intersection	2.243			2.338			1.560			2.356		
Bicycle LOS	B			B			A			B		

Sequence

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



Intersection Level Of Service Report
Intersection 31: Bristol Street at I-405 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	15.1
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.475

Intersection Setup

Name	Bristol Street		Bristol Street		I-405 SB Ramps	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration	↵		↵↵		↵↵↵↵	
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	1	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		Yes	

Volumes

Name	Bristol Street		Bristol Street		I-405 SB Ramps	
Base Volume Input [veh/h]	114	1131	1027	950	616	529
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	114	1131	1027	950	616	529
Peak Hour Factor	0.9270	0.9270	0.9270	0.9270	0.9270	0.9270
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	31	305	277	256	166	0
Total Analysis Volume [veh/h]	123	1220	1108	1025	665	0
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Unsignalized	Permissive	Unsignalized
Signal Group	1	6	2	0	3	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	6	10	10	0	6	0
Maximum Green [s]	30	30	30	0	30	0
Amber [s]	3.0	3.0	3.0	0.0	3.0	0.0
All red [s]	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	41	63	22	0	32	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	0	7	0	0	0
Pedestrian Clearance [s]	0	0	11	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No	No		No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
Minimum Recall	No	No	No		No	
Maximum Recall	No	No	No		No	
Pedestrian Recall	No	No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L
C, Cycle Length [s]	95	95	95	95
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	71	59	16
g / C, Green / Cycle	0.09	0.75	0.62	0.16
(v / s)_i Volume / Saturation Flow Rate	0.07	0.18	0.22	0.13
s, saturation flow rate [veh/h]	1781	6792	5094	5188
c, Capacity [veh/h]	157	5104	3163	853
d1, Uniform Delay [s]	42.41	3.58	8.73	38.06
k, delay calibration	0.11	0.50	0.50	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.14	0.11	0.31	1.59
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.78	0.24	0.35	0.78
d, Delay for Lane Group [s/veh]	50.55	3.69	9.03	39.65
Lane Group LOS	D	A	A	D
Critical Lane Group	Yes	No	Yes	Yes
50th-Percentile Queue Length [veh/ln]	3.15	1.40	3.44	5.00
50th-Percentile Queue Length [ft/ln]	78.87	35.11	86.12	125.02
95th-Percentile Queue Length [veh/ln]	5.68	2.53	6.20	8.67
95th-Percentile Queue Length [ft/ln]	141.96	63.19	155.02	216.71

Movement, Approach, & Intersection Results

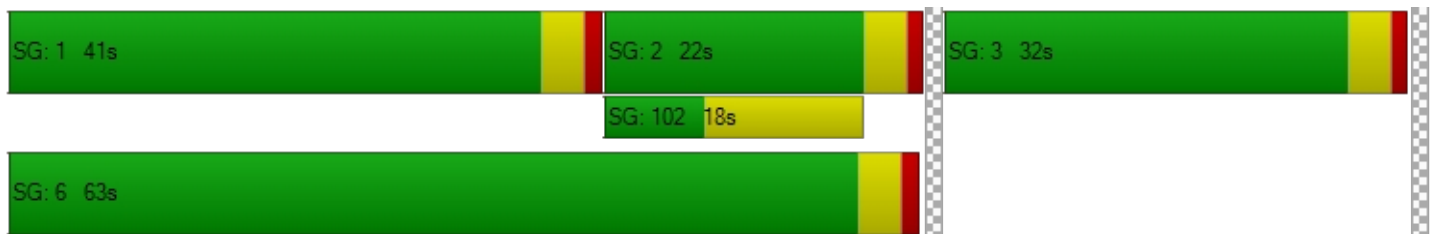
d_M, Delay for Movement [s/veh]	50.55	3.69	9.03	0.00	39.65	0.00
Movement LOS	D	A	A		D	
d_A, Approach Delay [s/veh]	7.98		9.03		39.65	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	15.11					
Intersection LOS	B					
Intersection V/C	0.475					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	37.14
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.583
Crosswalk LOS	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1242	379	589
d_b, Bicycle Delay [s]	6.83	31.21	23.63
I_b,int, Bicycle LOS Score for Intersection	2.114	2.169	1.560
Bicycle LOS	B	B	A

Sequence

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



Intersection Level Of Service Report
Intersection 37: Bear St at SR-73 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	23.0
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.670

Intersection Setup

Name	Bear St			Bear St			SR-73 NB Ramps			SR-73 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0	0	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		
Crosswalk	No			No			No			Yes		

Volumes

Name	Bear St			Bear St			SR-73 NB Ramps			SR-73 NB Ramps		
Base Volume Input [veh/h]	159	316	0	0	978	97	0	0	0	175	0	509
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	159	316	0	0	978	97	0	0	0	175	0	509
Peak Hour Factor	0.8120	0.8120	1.0000	1.0000	0.8120	0.8120	1.0000	1.0000	1.0000	0.8120	1.0000	0.8120
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	49	97	0	0	301	30	0	0	0	54	0	157
Total Analysis Volume [veh/h]	196	389	0	0	1204	119	0	0	0	216	0	627
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Permiss	Split
Signal Group	1	6	0	0	2	0	0	0	0	0	7	0	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	6	10	0	0	10	0	0	0	0	0	6	0	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	16	45	0	0	29	0	0	0	0	0	45	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	11	0	0	0	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall	No	No			No						No		
Maximum Recall	No	No			No						No		
Pedestrian Recall	No	No			No						No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C		L	R
C, Cycle Length [s]	90	90	90	90		90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	12	59	43	43		24	24
g / C, Green / Cycle	0.13	0.65	0.48	0.48		0.26	0.26
(v / s)_i Volume / Saturation Flow Rate	0.11	0.11	0.25	0.25		0.12	0.22
s, saturation flow rate [veh/h]	1781	3560	3560	1785		1781	2813
c, Capacity [veh/h]	231	2314	1694	849		465	735
d1, Uniform Delay [s]	38.32	6.20	16.45	16.44		27.96	31.61
k, delay calibration	0.11	0.50	0.50	0.50		0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	8.40	0.16	1.15	2.27		0.72	2.93
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.85	0.17	0.52	0.52		0.46	0.85
d, Delay for Lane Group [s/veh]	46.72	6.36	17.60	18.70		28.68	34.54
Lane Group LOS	D	A	B	B		C	C
Critical Lane Group	Yes	No	Yes	No		No	Yes
50th-Percentile Queue Length [veh/ln]	4.70	1.33	6.26	6.52		3.93	6.59
50th-Percentile Queue Length [ft/ln]	117.46	33.30	156.47	162.96		98.15	164.73
95th-Percentile Queue Length [veh/ln]	8.25	2.40	10.36	10.71		7.07	10.80
95th-Percentile Queue Length [ft/ln]	206.33	59.94	259.05	267.63		176.66	269.97

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	46.72	6.36	0.00	0.00	17.90	18.70	0.00	0.00	0.00	28.68	0.00	34.54
Movement LOS	D	A			B	B				C		C
d_A, Approach Delay [s/veh]	19.88				17.97		0.00		33.04			
Approach LOS	B				B		A		C			
d_I, Intersection Delay [s/veh]	22.99											
Intersection LOS	C											
Intersection V/C	0.670											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	34.68
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	2.336
Crosswalk LOS	F	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	911	555	0	911
d_b, Bicycle Delay [s]	13.35	23.48	45.01	13.35
I_b,int, Bicycle LOS Score for Intersection	2.042	2.287	4.132	1.560
Bicycle LOS	B	B	D	A

Sequence

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



Intersection Level Of Service Report
Intersection 38: Bear St at SR-73 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	25.2
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.784

Intersection Setup

Name	Bear St			Bear St			SR-73 SB Ramps			SR-73 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↑↑			↑↑↑			↑↑					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Bear St			Bear St			SR-73 SB Ramps			SR-73 SB Ramps		
Base Volume Input [veh/h]	0	344	381	618	606	0	123	1	206	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	344	381	618	606	0	123	1	206	0	0	0
Peak Hour Factor	1.0000	0.8010	0.8010	0.8010	0.8010	1.0000	0.8010	0.8010	0.8010	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	107	119	193	189	0	38	0	64	0	0	0
Total Analysis Volume [veh/h]	0	429	476	772	757	0	154	1	257	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Permiss	Permiss
Signal Group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	6	10	0	0	10	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	18	0	44	62	0	0	33	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	7	0	0	7	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	L	C	L	C	
C, Cycle Length [s]	95	95	95	95	95	95	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	41	41	25	69	18	18	
g / C, Green / Cycle	0.43	0.43	0.26	0.73	0.19	0.19	
(v / s)_i Volume / Saturation Flow Rate	0.23	0.30	0.22	0.21	0.09	0.16	
s, saturation flow rate [veh/h]	1870	1589	3459	3560	1781	1590	
c, Capacity [veh/h]	799	679	895	2592	335	299	
d1, Uniform Delay [s]	20.24	22.27	33.61	4.47	34.30	37.40	
k, delay calibration	0.50	0.50	0.11	0.50	0.11	0.11	
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	2.58	5.96	2.62	0.29	0.99	7.34	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	0.54	0.70	0.86	0.29	0.46	0.86	
d, Delay for Lane Group [s/veh]	22.83	28.23	36.23	4.75	35.29	44.74	
Lane Group LOS	C	C	D	A	D	D	
Critical Lane Group	No	Yes	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	7.38	9.44	8.61	2.17	3.22	6.32	
50th-Percentile Queue Length [ft/ln]	184.58	235.89	215.37	54.19	80.48	158.06	
95th-Percentile Queue Length [veh/ln]	11.84	14.47	13.43	3.90	5.79	10.45	
95th-Percentile Queue Length [ft/ln]	295.99	361.83	335.71	97.53	144.86	261.15	

Movement, Approach, & Intersection Results

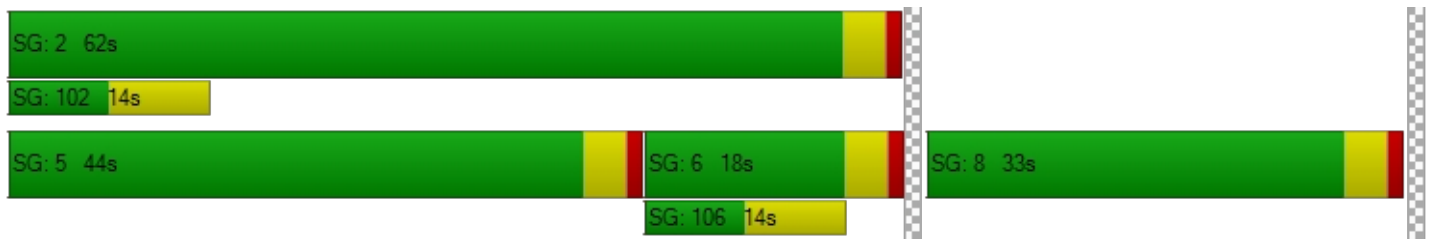
d_M, Delay for Movement [s/veh]	0.00	22.83	28.23	36.23	4.75	0.00	35.29	44.74	44.74	0.00	0.00	0.00
Movement LOS		C	C	D	A		D	D	D			
d_A, Approach Delay [s/veh]		25.67		20.65			41.20			0.00		
Approach LOS		C		C			D			A		
d_I, Intersection Delay [s/veh]	25.22											
Intersection LOS	C											
Intersection V/C	0.784											

Other Modes

g_Walk,mi, Effective Walk Time [s]		0.0		0.0		11.0		11.0
M_corner, Corner Circulation Area [ft ² /ped]		0.00		0.00		0.00		0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]		0.00		0.00		0.00		0.00
d_p, Pedestrian Delay [s]		0.00		0.00		37.14		37.14
I_p,int, Pedestrian LOS Score for Intersection		0.000		0.000		2.076		2.326
Crosswalk LOS		F		F		B		B
s_b, Saturation Flow Rate of the bicycle lane		2000		2000		2000		2000
c_b, Capacity of the bicycle lane [bicycles/h]		295		1221		610		0
d_b, Bicycle Delay [s]		34.54		7.21		22.93		47.51
I_b,int, Bicycle LOS Score for Intersection		2.306		2.821		2.239		4.132
Bicycle LOS		B		C		B		D

Sequence




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



Intersection Level Of Service Report
Intersection 12: SR-55 SB Ramps at MacArthur Blvd

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):	0.763

Intersection Setup

Name	SR-55 SB Ramp			MacArthur Blvd			MacArthur Blvd					
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	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	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		
Crosswalk	No			Yes			No			No		

Volumes

Name				SR-55 SB Ramp			MacArthur Blvd			MacArthur Blvd		
Base Volume Input [veh/h]	0	0	0	291	0	766	0	1229	1061	0	1582	608
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	291	0	766	0	1229	1061	0	1582	608
Peak Hour Factor	1.0000	1.0000	1.0000	0.8960	1.0000	0.8960	1.0000	0.8960	0.8960	1.0000	0.8960	0.8960
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	81	0	214	0	343	296	0	441	170
Total Analysis Volume [veh/h]	0	0	0	325	0	855	0	1372	1184	0	1766	679
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	115
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	0	0	0	5	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	6	0	0	0	10	0	0	10	0
Maximum Green [s]	0	0	0	30	0	0	0	30	0	0	30	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	54	0	0	0	61	0	0	61	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	14	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	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	R	C	C
C, Cycle Length [s]		54	54	54	54
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		20	20	26	26
g / C, Green / Cycle		0.38	0.38	0.48	0.48
(v / s)_i Volume / Saturation Flow Rate		0.09	0.30	0.27	0.35
s, saturation flow rate [veh/h]		3459	2813	5094	5094
c, Capacity [veh/h]		1306	1062	2424	2424
d1, Uniform Delay [s]		11.66	15.18	10.25	11.47
k, delay calibration		0.11	0.11	0.11	0.11
l, Upstream Filtering Factor		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		0.10	1.49	0.21	0.43
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.25	0.81	0.57	0.73
d, Delay for Lane Group [s/veh]		11.76	16.67	10.46	11.90
Lane Group LOS		B	B	B	B
Critical Lane Group		No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]		1.19	4.23	3.20	4.63
50th-Percentile Queue Length [ft/ln]		29.71	105.69	79.91	115.76
95th-Percentile Queue Length [veh/ln]		2.14	7.60	5.75	8.16
95th-Percentile Queue Length [ft/ln]		53.48	190.00	143.84	203.99

Movement, Approach, & Intersection Results

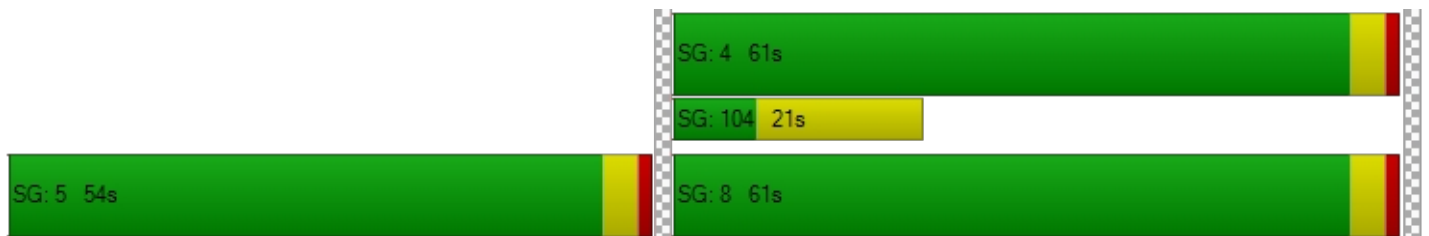
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	11.76	0.00	16.67	0.00	10.46	0.00	0.00	11.90	0.00
Movement LOS				B		B		B			B	
d_A, Approach Delay [s/veh]	0.00			15.32			10.46			11.90		
Approach LOS	A			B			B			B		
d_I, Intersection Delay [s/veh]	12.38											
Intersection LOS	B											
Intersection V/C	0.763											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	17.30	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	0.000	2.502	0.000	0.000
Crosswalk LOS	F	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	1839	2096	2096
d_b, Bicycle Delay [s]	27.19	0.18	0.06	0.06
I_b,int, Bicycle LOS Score for Intersection	4.132	1.560	2.314	2.531
Bicycle LOS	D	A	B	B

Sequence

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



Intersection Level Of Service Report
Intersection 13: SR-55 NB Ramps at MacArthur Blvd

Control Type:	Signalized	Delay (sec / veh):	8.7
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.663

Intersection Setup

Name	SR-55 NB Ramp						MacArthur Blvd			MacArthur Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	⇐⇐⇐						⇐⇐⇐			⇐⇐⇐		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	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		
Crosswalk	No			No			No			Yes		

Volumes

Name	SR-55 NB Ramp						MacArthur Blvd			MacArthur Blvd		
	Base Volume Input [veh/h]	664	0	430	0	0	0	0	728	777	0	1535
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	664	0	430	0	0	0	0	728	777	0	1535	1092
Peak Hour Factor	0.9240	1.0000	0.9240	1.0000	1.0000	1.0000	1.0000	0.9240	0.9240	1.0000	0.9240	0.9240
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	180	0	116	0	0	0	0	197	210	0	415	295
Total Analysis Volume [veh/h]	719	0	465	0	0	0	0	788	841	0	1661	1182
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	1	0	0	0	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	6	0	0	0	0	0	0	10	0	0	10	0
Maximum Green [s]	30	0	0	0	0	0	0	30	0	0	30	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	48	0	0	0	0	0	0	72	0	0	72	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	7	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	21	0	0	0	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No							No			No	
Maximum Recall	No							No			No	
Pedestrian Recall	No							No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L		C	C
C, Cycle Length [s]	41		41	41
L, Total Lost Time per Cycle [s]	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00		2.00	2.00
g_i, Effective Green Time [s]	12		21	21
g / C, Green / Cycle	0.29		0.51	0.51
(v / s)_i Volume / Saturation Flow Rate	0.21		0.22	0.33
s, saturation flow rate [veh/h]	3459		3560	5094
c, Capacity [veh/h]	1008		1831	2619
d1, Uniform Delay [s]	13.04		6.24	7.21
k, delay calibration	0.11		0.11	0.11
l, Upstream Filtering Factor	1.00		1.00	1.00
d2, Incremental Delay [s]	0.95		0.16	0.26
d3, Initial Queue Delay [s]	0.00		0.00	0.00
Rp, platoon ratio	1.00		1.00	1.00
PF, progression factor	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.71		0.43	0.63
d, Delay for Lane Group [s/veh]	14.00		6.40	7.47
Lane Group LOS	B		A	A
Critical Lane Group	Yes		No	Yes
50th-Percentile Queue Length [veh/ln]	2.49		1.38	2.24
50th-Percentile Queue Length [ft/ln]	62.25		34.54	55.98
95th-Percentile Queue Length [veh/ln]	4.48		2.49	4.03
95th-Percentile Queue Length [ft/ln]	112.05		62.17	100.76

Movement, Approach, & Intersection Results

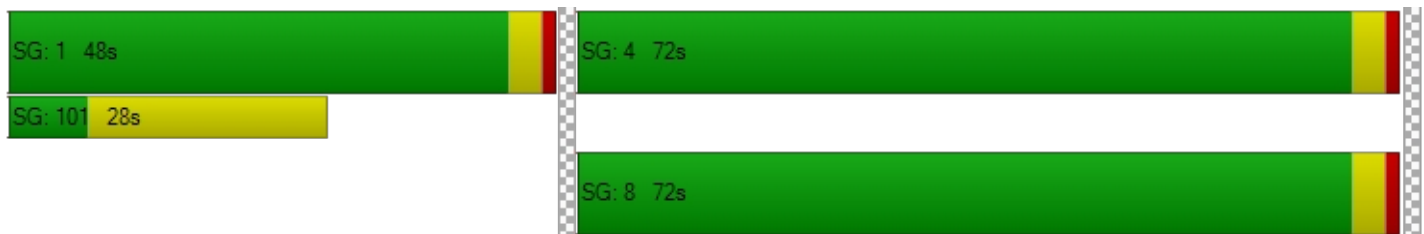
d_M, Delay for Movement [s/veh]	14.00	0.00	0.00	0.00	0.00	0.00	0.00	6.40	0.00	0.00	7.47	0.00
Movement LOS	B							A			A	
d_A, Approach Delay [s/veh]	14.00			0.00			6.40			7.47		
Approach LOS	B			A			A			A		
d_I, Intersection Delay [s/veh]	8.68											
Intersection LOS	A											
Intersection V/C	0.663											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	10.97
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	2.804
Crosswalk LOS	F	F	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	2146	0	3317	3317
d_b, Bicycle Delay [s]	0.11	20.50	8.89	8.89
I_b,int, Bicycle LOS Score for Intersection	1.560	4.132	2.210	2.473
Bicycle LOS	A	D	B	B

Sequence

Ring 1	1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 25: I-405 NB Off-Ramp at South Coast Drive

Control Type:	Signalized	Delay (sec / veh):	21.2
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.588

Intersection Setup

Name	I-405 NB Off-Ramp			The Cape Dwy			South Coast Drive			South Coast 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	1	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	I-405 NB Off-Ramp			The Cape Dwy			South Coast Drive			South Coast Drive		
Base Volume Input [veh/h]	476	30	193	28	0	39	43	399	0	0	371	33
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
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]	476	30	193	28	0	39	43	399	0	0	371	33
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	1.0000	0.9500	0.9500	0.9500	1.0000	1.0000	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	125	8	51	7	0	10	11	105	0	0	98	9
Total Analysis Volume [veh/h]	501	32	203	29	0	41	45	420	0	0	391	35
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	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Permiss	Split	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	7	0	0	5	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	10	0	6	0	0	6	10	0	0	10	0
Maximum Green [s]	0	30	0	30	0	0	30	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	58	0	58	0	0	10	32	0	0	22	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	14	0	0	0	0	0	11	0	0	11	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No		No				No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	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	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	R	L	C	C	C
C, Cycle Length [s]	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
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	37	37	37	37	37	4	45	37	37
g / C, Green / Cycle	0.41	0.41	0.41	0.41	0.41	0.05	0.50	0.41	0.41
(v / s)_i Volume / Saturation Flow Rate	0.37	0.07	0.07	0.03	0.03	0.03	0.12	0.11	0.12
s, saturation flow rate [veh/h]	1366	1656	1589	1145	1589	1781	3560	1870	1817
c, Capacity [veh/h]	619	684	657	480	657	80	1773	764	742
d1, Uniform Delay [s]	26.05	16.70	16.72	19.53	15.91	42.09	12.86	17.78	17.84
k, delay calibration	0.18	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.20	0.12	0.13	0.05	0.04	5.96	0.31	0.91	0.97
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.81	0.17	0.18	0.06	0.06	0.56	0.24	0.28	0.29
d, Delay for Lane Group [s/veh]	30.25	16.82	16.84	19.58	15.95	48.05	13.17	18.69	18.82
Lane Group LOS	C	B	B	B	B	D	B	B	B
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	10.42	1.54	1.49	0.41	0.50	1.10	2.38	3.05	3.07
50th-Percentile Queue Length [ft/ln]	260.52	38.49	37.35	10.13	12.59	27.55	59.45	76.34	76.80
95th-Percentile Queue Length [veh/ln]	15.71	2.77	2.69	0.73	0.91	1.98	4.28	5.50	5.53
95th-Percentile Queue Length [ft/ln]	392.87	69.28	67.23	18.23	22.66	49.59	107.00	137.41	138.24

Movement, Approach, & Intersection Results

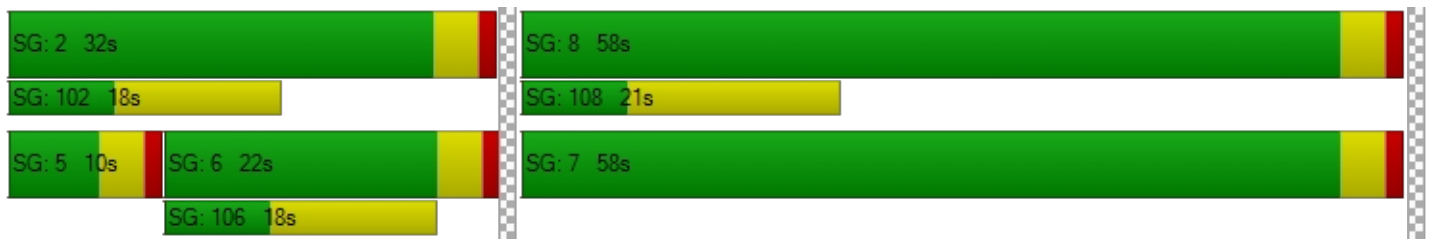
d_M, Delay for Movement [s/veh]	30.25	16.82	16.83	19.58	0.00	15.95	48.05	13.17	0.00	0.00	18.75	18.82
Movement LOS	C	B	B	B		B	D	B			B	B
d_A, Approach Delay [s/veh]	25.97			17.46			16.55			18.75		
Approach LOS	C			B			B			B		
d_I, Intersection Delay [s/veh]	21.22											
Intersection LOS	C											
Intersection V/C	0.588											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.67	34.67	0.00	34.67
I_p,int, Pedestrian LOS Score for Intersection	2.310	1.999	0.000	2.435
Crosswalk LOS	B	A	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1200	1200	622	400
d_b, Bicycle Delay [s]	7.20	7.20	21.36	28.80
I_b,int, Bicycle LOS Score for Intersection	2.774	1.560	1.943	1.911
Bicycle LOS	C	A	A	A

Sequence

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



Intersection Level Of Service Report
Intersection 28: Fairview Road at I-405 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	30.2
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.839

Intersection Setup

Name	Fairview Road			Fairview Road			I-405 NB Ramps			I-405 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	1	0	0	0	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		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Fairview Road			Fairview Road			I-405 NB Ramps			I-405 NB Ramps		
Base Volume Input [veh/h]	225	1328	0	0	1845	258	0	0	0	846	0	1072
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	225	1328	0	0	1845	258	0	0	0	846	0	1072
Peak Hour Factor	0.9270	0.9270	1.0000	1.0000	0.9270	0.9270	1.0000	1.0000	1.0000	0.9270	1.0000	0.9270
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	61	358	0	0	498	70	0	0	0	228	0	289
Total Analysis Volume [veh/h]	243	1433	0	0	1990	278	0	0	0	913	0	1156
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	105
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Permiss	Split
Signal Group	1	6	0	0	2	0	0	0	0	0	7	0	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	6	10	0	0	10	0	0	0	0	0	6	0	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	26	44	0	0	18	0	0	0	0	0	61	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	14	0	0	7	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall	No	No			No						No		
Maximum Recall	No	No			No						No		
Pedestrian Recall	No	No			No						No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	R		L	R
C, Cycle Length [s]	105	105	105	105		105	105
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	16	48	28	28		49	49
g / C, Green / Cycle	0.16	0.46	0.26	0.26		0.47	0.47
(v / s)_i Volume / Saturation Flow Rate	0.14	0.28	0.20	0.17		0.26	0.41
s, saturation flow rate [veh/h]	1781	5094	10188	1589		3459	2813
c, Capacity [veh/h]	276	2328	2687	419		1614	1313
d1, Uniform Delay [s]	43.38	21.53	35.37	34.49		20.28	25.34
k, delay calibration	0.11	0.50	0.50	0.50		0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	8.79	1.23	1.88	8.03		0.31	2.10
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.88	0.62	0.74	0.66		0.57	0.88
d, Delay for Lane Group [s/veh]	52.17	22.76	37.25	42.52		20.60	27.44
Lane Group LOS	D	C	D	D		C	C
Critical Lane Group	Yes	No	Yes	No		No	Yes
50th-Percentile Queue Length [veh/ln]	6.80	8.87	7.90	7.20		7.93	12.81
50th-Percentile Queue Length [ft/ln]	169.92	221.83	197.40	179.95		198.17	320.28
95th-Percentile Queue Length [veh/ln]	11.07	13.76	12.50	11.60		12.54	18.68
95th-Percentile Queue Length [ft/ln]	276.81	343.96	312.61	289.95		313.61	467.03

Movement, Approach, & Intersection Results

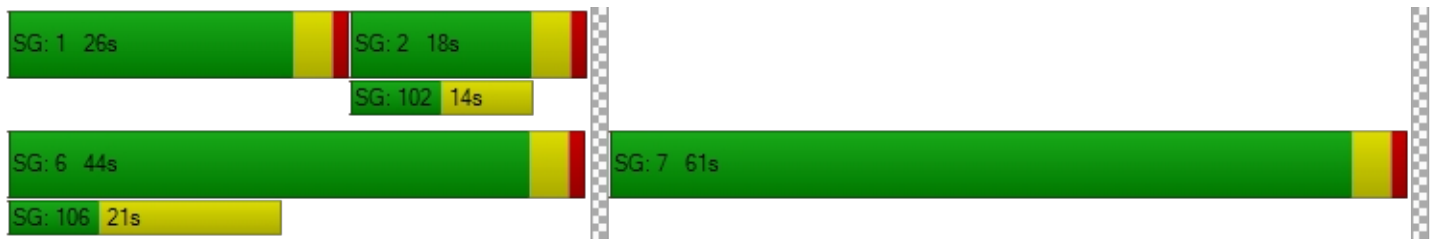
d_M, Delay for Movement [s/veh]	52.17	22.76	0.00	0.00	37.25	42.52	0.00	0.00	0.00	20.60	0.00	27.44
Movement LOS	D	C			D	D				C		C
d_A, Approach Delay [s/veh]	27.02			37.89			0.00			24.42		
Approach LOS	C			D			A			C		
d_I, Intersection Delay [s/veh]	30.23											
Intersection LOS	C											
Intersection V/C	0.839											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	42.07	42.07
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	1.939	2.711
Crosswalk LOS	F	F	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	762	267	0	1086
d_b, Bicycle Delay [s]	20.12	39.43	52.50	10.97
I_b,int, Bicycle LOS Score for Intersection	2.481	2.183	4.132	1.560
Bicycle LOS	B	B	D	A

Sequence

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



Intersection Level Of Service Report
Intersection 29: Fairview Road at I-405 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	19.8
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.657

Intersection Setup

Name	Fairview Rd			Fairview Rd			I-405 SB Ramps			I-405 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↑↑↑↓			↔↔↔↑↑			↔↔↔					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	1	0	0	1	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Fairview Rd			Fairview Rd			I-405 SB Ramps			I-405 SB Ramps		
Base Volume Input [veh/h]	0	1140	649	1037	1605	0	312	0	357	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1140	649	1037	1605	0	312	0	357	0	0	0
Peak Hour Factor	1.0000	0.9690	0.9690	0.9690	0.9690	1.0000	0.9690	1.0000	0.9690	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	294	167	268	414	0	80	0	92	0	0	0
Total Analysis Volume [veh/h]	0	1176	670	1070	1656	0	322	0	368	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Permiss
Signal Group	0	6	0	5	2	0	3	0	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	10	0	6	10	0	6	0	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	30	0	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Split [s]	0	22	0	44	66	0	24	0	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	11	0	0	14	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No		No					
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No		No					
Maximum Recall		No		No	No		No					
Pedestrian Recall		No		No	No		No					
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	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]	40	40	40	23	67	15	15	
g / C, Green / Cycle	0.45	0.45	0.45	0.26	0.75	0.16	0.16	
(v / s)_i Volume / Saturation Flow Rate	0.22	0.23	0.23	0.21	0.33	0.09	0.13	
s, saturation flow rate [veh/h]	5094	1589	1589	5188	5094	3459	2813	
c, Capacity [veh/h]	2281	712	712	1328	3812	563	458	
d1, Uniform Delay [s]	17.54	17.88	17.88	31.39	4.22	34.80	36.30	
k, delay calibration	0.50	0.50	0.50	0.11	0.50	0.11	0.11	
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	0.74	2.69	2.69	1.20	0.36	0.92	3.34	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	0.49	0.52	0.52	0.81	0.43	0.57	0.80	
d, Delay for Lane Group [s/veh]	18.28	20.57	20.57	32.59	4.59	35.71	39.65	
Lane Group LOS	B	C	C	C	A	D	D	
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	5.31	5.78	5.78	7.21	2.91	3.28	4.04	
50th-Percentile Queue Length [ft/ln]	132.64	144.51	144.51	180.31	72.79	81.94	100.88	
95th-Percentile Queue Length [veh/ln]	9.08	9.72	9.72	11.62	5.24	5.90	7.26	
95th-Percentile Queue Length [ft/ln]	227.07	243.08	243.08	290.42	131.02	147.48	181.58	

Movement, Approach, & Intersection Results

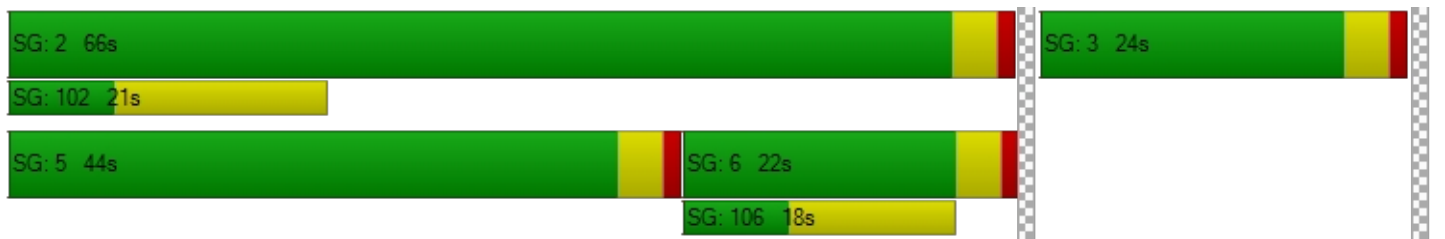
d_M, Delay for Movement [s/veh]	0.00	18.28	20.57	32.59	4.59	0.00	35.71	0.00	39.65	0.00	0.00	0.00
Movement LOS		B	C	C	A		D		D			
d_A, Approach Delay [s/veh]		19.20		15.58			37.81			0.00		
Approach LOS		B		B			D			A		
d_I, Intersection Delay [s/veh]	19.76											
Intersection LOS	B											
Intersection V/C	0.657											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	34.68	34.68
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.434	2.505
Crosswalk LOS	F	F	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	400	1377	444	0
d_b, Bicycle Delay [s]	28.81	4.36	27.23	45.01
I_b,int, Bicycle LOS Score for Intersection	2.321	3.059	1.560	4.132
Bicycle LOS	B	C	A	D

Sequence

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



Intersection Level Of Service Report
Intersection 30: Bristol Street at I-405 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	14.4
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.666

Intersection Setup

Name	Bristol Street			Bristol Street			I-405 NB Ramps			I-405 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	0	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	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	No			No			Yes			Yes		

Volumes

Name	Bristol Street			Bristol Street			I-405 NB Ramps			I-405 NB Ramps		
Base Volume Input [veh/h]	0	2198	185	0	2266	20	0	0	196	361	309	1260
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	2198	185	0	2266	20	0	0	196	361	309	1260
Peak Hour Factor	1.0000	0.9540	0.9540	1.0000	0.9540	0.9540	1.0000	1.0000	0.9540	0.9540	0.9540	0.9540
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	576	48	0	594	5	0	0	51	95	81	330
Total Analysis Volume [veh/h]	0	2304	194	0	2375	21	0	0	205	378	324	1321
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]	95
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss	Split	Permiss	Split	Split	Split	Overlap
Signal Group	0	6	0	0	2	0	0	0	8	0	4	4
Auxiliary Signal Groups												2,4
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	0	10	0	0	0	6	0	10	10
Maximum Green [s]	0	30	0	0	30	0	0	0	30	0	30	30
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0
Split [s]	0	32	0	0	32	0	0	0	41	0	22	22
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	18	0	0	14	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No				No		No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0
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	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	C	R	L	C	C	R
C, Cycle Length [s]	95	95	95	95	95	95	95	95
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	56	56	56	9	18	18	18	78
g / C, Green / Cycle	0.59	0.59	0.59	0.10	0.19	0.19	0.19	0.82
(v / s)_i Volume / Saturation Flow Rate	0.34	0.28	0.26	0.07	0.13	0.13	0.14	0.47
s, saturation flow rate [veh/h]	6792	6792	1856	2813	1781	1814	1702	2813
c, Capacity [veh/h]	3990	3990	1090	274	336	343	321	2303
d1, Uniform Delay [s]	12.24	11.26	10.90	41.76	35.99	35.89	36.24	2.95
k, delay calibration	0.50	0.50	0.50	0.11	0.11	0.11	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.61	0.42	1.29	4.08	2.59	2.40	3.16	1.05
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.58	0.48	0.44	0.75	0.70	0.68	0.73	0.57
d, Delay for Lane Group [s/veh]	12.85	11.68	12.19	45.84	38.58	38.29	39.40	4.00
Lane Group LOS	B	B	B	D	D	D	D	A
Critical Lane Group	No	No	No	Yes	No	No	Yes	Yes
50th-Percentile Queue Length [veh/ln]	7.13	5.45	5.55	2.47	5.24	5.21	5.31	2.70
50th-Percentile Queue Length [ft/ln]	178.28	136.17	138.73	61.77	130.8	130.2	132.7	67.51
95th-Percentile Queue Length [veh/ln]	11.51	9.27	9.41	4.45	8.99	8.95	9.09	4.86
95th-Percentile Queue Length [ft/ln]	287.77	231.85	235.31	111.19	224.6	223.7	227.2	121.5

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	12.85	0.00	0.00	11.78	12.19	0.00	0.00	45.84	38.58	39.09	4.00
Movement LOS		B			B	B			D	D	D	A
d_A, Approach Delay [s/veh]	12.85				11.78				45.84		16.06	
Approach LOS	B				B				D		B	
d_I, Intersection Delay [s/veh]	14.39											
Intersection LOS	B											
Intersection V/C	0.666											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		11.0		11.0	
M_corner, Corner Circulation Area [ft ² /ped]	0.00		0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00		0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		0.00		37.14		37.14	
I_p,int, Pedestrian LOS Score for Intersection	0.000		0.000		2.267		2.784	
Crosswalk LOS	F		F		B		C	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	589		589		779		379	
d_b, Bicycle Delay [s]	23.63		23.63		17.71		31.21	
I_b,int, Bicycle LOS Score for Intersection	2.510		2.350		1.560		3.229	
Bicycle LOS	B		B		A		C	

Sequence

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



Intersection Level Of Service Report
Intersection 31: Bristol Street at I-405 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	15.8
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.647

Intersection Setup

Name	Bristol Street		Bristol Street		I-405 SB Ramps	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration	↵		↵↵		↵↵↵↵	
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	1	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		Yes	

Volumes

Name	Bristol Street		Bristol Street		I-405 SB Ramps	
Base Volume Input [veh/h]	128	1591	1533	931	811	334
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	128	1591	1533	931	811	334
Peak Hour Factor	0.9440	0.9440	0.9440	0.9440	0.9440	0.9440
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	34	421	406	247	215	0
Total Analysis Volume [veh/h]	136	1685	1624	986	859	0
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Unsignalized	Permissive	Unsignalized
Signal Group	1	6	2	0	3	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	6	10	10	0	6	0
Maximum Green [s]	30	30	30	0	30	0
Amber [s]	3.0	3.0	3.0	0.0	3.0	0.0
All red [s]	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	28	50	22	0	40	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	0	7	0	0	0
Pedestrian Clearance [s]	0	0	11	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No	No		No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
Minimum Recall	No	No	No		No	
Maximum Recall	No	No	No		No	
Pedestrian Recall	No	No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L
C, Cycle Length [s]	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	63	50	19
g / C, Green / Cycle	0.10	0.70	0.56	0.21
(v / s)_i Volume / Saturation Flow Rate	0.08	0.25	0.32	0.17
s, saturation flow rate [veh/h]	1781	6792	5094	5188
c, Capacity [veh/h]	173	4761	2851	1090
d1, Uniform Delay [s]	39.76	5.35	12.81	33.66
k, delay calibration	0.11	0.50	0.50	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.76	0.21	0.83	1.31
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.79	0.35	0.57	0.79
d, Delay for Lane Group [s/veh]	47.52	5.56	13.64	34.97
Lane Group LOS	D	A	B	C
Critical Lane Group	Yes	No	Yes	Yes
50th-Percentile Queue Length [veh/ln]	3.27	2.64	6.67	5.92
50th-Percentile Queue Length [ft/ln]	81.85	65.97	166.66	148.05
95th-Percentile Queue Length [veh/ln]	5.89	4.75	10.90	9.91
95th-Percentile Queue Length [ft/ln]	147.34	118.74	272.52	247.82

Movement, Approach, & Intersection Results

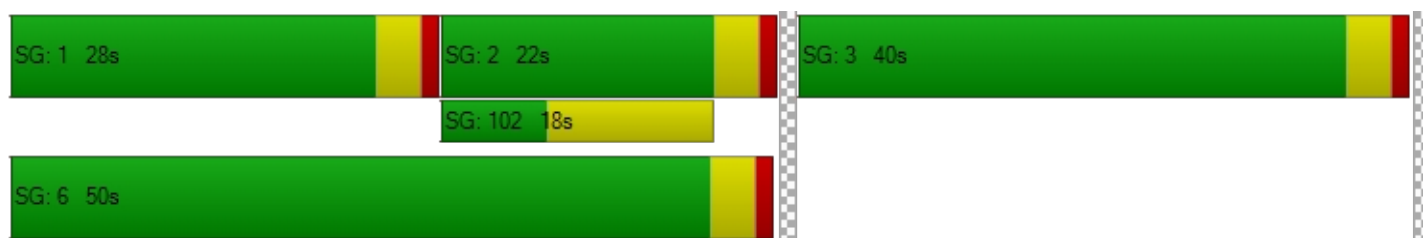
d_M, Delay for Movement [s/veh]	47.52	5.56	13.64	0.00	34.97	0.00
Movement LOS	D	A	B		C	
d_A, Approach Delay [s/veh]	8.69		13.64		34.97	
Approach LOS	A		B		C	
d_I, Intersection Delay [s/veh]	15.81					
Intersection LOS	B					
Intersection V/C	0.647					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	34.68
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.614
Crosswalk LOS	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1022	400	800
d_b, Bicycle Delay [s]	10.76	28.81	16.21
I_b,int, Bicycle LOS Score for Intersection	2.311	2.453	1.560
Bicycle LOS	B	B	A

Sequence

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



Intersection Level Of Service Report
Intersection 37: Bear St at SR-73 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	43.5
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.966

Intersection Setup

Name	Bear St			Bear St			SR-73 NB Ramps			SR-73 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0	0	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		
Crosswalk	No			No			No			Yes		

Volumes

Name	Bear St			Bear St			SR-73 NB Ramps			SR-73 NB Ramps		
Base Volume Input [veh/h]	153	593	0	0	1036	152	0	0	0	408	0	1366
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	153	593	0	0	1036	152	0	0	0	408	0	1366
Peak Hour Factor	0.9180	0.9180	1.0000	1.0000	0.9180	0.9180	1.0000	1.0000	1.0000	0.9180	1.0000	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]	42	161	0	0	282	41	0	0	0	111	0	372
Total Analysis Volume [veh/h]	167	646	0	0	1129	166	0	0	0	444	0	1488
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Permiss	Split
Signal Group	1	6	0	0	2	0	0	0	0	0	7	0	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	6	10	0	0	10	0	0	0	0	0	6	0	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	16	50	0	0	34	0	0	0	0	0	70	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	11	0	0	0	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall	No	No			No						No		
Maximum Recall	No	No			No						No		
Pedestrian Recall	No	No			No						No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C		L	R
C, Cycle Length [s]	120	120	120	120		120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	12	47	31	31		65	65
g / C, Green / Cycle	0.10	0.39	0.25	0.25		0.55	0.55
(v / s)_i Volume / Saturation Flow Rate	0.09	0.18	0.24	0.25		0.25	0.53
s, saturation flow rate [veh/h]	1781	3560	3560	1751		1781	2813
c, Capacity [veh/h]	179	1384	907	446		970	1532
d1, Uniform Delay [s]	53.53	27.38	43.98	44.21		16.56	26.39
k, delay calibration	0.11	0.50	0.50	0.50		0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	18.55	1.13	20.33	35.34		0.34	5.87
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.93	0.47	0.95	0.97		0.46	0.97
d, Delay for Lane Group [s/veh]	72.08	28.52	64.30	79.55		16.90	32.25
Lane Group LOS	E	C	E	E		B	C
Critical Lane Group	Yes	No	No	Yes		No	Yes
50th-Percentile Queue Length [veh/ln]	5.92	7.13	15.07	16.96		7.35	20.63
50th-Percentile Queue Length [ft/ln]	147.92	178.15	376.85	423.98		183.71	515.66
95th-Percentile Queue Length [veh/ln]	9.91	11.50	21.44	23.71		11.79	28.07
95th-Percentile Queue Length [ft/ln]	247.64	287.60	536.03	592.82		294.85	701.86

Movement, Approach, & Intersection Results

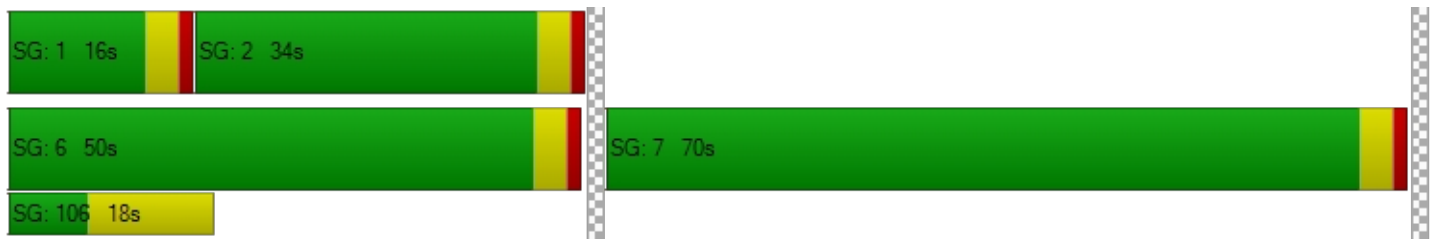
d_M, Delay for Movement [s/veh]	72.08	28.52	0.00	0.00	67.89	79.55	0.00	0.00	0.00	16.90	0.00	32.25
Movement LOS	E	C			E	E				B		C
d_A, Approach Delay [s/veh]	37.46		69.39		0.00		28.72					
Approach LOS	D		E		A		C					
d_I, Intersection Delay [s/veh]	43.52											
Intersection LOS	D											
Intersection V/C	0.966											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	49.49
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	2.616
Crosswalk LOS	F	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	767	500	0	1100
d_b, Bicycle Delay [s]	22.80	33.73	59.98	12.14
I_b,int, Bicycle LOS Score for Intersection	2.230	2.272	4.132	1.560
Bicycle LOS	B	B	D	A

Sequence

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



Intersection Level Of Service Report
Intersection 38: Bear St at SR-73 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	21.3
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.609

Intersection Setup

Name	Bear St			Bear St			SR-73 SB Ramps			SR-73 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↑↑			↑↑↑			↑↑					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Bear St			Bear St			SR-73 SB Ramps			SR-73 SB Ramps		
Base Volume Input [veh/h]	0	565	172	614	836	0	188	1	159	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	565	172	614	836	0	188	1	159	0	0	0
Peak Hour Factor	1.0000	0.9290	0.9290	0.9290	0.9290	1.0000	0.9290	0.9290	0.9290	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	152	46	165	225	0	51	0	43	0	0	0
Total Analysis Volume [veh/h]	0	608	185	661	900	0	202	1	171	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Permiss	Permiss
Signal Group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	6	10	0	0	10	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	18	0	48	66	0	0	29	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	7	0	0	7	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	L	C	L	C	
C, Cycle Length [s]	95	95	95	95	95	95	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	49	49	21	74	13	13	
g / C, Green / Cycle	0.51	0.51	0.23	0.78	0.14	0.14	
(v / s)_i Volume / Saturation Flow Rate	0.21	0.23	0.19	0.25	0.11	0.11	
s, saturation flow rate [veh/h]	1870	1728	3459	3560	1781	1596	
c, Capacity [veh/h]	955	882	781	2771	245	219	
d1, Uniform Delay [s]	14.45	14.77	35.22	3.12	39.74	39.76	
k, delay calibration	0.50	0.50	0.11	0.50	0.11	0.11	
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	1.33	1.66	2.65	0.31	6.08	6.90	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	0.42	0.45	0.85	0.32	0.80	0.81	
d, Delay for Lane Group [s/veh]	15.78	16.43	37.87	3.44	45.82	46.66	
Lane Group LOS	B	B	D	A	D	D	
Critical Lane Group	No	Yes	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	5.40	5.56	7.46	1.90	4.81	4.39	
50th-Percentile Queue Length [ft/ln]	134.96	139.12	186.51	47.59	120.29	109.64	
95th-Percentile Queue Length [veh/ln]	9.21	9.43	11.94	3.43	8.41	7.82	
95th-Percentile Queue Length [ft/ln]	230.22	235.84	298.49	85.66	210.23	195.50	

Movement, Approach, & Intersection Results

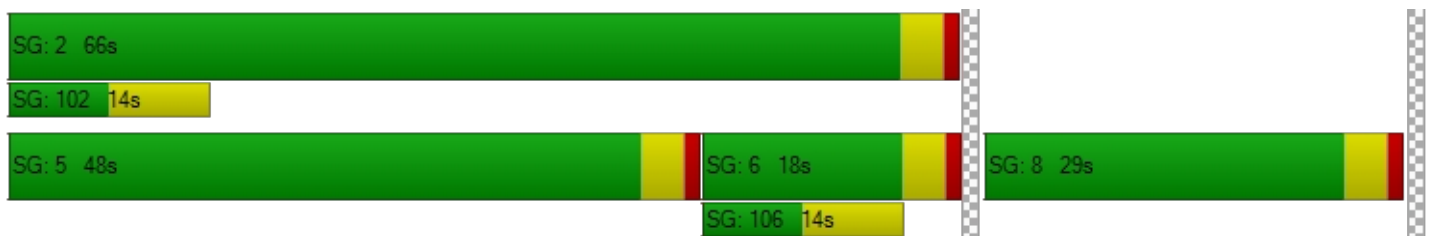
d_M, Delay for Movement [s/veh]	0.00	16.00	16.43	37.87	3.44	0.00	45.87	46.66	46.66	0.00	0.00	0.00
Movement LOS		B	B	D	A		D	D	D			
d_A, Approach Delay [s/veh]		16.10		18.02			46.22			0.00		
Approach LOS		B		B			D			A		
d_I, Intersection Delay [s/veh]	21.33											
Intersection LOS	C											
Intersection V/C	0.609											

Other Modes

g_Walk,mi, Effective Walk Time [s]		0.0		0.0		11.0		11.0
M_corner, Corner Circulation Area [ft ² /ped]		0.00		0.00		0.00		0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]		0.00		0.00		0.00		0.00
d_p, Pedestrian Delay [s]		0.00		0.00		37.14		37.14
I_p,int, Pedestrian LOS Score for Intersection		0.000		0.000		2.064		2.130
Crosswalk LOS		F		F		B		B
s_b, Saturation Flow Rate of the bicycle lane		2000		2000		2000		2000
c_b, Capacity of the bicycle lane [bicycles/h]		295		1305		526		0
d_b, Bicycle Delay [s]		34.54		5.74		25.80		47.51
I_b,int, Bicycle LOS Score for Intersection		2.214		2.847		2.177		4.132
Bicycle LOS		B		C		B		D

Sequence

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



APPENDIX E-IV

**EXISTING PLUS PROJECT PHASES 1, 2, AND 3
TRAFFIC CONDITIONS**

Intersection Level Of Service Report
Intersection 12: SR-55 SB Ramps at MacArthur Blvd

Control Type:	Signalized	Delay (sec / veh):	14.8
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.793

Intersection Setup

Name	SR-55 SB Ramp			MacArthur Blvd			MacArthur Blvd					
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration				T T T T			T T T T			T T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	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	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		
Crosswalk	No			Yes			No			No		

Volumes

Name				SR-55 SB Ramp			MacArthur Blvd			MacArthur Blvd		
Base Volume Input [veh/h]	0	0	0	971	0	923	0	1648	1094	0	1311	146
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	971	0	923	0	1648	1094	0	1311	146
Peak Hour Factor	1.0000	1.0000	1.0000	0.9470	1.0000	0.9470	1.0000	0.9470	0.9470	1.0000	0.9470	0.9470
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	256	0	244	0	435	289	0	346	39
Total Analysis Volume [veh/h]	0	0	0	1025	0	975	0	1740	1155	0	1384	154
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	0	0	0	5	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	6	0	0	0	10	0	0	10	0
Maximum Green [s]	0	0	0	30	0	0	0	30	0	0	30	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	48	0	0	0	47	0	0	47	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	14	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	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	R	C	C
C, Cycle Length [s]		61	61	61	61
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		26	26	27	27
g / C, Green / Cycle		0.43	0.43	0.44	0.44
(v / s)_i Volume / Saturation Flow Rate		0.30	0.35	0.34	0.27
s, saturation flow rate [veh/h]		3459	2813	5094	5094
c, Capacity [veh/h]		1476	1201	2250	2250
d1, Uniform Delay [s]		14.21	15.31	14.41	13.03
k, delay calibration		0.11	0.11	0.11	0.11
l, Upstream Filtering Factor		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		0.60	1.38	0.59	0.28
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.69	0.81	0.77	0.62
d, Delay for Lane Group [s/veh]		14.81	16.68	15.00	13.30
Lane Group LOS		B	B	B	B
Critical Lane Group		No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]		5.07	5.29	5.88	4.19
50th-Percentile Queue Length [ft/ln]		126.64	132.32	146.88	104.86
95th-Percentile Queue Length [veh/ln]		8.76	9.07	9.85	7.55
95th-Percentile Queue Length [ft/ln]		218.92	226.65	246.25	188.74

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	14.81	0.00	16.68	0.00	15.00	0.00	0.00	13.30	0.00
Movement LOS				B		B		B			B	
d_A, Approach Delay [s/veh]	0.00			15.72			15.00			13.30		
Approach LOS	A			B			B			B		
d_I, Intersection Delay [s/veh]	14.82											
Intersection LOS	B											
Intersection V/C	0.793											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	20.35	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	0.000	2.668	0.000	0.000
Crosswalk LOS	F	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	1450	1417	1417
d_b, Bicycle Delay [s]	30.36	2.30	2.58	2.58
I_b,int, Bicycle LOS Score for Intersection	4.132	1.560	2.517	2.321
Bicycle LOS	D	A	B	B

Sequence

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



Intersection Level Of Service Report
Intersection 13: SR-55 NB Ramps at MacArthur Blvd

Control Type:	Signalized	Delay (sec / veh):	22.4
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.941

Intersection Setup

Name	SR-55 NB Ramp						MacArthur Blvd			MacArthur Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	⇐⇐⇐						⇐⇐⇐			⇐⇐⇐		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	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		
Crosswalk	No			No			No			Yes		

Volumes

Name	SR-55 NB Ramp						MacArthur Blvd			MacArthur Blvd		
	Base Volume Input [veh/h]	928	0	986	0	0	0	0	1673	951	0	534
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	928	0	986	0	0	0	0	1673	951	0	534	246
Peak Hour Factor	0.9080	1.0000	0.9080	1.0000	1.0000	1.0000	1.0000	0.9080	0.9080	1.0000	0.9080	0.9080
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	256	0	271	0	0	0	0	461	262	0	147	68
Total Analysis Volume [veh/h]	1022	0	1086	0	0	0	0	1843	1047	0	588	271
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	1	0	0	0	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	6	0	0	0	0	0	0	10	0	0	10	0
Maximum Green [s]	30	0	0	0	0	0	0	30	0	0	30	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	46	0	0	0	0	0	0	44	0	0	44	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	7	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	21	0	0	0	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No							No			No	
Maximum Recall	No							No			No	
Pedestrian Recall	No							No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L		C	C
C, Cycle Length [s]	59		59	59
L, Total Lost Time per Cycle [s]	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00		2.00	2.00
g_i, Effective Green Time [s]	21		30	30
g / C, Green / Cycle	0.35		0.51	0.51
(v / s)_i Volume / Saturation Flow Rate	0.30		0.52	0.12
s, saturation flow rate [veh/h]	3459		3560	5094
c, Capacity [veh/h]	1229		1812	2593
d1, Uniform Delay [s]	17.39		14.47	8.03
k, delay calibration	0.11		0.11	0.11
l, Upstream Filtering Factor	1.00		1.00	1.00
d2, Incremental Delay [s]	1.54		14.41	0.04
d3, Initial Queue Delay [s]	0.00		0.00	0.00
Rp, platoon ratio	1.00		1.00	1.00
PF, progression factor	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.83		1.02	0.23
d, Delay for Lane Group [s/veh]	18.92		28.88	8.07
Lane Group LOS	B		F	A
Critical Lane Group	Yes		Yes	No
50th-Percentile Queue Length [veh/ln]	5.83		13.11	1.15
50th-Percentile Queue Length [ft/ln]	145.66		327.82	28.73
95th-Percentile Queue Length [veh/ln]	9.78		19.29	2.07
95th-Percentile Queue Length [ft/ln]	244.62		482.17	51.72

Movement, Approach, & Intersection Results

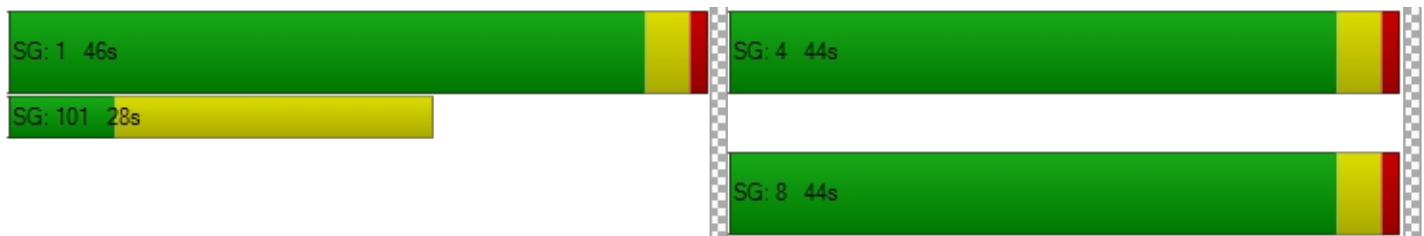
d_M, Delay for Movement [s/veh]	18.92	0.00	0.00	0.00	0.00	0.00	0.00	28.88	0.00	0.00	8.07	0.00
Movement LOS	B							F			A	
d_A, Approach Delay [s/veh]	18.92			0.00			28.88			8.07		
Approach LOS	B			A			C			A		
d_I, Intersection Delay [s/veh]	22.39											
Intersection LOS	C											
Intersection V/C	0.941											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	19.47
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	2.824
Crosswalk LOS	F	F	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1427	0	1359	1359
d_b, Bicycle Delay [s]	2.42	29.44	3.03	3.03
I_b,int, Bicycle LOS Score for Intersection	1.560	4.132	3.080	1.883
Bicycle LOS	A	D	C	A

Sequence

Ring 1	1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 25: I-405 NB Off-Ramp at South Coast Drive

Control Type:	Signalized	Delay (sec / veh):	22.8
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.430

Intersection Setup

Name	I-405 NB Off-Ramp			The Cape Dwy			South Coast Drive			South Coast 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	1	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	I-405 NB Off-Ramp			The Cape Dwy			South Coast Drive			South Coast Drive		
Base Volume Input [veh/h]	352	6	92	48	0	72	19	216	0	0	97	17
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
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]	352	6	92	48	0	72	19	216	0	0	97	17
Peak Hour Factor	0.8740	0.8740	0.8740	0.8740	1.0000	0.8740	0.8740	0.8740	1.0000	1.0000	0.8740	0.8740
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	101	2	26	14	0	21	5	62	0	0	28	5
Total Analysis Volume [veh/h]	403	7	105	55	0	82	22	247	0	0	111	19
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]	95
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Permiss	Split	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	7	0	0	5	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	10	0	6	0	0	6	10	0	0	10	0
Maximum Green [s]	0	30	0	30	0	0	30	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	63	0	63	0	0	10	32	0	0	22	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	14	0	0	0	0	0	11	0	0	11	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No		No				No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	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	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	R	L	C	C	C
C, Cycle Length [s]	95	95	95	95	95	95	95	95	95
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	33	33	33	33	33	3	54	47	47
g / C, Green / Cycle	0.35	0.35	0.35	0.35	0.35	0.03	0.57	0.50	0.50
(v / s)_i Volume / Saturation Flow Rate	0.31	0.03	0.03	0.04	0.05	0.01	0.07	0.03	0.04
s, saturation flow rate [veh/h]	1316	1620	1589	1281	1589	1781	3560	1870	1778
c, Capacity [veh/h]	513	567	557	471	557	50	2014	927	881
d1, Uniform Delay [s]	30.55	20.78	20.78	23.72	21.14	45.44	9.63	12.53	12.55
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.71	0.08	0.08	0.11	0.12	6.04	0.12	0.15	0.16
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.79	0.10	0.10	0.12	0.15	0.44	0.12	0.07	0.07
d, Delay for Lane Group [s/veh]	33.26	20.85	20.86	23.83	21.27	51.48	9.76	12.67	12.71
Lane Group LOS	C	C	C	C	C	D	A	B	B
Critical Lane Group	Yes	No	No	No	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	8.96	0.85	0.83	0.90	1.25	0.59	1.17	0.74	0.74
50th-Percentile Queue Length [ft/ln]	224.02	21.21	20.82	22.45	31.33	14.77	29.28	18.47	18.55
95th-Percentile Queue Length [veh/ln]	13.87	1.53	1.50	1.62	2.26	1.06	2.11	1.33	1.34
95th-Percentile Queue Length [ft/ln]	346.75	38.17	37.48	40.41	56.40	26.58	52.71	33.24	33.40

Movement, Approach, & Intersection Results

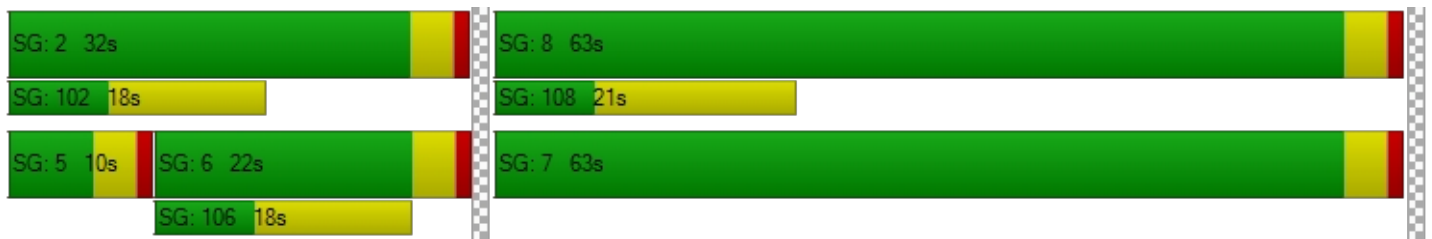
d_M, Delay for Movement [s/veh]	33.26	20.85	20.86	23.83	0.00	21.27	51.48	9.76	0.00	0.00	12.69	12.71
Movement LOS	C	C	C	C		C	D	A			B	B
d_A, Approach Delay [s/veh]	30.56			22.29			13.17			12.69		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]	22.82											
Intersection LOS	C											
Intersection V/C	0.430											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	37.14	37.14	0.00	37.14
I_p,int, Pedestrian LOS Score for Intersection	2.259	2.003	0.000	2.342
Crosswalk LOS	B	B	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1242	1242	589	379
d_b, Bicycle Delay [s]	6.82	6.82	23.63	31.21
I_b,int, Bicycle LOS Score for Intersection	2.409	1.560	1.782	1.667
Bicycle LOS	B	A	A	A

Sequence

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



Intersection Level Of Service Report
Intersection 28: Fairview Road at I-405 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	25.5
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.774

Intersection Setup

Name	Fairview Road			Fairview Road			I-405 NB Ramps			I-405 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	1	0	0	0	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		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Fairview Road			Fairview Road			I-405 NB Ramps			I-405 NB Ramps		
Base Volume Input [veh/h]	179	842	0	0	2459	296	0	0	0	614	0	776
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	179	842	0	0	2459	296	0	0	0	614	0	776
Peak Hour Factor	0.9070	0.9070	1.0000	1.0000	0.9070	0.9070	1.0000	1.0000	1.0000	0.9070	1.0000	0.9070
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	49	232	0	0	678	82	0	0	0	169	0	214
Total Analysis Volume [veh/h]	197	928	0	0	2711	326	0	0	0	677	0	856
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Permiss	Split
Signal Group	1	6	0	0	2	0	0	0	0	0	7	0	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	6	10	0	0	10	0	0	0	0	0	6	0	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	23	41	0	0	18	0	0	0	0	0	59	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	14	0	0	7	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall	No	No			No						No		
Maximum Recall	No	No			No						No		
Pedestrian Recall	No	No			No						No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	R		L	R
C, Cycle Length [s]	100	100	100	100		100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	13	56	39	39		36	36
g / C, Green / Cycle	0.13	0.56	0.39	0.39		0.36	0.36
(v / s)_i Volume / Saturation Flow Rate	0.11	0.18	0.27	0.21		0.20	0.30
s, saturation flow rate [veh/h]	1781	5094	10188	1589		3459	2813
c, Capacity [veh/h]	232	2862	3991	623		1238	1007
d1, Uniform Delay [s]	42.54	11.73	25.21	23.27		25.62	29.62
k, delay calibration	0.11	0.50	0.50	0.50		0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	8.44	0.30	0.95	3.13		0.38	2.12
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.85	0.32	0.68	0.52		0.55	0.85
d, Delay for Lane Group [s/veh]	50.98	12.03	26.15	26.40		26.00	31.73
Lane Group LOS	D	B	C	C		C	C
Critical Lane Group	Yes	No	Yes	No		No	Yes
50th-Percentile Queue Length [veh/ln]	5.26	3.59	8.80	6.29		6.36	9.49
50th-Percentile Queue Length [ft/ln]	131.44	89.79	219.97	157.15		158.91	237.30
95th-Percentile Queue Length [veh/ln]	9.02	6.47	13.66	10.40		10.49	14.54
95th-Percentile Queue Length [ft/ln]	225.45	161.63	341.59	259.94		262.28	363.61

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	50.98	12.03	0.00	0.00	26.15	26.40	0.00	0.00	0.00	26.00	0.00	31.73
Movement LOS	D	B			C	C				C		C
d_A, Approach Delay [s/veh]	18.85				26.18		0.00		29.20			
Approach LOS	B				C		A		C			
d_I, Intersection Delay [s/veh]	25.55											
Intersection LOS	C											
Intersection V/C	0.774											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	39.61	39.61
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	1.938	2.604
Crosswalk LOS	F	F	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	740	280	0	1100
d_b, Bicycle Delay [s]	19.85	36.98	50.00	10.13
I_b,int, Bicycle LOS Score for Intersection	2.178	2.395	4.132	1.560
Bicycle LOS	B	B	D	A

Sequence

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



Intersection Level Of Service Report
Intersection 29: Fairview Road at I-405 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	35.2
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.974

Intersection Setup

Name	Fairview Rd			Fairview Rd			I-405 SB Ramps			I-405 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↑↑↑↑↑			↑↑↑↑↑			↑↑↑↑↑					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	1	0	0	1	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Fairview Rd			Fairview Rd			I-405 SB Ramps			I-405 SB Ramps		
Base Volume Input [veh/h]	0	856	1129	1544	1658	0	185	0	326	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	856	1129	1544	1658	0	185	0	326	0	0	0
Peak Hour Factor	1.0000	0.8770	0.8770	0.8770	0.8770	1.0000	0.8770	1.0000	0.8770	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	244	322	440	473	0	53	0	93	0	0	0
Total Analysis Volume [veh/h]	0	976	1287	1761	1891	0	211	0	372	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Permiss
Signal Group	0	6	0	5	2	0	3	0	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	10	0	6	10	0	6	0	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	30	0	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Split [s]	0	55	0	45	100	0	20	0	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	11	0	0	14	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No		No					
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No		No					
Maximum Recall		No		No	No		No					
Pedestrian Recall		No		No	No		No					
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	R	L	C	L	R	
C, Cycle Length [s]	120	120	120	120	120	120	120	
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]	51	51	51	41	96	16	16	
g / C, Green / Cycle	0.42	0.42	0.42	0.34	0.80	0.13	0.13	
(v / s)_i Volume / Saturation Flow Rate	0.19	0.40	0.40	0.34	0.37	0.06	0.13	
s, saturation flow rate [veh/h]	5094	1589	1589	5188	5094	3459	2813	
c, Capacity [veh/h]	2164	675	675	1772	4074	462	376	
d1, Uniform Delay [s]	24.54	33.34	33.34	39.37	3.83	47.95	51.89	
k, delay calibration	0.50	0.50	0.50	0.11	0.50	0.11	0.11	
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	0.68	24.83	24.83	8.64	0.38	0.71	19.30	
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	0.45	0.95	0.95	0.99	0.46	0.46	0.99	
d, Delay for Lane Group [s/veh]	25.23	58.17	58.17	48.01	4.21	48.66	71.19	
Lane Group LOS	C	E	E	D	A	D	E	
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	6.69	22.26	22.26	18.35	3.94	2.97	6.58	
50th-Percentile Queue Length [ft/ln]	167.23	556.56	556.56	458.85	98.49	74.15	164.49	
95th-Percentile Queue Length [veh/ln]	10.93	30.00	30.00	25.38	7.09	5.34	10.79	
95th-Percentile Queue Length [ft/ln]	273.27	750.01	750.01	634.50	177.28	133.47	269.65	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	25.23	58.17	48.01	4.21	0.00	48.66	0.00	71.19	0.00	0.00	0.00
Movement LOS		C	E	D	A		D		E			
d_A, Approach Delay [s/veh]	43.96			25.33			63.03			0.00		
Approach LOS	D			C			E			A		
d_I, Intersection Delay [s/veh]	35.20											
Intersection LOS	D											
Intersection V/C	0.974											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0			0.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	0.00			0.00			49.50			49.50		
I_p,int, Pedestrian LOS Score for Intersection	0.000			0.000			2.427			2.945		
Crosswalk LOS	F			F			B			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	850			1600			267			0		
d_b, Bicycle Delay [s]	19.83			2.40			45.06			59.99		
I_b,int, Bicycle LOS Score for Intersection	2.493			3.568			1.560			4.132		
Bicycle LOS	B			D			A			D		

Sequence

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



Intersection Level Of Service Report
Intersection 30: Bristol Street at I-405 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	6.3
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.399

Intersection Setup

Name	Bristol Street			Bristol Street			I-405 NB Ramps			I-405 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	0	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	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	No			No			Yes			Yes		

Volumes

Name	Bristol Street			Bristol Street			I-405 NB Ramps			I-405 NB Ramps		
Base Volume Input [veh/h]	0	1566	193	0	2328	8	0	0	34	122	74	719
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1566	193	0	2328	8	0	0	34	122	74	719
Peak Hour Factor	1.0000	0.9380	0.9380	1.0000	0.9380	0.9380	1.0000	1.0000	0.9380	0.9380	0.9380	0.9380
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	417	51	0	620	2	0	0	9	33	20	192
Total Analysis Volume [veh/h]	0	1670	206	0	2482	9	0	0	36	130	79	767
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]	95
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss	Split	Permiss	Split	Split	Split	Overlap
Signal Group	0	6	0	0	2	0	0	0	8	0	4	4
Auxiliary Signal Groups												2,4
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	0	10	0	0	0	6	0	10	10
Maximum Green [s]	0	30	0	0	30	0	0	0	30	0	30	30
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0
Split [s]	0	69	0	0	69	0	0	0	10	0	16	16
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	18	0	0	14	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No				No		No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0
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	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	C	R	L	C	C	R
C, Cycle Length [s]	95	95	95	95	95	95	95	95
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	69	69	69	4	10	10	10	83
g / C, Green / Cycle	0.73	0.73	0.73	0.04	0.11	0.11	0.11	0.88
(v / s)_i Volume / Saturation Flow Rate	0.25	0.29	0.27	0.01	0.04	0.04	0.04	0.27
s, saturation flow rate [veh/h]	6792	6792	1864	2813	1781	1790	1702	2813
c, Capacity [veh/h]	4947	4947	1358	110	189	190	181	2466
d1, Uniform Delay [s]	4.65	4.96	4.78	44.43	39.48	39.48	39.63	0.99
k, delay calibration	0.50	0.50	0.50	0.11	0.11	0.11	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.19	0.25	0.77	1.70	1.16	1.16	1.41	0.33
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.34	0.40	0.37	0.33	0.36	0.36	0.40	0.31
d, Delay for Lane Group [s/veh]	4.83	5.21	5.55	46.13	40.64	40.63	41.05	1.32
Lane Group LOS	A	A	A	D	D	D	D	A
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.43	3.09	3.19	0.44	1.54	1.54	1.62	0.31
50th-Percentile Queue Length [ft/ln]	60.65	77.32	79.76	10.90	38.38	38.56	40.62	7.64
95th-Percentile Queue Length [veh/ln]	4.37	5.57	5.74	0.78	2.76	2.78	2.92	0.55
95th-Percentile Queue Length [ft/ln]	109.18	139.18	143.57	19.62	69.08	69.41	73.12	13.76

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	4.83	0.00	0.00	5.27	5.55	0.00	0.00	46.13	40.64	41.01	1.32
Movement LOS		A			A	A			D	D	D	A
d_A, Approach Delay [s/veh]	4.83			5.27			46.13			9.77		
Approach LOS	A			A			D			A		
d_I, Intersection Delay [s/veh]	6.27											
Intersection LOS	A											
Intersection V/C	0.399											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	37.14	37.14
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.164	2.614
Crosswalk LOS	F	F	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1368	1368	126	253
d_b, Bicycle Delay [s]	4.74	4.74	41.70	36.26
I_b,int, Bicycle LOS Score for Intersection	2.248	2.382	1.560	2.365
Bicycle LOS	B	B	A	B

Sequence




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



Intersection Level Of Service Report
Intersection 31: Bristol Street at I-405 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	14.6
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.485

Intersection Setup

Name	Bristol Street		Bristol Street		I-405 SB Ramps	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	1	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		Yes	

Volumes

Name	Bristol Street		Bristol Street		I-405 SB Ramps	
Base Volume Input [veh/h]	114	1133	1044	1004	626	529
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	114	1133	1044	1004	626	529
Peak Hour Factor	0.9270	0.9270	0.9270	0.9270	0.9270	0.9270
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	31	306	282	271	169	0
Total Analysis Volume [veh/h]	123	1222	1126	1083	675	0
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Unsignalized	Permissive	Unsignalized
Signal Group	1	6	2	0	3	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	6	10	10	0	6	0
Maximum Green [s]	30	30	30	0	30	0
Amber [s]	3.0	3.0	3.0	0.0	3.0	0.0
All red [s]	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	35	57	22	0	33	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	0	7	0	0	0
Pedestrian Clearance [s]	0	0	11	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No	No		No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
Minimum Recall	No	No	No		No	
Maximum Recall	No	No	No		No	
Pedestrian Recall	No	No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L
C, Cycle Length [s]	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	67	55	15
g / C, Green / Cycle	0.09	0.74	0.61	0.17
(v / s)_i Volume / Saturation Flow Rate	0.07	0.18	0.22	0.13
s, saturation flow rate [veh/h]	1781	6792	5094	5188
c, Capacity [veh/h]	158	5039	3100	878
d1, Uniform Delay [s]	40.14	3.66	8.85	35.73
k, delay calibration	0.11	0.50	0.50	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.90	0.11	0.33	1.46
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.78	0.24	0.36	0.77
d, Delay for Lane Group [s/veh]	48.04	3.77	9.19	37.18
Lane Group LOS	D	A	A	D
Critical Lane Group	Yes	No	Yes	Yes
50th-Percentile Queue Length [veh/ln]	2.98	1.37	3.41	4.75
50th-Percentile Queue Length [ft/ln]	74.45	34.18	85.37	118.69
95th-Percentile Queue Length [veh/ln]	5.36	2.46	6.15	8.32
95th-Percentile Queue Length [ft/ln]	134.01	61.53	153.66	208.02

Movement, Approach, & Intersection Results

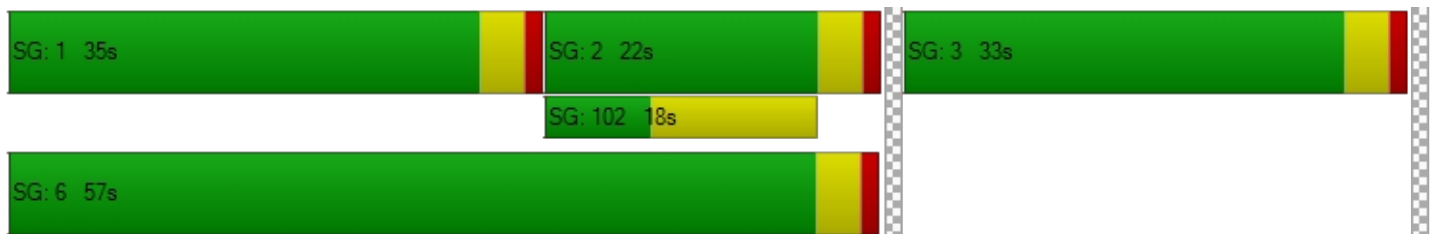
d_M, Delay for Movement [s/veh]	48.04	3.77	9.19	0.00	37.18	0.00
Movement LOS	D	A	A		D	
d_A, Approach Delay [s/veh]	7.82		9.19		37.18	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	14.61					
Intersection LOS	B					
Intersection V/C	0.485					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	34.68
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.582
Crosswalk LOS	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1177	400	644
d_b, Bicycle Delay [s]	7.61	28.81	20.68
I_b,int, Bicycle LOS Score for Intersection	2.114	2.179	1.560
Bicycle LOS	B	B	A

Sequence

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



Intersection Level Of Service Report
Intersection 37: Bear St at SR-73 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	23.0
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.671

Intersection Setup

Name	Bear St			Bear St			SR-73 NB Ramps			SR-73 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0	0	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		
Crosswalk	No			No			No			Yes		

Volumes

Name	Bear St			Bear St			SR-73 NB Ramps			SR-73 NB Ramps		
Base Volume Input [veh/h]	159	316	0	0	981	97	0	0	0	175	0	509
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	159	316	0	0	981	97	0	0	0	175	0	509
Peak Hour Factor	0.8120	0.8120	1.0000	1.0000	0.8120	0.8120	1.0000	1.0000	1.0000	0.8120	1.0000	0.8120
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	49	97	0	0	302	30	0	0	0	54	0	157
Total Analysis Volume [veh/h]	196	389	0	0	1208	119	0	0	0	216	0	627
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Permiss	Split
Signal Group	1	6	0	0	2	0	0	0	0	0	7	0	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	6	10	0	0	10	0	0	0	0	0	6	0	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	16	45	0	0	29	0	0	0	0	0	45	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	11	0	0	0	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall	No	No			No						No		
Maximum Recall	No	No			No						No		
Pedestrian Recall	No	No			No						No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C		L	R
C, Cycle Length [s]	90	90	90	90		90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	12	59	43	43		24	24
g / C, Green / Cycle	0.13	0.65	0.48	0.48		0.26	0.26
(v / s)_i Volume / Saturation Flow Rate	0.11	0.11	0.25	0.25		0.12	0.22
s, saturation flow rate [veh/h]	1781	3560	3560	1785		1781	2813
c, Capacity [veh/h]	231	2314	1694	849		465	735
d1, Uniform Delay [s]	38.32	6.20	16.47	16.45		27.96	31.61
k, delay calibration	0.11	0.50	0.50	0.50		0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	8.40	0.16	1.16	2.28		0.72	2.93
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.85	0.17	0.52	0.52		0.46	0.85
d, Delay for Lane Group [s/veh]	46.72	6.36	17.62	18.73		28.68	34.54
Lane Group LOS	D	A	B	B		C	C
Critical Lane Group	Yes	No	Yes	No		No	Yes
50th-Percentile Queue Length [veh/ln]	4.70	1.33	6.28	6.55		3.93	6.59
50th-Percentile Queue Length [ft/ln]	117.46	33.30	157.12	163.63		98.15	164.73
95th-Percentile Queue Length [veh/ln]	8.25	2.40	10.40	10.74		7.07	10.80
95th-Percentile Queue Length [ft/ln]	206.33	59.94	259.90	268.52		176.66	269.97

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	46.72	6.36	0.00	0.00	17.92	18.73	0.00	0.00	0.00	28.68	0.00	34.54
Movement LOS	D	A			B	B				C		C
d_A, Approach Delay [s/veh]	19.88				17.99		0.00		33.04			
Approach LOS	B				B		A		C			
d_I, Intersection Delay [s/veh]	23.00											
Intersection LOS	C											
Intersection V/C	0.671											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	34.68
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	2.336
Crosswalk LOS	F	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	911	555	0	911
d_b, Bicycle Delay [s]	13.35	23.48	45.01	13.35
I_b,int, Bicycle LOS Score for Intersection	2.042	2.289	4.132	1.560
Bicycle LOS	B	B	D	A

Sequence

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



Intersection Level Of Service Report
Intersection 38: Bear St at SR-73 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	25.2
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.784

Intersection Setup

Name	Bear St			Bear St			SR-73 SB Ramps			SR-73 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↑↑			↑↑↑			↑↑					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Bear St			Bear St			SR-73 SB Ramps			SR-73 SB Ramps		
Base Volume Input [veh/h]	0	344	381	618	609	0	123	1	206	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	344	381	618	609	0	123	1	206	0	0	0
Peak Hour Factor	1.0000	0.8010	0.8010	0.8010	0.8010	1.0000	0.8010	0.8010	0.8010	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	107	119	193	190	0	38	0	64	0	0	0
Total Analysis Volume [veh/h]	0	429	476	772	760	0	154	1	257	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Permiss	Permiss
Signal Group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	6	10	0	0	10	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	18	0	44	62	0	0	33	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	7	0	0	7	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	L	C	L	C	
C, Cycle Length [s]	95	95	95	95	95	95	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	41	41	25	69	18	18	
g / C, Green / Cycle	0.43	0.43	0.26	0.73	0.19	0.19	
(v / s)_i Volume / Saturation Flow Rate	0.23	0.30	0.22	0.21	0.09	0.16	
s, saturation flow rate [veh/h]	1870	1589	3459	3560	1781	1590	
c, Capacity [veh/h]	799	679	895	2592	335	299	
d1, Uniform Delay [s]	20.24	22.27	33.61	4.47	34.30	37.40	
k, delay calibration	0.50	0.50	0.11	0.50	0.11	0.11	
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	2.58	5.96	2.62	0.29	0.99	7.34	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	0.54	0.70	0.86	0.29	0.46	0.86	
d, Delay for Lane Group [s/veh]	22.83	28.23	36.23	4.76	35.29	44.74	
Lane Group LOS	C	C	D	A	D	D	
Critical Lane Group	No	Yes	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	7.38	9.44	8.61	2.18	3.22	6.32	
50th-Percentile Queue Length [ft/ln]	184.58	235.89	215.37	54.46	80.48	158.06	
95th-Percentile Queue Length [veh/ln]	11.84	14.47	13.43	3.92	5.79	10.45	
95th-Percentile Queue Length [ft/ln]	295.99	361.83	335.71	98.03	144.86	261.15	

Movement, Approach, & Intersection Results

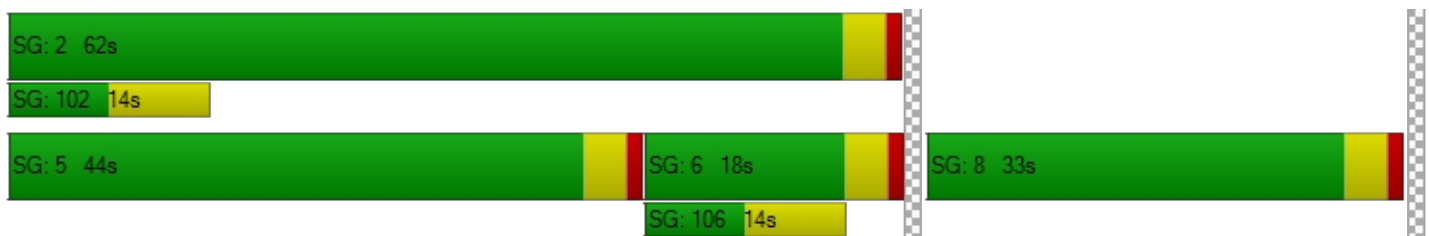
d_M, Delay for Movement [s/veh]	0.00	22.83	28.23	36.23	4.76	0.00	35.29	44.74	44.74	0.00	0.00	0.00
Movement LOS		C	C	D	A		D	D	D			
d_A, Approach Delay [s/veh]		25.67		20.62			41.20			0.00		
Approach LOS		C		C			D			A		
d_I, Intersection Delay [s/veh]	25.20											
Intersection LOS	C											
Intersection V/C	0.784											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	37.14	37.14
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.076	2.326
Crosswalk LOS	F	F	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	295	1221	610	0
d_b, Bicycle Delay [s]	34.54	7.21	22.93	47.51
I_b,int, Bicycle LOS Score for Intersection	2.306	2.824	2.239	4.132
Bicycle LOS	B	C	B	D

Sequence




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



Intersection Level Of Service Report
Intersection 12: SR-55 SB Ramps at MacArthur Blvd

Control Type:	Signalized	Delay (sec / veh):	12.7
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.773

Intersection Setup

Name	SR-55 SB Ramp			MacArthur Blvd			MacArthur Blvd					
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	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	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		
Crosswalk	No			Yes			No			No		

Volumes

Name				SR-55 SB Ramp			MacArthur Blvd			MacArthur Blvd		
Base Volume Input [veh/h]	0	0	0	291	0	787	0	1235	1059	0	1594	608
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	291	0	787	0	1235	1059	0	1594	608
Peak Hour Factor	1.0000	1.0000	1.0000	0.8960	1.0000	0.8960	1.0000	0.8960	0.8960	1.0000	0.8960	0.8960
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	81	0	220	0	345	295	0	445	170
Total Analysis Volume [veh/h]	0	0	0	325	0	878	0	1378	1182	0	1779	679
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	0	0	0	5	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	6	0	0	0	10	0	0	10	0
Maximum Green [s]	0	0	0	30	0	0	0	30	0	0	30	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	52	0	0	0	58	0	0	58	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	14	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	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	R	C	C
C, Cycle Length [s]		56	56	56	56
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		21	21	26	26
g / C, Green / Cycle		0.38	0.38	0.47	0.47
(v / s)_i Volume / Saturation Flow Rate		0.09	0.31	0.27	0.35
s, saturation flow rate [veh/h]		3459	2813	5094	5094
c, Capacity [veh/h]		1326	1078	2410	2410
d1, Uniform Delay [s]		11.69	15.40	10.60	11.89
k, delay calibration		0.11	0.11	0.11	0.11
l, Upstream Filtering Factor		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		0.10	1.55	0.22	0.45
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.25	0.81	0.57	0.74
d, Delay for Lane Group [s/veh]		11.79	16.95	10.82	12.34
Lane Group LOS		B	B	B	B
Critical Lane Group		No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]		1.21	4.47	3.35	4.88
50th-Percentile Queue Length [ft/ln]		30.23	111.81	83.84	122.12
95th-Percentile Queue Length [veh/ln]		2.18	7.94	6.04	8.51
95th-Percentile Queue Length [ft/ln]		54.41	198.51	150.91	212.74

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	11.79	0.00	16.95	0.00	10.82	0.00	0.00	12.34	0.00
Movement LOS				B		B		B			B	
d_A, Approach Delay [s/veh]	0.00			15.56			10.82			12.34		
Approach LOS	A			B			B			B		
d_I, Intersection Delay [s/veh]	12.75											
Intersection LOS	B											
Intersection V/C	0.773											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	17.88	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	0.000	2.507	0.000	0.000
Crosswalk LOS	F	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	1727	1943	1943
d_b, Bicycle Delay [s]	27.79	0.52	0.02	0.02
I_b,int, Bicycle LOS Score for Intersection	4.132	1.560	2.318	2.538
Bicycle LOS	D	A	B	B

Sequence

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



Intersection Level Of Service Report
Intersection 13: SR-55 NB Ramps at MacArthur Blvd

Control Type:	Signalized	Delay (sec / veh):	8.8
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.666

Intersection Setup

Name	SR-55 NB Ramp						MacArthur Blvd			MacArthur Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	⇐⇐⇐						⇐⇐⇐			⇐⇐⇐		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	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		
Crosswalk	No			No			No			Yes		

Volumes

Name	SR-55 NB Ramp						MacArthur Blvd			MacArthur Blvd		
Base Volume Input [veh/h]	672	0	430	0	0	0	0	727	784	0	1539	1092
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	672	0	430	0	0	0	0	727	784	0	1539	1092
Peak Hour Factor	0.9240	1.0000	0.9240	1.0000	1.0000	1.0000	1.0000	0.9240	0.9240	1.0000	0.9240	0.9240
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	182	0	116	0	0	0	0	197	212	0	416	295
Total Analysis Volume [veh/h]	727	0	465	0	0	0	0	787	848	0	1666	1182
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	1	0	0	0	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	6	0	0	0	0	0	0	10	0	0	10	0
Maximum Green [s]	30	0	0	0	0	0	0	30	0	0	30	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	48	0	0	0	0	0	0	72	0	0	72	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	7	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	21	0	0	0	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No							No			No	
Maximum Recall	No							No			No	
Pedestrian Recall	No							No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L		C	C
C, Cycle Length [s]	41		41	41
L, Total Lost Time per Cycle [s]	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00		2.00	2.00
g_i, Effective Green Time [s]	12		21	21
g / C, Green / Cycle	0.29		0.51	0.51
(v / s)_i Volume / Saturation Flow Rate	0.21		0.22	0.33
s, saturation flow rate [veh/h]	3459		3560	5094
c, Capacity [veh/h]	1015		1830	2618
d1, Uniform Delay [s]	13.12		6.30	7.29
k, delay calibration	0.11		0.11	0.11
l, Upstream Filtering Factor	1.00		1.00	1.00
d2, Incremental Delay [s]	0.96		0.16	0.26
d3, Initial Queue Delay [s]	0.00		0.00	0.00
Rp, platoon ratio	1.00		1.00	1.00
PF, progression factor	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.72		0.43	0.64
d, Delay for Lane Group [s/veh]	14.09		6.46	7.55
Lane Group LOS	B		A	A
Critical Lane Group	Yes		No	Yes
50th-Percentile Queue Length [veh/ln]	2.55		1.40	2.29
50th-Percentile Queue Length [ft/ln]	63.68		35.11	57.27
95th-Percentile Queue Length [veh/ln]	4.58		2.53	4.12
95th-Percentile Queue Length [ft/ln]	114.62		63.20	103.08

Movement, Approach, & Intersection Results

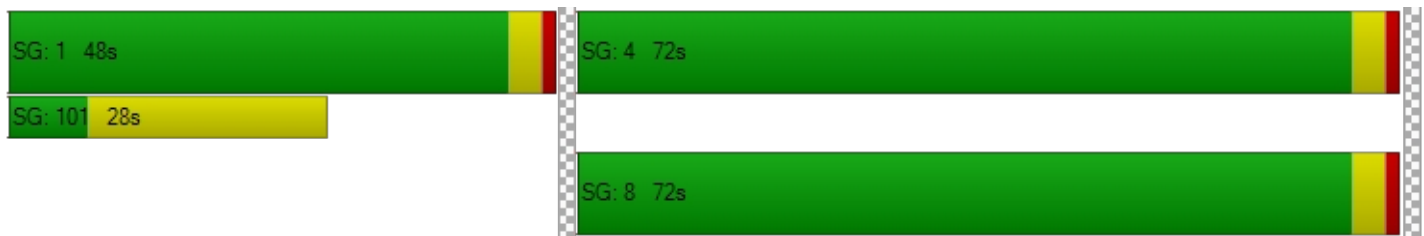
d_M, Delay for Movement [s/veh]	14.09	0.00	0.00	0.00	0.00	0.00	0.00	6.46	0.00	0.00	7.55	0.00
Movement LOS	B							A			A	
d_A, Approach Delay [s/veh]	14.09			0.00			6.46			7.55		
Approach LOS	B			A			A			A		
d_I, Intersection Delay [s/veh]	8.77											
Intersection LOS	A											
Intersection V/C	0.666											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	11.14
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	2.805
Crosswalk LOS	F	F	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	2128	0	3289	3289
d_b, Bicycle Delay [s]	0.08	20.67	8.59	8.59
I_b,int, Bicycle LOS Score for Intersection	1.560	4.132	2.209	2.476
Bicycle LOS	A	D	B	B

Sequence

Ring 1	1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 25: I-405 NB Off-Ramp at South Coast Drive

Control Type:	Signalized	Delay (sec / veh):	21.2
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.587

Intersection Setup

Name	I-405 NB Off-Ramp			The Cape Dwy			South Coast Drive			South Coast 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	1	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	I-405 NB Off-Ramp			The Cape Dwy			South Coast Drive			South Coast Drive		
Base Volume Input [veh/h]	476	30	193	28	0	39	43	398	0	0	369	33
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
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]	476	30	193	28	0	39	43	398	0	0	369	33
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	1.0000	0.9500	0.9500	0.9500	1.0000	1.0000	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	125	8	51	7	0	10	11	105	0	0	97	9
Total Analysis Volume [veh/h]	501	32	203	29	0	41	45	419	0	0	388	35
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	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Permiss	Split	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	7	0	0	5	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	10	0	6	0	0	6	10	0	0	10	0
Maximum Green [s]	0	30	0	30	0	0	30	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	58	0	58	0	0	10	32	0	0	22	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	14	0	0	0	0	0	11	0	0	11	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No		No				No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	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	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	R	L	C	C	C
C, Cycle Length [s]	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
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	37	37	37	37	37	4	45	37	37
g / C, Green / Cycle	0.41	0.41	0.41	0.41	0.41	0.05	0.50	0.41	0.41
(v / s)_i Volume / Saturation Flow Rate	0.37	0.07	0.07	0.03	0.03	0.03	0.12	0.11	0.12
s, saturation flow rate [veh/h]	1366	1656	1589	1145	1589	1781	3560	1870	1817
c, Capacity [veh/h]	619	684	657	480	657	80	1773	764	742
d1, Uniform Delay [s]	26.05	16.70	16.72	19.53	15.91	42.09	12.86	17.76	17.83
k, delay calibration	0.18	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.20	0.12	0.13	0.05	0.04	5.96	0.31	0.90	0.96
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.81	0.17	0.18	0.06	0.06	0.56	0.24	0.28	0.29
d, Delay for Lane Group [s/veh]	30.25	16.82	16.84	19.58	15.95	48.05	13.17	18.66	18.79
Lane Group LOS	C	B	B	B	B	D	B	B	B
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	10.42	1.54	1.49	0.41	0.50	1.10	2.37	3.03	3.05
50th-Percentile Queue Length [ft/ln]	260.52	38.49	37.35	10.13	12.59	27.55	59.29	75.72	76.18
95th-Percentile Queue Length [veh/ln]	15.71	2.77	2.69	0.73	0.91	1.98	4.27	5.45	5.49
95th-Percentile Queue Length [ft/ln]	392.87	69.28	67.23	18.23	22.66	49.59	106.71	136.30	137.13

Movement, Approach, & Intersection Results

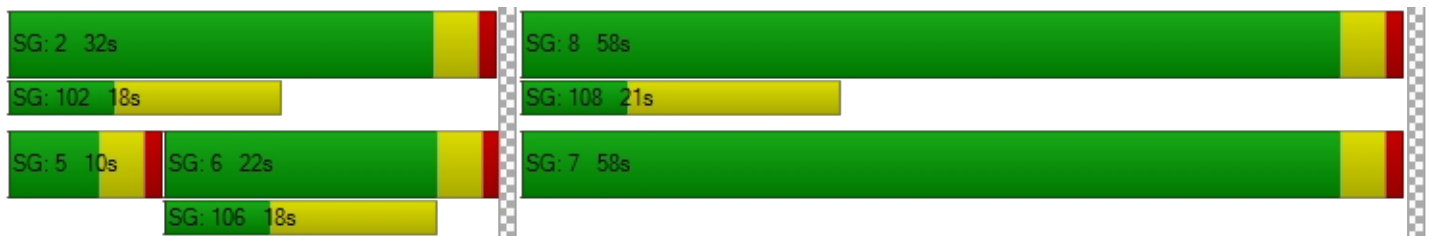
d_M, Delay for Movement [s/veh]	30.25	16.82	16.83	19.58	0.00	15.95	48.05	13.17	0.00	0.00	18.72	18.79
Movement LOS	C	B	B	B		B	D	B			B	B
d_A, Approach Delay [s/veh]	25.97			17.46			16.55			18.73		
Approach LOS	C			B			B			B		
d_I, Intersection Delay [s/veh]	21.23											
Intersection LOS	C											
Intersection V/C	0.587											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.67	34.67	0.00	34.67
I_p,int, Pedestrian LOS Score for Intersection	2.310	1.999	0.000	2.434
Crosswalk LOS	B	A	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1200	1200	622	400
d_b, Bicycle Delay [s]	7.20	7.20	21.36	28.80
I_b,int, Bicycle LOS Score for Intersection	2.774	1.560	1.942	1.909
Bicycle LOS	C	A	A	A

Sequence

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



Intersection Level Of Service Report
Intersection 28: Fairview Road at I-405 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	30.2
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.838

Intersection Setup

Name	Fairview Road			Fairview Road			I-405 NB Ramps			I-405 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	1	0	0	0	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		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Fairview Road			Fairview Road			I-405 NB Ramps			I-405 NB Ramps		
Base Volume Input [veh/h]	225	1328	0	0	1843	258	0	0	0	846	0	1072
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	225	1328	0	0	1843	258	0	0	0	846	0	1072
Peak Hour Factor	0.9270	0.9270	1.0000	1.0000	0.9270	0.9270	1.0000	1.0000	1.0000	0.9270	1.0000	0.9270
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	61	358	0	0	497	70	0	0	0	228	0	289
Total Analysis Volume [veh/h]	243	1433	0	0	1988	278	0	0	0	913	0	1156
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	105
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Permiss	Split
Signal Group	1	6	0	0	2	0	0	0	0	0	7	0	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	6	10	0	0	10	0	0	0	0	0	6	0	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	26	44	0	0	18	0	0	0	0	0	61	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	14	0	0	7	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall	No	No			No						No		
Maximum Recall	No	No			No						No		
Pedestrian Recall	No	No			No						No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	R		L	R
C, Cycle Length [s]	105	105	105	105		105	105
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	16	48	28	28		49	49
g / C, Green / Cycle	0.16	0.46	0.26	0.26		0.47	0.47
(v / s)_i Volume / Saturation Flow Rate	0.14	0.28	0.20	0.17		0.26	0.41
s, saturation flow rate [veh/h]	1781	5094	10188	1589		3459	2813
c, Capacity [veh/h]	276	2328	2687	419		1614	1313
d1, Uniform Delay [s]	43.38	21.53	35.36	34.49		20.28	25.34
k, delay calibration	0.11	0.50	0.50	0.50		0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	8.79	1.23	1.88	8.03		0.31	2.10
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.88	0.62	0.74	0.66		0.57	0.88
d, Delay for Lane Group [s/veh]	52.17	22.76	37.23	42.52		20.60	27.44
Lane Group LOS	D	C	D	D		C	C
Critical Lane Group	Yes	No	Yes	No		No	Yes
50th-Percentile Queue Length [veh/ln]	6.80	8.87	7.89	7.20		7.93	12.81
50th-Percentile Queue Length [ft/ln]	169.92	221.83	197.14	179.95		198.17	320.28
95th-Percentile Queue Length [veh/ln]	11.07	13.76	12.49	11.60		12.54	18.68
95th-Percentile Queue Length [ft/ln]	276.81	343.96	312.28	289.95		313.61	467.03

Movement, Approach, & Intersection Results

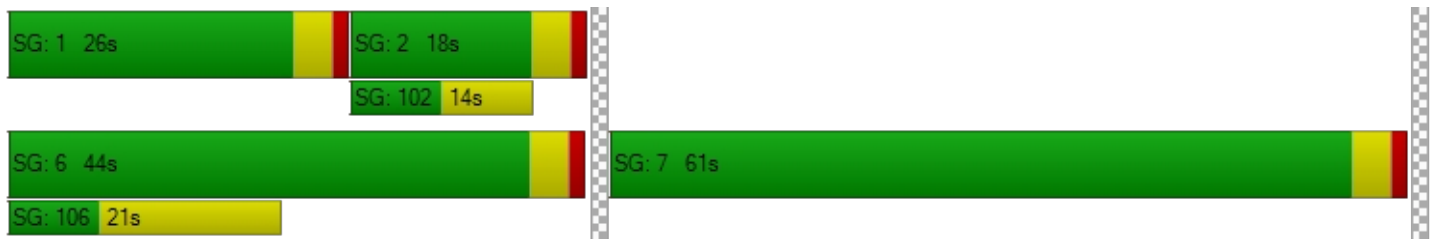
d_M, Delay for Movement [s/veh]	52.17	22.76	0.00	0.00	37.23	42.52	0.00	0.00	0.00	20.60	0.00	27.44
Movement LOS	D	C			D	D				C		C
d_A, Approach Delay [s/veh]	27.02			37.88			0.00			24.42		
Approach LOS	C			D			A			C		
d_I, Intersection Delay [s/veh]	30.22											
Intersection LOS	C											
Intersection V/C	0.838											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	42.07	42.07
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	1.939	2.711
Crosswalk LOS	F	F	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	762	267	0	1086
d_b, Bicycle Delay [s]	20.12	39.43	52.50	10.97
I_b,int, Bicycle LOS Score for Intersection	2.481	2.183	4.132	1.560
Bicycle LOS	B	B	D	A

Sequence

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



Intersection Level Of Service Report
Intersection 29: Fairview Road at I-405 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	19.8
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.657

Intersection Setup

Name	Fairview Rd			Fairview Rd			I-405 SB Ramps			I-405 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↑↑↑↑↑			↑↑↑↑↑			↑↑↑↑↑					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	1	0	0	1	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Fairview Rd			Fairview Rd			I-405 SB Ramps			I-405 SB Ramps		
Base Volume Input [veh/h]	0	1140	649	1037	1603	0	312	0	357	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1140	649	1037	1603	0	312	0	357	0	0	0
Peak Hour Factor	1.0000	0.9690	0.9690	0.9690	0.9690	1.0000	0.9690	1.0000	0.9690	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	294	167	268	414	0	80	0	92	0	0	0
Total Analysis Volume [veh/h]	0	1176	670	1070	1654	0	322	0	368	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Permiss
Signal Group	0	6	0	5	2	0	3	0	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	10	0	6	10	0	6	0	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	30	0	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Split [s]	0	22	0	44	66	0	24	0	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	11	0	0	14	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No		No					
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No		No					
Maximum Recall		No		No	No		No					
Pedestrian Recall		No		No	No		No					
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	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]	40	40	40	23	67	15	15	
g / C, Green / Cycle	0.45	0.45	0.45	0.26	0.75	0.16	0.16	
(v / s)_i Volume / Saturation Flow Rate	0.22	0.23	0.23	0.21	0.32	0.09	0.13	
s, saturation flow rate [veh/h]	5094	1589	1589	5188	5094	3459	2813	
c, Capacity [veh/h]	2281	712	712	1328	3812	563	458	
d1, Uniform Delay [s]	17.54	17.88	17.88	31.39	4.22	34.80	36.30	
k, delay calibration	0.50	0.50	0.50	0.11	0.50	0.11	0.11	
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	0.74	2.69	2.69	1.20	0.36	0.92	3.34	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	0.49	0.52	0.52	0.81	0.43	0.57	0.80	
d, Delay for Lane Group [s/veh]	18.28	20.57	20.57	32.59	4.58	35.71	39.65	
Lane Group LOS	B	C	C	C	A	D	D	
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	5.31	5.78	5.78	7.21	2.91	3.28	4.04	
50th-Percentile Queue Length [ft/ln]	132.64	144.51	144.51	180.31	72.66	81.94	100.88	
95th-Percentile Queue Length [veh/ln]	9.08	9.72	9.72	11.62	5.23	5.90	7.26	
95th-Percentile Queue Length [ft/ln]	227.07	243.08	243.08	290.42	130.78	147.48	181.58	

Movement, Approach, & Intersection Results

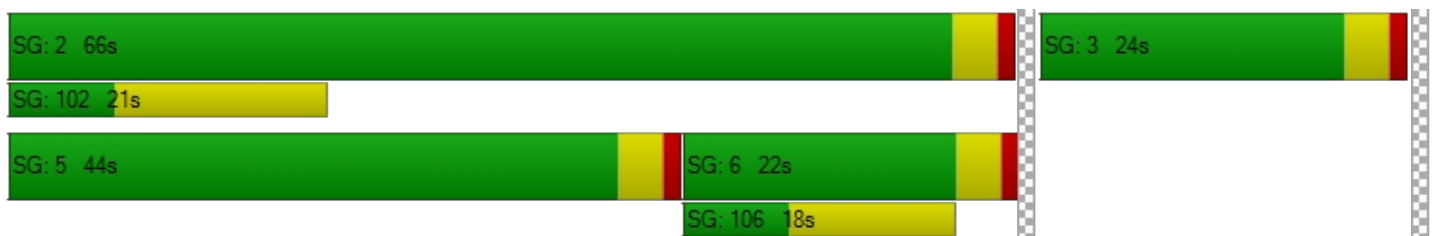
d_M, Delay for Movement [s/veh]	0.00	18.28	20.57	32.59	4.58	0.00	35.71	0.00	39.65	0.00	0.00	0.00
Movement LOS		B	C	C	A		D		D			
d_A, Approach Delay [s/veh]		19.20		15.59			37.81			0.00		
Approach LOS		B		B			D			A		
d_I, Intersection Delay [s/veh]	19.77											
Intersection LOS	B											
Intersection V/C	0.657											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	34.68	34.68
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.434	2.505
Crosswalk LOS	F	F	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	400	1377	444	0
d_b, Bicycle Delay [s]	28.81	4.36	27.23	45.01
I_b,int, Bicycle LOS Score for Intersection	2.321	3.058	1.560	4.132
Bicycle LOS	B	C	A	D

Sequence

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



Intersection Level Of Service Report
Intersection 30: Bristol Street at I-405 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	14.1
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.677

Intersection Setup

Name	Bristol Street			Bristol Street			I-405 NB Ramps			I-405 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	0	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	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	No			No			Yes			Yes		

Volumes

Name	Bristol Street			Bristol Street			I-405 NB Ramps			I-405 NB Ramps		
Base Volume Input [veh/h]	0	2223	185	0	2279	20	0	0	196	361	309	1281
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	2223	185	0	2279	20	0	0	196	361	309	1281
Peak Hour Factor	1.0000	0.9540	0.9540	1.0000	0.9540	0.9540	1.0000	1.0000	0.9540	0.9540	0.9540	0.9540
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	583	48	0	597	5	0	0	51	95	81	336
Total Analysis Volume [veh/h]	0	2330	194	0	2389	21	0	0	205	378	324	1343
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	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss	Split	Permiss	Split	Split	Split	Overlap
Signal Group	0	6	0	0	2	0	0	0	8	0	4	4
Auxiliary Signal Groups												2,4
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	0	10	0	0	0	6	0	10	10
Maximum Green [s]	0	30	0	0	30	0	0	0	30	0	30	30
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0
Split [s]	0	30	0	0	30	0	0	0	39	0	21	21
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	18	0	0	14	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No				No		No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0
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	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	C	R	L	C	C	R
C, Cycle Length [s]	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
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	52	52	52	9	17	17	17	73
g / C, Green / Cycle	0.58	0.58	0.58	0.10	0.19	0.19	0.19	0.81
(v / s)_i Volume / Saturation Flow Rate	0.34	0.28	0.26	0.07	0.13	0.13	0.14	0.48
s, saturation flow rate [veh/h]	6792	6792	1856	2813	1781	1814	1702	2813
c, Capacity [veh/h]	3924	3924	1072	279	338	344	323	2284
d1, Uniform Delay [s]	12.23	11.22	10.85	39.42	34.04	33.95	34.28	3.05
k, delay calibration	0.50	0.50	0.50	0.11	0.11	0.11	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.67	0.44	1.36	3.72	2.54	2.36	3.09	1.12
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.59	0.49	0.45	0.73	0.69	0.68	0.72	0.59
d, Delay for Lane Group [s/veh]	12.90	11.66	12.22	43.14	36.58	36.30	37.37	4.17
Lane Group LOS	B	B	B	D	D	D	D	A
Critical Lane Group	No	No	No	Yes	No	No	Yes	Yes
50th-Percentile Queue Length [veh/ln]	6.97	5.27	5.39	2.32	4.92	4.90	5.00	2.67
50th-Percentile Queue Length [ft/ln]	174.18	131.78	134.72	57.96	123.1	122.4	124.9	66.84
95th-Percentile Queue Length [veh/ln]	11.30	9.04	9.20	4.17	8.56	8.53	8.66	4.81
95th-Percentile Queue Length [ft/ln]	282.40	225.91	229.90	104.32	214.0	213.1	216.5	120.3

Movement, Approach, & Intersection Results

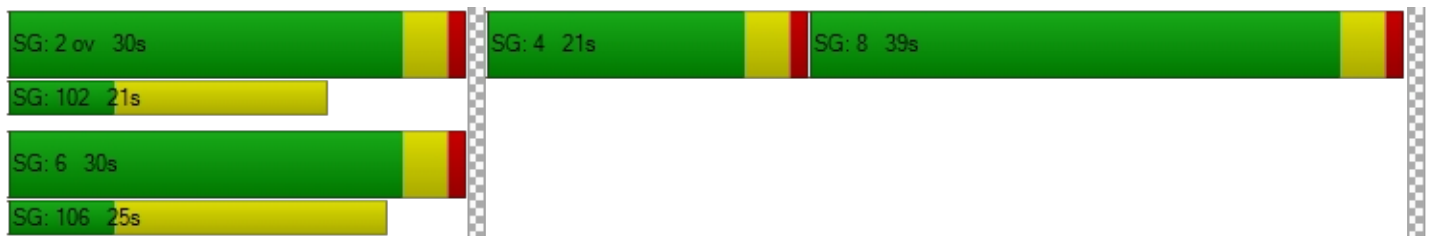
d_M, Delay for Movement [s/veh]	0.00	12.90	0.00	0.00	11.77	12.22	0.00	0.00	43.14	36.58	37.07	4.17
Movement LOS		B			B	B			D	D	D	A
d_A, Approach Delay [s/veh]	12.90			11.77			43.14			15.35		
Approach LOS	B			B			D			B		
d_I, Intersection Delay [s/veh]	14.11											
Intersection LOS	B											
Intersection V/C	0.677											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0			0.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	0.00			0.00			34.70			34.70		
I_p,int, Pedestrian LOS Score for Intersection	0.000			0.000			2.265			2.785		
Crosswalk LOS	F			F			B			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	577			577			777			378		
d_b, Bicycle Delay [s]	22.78			22.78			16.83			29.63		
I_b,int, Bicycle LOS Score for Intersection	2.521			2.355			1.560			3.247		
Bicycle LOS	B			B			A			C		

Sequence

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



Intersection Level Of Service Report
Intersection 31: Bristol Street at I-405 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	16.0
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.652

Intersection Setup

Name	Bristol Street		Bristol Street		I-405 SB Ramps	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration	↵ ↑ ↑ ↑		↑ ↑ ↵		↵↵↵↵	
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	1	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		Yes	

Volumes

Name	Bristol Street		Bristol Street		I-405 SB Ramps	
Base Volume Input [veh/h]	128	1595	1532	938	832	334
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	128	1595	1532	938	832	334
Peak Hour Factor	0.9440	0.9440	0.9440	0.9440	0.9440	0.9440
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	34	422	406	248	220	0
Total Analysis Volume [veh/h]	136	1690	1623	994	881	0
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Unsignalized	Permissive	Unsignalized
Signal Group	1	6	2	0	3	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	6	10	10	0	6	0
Maximum Green [s]	30	30	30	0	30	0
Amber [s]	3.0	3.0	3.0	0.0	3.0	0.0
All red [s]	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	26	48	22	0	42	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	0	7	0	0	0
Pedestrian Clearance [s]	0	0	11	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No	No		No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
Minimum Recall	No	No	No		No	
Maximum Recall	No	No	No		No	
Pedestrian Recall	No	No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L
C, Cycle Length [s]	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	63	50	19
g / C, Green / Cycle	0.10	0.70	0.56	0.22
(v / s)_i Volume / Saturation Flow Rate	0.08	0.25	0.32	0.17
s, saturation flow rate [veh/h]	1781	6792	5094	5188
c, Capacity [veh/h]	172	4726	2826	1117
d1, Uniform Delay [s]	39.77	5.54	13.10	33.40
k, delay calibration	0.11	0.50	0.50	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.83	0.21	0.86	1.28
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.79	0.36	0.57	0.79
d, Delay for Lane Group [s/veh]	47.60	5.75	13.95	34.68
Lane Group LOS	D	A	B	C
Critical Lane Group	Yes	No	Yes	Yes
50th-Percentile Queue Length [veh/ln]	3.28	2.72	6.76	6.06
50th-Percentile Queue Length [ft/ln]	81.93	68.06	169.10	151.39
95th-Percentile Queue Length [veh/ln]	5.90	4.90	11.03	10.09
95th-Percentile Queue Length [ft/ln]	147.47	122.50	275.73	252.29

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	47.60	5.75	13.95	0.00	34.68	0.00
Movement LOS	D	A	B		C	
d_A, Approach Delay [s/veh]	8.87		13.95		34.68	
Approach LOS	A		B		C	
d_I, Intersection Delay [s/veh]	16.03					
Intersection LOS	B					
Intersection V/C	0.652					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	34.68
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.618
Crosswalk LOS	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	978	400	844
d_b, Bicycle Delay [s]	11.76	28.81	15.03
I_b,int, Bicycle LOS Score for Intersection	2.313	2.452	1.560
Bicycle LOS	B	B	A

Sequence

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



Intersection Level Of Service Report
Intersection 37: Bear St at SR-73 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	43.4
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.965

Intersection Setup

Name	Bear St			Bear St			SR-73 NB Ramps			SR-73 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0	0	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		
Crosswalk	No			No			No			Yes		

Volumes

Name	Bear St			Bear St			SR-73 NB Ramps			SR-73 NB Ramps		
Base Volume Input [veh/h]	153	592	0	0	1034	152	0	0	0	408	0	1366
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	153	592	0	0	1034	152	0	0	0	408	0	1366
Peak Hour Factor	0.9180	0.9180	1.0000	1.0000	0.9180	0.9180	1.0000	1.0000	1.0000	0.9180	1.0000	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]	42	161	0	0	282	41	0	0	0	111	0	372
Total Analysis Volume [veh/h]	167	645	0	0	1126	166	0	0	0	444	0	1488
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Permiss	Split
Signal Group	1	6	0	0	2	0	0	0	0	0	7	0	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	6	10	0	0	10	0	0	0	0	0	6	0	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	16	50	0	0	34	0	0	0	0	0	70	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	11	0	0	0	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall	No	No			No						No		
Maximum Recall	No	No			No						No		
Pedestrian Recall	No	No			No						No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C		L	R
C, Cycle Length [s]	120	120	120	120		120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	12	47	31	31		65	65
g / C, Green / Cycle	0.10	0.39	0.25	0.25		0.55	0.55
(v / s)_i Volume / Saturation Flow Rate	0.09	0.18	0.24	0.25		0.25	0.53
s, saturation flow rate [veh/h]	1781	3560	3560	1751		1781	2813
c, Capacity [veh/h]	179	1384	907	446		970	1532
d1, Uniform Delay [s]	53.53	27.37	43.94	44.18		16.56	26.39
k, delay calibration	0.11	0.50	0.50	0.50		0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	18.55	1.13	19.98	34.91		0.34	5.87
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.93	0.47	0.95	0.97		0.46	0.97
d, Delay for Lane Group [s/veh]	72.08	28.50	63.92	79.09		16.90	32.25
Lane Group LOS	E	C	E	E		B	C
Critical Lane Group	Yes	No	No	Yes		No	Yes
50th-Percentile Queue Length [veh/ln]	5.92	7.11	14.99	16.87		7.35	20.63
50th-Percentile Queue Length [ft/ln]	147.92	177.81	374.78	421.67		183.71	515.66
95th-Percentile Queue Length [veh/ln]	9.91	11.49	21.34	23.60		11.79	28.07
95th-Percentile Queue Length [ft/ln]	247.64	287.16	533.53	590.06		294.85	701.86

Movement, Approach, & Intersection Results

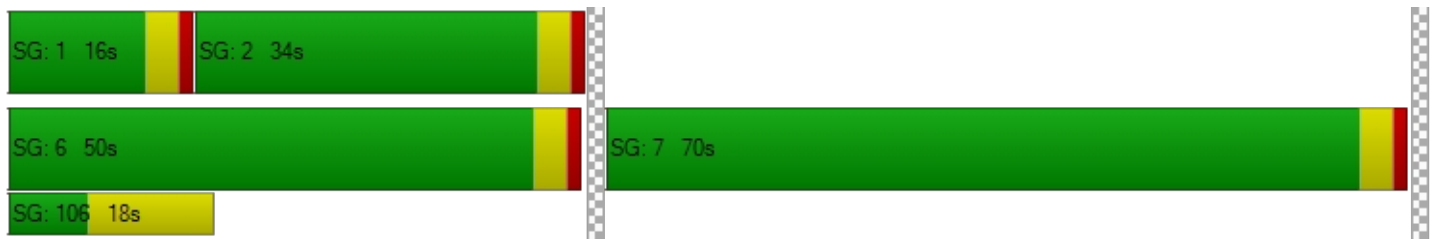
d_M, Delay for Movement [s/veh]	72.08	28.50	0.00	0.00	67.48	79.09	0.00	0.00	0.00	16.90	0.00	32.25
Movement LOS	E	C			E	E				B		C
d_A, Approach Delay [s/veh]	37.47			68.98			0.00			28.72		
Approach LOS	D			E			A			C		
d_I, Intersection Delay [s/veh]	43.37											
Intersection LOS	D											
Intersection V/C	0.965											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	49.49
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	2.616
Crosswalk LOS	F	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	767	500	0	1100
d_b, Bicycle Delay [s]	22.80	33.73	59.98	12.14
I_b,int, Bicycle LOS Score for Intersection	2.230	2.270	4.132	1.560
Bicycle LOS	B	B	D	A

Sequence

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



Intersection Level Of Service Report
Intersection 38: Bear St at SR-73 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	21.3
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.608

Intersection Setup

Name	Bear St			Bear St			SR-73 SB Ramps			SR-73 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↑↑			↑↑↑			↑↑					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Bear St			Bear St			SR-73 SB Ramps			SR-73 SB Ramps		
Base Volume Input [veh/h]	0	564	172	614	834	0	188	1	159	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	564	172	614	834	0	188	1	159	0	0	0
Peak Hour Factor	1.0000	0.9290	0.9290	0.9290	0.9290	1.0000	0.9290	0.9290	0.9290	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	152	46	165	224	0	51	0	43	0	0	0
Total Analysis Volume [veh/h]	0	607	185	661	898	0	202	1	171	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Permiss	Permiss
Signal Group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	6	10	0	0	10	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	18	0	48	66	0	0	29	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	7	0	0	7	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	L	C	L	C	
C, Cycle Length [s]	95	95	95	95	95	95	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	49	49	21	74	13	13	
g / C, Green / Cycle	0.51	0.51	0.23	0.78	0.14	0.14	
(v / s)_i Volume / Saturation Flow Rate	0.21	0.23	0.19	0.25	0.11	0.11	
s, saturation flow rate [veh/h]	1870	1728	3459	3560	1781	1596	
c, Capacity [veh/h]	955	882	781	2771	245	219	
d1, Uniform Delay [s]	14.44	14.77	35.22	3.12	39.74	39.76	
k, delay calibration	0.50	0.50	0.11	0.50	0.11	0.11	
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	1.33	1.65	2.65	0.31	6.08	6.90	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	0.41	0.45	0.85	0.32	0.80	0.81	
d, Delay for Lane Group [s/veh]	15.77	16.42	37.87	3.43	45.82	46.66	
Lane Group LOS	B	B	D	A	D	D	
Critical Lane Group	No	Yes	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	5.39	5.56	7.46	1.90	4.81	4.39	
50th-Percentile Queue Length [ft/ln]	134.74	138.90	186.51	47.44	120.29	109.64	
95th-Percentile Queue Length [veh/ln]	9.20	9.42	11.94	3.42	8.41	7.82	
95th-Percentile Queue Length [ft/ln]	229.92	235.54	298.49	85.40	210.23	195.50	

Movement, Approach, & Intersection Results

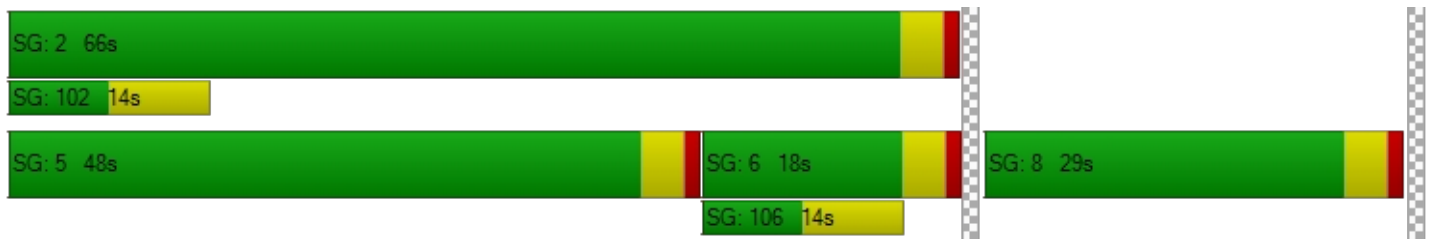
d_M, Delay for Movement [s/veh]	0.00	16.00	16.42	37.87	3.43	0.00	45.87	46.66	46.66	0.00	0.00	0.00
Movement LOS		B	B	D	A		D	D	D			
d_A, Approach Delay [s/veh]		16.09		18.03			46.22			0.00		
Approach LOS		B		B			D			A		
d_I, Intersection Delay [s/veh]	21.34											
Intersection LOS	C											
Intersection V/C	0.608											

Other Modes

g_Walk,mi, Effective Walk Time [s]		0.0		0.0		11.0		11.0
M_corner, Corner Circulation Area [ft ² /ped]		0.00		0.00		0.00		0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]		0.00		0.00		0.00		0.00
d_p, Pedestrian Delay [s]		0.00		0.00		37.14		37.14
I_p,int, Pedestrian LOS Score for Intersection		0.000		0.000		2.064		2.130
Crosswalk LOS		F		F		B		B
s_b, Saturation Flow Rate of the bicycle lane		2000		2000		2000		2000
c_b, Capacity of the bicycle lane [bicycles/h]		295		1305		526		0
d_b, Bicycle Delay [s]		34.54		5.74		25.80		47.51
I_b,int, Bicycle LOS Score for Intersection		2.213		2.846		2.177		4.132
Bicycle LOS		B		C		B		D

Sequence

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



APPENDIX E-V

**YEAR 2030 CUMULATIVE
TRAFFIC CONDITIONS**

Intersection Level Of Service Report
Intersection 12: SR-55 SB Ramps at MacArthur Blvd

Control Type:	Signalized	Delay (sec / veh):	14.4
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.774

Intersection Setup

Name	SR-55 SB Ramp			MacArthur Blvd			MacArthur Blvd					
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration				T T T T			T T T T			T T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	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	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		
Crosswalk	No			Yes			No			No		

Volumes

Name				SR-55 SB Ramp			MacArthur Blvd			MacArthur Blvd		
Base Volume Input [veh/h]	0	0	0	1055	0	970	0	1645	1146	0	1410	161
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	1055	0	970	0	1645	1146	0	1410	161
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	264	0	243	0	411	287	0	353	40
Total Analysis Volume [veh/h]	0	0	0	1055	0	970	0	1645	1146	0	1410	161
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	105
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	0	0	0	5	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	6	0	0	0	10	0	0	10	0
Maximum Green [s]	0	0	0	30	0	0	0	30	0	0	30	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	55	0	0	0	50	0	0	50	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	14	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	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	R	C	C
C, Cycle Length [s]		58	58	58	58
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		25	25	25	25
g / C, Green / Cycle		0.43	0.43	0.43	0.43
(v / s)_i Volume / Saturation Flow Rate		0.31	0.34	0.32	0.28
s, saturation flow rate [veh/h]		3459	2813	5094	5094
c, Capacity [veh/h]		1500	1220	2188	2188
d1, Uniform Delay [s]		13.49	14.30	14.04	13.15
k, delay calibration		0.11	0.11	0.11	0.11
l, Upstream Filtering Factor		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		0.61	1.22	0.54	0.32
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.70	0.80	0.75	0.64
d, Delay for Lane Group [s/veh]		14.10	15.53	14.58	13.47
Lane Group LOS		B	B	B	B
Critical Lane Group		No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]		4.90	4.86	5.25	4.19
50th-Percentile Queue Length [ft/ln]		122.45	121.47	131.27	104.79
95th-Percentile Queue Length [veh/ln]		8.53	8.47	9.01	7.54
95th-Percentile Queue Length [ft/ln]		213.19	211.85	225.21	188.61

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	14.10	0.00	15.53	0.00	14.58	0.00	0.00	13.47	0.00
Movement LOS				B		B		B			B	
d_A, Approach Delay [s/veh]	0.00			14.78			14.58			13.47		
Approach LOS	A			B			B			B		
d_I, Intersection Delay [s/veh]	14.35											
Intersection LOS	B											
Intersection V/C	0.774											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	19.16	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	0.000	2.670	0.000	0.000
Crosswalk LOS	F	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	1751	1579	1579
d_b, Bicycle Delay [s]	29.12	0.45	1.29	1.29
I_b,int, Bicycle LOS Score for Intersection	4.132	1.560	2.464	2.335
Bicycle LOS	D	A	B	B

Sequence

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



Intersection Level Of Service Report
Intersection 13: SR-55 NB Ramps at MacArthur Blvd

Control Type:	Signalized	Delay (sec / veh):	17.4
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.917

Intersection Setup

Name	SR-55 NB Ramp						MacArthur Blvd			MacArthur Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	⇐⇐⇐						⇐⇐⇐			⇐⇐⇐		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	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		
Crosswalk	No			No			No			Yes		

Volumes

Name	SR-55 NB Ramp						MacArthur Blvd			MacArthur Blvd		
	Base Volume Input [veh/h]	996	0	1074	0	0	0	0	1791	911	0	580
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	996	0	1074	0	0	0	0	1791	911	0	580	269
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	249	0	269	0	0	0	0	448	228	0	145	67
Total Analysis Volume [veh/h]	996	0	1074	0	0	0	0	1791	911	0	580	269
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	1	0	0	0	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	6	0	0	0	0	0	0	10	0	0	10	0
Maximum Green [s]	30	0	0	0	0	0	0	30	0	0	30	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	47	0	0	0	0	0	0	43	0	0	43	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	7	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	21	0	0	0	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No							No			No	
Maximum Recall	No							No			No	
Pedestrian Recall	No							No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L		C	C
C, Cycle Length [s]	58		58	58
L, Total Lost Time per Cycle [s]	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00		2.00	2.00
g_i, Effective Green Time [s]	20		30	30
g / C, Green / Cycle	0.35		0.51	0.51
(v / s)_i Volume / Saturation Flow Rate	0.29		0.50	0.11
s, saturation flow rate [veh/h]	3459		3560	5094
c, Capacity [veh/h]	1205		1831	2620
d1, Uniform Delay [s]	17.38		13.84	7.76
k, delay calibration	0.11		0.11	0.11
l, Upstream Filtering Factor	1.00		1.00	1.00
d2, Incremental Delay [s]	1.51		5.91	0.04
d3, Initial Queue Delay [s]	0.00		0.00	0.00
Rp, platoon ratio	1.00		1.00	1.00
PF, progression factor	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.83		0.98	0.22
d, Delay for Lane Group [s/veh]	18.89		19.76	7.81
Lane Group LOS	B		B	A
Critical Lane Group	Yes		Yes	No
50th-Percentile Queue Length [veh/ln]	5.62		10.46	1.09
50th-Percentile Queue Length [ft/ln]	140.44		261.52	27.37
95th-Percentile Queue Length [veh/ln]	9.50		15.77	1.97
95th-Percentile Queue Length [ft/ln]	237.62		394.13	49.26

Movement, Approach, & Intersection Results

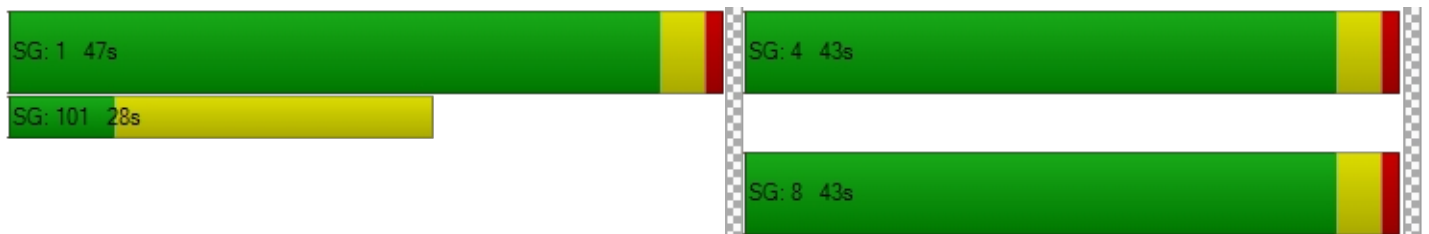
d_M, Delay for Movement [s/veh]	18.89	0.00	0.00	0.00	0.00	0.00	0.00	19.76	0.00	0.00	7.81	0.00
Movement LOS	B							B			A	
d_A, Approach Delay [s/veh]	18.89			0.00			19.76			7.81		
Approach LOS	B			A			B			A		
d_I, Intersection Delay [s/veh]	17.44											
Intersection LOS	B											
Intersection V/C	0.917											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	19.18
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	2.814
Crosswalk LOS	F	F	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1476	0	1338	1338
d_b, Bicycle Delay [s]	2.00	29.14	3.19	3.19
I_b,int, Bicycle LOS Score for Intersection	1.560	4.132	3.037	1.879
Bicycle LOS	A	D	C	A

Sequence

Ring 1	1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 25: I-405 NB Off-Ramp at South Coast Drive

Control Type:	Signalized	Delay (sec / veh):	21.7
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.410

Intersection Setup

Name	I-405 NB Off-Ramp			The Cape Dwy			South Coast Drive			South Coast 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	1	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	I-405 NB Off-Ramp			The Cape Dwy			South Coast Drive			South Coast Drive		
Base Volume Input [veh/h]	380	6	99	52	0	78	21	241	0	0	125	18
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
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]	380	6	99	52	0	78	21	241	0	0	125	18
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	95	2	25	13	0	20	5	60	0	0	31	5
Total Analysis Volume [veh/h]	380	6	99	52	0	78	21	241	0	0	125	18
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	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Permiss	Split	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	7	0	0	5	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	10	0	6	0	0	6	10	0	0	10	0
Maximum Green [s]	0	30	0	30	0	0	30	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	58	0	58	0	0	10	32	0	0	22	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	14	0	0	0	0	0	11	0	0	11	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No		No				No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	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	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	R	L	C	C	C
C, Cycle Length [s]	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
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	30	30	30	30	30	2	52	45	45
g / C, Green / Cycle	0.33	0.33	0.33	0.33	0.33	0.03	0.58	0.51	0.51
(v / s)_i Volume / Saturation Flow Rate	0.29	0.03	0.03	0.04	0.05	0.01	0.07	0.04	0.04
s, saturation flow rate [veh/h]	1321	1617	1589	1289	1589	1781	3560	1870	1790
c, Capacity [veh/h]	495	540	531	456	531	49	2055	944	904
d1, Uniform Delay [s]	29.72	20.63	20.63	23.52	20.99	43.07	8.64	11.46	11.48
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.54	0.08	0.08	0.11	0.13	5.80	0.12	0.16	0.17
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.77	0.10	0.10	0.11	0.15	0.43	0.12	0.08	0.08
d, Delay for Lane Group [s/veh]	32.25	20.71	20.71	23.63	21.11	48.87	8.75	11.62	11.65
Lane Group LOS	C	C	C	C	C	D	A	B	B
Critical Lane Group	Yes	No	No	No	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	7.96	0.77	0.75	0.82	1.15	0.53	1.03	0.75	0.75
50th-Percentile Queue Length [ft/ln]	199.03	19.14	18.82	20.44	28.71	13.36	25.66	18.64	18.72
95th-Percentile Queue Length [veh/ln]	12.59	1.38	1.36	1.47	2.07	0.96	1.85	1.34	1.35
95th-Percentile Queue Length [ft/ln]	314.71	34.46	33.88	36.78	51.67	24.05	46.18	33.55	33.70

Movement, Approach, & Intersection Results

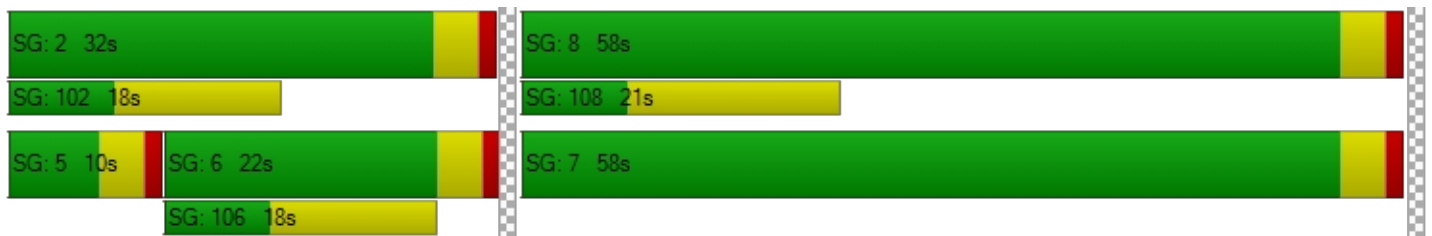
d_M, Delay for Movement [s/veh]	32.25	20.71	20.71	23.63	0.00	21.11	48.87	8.75	0.00	0.00	11.63	11.65
Movement LOS	C	C	C	C		C	D	A			B	B
d_A, Approach Delay [s/veh]	29.75			22.12			11.97			11.64		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]	21.67											
Intersection LOS	C											
Intersection V/C	0.410											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.68	34.68	0.00	34.68
I_p,int, Pedestrian LOS Score for Intersection	2.249	1.997	0.000	2.335
Crosswalk LOS	B	A	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1200	1200	622	400
d_b, Bicycle Delay [s]	7.20	7.20	21.36	28.80
I_b,int, Bicycle LOS Score for Intersection	2.360	1.560	1.776	1.678
Bicycle LOS	B	A	A	A

Sequence

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



Intersection Level Of Service Report
Intersection 28: Fairview Road at I-405 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	25.2
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.766

Intersection Setup

Name	Fairview Road			Fairview Road			I-405 NB Ramps			I-405 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	1	0	0	0	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		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Fairview Road			Fairview Road			I-405 NB Ramps			I-405 NB Ramps		
Base Volume Input [veh/h]	198	971	0	0	2658	321	0	0	0	663	0	849
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	198	971	0	0	2658	321	0	0	0	663	0	849
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	50	243	0	0	665	80	0	0	0	166	0	212
Total Analysis Volume [veh/h]	198	971	0	0	2658	321	0	0	0	663	0	849
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Permiss	Split
Signal Group	1	6	0	0	2	0	0	0	0	0	7	0	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	6	10	0	0	10	0	0	0	0	0	6	0	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	23	41	0	0	18	0	0	0	0	0	59	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	14	0	0	7	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall	No	No			No						No		
Maximum Recall	No	No			No						No		
Pedestrian Recall	No	No			No						No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	R		L	R
C, Cycle Length [s]	100	100	100	100		100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	13	57	39	39		36	36
g / C, Green / Cycle	0.13	0.56	0.39	0.39		0.36	0.36
(v / s)_i Volume / Saturation Flow Rate	0.11	0.19	0.26	0.20		0.19	0.30
s, saturation flow rate [veh/h]	1781	5094	10188	1589		3459	2813
c, Capacity [veh/h]	233	2878	4016	627		1228	999
d1, Uniform Delay [s]	42.51	11.69	24.83	22.99		25.73	29.79
k, delay calibration	0.11	0.50	0.50	0.50		0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	8.44	0.32	0.87	2.98		0.37	2.14
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.85	0.34	0.66	0.51		0.54	0.85
d, Delay for Lane Group [s/veh]	50.95	12.01	25.70	25.97		26.11	31.93
Lane Group LOS	D	B	C	C		C	C
Critical Lane Group	Yes	No	Yes	No		No	Yes
50th-Percentile Queue Length [veh/ln]	5.28	3.76	8.52	6.12		6.23	9.44
50th-Percentile Queue Length [ft/ln]	132.09	94.10	212.91	153.11		155.71	235.90
95th-Percentile Queue Length [veh/ln]	9.05	6.77	13.30	10.18		10.32	14.47
95th-Percentile Queue Length [ft/ln]	226.33	169.37	332.56	254.58		258.03	361.84

Movement, Approach, & Intersection Results

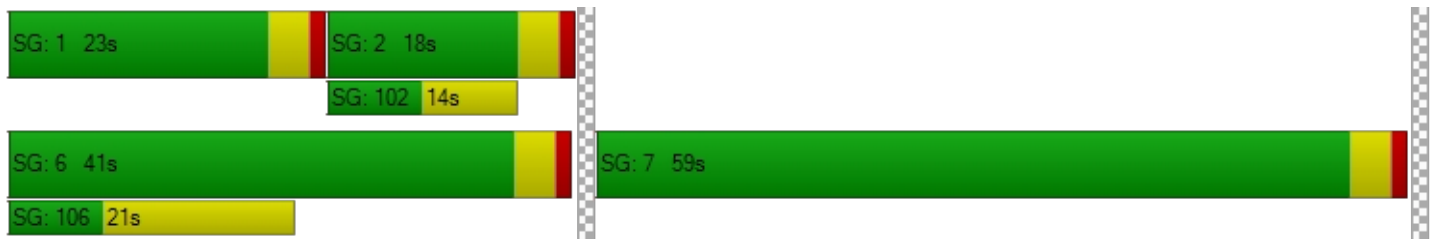
d_M, Delay for Movement [s/veh]	50.95	12.01	0.00	0.00	25.70	25.97	0.00	0.00	0.00	26.11	0.00	31.93
Movement LOS	D	B			C	C				C		C
d_A, Approach Delay [s/veh]	18.61				25.73		0.00		29.38			
Approach LOS	B				C		A		C			
d_I, Intersection Delay [s/veh]	25.23											
Intersection LOS	C											
Intersection V/C	0.766											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	39.61	39.61
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	1.934	2.600
Crosswalk LOS	F	F	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	740	280	0	1100
d_b, Bicycle Delay [s]	19.85	36.98	50.00	10.13
I_b,int, Bicycle LOS Score for Intersection	2.203	2.379	4.132	1.560
Bicycle LOS	B	B	D	A

Sequence

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



Intersection Level Of Service Report
Intersection 29: Fairview Road at I-405 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	31.1
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.928

Intersection Setup

Name	Fairview Rd			Fairview Rd			I-405 SB Ramps			I-405 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↑↑↑↓			↔↔↔↑↑			↔↔↔					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	1	0	0	1	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Fairview Rd			Fairview Rd			I-405 SB Ramps			I-405 SB Ramps		
Base Volume Input [veh/h]	0	979	1219	1669	1792	0	211	0	354	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	979	1219	1669	1792	0	211	0	354	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	245	305	417	448	0	53	0	89	0	0	0
Total Analysis Volume [veh/h]	0	979	1219	1669	1792	0	211	0	354	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	115
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Permiss
Signal Group	0	6	0	5	2	0	3	0	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	10	0	6	10	0	6	0	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	30	0	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Split [s]	0	50	0	45	95	0	20	0	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	11	0	0	14	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No		No					
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No		No					
Maximum Recall		No		No	No		No					
Pedestrian Recall		No		No	No		No					
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	R	L	C	L	R
C, Cycle Length [s]	115	115	115	115	115	115	115
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]	47	47	47	40	91	16	16
g / C, Green / Cycle	0.41	0.41	0.41	0.35	0.79	0.14	0.14
(v / s)_i Volume / Saturation Flow Rate	0.19	0.38	0.38	0.32	0.35	0.06	0.13
s, saturation flow rate [veh/h]	5094	1589	1589	5188	5094	3459	2813
c, Capacity [veh/h]	2093	653	653	1792	4030	482	392
d1, Uniform Delay [s]	24.70	32.36	32.36	36.31	3.87	45.35	48.72
k, delay calibration	0.50	0.50	0.50	0.11	0.50	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.75	22.17	22.17	2.71	0.36	0.63	7.85
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	0.47	0.93	0.93	0.93	0.44	0.44	0.90
d, Delay for Lane Group [s/veh]	25.45	54.53	54.53	39.02	4.23	45.98	56.57
Lane Group LOS	C	D	D	D	A	D	E
Critical Lane Group	No	Yes	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	6.58	19.77	19.77	15.23	3.62	2.81	5.41
50th-Percentile Queue Length [ft/ln]	164.55	494.29	494.29	380.74	90.53	70.18	135.26
95th-Percentile Queue Length [veh/ln]	10.79	27.06	27.06	21.63	6.52	5.05	9.22
95th-Percentile Queue Length [ft/ln]	269.74	676.60	676.60	540.75	162.95	126.32	230.62

Movement, Approach, & Intersection Results

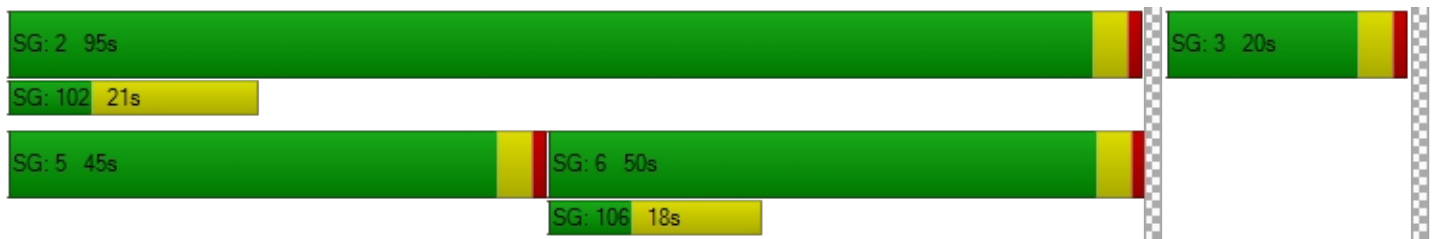
d_M, Delay for Movement [s/veh]	0.00	25.45	54.53	39.02	4.23	0.00	45.98	0.00	56.57	0.00	0.00	0.00
Movement LOS		C	D	D	A		D		E			
d_A, Approach Delay [s/veh]		41.58		21.00			52.61			0.00		
Approach LOS		D		C			D			A		
d_I, Intersection Delay [s/veh]	31.14											
Intersection LOS	C											
Intersection V/C	0.928											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		11.0		11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00		0.00		0.00		0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00		0.00		0.00		0.00
d_p, Pedestrian Delay [s]	0.00		0.00		47.02		47.02
I_p,int, Pedestrian LOS Score for Intersection	0.000		0.000		2.422		2.891
Crosswalk LOS	F		F		B		C
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000		2000
c_b, Capacity of the bicycle lane [bicycles/h]	800		1583		278		0
d_b, Bicycle Delay [s]	20.69		2.50		42.61		57.49
I_b,int, Bicycle LOS Score for Intersection	2.466		3.463		1.560		4.132
Bicycle LOS	B		C		A		D

Sequence

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



Intersection Level Of Service Report
Intersection 30: Bristol Street at I-405 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	6.4
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.381

Intersection Setup

Name	Bristol Street			Bristol Street			I-405 NB Ramps			I-405 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	lr			lt			rr			r lr		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	0	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	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	No			No			Yes			Yes		

Volumes

Name	Bristol Street			Bristol Street			I-405 NB Ramps			I-405 NB Ramps		
Base Volume Input [veh/h]	0	1687	208	0	2313	9	0	0	37	135	80	759
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1687	208	0	2313	9	0	0	37	135	80	759
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	422	52	0	578	2	0	0	9	34	20	190
Total Analysis Volume [veh/h]	0	1687	208	0	2313	9	0	0	37	135	80	759
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	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss	Split	Permiss	Split	Split	Split	Overlap
Signal Group	0	6	0	0	2	0	0	0	8	0	4	4
Auxiliary Signal Groups												2,4
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	0	10	0	0	0	6	0	10	10
Maximum Green [s]	0	30	0	0	30	0	0	0	30	0	30	30
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0
Split [s]	0	51	0	0	51	0	0	0	10	0	29	29
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	18	0	0	14	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No				No		No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0
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	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	C	R	L	C	C	R
C, Cycle Length [s]	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
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	64	64	64	4	10	10	10	78
g / C, Green / Cycle	0.71	0.71	0.71	0.04	0.11	0.11	0.11	0.87
(v / s)_i Volume / Saturation Flow Rate	0.25	0.27	0.25	0.01	0.04	0.04	0.04	0.27
s, saturation flow rate [veh/h]	6792	6792	1864	2813	1781	1788	1702	2813
c, Capacity [veh/h]	4841	4841	1328	116	201	201	192	2447
d1, Uniform Delay [s]	4.94	5.11	4.95	41.93	36.92	36.92	37.07	1.04
k, delay calibration	0.50	0.50	0.50	0.11	0.11	0.11	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.20	0.23	0.73	1.55	1.05	1.04	1.27	0.33
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.35	0.38	0.35	0.32	0.35	0.35	0.39	0.31
d, Delay for Lane Group [s/veh]	5.14	5.34	5.67	43.48	37.96	37.96	38.34	1.38
Lane Group LOS	A	A	A	D	D	D	D	A
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.46	2.80	2.91	0.42	1.47	1.48	1.56	0.30
50th-Percentile Queue Length [ft/ln]	61.51	70.12	72.67	10.52	36.87	37.01	39.02	7.46
95th-Percentile Queue Length [veh/ln]	4.43	5.05	5.23	0.76	2.65	2.66	2.81	0.54
95th-Percentile Queue Length [ft/ln]	110.73	126.21	130.80	18.93	66.36	66.62	70.24	13.42

Movement, Approach, & Intersection Results

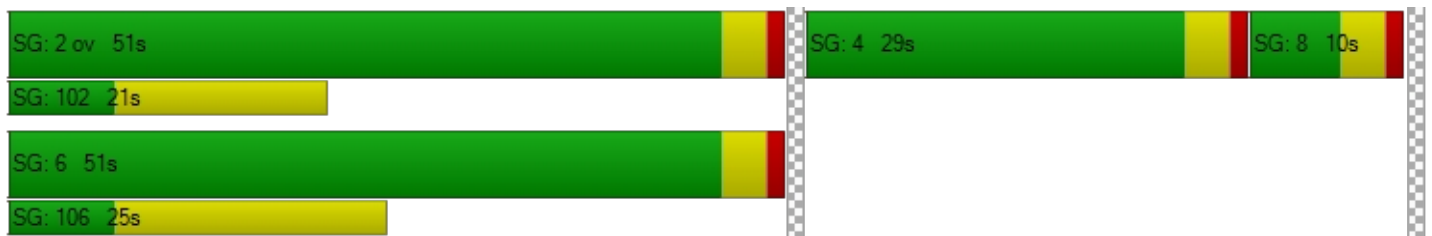
d_M, Delay for Movement [s/veh]	0.00	5.14	0.00	0.00	5.41	5.67	0.00	0.00	43.48	37.96	38.31	1.38
Movement LOS		A			A	A			D	D	D	A
d_A, Approach Delay [s/veh]	5.14			5.41			43.48			9.48		
Approach LOS	A			A			D			A		
d_I, Intersection Delay [s/veh]	6.39											
Intersection LOS	A											
Intersection V/C	0.381											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0			0.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	0.00			0.00			34.68			34.68		
I_p,int, Pedestrian LOS Score for Intersection	0.000			0.000			2.161			2.611		
Crosswalk LOS	F			F			B			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	1044			1044			133			555		
d_b, Bicycle Delay [s]	10.28			10.28			39.21			23.48		
I_b,int, Bicycle LOS Score for Intersection	2.255			2.326			1.560			2.363		
Bicycle LOS	B			B			A			B		

Sequence

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



Intersection Level Of Service Report
Intersection 31: Bristol Street at I-405 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	15.3
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.482

Intersection Setup

Name	Bristol Street		Bristol Street		I-405 SB Ramps	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration	↵ ↑ ↑ ↑		↑ ↑ ↵		↵↵↵↵	
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	1	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		Yes	

Volumes

Name	Bristol Street		Bristol Street		I-405 SB Ramps	
Base Volume Input [veh/h]	132	1229	1110	1003	668	571
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	132	1229	1110	1003	668	571
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	33	307	278	251	167	0
Total Analysis Volume [veh/h]	132	1229	1110	1003	668	0
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Unsignalized	Permissive	Unsignalized
Signal Group	1	6	2	0	3	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	6	10	10	0	6	0
Maximum Green [s]	30	30	30	0	30	0
Amber [s]	3.0	3.0	3.0	0.0	3.0	0.0
All red [s]	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	44	66	22	0	29	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	0	7	0	0	0
Pedestrian Clearance [s]	0	0	11	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No	No		No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
Minimum Recall	No	No	No		No	
Maximum Recall	No	No	No		No	
Pedestrian Recall	No	No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L
C, Cycle Length [s]	95	95	95	95
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	71	59	16
g / C, Green / Cycle	0.09	0.75	0.62	0.16
(v / s)_i Volume / Saturation Flow Rate	0.07	0.18	0.22	0.13
s, saturation flow rate [veh/h]	1781	6792	5094	5188
c, Capacity [veh/h]	168	5109	3138	849
d1, Uniform Delay [s]	42.11	3.56	8.96	38.16
k, delay calibration	0.11	0.50	0.50	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.92	0.11	0.31	1.67
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.79	0.24	0.35	0.79
d, Delay for Lane Group [s/veh]	50.03	3.67	9.27	39.82
Lane Group LOS	D	A	A	D
Critical Lane Group	Yes	No	Yes	Yes
50th-Percentile Queue Length [veh/ln]	3.37	1.41	3.52	5.04
50th-Percentile Queue Length [ft/ln]	84.19	35.22	87.89	125.93
95th-Percentile Queue Length [veh/ln]	6.06	2.54	6.33	8.72
95th-Percentile Queue Length [ft/ln]	151.54	63.40	158.21	217.94

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	50.03	3.67	9.27	0.00	39.82	0.00
Movement LOS	D	A	A		D	
d_A, Approach Delay [s/veh]	8.17		9.27		39.82	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	15.29					
Intersection LOS	B					
Intersection V/C	0.482					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	37.14
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.585
Crosswalk LOS	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1305	379	526
d_b, Bicycle Delay [s]	5.74	31.21	25.80
I_b,int, Bicycle LOS Score for Intersection	2.121	2.170	1.560
Bicycle LOS	B	B	A

Sequence

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



Intersection Level Of Service Report
Intersection 37: Bear St at SR-73 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	21.3
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.573

Intersection Setup

Name	Bear St			Bear St			SR-73 NB Ramps			SR-73 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0	0	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		
Crosswalk	No			No			No			Yes		

Volumes

Name	Bear St			Bear St			SR-73 NB Ramps			SR-73 NB Ramps		
Base Volume Input [veh/h]	177	368	0	0	1014	105	0	0	0	191	0	529
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	177	368	0	0	1014	105	0	0	0	191	0	529
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	44	92	0	0	254	26	0	0	0	48	0	132
Total Analysis Volume [veh/h]	177	368	0	0	1014	105	0	0	0	191	0	529
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Permiss	Split
Signal Group	1	6	0	0	2	0	0	0	0	0	7	0	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	6	10	0	0	10	0	0	0	0	0	6	0	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	26	40	0	0	14	0	0	0	0	0	50	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	11	0	0	0	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall	No	No			No						No		
Maximum Recall	No	No			No						No		
Pedestrian Recall	No	No			No						No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C		L	R
C, Cycle Length [s]	90	90	90	90		90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	11	62	47	47		20	20
g / C, Green / Cycle	0.12	0.69	0.52	0.52		0.22	0.22
(v / s)_i Volume / Saturation Flow Rate	0.10	0.10	0.21	0.21		0.11	0.19
s, saturation flow rate [veh/h]	1781	3560	3560	1781		1781	2813
c, Capacity [veh/h]	216	2444	1854	927		400	632
d1, Uniform Delay [s]	38.59	4.94	13.09	13.09		30.32	33.33
k, delay calibration	0.11	0.50	0.50	0.50		0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	7.43	0.13	0.65	1.30		0.88	3.03
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.82	0.15	0.40	0.40		0.48	0.84
d, Delay for Lane Group [s/veh]	46.01	5.07	13.74	14.39		31.20	36.36
Lane Group LOS	D	A	B	B		C	D
Critical Lane Group	Yes	No	Yes	No		No	Yes
50th-Percentile Queue Length [veh/ln]	4.20	1.06	4.46	4.62		3.63	5.64
50th-Percentile Queue Length [ft/ln]	104.97	26.52	111.47	115.62		90.75	141.09
95th-Percentile Queue Length [veh/ln]	7.56	1.91	7.92	8.15		6.53	9.54
95th-Percentile Queue Length [ft/ln]	188.94	47.73	198.04	203.79		163.35	238.49

Movement, Approach, & Intersection Results

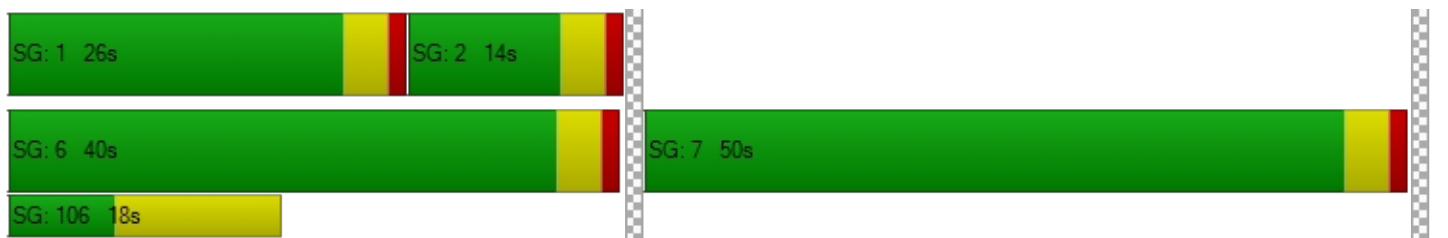
d_M, Delay for Movement [s/veh]	46.01	5.07	0.00	0.00	13.91	14.39	0.00	0.00	0.00	31.20	0.00	36.36
Movement LOS	D	A			B	B				C		D
d_A, Approach Delay [s/veh]	18.37				13.96		0.00		34.99			
Approach LOS	B				B		A		C			
d_I, Intersection Delay [s/veh]	21.32											
Intersection LOS	C											
Intersection V/C	0.573											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		0.0		11.0	
M_corner, Corner Circulation Area [ft ² /ped]	0.00		0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00		0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		0.00		0.00		34.68	
I_p,int, Pedestrian LOS Score for Intersection	0.000		0.000		0.000		2.306	
Crosswalk LOS	F		F		F		B	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	800		222		0		1022	
d_b, Bicycle Delay [s]	16.21		35.57		45.01		10.76	
I_b,int, Bicycle LOS Score for Intersection	2.009		2.175		4.132		1.560	
Bicycle LOS	B		B		D		A	

Sequence

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



Intersection Level Of Service Report
Intersection 38: Bear St at SR-73 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	22.1
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.674

Intersection Setup

Name	Bear St			Bear St			SR-73 SB Ramps			SR-73 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↑↑			↑↑↑			↑↑					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Bear St			Bear St			SR-73 SB Ramps			SR-73 SB Ramps		
Base Volume Input [veh/h]	0	403	417	623	659	0	133	1	224	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	403	417	623	659	0	133	1	224	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	101	104	156	165	0	33	0	56	0	0	0
Total Analysis Volume [veh/h]	0	403	417	623	659	0	133	1	224	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Permiss	Permiss
Signal Group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	6	10	0	0	10	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	18	0	38	56	0	0	34	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	7	0	0	7	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	L	C	L	C	
C, Cycle Length [s]	90	90	90	90	90	90	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	44	44	19	67	15	15	
g / C, Green / Cycle	0.48	0.48	0.21	0.74	0.17	0.17	
(v / s)_i Volume / Saturation Flow Rate	0.22	0.26	0.18	0.19	0.07	0.14	
s, saturation flow rate [veh/h]	1870	1589	3459	3560	1781	1591	
c, Capacity [veh/h]	903	768	743	2643	301	268	
d1, Uniform Delay [s]	15.34	16.31	33.85	3.67	33.62	36.23	
k, delay calibration	0.50	0.50	0.11	0.50	0.11	0.11	
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	1.59	2.75	2.62	0.23	1.02	6.86	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	0.45	0.54	0.84	0.25	0.44	0.84	
d, Delay for Lane Group [s/veh]	16.93	19.06	36.47	3.89	34.64	43.09	
Lane Group LOS	B	B	D	A	C	D	
Critical Lane Group	No	Yes	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	5.55	6.26	6.64	1.52	2.66	5.20	
50th-Percentile Queue Length [ft/ln]	138.85	156.45	165.89	37.99	66.48	130.11	
95th-Percentile Queue Length [veh/ln]	9.42	10.36	10.86	2.74	4.79	8.95	
95th-Percentile Queue Length [ft/ln]	235.48	259.02	271.51	68.38	119.67	223.64	

Movement, Approach, & Intersection Results

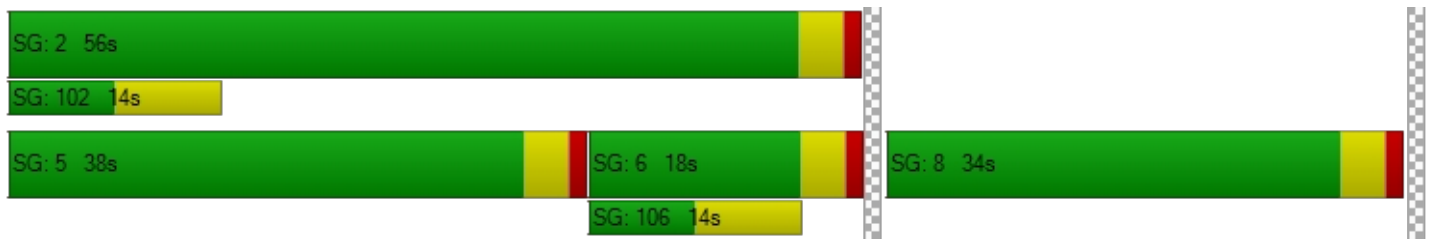
d_M, Delay for Movement [s/veh]	0.00	16.93	19.06	36.47	3.89	0.00	34.64	43.09	43.09	0.00	0.00	0.00
Movement LOS		B	B	D	A		C	D	D			
d_A, Approach Delay [s/veh]		18.01		19.72			39.95			0.00		
Approach LOS		B		B			D			A		
d_I, Intersection Delay [s/veh]	22.10											
Intersection LOS	C											
Intersection V/C	0.674											

Other Modes

g_Walk,mi, Effective Walk Time [s]		0.0		0.0		11.0		11.0
M_corner, Corner Circulation Area [ft ² /ped]		0.00		0.00		0.00		0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]		0.00		0.00		0.00		0.00
d_p, Pedestrian Delay [s]		0.00		0.00		34.68		34.68
I_p,int, Pedestrian LOS Score for Intersection		0.000		0.000		2.056		2.222
Crosswalk LOS		F		F		B		B
s_b, Saturation Flow Rate of the bicycle lane		2000		2000		2000		2000
c_b, Capacity of the bicycle lane [bicycles/h]		311		1155		666		0
d_b, Bicycle Delay [s]		32.10		8.03		20.01		45.01
I_b,int, Bicycle LOS Score for Intersection		2.236		2.617		2.150		4.132
Bicycle LOS		B		B		B		D

Sequence

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



Intersection Level Of Service Report
Intersection 12: SR-55 SB Ramps at MacArthur Blvd

Control Type:	Signalized	Delay (sec / veh):	11.5
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.739

Intersection Setup

Name	SR-55 SB Ramp			MacArthur Blvd			MacArthur Blvd					
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration				T T T T			T T T T			T T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	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	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		
Crosswalk	No			Yes			No			No		

Volumes

Name				SR-55 SB Ramp			MacArthur Blvd			MacArthur Blvd		
Base Volume Input [veh/h]	0	0	0	318	0	802	0	1325	1148	0	1725	667
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	318	0	802	0	1325	1148	0	1725	667
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	80	0	201	0	331	287	0	431	167
Total Analysis Volume [veh/h]	0	0	0	318	0	802	0	1325	1148	0	1725	667
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	0	0	0	5	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	6	0	0	0	10	0	0	10	0
Maximum Green [s]	0	0	0	30	0	0	0	30	0	0	30	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	47	0	0	0	53	0	0	53	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	14	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	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	R	C	C
C, Cycle Length [s]		51	51	51	51
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		19	19	25	25
g / C, Green / Cycle		0.36	0.36	0.48	0.48
(v / s)_i Volume / Saturation Flow Rate		0.09	0.29	0.26	0.34
s, saturation flow rate [veh/h]		3459	2813	5094	5094
c, Capacity [veh/h]		1259	1024	2447	2447
d1, Uniform Delay [s]		11.44	14.53	9.37	10.49
k, delay calibration		0.11	0.11	0.11	0.11
l, Upstream Filtering Factor		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		0.10	1.35	0.19	0.38
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.25	0.78	0.54	0.71
d, Delay for Lane Group [s/veh]		11.55	15.89	9.56	10.87
Lane Group LOS		B	B	A	B
Critical Lane Group		No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]		1.10	3.65	2.73	4.00
50th-Percentile Queue Length [ft/ln]		27.45	91.29	68.26	100.01
95th-Percentile Queue Length [veh/ln]		1.98	6.57	4.91	7.20
95th-Percentile Queue Length [ft/ln]		49.41	164.32	122.86	180.02

Movement, Approach, & Intersection Results

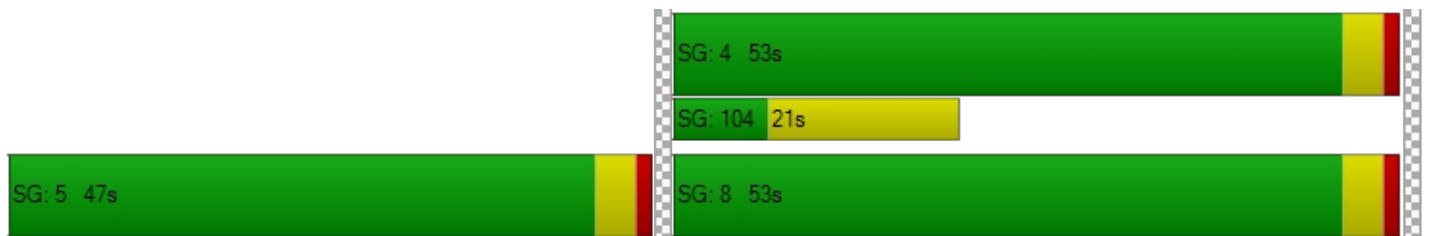
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	11.55	0.00	15.89	0.00	9.56	0.00	0.00	10.87	0.00
Movement LOS				B		B		A			B	
d_A, Approach Delay [s/veh]	0.00			14.66			9.56			10.87		
Approach LOS	A			B			A			B		
d_I, Intersection Delay [s/veh]	11.47											
Intersection LOS	B											
Intersection V/C	0.739											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	15.77	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	0.000	2.486	0.000	0.000
Crosswalk LOS	F	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	1680	1915	1915
d_b, Bicycle Delay [s]	25.59	0.65	0.05	0.05
I_b,int, Bicycle LOS Score for Intersection	4.132	1.560	2.288	2.508
Bicycle LOS	D	A	B	B

Sequence

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



Intersection Level Of Service Report
Intersection 13: SR-55 NB Ramps at MacArthur Blvd

Control Type:	Signalized	Delay (sec / veh):	8.8
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.666

Intersection Setup

Name	SR-55 NB Ramp						MacArthur Blvd			MacArthur Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	⇐⇐⇐						⇐⇐⇐			⇐⇐⇐		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	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		
Crosswalk	No			No			No			Yes		

Volumes

Name	SR-55 NB Ramp						MacArthur Blvd			MacArthur Blvd		
	Base Volume Input [veh/h]	724	0	470	0	0	0	0	797	829	0	1674
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	724	0	470	0	0	0	0	797	829	0	1674	1185
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	181	0	118	0	0	0	0	199	207	0	419	296
Total Analysis Volume [veh/h]	724	0	470	0	0	0	0	797	829	0	1674	1185
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	1	0	0	0	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	6	0	0	0	0	0	0	10	0	0	10	0
Maximum Green [s]	30	0	0	0	0	0	0	30	0	0	30	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	48	0	0	0	0	0	0	72	0	0	72	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	7	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	21	0	0	0	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No							No			No	
Maximum Recall	No							No			No	
Pedestrian Recall	No							No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L		C	C
C, Cycle Length [s]	42		42	42
L, Total Lost Time per Cycle [s]	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00		2.00	2.00
g_i, Effective Green Time [s]	12		21	21
g / C, Green / Cycle	0.29		0.52	0.52
(v / s)_i Volume / Saturation Flow Rate	0.21		0.22	0.33
s, saturation flow rate [veh/h]	3459		3560	5094
c, Capacity [veh/h]	1010		1837	2629
d1, Uniform Delay [s]	13.21		6.29	7.27
k, delay calibration	0.11		0.11	0.11
l, Upstream Filtering Factor	1.00		1.00	1.00
d2, Incremental Delay [s]	0.97		0.16	0.26
d3, Initial Queue Delay [s]	0.00		0.00	0.00
Rp, platoon ratio	1.00		1.00	1.00
PF, progression factor	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.72		0.43	0.64
d, Delay for Lane Group [s/veh]	14.18		6.45	7.53
Lane Group LOS	B		A	A
Critical Lane Group	Yes		No	Yes
50th-Percentile Queue Length [veh/ln]	2.56		1.43	2.30
50th-Percentile Queue Length [ft/ln]	63.91		35.66	57.62
95th-Percentile Queue Length [veh/ln]	4.60		2.57	4.15
95th-Percentile Queue Length [ft/ln]	115.04		64.18	103.72

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	14.18	0.00	0.00	0.00	0.00	0.00	0.00	6.45	0.00	0.00	7.53	0.00
Movement LOS	B							A			A	
d_A, Approach Delay [s/veh]	14.18			0.00			6.45			7.53		
Approach LOS	B			A			A			A		
d_I, Intersection Delay [s/veh]	8.77											
Intersection LOS	A											
Intersection V/C	0.666											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	11.21
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	2.809
Crosswalk LOS	F	F	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	2120	0	3276	3276
d_b, Bicycle Delay [s]	0.07	20.76	8.45	8.45
I_b,int, Bicycle LOS Score for Intersection	1.560	4.132	2.217	2.480
Bicycle LOS	A	D	B	B

Sequence

Ring 1	1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 25: I-405 NB Off-Ramp at South Coast Drive

Control Type:	Signalized	Delay (sec / veh):	21.4
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.607

Intersection Setup

Name	I-405 NB Off-Ramp			The Cape Dwy			South Coast Drive			South Coast 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	1	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	I-405 NB Off-Ramp			The Cape Dwy			South Coast Drive			South Coast Drive		
Base Volume Input [veh/h]	514	32	208	30	0	42	46	457	0	0	413	36
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	514	32	208	30	0	42	46	457	0	0	413	36
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	129	8	52	8	0	11	12	114	0	0	103	9
Total Analysis Volume [veh/h]	514	32	208	30	0	42	46	457	0	0	413	36
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	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Permiss	Split	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	7	0	0	5	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	10	0	6	0	0	6	10	0	0	10	0
Maximum Green [s]	0	30	0	30	0	0	30	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	58	0	58	0	0	10	32	0	0	22	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	14	0	0	0	0	0	11	0	0	11	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No		No				No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	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	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	R	L	C	C	C
C, Cycle Length [s]	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
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	38	38	38	38	38	4	44	36	36
g / C, Green / Cycle	0.42	0.42	0.42	0.42	0.42	0.05	0.49	0.40	0.40
(v / s)_i Volume / Saturation Flow Rate	0.38	0.07	0.07	0.03	0.03	0.03	0.13	0.12	0.12
s, saturation flow rate [veh/h]	1364	1655	1589	1140	1589	1781	3560	1870	1819
c, Capacity [veh/h]	632	700	673	490	673	81	1737	744	723
d1, Uniform Delay [s]	25.59	16.17	16.18	18.96	15.38	42.07	13.54	18.54	18.62
k, delay calibration	0.19	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.48	0.12	0.12	0.05	0.04	6.02	0.37	1.04	1.12
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.81	0.17	0.18	0.06	0.06	0.57	0.26	0.30	0.31
d, Delay for Lane Group [s/veh]	30.07	16.28	16.30	19.01	15.42	48.09	13.90	19.59	19.73
Lane Group LOS	C	B	B	B	B	D	B	B	B
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	10.69	1.54	1.50	0.41	0.51	1.13	2.69	3.32	3.34
50th-Percentile Queue Length [ft/ln]	267.32	38.52	37.47	10.30	12.64	28.17	67.13	82.92	83.44
95th-Percentile Queue Length [veh/ln]	16.06	2.77	2.70	0.74	0.91	2.03	4.83	5.97	6.01
95th-Percentile Queue Length [ft/ln]	401.38	69.34	67.44	18.54	22.75	50.70	120.84	149.25	150.19

Movement, Approach, & Intersection Results

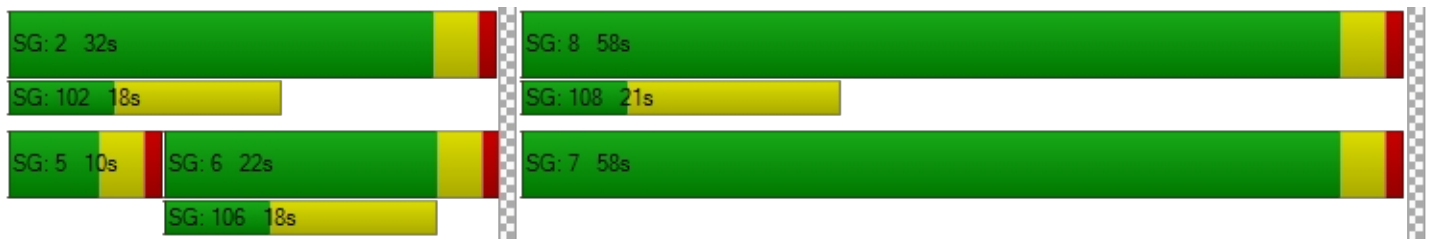
d_M, Delay for Movement [s/veh]	30.07	16.28	16.29	19.01	0.00	15.42	48.09	13.90	0.00	0.00	19.65	19.73
Movement LOS	C	B	B	B		B	D	B			B	B
d_A, Approach Delay [s/veh]	25.68			16.92			17.03			19.66		
Approach LOS	C			B			B			B		
d_I, Intersection Delay [s/veh]	21.36											
Intersection LOS	C											
Intersection V/C	0.607											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.67	34.67	0.00	34.67
I_p,int, Pedestrian LOS Score for Intersection	2.314	2.000	0.000	2.452
Crosswalk LOS	B	B	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1200	1200	622	400
d_b, Bicycle Delay [s]	7.20	7.20	21.36	28.80
I_b,int, Bicycle LOS Score for Intersection	2.804	1.560	1.975	1.930
Bicycle LOS	C	A	A	A

Sequence

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



Intersection Level Of Service Report
Intersection 28: Fairview Road at I-405 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	31.6
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.843

Intersection Setup

Name	Fairview Road			Fairview Road			I-405 NB Ramps			I-405 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	1	0	0	0	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		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Fairview Road			Fairview Road			I-405 NB Ramps			I-405 NB Ramps		
Base Volume Input [veh/h]	246	1457	0	0	2047	288	0	0	0	914	0	1159
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	246	1457	0	0	2047	288	0	0	0	914	0	1159
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	62	364	0	0	512	72	0	0	0	229	0	290
Total Analysis Volume [veh/h]	246	1457	0	0	2047	288	0	0	0	914	0	1159
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Permiss	Split
Signal Group	1	6	0	0	2	0	0	0	0	0	7	0	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	6	10	0	0	10	0	0	0	0	0	6	0	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	28	46	0	0	18	0	0	0	0	0	64	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	14	0	0	7	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall	No	No			No						No		
Maximum Recall	No	No			No						No		
Pedestrian Recall	No	No			No						No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	R		L	R
C, Cycle Length [s]	110	110	110	110		110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	17	51	29	29		51	51
g / C, Green / Cycle	0.16	0.46	0.27	0.27		0.47	0.47
(v / s)_i Volume / Saturation Flow Rate	0.14	0.29	0.20	0.18		0.26	0.41
s, saturation flow rate [veh/h]	1781	5094	10188	1589		3459	2813
c, Capacity [veh/h]	278	2347	2731	426		1614	1313
d1, Uniform Delay [s]	45.41	22.40	36.87	35.98		21.27	26.61
k, delay calibration	0.11	0.50	0.50	0.50		0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	9.06	1.25	1.94	8.34		0.31	2.15
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.88	0.62	0.75	0.68		0.57	0.88
d, Delay for Lane Group [s/veh]	54.47	23.65	38.81	44.32		21.58	28.76
Lane Group LOS	D	C	D	D		C	C
Critical Lane Group	Yes	No	Yes	No		No	Yes
50th-Percentile Queue Length [veh/ln]	7.23	9.52	8.56	7.84		8.40	13.61
50th-Percentile Queue Length [ft/ln]	180.86	237.96	214.06	195.97		210.01	340.18
95th-Percentile Queue Length [veh/ln]	11.65	14.58	13.36	12.43		13.15	19.66
95th-Percentile Queue Length [ft/ln]	291.14	364.46	334.04	310.75		328.84	491.42

Movement, Approach, & Intersection Results

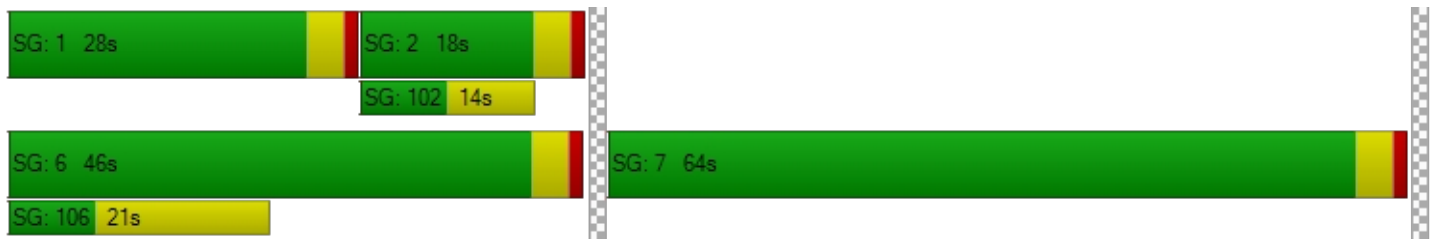
d_M, Delay for Movement [s/veh]	54.47	23.65	0.00	0.00	38.81	44.32	0.00	0.00	0.00	21.58	0.00	28.76
Movement LOS	D	C			D	D				C		C
d_A, Approach Delay [s/veh]	28.10				39.49		0.00		25.59			
Approach LOS	C				D		A		C			
d_I, Intersection Delay [s/veh]	31.60											
Intersection LOS	C											
Intersection V/C	0.843											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	44.54	44.54
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	1.954	2.714
Crosswalk LOS	F	F	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	764	255	0	1091
d_b, Bicycle Delay [s]	21.01	41.88	54.99	11.36
I_b,int, Bicycle LOS Score for Intersection	2.496	2.202	4.132	1.560
Bicycle LOS	B	B	D	A

Sequence

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



Intersection Level Of Service Report
Intersection 29: Fairview Road at I-405 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	20.4
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.696

Intersection Setup

Name	Fairview Rd			Fairview Rd			I-405 SB Ramps			I-405 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↑↑↑↓			↔↔↑↑			↔↔↓					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	1	0	0	1	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Fairview Rd			Fairview Rd			I-405 SB Ramps			I-405 SB Ramps		
Base Volume Input [veh/h]	0	1256	701	1129	1779	0	338	0	391	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1256	701	1129	1779	0	338	0	391	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	314	175	282	445	0	85	0	98	0	0	0
Total Analysis Volume [veh/h]	0	1256	701	1129	1779	0	338	0	391	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Permiss
Signal Group	0	6	0	5	2	0	3	0	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	10	0	6	10	0	6	0	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	30	0	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Split [s]	0	22	0	43	65	0	25	0	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	11	0	0	14	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No		No					
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No		No					
Maximum Recall		No		No	No		No					
Pedestrian Recall		No		No	No		No					
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	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]	38	38	38	24	67	15	15	
g / C, Green / Cycle	0.43	0.43	0.43	0.27	0.74	0.17	0.17	
(v / s)_i Volume / Saturation Flow Rate	0.23	0.25	0.25	0.22	0.35	0.10	0.14	
s, saturation flow rate [veh/h]	5094	1589	1589	5188	5094	3459	2813	
c, Capacity [veh/h]	2174	678	678	1391	3766	594	483	
d1, Uniform Delay [s]	19.22	19.63	19.63	30.83	4.70	34.23	35.86	
k, delay calibration	0.50	0.50	0.50	0.11	0.50	0.11	0.11	
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	0.97	3.55	3.55	1.19	0.43	0.86	3.28	
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	0.54	0.58	0.58	0.81	0.47	0.57	0.81	
d, Delay for Lane Group [s/veh]	20.19	23.18	23.18	32.01	5.13	35.08	39.14	
Lane Group LOS	C	C	C	C	A	D	D	
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	6.01	6.61	6.61	7.57	3.46	3.41	4.27	
50th-Percentile Queue Length [ft/ln]	150.35	165.25	165.25	189.28	86.40	85.27	106.72	
95th-Percentile Queue Length [veh/ln]	10.04	10.83	10.83	12.08	6.22	6.14	7.66	
95th-Percentile Queue Length [ft/ln]	250.90	270.67	270.67	302.09	155.52	153.49	191.43	

Movement, Approach, & Intersection Results

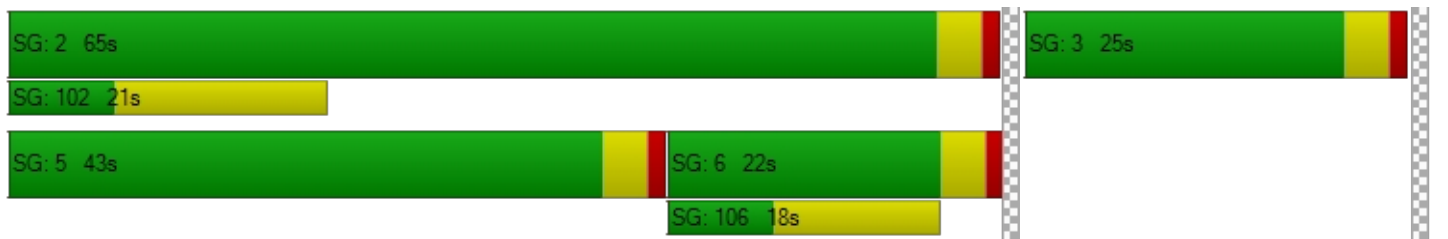
d_M, Delay for Movement [s/veh]	0.00	20.19	23.18	32.01	5.13	0.00	35.08	0.00	39.14	0.00	0.00	0.00
Movement LOS		C	C	C	A		D		D			
d_A, Approach Delay [s/veh]		21.39		15.57			37.26			0.00		
Approach LOS		C		B			D			A		
d_I, Intersection Delay [s/veh]	20.43											
Intersection LOS	C											
Intersection V/C	0.696											

Other Modes

g_Walk,mi, Effective Walk Time [s]		0.0		0.0		11.0		11.0
M_corner, Corner Circulation Area [ft ² /ped]		0.00		0.00		0.00		0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]		0.00		0.00		0.00		0.00
d_p, Pedestrian Delay [s]		0.00		0.00		34.68		34.68
I_p,int, Pedestrian LOS Score for Intersection		0.000		0.000		2.442		2.534
Crosswalk LOS		F		F		B		B
s_b, Saturation Flow Rate of the bicycle lane		2000		2000		2000		2000
c_b, Capacity of the bicycle lane [bicycles/h]		400		1355		467		0
d_b, Bicycle Delay [s]		28.81		4.68		26.46		45.01
I_b,int, Bicycle LOS Score for Intersection		2.367		3.159		1.560		4.132
Bicycle LOS		B		C		A		D

Sequence

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



Intersection Level Of Service Report
Intersection 30: Bristol Street at I-405 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	15.0
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.694

Intersection Setup

Name	Bristol Street			Bristol Street			I-405 NB Ramps			I-405 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	0	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	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	No			No			Yes			Yes		

Volumes

Name	Bristol Street			Bristol Street			I-405 NB Ramps			I-405 NB Ramps		
Base Volume Input [veh/h]	0	2460	200	0	2573	22	0	0	212	400	334	1385
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	2460	200	0	2573	22	0	0	212	400	334	1385
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	615	50	0	643	6	0	0	53	100	84	346
Total Analysis Volume [veh/h]	0	2460	200	0	2573	22	0	0	212	400	334	1385
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	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss	Split	Permiss	Split	Split	Split	Overlap
Signal Group	0	6	0	0	2	0	0	0	8	0	4	4
Auxiliary Signal Groups												2,4
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	0	10	0	0	0	6	0	10	10
Maximum Green [s]	0	30	0	0	30	0	0	0	30	0	30	30
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0
Split [s]	0	32	0	0	32	0	0	0	36	0	22	22
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	18	0	0	14	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No				No		No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0
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	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	C	R	L	C	C	R
C, Cycle Length [s]	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
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	51	51	51	9	18	18	18	73
g / C, Green / Cycle	0.57	0.57	0.57	0.10	0.20	0.20	0.20	0.81
(v / s)_i Volume / Saturation Flow Rate	0.36	0.31	0.28	0.08	0.14	0.13	0.14	0.49
s, saturation flow rate [veh/h]	6792	6792	1856	2813	1781	1812	1702	2813
c, Capacity [veh/h]	3831	3831	1047	286	358	364	342	2277
d1, Uniform Delay [s]	13.42	12.33	11.88	39.30	33.35	33.26	33.60	3.22
k, delay calibration	0.50	0.50	0.50	0.11	0.11	0.11	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.84	0.55	1.68	3.74	2.32	2.16	2.81	1.22
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.64	0.54	0.50	0.74	0.68	0.67	0.72	0.61
d, Delay for Lane Group [s/veh]	14.26	12.88	13.56	43.04	35.67	35.42	36.41	4.44
Lane Group LOS	B	B	B	D	D	D	D	A
Critical Lane Group	No	No	No	Yes	No	No	Yes	Yes
50th-Percentile Queue Length [veh/ln]	7.93	6.12	6.25	2.40	5.08	5.06	5.16	2.93
50th-Percentile Queue Length [ft/ln]	198.26	153.05	156.16	59.89	127.1	126.4	128.9	73.36
95th-Percentile Queue Length [veh/ln]	12.55	10.18	10.35	4.31	8.78	8.75	8.88	5.28
95th-Percentile Queue Length [ft/ln]	313.71	254.49	258.63	107.80	219.5	218.7	222.0	132.0

Movement, Approach, & Intersection Results

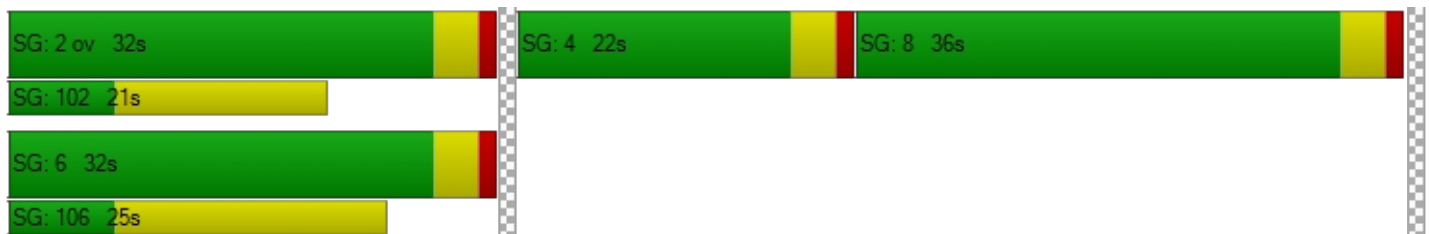
d_M, Delay for Movement [s/veh]	0.00	14.26	0.00	0.00	13.01	13.56	0.00	0.00	43.04	35.67	36.14	4.44
Movement LOS		B			B	B			D	D	D	A
d_A, Approach Delay [s/veh]	14.26		13.01			43.04			15.32			
Approach LOS	B		B			D			B			
d_I, Intersection Delay [s/veh]	14.95											
Intersection LOS	B											
Intersection V/C	0.694											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	34.70	34.70
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.269	2.797
Crosswalk LOS	F	F	B	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	622	622	711	400
d_b, Bicycle Delay [s]	21.38	21.38	18.71	28.82
I_b,int, Bicycle LOS Score for Intersection	2.574	2.416	1.560	3.308
Bicycle LOS	B	B	A	C

Sequence

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



Intersection Level Of Service Report
Intersection 31: Bristol Street at I-405 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	16.8
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.684

Intersection Setup

Name	Bristol Street		Bristol Street		I-405 SB Ramps	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration	↵ ↑ ↑ ↑		↑ ↑ ↵		↵↵↵↵	
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	1	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		Yes	

Volumes

Name	Bristol Street		Bristol Street		I-405 SB Ramps	
Base Volume Input [veh/h]	142	1739	1689	1063	941	361
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	142	1739	1689	1063	941	361
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	36	435	422	266	235	0
Total Analysis Volume [veh/h]	142	1739	1689	1063	941	0
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Unsignalized	Permissive	Unsignalized
Signal Group	1	6	2	0	3	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	6	10	10	0	6	0
Maximum Green [s]	30	30	30	0	30	0
Amber [s]	3.0	3.0	3.0	0.0	3.0	0.0
All red [s]	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	25	47	22	0	43	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	0	7	0	0	0
Pedestrian Clearance [s]	0	0	11	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No	No		No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
Minimum Recall	No	No	No		No	
Maximum Recall	No	No	No		No	
Pedestrian Recall	No	No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L
C, Cycle Length [s]	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	61	48	21
g / C, Green / Cycle	0.10	0.68	0.54	0.23
(v / s)_i Volume / Saturation Flow Rate	0.08	0.26	0.33	0.18
s, saturation flow rate [veh/h]	1781	6792	5094	5188
c, Capacity [veh/h]	179	4638	2741	1184
d1, Uniform Delay [s]	39.60	6.09	14.37	32.75
k, delay calibration	0.11	0.50	0.50	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.77	0.23	1.05	1.25
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.79	0.37	0.62	0.79
d, Delay for Lane Group [s/veh]	47.37	6.32	15.42	34.01
Lane Group LOS	D	A	B	C
Critical Lane Group	Yes	No	Yes	Yes
50th-Percentile Queue Length [veh/ln]	3.41	3.02	7.56	6.43
50th-Percentile Queue Length [ft/ln]	85.34	75.55	188.88	160.70
95th-Percentile Queue Length [veh/ln]	6.14	5.44	12.06	10.59
95th-Percentile Queue Length [ft/ln]	153.60	135.98	301.58	264.65

Movement, Approach, & Intersection Results

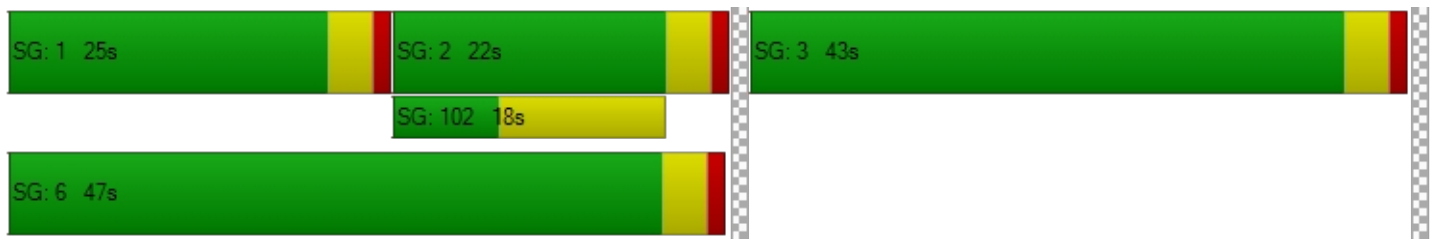
d_M, Delay for Movement [s/veh]	47.37	6.32	15.42	0.00	34.01	0.00
Movement LOS	D	A	B		C	
d_A, Approach Delay [s/veh]	9.42		15.42		34.01	
Approach LOS	A		B		C	
d_I, Intersection Delay [s/veh]	16.79					
Intersection LOS	B					
Intersection V/C	0.684					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	34.68
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.628
Crosswalk LOS	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	955	400	866
d_b, Bicycle Delay [s]	12.28	28.81	14.46
I_b,int, Bicycle LOS Score for Intersection	2.336	2.489	1.560
Bicycle LOS	B	B	A

Sequence

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



Intersection Level Of Service Report
Intersection 37: Bear St at SR-73 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	41.9
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.949

Intersection Setup

Name	Bear St			Bear St			SR-73 NB Ramps			SR-73 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0	0	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		
Crosswalk	No			No			No			Yes		

Volumes

Name	Bear St			Bear St			SR-73 NB Ramps			SR-73 NB Ramps		
Base Volume Input [veh/h]	167	650	0	0	1129	164	0	0	0	448	0	1447
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	167	650	0	0	1129	164	0	0	0	448	0	1447
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	42	163	0	0	282	41	0	0	0	112	0	362
Total Analysis Volume [veh/h]	167	650	0	0	1129	164	0	0	0	448	0	1447
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Permiss	Split
Signal Group	1	6	0	0	2	0	0	0	0	0	7	0	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	6	10	0	0	10	0	0	0	0	0	6	0	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	16	49	0	0	33	0	0	0	0	0	71	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	11	0	0	0	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall	No	No			No						No		
Maximum Recall	No	No			No						No		
Pedestrian Recall	No	No			No						No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C		L	R
C, Cycle Length [s]	120	120	120	120		120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	12	47	31	31		65	65
g / C, Green / Cycle	0.10	0.39	0.26	0.26		0.54	0.54
(v / s)_i Volume / Saturation Flow Rate	0.09	0.18	0.24	0.25		0.25	0.51
s, saturation flow rate [veh/h]	1781	3560	3560	1752		1781	2813
c, Capacity [veh/h]	179	1395	918	452		964	1524
d1, Uniform Delay [s]	53.53	27.14	43.59	43.81		16.84	25.95
k, delay calibration	0.11	0.50	0.50	0.50		0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	18.55	1.12	18.19	32.31		0.35	4.08
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.93	0.47	0.94	0.95		0.46	0.95
d, Delay for Lane Group [s/veh]	72.08	28.26	61.78	76.12		17.19	30.03
Lane Group LOS	E	C	E	E		B	C
Critical Lane Group	Yes	No	No	Yes		No	Yes
50th-Percentile Queue Length [veh/ln]	5.92	7.13	14.74	16.54		7.51	19.31
50th-Percentile Queue Length [ft/ln]	147.92	178.31	368.56	413.53		187.66	482.83
95th-Percentile Queue Length [veh/ln]	9.91	11.51	21.04	23.21		12.00	26.52
95th-Percentile Queue Length [ft/ln]	247.64	287.80	525.99	580.28		300.00	663.01

Movement, Approach, & Intersection Results

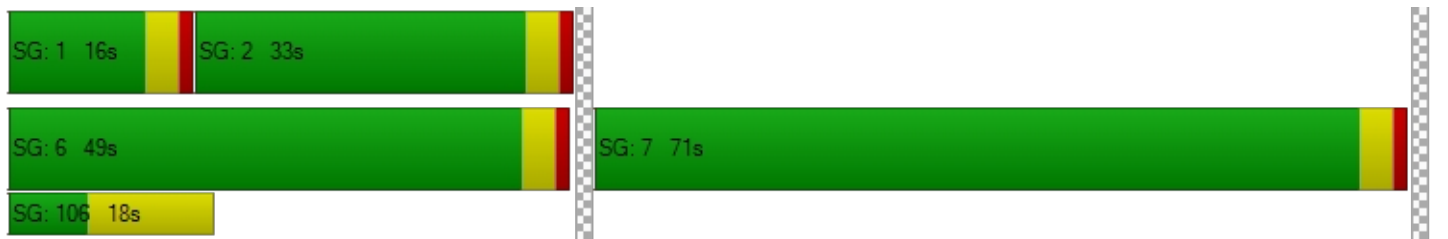
d_M, Delay for Movement [s/veh]	72.08	28.26	0.00	0.00	65.17	76.12	0.00	0.00	0.00	17.19	0.00	30.03
Movement LOS	E	C			E	E				B		C
d_A, Approach Delay [s/veh]	37.22				66.56		0.00		27.00			
Approach LOS	D				E		A		C			
d_I, Intersection Delay [s/veh]	41.85											
Intersection LOS	D											
Intersection V/C	0.949											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	49.49
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	2.607
Crosswalk LOS	F	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	750	483	0	1117
d_b, Bicycle Delay [s]	23.42	34.49	59.98	11.69
I_b,int, Bicycle LOS Score for Intersection	2.234	2.271	4.132	1.560
Bicycle LOS	B	B	D	A

Sequence

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



Intersection Level Of Service Report
Intersection 38: Bear St at SR-73 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	20.2
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.617

Intersection Setup

Name	Bear St			Bear St			SR-73 SB Ramps			SR-73 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↑↑			↑↑↑			↑↑					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Bear St			Bear St			SR-73 SB Ramps			SR-73 SB Ramps		
Base Volume Input [veh/h]	0	622	188	647	936	0	203	1	177	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	622	188	647	936	0	203	1	177	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	156	47	162	234	0	51	0	44	0	0	0
Total Analysis Volume [veh/h]	0	622	188	647	936	0	203	1	177	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Permiss	Permiss
Signal Group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	6	10	0	0	10	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	18	0	43	61	0	0	29	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	7	0	0	7	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	L	C	L	C	
C, Cycle Length [s]	90	90	90	90	90	90	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	45	45	20	69	13	13	
g / C, Green / Cycle	0.50	0.50	0.22	0.77	0.14	0.14	
(v / s)_i Volume / Saturation Flow Rate	0.22	0.23	0.19	0.26	0.11	0.11	
s, saturation flow rate [veh/h]	1870	1728	3459	3560	1781	1593	
c, Capacity [veh/h]	939	868	771	2741	252	225	
d1, Uniform Delay [s]	14.24	14.57	33.43	3.24	37.41	37.43	
k, delay calibration	0.50	0.50	0.11	0.50	0.11	0.11	
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	1.44	1.80	2.53	0.34	5.70	6.47	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	0.43	0.47	0.84	0.34	0.80	0.80	
d, Delay for Lane Group [s/veh]	15.68	16.37	35.97	3.58	43.11	43.90	
Lane Group LOS	B	B	D	A	D	D	
Critical Lane Group	No	Yes	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	5.31	5.49	6.86	1.95	4.60	4.19	
50th-Percentile Queue Length [ft/ln]	132.87	137.16	171.42	48.75	115.09	104.65	
95th-Percentile Queue Length [veh/ln]	9.10	9.33	11.15	3.51	8.12	7.53	
95th-Percentile Queue Length [ft/ln]	227.39	233.19	278.79	87.75	203.06	188.37	

Movement, Approach, & Intersection Results

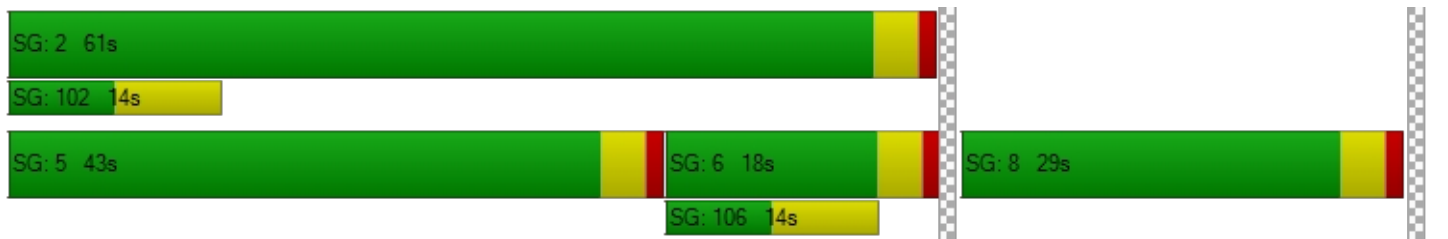
d_M, Delay for Movement [s/veh]	0.00	15.92	16.37	35.97	3.58	0.00	43.15	43.90	43.90	0.00	0.00	0.00
Movement LOS		B	B	D	A		D	D	D			
d_A, Approach Delay [s/veh]		16.02		16.82			43.48			0.00		
Approach LOS		B		B			D			A		
d_I, Intersection Delay [s/veh]	20.25											
Intersection LOS	C											
Intersection V/C	0.617											

Other Modes

g_Walk,mi, Effective Walk Time [s]		0.0		0.0		11.0		11.0
M_corner, Corner Circulation Area [ft ² /ped]		0.00		0.00		0.00		0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]		0.00		0.00		0.00		0.00
d_p, Pedestrian Delay [s]		0.00		0.00		34.68		34.68
I_p,int, Pedestrian LOS Score for Intersection		0.000		0.000		2.064		2.122
Crosswalk LOS		F		F		B		B
s_b, Saturation Flow Rate of the bicycle lane		2000		2000		2000		2000
c_b, Capacity of the bicycle lane [bicycles/h]		311		1266		555		0
d_b, Bicycle Delay [s]		32.10		6.06		23.48		45.01
I_b,int, Bicycle LOS Score for Intersection		2.228		2.866		2.188		4.132
Bicycle LOS		B		C		B		D

Sequence

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



APPENDIX E-VI

**YEAR 2030 CUMULATIVE PLUS PROJECT PHASE 1
TRAFFIC CONDITIONS**

Intersection Level Of Service Report
Intersection 12: SR-55 SB Ramps at MacArthur Blvd

Control Type:	Signalized	Delay (sec / veh):	15.0
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.796

Intersection Setup

Name	SR-55 SB Ramp			MacArthur Blvd			MacArthur Blvd					
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration				T T T T			T T T T			T T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	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	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		
Crosswalk	No			Yes			No			No		

Volumes

Name				SR-55 SB Ramp			MacArthur Blvd			MacArthur Blvd		
Base Volume Input [veh/h]	0	0	0	1055	0	994	0	1723	1146	0	1417	161
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	1055	0	994	0	1723	1146	0	1417	161
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	264	0	249	0	431	287	0	354	40
Total Analysis Volume [veh/h]	0	0	0	1055	0	994	0	1723	1146	0	1417	161
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	0	0	0	5	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	6	0	0	0	10	0	0	10	0
Maximum Green [s]	0	0	0	30	0	0	0	30	0	0	30	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	51	0	0	0	49	0	0	49	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	14	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	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	R	C	C
C, Cycle Length [s]		61	61	61	61
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		26	26	27	27
g / C, Green / Cycle		0.43	0.43	0.44	0.44
(v / s)_i Volume / Saturation Flow Rate		0.31	0.35	0.34	0.28
s, saturation flow rate [veh/h]		3459	2813	5094	5094
c, Capacity [veh/h]		1494	1215	2227	2227
d1, Uniform Delay [s]		14.19	15.25	14.64	13.42
k, delay calibration		0.11	0.11	0.11	0.11
l, Upstream Filtering Factor		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		0.62	1.41	0.59	0.30
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.71	0.82	0.77	0.64
d, Delay for Lane Group [s/veh]		14.82	16.67	15.23	13.72
Lane Group LOS		B	B	B	B
Critical Lane Group		No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]		5.25	5.42	5.89	4.41
50th-Percentile Queue Length [ft/ln]		131.14	135.47	147.32	110.34
95th-Percentile Queue Length [veh/ln]		9.00	9.24	9.87	7.86
95th-Percentile Queue Length [ft/ln]		225.04	230.91	246.85	196.47

Movement, Approach, & Intersection Results

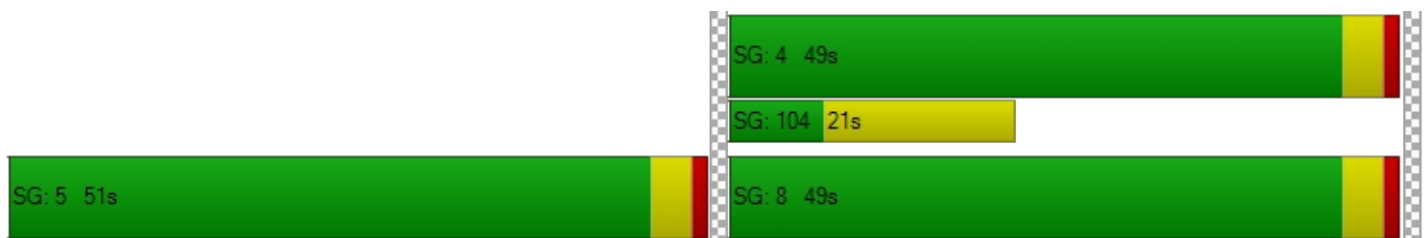
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	14.82	0.00	16.67	0.00	15.23	0.00	0.00	13.72	0.00
Movement LOS				B		B		B			B	
d_A, Approach Delay [s/veh]	0.00			15.71			15.23			13.72		
Approach LOS	A			B			B			B		
d_I, Intersection Delay [s/veh]	15.01											
Intersection LOS	B											
Intersection V/C	0.796											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	20.48	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	0.000	2.678	0.000	0.000
Crosswalk LOS	F	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	1542	1476	1476
d_b, Bicycle Delay [s]	30.48	1.60	2.09	2.09
I_b,int, Bicycle LOS Score for Intersection	4.132	1.560	2.507	2.339
Bicycle LOS	D	A	B	B

Sequence

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



Intersection Level Of Service Report
Intersection 13: SR-55 NB Ramps at MacArthur Blvd

Control Type:	Signalized	Delay (sec / veh):	18.4
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.923

Intersection Setup

Name	SR-55 NB Ramp						MacArthur Blvd			MacArthur Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	⇐⇐⇐						⇐⇐⇐			⇐⇐⇐		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	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		
Crosswalk	No			No			No			Yes		

Volumes

Name	SR-55 NB Ramp						MacArthur Blvd			MacArthur Blvd		
	Base Volume Input [veh/h]	996	0	1074	0	0	0	0	1811	970	0	587
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	996	0	1074	0	0	0	0	1811	970	0	587	269
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	249	0	269	0	0	0	0	453	243	0	147	67
Total Analysis Volume [veh/h]	996	0	1074	0	0	0	0	1811	970	0	587	269
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	1	0	0	0	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	6	0	0	0	0	0	0	10	0	0	10	0
Maximum Green [s]	30	0	0	0	0	0	0	30	0	0	30	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	47	0	0	0	0	0	0	43	0	0	43	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	7	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	21	0	0	0	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No							No			No	
Maximum Recall	No							No			No	
Pedestrian Recall	No							No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L		C	C
C, Cycle Length [s]	58		58	58
L, Total Lost Time per Cycle [s]	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00		2.00	2.00
g_i, Effective Green Time [s]	20		30	30
g / C, Green / Cycle	0.35		0.51	0.51
(v / s)_i Volume / Saturation Flow Rate	0.29		0.51	0.12
s, saturation flow rate [veh/h]	3459		3560	5094
c, Capacity [veh/h]	1205		1831	2620
d1, Uniform Delay [s]	17.38		14.00	7.78
k, delay calibration	0.11		0.11	0.11
l, Upstream Filtering Factor	1.00		1.00	1.00
d2, Incremental Delay [s]	1.51		7.55	0.04
d3, Initial Queue Delay [s]	0.00		0.00	0.00
Rp, platoon ratio	1.00		1.00	1.00
PF, progression factor	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.83		0.99	0.22
d, Delay for Lane Group [s/veh]	18.89		21.55	7.82
Lane Group LOS	B		C	A
Critical Lane Group	Yes		Yes	No
50th-Percentile Queue Length [veh/ln]	5.62		11.08	1.11
50th-Percentile Queue Length [ft/ln]	140.44		277.00	27.74
95th-Percentile Queue Length [veh/ln]	9.50		16.54	2.00
95th-Percentile Queue Length [ft/ln]	237.62		413.47	49.93

Movement, Approach, & Intersection Results

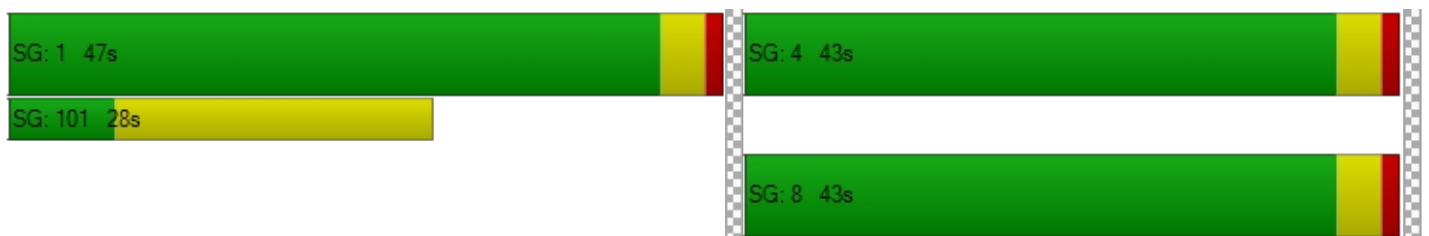
d_M, Delay for Movement [s/veh]	18.89	0.00	0.00	0.00	0.00	0.00	0.00	21.55	0.00	0.00	7.82	0.00
Movement LOS	B							C			A	
d_A, Approach Delay [s/veh]	18.89			0.00			21.55			7.82		
Approach LOS	B			A			C			A		
d_I, Intersection Delay [s/veh]	18.39											
Intersection LOS	B											
Intersection V/C	0.923											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	19.18
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	2.818
Crosswalk LOS	F	F	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1476	0	1338	1338
d_b, Bicycle Delay [s]	2.00	29.14	3.19	3.19
I_b,int, Bicycle LOS Score for Intersection	1.560	4.132	3.054	1.882
Bicycle LOS	A	D	C	A

Sequence

Ring 1	1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 25: I-405 NB Off-Ramp at South Coast Drive

Control Type:	Signalized	Delay (sec / veh):	22.8
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.407

Intersection Setup

Name	I-405 NB Off-Ramp			The Cape Dwy			South Coast Drive			South Coast 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	1	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	I-405 NB Off-Ramp			The Cape Dwy			South Coast Drive			South Coast Drive		
Base Volume Input [veh/h]	380	6	99	52	0	78	21	242	0	0	129	18
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
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]	380	6	99	52	0	78	21	242	0	0	129	18
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	95	2	25	13	0	20	5	61	0	0	32	5
Total Analysis Volume [veh/h]	380	6	99	52	0	78	21	242	0	0	129	18
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]	95
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Permiss	Split	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	7	0	0	5	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	10	0	6	0	0	6	10	0	0	10	0
Maximum Green [s]	0	30	0	30	0	0	30	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	63	0	63	0	0	10	32	0	0	22	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	14	0	0	0	0	0	11	0	0	11	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No		No				No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	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	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	R	L	C	C	C
C, Cycle Length [s]	95	95	95	95	95	95	95	95	95
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	31	31	31	31	31	3	56	49	49
g / C, Green / Cycle	0.33	0.33	0.33	0.33	0.33	0.03	0.58	0.52	0.52
(v / s)_i Volume / Saturation Flow Rate	0.29	0.03	0.03	0.04	0.05	0.01	0.07	0.04	0.04
s, saturation flow rate [veh/h]	1321	1617	1589	1289	1589	1781	3560	1870	1793
c, Capacity [veh/h]	489	536	527	450	527	48	2080	963	923
d1, Uniform Delay [s]	31.51	21.94	21.94	24.94	22.32	45.51	8.81	11.62	11.64
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.71	0.08	0.08	0.11	0.13	6.11	0.11	0.15	0.17
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.78	0.10	0.10	0.12	0.15	0.44	0.12	0.08	0.08
d, Delay for Lane Group [s/veh]	34.21	22.02	22.03	25.05	22.45	51.62	8.92	11.78	11.81
Lane Group LOS	C	C	C	C	C	D	A	B	B
Critical Lane Group	Yes	No	No	No	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	8.51	0.82	0.81	0.87	1.23	0.57	1.08	0.80	0.80
50th-Percentile Queue Length [ft/ln]	212.68	20.50	20.15	21.82	30.74	14.15	27.06	19.98	20.06
95th-Percentile Queue Length [veh/ln]	13.29	1.48	1.45	1.57	2.21	1.02	1.95	1.44	1.44
95th-Percentile Queue Length [ft/ln]	332.27	36.89	36.27	39.28	55.32	25.47	48.71	35.96	36.11

Movement, Approach, & Intersection Results

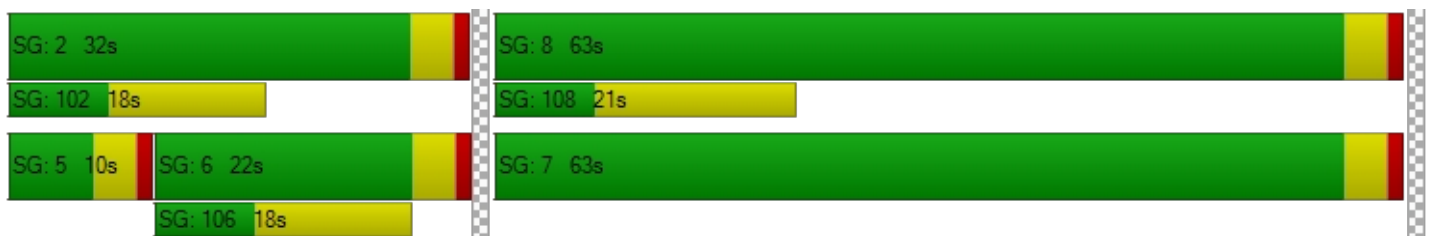
d_M, Delay for Movement [s/veh]	34.21	22.02	22.03	25.05	0.00	22.45	51.62	8.92	0.00	0.00	11.79	11.81
Movement LOS	C	C	C	C		C	D	A			B	B
d_A, Approach Delay [s/veh]	31.57			23.49			12.33			11.80		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]	22.78											
Intersection LOS	C											
Intersection V/C	0.407											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	37.14	37.14	0.00	37.14
I_p,int, Pedestrian LOS Score for Intersection	2.252	1.999	0.000	2.339
Crosswalk LOS	B	A	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1242	1242	589	379
d_b, Bicycle Delay [s]	6.82	6.82	23.63	31.21
I_b,int, Bicycle LOS Score for Intersection	2.360	1.560	1.777	1.681
Bicycle LOS	B	A	A	A

Sequence

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



Intersection Level Of Service Report
Intersection 28: Fairview Road at I-405 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	25.2
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.767

Intersection Setup

Name	Fairview Road			Fairview Road			I-405 NB Ramps			I-405 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	1	0	0	0	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		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Fairview Road			Fairview Road			I-405 NB Ramps			I-405 NB Ramps		
Base Volume Input [veh/h]	198	973	0	0	2665	321	0	0	0	663	0	849
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	198	973	0	0	2665	321	0	0	0	663	0	849
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	50	243	0	0	666	80	0	0	0	166	0	212
Total Analysis Volume [veh/h]	198	973	0	0	2665	321	0	0	0	663	0	849
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Permiss	Split
Signal Group	1	6	0	0	2	0	0	0	0	0	7	0	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	6	10	0	0	10	0	0	0	0	0	6	0	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	23	41	0	0	18	0	0	0	0	0	59	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	14	0	0	7	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall	No	No			No						No		
Maximum Recall	No	No			No						No		
Pedestrian Recall	No	No			No						No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	R		L	R
C, Cycle Length [s]	100	100	100	100		100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	13	57	39	39		36	36
g / C, Green / Cycle	0.13	0.56	0.39	0.39		0.36	0.36
(v / s)_i Volume / Saturation Flow Rate	0.11	0.19	0.26	0.20		0.19	0.30
s, saturation flow rate [veh/h]	1781	5094	10188	1589		3459	2813
c, Capacity [veh/h]	233	2878	4016	627		1228	999
d1, Uniform Delay [s]	42.51	11.70	24.85	22.99		25.73	29.79
k, delay calibration	0.11	0.50	0.50	0.50		0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	8.44	0.32	0.88	2.98		0.37	2.14
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.85	0.34	0.66	0.51		0.54	0.85
d, Delay for Lane Group [s/veh]	50.95	12.02	25.73	25.97		26.11	31.93
Lane Group LOS	D	B	C	C		C	C
Critical Lane Group	Yes	No	Yes	No		No	Yes
50th-Percentile Queue Length [veh/ln]	5.28	3.77	8.55	6.12		6.23	9.44
50th-Percentile Queue Length [ft/ln]	132.09	94.34	213.69	153.11		155.71	235.90
95th-Percentile Queue Length [veh/ln]	9.05	6.79	13.34	10.18		10.32	14.47
95th-Percentile Queue Length [ft/ln]	226.33	169.81	333.56	254.58		258.03	361.84

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	50.95	12.02	0.00	0.00	25.73	25.97	0.00	0.00	0.00	26.11	0.00	31.93
Movement LOS	D	B			C	C				C		C
d_A, Approach Delay [s/veh]	18.60		25.75			0.00			29.38			
Approach LOS	B		C			A			C			
d_I, Intersection Delay [s/veh]	25.24											
Intersection LOS	C											
Intersection V/C	0.767											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	39.61	39.61
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	1.934	2.600
Crosswalk LOS	F	F	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	740	280	0	1100
d_b, Bicycle Delay [s]	19.85	36.98	50.00	10.13
I_b,int, Bicycle LOS Score for Intersection	2.204	2.381	4.132	1.560
Bicycle LOS	B	B	D	A

Sequence

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



Intersection Level Of Service Report
Intersection 29: Fairview Road at I-405 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	31.1
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.928

Intersection Setup

Name	Fairview Rd			Fairview Rd			I-405 SB Ramps			I-405 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↑↑↑↑↑			↑↑↑↑↑			↑↑↑↑↑					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	1	0	0	1	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Fairview Rd			Fairview Rd			I-405 SB Ramps			I-405 SB Ramps		
Base Volume Input [veh/h]	0	981	1219	1669	1799	0	211	0	354	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	981	1219	1669	1799	0	211	0	354	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	245	305	417	450	0	53	0	89	0	0	0
Total Analysis Volume [veh/h]	0	981	1219	1669	1799	0	211	0	354	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	115
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Permiss
Signal Group	0	6	0	5	2	0	3	0	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	10	0	6	10	0	6	0	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	30	0	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Split [s]	0	50	0	45	95	0	20	0	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	11	0	0	14	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No		No					
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No		No					
Maximum Recall		No		No	No		No					
Pedestrian Recall		No		No	No		No					
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	R	L	C	L	R	
C, Cycle Length [s]	115	115	115	115	115	115	115	
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]	47	47	47	40	91	16	16	
g / C, Green / Cycle	0.41	0.41	0.41	0.35	0.79	0.14	0.14	
(v / s)_i Volume / Saturation Flow Rate	0.19	0.38	0.38	0.32	0.35	0.06	0.13	
s, saturation flow rate [veh/h]	5094	1589	1589	5188	5094	3459	2813	
c, Capacity [veh/h]	2093	653	653	1792	4030	482	392	
d1, Uniform Delay [s]	24.71	32.36	32.36	36.31	3.88	45.35	48.72	
k, delay calibration	0.50	0.50	0.50	0.11	0.50	0.11	0.11	
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	0.76	22.17	22.17	2.71	0.36	0.63	7.85	
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	0.47	0.93	0.93	0.93	0.45	0.44	0.90	
d, Delay for Lane Group [s/veh]	25.47	54.53	54.53	39.02	4.24	45.98	56.57	
Lane Group LOS	C	D	D	D	A	D	E	
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	6.60	19.77	19.77	15.23	3.64	2.81	5.41	
50th-Percentile Queue Length [ft/ln]	164.97	494.29	494.29	380.74	91.08	70.18	135.26	
95th-Percentile Queue Length [veh/ln]	10.81	27.06	27.06	21.63	6.56	5.05	9.22	
95th-Percentile Queue Length [ft/ln]	270.29	676.60	676.60	540.75	163.94	126.32	230.62	

Movement, Approach, & Intersection Results

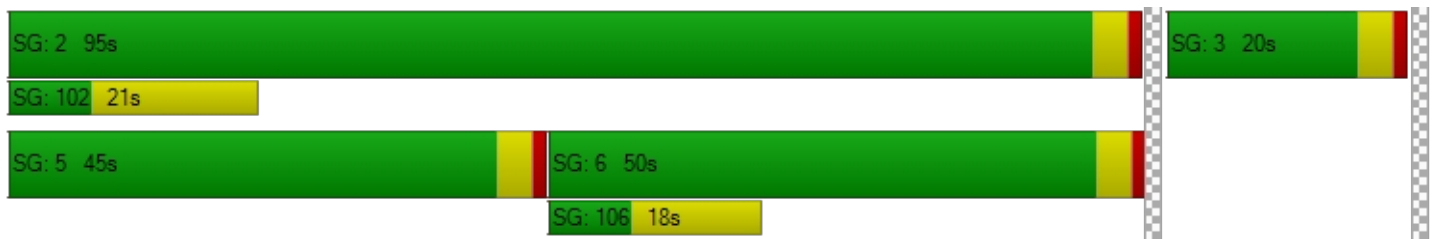
d_M, Delay for Movement [s/veh]	0.00	25.47	54.53	39.02	4.24	0.00	45.98	0.00	56.57	0.00	0.00	0.00
Movement LOS		C	D	D	A		D		E			
d_A, Approach Delay [s/veh]		41.57		20.98			52.61			0.00		
Approach LOS		D		C			D			A		
d_I, Intersection Delay [s/veh]	31.11											
Intersection LOS	C											
Intersection V/C	0.928											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0		0.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00		0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00		0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	0.00		0.00			47.02			47.02		
I_p,int, Pedestrian LOS Score for Intersection	0.000		0.000			2.422			2.891		
Crosswalk LOS	F		F			B			C		
s_b, Saturation Flow Rate of the bicycle lane	2000		2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	800		1583			278			0		
d_b, Bicycle Delay [s]	20.69		2.50			42.61			57.49		
I_b,int, Bicycle LOS Score for Intersection	2.467		3.467			1.560			4.132		
Bicycle LOS	B		C			A			D		

Sequence

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



Intersection Level Of Service Report
Intersection 30: Bristol Street at I-405 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	6.4
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.400

Intersection Setup

Name	Bristol Street			Bristol Street			I-405 NB Ramps			I-405 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	0	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	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	No			No			Yes			Yes		

Volumes

Name	Bristol Street			Bristol Street			I-405 NB Ramps			I-405 NB Ramps		
Base Volume Input [veh/h]	0	1723	208	0	2453	9	0	0	37	135	80	786
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1723	208	0	2453	9	0	0	37	135	80	786
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	431	52	0	613	2	0	0	9	34	20	197
Total Analysis Volume [veh/h]	0	1723	208	0	2453	9	0	0	37	135	80	786
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	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss	Split	Permiss	Split	Split	Split	Overlap
Signal Group	0	6	0	0	2	0	0	0	8	0	4	4
Auxiliary Signal Groups												2,4
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	0	10	0	0	0	6	0	10	10
Maximum Green [s]	0	30	0	0	30	0	0	0	30	0	30	30
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0
Split [s]	0	63	0	0	63	0	0	0	10	0	17	17
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	18	0	0	14	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No				No		No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0
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	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	C	R	L	C	C	R
C, Cycle Length [s]	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
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	64	64	64	4	10	10	10	78
g / C, Green / Cycle	0.71	0.71	0.71	0.04	0.11	0.11	0.11	0.87
(v / s)_i Volume / Saturation Flow Rate	0.25	0.29	0.26	0.01	0.04	0.04	0.04	0.28
s, saturation flow rate [veh/h]	6792	6792	1864	2813	1781	1788	1702	2813
c, Capacity [veh/h]	4848	4848	1331	115	200	200	191	2448
d1, Uniform Delay [s]	4.94	5.19	5.01	41.97	36.96	36.96	37.11	1.05
k, delay calibration	0.50	0.50	0.50	0.11	0.11	0.11	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.20	0.25	0.79	1.60	1.06	1.05	1.28	0.35
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.36	0.41	0.37	0.32	0.35	0.35	0.39	0.32
d, Delay for Lane Group [s/veh]	5.15	5.45	5.80	43.57	38.02	38.01	38.39	1.40
Lane Group LOS	A	A	A	D	D	D	D	A
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.52	3.04	3.14	0.42	1.48	1.48	1.56	0.31
50th-Percentile Queue Length [ft/ln]	63.10	75.89	78.49	10.53	36.89	37.04	39.05	7.75
95th-Percentile Queue Length [veh/ln]	4.54	5.46	5.65	0.76	2.66	2.67	2.81	0.56
95th-Percentile Queue Length [ft/ln]	113.58	136.60	141.27	18.95	66.40	66.66	70.28	13.95

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	5.15	0.00	0.00	5.52	5.80	0.00	0.00	43.57	38.02	38.36	1.40
Movement LOS		A			A	A			D	D	D	A
d_A, Approach Delay [s/veh]	5.15				5.52				43.57		9.29	
Approach LOS	A				A				D		A	
d_I, Intersection Delay [s/veh]	6.39											
Intersection LOS	A											
Intersection V/C	0.400											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		11.0		11.0	
M_corner, Corner Circulation Area [ft ² /ped]	0.00		0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00		0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		0.00		34.68		34.68	
I_p,int, Pedestrian LOS Score for Intersection	0.000		0.000		2.161		2.615	
Crosswalk LOS	F		F		B		B	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	1311		1311		133		289	
d_b, Bicycle Delay [s]	5.35		5.35		39.21		32.95	
I_b,int, Bicycle LOS Score for Intersection	2.270		2.372		1.560		2.385	
Bicycle LOS	B		B		A		B	

Sequence

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



Intersection Level Of Service Report
Intersection 31: Bristol Street at I-405 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	15.5
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.492

Intersection Setup

Name	Bristol Street		Bristol Street		I-405 SB Ramps	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration	↵ ↑ ↑ ↑		↑ ↑ ↵		↵↵↵↵	
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	1	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		Yes	

Volumes

Name	Bristol Street		Bristol Street		I-405 SB Ramps	
Base Volume Input [veh/h]	132	1238	1131	1064	695	571
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	132	1238	1131	1064	695	571
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	33	310	283	266	174	0
Total Analysis Volume [veh/h]	132	1238	1131	1064	695	0
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Unsignalized	Permissive	Unsignalized
Signal Group	1	6	2	0	3	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	6	10	10	0	6	0
Maximum Green [s]	30	30	30	0	30	0
Amber [s]	3.0	3.0	3.0	0.0	3.0	0.0
All red [s]	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	42	64	22	0	31	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	0	7	0	0	0
Pedestrian Clearance [s]	0	0	11	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No	No		No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
Minimum Recall	No	No	No		No	
Maximum Recall	No	No	No		No	
Pedestrian Recall	No	No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L
C, Cycle Length [s]	95	95	95	95
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	71	58	16
g / C, Green / Cycle	0.09	0.75	0.61	0.17
(v / s)_i Volume / Saturation Flow Rate	0.07	0.18	0.22	0.13
s, saturation flow rate [veh/h]	1781	6792	5094	5188
c, Capacity [veh/h]	168	5065	3105	883
d1, Uniform Delay [s]	42.11	3.76	9.31	37.78
k, delay calibration	0.11	0.50	0.50	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.94	0.11	0.33	1.61
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.79	0.24	0.36	0.79
d, Delay for Lane Group [s/veh]	50.05	3.87	9.65	39.39
Lane Group LOS	D	A	A	D
Critical Lane Group	Yes	No	Yes	Yes
50th-Percentile Queue Length [veh/ln]	3.37	1.49	3.69	5.22
50th-Percentile Queue Length [ft/ln]	84.20	37.19	92.17	130.50
95th-Percentile Queue Length [veh/ln]	6.06	2.68	6.64	8.97
95th-Percentile Queue Length [ft/ln]	151.57	66.94	165.91	224.17

Movement, Approach, & Intersection Results

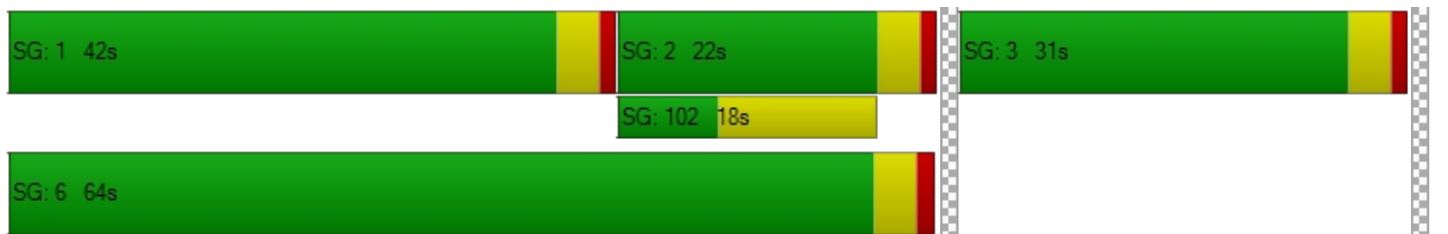
d_M, Delay for Movement [s/veh]	50.05	3.87	9.65	0.00	39.39	0.00
Movement LOS	D	A	A		D	
d_A, Approach Delay [s/veh]	8.32		9.65		39.39	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	15.55					
Intersection LOS	B					
Intersection V/C	0.492					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	37.14
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.590
Crosswalk LOS	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1263	379	568
d_b, Bicycle Delay [s]	6.45	31.21	24.34
I_b,int, Bicycle LOS Score for Intersection	2.125	2.182	1.560
Bicycle LOS	B	B	A

Sequence

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



Intersection Level Of Service Report
Intersection 37: Bear St at SR-73 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	21.5
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.591

Intersection Setup

Name	Bear St			Bear St			SR-73 NB Ramps			SR-73 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0	0	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		
Crosswalk	No			No			No			Yes		

Volumes

Name	Bear St			Bear St			SR-73 NB Ramps			SR-73 NB Ramps		
Base Volume Input [veh/h]	177	369	0	0	1059	105	0	0	0	191	0	548
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	177	369	0	0	1059	105	0	0	0	191	0	548
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	44	92	0	0	265	26	0	0	0	48	0	137
Total Analysis Volume [veh/h]	177	369	0	0	1059	105	0	0	0	191	0	548
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Permiss	Split
Signal Group	1	6	0	0	2	0	0	0	0	0	7	0	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	6	10	0	0	10	0	0	0	0	0	6	0	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	15	41	0	0	26	0	0	0	0	0	49	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	11	0	0	0	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall	No	No			No						No		
Maximum Recall	No	No			No						No		
Pedestrian Recall	No	No			No						No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C		L	R
C, Cycle Length [s]	90	90	90	90		90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	11	61	47	47		21	21
g / C, Green / Cycle	0.12	0.68	0.52	0.52		0.23	0.23
(v / s)_i Volume / Saturation Flow Rate	0.10	0.10	0.22	0.22		0.11	0.19
s, saturation flow rate [veh/h]	1781	3560	3560	1785		1781	2813
c, Capacity [veh/h]	212	2419	1838	921		413	652
d1, Uniform Delay [s]	38.82	5.16	13.48	13.47		29.77	33.00
k, delay calibration	0.11	0.50	0.50	0.50		0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	8.43	0.13	0.71	1.41		0.81	3.02
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.84	0.15	0.42	0.42		0.46	0.84
d, Delay for Lane Group [s/veh]	47.25	5.30	14.19	14.88		30.58	36.02
Lane Group LOS	D	A	B	B		C	D
Critical Lane Group	Yes	No	Yes	No		No	Yes
50th-Percentile Queue Length [veh/ln]	4.26	1.10	4.75	4.92		3.59	5.83
50th-Percentile Queue Length [ft/ln]	106.52	27.52	118.71	123.12		89.67	145.76
95th-Percentile Queue Length [veh/ln]	7.65	1.98	8.32	8.56		6.46	9.79
95th-Percentile Queue Length [ft/ln]	191.15	49.53	208.05	214.11		161.41	244.76

Movement, Approach, & Intersection Results

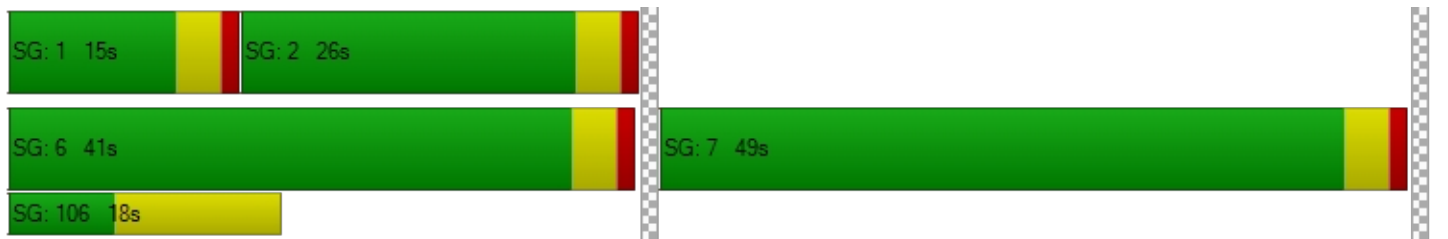
d_M, Delay for Movement [s/veh]	47.25	5.30	0.00	0.00	14.38	14.88	0.00	0.00	0.00	30.58	0.00	36.02
Movement LOS	D	A			B	B				C		D
d_A, Approach Delay [s/veh]	18.90				14.42		0.00		34.61			
Approach LOS	B				B		A		C			
d_I, Intersection Delay [s/veh]	21.51											
Intersection LOS	C											
Intersection V/C	0.591											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		0.0		11.0	
M_corner, Corner Circulation Area [ft ² /ped]	0.00		0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00		0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		0.00		0.00		34.68	
I_p,int, Pedestrian LOS Score for Intersection	0.000		0.000		0.000		2.311	
Crosswalk LOS	F		F		F		B	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	822		489		0		1000	
d_b, Bicycle Delay [s]	15.62		25.70		45.01		11.26	
I_b,int, Bicycle LOS Score for Intersection	2.010		2.200		4.132		1.560	
Bicycle LOS	B		B		D		A	

Sequence

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



Intersection Level Of Service Report
Intersection 38: Bear St at SR-73 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	22.4
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.687

Intersection Setup

Name	Bear St			Bear St			SR-73 SB Ramps			SR-73 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↑↑			↑↑↑			↑↑					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Bear St			Bear St			SR-73 SB Ramps			SR-73 SB Ramps		
Base Volume Input [veh/h]	0	404	417	664	663	0	133	1	224	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	404	417	664	663	0	133	1	224	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	101	104	166	166	0	33	0	56	0	0	0
Total Analysis Volume [veh/h]	0	404	417	664	663	0	133	1	224	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Permiss	Permiss
Signal Group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	6	10	0	0	10	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	18	0	42	60	0	0	30	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	7	0	0	7	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	L	C	L	C	
C, Cycle Length [s]	90	90	90	90	90	90	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	42	42	21	67	15	15	
g / C, Green / Cycle	0.47	0.47	0.23	0.74	0.17	0.17	
(v / s)_i Volume / Saturation Flow Rate	0.22	0.26	0.19	0.19	0.07	0.14	
s, saturation flow rate [veh/h]	1870	1589	3459	3560	1781	1591	
c, Capacity [veh/h]	880	748	789	2646	299	267	
d1, Uniform Delay [s]	16.09	17.10	33.20	3.65	33.68	36.30	
k, delay calibration	0.50	0.50	0.11	0.50	0.11	0.11	
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	1.72	2.99	2.53	0.23	1.04	7.06	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	0.46	0.56	0.84	0.25	0.44	0.84	
d, Delay for Lane Group [s/veh]	17.82	20.09	35.74	3.88	34.72	43.36	
Lane Group LOS	B	C	D	A	C	D	
Critical Lane Group	No	Yes	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	5.75	6.47	7.03	1.52	2.66	5.22	
50th-Percentile Queue Length [ft/ln]	143.79	161.70	175.64	38.07	66.57	130.55	
95th-Percentile Queue Length [veh/ln]	9.68	10.64	11.37	2.74	4.79	8.97	
95th-Percentile Queue Length [ft/ln]	242.12	265.97	284.31	68.53	119.82	224.24	

Movement, Approach, & Intersection Results

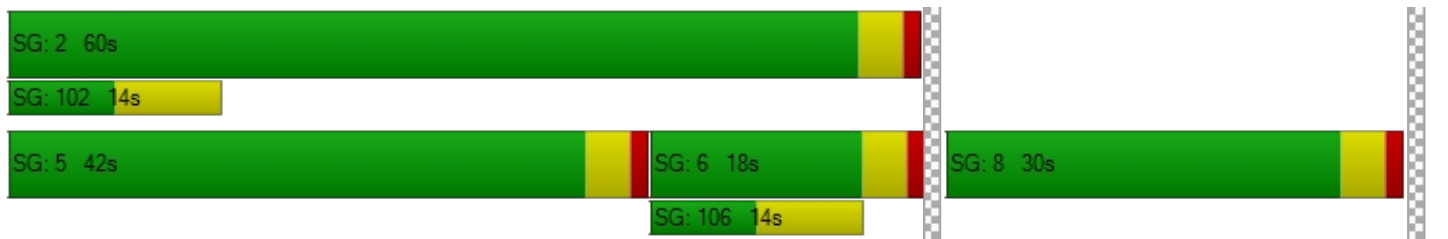
d_M, Delay for Movement [s/veh]	0.00	17.82	20.09	35.74	3.88	0.00	34.72	43.36	43.36	0.00	0.00	0.00
Movement LOS		B	C	D	A		C	D	D			
d_A, Approach Delay [s/veh]		18.97		19.82			40.15			0.00		
Approach LOS		B		B			D			A		
d_I, Intersection Delay [s/veh]	22.44											
Intersection LOS	C											
Intersection V/C	0.687											

Other Modes

g_Walk,mi, Effective Walk Time [s]		0.0		0.0		11.0		11.0
M_corner, Corner Circulation Area [ft ² /ped]		0.00		0.00		0.00		0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]		0.00		0.00		0.00		0.00
d_p, Pedestrian Delay [s]		0.00		0.00		34.68		34.68
I_p,int, Pedestrian LOS Score for Intersection		0.000		0.000		2.056		2.242
Crosswalk LOS		F		F		B		B
s_b, Saturation Flow Rate of the bicycle lane		2000		2000		2000		2000
c_b, Capacity of the bicycle lane [bicycles/h]		311		1244		578		0
d_b, Bicycle Delay [s]		32.10		6.43		22.77		45.01
I_b,int, Bicycle LOS Score for Intersection		2.237		2.654		2.150		4.132
Bicycle LOS		B		B		B		D

Sequence

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



Intersection Level Of Service Report
Intersection 12: SR-55 SB Ramps at MacArthur Blvd

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):	0.753

Intersection Setup

Name	SR-55 SB Ramp			MacArthur Blvd			MacArthur Blvd					
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration				T T T T			T T T T			T T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	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	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		
Crosswalk	No			Yes			No			No		

Volumes

Name				SR-55 SB Ramp			MacArthur Blvd			MacArthur Blvd		
Base Volume Input [veh/h]	0	0	0	318	0	840	0	1354	1148	0	1736	667
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	318	0	840	0	1354	1148	0	1736	667
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	80	0	210	0	339	287	0	434	167
Total Analysis Volume [veh/h]	0	0	0	318	0	840	0	1354	1148	0	1736	667
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	115
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	0	0	0	5	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	6	0	0	0	10	0	0	10	0
Maximum Green [s]	0	0	0	30	0	0	0	30	0	0	30	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	55	0	0	0	60	0	0	60	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	14	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	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	R	C	C
C, Cycle Length [s]		53	53	53	53
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		20	20	25	25
g / C, Green / Cycle		0.37	0.37	0.47	0.47
(v / s)_i Volume / Saturation Flow Rate		0.09	0.30	0.27	0.34
s, saturation flow rate [veh/h]		3459	2813	5094	5094
c, Capacity [veh/h]		1296	1054	2419	2419
d1, Uniform Delay [s]		11.44	14.81	9.98	11.12
k, delay calibration		0.11	0.11	0.11	0.11
l, Upstream Filtering Factor		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		0.10	1.43	0.20	0.41
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.25	0.80	0.56	0.72
d, Delay for Lane Group [s/veh]		11.54	16.24	10.18	11.52
Lane Group LOS		B	B	B	B
Critical Lane Group		No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]		1.12	3.99	3.02	4.34
50th-Percentile Queue Length [ft/ln]		28.12	99.87	75.51	108.48
95th-Percentile Queue Length [veh/ln]		2.02	7.19	5.44	7.76
95th-Percentile Queue Length [ft/ln]		50.61	179.76	135.93	193.89

Movement, Approach, & Intersection Results

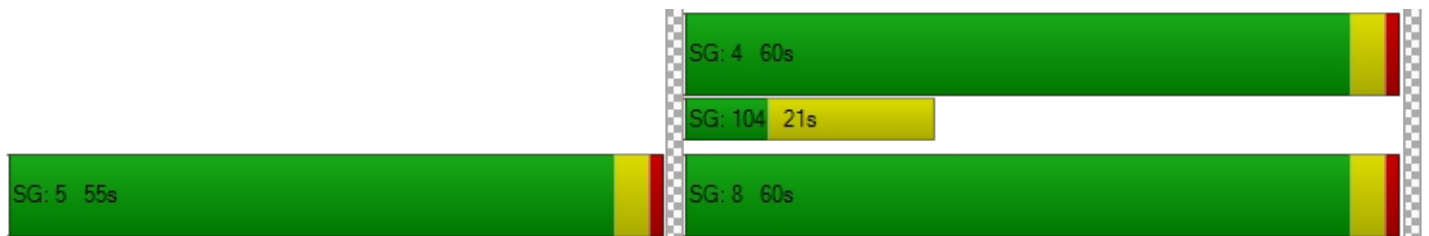
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	11.54	0.00	16.24	0.00	10.18	0.00	0.00	11.52	0.00
Movement LOS				B		B		B			B	
d_A, Approach Delay [s/veh]	0.00			14.95			10.18			11.52		
Approach LOS	A			B			B			B		
d_I, Intersection Delay [s/veh]	12.03											
Intersection LOS	B											
Intersection V/C	0.753											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	16.62	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	0.000	2.496	0.000	0.000
Crosswalk LOS	F	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	1926	2115	2115
d_b, Bicycle Delay [s]	26.47	0.04	0.09	0.09
I_b,int, Bicycle LOS Score for Intersection	4.132	1.560	2.304	2.514
Bicycle LOS	D	A	B	B

Sequence

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



Intersection Level Of Service Report
Intersection 13: SR-55 NB Ramps at MacArthur Blvd

Control Type:	Signalized	Delay (sec / veh):	8.8
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.668

Intersection Setup

Name	SR-55 NB Ramp						MacArthur Blvd			MacArthur Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	⇐⇐⇐						⇐⇐⇐			⇐⇐⇐		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	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		
Crosswalk	No			No			No			Yes		

Volumes

Name	SR-55 NB Ramp						MacArthur Blvd			MacArthur Blvd		
	Base Volume Input [veh/h]	724	0	470	0	0	0	0	802	852	0	1685
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	724	0	470	0	0	0	0	802	852	0	1685	1185
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	181	0	118	0	0	0	0	201	213	0	421	296
Total Analysis Volume [veh/h]	724	0	470	0	0	0	0	802	852	0	1685	1185
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	1	0	0	0	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	6	0	0	0	0	0	0	10	0	0	10	0
Maximum Green [s]	30	0	0	0	0	0	0	30	0	0	30	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	47	0	0	0	0	0	0	73	0	0	73	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	7	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	21	0	0	0	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No							No			No	
Maximum Recall	No							No			No	
Pedestrian Recall	No							No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L		C	C
C, Cycle Length [s]	42		42	42
L, Total Lost Time per Cycle [s]	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00		2.00	2.00
g_i, Effective Green Time [s]	12		22	22
g / C, Green / Cycle	0.29		0.52	0.52
(v / s)_i Volume / Saturation Flow Rate	0.21		0.23	0.33
s, saturation flow rate [veh/h]	3459		3560	5094
c, Capacity [veh/h]	1008		1845	2640
d1, Uniform Delay [s]	13.34		6.29	7.28
k, delay calibration	0.11		0.11	0.11
l, Upstream Filtering Factor	1.00		1.00	1.00
d2, Incremental Delay [s]	0.98		0.16	0.26
d3, Initial Queue Delay [s]	0.00		0.00	0.00
Rp, platoon ratio	1.00		1.00	1.00
PF, progression factor	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.72		0.43	0.64
d, Delay for Lane Group [s/veh]	14.32		6.45	7.54
Lane Group LOS	B		A	A
Critical Lane Group	Yes		No	Yes
50th-Percentile Queue Length [veh/ln]	2.59		1.45	2.34
50th-Percentile Queue Length [ft/ln]	64.78		36.18	58.57
95th-Percentile Queue Length [veh/ln]	4.66		2.60	4.22
95th-Percentile Queue Length [ft/ln]	116.60		65.12	105.43

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	14.32	0.00	0.00	0.00	0.00	0.00	0.00	6.45	0.00	0.00	7.54	0.00
Movement LOS	B							A			A	
d_A, Approach Delay [s/veh]	14.32			0.00			6.45			7.54		
Approach LOS	B			A			A			A		
d_I, Intersection Delay [s/veh]	8.80											
Intersection LOS	A											
Intersection V/C	0.668											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		0.0		11.0	
M_corner, Corner Circulation Area [ft ² /ped]	0.00		0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00		0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		0.00		0.00		11.37	
I_p,int, Pedestrian LOS Score for Intersection	0.000		0.000		0.000		2.812	
Crosswalk LOS	F		F		F		C	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	2055		0		3298		3298	
d_b, Bicycle Delay [s]	0.02		20.92		8.81		8.81	
I_b,int, Bicycle LOS Score for Intersection	1.560		4.132		2.221		2.486	
Bicycle LOS	A		D		B		B	

Sequence

Ring 1	1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 25: I-405 NB Off-Ramp at South Coast Drive

Control Type:	Signalized	Delay (sec / veh):	21.4
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.607

Intersection Setup

Name	I-405 NB Off-Ramp			The Cape Dwy			South Coast Drive			South Coast 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	1	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	I-405 NB Off-Ramp			The Cape Dwy			South Coast Drive			South Coast Drive		
Base Volume Input [veh/h]	514	32	208	30	0	42	46	458	0	0	413	36
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	514	32	208	30	0	42	46	458	0	0	413	36
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	129	8	52	8	0	11	12	115	0	0	103	9
Total Analysis Volume [veh/h]	514	32	208	30	0	42	46	458	0	0	413	36
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	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Permiss	Split	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	7	0	0	5	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	10	0	6	0	0	6	10	0	0	10	0
Maximum Green [s]	0	30	0	30	0	0	30	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	58	0	58	0	0	10	32	0	0	22	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	14	0	0	0	0	0	11	0	0	11	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No		No				No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	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	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	R	L	C	C	C
C, Cycle Length [s]	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
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	38	38	38	38	38	4	44	36	36
g / C, Green / Cycle	0.42	0.42	0.42	0.42	0.42	0.05	0.49	0.40	0.40
(v / s)_i Volume / Saturation Flow Rate	0.38	0.07	0.07	0.03	0.03	0.03	0.13	0.12	0.12
s, saturation flow rate [veh/h]	1364	1655	1589	1140	1589	1781	3560	1870	1819
c, Capacity [veh/h]	632	700	673	490	673	81	1737	744	723
d1, Uniform Delay [s]	25.59	16.17	16.18	18.96	15.38	42.07	13.54	18.54	18.62
k, delay calibration	0.19	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.48	0.12	0.12	0.05	0.04	6.02	0.37	1.04	1.12
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.81	0.17	0.18	0.06	0.06	0.57	0.26	0.30	0.31
d, Delay for Lane Group [s/veh]	30.07	16.28	16.30	19.01	15.42	48.09	13.91	19.59	19.73
Lane Group LOS	C	B	B	B	B	D	B	B	B
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	10.69	1.54	1.50	0.41	0.51	1.13	2.69	3.32	3.34
50th-Percentile Queue Length [ft/ln]	267.32	38.52	37.47	10.30	12.64	28.17	67.30	82.92	83.44
95th-Percentile Queue Length [veh/ln]	16.06	2.77	2.70	0.74	0.91	2.03	4.85	5.97	6.01
95th-Percentile Queue Length [ft/ln]	401.38	69.34	67.44	18.54	22.75	50.70	121.15	149.25	150.19

Movement, Approach, & Intersection Results

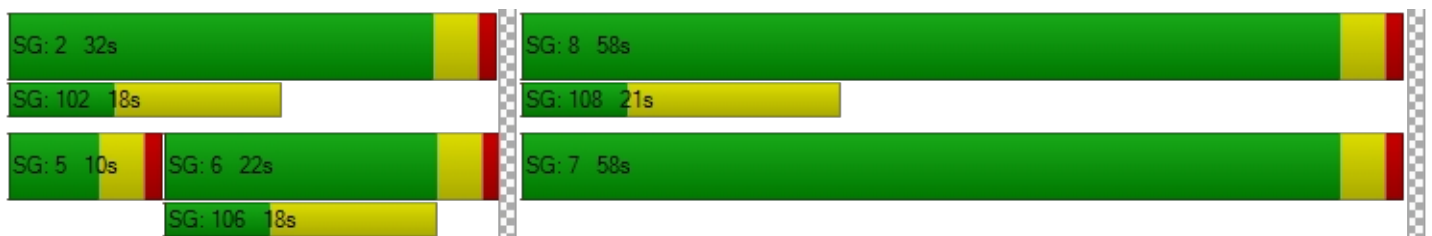
d_M, Delay for Movement [s/veh]	30.07	16.28	16.29	19.01	0.00	15.42	48.09	13.91	0.00	0.00	19.65	19.73
Movement LOS	C	B	B	B		B	D	B			B	B
d_A, Approach Delay [s/veh]	25.68			16.92			17.03			19.66		
Approach LOS	C			B			B			B		
d_I, Intersection Delay [s/veh]	21.36											
Intersection LOS	C											
Intersection V/C	0.607											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.67	34.67	0.00	34.67
I_p,int, Pedestrian LOS Score for Intersection	2.314	2.000	0.000	2.452
Crosswalk LOS	B	B	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1200	1200	622	400
d_b, Bicycle Delay [s]	7.20	7.20	21.36	28.80
I_b,int, Bicycle LOS Score for Intersection	2.804	1.560	1.975	1.930
Bicycle LOS	C	A	A	A

Sequence

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



Intersection Level Of Service Report
Intersection 28: Fairview Road at I-405 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	31.6
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.843

Intersection Setup

Name	Fairview Road			Fairview Road			I-405 NB Ramps			I-405 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	1	0	0	0	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		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Fairview Road			Fairview Road			I-405 NB Ramps			I-405 NB Ramps		
Base Volume Input [veh/h]	246	1460	0	0	2048	288	0	0	0	914	0	1159
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	246	1460	0	0	2048	288	0	0	0	914	0	1159
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	62	365	0	0	512	72	0	0	0	229	0	290
Total Analysis Volume [veh/h]	246	1460	0	0	2048	288	0	0	0	914	0	1159
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Permiss	Split
Signal Group	1	6	0	0	2	0	0	0	0	0	7	0	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	6	10	0	0	10	0	0	0	0	0	6	0	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	28	46	0	0	18	0	0	0	0	0	64	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	14	0	0	7	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall	No	No			No						No		
Maximum Recall	No	No			No						No		
Pedestrian Recall	No	No			No						No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	R		L	R
C, Cycle Length [s]	110	110	110	110		110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	17	51	29	29		51	51
g / C, Green / Cycle	0.16	0.46	0.27	0.27		0.47	0.47
(v / s)_i Volume / Saturation Flow Rate	0.14	0.29	0.20	0.18		0.26	0.41
s, saturation flow rate [veh/h]	1781	5094	10188	1589		3459	2813
c, Capacity [veh/h]	278	2347	2731	426		1614	1313
d1, Uniform Delay [s]	45.41	22.42	36.87	35.98		21.27	26.61
k, delay calibration	0.11	0.50	0.50	0.50		0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	9.06	1.25	1.94	8.34		0.31	2.15
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.88	0.62	0.75	0.68		0.57	0.88
d, Delay for Lane Group [s/veh]	54.47	23.67	38.82	44.32		21.58	28.76
Lane Group LOS	D	C	D	D		C	C
Critical Lane Group	Yes	No	Yes	No		No	Yes
50th-Percentile Queue Length [veh/ln]	7.23	9.55	8.57	7.84		8.40	13.61
50th-Percentile Queue Length [ft/ln]	180.86	238.67	214.20	195.97		210.01	340.18
95th-Percentile Queue Length [veh/ln]	11.65	14.61	13.37	12.43		13.15	19.66
95th-Percentile Queue Length [ft/ln]	291.14	365.35	334.21	310.75		328.84	491.42

Movement, Approach, & Intersection Results

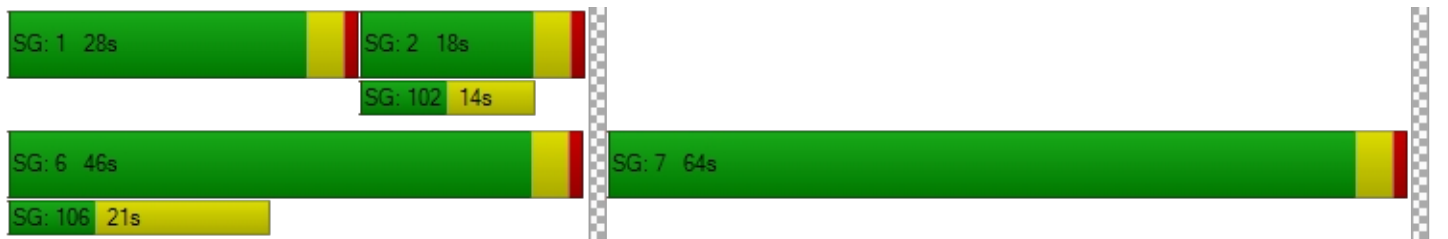
d_M, Delay for Movement [s/veh]	54.47	23.67	0.00	0.00	38.82	44.32	0.00	0.00	0.00	21.58	0.00	28.76
Movement LOS	D	C			D	D				C		C
d_A, Approach Delay [s/veh]	28.11				39.49		0.00		25.59			
Approach LOS	C				D		A		C			
d_I, Intersection Delay [s/veh]	31.61											
Intersection LOS	C											
Intersection V/C	0.843											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	44.54	44.54
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	1.954	2.714
Crosswalk LOS	F	F	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	764	255	0	1091
d_b, Bicycle Delay [s]	21.01	41.88	54.99	11.36
I_b,int, Bicycle LOS Score for Intersection	2.498	2.202	4.132	1.560
Bicycle LOS	B	B	D	A

Sequence

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



Intersection Level Of Service Report
Intersection 29: Fairview Road at I-405 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	20.4
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.696

Intersection Setup

Name	Fairview Rd			Fairview Rd			I-405 SB Ramps			I-405 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↑↑↑↑↑			↑↑↑↑↑			↑↑↑↑↑					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	1	0	0	1	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Fairview Rd			Fairview Rd			I-405 SB Ramps			I-405 SB Ramps		
Base Volume Input [veh/h]	0	1259	701	1129	1780	0	338	0	391	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1259	701	1129	1780	0	338	0	391	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	315	175	282	445	0	85	0	98	0	0	0
Total Analysis Volume [veh/h]	0	1259	701	1129	1780	0	338	0	391	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Permiss
Signal Group	0	6	0	5	2	0	3	0	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	10	0	6	10	0	6	0	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	30	0	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Split [s]	0	22	0	43	65	0	25	0	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	11	0	0	14	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No		No					
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No		No					
Maximum Recall		No		No	No		No					
Pedestrian Recall		No		No	No		No					
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	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]	38	38	38	24	67	15	15	
g / C, Green / Cycle	0.43	0.43	0.43	0.27	0.74	0.17	0.17	
(v / s)_i Volume / Saturation Flow Rate	0.23	0.25	0.25	0.22	0.35	0.10	0.14	
s, saturation flow rate [veh/h]	5094	1589	1589	5188	5094	3459	2813	
c, Capacity [veh/h]	2174	678	678	1391	3766	594	483	
d1, Uniform Delay [s]	19.23	19.64	19.64	30.83	4.70	34.23	35.86	
k, delay calibration	0.50	0.50	0.50	0.11	0.50	0.11	0.11	
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	0.97	3.56	3.56	1.19	0.43	0.86	3.28	
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	0.54	0.58	0.58	0.81	0.47	0.57	0.81	
d, Delay for Lane Group [s/veh]	20.20	23.20	23.20	32.01	5.13	35.08	39.14	
Lane Group LOS	C	C	C	C	A	D	D	
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	6.03	6.62	6.62	7.57	3.46	3.41	4.27	
50th-Percentile Queue Length [ft/ln]	150.66	165.62	165.62	189.28	86.47	85.27	106.72	
95th-Percentile Queue Length [veh/ln]	10.05	10.85	10.85	12.08	6.23	6.14	7.66	
95th-Percentile Queue Length [ft/ln]	251.31	271.14	271.14	302.09	155.65	153.49	191.43	

Movement, Approach, & Intersection Results

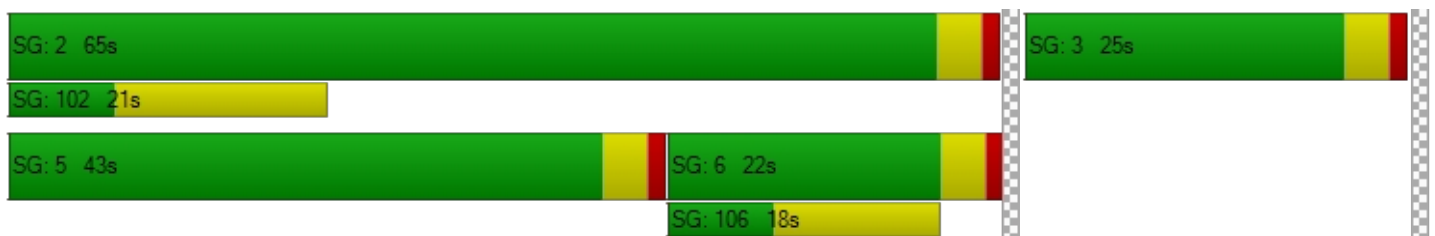
d_M, Delay for Movement [s/veh]	0.00	20.20	23.20	32.01	5.13	0.00	35.08	0.00	39.14	0.00	0.00	0.00
Movement LOS		C	C	C	A		D		D			
d_A, Approach Delay [s/veh]		21.40		15.56			37.26			0.00		
Approach LOS		C		B			D			A		
d_I, Intersection Delay [s/veh]	20.43											
Intersection LOS	C											
Intersection V/C	0.696											

Other Modes

g_Walk,mi, Effective Walk Time [s]		0.0		0.0		11.0		11.0
M_corner, Corner Circulation Area [ft ² /ped]		0.00		0.00		0.00		0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]		0.00		0.00		0.00		0.00
d_p, Pedestrian Delay [s]		0.00		0.00		34.68		34.68
I_p,int, Pedestrian LOS Score for Intersection		0.000		0.000		2.442		2.534
Crosswalk LOS		F		F		B		B
s_b, Saturation Flow Rate of the bicycle lane		2000		2000		2000		2000
c_b, Capacity of the bicycle lane [bicycles/h]		400		1355		467		0
d_b, Bicycle Delay [s]		28.81		4.68		26.46		45.01
I_b,int, Bicycle LOS Score for Intersection		2.368		3.160		1.560		4.132
Bicycle LOS		B		C		A		D

Sequence

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



Intersection Level Of Service Report
Intersection 30: Bristol Street at I-405 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	15.0
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.707

Intersection Setup

Name	Bristol Street			Bristol Street			I-405 NB Ramps			I-405 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	0	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	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	No			No			Yes			Yes		

Volumes

Name	Bristol Street			Bristol Street			I-405 NB Ramps			I-405 NB Ramps		
Base Volume Input [veh/h]	0	2511	200	0	2633	22	0	0	212	400	334	1425
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	2511	200	0	2633	22	0	0	212	400	334	1425
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	628	50	0	658	6	0	0	53	100	84	356
Total Analysis Volume [veh/h]	0	2511	200	0	2633	22	0	0	212	400	334	1425
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	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss	Split	Permiss	Split	Split	Split	Overlap
Signal Group	0	6	0	0	2	0	0	0	8	0	4	4
Auxiliary Signal Groups												2,4
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	0	10	0	0	0	6	0	10	10
Maximum Green [s]	0	30	0	0	30	0	0	0	30	0	30	30
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0
Split [s]	0	33	0	0	33	0	0	0	35	0	22	22
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	18	0	0	14	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No				No		No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0
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	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	C	R	L	C	C	R
C, Cycle Length [s]	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
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	51	51	51	9	18	18	18	73
g / C, Green / Cycle	0.57	0.57	0.57	0.10	0.20	0.20	0.20	0.81
(v / s)_i Volume / Saturation Flow Rate	0.37	0.31	0.29	0.08	0.14	0.13	0.14	0.51
s, saturation flow rate [veh/h]	6792	6792	1856	2813	1781	1812	1702	2813
c, Capacity [veh/h]	3832	3832	1047	286	358	364	342	2277
d1, Uniform Delay [s]	13.57	12.45	11.98	39.31	33.35	33.26	33.60	3.32
k, delay calibration	0.50	0.50	0.50	0.11	0.11	0.11	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.89	0.58	1.75	3.75	2.32	2.16	2.81	1.31
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.66	0.55	0.51	0.74	0.68	0.67	0.72	0.63
d, Delay for Lane Group [s/veh]	14.46	13.03	13.74	43.06	35.67	35.42	36.41	4.63
Lane Group LOS	B	B	B	D	D	D	D	A
Critical Lane Group	No	No	No	Yes	No	No	Yes	Yes
50th-Percentile Queue Length [veh/ln]	8.20	6.33	6.45	2.40	5.08	5.06	5.16	3.11
50th-Percentile Queue Length [ft/ln]	204.89	158.24	161.34	59.90	127.1	126.4	128.9	77.77
95th-Percentile Queue Length [veh/ln]	12.89	10.46	10.62	4.31	8.78	8.75	8.88	5.60
95th-Percentile Queue Length [ft/ln]	322.27	261.39	265.50	107.82	219.5	218.7	222.0	139.9

Movement, Approach, & Intersection Results

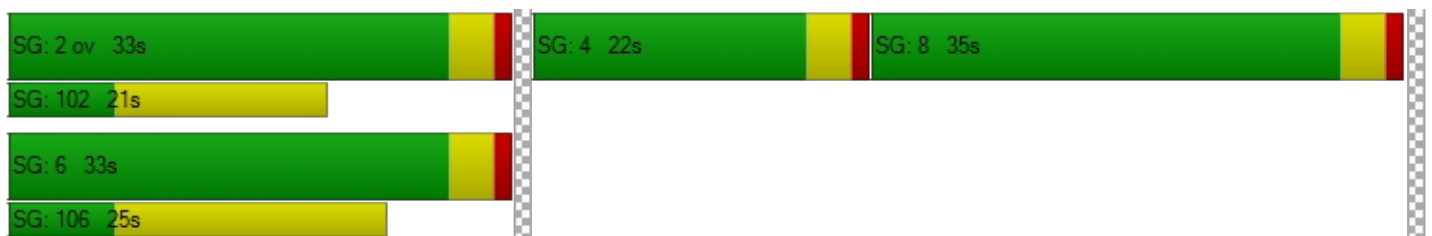
d_M, Delay for Movement [s/veh]	0.00	14.46	0.00	0.00	13.17	13.74	0.00	0.00	43.06	35.67	36.14	4.63
Movement LOS		B			B	B			D	D	D	A
d_A, Approach Delay [s/veh]	14.46			13.17			43.06			15.24		
Approach LOS	B			B			D			B		
d_I, Intersection Delay [s/veh]	15.03											
Intersection LOS	B											
Intersection V/C	0.707											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	34.70	34.70
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.269	2.803
Crosswalk LOS	F	F	B	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	644	644	689	400
d_b, Bicycle Delay [s]	20.69	20.69	19.36	28.82
I_b,int, Bicycle LOS Score for Intersection	2.595	2.436	1.560	3.341
Bicycle LOS	B	B	A	C

Sequence

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



Intersection Level Of Service Report
Intersection 31: Bristol Street at I-405 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	17.2
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.694

Intersection Setup

Name	Bristol Street		Bristol Street		I-405 SB Ramps	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration	↵ ↑ ↑ ↑		↑ ↑ ↵		↵↵↵↵	
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	1	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		Yes	

Volumes

Name	Bristol Street		Bristol Street		I-405 SB Ramps	
Base Volume Input [veh/h]	142	1751	1696	1089	981	361
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	142	1751	1696	1089	981	361
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	36	438	424	272	245	0
Total Analysis Volume [veh/h]	142	1751	1696	1089	981	0
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Unsignalized	Permissive	Unsignalized
Signal Group	1	6	2	0	3	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	6	10	10	0	6	0
Maximum Green [s]	30	30	30	0	30	0
Amber [s]	3.0	3.0	3.0	0.0	3.0	0.0
All red [s]	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	23	45	22	0	45	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	0	7	0	0	0
Pedestrian Clearance [s]	0	0	11	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No	No		No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
Minimum Recall	No	No	No		No	
Maximum Recall	No	No	No		No	
Pedestrian Recall	No	No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L
C, Cycle Length [s]	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	61	48	21
g / C, Green / Cycle	0.10	0.67	0.53	0.24
(v / s)_i Volume / Saturation Flow Rate	0.08	0.26	0.33	0.19
s, saturation flow rate [veh/h]	1781	6792	5094	5188
c, Capacity [veh/h]	178	4577	2696	1231
d1, Uniform Delay [s]	39.62	6.45	14.95	32.30
k, delay calibration	0.11	0.50	0.50	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.86	0.24	1.12	1.22
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.80	0.38	0.63	0.80
d, Delay for Lane Group [s/veh]	47.47	6.70	16.08	33.52
Lane Group LOS	D	A	B	C
Critical Lane Group	Yes	No	Yes	Yes
50th-Percentile Queue Length [veh/ln]	3.42	3.18	7.80	6.67
50th-Percentile Queue Length [ft/ln]	85.44	79.60	195.02	166.73
95th-Percentile Queue Length [veh/ln]	6.15	5.73	12.38	10.90
95th-Percentile Queue Length [ft/ln]	153.80	143.28	309.54	272.62

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	47.47	6.70	16.08	0.00	33.52	0.00
Movement LOS	D	A	B		C	
d_A, Approach Delay [s/veh]	9.75		16.08		33.52	
Approach LOS	A		B		C	
d_I, Intersection Delay [s/veh]	17.20					
Intersection LOS	B					
Intersection V/C	0.694					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	34.68
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.635
Crosswalk LOS	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	911	400	911
d_b, Bicycle Delay [s]	13.35	28.81	13.35
I_b,int, Bicycle LOS Score for Intersection	2.340	2.492	1.560
Bicycle LOS	B	B	A

Sequence

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



Intersection Level Of Service Report
Intersection 37: Bear St at SR-73 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	43.3
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.962

Intersection Setup

Name	Bear St			Bear St			SR-73 NB Ramps			SR-73 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0	0	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		
Crosswalk	No			No			No			Yes		

Volumes

Name	Bear St			Bear St			SR-73 NB Ramps			SR-73 NB Ramps		
Base Volume Input [veh/h]	167	651	0	0	1144	164	0	0	0	448	0	1473
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	167	651	0	0	1144	164	0	0	0	448	0	1473
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	42	163	0	0	286	41	0	0	0	112	0	368
Total Analysis Volume [veh/h]	167	651	0	0	1144	164	0	0	0	448	0	1473
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Permiss	Split
Signal Group	1	6	0	0	2	0	0	0	0	0	7	0	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	6	10	0	0	10	0	0	0	0	0	6	0	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	16	50	0	0	34	0	0	0	0	0	70	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	11	0	0	0	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall	No	No			No						No		
Maximum Recall	No	No			No						No		
Pedestrian Recall	No	No			No						No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C		L	R
C, Cycle Length [s]	120	120	120	120		120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	12	47	31	31		65	65
g / C, Green / Cycle	0.10	0.39	0.26	0.26		0.54	0.54
(v / s)_i Volume / Saturation Flow Rate	0.09	0.18	0.24	0.25		0.25	0.52
s, saturation flow rate [veh/h]	1781	3560	3560	1754		1781	2813
c, Capacity [veh/h]	179	1391	915	450		966	1526
d1, Uniform Delay [s]	53.53	27.23	43.86	44.07		16.77	26.35
k, delay calibration	0.11	0.50	0.50	0.50		0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	18.55	1.13	20.42	35.13		0.35	5.28
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.93	0.47	0.95	0.97		0.46	0.97
d, Delay for Lane Group [s/veh]	72.08	28.36	64.28	79.20		17.12	31.63
Lane Group LOS	E	C	E	E		B	C
Critical Lane Group	Yes	No	No	Yes		No	Yes
50th-Percentile Queue Length [veh/ln]	5.92	7.16	15.23	17.09		7.48	20.21
50th-Percentile Queue Length [ft/ln]	147.92	179.05	380.74	427.35		187.10	505.15
95th-Percentile Queue Length [veh/ln]	9.91	11.55	21.63	23.87		11.97	27.58
95th-Percentile Queue Length [ft/ln]	247.64	288.77	540.75	596.87		299.26	689.44

Movement, Approach, & Intersection Results

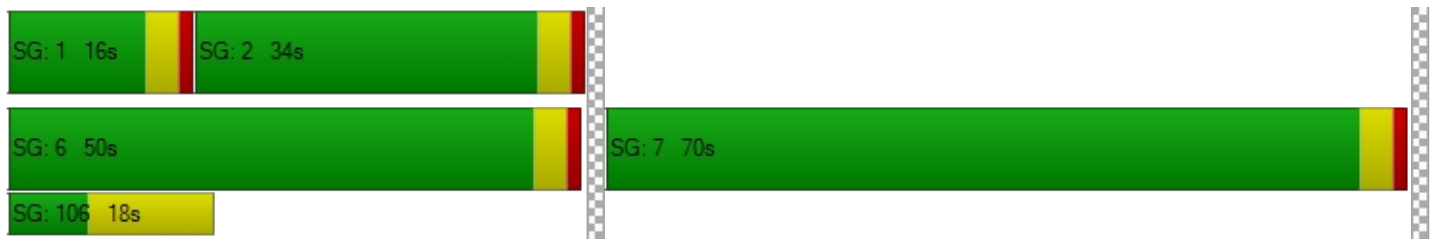
d_M, Delay for Movement [s/veh]	72.08	28.36	0.00	0.00	67.82	79.20	0.00	0.00	0.00	17.12	0.00	31.63
Movement LOS	E	C			E	E				B		C
d_A, Approach Delay [s/veh]	37.29		69.25			0.00			28.24			
Approach LOS	D		E			A			C			
d_I, Intersection Delay [s/veh]	43.32											
Intersection LOS	D											
Intersection V/C	0.962											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	49.49
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	2.613
Crosswalk LOS	F	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	767	500	0	1100
d_b, Bicycle Delay [s]	22.80	33.73	59.98	12.14
I_b,int, Bicycle LOS Score for Intersection	2.234	2.279	4.132	1.560
Bicycle LOS	B	B	D	A

Sequence

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



Intersection Level Of Service Report
Intersection 38: Bear St at SR-73 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	20.5
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.622

Intersection Setup

Name	Bear St			Bear St			SR-73 SB Ramps			SR-73 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↑↑			←↑↑			←↑↑					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Bear St			Bear St			SR-73 SB Ramps			SR-73 SB Ramps		
Base Volume Input [veh/h]	0	623	188	662	936	0	203	1	177	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	623	188	662	936	0	203	1	177	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	156	47	166	234	0	51	0	44	0	0	0
Total Analysis Volume [veh/h]	0	623	188	662	936	0	203	1	177	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Permiss	Permiss
Signal Group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	6	10	0	0	10	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	18	0	54	72	0	0	18	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	7	0	0	7	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	L	C	L	C	
C, Cycle Length [s]	90	90	90	90	90	90	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	45	45	21	70	12	12	
g / C, Green / Cycle	0.50	0.50	0.23	0.78	0.14	0.14	
(v / s)_i Volume / Saturation Flow Rate	0.22	0.23	0.19	0.26	0.11	0.11	
s, saturation flow rate [veh/h]	1870	1729	3459	3560	1781	1593	
c, Capacity [veh/h]	940	869	790	2761	242	216	
d1, Uniform Delay [s]	14.23	14.56	33.15	3.08	37.89	37.92	
k, delay calibration	0.50	0.50	0.11	0.50	0.11	0.11	
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	1.45	1.80	2.47	0.33	7.16	8.12	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	0.43	0.47	0.84	0.34	0.83	0.83	
d, Delay for Lane Group [s/veh]	15.67	16.36	35.62	3.42	45.05	46.04	
Lane Group LOS	B	B	D	A	D	D	
Critical Lane Group	No	Yes	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	5.32	5.49	6.99	1.86	4.72	4.30	
50th-Percentile Queue Length [ft/ln]	132.99	137.29	174.75	46.49	117.93	107.44	
95th-Percentile Queue Length [veh/ln]	9.10	9.33	11.33	3.35	8.28	7.70	
95th-Percentile Queue Length [ft/ln]	227.56	233.37	283.15	83.69	206.98	192.44	

Movement, Approach, & Intersection Results

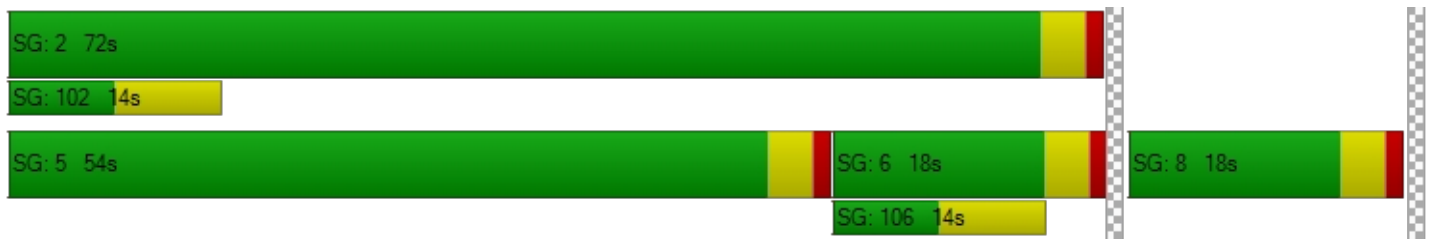
d_M, Delay for Movement [s/veh]	0.00	15.91	16.36	35.62	3.42	0.00	45.11	46.04	46.04	0.00	0.00	0.00
Movement LOS		B	B	D	A		D	D	D			
d_A, Approach Delay [s/veh]		16.02		16.76			45.52			0.00		
Approach LOS		B		B			D			A		
d_I, Intersection Delay [s/veh]	20.47											
Intersection LOS	C											
Intersection V/C	0.622											

Other Modes

g_Walk,mi, Effective Walk Time [s]		0.0		0.0		11.0		11.0
M_corner, Corner Circulation Area [ft ² /ped]		0.00		0.00		0.00		0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]		0.00		0.00		0.00		0.00
d_p, Pedestrian Delay [s]		0.00		0.00		34.68		34.68
I_p,int, Pedestrian LOS Score for Intersection		0.000		0.000		2.064		2.129
Crosswalk LOS		F		F		B		B
s_b, Saturation Flow Rate of the bicycle lane		2000		2000		2000		2000
c_b, Capacity of the bicycle lane [bicycles/h]		311		1511		311		0
d_b, Bicycle Delay [s]		32.10		2.69		32.10		45.01
I_b,int, Bicycle LOS Score for Intersection		2.229		2.878		2.188		4.132
Bicycle LOS		B		C		B		D

Sequence

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



APPENDIX E-VII

**YEAR 2032 CUMULATIVE
TRAFFIC CONDITIONS**

Intersection Level Of Service Report
Intersection 12: SR-55 SB Ramps at MacArthur Blvd

Control Type:	Signalized	Delay (sec / veh):	14.7
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.785

Intersection Setup

Name	SR-55 SB Ramp			MacArthur Blvd			MacArthur Blvd					
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration				T T T T			T T T T			T T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	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	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		
Crosswalk	No			Yes			No			No		

Volumes

Name				SR-55 SB Ramp			MacArthur Blvd			MacArthur Blvd		
Base Volume Input [veh/h]	0	0	0	1074	0	988	0	1675	1167	0	1436	164
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	1074	0	988	0	1675	1167	0	1436	164
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	269	0	247	0	419	292	0	359	41
Total Analysis Volume [veh/h]	0	0	0	1074	0	988	0	1675	1167	0	1436	164
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	105
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	0	0	0	5	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	6	0	0	0	10	0	0	10	0
Maximum Green [s]	0	0	0	30	0	0	0	30	0	0	30	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	54	0	0	0	51	0	0	51	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	14	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	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	R	C	C
C, Cycle Length [s]		60	60	60	60
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		26	26	26	26
g / C, Green / Cycle		0.43	0.43	0.43	0.43
(v / s)_i Volume / Saturation Flow Rate		0.31	0.35	0.33	0.28
s, saturation flow rate [veh/h]		3459	2813	5094	5094
c, Capacity [veh/h]		1503	1223	2198	2198
d1, Uniform Delay [s]		13.85	14.72	14.39	13.45
k, delay calibration		0.11	0.11	0.11	0.11
l, Upstream Filtering Factor		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		0.64	1.32	0.56	0.33
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.71	0.81	0.76	0.65
d, Delay for Lane Group [s/veh]		14.49	16.03	14.96	13.78
Lane Group LOS		B	B	B	B
Critical Lane Group		No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]		5.18	5.16	5.55	4.42
50th-Percentile Queue Length [ft/ln]		129.53	128.93	138.72	110.55
95th-Percentile Queue Length [veh/ln]		8.91	8.88	9.41	7.87
95th-Percentile Queue Length [ft/ln]		222.85	222.04	235.29	196.76

Movement, Approach, & Intersection Results

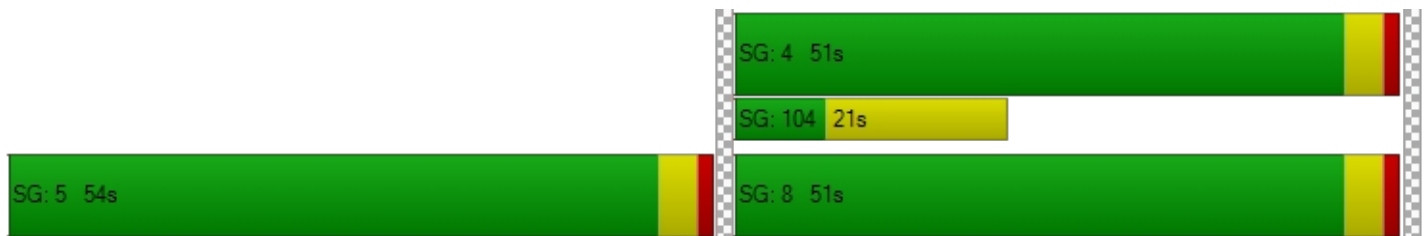
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	14.49	0.00	16.03	0.00	14.96	0.00	0.00	13.78	0.00
Movement LOS				B		B		B			B	
d_A, Approach Delay [s/veh]	0.00			15.23			14.96			13.78		
Approach LOS	A			B			B			B		
d_I, Intersection Delay [s/veh]	14.74											
Intersection LOS	B											
Intersection V/C	0.785											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	19.82	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	0.000	2.679	0.000	0.000
Crosswalk LOS	F	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	1678	1577	1577
d_b, Bicycle Delay [s]	29.80	0.77	1.33	1.33
I_b,int, Bicycle LOS Score for Intersection	4.132	1.560	2.481	2.349
Bicycle LOS	D	A	B	B

Sequence

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



Intersection Level Of Service Report
Intersection 13: SR-55 NB Ramps at MacArthur Blvd

Control Type:	Signalized	Delay (sec / veh):	20.3
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.933

Intersection Setup

Name	SR-55 NB Ramp						MacArthur Blvd			MacArthur Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	⇐⇐⇐						⇐⇐⇐			⇐⇐⇐		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	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		
Crosswalk	No			No			No			Yes		

Volumes

Name	SR-55 NB Ramp						MacArthur Blvd			MacArthur Blvd		
Base Volume Input [veh/h]	1015	0	1094	0	0	0	0	1824	927	0	590	274
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	1015	0	1094	0	0	0	0	1824	927	0	590	274
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	254	0	274	0	0	0	0	456	232	0	148	69
Total Analysis Volume [veh/h]	1015	0	1094	0	0	0	0	1824	927	0	590	274
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	1	0	0	0	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	6	0	0	0	0	0	0	10	0	0	10	0
Maximum Green [s]	30	0	0	0	0	0	0	30	0	0	30	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	46	0	0	0	0	0	0	44	0	0	44	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	7	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	21	0	0	0	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No							No			No	
Maximum Recall	No							No			No	
Pedestrian Recall	No							No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L		C	C
C, Cycle Length [s]	59		59	59
L, Total Lost Time per Cycle [s]	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00		2.00	2.00
g_i, Effective Green Time [s]	21		30	30
g / C, Green / Cycle	0.35		0.51	0.51
(v / s)_i Volume / Saturation Flow Rate	0.29		0.51	0.12
s, saturation flow rate [veh/h]	3459		3560	5094
c, Capacity [veh/h]	1222		1817	2600
d1, Uniform Delay [s]	17.39		14.39	7.97
k, delay calibration	0.11		0.11	0.11
l, Upstream Filtering Factor	1.00		1.00	1.00
d2, Incremental Delay [s]	1.53		10.68	0.04
d3, Initial Queue Delay [s]	0.00		0.00	0.00
Rp, platoon ratio	1.00		1.00	1.00
PF, progression factor	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.83		1.00	0.23
d, Delay for Lane Group [s/veh]	18.91		25.06	8.01
Lane Group LOS	B		F	A
Critical Lane Group	Yes		Yes	No
50th-Percentile Queue Length [veh/ln]	5.77		12.15	1.14
50th-Percentile Queue Length [ft/ln]	144.24		303.76	28.59
95th-Percentile Queue Length [veh/ln]	9.71		17.91	2.06
95th-Percentile Queue Length [ft/ln]	242.72		447.86	51.46

Movement, Approach, & Intersection Results

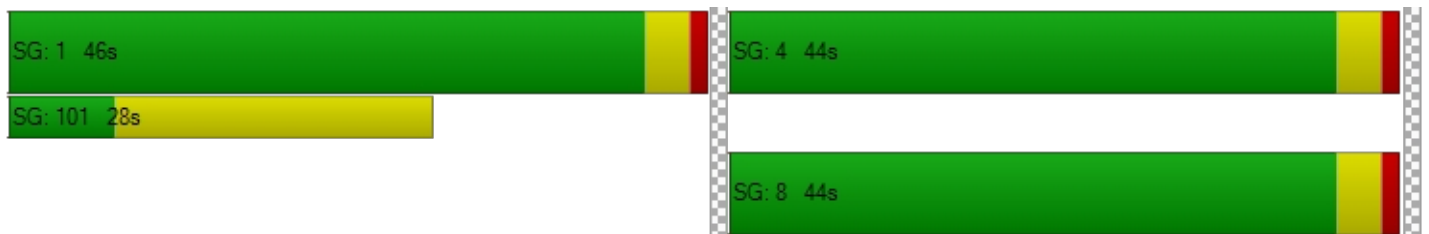
d_M, Delay for Movement [s/veh]	18.91	0.00	0.00	0.00	0.00	0.00	0.00	25.06	0.00	0.00	8.01	0.00
Movement LOS	B							F			A	
d_A, Approach Delay [s/veh]	18.91			0.00			25.06			8.01		
Approach LOS	B			A			C			A		
d_I, Intersection Delay [s/veh]	20.31											
Intersection LOS	C											
Intersection V/C	0.933											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	19.39
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	2.821
Crosswalk LOS	F	F	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1430	0	1362	1362
d_b, Bicycle Delay [s]	2.38	29.36	2.98	2.98
I_b,int, Bicycle LOS Score for Intersection	1.560	4.132	3.064	1.884
Bicycle LOS	A	D	C	A

Sequence





Ring 1	1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 25: I-405 NB Off-Ramp at South Coast Drive

Control Type:	Signalized	Delay (sec / veh):	21.6
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.418

Intersection Setup

Name	I-405 NB Off-Ramp			The Cape Dwy			South Coast Drive			South Coast 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	1	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	I-405 NB Off-Ramp			The Cape Dwy			South Coast Drive			South Coast Drive		
Base Volume Input [veh/h]	387	7	101	53	0	79	21	245	0	0	127	19
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	387	7	101	53	0	79	21	245	0	0	127	19
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	97	2	25	13	0	20	5	61	0	0	32	5
Total Analysis Volume [veh/h]	387	7	101	53	0	79	21	245	0	0	127	19
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	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Permiss	Split	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	7	0	0	5	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	10	0	6	0	0	6	10	0	0	10	0
Maximum Green [s]	0	30	0	30	0	0	30	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	58	0	58	0	0	10	32	0	0	22	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	14	0	0	0	0	0	11	0	0	11	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No		No				No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	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	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	R	L	C	C	C
C, Cycle Length [s]	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
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	31	31	31	31	31	2	51	45	45
g / C, Green / Cycle	0.34	0.34	0.34	0.34	0.34	0.03	0.57	0.50	0.50
(v / s)_i Volume / Saturation Flow Rate	0.29	0.03	0.03	0.04	0.05	0.01	0.07	0.04	0.04
s, saturation flow rate [veh/h]	1320	1621	1589	1285	1589	1781	3560	1870	1788
c, Capacity [veh/h]	502	551	540	462	540	49	2034	934	893
d1, Uniform Delay [s]	29.44	20.30	20.30	23.18	20.65	43.07	8.88	11.74	11.76
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.54	0.08	0.08	0.11	0.12	5.80	0.12	0.16	0.18
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.77	0.10	0.10	0.11	0.15	0.43	0.12	0.08	0.08
d, Delay for Lane Group [s/veh]	31.98	20.38	20.38	23.29	20.77	48.87	9.00	11.90	11.94
Lane Group LOS	C	C	C	C	C	D	A	B	B
Critical Lane Group	Yes	No	No	No	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	8.09	0.78	0.77	0.83	1.15	0.53	1.06	0.77	0.78
50th-Percentile Queue Length [ft/ln]	202.26	19.53	19.16	20.66	28.80	13.36	26.57	19.32	19.41
95th-Percentile Queue Length [veh/ln]	12.75	1.41	1.38	1.49	2.07	0.96	1.91	1.39	1.40
95th-Percentile Queue Length [ft/ln]	318.87	35.16	34.49	37.19	51.84	24.05	47.83	34.78	34.94

Movement, Approach, & Intersection Results

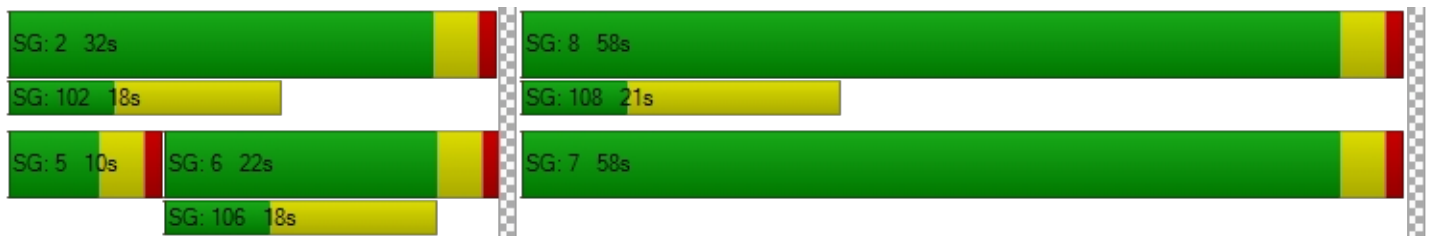
d_M, Delay for Movement [s/veh]	31.98	20.38	20.38	23.29	0.00	20.77	48.87	9.00	0.00	0.00	11.92	11.94
Movement LOS	C	C	C	C		C	D	A			B	B
d_A, Approach Delay [s/veh]	29.45			21.78			12.15			11.92		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]	21.58											
Intersection LOS	C											
Intersection V/C	0.418											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.68	34.68	0.00	34.68
I_p,int, Pedestrian LOS Score for Intersection	2.251	1.998	0.000	2.339
Crosswalk LOS	B	A	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1200	1200	622	400
d_b, Bicycle Delay [s]	7.20	7.20	21.36	28.80
I_b,int, Bicycle LOS Score for Intersection	2.376	1.560	1.779	1.680
Bicycle LOS	B	A	A	A

Sequence

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



Intersection Level Of Service Report
Intersection 28: Fairview Road at I-405 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	25.7
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.780

Intersection Setup

Name	Fairview Road			Fairview Road			I-405 NB Ramps			I-405 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	1	0	0	0	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		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Fairview Road			Fairview Road			I-405 NB Ramps			I-405 NB Ramps		
Base Volume Input [veh/h]	202	988	0	0	2707	327	0	0	0	675	0	865
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	202	988	0	0	2707	327	0	0	0	675	0	865
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	51	247	0	0	677	82	0	0	0	169	0	216
Total Analysis Volume [veh/h]	202	988	0	0	2707	327	0	0	0	675	0	865
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Permiss	Split
Signal Group	1	6	0	0	2	0	0	0	0	0	7	0	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	6	10	0	0	10	0	0	0	0	0	6	0	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	24	42	0	0	18	0	0	0	0	0	58	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	14	0	0	7	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall	No	No			No						No		
Maximum Recall	No	No			No						No		
Pedestrian Recall	No	No			No						No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	R		L	R
C, Cycle Length [s]	100	100	100	100		100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	13	56	39	39		36	36
g / C, Green / Cycle	0.13	0.56	0.39	0.39		0.36	0.36
(v / s)_i Volume / Saturation Flow Rate	0.11	0.19	0.27	0.21		0.20	0.31
s, saturation flow rate [veh/h]	1781	5094	10188	1589		3459	2813
c, Capacity [veh/h]	237	2848	3931	613		1248	1016
d1, Uniform Delay [s]	42.38	12.06	25.69	23.75		25.37	29.48
k, delay calibration	0.11	0.50	0.50	0.50		0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	8.36	0.34	1.01	3.30		0.37	2.13
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.85	0.35	0.69	0.53		0.54	0.85
d, Delay for Lane Group [s/veh]	50.74	12.40	26.69	27.05		25.74	31.62
Lane Group LOS	D	B	C	C		C	C
Critical Lane Group	Yes	No	Yes	No		No	Yes
50th-Percentile Queue Length [veh/ln]	5.38	3.91	8.89	6.40		6.30	9.59
50th-Percentile Queue Length [ft/ln]	134.53	97.87	222.27	159.92		157.45	239.64
95th-Percentile Queue Length [veh/ln]	9.19	7.05	13.78	10.54		10.41	14.66
95th-Percentile Queue Length [ft/ln]	229.64	176.17	344.52	263.62		260.34	366.58

Movement, Approach, & Intersection Results

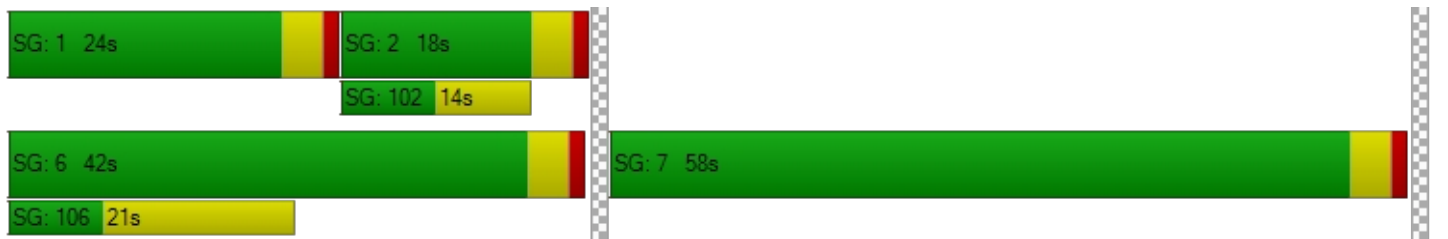
d_M, Delay for Movement [s/veh]	50.74	12.40	0.00	0.00	26.69	27.05	0.00	0.00	0.00	25.74	0.00	31.62
Movement LOS	D	B			C	C				C		C
d_A, Approach Delay [s/veh]	18.91				26.73		0.00		29.04			
Approach LOS	B				C		A		C			
d_I, Intersection Delay [s/veh]	25.73											
Intersection LOS	C											
Intersection V/C	0.780											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		11.0		11.0	
M_corner, Corner Circulation Area [ft ² /ped]	0.00		0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00		0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		0.00		39.61		39.61	
I_p,int, Pedestrian LOS Score for Intersection	0.000		0.000		1.944		2.605	
Crosswalk LOS	F		F		A		B	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	760		280		0		1080	
d_b, Bicycle Delay [s]	19.22		36.98		50.00		10.58	
I_b,int, Bicycle LOS Score for Intersection	2.214		2.394		4.132		1.560	
Bicycle LOS	B		B		D		A	

Sequence

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



Intersection Level Of Service Report
Intersection 29: Fairview Road at I-405 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	32.9
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.941

Intersection Setup

Name	Fairview Rd			Fairview Rd			I-405 SB Ramps			I-405 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↑↑↑↓			↑↑↑↑			↑↑↓					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	1	0	0	1	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Fairview Rd			Fairview Rd			I-405 SB Ramps			I-405 SB Ramps		
Base Volume Input [veh/h]	0	996	1242	1699	1825	0	215	0	361	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	996	1242	1699	1825	0	215	0	361	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	249	311	425	456	0	54	0	90	0	0	0
Total Analysis Volume [veh/h]	0	996	1242	1699	1825	0	215	0	361	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Permiss
Signal Group	0	6	0	5	2	0	3	0	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	10	0	6	10	0	6	0	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	30	0	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Split [s]	0	53	0	46	99	0	21	0	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	11	0	0	14	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No		No					
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No		No					
Maximum Recall		No		No	No		No					
Pedestrian Recall		No		No	No		No					
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	R	L	C	L	R	
C, Cycle Length [s]	120	120	120	120	120	120	120	
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]	50	50	50	41	95	17	17	
g / C, Green / Cycle	0.41	0.41	0.41	0.35	0.79	0.14	0.14	
(v / s)_i Volume / Saturation Flow Rate	0.20	0.39	0.39	0.33	0.36	0.06	0.13	
s, saturation flow rate [veh/h]	5094	1589	1589	5188	5094	3459	2813	
c, Capacity [veh/h]	2104	657	657	1790	4032	490	399	
d1, Uniform Delay [s]	25.69	33.91	33.91	38.25	4.06	47.11	50.68	
k, delay calibration	0.50	0.50	0.50	0.11	0.50	0.11	0.11	
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	0.77	24.08	24.08	3.50	0.37	0.62	7.85	
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	0.47	0.95	0.95	0.95	0.45	0.44	0.91	
d, Delay for Lane Group [s/veh]	26.45	57.99	57.99	41.76	4.43	47.73	58.53	
Lane Group LOS	C	E	E	D	A	D	E	
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	7.03	21.39	21.39	16.53	3.99	2.99	5.76	
50th-Percentile Queue Length [ft/ln]	175.80	534.73	534.73	413.25	99.69	74.76	144.02	
95th-Percentile Queue Length [veh/ln]	11.38	28.97	28.97	23.20	7.18	5.38	9.70	
95th-Percentile Queue Length [ft/ln]	284.53	724.35	724.35	579.94	179.45	134.57	242.43	

Movement, Approach, & Intersection Results

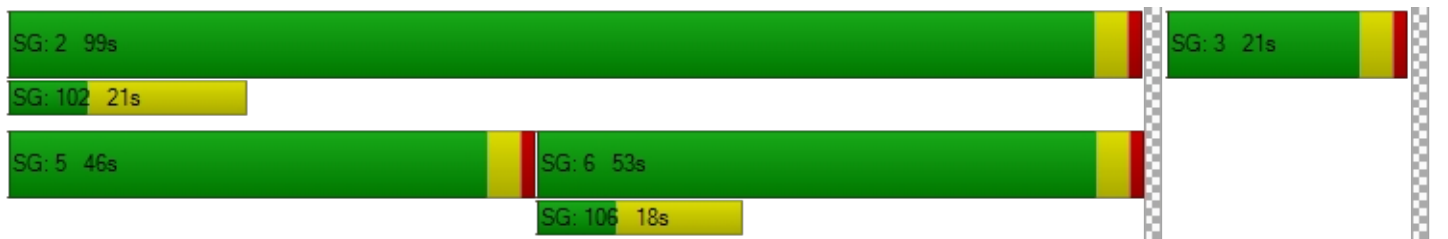
d_M, Delay for Movement [s/veh]	0.00	26.45	57.99	41.76	4.43	0.00	47.73	0.00	58.53	0.00	0.00	0.00
Movement LOS		C	E	D	A		D		E			
d_A, Approach Delay [s/veh]	43.96			22.43			54.50			0.00		
Approach LOS	D			C			D			A		
d_I, Intersection Delay [s/veh]	32.94											
Intersection LOS	C											
Intersection V/C	0.941											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0			0.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	0.00			0.00			49.50			49.50		
I_p,int, Pedestrian LOS Score for Intersection	0.000			0.000			2.426			2.910		
Crosswalk LOS	F			F			B			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	817			1584			283			0		
d_b, Bicycle Delay [s]	21.00			2.60			44.20			59.99		
I_b,int, Bicycle LOS Score for Intersection	2.483			3.498			1.560			4.132		
Bicycle LOS	B			C			A			D		

Sequence

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



Intersection Level Of Service Report
Intersection 30: Bristol Street at I-405 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	6.4
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.387

Intersection Setup

Name	Bristol Street			Bristol Street			I-405 NB Ramps			I-405 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	0	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	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	No			No			Yes			Yes		

Volumes

Name	Bristol Street			Bristol Street			I-405 NB Ramps			I-405 NB Ramps		
Base Volume Input [veh/h]	0	1717	212	0	2353	9	0	0	37	137	81	772
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1717	212	0	2353	9	0	0	37	137	81	772
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	429	53	0	588	2	0	0	9	34	20	193
Total Analysis Volume [veh/h]	0	1717	212	0	2353	9	0	0	37	137	81	772
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	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss	Split	Permiss	Split	Split	Split	Overlap
Signal Group	0	6	0	0	2	0	0	0	8	0	4	4
Auxiliary Signal Groups												2,4
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	0	10	0	0	0	6	0	10	10
Maximum Green [s]	0	30	0	0	30	0	0	0	30	0	30	30
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0
Split [s]	0	52	0	0	52	0	0	0	10	0	28	28
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	18	0	0	14	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No				No		No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0
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	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	C	R	L	C	C	R
C, Cycle Length [s]	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
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	64	64	64	4	10	10	10	78
g / C, Green / Cycle	0.71	0.71	0.71	0.04	0.11	0.11	0.11	0.87
(v / s)_i Volume / Saturation Flow Rate	0.25	0.28	0.25	0.01	0.04	0.04	0.04	0.27
s, saturation flow rate [veh/h]	6792	6792	1864	2813	1781	1788	1702	2813
c, Capacity [veh/h]	4841	4841	1328	116	201	201	192	2447
d1, Uniform Delay [s]	4.97	5.14	4.97	41.93	36.93	36.93	37.08	1.05
k, delay calibration	0.50	0.50	0.50	0.11	0.11	0.11	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.20	0.24	0.75	1.56	1.07	1.06	1.30	0.34
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.35	0.39	0.36	0.32	0.36	0.36	0.39	0.32
d, Delay for Lane Group [s/veh]	5.17	5.38	5.72	43.49	38.00	37.99	38.38	1.39
Lane Group LOS	A	A	A	D	D	D	D	A
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.52	2.87	2.97	0.42	1.50	1.50	1.58	0.31
50th-Percentile Queue Length [ft/ln]	62.99	71.80	74.37	10.52	37.41	37.56	39.60	7.63
95th-Percentile Queue Length [veh/ln]	4.54	5.17	5.35	0.76	2.69	2.70	2.85	0.55
95th-Percentile Queue Length [ft/ln]	113.38	129.25	133.87	18.93	67.34	67.60	71.29	13.73

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	5.17	0.00	0.00	5.45	5.72	0.00	0.00	43.49	38.00	38.35	1.39
Movement LOS		A			A	A			D	D	D	A
d_A, Approach Delay [s/veh]	5.17			5.45			43.49			9.48		
Approach LOS	A			A			D			A		
d_I, Intersection Delay [s/veh]	6.41											
Intersection LOS	A											
Intersection V/C	0.387											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0			0.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	0.00			0.00			34.68			34.68		
I_p,int, Pedestrian LOS Score for Intersection	0.000			0.000			2.162			2.613		
Crosswalk LOS	F			F			B			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	1066			1066			133			533		
d_b, Bicycle Delay [s]	9.81			9.81			39.21			24.21		
I_b,int, Bicycle LOS Score for Intersection	2.268			2.339			1.560			2.376		
Bicycle LOS	B			B			A			B		

Sequence

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



Intersection Level Of Service Report
Intersection 31: Bristol Street at I-405 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	14.8
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.494

Intersection Setup

Name	Bristol Street		Bristol Street		I-405 SB Ramps	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration	↵ ↑↑↑		↑↑↑↵		↵↵↵↵	
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	1	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		Yes	

Volumes

Name	Bristol Street		Bristol Street		I-405 SB Ramps	
Base Volume Input [veh/h]	134	1251	1130	1021	680	582
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	134	1251	1130	1021	680	582
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	34	313	283	255	170	0
Total Analysis Volume [veh/h]	134	1251	1130	1021	680	0
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Unsignalized	Permissive	Unsignalized
Signal Group	1	6	2	0	3	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	6	10	10	0	6	0
Maximum Green [s]	30	30	30	0	30	0
Amber [s]	3.0	3.0	3.0	0.0	3.0	0.0
All red [s]	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	38	60	22	0	30	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	0	7	0	0	0
Pedestrian Clearance [s]	0	0	11	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No	No		No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
Minimum Recall	No	No	No		No	
Maximum Recall	No	No	No		No	
Pedestrian Recall	No	No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L
C, Cycle Length [s]	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	67	54	15
g / C, Green / Cycle	0.10	0.74	0.60	0.17
(v / s)_i Volume / Saturation Flow Rate	0.08	0.18	0.22	0.13
s, saturation flow rate [veh/h]	1781	6792	5094	5188
c, Capacity [veh/h]	171	5041	3065	877
d1, Uniform Delay [s]	39.78	3.67	9.18	35.78
k, delay calibration	0.11	0.50	0.50	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.62	0.12	0.34	1.51
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.78	0.25	0.37	0.78
d, Delay for Lane Group [s/veh]	47.40	3.79	9.52	37.29
Lane Group LOS	D	A	A	D
Critical Lane Group	Yes	No	Yes	Yes
50th-Percentile Queue Length [veh/ln]	3.22	1.41	3.52	4.79
50th-Percentile Queue Length [ft/ln]	80.52	35.13	87.90	119.82
95th-Percentile Queue Length [veh/ln]	5.80	2.53	6.33	8.38
95th-Percentile Queue Length [ft/ln]	144.94	63.24	158.22	209.57

Movement, Approach, & Intersection Results

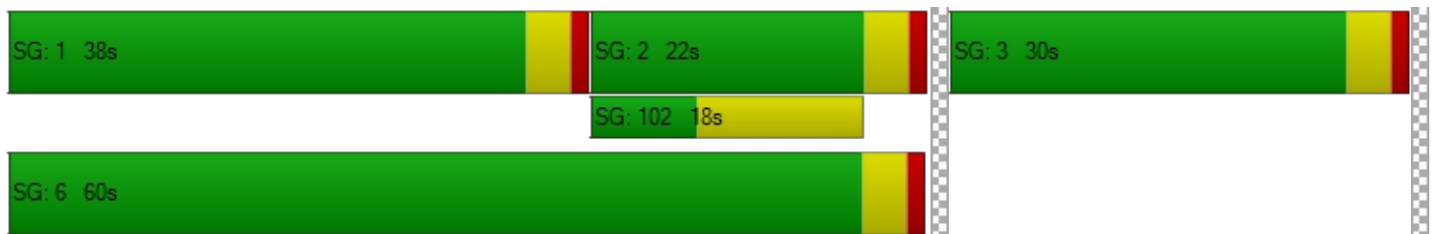
d_M, Delay for Movement [s/veh]	47.40	3.79	9.52	0.00	37.29	0.00
Movement LOS	D	A	A		D	
d_A, Approach Delay [s/veh]	8.01		9.52		37.29	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	14.78					
Intersection LOS	B					
Intersection V/C	0.494					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	34.68
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.585
Crosswalk LOS	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1244	400	578
d_b, Bicycle Delay [s]	6.43	28.81	22.77
I_b,int, Bicycle LOS Score for Intersection	2.131	2.181	1.560
Bicycle LOS	B	B	A

Sequence

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



Intersection Level Of Service Report
Intersection 37: Bear St at SR-73 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	21.5
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.584

Intersection Setup

Name	Bear St			Bear St			SR-73 NB Ramps			SR-73 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	←			→						←		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0	0	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		
Crosswalk	No			No			No			Yes		

Volumes

Name	Bear St			Bear St			SR-73 NB Ramps			SR-73 NB Ramps		
Base Volume Input [veh/h]	180	374	0	0	1033	107	0	0	0	195	0	539
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	180	374	0	0	1033	107	0	0	0	195	0	539
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	45	94	0	0	258	27	0	0	0	49	0	135
Total Analysis Volume [veh/h]	180	374	0	0	1033	107	0	0	0	195	0	539
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Permiss	Split
Signal Group	1	6	0	0	2	0	0	0	0	0	7	0	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	6	10	0	0	10	0	0	0	0	0	6	0	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	16	30	0	0	14	0	0	0	0	0	60	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	11	0	0	0	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall	No	No			No						No		
Maximum Recall	No	No			No						No		
Pedestrian Recall	No	No			No						No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C		L	R
C, Cycle Length [s]	90	90	90	90		90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	11	61	47	47		21	21
g / C, Green / Cycle	0.12	0.68	0.52	0.52		0.23	0.23
(v / s)_i Volume / Saturation Flow Rate	0.10	0.11	0.21	0.21		0.11	0.19
s, saturation flow rate [veh/h]	1781	3560	3560	1781		1781	2813
c, Capacity [veh/h]	215	2430	1841	921		407	644
d1, Uniform Delay [s]	38.71	5.07	13.35	13.34		30.08	33.13
k, delay calibration	0.11	0.50	0.50	0.50		0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	8.29	0.13	0.69	1.36		0.87	2.99
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.84	0.15	0.41	0.41		0.48	0.84
d, Delay for Lane Group [s/veh]	46.99	5.21	14.03	14.71		30.95	36.12
Lane Group LOS	D	A	B	B		C	D
Critical Lane Group	Yes	No	Yes	No		No	Yes
50th-Percentile Queue Length [veh/ln]	4.32	1.10	4.61	4.78		3.69	5.74
50th-Percentile Queue Length [ft/ln]	108.04	27.54	115.26	119.59		92.29	143.42
95th-Percentile Queue Length [veh/ln]	7.73	1.98	8.13	8.37		6.64	9.67
95th-Percentile Queue Length [ft/ln]	193.27	49.57	203.29	209.26		166.12	241.63

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	46.99	5.21	0.00	0.00	14.21	14.71	0.00	0.00	0.00	30.95	0.00	36.12
Movement LOS	D	A			B	B				C		D
d_A, Approach Delay [s/veh]	18.79				14.26		0.00		34.75			
Approach LOS	B				B		A		C			
d_I, Intersection Delay [s/veh]	21.49											
Intersection LOS	C											
Intersection V/C	0.584											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		0.0		11.0	
M_corner, Corner Circulation Area [ft ² /ped]	0.00		0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00		0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		0.00		0.00		34.68	
I_p,int, Pedestrian LOS Score for Intersection	0.000		0.000		0.000		2.310	
Crosswalk LOS	F		F		F		B	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	578		222		0		1244	
d_b, Bicycle Delay [s]	22.77		35.57		45.01		6.43	
I_b,int, Bicycle LOS Score for Intersection	2.017		2.187		4.132		1.560	
Bicycle LOS	B		B		D		A	

Sequence

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



Intersection Level Of Service Report
Intersection 38: Bear St at SR-73 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	22.3
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.687

Intersection Setup

Name	Bear St			Bear St			SR-73 SB Ramps			SR-73 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↑↑			↑↑↑			↑↑					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Bear St			Bear St			SR-73 SB Ramps			SR-73 SB Ramps		
Base Volume Input [veh/h]	0	410	425	635	671	0	135	1	229	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	410	425	635	671	0	135	1	229	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	103	106	159	168	0	34	0	57	0	0	0
Total Analysis Volume [veh/h]	0	410	425	635	671	0	135	1	229	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Permiss	Permiss
Signal Group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	6	10	0	0	10	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	18	0	38	56	0	0	34	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	7	0	0	7	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	L	C	L	C	
C, Cycle Length [s]	90	90	90	90	90	90	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	43	43	20	67	15	15	
g / C, Green / Cycle	0.48	0.48	0.22	0.74	0.17	0.17	
(v / s)_i Volume / Saturation Flow Rate	0.22	0.27	0.18	0.19	0.08	0.14	
s, saturation flow rate [veh/h]	1870	1589	3459	3560	1781	1591	
c, Capacity [veh/h]	891	757	756	2632	306	274	
d1, Uniform Delay [s]	15.82	16.86	33.68	3.77	33.40	36.09	
k, delay calibration	0.50	0.50	0.11	0.50	0.11	0.11	
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	1.71	3.00	2.61	0.23	1.00	6.86	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	0.46	0.56	0.84	0.25	0.44	0.84	
d, Delay for Lane Group [s/veh]	17.53	19.85	36.30	4.01	34.40	42.95	
Lane Group LOS	B	B	D	A	C	D	
Critical Lane Group	No	Yes	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	5.78	6.55	6.75	1.59	2.69	5.31	
50th-Percentile Queue Length [ft/ln]	144.54	163.73	168.87	39.68	67.22	132.87	
95th-Percentile Queue Length [veh/ln]	9.72	10.75	11.02	2.86	4.84	9.10	
95th-Percentile Queue Length [ft/ln]	243.12	268.66	275.43	71.43	121.00	227.38	

Movement, Approach, & Intersection Results

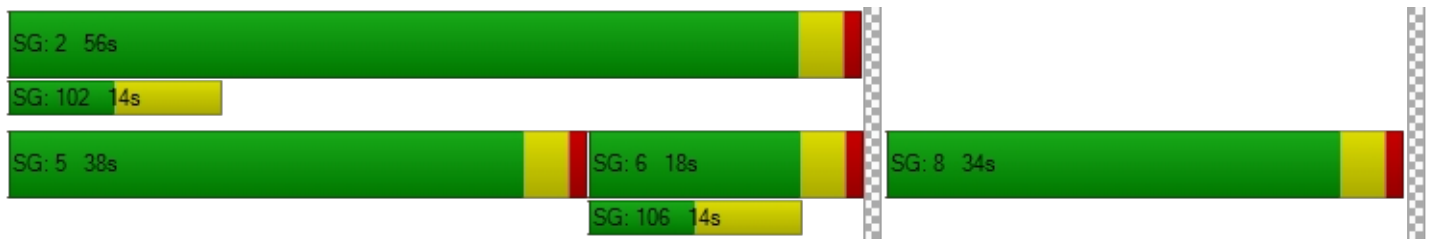
d_M, Delay for Movement [s/veh]	0.00	17.53	19.85	36.30	4.01	0.00	34.40	42.95	42.95	0.00	0.00	0.00
Movement LOS		B	B	D	A		C	D	D			
d_A, Approach Delay [s/veh]		18.71		19.71			39.79			0.00		
Approach LOS		B		B			D			A		
d_I, Intersection Delay [s/veh]	22.30											
Intersection LOS	C											
Intersection V/C	0.687											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	34.68	34.68
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.058	2.232
Crosswalk LOS	F	F	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	311	1155	666	0
d_b, Bicycle Delay [s]	32.10	8.03	20.01	45.01
I_b,int, Bicycle LOS Score for Intersection	2.248	2.637	2.162	4.132
Bicycle LOS	B	B	B	D

Sequence

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



Intersection Level Of Service Report
Intersection 12: SR-55 SB Ramps at MacArthur Blvd

Control Type:	Signalized	Delay (sec / veh):	11.8
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.749

Intersection Setup

Name	SR-55 SB Ramp			MacArthur Blvd			MacArthur Blvd					
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration				T T T T			T T T T			T T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	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	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		
Crosswalk	No			Yes			No			No		

Volumes

Name				SR-55 SB Ramp			MacArthur Blvd			MacArthur Blvd		
Base Volume Input [veh/h]	0	0	0	324	0	816	0	1349	1169	0	1756	679
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	324	0	816	0	1349	1169	0	1756	679
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	81	0	204	0	337	292	0	439	170
Total Analysis Volume [veh/h]	0	0	0	324	0	816	0	1349	1169	0	1756	679
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	0	0	0	5	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	6	0	0	0	10	0	0	10	0
Maximum Green [s]	0	0	0	30	0	0	0	30	0	0	30	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	55	0	0	0	65	0	0	65	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	14	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	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	R	C	C
C, Cycle Length [s]		53	53	53	53
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		19	19	25	25
g / C, Green / Cycle		0.37	0.37	0.48	0.48
(v / s)_i Volume / Saturation Flow Rate		0.09	0.29	0.26	0.34
s, saturation flow rate [veh/h]		3459	2813	5094	5094
c, Capacity [veh/h]		1268	1031	2455	2455
d1, Uniform Delay [s]		11.69	14.92	9.64	10.82
k, delay calibration		0.11	0.11	0.11	0.11
l, Upstream Filtering Factor		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		0.11	1.41	0.19	0.40
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.26	0.79	0.55	0.72
d, Delay for Lane Group [s/veh]		11.80	16.33	9.84	11.22
Lane Group LOS		B	B	A	B
Critical Lane Group		No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]		1.16	3.87	2.91	4.28
50th-Percentile Queue Length [ft/ln]		29.00	96.80	72.82	107.01
95th-Percentile Queue Length [veh/ln]		2.09	6.97	5.24	7.67
95th-Percentile Queue Length [ft/ln]		52.21	174.24	131.08	191.83

Movement, Approach, & Intersection Results

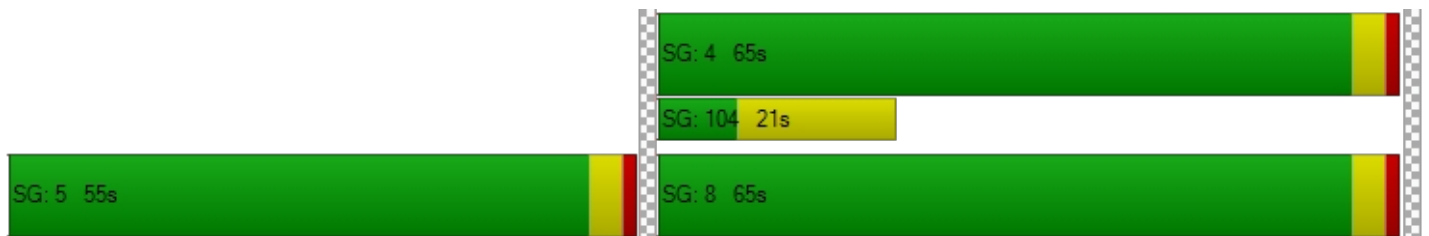
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	11.80	0.00	16.33	0.00	9.84	0.00	0.00	11.22	0.00
Movement LOS				B		B		A			B	
d_A, Approach Delay [s/veh]	0.00			15.04			9.84			11.22		
Approach LOS	A			B			A			B		
d_I, Intersection Delay [s/veh]	11.80											
Intersection LOS	B											
Intersection V/C	0.749											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	16.47	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	0.000	2.492	0.000	0.000
Crosswalk LOS	F	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	1938	2317	2317
d_b, Bicycle Delay [s]	26.32	0.03	0.66	0.66
I_b,int, Bicycle LOS Score for Intersection	4.132	1.560	2.302	2.525
Bicycle LOS	D	A	B	B

Sequence

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



Intersection Level Of Service Report
Intersection 13: SR-55 NB Ramps at MacArthur Blvd

Control Type:	Signalized	Delay (sec / veh):	9.0
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.674

Intersection Setup

Name	SR-55 NB Ramp						MacArthur Blvd			MacArthur Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	⇐⇐⇐						⇐⇐⇐			⇐⇐⇐		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	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		
Crosswalk	No			No			No			Yes		

Volumes

Name	SR-55 NB Ramp						MacArthur Blvd			MacArthur Blvd		
	Base Volume Input [veh/h]	737	0	479	0	0	0	0	812	844	0	1705
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	737	0	479	0	0	0	0	812	844	0	1705	1207
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	184	0	120	0	0	0	0	203	211	0	426	302
Total Analysis Volume [veh/h]	737	0	479	0	0	0	0	812	844	0	1705	1207
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	1	0	0	0	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	6	0	0	0	0	0	0	10	0	0	10	0
Maximum Green [s]	30	0	0	0	0	0	0	30	0	0	30	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	48	0	0	0	0	0	0	72	0	0	72	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	7	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	21	0	0	0	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No							No			No	
Maximum Recall	No							No			No	
Pedestrian Recall	No							No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L		C	C
C, Cycle Length [s]	43		43	43
L, Total Lost Time per Cycle [s]	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00		2.00	2.00
g_i, Effective Green Time [s]	13		22	22
g / C, Green / Cycle	0.29		0.52	0.52
(v / s)_i Volume / Saturation Flow Rate	0.21		0.23	0.33
s, saturation flow rate [veh/h]	3459		3560	5094
c, Capacity [veh/h]	1015		1852	2649
d1, Uniform Delay [s]	13.61		6.41	7.43
k, delay calibration	0.11		0.11	0.11
l, Upstream Filtering Factor	1.00		1.00	1.00
d2, Incremental Delay [s]	1.01		0.16	0.26
d3, Initial Queue Delay [s]	0.00		0.00	0.00
Rp, platoon ratio	1.00		1.00	1.00
PF, progression factor	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.73		0.44	0.64
d, Delay for Lane Group [s/veh]	14.62		6.57	7.70
Lane Group LOS	B		A	A
Critical Lane Group	Yes		No	Yes
50th-Percentile Queue Length [veh/ln]	2.73		1.52	2.47
50th-Percentile Queue Length [ft/ln]	68.13		38.12	61.82
95th-Percentile Queue Length [veh/ln]	4.91		2.74	4.45
95th-Percentile Queue Length [ft/ln]	122.64		68.61	111.28

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	14.62	0.00	0.00	0.00	0.00	0.00	0.00	6.57	0.00	0.00	7.70	0.00
Movement LOS	B							A			A	
d_A, Approach Delay [s/veh]	14.62			0.00			6.57			7.70		
Approach LOS	B			A			A			A		
d_I, Intersection Delay [s/veh]	8.98											
Intersection LOS	A											
Intersection V/C	0.674											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	11.80
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	2.818
Crosswalk LOS	F	F	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	2057	0	3179	3179
d_b, Bicycle Delay [s]	0.02	21.39	7.44	7.44
I_b,int, Bicycle LOS Score for Intersection	1.560	4.132	2.230	2.497
Bicycle LOS	A	D	B	B

Sequence

Ring 1	1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 25: I-405 NB Off-Ramp at South Coast Drive

Control Type:	Signalized	Delay (sec / veh):	21.5
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.619

Intersection Setup

Name	I-405 NB Off-Ramp			The Cape Dwy			South Coast Drive			South Coast 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	1	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	I-405 NB Off-Ramp			The Cape Dwy			South Coast Drive			South Coast Drive		
Base Volume Input [veh/h]	524	33	212	31	0	43	47	465	0	0	420	36
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	524	33	212	31	0	43	47	465	0	0	420	36
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	131	8	53	8	0	11	12	116	0	0	105	9
Total Analysis Volume [veh/h]	524	33	212	31	0	43	47	465	0	0	420	36
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	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Permiss	Split	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	7	0	0	5	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	10	0	6	0	0	6	10	0	0	10	0
Maximum Green [s]	0	30	0	30	0	0	30	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	58	0	58	0	0	10	32	0	0	22	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	14	0	0	0	0	0	11	0	0	11	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No		No				No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	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	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	R	L	C	C	C
C, Cycle Length [s]	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
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	39	39	39	39	39	4	43	35	35
g / C, Green / Cycle	0.43	0.43	0.43	0.43	0.43	0.05	0.48	0.39	0.39
(v / s)_i Volume / Saturation Flow Rate	0.38	0.08	0.08	0.03	0.03	0.03	0.13	0.12	0.13
s, saturation flow rate [veh/h]	1363	1655	1589	1135	1589	1781	3560	1870	1819
c, Capacity [veh/h]	642	713	685	496	685	82	1710	729	709
d1, Uniform Delay [s]	25.23	15.76	15.78	18.54	14.98	42.05	13.98	19.10	19.17
k, delay calibration	0.20	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.70	0.11	0.12	0.05	0.04	6.09	0.39	1.12	1.20
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.82	0.17	0.18	0.06	0.06	0.57	0.27	0.31	0.32
d, Delay for Lane Group [s/veh]	29.93	15.88	15.90	18.59	15.02	48.14	14.38	20.22	20.37
Lane Group LOS	C	B	B	B	B	D	B	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	10.90	1.55	1.51	0.42	0.51	1.15	2.79	3.44	3.46
50th-Percentile Queue Length [ft/ln]	272.52	38.72	37.71	10.51	12.74	28.78	69.80	85.89	86.43
95th-Percentile Queue Length [veh/ln]	16.32	2.79	2.71	0.76	0.92	2.07	5.03	6.18	6.22
95th-Percentile Queue Length [ft/ln]	407.89	69.70	67.87	18.91	22.92	51.81	125.64	154.59	155.57

Movement, Approach, & Intersection Results

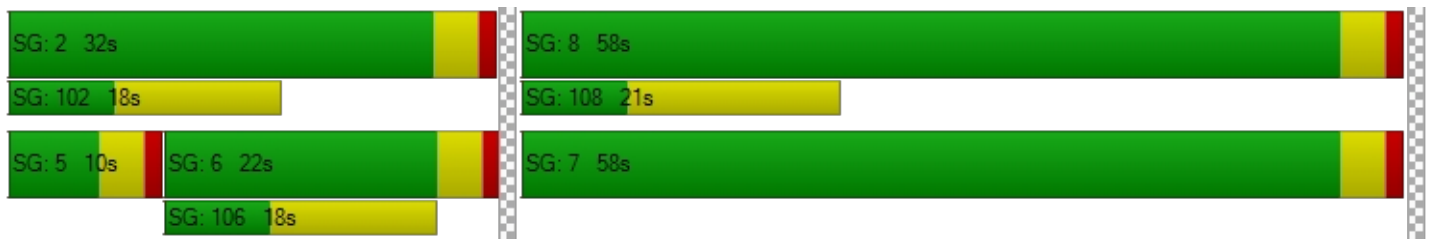
d_M, Delay for Movement [s/veh]	29.93	15.88	15.89	18.59	0.00	15.02	48.14	14.38	0.00	0.00	20.29	20.37
Movement LOS	C	B	B	B		B	D	B			C	C
d_A, Approach Delay [s/veh]	25.46			16.52			17.47			20.29		
Approach LOS	C			B			B			C		
d_I, Intersection Delay [s/veh]	21.53											
Intersection LOS	C											
Intersection V/C	0.619											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.67	34.67	0.00	34.67
I_p,int, Pedestrian LOS Score for Intersection	2.318	2.001	0.000	2.458
Crosswalk LOS	B	B	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1200	1200	622	400
d_b, Bicycle Delay [s]	7.20	7.20	21.36	28.80
I_b,int, Bicycle LOS Score for Intersection	2.828	1.560	1.982	1.936
Bicycle LOS	C	A	A	A

Sequence

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



Intersection Level Of Service Report
Intersection 28: Fairview Road at I-405 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	29.3
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.883

Intersection Setup

Name	Fairview Road			Fairview Road			I-405 NB Ramps			I-405 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	1	0	0	0	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		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Fairview Road			Fairview Road			I-405 NB Ramps			I-405 NB Ramps		
Base Volume Input [veh/h]	251	1483	0	0	2084	293	0	0	0	931	0	1180
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	251	1483	0	0	2084	293	0	0	0	931	0	1180
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	63	371	0	0	521	73	0	0	0	233	0	295
Total Analysis Volume [veh/h]	251	1483	0	0	2084	293	0	0	0	931	0	1180
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Permiss	Split
Signal Group	1	6	0	0	2	0	0	0	0	0	7	0	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	6	10	0	0	10	0	0	0	0	0	6	0	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	19	39	0	0	20	0	0	0	0	0	51	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	14	0	0	7	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall	No	No			No						No		
Maximum Recall	No	No			No						No		
Pedestrian Recall	No	No			No						No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	R		L	R
C, Cycle Length [s]	90	90	90	90		90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	14	39	21	21		43	43
g / C, Green / Cycle	0.16	0.44	0.23	0.23		0.47	0.47
(v / s)_i Volume / Saturation Flow Rate	0.14	0.29	0.20	0.18		0.27	0.42
s, saturation flow rate [veh/h]	1781	5094	10188	1589		3459	2813
c, Capacity [veh/h]	286	2226	2363	369		1640	1334
d1, Uniform Delay [s]	36.92	20.13	33.39	32.57		17.03	21.44
k, delay calibration	0.11	0.50	0.50	0.50		0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	8.43	1.60	5.19	16.11		0.31	2.14
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.88	0.67	0.88	0.79		0.57	0.88
d, Delay for Lane Group [s/veh]	45.36	21.73	38.59	48.68		17.34	23.59
Lane Group LOS	D	C	D	D		B	C
Critical Lane Group	Yes	No	Yes	No		No	Yes
50th-Percentile Queue Length [veh/ln]	5.96	8.13	7.69	7.51		6.61	10.83
50th-Percentile Queue Length [ft/ln]	149.05	203.37	192.30	187.76		165.27	270.78
95th-Percentile Queue Length [veh/ln]	9.97	12.81	12.24	12.00		10.83	16.23
95th-Percentile Queue Length [ft/ln]	249.16	320.31	306.01	300.12		270.68	405.71

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	45.36	21.73	0.00	0.00	38.59	48.68	0.00	0.00	0.00	17.34	0.00	23.59
Movement LOS	D	C			D	D				B		C
d_A, Approach Delay [s/veh]	25.15				39.83		0.00		20.83			
Approach LOS	C				D		A		C			
d_I, Intersection Delay [s/veh]	29.29											
Intersection LOS	C											
Intersection V/C	0.883											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	34.68	34.68
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	1.953	2.711
Crosswalk LOS	F	F	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	778	355	0	1044
d_b, Bicycle Delay [s]	16.82	30.43	45.01	10.28
I_b,int, Bicycle LOS Score for Intersection	2.513	2.213	4.132	1.560
Bicycle LOS	B	B	D	A

Sequence

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



Intersection Level Of Service Report
Intersection 29: Fairview Road at I-405 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	20.7
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.708

Intersection Setup

Name	Fairview Rd			Fairview Rd			I-405 SB Ramps			I-405 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↑↑↑↑			↑↑↑↑			↑↑↑↑					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	1	0	0	1	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Fairview Rd			Fairview Rd			I-405 SB Ramps			I-405 SB Ramps		
Base Volume Input [veh/h]	0	1278	714	1150	1811	0	344	0	398	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1278	714	1150	1811	0	344	0	398	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	320	179	288	453	0	86	0	100	0	0	0
Total Analysis Volume [veh/h]	0	1278	714	1150	1811	0	344	0	398	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Permiss
Signal Group	0	6	0	5	2	0	3	0	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	10	0	6	10	0	6	0	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	30	0	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Split [s]	0	22	0	43	65	0	25	0	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	11	0	0	14	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No		No					
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No		No					
Maximum Recall		No		No	No		No					
Pedestrian Recall		No		No	No		No					
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	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]	38	38	38	25	66	16	16	
g / C, Green / Cycle	0.42	0.42	0.42	0.27	0.74	0.17	0.17	
(v / s)_i Volume / Saturation Flow Rate	0.23	0.25	0.25	0.22	0.36	0.10	0.14	
s, saturation flow rate [veh/h]	5094	1589	1589	5188	5094	3459	2813	
c, Capacity [veh/h]	2139	668	668	1414	3754	603	490	
d1, Uniform Delay [s]	19.79	20.21	20.21	30.62	4.84	34.09	35.76	
k, delay calibration	0.50	0.50	0.50	0.11	0.50	0.11	0.11	
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	1.06	3.91	3.91	1.18	0.45	0.85	3.29	
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	0.56	0.60	0.60	0.81	0.48	0.57	0.81	
d, Delay for Lane Group [s/veh]	20.85	24.12	24.12	31.80	5.28	34.94	39.05	
Lane Group LOS	C	C	C	C	A	C	D	
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	6.25	6.90	6.90	7.70	3.61	3.47	4.34	
50th-Percentile Queue Length [ft/ln]	156.35	172.44	172.44	192.41	90.28	86.64	108.58	
95th-Percentile Queue Length [veh/ln]	10.36	11.20	11.20	12.25	6.50	6.24	7.76	
95th-Percentile Queue Length [ft/ln]	258.88	280.12	280.12	306.15	162.51	155.95	194.03	

Movement, Approach, & Intersection Results

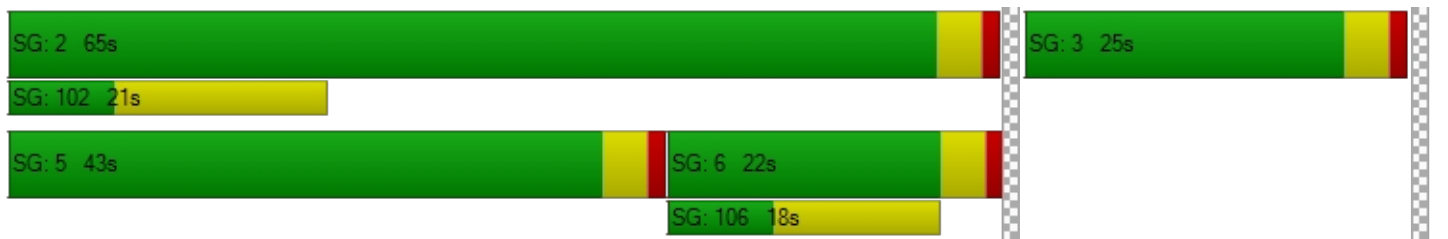
d_M, Delay for Movement [s/veh]	0.00	20.85	24.12	31.80	5.28	0.00	34.94	0.00	39.05	0.00	0.00	0.00
Movement LOS		C	C	C	A		C		D			
d_A, Approach Delay [s/veh]	22.16			15.58			37.15			0.00		
Approach LOS	C			B			D			A		
d_I, Intersection Delay [s/veh]	20.69											
Intersection LOS	C											
Intersection V/C	0.708											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	34.68	34.68
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.444	2.546
Crosswalk LOS	F	F	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	400	1355	467	0
d_b, Bicycle Delay [s]	28.81	4.68	26.46	45.01
I_b,int, Bicycle LOS Score for Intersection	2.381	3.188	1.560	4.132
Bicycle LOS	B	C	A	D

Sequence

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



Intersection Level Of Service Report
Intersection 30: Bristol Street at I-405 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	15.2
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.707

Intersection Setup

Name	Bristol Street			Bristol Street			I-405 NB Ramps			I-405 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	lr			lt			rr			r lr		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	0	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	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	No			No			Yes			Yes		

Volumes

Name	Bristol Street			Bristol Street			I-405 NB Ramps			I-405 NB Ramps		
Base Volume Input [veh/h]	0	2503	204	0	2616	22	0	0	216	407	340	1409
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	2503	204	0	2616	22	0	0	216	407	340	1409
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	626	51	0	654	6	0	0	54	102	85	352
Total Analysis Volume [veh/h]	0	2503	204	0	2616	22	0	0	216	407	340	1409
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	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss	Split	Permiss	Split	Split	Split	Overlap
Signal Group	0	6	0	0	2	0	0	0	8	0	4	4
Auxiliary Signal Groups												2,4
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	0	10	0	0	0	6	0	10	10
Maximum Green [s]	0	30	0	0	30	0	0	0	30	0	30	30
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0
Split [s]	0	32	0	0	32	0	0	0	36	0	22	22
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	18	0	0	14	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No				No		No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0
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	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	C	R	L	C	C	R
C, Cycle Length [s]	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
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	51	51	51	9	18	18	18	73
g / C, Green / Cycle	0.56	0.56	0.56	0.10	0.20	0.20	0.20	0.81
(v / s)_i Volume / Saturation Flow Rate	0.37	0.31	0.28	0.08	0.14	0.14	0.15	0.50
s, saturation flow rate [veh/h]	6792	6792	1856	2813	1781	1812	1702	2813
c, Capacity [veh/h]	3821	3821	1044	291	358	364	342	2273
d1, Uniform Delay [s]	13.65	12.50	12.04	39.23	33.45	33.35	33.70	3.33
k, delay calibration	0.50	0.50	0.50	0.11	0.11	0.11	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.89	0.58	1.75	3.74	2.45	2.28	2.98	1.28
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.66	0.55	0.51	0.74	0.70	0.68	0.73	0.62
d, Delay for Lane Group [s/veh]	14.54	13.08	13.78	42.97	35.89	35.63	36.68	4.61
Lane Group LOS	B	B	B	D	D	D	D	A
Critical Lane Group	No	No	No	Yes	No	No	Yes	Yes
50th-Percentile Queue Length [veh/ln]	8.19	6.30	6.43	2.44	5.20	5.17	5.28	3.10
50th-Percentile Queue Length [ft/ln]	204.86	157.52	160.65	60.98	129.9	129.2	131.8	77.40
95th-Percentile Queue Length [veh/ln]	12.89	10.42	10.58	4.39	8.94	8.90	9.04	5.57
95th-Percentile Queue Length [ft/ln]	322.22	260.44	264.58	109.77	223.4	222.5	226.0	139.3

Movement, Approach, & Intersection Results

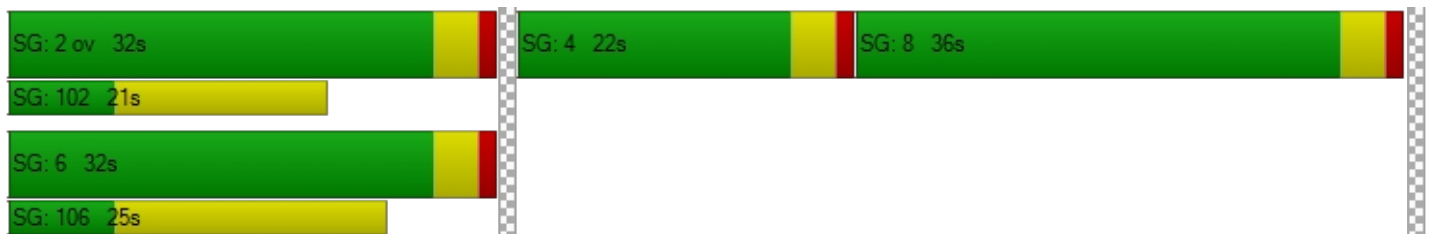
d_M, Delay for Movement [s/veh]	0.00	14.54	0.00	0.00	13.22	13.78	0.00	0.00	42.97	35.89	36.40	4.61
Movement LOS		B			B	B			D	D	D	A
d_A, Approach Delay [s/veh]	14.54			13.22			42.97			15.51		
Approach LOS	B			B			D			B		
d_I, Intersection Delay [s/veh]	15.17											
Intersection LOS	B											
Intersection V/C	0.707											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	34.70	34.70
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.271	2.803
Crosswalk LOS	F	F	B	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	622	622	711	400
d_b, Bicycle Delay [s]	21.38	21.38	18.71	28.82
I_b,int, Bicycle LOS Score for Intersection	2.592	2.430	1.560	3.338
Bicycle LOS	B	B	A	C

Sequence

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



Intersection Level Of Service Report
Intersection 31: Bristol Street at I-405 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	17.0
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.696

Intersection Setup

Name	Bristol Street		Bristol Street		I-405 SB Ramps	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration	↵ ↑ ↑ ↑		↑ ↑ ↵		↵↵↵↵	
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	1	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		Yes	

Volumes

Name	Bristol Street		Bristol Street		I-405 SB Ramps	
Base Volume Input [veh/h]	145	1770	1719	1081	956	367
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	145	1770	1719	1081	956	367
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	36	443	430	270	239	0
Total Analysis Volume [veh/h]	145	1770	1719	1081	956	0
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Unsignalized	Permissive	Unsignalized
Signal Group	1	6	2	0	3	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	6	10	10	0	6	0
Maximum Green [s]	30	30	30	0	30	0
Amber [s]	3.0	3.0	3.0	0.0	3.0	0.0
All red [s]	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	26	48	22	0	42	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	0	7	0	0	0
Pedestrian Clearance [s]	0	0	11	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No	No		No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
Minimum Recall	No	No	No		No	
Maximum Recall	No	No	No		No	
Pedestrian Recall	No	No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L
C, Cycle Length [s]	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	61	48	21
g / C, Green / Cycle	0.10	0.68	0.53	0.23
(v / s)_i Volume / Saturation Flow Rate	0.08	0.26	0.34	0.18
s, saturation flow rate [veh/h]	1781	6792	5094	5188
c, Capacity [veh/h]	182	4618	2716	1200
d1, Uniform Delay [s]	39.50	6.24	14.81	32.62
k, delay calibration	0.11	0.50	0.50	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.69	0.24	1.13	1.25
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.80	0.38	0.63	0.80
d, Delay for Lane Group [s/veh]	47.19	6.48	15.94	33.87
Lane Group LOS	D	A	B	C
Critical Lane Group	Yes	No	Yes	Yes
50th-Percentile Queue Length [veh/ln]	3.48	3.14	7.88	6.52
50th-Percentile Queue Length [ft/ln]	86.97	78.50	196.91	163.10
95th-Percentile Queue Length [veh/ln]	6.26	5.65	12.48	10.71
95th-Percentile Queue Length [ft/ln]	156.55	141.30	311.97	267.82

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	47.19	6.48	15.94	0.00	33.87	0.00
Movement LOS	D	A	B		C	
d_A, Approach Delay [s/veh]	9.56		15.94		33.87	
Approach LOS	A		B		C	
d_I, Intersection Delay [s/veh]	17.02					
Intersection LOS	B					
Intersection V/C	0.696					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	34.68
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.631
Crosswalk LOS	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	978	400	844
d_b, Bicycle Delay [s]	11.76	28.81	15.03
I_b,int, Bicycle LOS Score for Intersection	2.350	2.505	1.560
Bicycle LOS	B	B	A

Sequence

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



Intersection Level Of Service Report
Intersection 37: Bear St at SR-73 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	43.1
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.966

Intersection Setup

Name	Bear St			Bear St			SR-73 NB Ramps			SR-73 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0	0	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		
Crosswalk	No			No			No			Yes		

Volumes

Name	Bear St			Bear St			SR-73 NB Ramps			SR-73 NB Ramps		
Base Volume Input [veh/h]	170	662	0	0	1149	167	0	0	0	456	0	1474
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	170	662	0	0	1149	167	0	0	0	456	0	1474
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	43	166	0	0	287	42	0	0	0	114	0	369
Total Analysis Volume [veh/h]	170	662	0	0	1149	167	0	0	0	456	0	1474
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Permiss	Split
Signal Group	1	6	0	0	2	0	0	0	0	0	7	0	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	6	10	0	0	10	0	0	0	0	0	6	0	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	16	51	0	0	35	0	0	0	0	0	69	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	11	0	0	0	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall	No	No			No						No		
Maximum Recall	No	No			No						No		
Pedestrian Recall	No	No			No						No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C		L	R
C, Cycle Length [s]	120	120	120	120		120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	12	47	31	31		65	65
g / C, Green / Cycle	0.10	0.40	0.26	0.26		0.54	0.54
(v / s)_i Volume / Saturation Flow Rate	0.10	0.19	0.25	0.25		0.26	0.52
s, saturation flow rate [veh/h]	1781	3560	3560	1752		1781	2813
c, Capacity [veh/h]	179	1409	932	459		957	1512
d1, Uniform Delay [s]	53.62	26.89	43.36	43.59		17.24	26.94
k, delay calibration	0.11	0.50	0.50	0.50		0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	21.02	1.13	18.27	32.39		0.37	6.36
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.95	0.47	0.94	0.96		0.48	0.97
d, Delay for Lane Group [s/veh]	74.65	28.02	61.63	75.98		17.61	33.30
Lane Group LOS	E	C	E	E		B	C
Critical Lane Group	Yes	No	No	Yes		No	Yes
50th-Percentile Queue Length [veh/ln]	6.14	7.24	15.01	16.84		7.76	20.70
50th-Percentile Queue Length [ft/ln]	153.48	181.07	375.29	421.01		194.10	517.42
95th-Percentile Queue Length [veh/ln]	10.20	11.66	21.37	23.57		12.33	28.16
95th-Percentile Queue Length [ft/ln]	255.06	291.41	534.15	589.26		308.34	703.94

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	74.65	28.02	0.00	0.00	65.03	75.98	0.00	0.00	0.00	17.61	0.00	33.30
Movement LOS	E	C			E	E				B		C
d_A, Approach Delay [s/veh]	37.55			66.42			0.00			29.59		
Approach LOS	D			E			A			C		
d_I, Intersection Delay [s/veh]	43.10											
Intersection LOS	D											
Intersection V/C	0.966											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	49.49
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	2.615
Crosswalk LOS	F	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	784	517	0	1084
d_b, Bicycle Delay [s]	22.19	32.99	59.98	12.59
I_b,int, Bicycle LOS Score for Intersection	2.246	2.283	4.132	1.560
Bicycle LOS	B	B	D	A

Sequence

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



Intersection Level Of Service Report
Intersection 38: Bear St at SR-73 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	20.4
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.628

Intersection Setup

Name	Bear St			Bear St			SR-73 SB Ramps			SR-73 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↑↑			↑↑↑			↑↑					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Bear St			Bear St			SR-73 SB Ramps			SR-73 SB Ramps		
Base Volume Input [veh/h]	0	633	191	659	953	0	207	1	180	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	633	191	659	953	0	207	1	180	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	158	48	165	238	0	52	0	45	0	0	0
Total Analysis Volume [veh/h]	0	633	191	659	953	0	207	1	180	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Permiss	Permiss
Signal Group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	6	10	0	0	10	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	18	0	42	60	0	0	30	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	7	0	0	7	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	L	C	L	C	
C, Cycle Length [s]	90	90	90	90	90	90	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	45	45	20	69	13	13	
g / C, Green / Cycle	0.50	0.50	0.23	0.77	0.14	0.14	
(v / s)_i Volume / Saturation Flow Rate	0.22	0.24	0.19	0.27	0.11	0.12	
s, saturation flow rate [veh/h]	1870	1729	3459	3560	1781	1593	
c, Capacity [veh/h]	928	858	784	2732	256	229	
d1, Uniform Delay [s]	14.64	14.99	33.27	3.32	37.29	37.31	
k, delay calibration	0.50	0.50	0.11	0.50	0.11	0.11	
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	1.54	1.92	2.54	0.35	5.67	6.42	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	0.44	0.48	0.84	0.35	0.80	0.80	
d, Delay for Lane Group [s/veh]	16.18	16.91	35.81	3.68	42.97	43.73	
Lane Group LOS	B	B	D	A	D	D	
Critical Lane Group	No	Yes	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	5.52	5.70	6.98	2.04	4.68	4.25	
50th-Percentile Queue Length [ft/ln]	138.02	142.59	174.42	50.92	117.07	106.36	
95th-Percentile Queue Length [veh/ln]	9.37	9.62	11.31	3.67	8.23	7.64	
95th-Percentile Queue Length [ft/ln]	234.35	240.50	282.71	91.66	205.80	190.93	

Movement, Approach, & Intersection Results

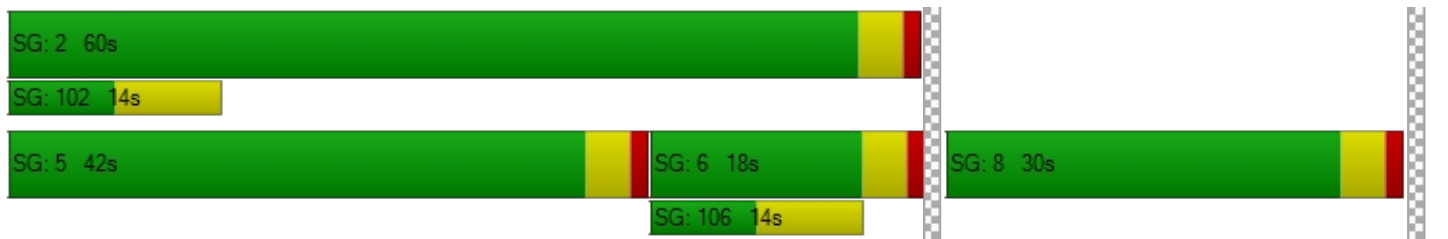
d_M, Delay for Movement [s/veh]	0.00	16.43	16.91	35.81	3.68	0.00	43.01	43.73	43.73	0.00	0.00	0.00
Movement LOS		B	B	D	A		D	D	D			
d_A, Approach Delay [s/veh]		16.54		16.81			43.33			0.00		
Approach LOS		B		B			D			A		
d_I, Intersection Delay [s/veh]	20.38											
Intersection LOS	C											
Intersection V/C	0.628											

Other Modes

g_Walk,mi, Effective Walk Time [s]		0.0		0.0		11.0		11.0
M_corner, Corner Circulation Area [ft ² /ped]		0.00		0.00		0.00		0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]		0.00		0.00		0.00		0.00
d_p, Pedestrian Delay [s]		0.00		0.00		34.68		34.68
I_p,int, Pedestrian LOS Score for Intersection		0.000		0.000		2.066		2.129
Crosswalk LOS		F		F		B		B
s_b, Saturation Flow Rate of the bicycle lane		2000		2000		2000		2000
c_b, Capacity of the bicycle lane [bicycles/h]		311		1244		578		0
d_b, Bicycle Delay [s]		32.10		6.43		22.77		45.01
I_b,int, Bicycle LOS Score for Intersection		2.239		2.890		2.200		4.132
Bicycle LOS		B		C		B		D

Sequence

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



APPENDIX E-VIII

**YEAR 2032 CUMULATIVE PLUS PROJECT PHASES 1 AND 2
TRAFFIC CONDITIONS**

Intersection Level Of Service Report
Intersection 12: SR-55 SB Ramps at MacArthur Blvd

Control Type:	Signalized	Delay (sec / veh):	15.7
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.820

Intersection Setup

Name	SR-55 SB Ramp			MacArthur Blvd			MacArthur Blvd					
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration				T T T T			T T T T			T T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	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	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		
Crosswalk	No			Yes			No			No		

Volumes

Name				SR-55 SB Ramp			MacArthur Blvd			MacArthur Blvd		
Base Volume Input [veh/h]	0	0	0	1074	0	1022	0	1798	1190	0	1453	164
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	1074	0	1022	0	1798	1190	0	1453	164
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	269	0	256	0	450	298	0	363	41
Total Analysis Volume [veh/h]	0	0	0	1074	0	1022	0	1798	1190	0	1453	164
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	0	0	0	5	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	6	0	0	0	10	0	0	10	0
Maximum Green [s]	0	0	0	30	0	0	0	30	0	0	30	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	48	0	0	0	47	0	0	47	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	14	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	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	R	C	C
C, Cycle Length [s]		63	63	63	63
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		27	27	28	28
g / C, Green / Cycle		0.43	0.43	0.44	0.44
(v / s)_i Volume / Saturation Flow Rate		0.31	0.36	0.35	0.29
s, saturation flow rate [veh/h]		3459	2813	5094	5094
c, Capacity [veh/h]		1495	1216	2250	2250
d1, Uniform Delay [s]		14.84	16.07	15.29	13.84
k, delay calibration		0.11	0.11	0.11	0.11
l, Upstream Filtering Factor		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		0.66	1.65	0.68	0.31
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.72	0.84	0.80	0.65
d, Delay for Lane Group [s/veh]		15.51	17.72	15.97	14.15
Lane Group LOS		B	B	B	B
Critical Lane Group		No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]		5.67	5.98	6.56	4.76
50th-Percentile Queue Length [ft/ln]		141.84	149.58	164.12	119.10
95th-Percentile Queue Length [veh/ln]		9.58	9.99	10.77	8.34
95th-Percentile Queue Length [ft/ln]		239.50	249.87	269.16	208.59

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	15.51	0.00	17.72	0.00	15.97	0.00	0.00	14.15	0.00
Movement LOS				B		B		B			B	
d_A, Approach Delay [s/veh]	0.00			16.59			15.97			14.15		
Approach LOS	A			B			B			B		
d_I, Intersection Delay [s/veh]	15.72											
Intersection LOS	B											
Intersection V/C	0.820											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	21.61	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	0.000	2.689	0.000	0.000
Crosswalk LOS	F	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	1390	1358	1358
d_b, Bicycle Delay [s]	31.66	2.95	3.26	3.26
I_b,int, Bicycle LOS Score for Intersection	4.132	1.560	2.549	2.359
Bicycle LOS	D	A	B	B

Sequence

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



Intersection Level Of Service Report
Intersection 13: SR-55 NB Ramps at MacArthur Blvd

Control Type:	Signalized	Delay (sec / veh):	23.5
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.945

Intersection Setup

Name	SR-55 NB Ramp						MacArthur Blvd			MacArthur Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	⇐⇐⇐						⇐⇐⇐			⇐⇐⇐		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	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		
Crosswalk	No			No			No			Yes		

Volumes

Name	SR-55 NB Ramp						MacArthur Blvd			MacArthur Blvd		
Base Volume Input [veh/h]	1022	0	1094	0	0	0	0	1855	1020	0	600	274
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	1022	0	1094	0	0	0	0	1855	1020	0	600	274
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	256	0	274	0	0	0	0	464	255	0	150	69
Total Analysis Volume [veh/h]	1022	0	1094	0	0	0	0	1855	1020	0	600	274
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	1	0	0	0	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	6	0	0	0	0	0	0	10	0	0	10	0
Maximum Green [s]	30	0	0	0	0	0	0	30	0	0	30	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	46	0	0	0	0	0	0	44	0	0	44	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	7	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	21	0	0	0	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No							No			No	
Maximum Recall	No							No			No	
Pedestrian Recall	No							No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L		C	C
C, Cycle Length [s]	59		59	59
L, Total Lost Time per Cycle [s]	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00		2.00	2.00
g_i, Effective Green Time [s]	21		30	30
g / C, Green / Cycle	0.35		0.51	0.51
(v / s)_i Volume / Saturation Flow Rate	0.30		0.52	0.12
s, saturation flow rate [veh/h]	3459		3560	5094
c, Capacity [veh/h]	1229		1812	2593
d1, Uniform Delay [s]	17.39		14.47	8.05
k, delay calibration	0.11		0.11	0.11
l, Upstream Filtering Factor	1.00		1.00	1.00
d2, Incremental Delay [s]	1.54		16.55	0.05
d3, Initial Queue Delay [s]	0.00		0.00	0.00
Rp, platoon ratio	1.00		1.00	1.00
PF, progression factor	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.83		1.02	0.23
d, Delay for Lane Group [s/veh]	18.92		31.01	8.10
Lane Group LOS	B		F	A
Critical Lane Group	Yes		Yes	No
50th-Percentile Queue Length [veh/ln]	5.83		13.65	1.18
50th-Percentile Queue Length [ft/ln]	145.66		341.27	29.40
95th-Percentile Queue Length [veh/ln]	9.78		20.05	2.12
95th-Percentile Queue Length [ft/ln]	244.62		501.23	52.92

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	18.92	0.00	0.00	0.00	0.00	0.00	0.00	31.01	0.00	0.00	8.10	0.00
Movement LOS	B							F			A	
d_A, Approach Delay [s/veh]	18.92			0.00			31.01			8.10		
Approach LOS	B			A			C			A		
d_I, Intersection Delay [s/veh]	23.51											
Intersection LOS	C											
Intersection V/C	0.945											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	19.47
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	2.828
Crosswalk LOS	F	F	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1427	0	1359	1359
d_b, Bicycle Delay [s]	2.42	29.44	3.03	3.03
I_b,int, Bicycle LOS Score for Intersection	1.560	4.132	3.090	1.890
Bicycle LOS	A	D	C	A

Sequence





Ring 1	1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 25: I-405 NB Off-Ramp at South Coast Drive

Control Type:	Signalized	Delay (sec / veh):	22.6
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.415

Intersection Setup

Name	I-405 NB Off-Ramp			The Cape Dwy			South Coast Drive			South Coast 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	1	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	I-405 NB Off-Ramp			The Cape Dwy			South Coast Drive			South Coast Drive		
Base Volume Input [veh/h]	387	7	101	53	0	79	21	247	0	0	133	19
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	387	7	101	53	0	79	21	247	0	0	133	19
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	97	2	25	13	0	20	5	62	0	0	33	5
Total Analysis Volume [veh/h]	387	7	101	53	0	79	21	247	0	0	133	19
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]	95
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Permiss	Split	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	7	0	0	5	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	10	0	6	0	0	6	10	0	0	10	0
Maximum Green [s]	0	30	0	30	0	0	30	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	63	0	63	0	0	10	32	0	0	22	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	14	0	0	0	0	0	11	0	0	11	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No		No				No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	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	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	R	L	C	C	C
C, Cycle Length [s]	95	95	95	95	95	95	95	95	95
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	32	32	32	32	32	3	55	48	48
g / C, Green / Cycle	0.34	0.34	0.34	0.34	0.34	0.03	0.58	0.51	0.51
(v / s)_i Volume / Saturation Flow Rate	0.29	0.03	0.03	0.04	0.05	0.01	0.07	0.04	0.04
s, saturation flow rate [veh/h]	1320	1621	1589	1285	1589	1781	3560	1870	1791
c, Capacity [veh/h]	496	546	536	456	536	48	2060	953	912
d1, Uniform Delay [s]	31.22	21.59	21.59	24.58	21.96	45.51	9.06	11.91	11.94
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.71	0.08	0.08	0.11	0.13	6.11	0.12	0.16	0.18
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.78	0.10	0.10	0.12	0.15	0.44	0.12	0.08	0.08
d, Delay for Lane Group [s/veh]	33.92	21.67	21.67	24.69	22.08	51.62	9.18	12.08	12.12
Lane Group LOS	C	C	C	C	C	D	A	B	B
Critical Lane Group	Yes	No	No	No	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	8.65	0.84	0.82	0.88	1.23	0.57	1.13	0.84	0.84
50th-Percentile Queue Length [ft/ln]	216.15	20.91	20.52	22.07	30.84	14.15	28.15	20.99	21.08
95th-Percentile Queue Length [veh/ln]	13.47	1.51	1.48	1.59	2.22	1.02	2.03	1.51	1.52
95th-Percentile Queue Length [ft/ln]	336.71	37.65	36.93	39.72	55.51	25.47	50.67	37.78	37.94

Movement, Approach, & Intersection Results

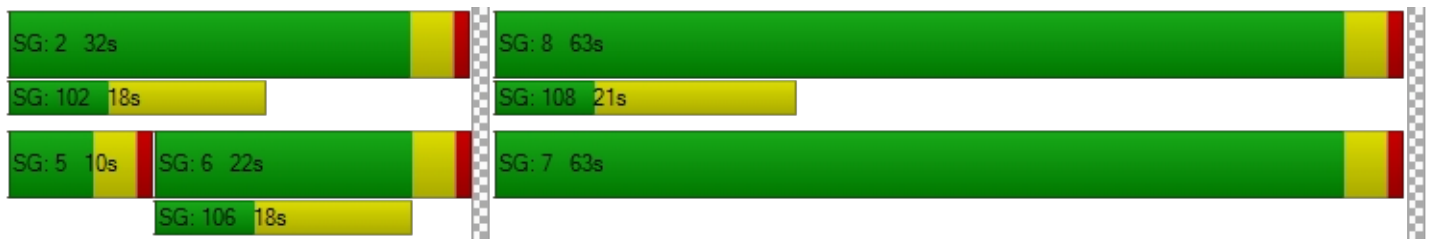
d_M, Delay for Movement [s/veh]	33.92	21.67	21.67	24.69	0.00	22.08	51.62	9.18	0.00	0.00	12.09	12.12
Movement LOS	C	C	C	C		C	D	A			B	B
d_A, Approach Delay [s/veh]	31.25			23.13			12.51			12.10		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]	22.65											
Intersection LOS	C											
Intersection V/C	0.415											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	37.14	37.14	0.00	37.14
I_p,int, Pedestrian LOS Score for Intersection	2.254	2.001	0.000	2.344
Crosswalk LOS	B	B	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1242	1242	589	379
d_b, Bicycle Delay [s]	6.82	6.82	23.63	31.21
I_b,int, Bicycle LOS Score for Intersection	2.376	1.560	1.781	1.685
Bicycle LOS	B	A	A	A

Sequence

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



Intersection Level Of Service Report
Intersection 28: Fairview Road at I-405 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	25.8
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.781

Intersection Setup

Name	Fairview Road			Fairview Road			I-405 NB Ramps			I-405 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	1	0	0	0	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		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Fairview Road			Fairview Road			I-405 NB Ramps			I-405 NB Ramps		
Base Volume Input [veh/h]	202	991	0	0	2718	327	0	0	0	675	0	865
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	202	991	0	0	2718	327	0	0	0	675	0	865
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	51	248	0	0	680	82	0	0	0	169	0	216
Total Analysis Volume [veh/h]	202	991	0	0	2718	327	0	0	0	675	0	865
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Permiss	Split
Signal Group	1	6	0	0	2	0	0	0	0	0	7	0	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	6	10	0	0	10	0	0	0	0	0	6	0	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	24	42	0	0	18	0	0	0	0	0	58	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	14	0	0	7	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall	No	No			No						No		
Maximum Recall	No	No			No						No		
Pedestrian Recall	No	No			No						No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	R		L	R
C, Cycle Length [s]	100	100	100	100		100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	13	56	39	39		36	36
g / C, Green / Cycle	0.13	0.56	0.39	0.39		0.36	0.36
(v / s)_i Volume / Saturation Flow Rate	0.11	0.19	0.27	0.21		0.20	0.31
s, saturation flow rate [veh/h]	1781	5094	10188	1589		3459	2813
c, Capacity [veh/h]	237	2848	3931	613		1248	1016
d1, Uniform Delay [s]	42.38	12.07	25.72	23.75		25.37	29.48
k, delay calibration	0.11	0.50	0.50	0.50		0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	8.36	0.34	1.02	3.30		0.37	2.13
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.85	0.35	0.69	0.53		0.54	0.85
d, Delay for Lane Group [s/veh]	50.74	12.41	26.74	27.05		25.74	31.62
Lane Group LOS	D	B	C	C		C	C
Critical Lane Group	Yes	No	Yes	No		No	Yes
50th-Percentile Queue Length [veh/ln]	5.38	3.93	8.94	6.40		6.30	9.59
50th-Percentile Queue Length [ft/ln]	134.53	98.25	223.53	159.92		157.45	239.64
95th-Percentile Queue Length [veh/ln]	9.19	7.07	13.85	10.54		10.41	14.66
95th-Percentile Queue Length [ft/ln]	229.64	176.84	346.13	263.62		260.34	366.58

Movement, Approach, & Intersection Results

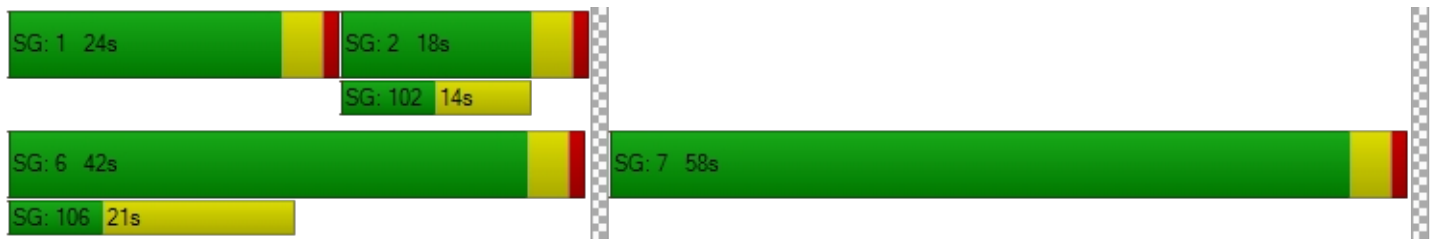
d_M, Delay for Movement [s/veh]	50.74	12.41	0.00	0.00	26.74	27.05	0.00	0.00	0.00	25.74	0.00	31.62
Movement LOS	D	B			C	C				C		C
d_A, Approach Delay [s/veh]	18.90				26.78		0.00		29.04			
Approach LOS	B				C		A		C			
d_I, Intersection Delay [s/veh]	25.75											
Intersection LOS	C											
Intersection V/C	0.781											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	39.61	39.61
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	1.944	2.605
Crosswalk LOS	F	F	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	760	280	0	1080
d_b, Bicycle Delay [s]	19.22	36.98	50.00	10.58
I_b,int, Bicycle LOS Score for Intersection	2.216	2.397	4.132	1.560
Bicycle LOS	B	B	D	A

Sequence

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



Intersection Level Of Service Report
Intersection 29: Fairview Road at I-405 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	32.9
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.941

Intersection Setup

Name	Fairview Rd			Fairview Rd			I-405 SB Ramps			I-405 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↑↑↑↓			↔↔↑↑			↔↔↓					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	1	0	0	1	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Fairview Rd			Fairview Rd			I-405 SB Ramps			I-405 SB Ramps		
Base Volume Input [veh/h]	0	999	1242	1699	1836	0	215	0	361	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	999	1242	1699	1836	0	215	0	361	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	250	311	425	459	0	54	0	90	0	0	0
Total Analysis Volume [veh/h]	0	999	1242	1699	1836	0	215	0	361	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Permiss
Signal Group	0	6	0	5	2	0	3	0	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	10	0	6	10	0	6	0	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	30	0	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Split [s]	0	53	0	46	99	0	21	0	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	11	0	0	14	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No		No					
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No		No					
Maximum Recall		No		No	No		No					
Pedestrian Recall		No		No	No		No					
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	R	L	C	L	R	
C, Cycle Length [s]	120	120	120	120	120	120	120	
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]	50	50	50	41	95	17	17	
g / C, Green / Cycle	0.41	0.41	0.41	0.35	0.79	0.14	0.14	
(v / s)_i Volume / Saturation Flow Rate	0.20	0.39	0.39	0.33	0.36	0.06	0.13	
s, saturation flow rate [veh/h]	5094	1589	1589	5188	5094	3459	2813	
c, Capacity [veh/h]	2104	657	657	1790	4032	490	399	
d1, Uniform Delay [s]	25.70	33.91	33.91	38.25	4.08	47.11	50.68	
k, delay calibration	0.50	0.50	0.50	0.11	0.50	0.11	0.11	
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	0.77	24.08	24.08	3.50	0.37	0.62	7.85	
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	0.47	0.95	0.95	0.95	0.46	0.44	0.91	
d, Delay for Lane Group [s/veh]	26.47	57.99	57.99	41.76	4.45	47.73	58.53	
Lane Group LOS	C	E	E	D	A	D	E	
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	7.06	21.39	21.39	16.53	4.03	2.99	5.76	
50th-Percentile Queue Length [ft/ln]	176.47	534.73	534.73	413.25	100.64	74.76	144.02	
95th-Percentile Queue Length [veh/ln]	11.42	28.97	28.97	23.20	7.25	5.38	9.70	
95th-Percentile Queue Length [ft/ln]	285.40	724.35	724.35	579.94	181.15	134.57	242.43	

Movement, Approach, & Intersection Results

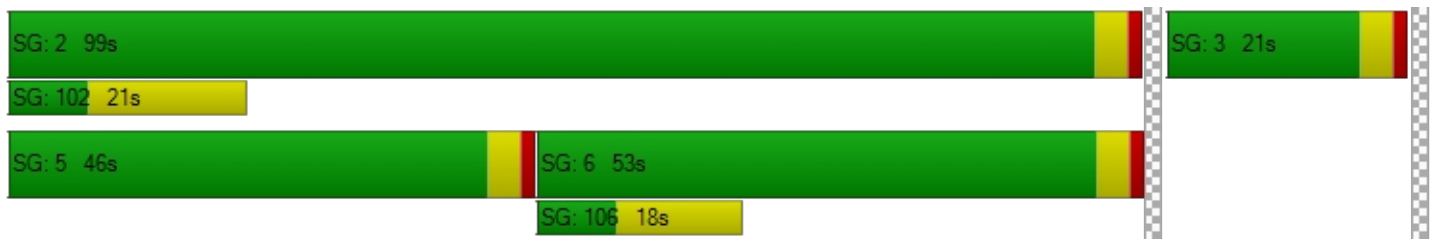
d_M, Delay for Movement [s/veh]	0.00	26.47	57.99	41.76	4.45	0.00	47.73	0.00	58.53	0.00	0.00	0.00
Movement LOS		C	E	D	A		D		E			
d_A, Approach Delay [s/veh]	43.94			22.38			54.50			0.00		
Approach LOS	D			C			D			A		
d_I, Intersection Delay [s/veh]	32.90											
Intersection LOS	C											
Intersection V/C	0.941											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0			0.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	0.00			0.00			49.50			49.50		
I_p,int, Pedestrian LOS Score for Intersection	0.000			0.000			2.426			2.910		
Crosswalk LOS	F			F			B			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	817			1584			283			0		
d_b, Bicycle Delay [s]	21.00			2.60			44.20			59.99		
I_b,int, Bicycle LOS Score for Intersection	2.484			3.504			1.560			4.132		
Bicycle LOS	B			D			A			D		

Sequence

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



Intersection Level Of Service Report
Intersection 30: Bristol Street at I-405 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	6.4
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.413

Intersection Setup

Name	Bristol Street			Bristol Street			I-405 NB Ramps			I-405 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	0	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	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	No			No			Yes			Yes		

Volumes

Name	Bristol Street			Bristol Street			I-405 NB Ramps			I-405 NB Ramps		
Base Volume Input [veh/h]	0	1767	212	0	2571	9	0	0	37	137	81	809
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1767	212	0	2571	9	0	0	37	137	81	809
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	442	53	0	643	2	0	0	9	34	20	202
Total Analysis Volume [veh/h]	0	1767	212	0	2571	9	0	0	37	137	81	809
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]	95
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss	Split	Permiss	Split	Split	Split	Overlap
Signal Group	0	6	0	0	2	0	0	0	8	0	4	4
Auxiliary Signal Groups												2,4
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	0	10	0	0	0	6	0	10	10
Maximum Green [s]	0	30	0	0	30	0	0	0	30	0	30	30
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0
Split [s]	0	68	0	0	68	0	0	0	10	0	17	17
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	18	0	0	14	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No				No		No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0
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	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	C	R	L	C	C	R
C, Cycle Length [s]	95	95	95	95	95	95	95	95
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	69	69	69	4	10	10	10	83
g / C, Green / Cycle	0.73	0.73	0.73	0.04	0.11	0.11	0.11	0.88
(v / s)_i Volume / Saturation Flow Rate	0.26	0.30	0.28	0.01	0.04	0.04	0.04	0.29
s, saturation flow rate [veh/h]	6792	6792	1864	2813	1781	1788	1702	2813
c, Capacity [veh/h]	4942	4942	1356	112	189	190	181	2464
d1, Uniform Delay [s]	4.76	5.06	4.87	44.38	39.54	39.54	39.70	1.03
k, delay calibration	0.50	0.50	0.50	0.11	0.11	0.11	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.20	0.26	0.81	1.70	1.24	1.24	1.52	0.36
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.36	0.42	0.38	0.33	0.38	0.38	0.41	0.33
d, Delay for Lane Group [s/veh]	4.97	5.33	5.69	46.08	40.78	40.78	41.22	1.38
Lane Group LOS	A	A	A	D	D	D	D	A
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.63	3.27	3.36	0.45	1.61	1.61	1.70	0.34
50th-Percentile Queue Length [ft/ln]	65.72	81.66	84.10	11.19	40.15	40.30	42.51	8.50
95th-Percentile Queue Length [veh/ln]	4.73	5.88	6.06	0.81	2.89	2.90	3.06	0.61
95th-Percentile Queue Length [ft/ln]	118.29	147.00	151.38	20.14	72.26	72.54	76.51	15.30

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	4.97	0.00	0.00	5.40	5.69	0.00	0.00	46.08	40.78	41.19	1.38
Movement LOS		A			A	A			D	D	D	A
d_A, Approach Delay [s/veh]	4.97			5.40			46.08			9.78		
Approach LOS	A			A			D			A		
d_I, Intersection Delay [s/veh]	6.37											
Intersection LOS	A											
Intersection V/C	0.413											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	37.14	37.14
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.164	2.622
Crosswalk LOS	F	F	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1347	1347	126	274
d_b, Bicycle Delay [s]	5.06	5.06	41.70	35.40
I_b,int, Bicycle LOS Score for Intersection	2.288	2.411	1.560	2.407
Bicycle LOS	B	B	A	B

Sequence

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



Intersection Level Of Service Report
Intersection 31: Bristol Street at I-405 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	15.1
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.509

Intersection Setup

Name	Bristol Street		Bristol Street		I-405 SB Ramps	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration	↵ ↑ ↑ ↑		↑ ↑ ↵		↵↵↵↵	
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	1	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		Yes	

Volumes

Name	Bristol Street		Bristol Street		I-405 SB Ramps	
Base Volume Input [veh/h]	134	1263	1162	1116	717	582
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	134	1263	1162	1116	717	582
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	34	316	291	279	179	0
Total Analysis Volume [veh/h]	134	1263	1162	1116	717	0
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Unsignalized	Permissive	Unsignalized
Signal Group	1	6	2	0	3	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	6	10	10	0	6	0
Maximum Green [s]	30	30	30	0	30	0
Amber [s]	3.0	3.0	3.0	0.0	3.0	0.0
All red [s]	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	38	60	22	0	30	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	0	7	0	0	0
Pedestrian Clearance [s]	0	0	11	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No	No		No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
Minimum Recall	No	No	No		No	
Maximum Recall	No	No	No		No	
Pedestrian Recall	No	No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L
C, Cycle Length [s]	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	66	54	16
g / C, Green / Cycle	0.10	0.73	0.59	0.18
(v / s)_i Volume / Saturation Flow Rate	0.08	0.19	0.23	0.14
s, saturation flow rate [veh/h]	1781	6792	5094	5188
c, Capacity [veh/h]	171	4989	3026	916
d1, Uniform Delay [s]	39.78	3.90	9.61	35.42
k, delay calibration	0.11	0.50	0.50	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.62	0.12	0.37	1.51
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.78	0.25	0.38	0.78
d, Delay for Lane Group [s/veh]	47.40	4.02	9.98	36.93
Lane Group LOS	D	A	A	D
Critical Lane Group	Yes	No	Yes	Yes
50th-Percentile Queue Length [veh/ln]	3.22	1.50	3.74	5.04
50th-Percentile Queue Length [ft/ln]	80.52	37.40	93.58	126.00
95th-Percentile Queue Length [veh/ln]	5.80	2.69	6.74	8.72
95th-Percentile Queue Length [ft/ln]	144.94	67.32	168.44	218.04

Movement, Approach, & Intersection Results

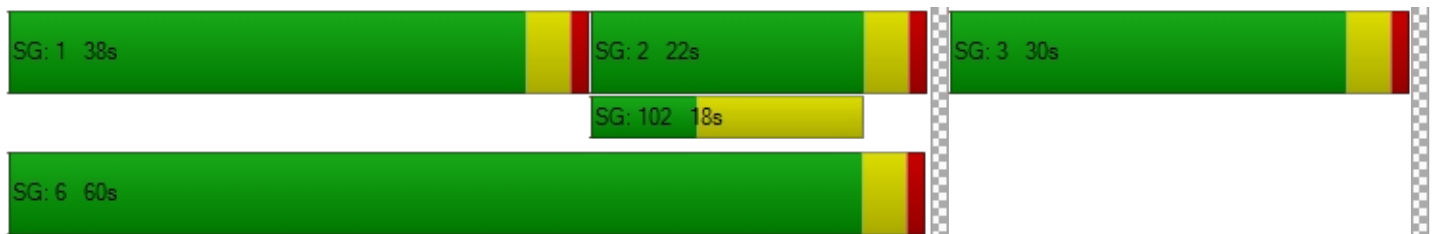
d_M, Delay for Movement [s/veh]	47.40	4.02	9.98	0.00	36.93	0.00
Movement LOS	D	A	A		D	
d_A, Approach Delay [s/veh]	8.18		9.98		36.93	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	15.11					
Intersection LOS	B					
Intersection V/C	0.509					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	34.68
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.591
Crosswalk LOS	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1244	400	578
d_b, Bicycle Delay [s]	6.43	28.81	22.77
I_b,int, Bicycle LOS Score for Intersection	2.136	2.199	1.560
Bicycle LOS	B	B	A

Sequence

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



Intersection Level Of Service Report
Intersection 37: Bear St at SR-73 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	21.7
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.602

Intersection Setup

Name	Bear St			Bear St			SR-73 NB Ramps			SR-73 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0	0	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		
Crosswalk	No			No			No			Yes		

Volumes

Name	Bear St			Bear St			SR-73 NB Ramps			SR-73 NB Ramps		
Base Volume Input [veh/h]	180	376	0	0	1080	107	0	0	0	195	0	558
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	180	376	0	0	1080	107	0	0	0	195	0	558
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	45	94	0	0	270	27	0	0	0	49	0	140
Total Analysis Volume [veh/h]	180	376	0	0	1080	107	0	0	0	195	0	558
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Permiss	Split
Signal Group	1	6	0	0	2	0	0	0	0	0	7	0	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	6	10	0	0	10	0	0	0	0	0	6	0	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	15	42	0	0	27	0	0	0	0	0	48	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	11	0	0	0	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall	No	No			No						No		
Maximum Recall	No	No			No						No		
Pedestrian Recall	No	No			No						No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C		L	R
C, Cycle Length [s]	90	90	90	90		90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	11	61	46	46		21	21
g / C, Green / Cycle	0.12	0.68	0.51	0.51		0.24	0.24
(v / s)_i Volume / Saturation Flow Rate	0.10	0.11	0.22	0.22		0.11	0.20
s, saturation flow rate [veh/h]	1781	3560	3560	1785		1781	2813
c, Capacity [veh/h]	215	2406	1818	912		419	663
d1, Uniform Delay [s]	38.74	5.30	13.86	13.85		29.55	32.82
k, delay calibration	0.11	0.50	0.50	0.50		0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	8.45	0.14	0.76	1.51		0.80	3.00
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.84	0.16	0.44	0.43		0.46	0.84
d, Delay for Lane Group [s/veh]	47.19	5.43	14.62	15.35		30.35	35.83
Lane Group LOS	D	A	B	B		C	D
Critical Lane Group	Yes	No	Yes	No		No	Yes
50th-Percentile Queue Length [veh/ln]	4.33	1.14	4.94	5.13		3.65	5.93
50th-Percentile Queue Length [ft/ln]	108.29	28.61	123.58	128.23		91.23	148.19
95th-Percentile Queue Length [veh/ln]	7.74	2.06	8.59	8.84		6.57	9.92
95th-Percentile Queue Length [ft/ln]	193.62	51.49	214.74	221.08		164.21	248.01

Movement, Approach, & Intersection Results

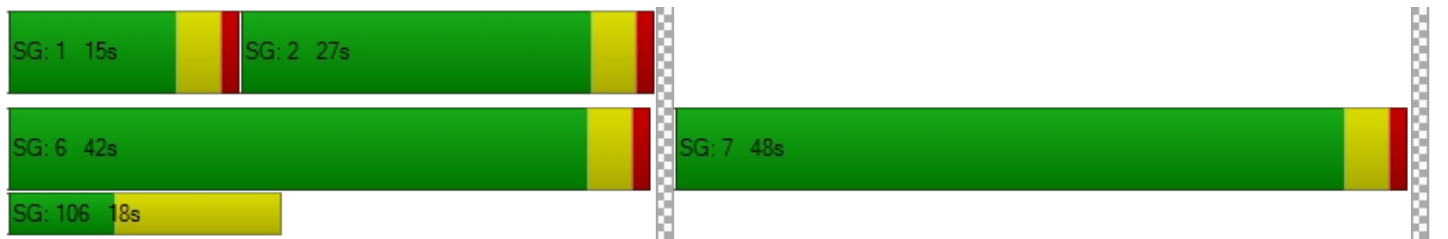
d_M, Delay for Movement [s/veh]	47.19	5.43	0.00	0.00	14.81	15.35	0.00	0.00	0.00	30.35	0.00	35.83
Movement LOS	D	A			B	B				C		D
d_A, Approach Delay [s/veh]	18.95				14.86		0.00		34.41			
Approach LOS	B				B		A		C			
d_I, Intersection Delay [s/veh]	21.67											
Intersection LOS	C											
Intersection V/C	0.602											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	34.68
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	2.314
Crosswalk LOS	F	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	844	511	0	978
d_b, Bicycle Delay [s]	15.03	24.95	45.01	11.76
I_b,int, Bicycle LOS Score for Intersection	2.018	2.212	4.132	1.560
Bicycle LOS	B	B	D	A

Sequence

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



Intersection Level Of Service Report
Intersection 38: Bear St at SR-73 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	22.6
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.701

Intersection Setup

Name	Bear St			Bear St			SR-73 SB Ramps			SR-73 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↑↑			↑↑↑			↑↑					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Bear St			Bear St			SR-73 SB Ramps			SR-73 SB Ramps		
Base Volume Input [veh/h]	0	412	425	676	677	0	135	1	229	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	412	425	676	677	0	135	1	229	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	103	106	169	169	0	34	0	57	0	0	0
Total Analysis Volume [veh/h]	0	412	425	676	677	0	135	1	229	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Permiss	Permiss
Signal Group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	6	10	0	0	10	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	18	0	41	59	0	0	31	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	7	0	0	7	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	L	C	L	C	
C, Cycle Length [s]	90	90	90	90	90	90	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	42	42	21	67	15	15	
g / C, Green / Cycle	0.46	0.46	0.23	0.74	0.17	0.17	
(v / s)_i Volume / Saturation Flow Rate	0.22	0.27	0.20	0.19	0.08	0.14	
s, saturation flow rate [veh/h]	1870	1589	3459	3560	1781	1591	
c, Capacity [veh/h]	867	737	801	2634	305	273	
d1, Uniform Delay [s]	16.60	17.67	33.05	3.77	33.45	36.14	
k, delay calibration	0.50	0.50	0.11	0.50	0.11	0.11	
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	1.86	3.27	2.54	0.24	1.01	7.00	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	0.48	0.58	0.84	0.26	0.44	0.84	
d, Delay for Lane Group [s/veh]	18.47	20.94	35.59	4.00	34.45	43.14	
Lane Group LOS	B	C	D	A	C	D	
Critical Lane Group	No	Yes	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	6.01	6.77	7.15	1.60	2.69	5.33	
50th-Percentile Queue Length [ft/ln]	150.13	169.23	178.65	39.97	67.29	133.19	
95th-Percentile Queue Length [veh/ln]	10.02	11.04	11.53	2.88	4.84	9.11	
95th-Percentile Queue Length [ft/ln]	250.61	275.90	288.25	71.95	121.12	227.83	

Movement, Approach, & Intersection Results

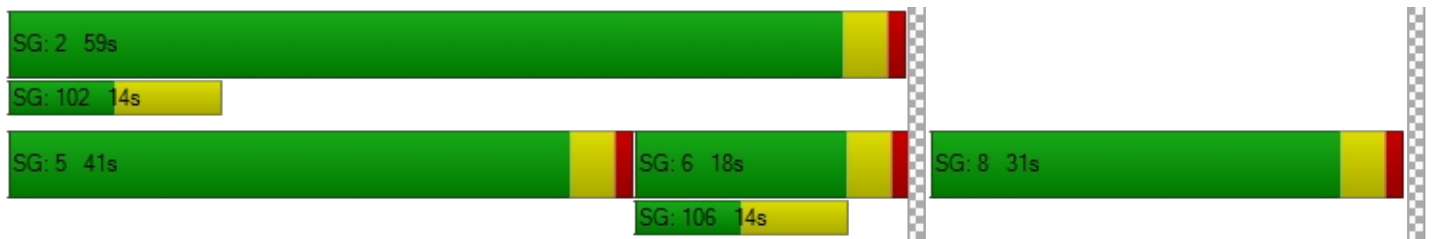
d_M, Delay for Movement [s/veh]	0.00	18.47	20.94	35.59	4.00	0.00	34.45	43.14	43.14	0.00	0.00	0.00
Movement LOS		B	C	D	A		C	D	D			
d_A, Approach Delay [s/veh]		19.72		19.78			39.93			0.00		
Approach LOS		B		B			D			A		
d_I, Intersection Delay [s/veh]	22.64											
Intersection LOS	C											
Intersection V/C	0.701											

Other Modes

g_Walk,mi, Effective Walk Time [s]		0.0		0.0		11.0		11.0
M_corner, Corner Circulation Area [ft ² /ped]		0.00		0.00		0.00		0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]		0.00		0.00		0.00		0.00
d_p, Pedestrian Delay [s]		0.00		0.00		34.68		34.68
I_p,int, Pedestrian LOS Score for Intersection		0.000		0.000		2.058		2.252
Crosswalk LOS		F		F		B		B
s_b, Saturation Flow Rate of the bicycle lane		2000		2000		2000		2000
c_b, Capacity of the bicycle lane [bicycles/h]		311		1222		600		0
d_b, Bicycle Delay [s]		32.10		6.81		22.06		45.01
I_b,int, Bicycle LOS Score for Intersection		2.250		2.676		2.162		4.132
Bicycle LOS		B		B		B		D

Sequence

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



Intersection Level Of Service Report
Intersection 12: SR-55 SB Ramps at MacArthur Blvd

Control Type:	Signalized	Delay (sec / veh):	12.8
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.775

Intersection Setup

Name	SR-55 SB Ramp			MacArthur Blvd			MacArthur Blvd					
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration				T T T T			T T T T			T T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	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	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		
Crosswalk	No			Yes			No			No		

Volumes

Name				SR-55 SB Ramp			MacArthur Blvd			MacArthur Blvd		
Base Volume Input [veh/h]	0	0	0	324	0	878	0	1399	1180	0	1791	679
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	324	0	878	0	1399	1180	0	1791	679
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	81	0	220	0	350	295	0	448	170
Total Analysis Volume [veh/h]	0	0	0	324	0	878	0	1399	1180	0	1791	679
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	0	0	0	5	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	6	0	0	0	10	0	0	10	0
Maximum Green [s]	0	0	0	30	0	0	0	30	0	0	30	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	52	0	0	0	58	0	0	58	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	14	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	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	R	C	C
C, Cycle Length [s]		56	56	56	56
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		21	21	27	27
g / C, Green / Cycle		0.38	0.38	0.47	0.47
(v / s)_i Volume / Saturation Flow Rate		0.09	0.31	0.27	0.35
s, saturation flow rate [veh/h]		3459	2813	5094	5094
c, Capacity [veh/h]		1323	1077	2417	2417
d1, Uniform Delay [s]		11.78	15.52	10.66	11.93
k, delay calibration		0.11	0.11	0.11	0.11
l, Upstream Filtering Factor		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		0.10	1.57	0.22	0.46
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.24	0.82	0.58	0.74
d, Delay for Lane Group [s/veh]		11.87	17.09	10.88	12.39
Lane Group LOS		B	B	B	B
Critical Lane Group		No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]		1.22	4.51	3.44	4.96
50th-Percentile Queue Length [ft/ln]		30.41	112.85	85.97	123.92
95th-Percentile Queue Length [veh/ln]		2.19	8.00	6.19	8.61
95th-Percentile Queue Length [ft/ln]		54.73	199.96	154.75	215.20

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	11.87	0.00	17.09	0.00	10.88	0.00	0.00	12.39	0.00
Movement LOS				B		B		B			B	
d_A, Approach Delay [s/veh]	0.00			15.68			10.88			12.39		
Approach LOS	A			B			B			B		
d_I, Intersection Delay [s/veh]	12.81											
Intersection LOS	B											
Intersection V/C	0.775											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	18.03	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	0.000	2.508	0.000	0.000
Crosswalk LOS	F	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	1718	1932	1932
d_b, Bicycle Delay [s]	27.94	0.56	0.03	0.03
I_b,int, Bicycle LOS Score for Intersection	4.132	1.560	2.329	2.545
Bicycle LOS	D	A	B	B

Sequence

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



Intersection Level Of Service Report
Intersection 13: SR-55 NB Ramps at MacArthur Blvd

Control Type:	Signalized	Delay (sec / veh):	9.2
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.681

Intersection Setup

Name	SR-55 NB Ramp						MacArthur Blvd			MacArthur Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	⇐⇐⇐						⇐⇐⇐			⇐⇐⇐		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	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		
Crosswalk	No			No			No			Yes		

Volumes

Name	SR-55 NB Ramp						MacArthur Blvd			MacArthur Blvd		
Base Volume Input [veh/h]	754	0	479	0	0	0	0	822	883	0	1724	1207
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	754	0	479	0	0	0	0	822	883	0	1724	1207
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	189	0	120	0	0	0	0	206	221	0	431	302
Total Analysis Volume [veh/h]	754	0	479	0	0	0	0	822	883	0	1724	1207
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	1	0	0	0	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	6	0	0	0	0	0	0	10	0	0	10	0
Maximum Green [s]	30	0	0	0	0	0	0	30	0	0	30	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	48	0	0	0	0	0	0	72	0	0	72	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	7	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	21	0	0	0	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No							No			No	
Maximum Recall	No							No			No	
Pedestrian Recall	No							No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L		C	C
C, Cycle Length [s]	44		44	44
L, Total Lost Time per Cycle [s]	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00		2.00	2.00
g_i, Effective Green Time [s]	13		23	23
g / C, Green / Cycle	0.30		0.52	0.52
(v / s)_i Volume / Saturation Flow Rate	0.22		0.23	0.34
s, saturation flow rate [veh/h]	3459		3560	5094
c, Capacity [veh/h]	1027		1854	2653
d1, Uniform Delay [s]	13.88		6.56	7.62
k, delay calibration	0.11		0.11	0.11
l, Upstream Filtering Factor	1.00		1.00	1.00
d2, Incremental Delay [s]	1.03		0.17	0.27
d3, Initial Queue Delay [s]	0.00		0.00	0.00
Rp, platoon ratio	1.00		1.00	1.00
PF, progression factor	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.73		0.44	0.65
d, Delay for Lane Group [s/veh]	14.92		6.73	7.90
Lane Group LOS	B		A	A
Critical Lane Group	Yes		No	Yes
50th-Percentile Queue Length [veh/ln]	2.88		1.62	2.62
50th-Percentile Queue Length [ft/ln]	72.07		40.40	65.60
95th-Percentile Queue Length [veh/ln]	5.19		2.91	4.72
95th-Percentile Queue Length [ft/ln]	129.73		72.73	118.08

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	14.92	0.00	0.00	0.00	0.00	0.00	0.00	6.73	0.00	0.00	7.90	0.00
Movement LOS	B							A			A	
d_A, Approach Delay [s/veh]	14.92			0.00			6.73			7.90		
Approach LOS	B			A			A			A		
d_I, Intersection Delay [s/veh]	9.21											
Intersection LOS	A											
Intersection V/C	0.681											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	12.28
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	2.824
Crosswalk LOS	F	F	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	2010	0	3106	3106
d_b, Bicycle Delay [s]	0.00	21.89	6.69	6.69
I_b,int, Bicycle LOS Score for Intersection	1.560	4.132	2.238	2.508
Bicycle LOS	A	D	B	B

Sequence

Ring 1	1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 25: I-405 NB Off-Ramp at South Coast Drive

Control Type:	Signalized	Delay (sec / veh):	21.5
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.619

Intersection Setup

Name	I-405 NB Off-Ramp			The Cape Dwy			South Coast Drive			South Coast 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	1	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	I-405 NB Off-Ramp			The Cape Dwy			South Coast Drive			South Coast Drive		
Base Volume Input [veh/h]	524	33	212	31	0	43	47	467	0	0	421	36
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	524	33	212	31	0	43	47	467	0	0	421	36
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	131	8	53	8	0	11	12	117	0	0	105	9
Total Analysis Volume [veh/h]	524	33	212	31	0	43	47	467	0	0	421	36
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	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Permiss	Split	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	7	0	0	5	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	10	0	6	0	0	6	10	0	0	10	0
Maximum Green [s]	0	30	0	30	0	0	30	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	58	0	58	0	0	10	32	0	0	22	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	14	0	0	0	0	0	11	0	0	11	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No		No				No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	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	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	R	L	C	C	C
C, Cycle Length [s]	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
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	39	39	39	39	39	4	43	35	35
g / C, Green / Cycle	0.43	0.43	0.43	0.43	0.43	0.05	0.48	0.39	0.39
(v / s)_i Volume / Saturation Flow Rate	0.38	0.08	0.08	0.03	0.03	0.03	0.13	0.12	0.13
s, saturation flow rate [veh/h]	1363	1655	1589	1135	1589	1781	3560	1870	1819
c, Capacity [veh/h]	642	713	685	496	685	82	1710	729	709
d1, Uniform Delay [s]	25.23	15.76	15.78	18.54	14.98	42.05	13.99	19.10	19.18
k, delay calibration	0.20	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.70	0.11	0.12	0.05	0.04	6.09	0.40	1.12	1.20
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.82	0.17	0.18	0.06	0.06	0.57	0.27	0.31	0.32
d, Delay for Lane Group [s/veh]	29.93	15.88	15.90	18.59	15.02	48.14	14.39	20.23	20.38
Lane Group LOS	C	B	B	B	B	D	B	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	10.90	1.55	1.51	0.42	0.51	1.15	2.81	3.44	3.47
50th-Percentile Queue Length [ft/ln]	272.52	38.72	37.71	10.51	12.74	28.78	70.15	86.10	86.65
95th-Percentile Queue Length [veh/ln]	16.32	2.79	2.71	0.76	0.92	2.07	5.05	6.20	6.24
95th-Percentile Queue Length [ft/ln]	407.89	69.70	67.87	18.91	22.92	51.81	126.27	154.99	155.97

Movement, Approach, & Intersection Results

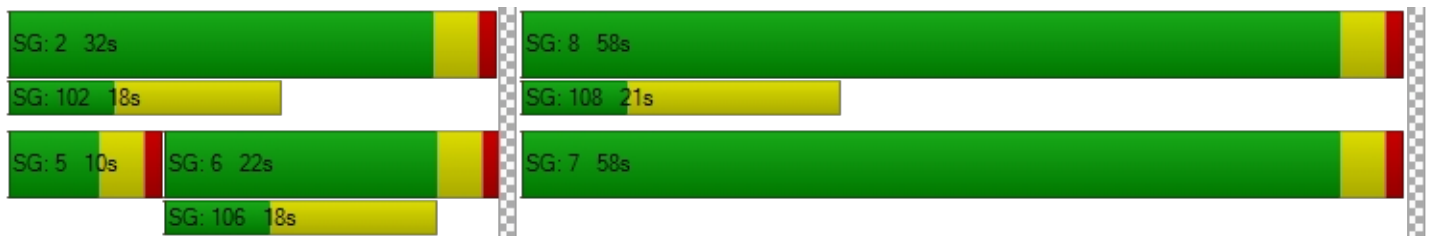
d_M, Delay for Movement [s/veh]	29.93	15.88	15.89	18.59	0.00	15.02	48.14	14.39	0.00	0.00	20.30	20.38
Movement LOS	C	B	B	B		B	D	B			C	C
d_A, Approach Delay [s/veh]	25.46			16.52			17.47			20.30		
Approach LOS	C			B			B			C		
d_I, Intersection Delay [s/veh]	21.53											
Intersection LOS	C											
Intersection V/C	0.619											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.67	34.67	0.00	34.67
I_p,int, Pedestrian LOS Score for Intersection	2.318	2.001	0.000	2.459
Crosswalk LOS	B	B	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1200	1200	622	400
d_b, Bicycle Delay [s]	7.20	7.20	21.36	28.80
I_b,int, Bicycle LOS Score for Intersection	2.828	1.560	1.984	1.937
Bicycle LOS	C	A	A	A

Sequence

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



Intersection Level Of Service Report
Intersection 28: Fairview Road at I-405 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	29.3
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.883

Intersection Setup

Name	Fairview Road			Fairview Road			I-405 NB Ramps			I-405 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	1	0	0	0	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		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Fairview Road			Fairview Road			I-405 NB Ramps			I-405 NB Ramps		
Base Volume Input [veh/h]	251	1489	0	0	2087	293	0	0	0	931	0	1180
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	251	1489	0	0	2087	293	0	0	0	931	0	1180
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	63	372	0	0	522	73	0	0	0	233	0	295
Total Analysis Volume [veh/h]	251	1489	0	0	2087	293	0	0	0	931	0	1180
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Permiss	Split
Signal Group	1	6	0	0	2	0	0	0	0	0	7	0	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	6	10	0	0	10	0	0	0	0	0	6	0	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	19	39	0	0	20	0	0	0	0	0	51	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	14	0	0	7	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall	No	No			No						No		
Maximum Recall	No	No			No						No		
Pedestrian Recall	No	No			No						No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	R		L	R
C, Cycle Length [s]	90	90	90	90		90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	14	39	21	21		43	43
g / C, Green / Cycle	0.16	0.44	0.23	0.23		0.47	0.47
(v / s)_i Volume / Saturation Flow Rate	0.14	0.29	0.20	0.18		0.27	0.42
s, saturation flow rate [veh/h]	1781	5094	10188	1589		3459	2813
c, Capacity [veh/h]	286	2226	2363	369		1640	1334
d1, Uniform Delay [s]	36.92	20.17	33.41	32.57		17.03	21.44
k, delay calibration	0.11	0.50	0.50	0.50		0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	8.43	1.62	5.25	16.11		0.31	2.14
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.88	0.67	0.88	0.79		0.57	0.88
d, Delay for Lane Group [s/veh]	45.36	21.78	38.65	48.68		17.34	23.59
Lane Group LOS	D	C	D	D		B	C
Critical Lane Group	Yes	No	Yes	No		No	Yes
50th-Percentile Queue Length [veh/ln]	5.96	8.18	7.71	7.51		6.61	10.83
50th-Percentile Queue Length [ft/ln]	149.05	204.59	192.77	187.76		165.27	270.78
95th-Percentile Queue Length [veh/ln]	9.97	12.87	12.26	12.00		10.83	16.23
95th-Percentile Queue Length [ft/ln]	249.16	321.87	306.62	300.12		270.68	405.71

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	45.36	21.78	0.00	0.00	38.65	48.68	0.00	0.00	0.00	17.34	0.00	23.59
Movement LOS	D	C			D	D				B		C
d_A, Approach Delay [s/veh]	25.18				39.89		0.00		20.83			
Approach LOS	C				D		A		C			
d_I, Intersection Delay [s/veh]	29.33											
Intersection LOS	C											
Intersection V/C	0.883											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	34.68	34.68
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	1.953	2.711
Crosswalk LOS	F	F	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	778	355	0	1044
d_b, Bicycle Delay [s]	16.82	30.43	45.01	10.28
I_b,int, Bicycle LOS Score for Intersection	2.517	2.214	4.132	1.560
Bicycle LOS	B	B	D	A

Sequence

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



Intersection Level Of Service Report
Intersection 29: Fairview Road at I-405 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	20.7
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.709

Intersection Setup

Name	Fairview Rd			Fairview Rd			I-405 SB Ramps			I-405 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T			T			T					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	1	0	0	1	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Fairview Rd			Fairview Rd			I-405 SB Ramps			I-405 SB Ramps		
Base Volume Input [veh/h]	0	1284	714	1150	1814	0	344	0	398	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1284	714	1150	1814	0	344	0	398	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	321	179	288	454	0	86	0	100	0	0	0
Total Analysis Volume [veh/h]	0	1284	714	1150	1814	0	344	0	398	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Permiss
Signal Group	0	6	0	5	2	0	3	0	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	10	0	6	10	0	6	0	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	30	0	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Split [s]	0	22	0	43	65	0	25	0	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	11	0	0	14	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No		No					
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No		No					
Maximum Recall		No		No	No		No					
Pedestrian Recall		No		No	No		No					
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	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]	38	38	38	25	66	16	16	
g / C, Green / Cycle	0.42	0.42	0.42	0.27	0.74	0.17	0.17	
(v / s)_i Volume / Saturation Flow Rate	0.24	0.25	0.25	0.22	0.36	0.10	0.14	
s, saturation flow rate [veh/h]	5094	1589	1589	5188	5094	3459	2813	
c, Capacity [veh/h]	2139	668	668	1414	3754	603	490	
d1, Uniform Delay [s]	19.81	20.23	20.23	30.62	4.84	34.09	35.76	
k, delay calibration	0.50	0.50	0.50	0.11	0.50	0.11	0.11	
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	1.07	3.94	3.94	1.18	0.45	0.85	3.29	
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	0.56	0.60	0.60	0.81	0.48	0.57	0.81	
d, Delay for Lane Group [s/veh]	20.87	24.17	24.17	31.80	5.29	34.94	39.05	
Lane Group LOS	C	C	C	C	A	C	D	
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	6.28	6.93	6.93	7.70	3.62	3.47	4.34	
50th-Percentile Queue Length [ft/ln]	156.98	173.19	173.19	192.41	90.52	86.64	108.58	
95th-Percentile Queue Length [veh/ln]	10.39	11.24	11.24	12.25	6.52	6.24	7.76	
95th-Percentile Queue Length [ft/ln]	259.71	281.11	281.11	306.15	162.93	155.95	194.03	

Movement, Approach, & Intersection Results

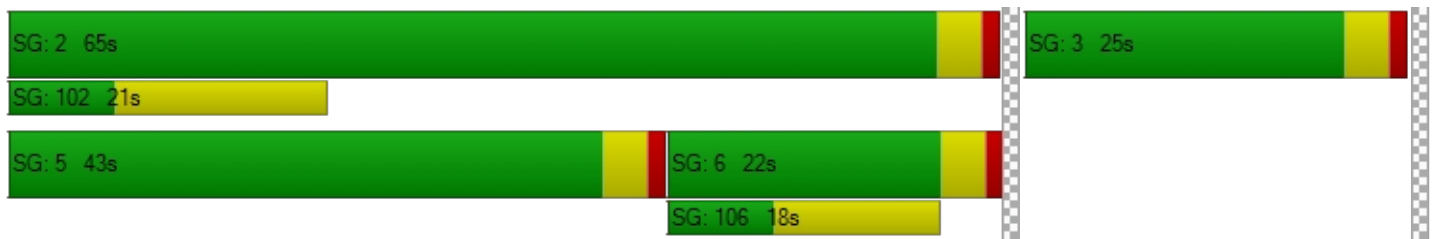
d_M, Delay for Movement [s/veh]	0.00	20.87	24.17	31.80	5.29	0.00	34.94	0.00	39.05	0.00	0.00	0.00
Movement LOS		C	C	C	A		C		D			
d_A, Approach Delay [s/veh]	22.19			15.57			37.15			0.00		
Approach LOS	C			B			D			A		
d_I, Intersection Delay [s/veh]	20.70											
Intersection LOS	C											
Intersection V/C	0.709											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	34.68	34.68
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.444	2.546
Crosswalk LOS	F	F	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	400	1355	467	0
d_b, Bicycle Delay [s]	28.81	4.68	26.46	45.01
I_b,int, Bicycle LOS Score for Intersection	2.384	3.190	1.560	4.132
Bicycle LOS	B	C	A	D

Sequence

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



Intersection Level Of Service Report
Intersection 30: Bristol Street at I-405 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	15.3
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.727

Intersection Setup

Name	Bristol Street			Bristol Street			I-405 NB Ramps			I-405 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	0	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	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	No			No			Yes			Yes		

Volumes

Name	Bristol Street			Bristol Street			I-405 NB Ramps			I-405 NB Ramps		
Base Volume Input [veh/h]	0	2586	204	0	2713	22	0	0	216	407	340	1473
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	2586	204	0	2713	22	0	0	216	407	340	1473
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	647	51	0	678	6	0	0	54	102	85	368
Total Analysis Volume [veh/h]	0	2586	204	0	2713	22	0	0	216	407	340	1473
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	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss	Split	Permiss	Split	Split	Split	Overlap
Signal Group	0	6	0	0	2	0	0	0	8	0	4	4
Auxiliary Signal Groups												2,4
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	0	10	0	0	0	6	0	10	10
Maximum Green [s]	0	30	0	0	30	0	0	0	30	0	30	30
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0
Split [s]	0	33	0	0	33	0	0	0	35	0	22	22
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	18	0	0	14	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No				No		No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0
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	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	C	R	L	C	C	R
C, Cycle Length [s]	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
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	51	51	51	9	18	18	18	73
g / C, Green / Cycle	0.56	0.56	0.56	0.10	0.20	0.20	0.20	0.81
(v / s)_i Volume / Saturation Flow Rate	0.38	0.32	0.29	0.08	0.14	0.14	0.15	0.52
s, saturation flow rate [veh/h]	6792	6792	1857	2813	1781	1812	1702	2813
c, Capacity [veh/h]	3822	3822	1045	291	358	364	342	2273
d1, Uniform Delay [s]	13.91	12.71	12.21	39.23	33.45	33.35	33.70	3.49
k, delay calibration	0.50	0.50	0.50	0.11	0.11	0.11	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.98	0.63	1.88	3.75	2.45	2.28	2.98	1.45
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.68	0.57	0.52	0.74	0.70	0.68	0.73	0.65
d, Delay for Lane Group [s/veh]	14.89	13.34	14.09	42.99	35.89	35.63	36.68	4.93
Lane Group LOS	B	B	B	D	D	D	D	A
Critical Lane Group	No	No	No	Yes	No	No	Yes	Yes
50th-Percentile Queue Length [veh/ln]	8.64	6.65	6.77	2.44	5.20	5.17	5.28	3.40
50th-Percentile Queue Length [ft/ln]	216.07	166.16	169.28	60.99	129.9	129.2	131.8	85.05
95th-Percentile Queue Length [veh/ln]	13.46	10.87	11.04	4.39	8.94	8.90	9.04	6.12
95th-Percentile Queue Length [ft/ln]	336.61	271.86	275.97	109.79	223.4	222.5	226.0	153.0

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	14.89	0.00	0.00	13.48	14.09	0.00	0.00	42.99	35.89	36.40	4.93
Movement LOS		B			B	B			D	D	D	A
d_A, Approach Delay [s/veh]	14.89			13.49			42.99			15.41		
Approach LOS	B			B			D			B		
d_I, Intersection Delay [s/veh]	15.33											
Intersection LOS	B											
Intersection V/C	0.727											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0			0.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	0.00			0.00			34.70			34.70		
I_p,int, Pedestrian LOS Score for Intersection	0.000			0.000			2.271			2.813		
Crosswalk LOS	F			F			B			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	644			644			689			400		
d_b, Bicycle Delay [s]	20.69			20.69			19.36			28.82		
I_b,int, Bicycle LOS Score for Intersection	2.626			2.462			1.560			3.391		
Bicycle LOS	B			B			A			C		

Sequence

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



Intersection Level Of Service Report
Intersection 31: Bristol Street at I-405 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	17.7
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.713

Intersection Setup

Name	Bristol Street		Bristol Street		I-405 SB Ramps	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration	↵		↵↵		↵↵↵↵	
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	1	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		Yes	

Volumes

Name	Bristol Street		Bristol Street		I-405 SB Ramps	
Base Volume Input [veh/h]	145	1790	1731	1123	1020	367
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	145	1790	1731	1123	1020	367
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	36	448	433	281	255	0
Total Analysis Volume [veh/h]	145	1790	1731	1123	1020	0
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Unsignalized	Permissive	Unsignalized
Signal Group	1	6	2	0	3	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	6	10	10	0	6	0
Maximum Green [s]	30	30	30	0	30	0
Amber [s]	3.0	3.0	3.0	0.0	3.0	0.0
All red [s]	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	22	44	22	0	46	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	0	7	0	0	0
Pedestrian Clearance [s]	0	0	11	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No	No		No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
Minimum Recall	No	No	No		No	
Maximum Recall	No	No	No		No	
Pedestrian Recall	No	No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L
C, Cycle Length [s]	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	60	47	22
g / C, Green / Cycle	0.10	0.67	0.52	0.25
(v / s)_i Volume / Saturation Flow Rate	0.08	0.26	0.34	0.20
s, saturation flow rate [veh/h]	1781	6792	5094	5188
c, Capacity [veh/h]	181	4519	2644	1275
d1, Uniform Delay [s]	39.54	6.85	15.77	31.87
k, delay calibration	0.11	0.50	0.50	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.87	0.26	1.28	1.20
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.80	0.40	0.65	0.80
d, Delay for Lane Group [s/veh]	47.41	7.11	17.05	33.08
Lane Group LOS	D	A	B	C
Critical Lane Group	Yes	No	Yes	Yes
50th-Percentile Queue Length [veh/ln]	3.49	3.41	8.29	6.90
50th-Percentile Queue Length [ft/ln]	87.20	85.32	207.33	172.61
95th-Percentile Queue Length [veh/ln]	6.28	6.14	13.02	11.21
95th-Percentile Queue Length [ft/ln]	156.95	153.58	325.41	280.34

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	47.41	7.11	17.05	0.00	33.08	0.00
Movement LOS	D	A	B		C	
d_A, Approach Delay [s/veh]	10.13		17.05		33.08	
Approach LOS	B		B		C	
d_I, Intersection Delay [s/veh]	17.68					
Intersection LOS	B					
Intersection V/C	0.713					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	34.68
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.642
Crosswalk LOS	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	889	400	933
d_b, Bicycle Delay [s]	13.90	28.81	12.81
I_b,int, Bicycle LOS Score for Intersection	2.358	2.512	1.560
Bicycle LOS	B	B	A

Sequence

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



Intersection Level Of Service Report
Intersection 37: Bear St at SR-73 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	46.4
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.980

Intersection Setup

Name	Bear St			Bear St			SR-73 NB Ramps			SR-73 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0	0	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		
Crosswalk	No			No			No			Yes		

Volumes

Name	Bear St			Bear St			SR-73 NB Ramps			SR-73 NB Ramps		
Base Volume Input [veh/h]	170	664	0	0	1165	167	0	0	0	456	0	1500
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	170	664	0	0	1165	167	0	0	0	456	0	1500
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	43	166	0	0	291	42	0	0	0	114	0	375
Total Analysis Volume [veh/h]	170	664	0	0	1165	167	0	0	0	456	0	1500
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Permiss	Split
Signal Group	1	6	0	0	2	0	0	0	0	0	7	0	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	6	10	0	0	10	0	0	0	0	0	6	0	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	16	50	0	0	34	0	0	0	0	0	70	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	11	0	0	0	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall	No	No			No						No		
Maximum Recall	No	No			No						No		
Pedestrian Recall	No	No			No						No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C		L	R
C, Cycle Length [s]	120	120	120	120		120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	12	46	30	30		66	66
g / C, Green / Cycle	0.10	0.39	0.25	0.25		0.55	0.55
(v / s)_i Volume / Saturation Flow Rate	0.10	0.19	0.25	0.25		0.26	0.53
s, saturation flow rate [veh/h]	1781	3560	3560	1754		1781	2813
c, Capacity [veh/h]	179	1378	901	444		973	1537
d1, Uniform Delay [s]	53.62	27.69	44.56	44.78		16.60	26.46
k, delay calibration	0.11	0.50	0.50	0.50		0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	21.02	1.21	26.61	42.75		0.35	6.47
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.95	0.48	0.99	1.00		0.47	0.98
d, Delay for Lane Group [s/veh]	74.65	28.90	71.17	87.53		16.95	32.92
Lane Group LOS	E	C	E	F		B	C
Critical Lane Group	Yes	No	No	Yes		No	Yes
50th-Percentile Queue Length [veh/ln]	6.14	7.40	16.35	18.36		7.58	21.01
50th-Percentile Queue Length [ft/ln]	153.48	184.95	408.82	458.93		189.59	525.20
95th-Percentile Queue Length [veh/ln]	10.20	11.86	22.98	25.39		12.10	28.52
95th-Percentile Queue Length [ft/ln]	255.06	296.46	574.62	634.66		302.49	713.12

Movement, Approach, & Intersection Results

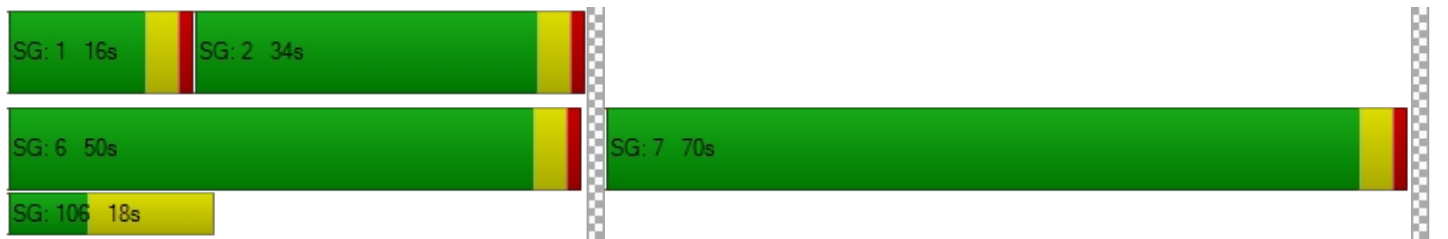
d_M, Delay for Movement [s/veh]	74.65	28.90	0.00	0.00	75.06	87.53	0.00	0.00	0.00	16.95	0.00	32.92
Movement LOS	E	C			E	F				B		C
d_A, Approach Delay [s/veh]	38.22			76.62			0.00			29.20		
Approach LOS	D			E			A			C		
d_I, Intersection Delay [s/veh]	46.35											
Intersection LOS	D											
Intersection V/C	0.980											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	49.49
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	2.622
Crosswalk LOS	F	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	767	500	0	1100
d_b, Bicycle Delay [s]	22.80	33.73	59.98	12.14
I_b,int, Bicycle LOS Score for Intersection	2.248	2.292	4.132	1.560
Bicycle LOS	B	B	D	A

Sequence

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



Intersection Level Of Service Report
Intersection 38: Bear St at SR-73 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	20.5
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.633

Intersection Setup

Name	Bear St			Bear St			SR-73 SB Ramps			SR-73 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↑↑			↑↑↑			↑↑					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Bear St			Bear St			SR-73 SB Ramps			SR-73 SB Ramps		
Base Volume Input [veh/h]	0	635	191	674	954	0	207	1	180	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	635	191	674	954	0	207	1	180	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	159	48	169	239	0	52	0	45	0	0	0
Total Analysis Volume [veh/h]	0	635	191	674	954	0	207	1	180	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Permiss	Permiss
Signal Group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	6	10	0	0	10	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	18	0	43	61	0	0	29	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	7	0	0	7	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	L	C	L	C	
C, Cycle Length [s]	90	90	90	90	90	90	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	44	44	21	69	13	13	
g / C, Green / Cycle	0.49	0.49	0.23	0.77	0.14	0.14	
(v / s)_i Volume / Saturation Flow Rate	0.22	0.24	0.19	0.27	0.11	0.12	
s, saturation flow rate [veh/h]	1870	1729	3459	3560	1781	1593	
c, Capacity [veh/h]	920	851	800	2733	256	229	
d1, Uniform Delay [s]	14.91	15.27	33.05	3.32	37.31	37.33	
k, delay calibration	0.50	0.50	0.11	0.50	0.11	0.11	
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	1.58	1.98	2.51	0.35	5.72	6.47	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	0.45	0.49	0.84	0.35	0.80	0.80	
d, Delay for Lane Group [s/veh]	16.50	17.25	35.56	3.67	43.03	43.80	
Lane Group LOS	B	B	D	A	D	D	
Critical Lane Group	No	Yes	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	5.60	5.79	7.12	2.04	4.69	4.26	
50th-Percentile Queue Length [ft/ln]	140.12	144.78	178.01	50.91	117.17	106.46	
95th-Percentile Queue Length [veh/ln]	9.49	9.74	11.50	3.67	8.24	7.64	
95th-Percentile Queue Length [ft/ln]	237.18	243.44	287.41	91.64	205.93	191.06	

Movement, Approach, & Intersection Results

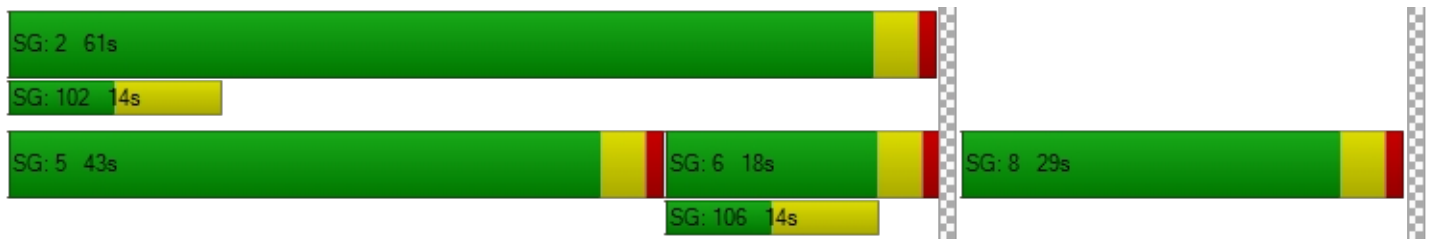
d_M, Delay for Movement [s/veh]	0.00	16.76	17.25	35.56	3.67	0.00	43.07	43.80	43.80	0.00	0.00	0.00
Movement LOS		B	B	D	A		D	D	D			
d_A, Approach Delay [s/veh]		16.87		16.87			43.39		0.00			
Approach LOS		B		B			D		A			
d_I, Intersection Delay [s/veh]	20.49											
Intersection LOS	C											
Intersection V/C	0.633											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	34.68	34.68
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.066	2.137
Crosswalk LOS	F	F	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	311	1266	555	0
d_b, Bicycle Delay [s]	32.10	6.06	23.48	45.01
I_b,int, Bicycle LOS Score for Intersection	2.241	2.903	2.200	4.132
Bicycle LOS	B	C	B	D

Sequence

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



APPENDIX E-IX

**YEAR 2036 CUMULATIVE
TRAFFIC CONDITIONS**

Intersection Level Of Service Report
Intersection 12: SR-55 SB Ramps at MacArthur Blvd

Control Type:	Signalized	Delay (sec / veh):	15.8
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.818

Intersection Setup

Name	SR-55 SB Ramp			MacArthur Blvd			MacArthur Blvd					
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration				T T T T			T T T T			T T T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	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	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		
Crosswalk	No			Yes			No			No		

Volumes

Name				SR-55 SB Ramp			MacArthur Blvd			MacArthur Blvd		
Base Volume Input [veh/h]	0	0	0	1113	0	1033	0	1770	1208	0	1490	169
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	1113	0	1033	0	1770	1208	0	1490	169
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	278	0	258	0	443	302	0	373	42
Total Analysis Volume [veh/h]	0	0	0	1113	0	1033	0	1770	1208	0	1490	169
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	0	0	0	5	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	6	0	0	0	10	0	0	10	0
Maximum Green [s]	0	0	0	30	0	0	0	30	0	0	30	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	49	0	0	0	46	0	0	46	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	14	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	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	R	C	C
C, Cycle Length [s]		63	63	63	63
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		28	28	28	28
g / C, Green / Cycle		0.44	0.44	0.44	0.44
(v / s)_i Volume / Saturation Flow Rate		0.32	0.37	0.35	0.29
s, saturation flow rate [veh/h]		3459	2813	5094	5094
c, Capacity [veh/h]		1508	1227	2229	2229
d1, Uniform Delay [s]		14.85	15.92	15.35	14.16
k, delay calibration		0.11	0.11	0.11	0.11
l, Upstream Filtering Factor		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		0.72	1.65	0.67	0.35
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.74	0.84	0.79	0.67
d, Delay for Lane Group [s/veh]		15.57	17.57	16.02	14.51
Lane Group LOS		B	B	B	B
Critical Lane Group		No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]		5.91	6.01	6.45	4.98
50th-Percentile Queue Length [ft/ln]		147.71	150.19	161.34	124.40
95th-Percentile Queue Length [veh/ln]		9.89	10.03	10.62	8.63
95th-Percentile Queue Length [ft/ln]		247.36	250.68	265.49	215.86

Movement, Approach, & Intersection Results

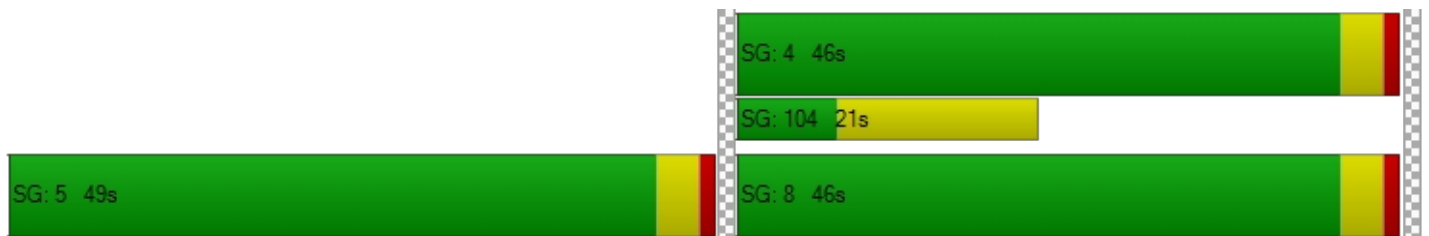
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	15.57	0.00	17.57	0.00	16.02	0.00	0.00	14.51	0.00
Movement LOS				B		B		B			B	
d_A, Approach Delay [s/veh]	0.00			16.53			16.02			14.51		
Approach LOS	A			B			B			B		
d_I, Intersection Delay [s/veh]	15.81											
Intersection LOS	B											
Intersection V/C	0.818											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	21.54	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	0.000	2.699	0.000	0.000
Crosswalk LOS	F	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	1425	1330	1330
d_b, Bicycle Delay [s]	31.58	2.61	3.55	3.55
I_b,int, Bicycle LOS Score for Intersection	4.132	1.560	2.533	2.379
Bicycle LOS	D	A	B	B

Sequence

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



Intersection Level Of Service Report
Intersection 13: SR-55 NB Ramps at MacArthur Blvd

Control Type:	Signalized	Delay (sec / veh):	30.9
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.966

Intersection Setup

Name	SR-55 NB Ramp						MacArthur Blvd			MacArthur Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	⇐⇐⇐						⇐⇐⇐			⇐⇐⇐		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	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		
Crosswalk	No			No			No			Yes		

Volumes

Name	SR-55 NB Ramp						MacArthur Blvd			MacArthur Blvd		
Base Volume Input [veh/h]	1051	0	1133	0	0	0	0	1897	988	0	614	283
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	1051	0	1133	0	0	0	0	1897	988	0	614	283
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	263	0	283	0	0	0	0	474	247	0	154	71
Total Analysis Volume [veh/h]	1051	0	1133	0	0	0	0	1897	988	0	614	283
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	1	0	0	0	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	6	0	0	0	0	0	0	10	0	0	10	0
Maximum Green [s]	30	0	0	0	0	0	0	30	0	0	30	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	44	0	0	0	0	0	0	46	0	0	46	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	7	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	21	0	0	0	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No							No			No	
Maximum Recall	No							No			No	
Pedestrian Recall	No							No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L		C	C
C, Cycle Length [s]	60		60	60
L, Total Lost Time per Cycle [s]	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00		2.00	2.00
g_i, Effective Green Time [s]	22		30	30
g / C, Green / Cycle	0.36		0.50	0.50
(v / s)_i Volume / Saturation Flow Rate	0.30		0.53	0.12
s, saturation flow rate [veh/h]	3459		3560	5094
c, Capacity [veh/h]	1254		1792	2563
d1, Uniform Delay [s]	17.40		14.81	8.36
k, delay calibration	0.11		0.11	0.11
l, Upstream Filtering Factor	1.00		1.00	1.00
d2, Incremental Delay [s]	1.57		29.91	0.05
d3, Initial Queue Delay [s]	0.00		0.00	0.00
Rp, platoon ratio	1.00		1.00	1.00
PF, progression factor	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.84		1.06	0.24
d, Delay for Lane Group [s/veh]	18.97		44.72	8.41
Lane Group LOS	B		F	A
Critical Lane Group	Yes		Yes	No
50th-Percentile Queue Length [veh/ln]	6.06		17.05	1.25
50th-Percentile Queue Length [ft/ln]	151.62		426.28	31.28
95th-Percentile Queue Length [veh/ln]	10.10		24.84	2.25
95th-Percentile Queue Length [ft/ln]	252.59		621.06	56.31

Movement, Approach, & Intersection Results

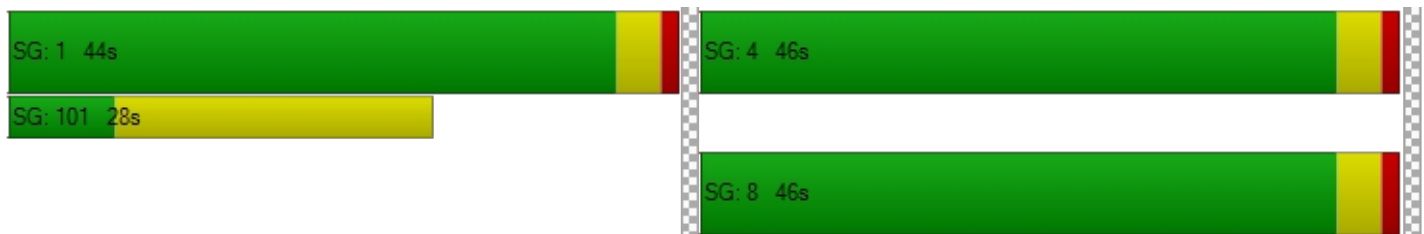
d_M, Delay for Movement [s/veh]	18.97	0.00	0.00	0.00	0.00	0.00	0.00	44.72	0.00	0.00	8.41	0.00
Movement LOS	B							F			A	
d_A, Approach Delay [s/veh]	18.97			0.00			44.72			8.41		
Approach LOS	B			A			D			A		
d_I, Intersection Delay [s/veh]	30.86											
Intersection LOS	C											
Intersection V/C	0.966											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	19.80
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	2.838
Crosswalk LOS	F	F	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1343	0	1410	1410
d_b, Bicycle Delay [s]	3.21	29.78	2.59	2.59
I_b,int, Bicycle LOS Score for Intersection	1.560	4.132	3.125	1.897
Bicycle LOS	A	D	C	A

Sequence

Ring 1	1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 25: I-405 NB Off-Ramp at South Coast Drive

Control Type:	Signalized	Delay (sec / veh):	21.4
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.434

Intersection Setup

Name	I-405 NB Off-Ramp			The Cape Dwy			South Coast Drive			South Coast 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	1	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	I-405 NB Off-Ramp			The Cape Dwy			South Coast Drive			South Coast Drive		
Base Volume Input [veh/h]	401	7	105	55	0	82	22	255	0	0	131	19
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	401	7	105	55	0	82	22	255	0	0	131	19
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	100	2	26	14	0	21	6	64	0	0	33	5
Total Analysis Volume [veh/h]	401	7	105	55	0	82	22	255	0	0	131	19
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	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Permiss	Split	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	7	0	0	5	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	10	0	6	0	0	6	10	0	0	10	0
Maximum Green [s]	0	30	0	30	0	0	30	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	58	0	58	0	0	10	32	0	0	22	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	14	0	0	0	0	0	11	0	0	11	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No		No				No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	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	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	R	L	C	C	C
C, Cycle Length [s]	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
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	32	32	32	32	32	3	50	44	44
g / C, Green / Cycle	0.35	0.35	0.35	0.35	0.35	0.03	0.56	0.49	0.49
(v / s)_i Volume / Saturation Flow Rate	0.30	0.03	0.03	0.04	0.05	0.01	0.07	0.04	0.04
s, saturation flow rate [veh/h]	1316	1620	1589	1281	1589	1781	3560	1870	1790
c, Capacity [veh/h]	517	569	558	475	558	51	1993	911	872
d1, Uniform Delay [s]	28.89	19.63	19.63	22.47	19.97	43.01	9.39	12.34	12.37
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.54	0.08	0.08	0.11	0.12	5.72	0.13	0.18	0.19
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.78	0.10	0.10	0.12	0.15	0.43	0.13	0.08	0.09
d, Delay for Lane Group [s/veh]	31.43	19.70	19.70	22.58	20.09	48.73	9.52	12.52	12.56
Lane Group LOS	C	B	B	C	C	D	A	B	B
Critical Lane Group	Yes	No	No	No	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	8.35	0.79	0.78	0.84	1.17	0.56	1.15	0.82	0.82
50th-Percentile Queue Length [ft/ln]	208.65	19.85	19.49	21.07	29.33	13.94	28.72	20.50	20.59
95th-Percentile Queue Length [veh/ln]	13.08	1.43	1.40	1.52	2.11	1.00	2.07	1.48	1.48
95th-Percentile Queue Length [ft/ln]	327.10	35.74	35.09	37.93	52.80	25.09	51.70	36.90	37.06

Movement, Approach, & Intersection Results

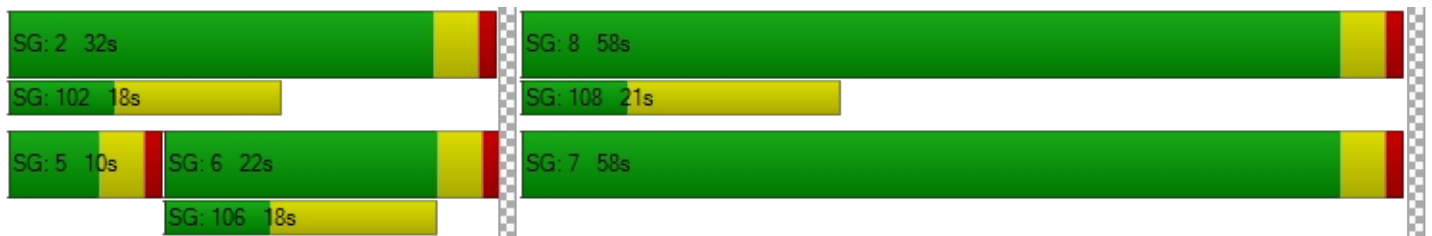
d_M, Delay for Movement [s/veh]	31.43	19.70	19.70	22.58	0.00	20.09	48.73	9.52	0.00	0.00	12.54	12.56
Movement LOS	C	B	B	C		C	D	A			B	B
d_A, Approach Delay [s/veh]	28.87			21.09			12.64			12.54		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]	21.43											
Intersection LOS	C											
Intersection V/C	0.434											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.68	34.68	0.00	34.68
I_p,int, Pedestrian LOS Score for Intersection	2.256	2.000	0.000	2.347
Crosswalk LOS	B	A	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1200	1200	622	400
d_b, Bicycle Delay [s]	7.20	7.20	21.36	28.80
I_b,int, Bicycle LOS Score for Intersection	2.406	1.560	1.788	1.683
Bicycle LOS	B	A	A	A

Sequence

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



Intersection Level Of Service Report
Intersection 28: Fairview Road at I-405 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	25.3
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.821

Intersection Setup

Name	Fairview Road			Fairview Road			I-405 NB Ramps			I-405 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	1	0	0	0	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		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Fairview Road			Fairview Road			I-405 NB Ramps			I-405 NB Ramps		
Base Volume Input [veh/h]	209	1021	0	0	2808	338	0	0	0	700	0	896
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	209	1021	0	0	2808	338	0	0	0	700	0	896
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	52	255	0	0	702	85	0	0	0	175	0	224
Total Analysis Volume [veh/h]	209	1021	0	0	2808	338	0	0	0	700	0	896
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Permiss	Split
Signal Group	1	6	0	0	2	0	0	0	0	0	7	0	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	6	10	0	0	10	0	0	0	0	0	6	0	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	21	39	0	0	18	0	0	0	0	0	51	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	14	0	0	7	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall	No	No			No						No		
Maximum Recall	No	No			No						No		
Pedestrian Recall	No	No			No						No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	R		L	R
C, Cycle Length [s]	90	90	90	90		90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	12	48	32	32		34	34
g / C, Green / Cycle	0.14	0.53	0.35	0.35		0.38	0.38
(v / s)_i Volume / Saturation Flow Rate	0.12	0.20	0.28	0.21		0.20	0.32
s, saturation flow rate [veh/h]	1781	5094	10188	1589		3459	2813
c, Capacity [veh/h]	247	2720	3575	558		1304	1061
d1, Uniform Delay [s]	37.84	12.22	26.19	24.09		21.90	25.63
k, delay calibration	0.11	0.50	0.50	0.50		0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	7.76	0.40	1.81	4.83		0.34	1.94
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.85	0.38	0.79	0.61		0.54	0.84
d, Delay for Lane Group [s/veh]	45.60	12.62	28.00	28.93		22.25	27.57
Lane Group LOS	D	B	C	C		C	C
Critical Lane Group	Yes	No	Yes	No		No	Yes
50th-Percentile Queue Length [veh/ln]	4.95	3.83	8.92	6.47		5.63	8.63
50th-Percentile Queue Length [ft/ln]	123.77	95.76	222.93	161.87		140.84	215.79
95th-Percentile Queue Length [veh/ln]	8.60	6.89	13.81	10.65		9.53	13.45
95th-Percentile Queue Length [ft/ln]	215.00	172.37	345.36	266.19		238.16	336.24

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	45.60	12.62	0.00	0.00	28.00	28.93	0.00	0.00	0.00	22.25	0.00	27.57
Movement LOS	D	B			C	C				C		C
d_A, Approach Delay [s/veh]	18.22				28.10		0.00		25.24			
Approach LOS	B				C		A		C			
d_I, Intersection Delay [s/veh]	25.30											
Intersection LOS	C											
Intersection V/C	0.821											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	34.68	34.68
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	1.956	2.611
Crosswalk LOS	F	F	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	778	311	0	1044
d_b, Bicycle Delay [s]	16.82	32.10	45.01	10.28
I_b,int, Bicycle LOS Score for Intersection	2.236	2.425	4.132	1.560
Bicycle LOS	B	B	D	A

Sequence

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



Intersection Level Of Service Report
Intersection 29: Fairview Road at I-405 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	34.4
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.985

Intersection Setup

Name	Fairview Rd			Fairview Rd			I-405 SB Ramps			I-405 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↑↑↑↓			↔↔↑↑			↔↔↓					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	1	0	0	1	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Fairview Rd			Fairview Rd			I-405 SB Ramps			I-405 SB Ramps		
Base Volume Input [veh/h]	0	1030	1287	1761	1894	0	222	0	374	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1030	1287	1761	1894	0	222	0	374	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	258	322	440	474	0	56	0	94	0	0	0
Total Analysis Volume [veh/h]	0	1030	1287	1761	1894	0	222	0	374	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Permiss
Signal Group	0	6	0	5	2	0	3	0	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	10	0	6	10	0	6	0	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	30	0	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Split [s]	0	49	0	42	91	0	19	0	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	11	0	0	14	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No		No					
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No		No					
Maximum Recall		No		No	No		No					
Pedestrian Recall		No		No	No		No					
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	R	L	C	L	R	
C, Cycle Length [s]	110	110	110	110	110	110	110	
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]	45	45	45	38	87	15	15	
g / C, Green / Cycle	0.41	0.41	0.41	0.35	0.79	0.14	0.14	
(v / s)_i Volume / Saturation Flow Rate	0.20	0.40	0.40	0.34	0.37	0.06	0.13	
s, saturation flow rate [veh/h]	5094	1589	1589	5188	5094	3459	2813	
c, Capacity [veh/h]	2083	650	650	1792	4027	473	384	
d1, Uniform Delay [s]	24.08	32.28	32.28	35.68	3.84	43.80	47.27	
k, delay calibration	0.50	0.50	0.50	0.11	0.50	0.11	0.11	
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	0.84	32.96	32.96	6.69	0.40	0.73	15.81	
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	0.49	0.99	0.99	0.98	0.47	0.47	0.97	
d, Delay for Lane Group [s/veh]	24.93	65.24	65.24	42.37	4.23	44.53	63.08	
Lane Group LOS	C	E	E	D	A	D	E	
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	6.69	22.36	22.36	16.32	3.67	2.83	5.91	
50th-Percentile Queue Length [ft/ln]	167.30	558.90	558.90	407.99	91.85	70.87	147.80	
95th-Percentile Queue Length [veh/ln]	10.93	30.11	30.11	22.94	6.61	5.10	9.90	
95th-Percentile Queue Length [ft/ln]	273.36	752.76	752.76	573.62	165.33	127.57	247.49	

Movement, Approach, & Intersection Results

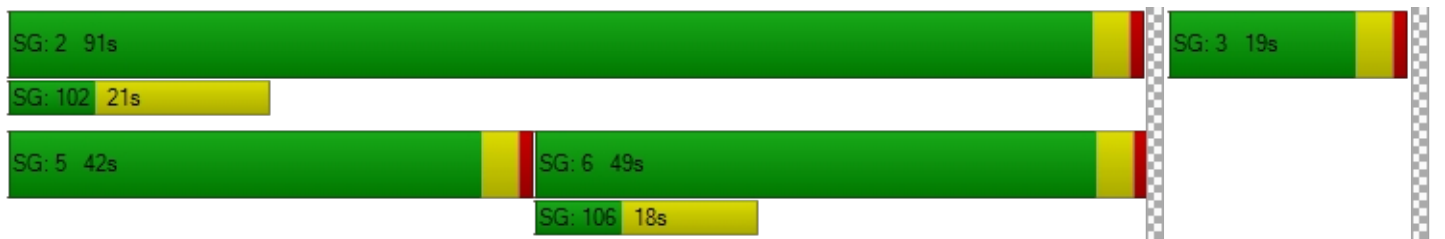
d_M, Delay for Movement [s/veh]	0.00	24.93	65.24	42.37	4.23	0.00	44.53	0.00	63.08	0.00	0.00	0.00
Movement LOS		C	E	D	A		D		E			
d_A, Approach Delay [s/veh]	47.32			22.61			56.17			0.00		
Approach LOS	D			C			E			A		
d_I, Intersection Delay [s/veh]	34.37											
Intersection LOS	C											
Intersection V/C	0.985											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0			0.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	0.00			0.00			44.55			44.55		
I_p,int, Pedestrian LOS Score for Intersection	0.000			0.000			2.426			2.940		
Crosswalk LOS	F			F			B			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	818			1582			273			0		
d_b, Bicycle Delay [s]	19.20			2.40			41.02			55.00		
I_b,int, Bicycle LOS Score for Intersection	2.515			3.570			1.560			4.132		
Bicycle LOS	B			D			A			D		

Sequence

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



Intersection Level Of Service Report
Intersection 30: Bristol Street at I-405 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	6.5
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.409

Intersection Setup

Name	Bristol Street			Bristol Street			I-405 NB Ramps			I-405 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	0	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	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	No			No			Yes			Yes		

Volumes

Name	Bristol Street			Bristol Street			I-405 NB Ramps			I-405 NB Ramps		
Base Volume Input [veh/h]	0	1790	220	0	2497	9	0	0	39	142	84	809
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1790	220	0	2497	9	0	0	39	142	84	809
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	448	55	0	624	2	0	0	10	36	21	202
Total Analysis Volume [veh/h]	0	1790	220	0	2497	9	0	0	39	142	84	809
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	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss	Split	Permiss	Split	Split	Split	Overlap
Signal Group	0	6	0	0	2	0	0	0	8	0	4	4
Auxiliary Signal Groups												2,4
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	0	10	0	0	0	6	0	10	10
Maximum Green [s]	0	30	0	0	30	0	0	0	30	0	30	30
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0
Split [s]	0	62	0	0	62	0	0	0	13	0	15	15
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	18	0	0	14	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No				No		No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0
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	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	C	R	L	C	C	R
C, Cycle Length [s]	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
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	64	64	64	4	10	10	10	78
g / C, Green / Cycle	0.71	0.71	0.71	0.04	0.11	0.11	0.11	0.87
(v / s)_i Volume / Saturation Flow Rate	0.26	0.30	0.27	0.01	0.04	0.04	0.05	0.29
s, saturation flow rate [veh/h]	6792	6792	1864	2813	1781	1788	1702	2813
c, Capacity [veh/h]	4839	4839	1328	119	199	200	191	2445
d1, Uniform Delay [s]	5.05	5.28	5.09	41.88	37.04	37.04	37.20	1.09
k, delay calibration	0.50	0.50	0.50	0.11	0.11	0.11	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.22	0.26	0.82	1.59	1.15	1.14	1.40	0.36
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.37	0.41	0.38	0.33	0.37	0.37	0.41	0.33
d, Delay for Lane Group [s/veh]	5.27	5.54	5.91	43.47	38.19	38.18	38.60	1.45
Lane Group LOS	A	A	A	D	D	D	D	A
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.68	3.14	3.24	0.44	1.56	1.56	1.65	0.34
50th-Percentile Queue Length [ft/ln]	66.94	78.41	81.01	11.07	38.91	39.06	41.19	8.56
95th-Percentile Queue Length [veh/ln]	4.82	5.65	5.83	0.80	2.80	2.81	2.97	0.62
95th-Percentile Queue Length [ft/ln]	120.50	141.13	145.82	19.93	70.03	70.30	74.15	15.40

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	5.27	0.00	0.00	5.62	5.91	0.00	0.00	43.47	38.19	38.57	1.45
Movement LOS		A			A	A			D	D	D	A
d_A, Approach Delay [s/veh]	5.27			5.62			43.47			9.50		
Approach LOS	A			A			D			A		
d_I, Intersection Delay [s/veh]	6.53											
Intersection LOS	A											
Intersection V/C	0.409											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0			0.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	0.00			0.00			34.68			34.68		
I_p,int, Pedestrian LOS Score for Intersection	0.000			0.000			2.163			2.621		
Crosswalk LOS	F			F			B			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	1289			1289			200			244		
d_b, Bicycle Delay [s]	5.70			5.70			36.46			34.68		
I_b,int, Bicycle LOS Score for Intersection	2.298			2.387			1.560			2.413		
Bicycle LOS	B			B			A			B		

Sequence

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



Intersection Level Of Service Report
Intersection 31: Bristol Street at I-405 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	15.0
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.515

Intersection Setup

Name	Bristol Street		Bristol Street		I-405 SB Ramps	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration	↵ ↑ ↑ ↑		↑ ↑ ↵		↵↵↵↵	
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	1	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		Yes	

Volumes

Name	Bristol Street		Bristol Street		I-405 SB Ramps	
Base Volume Input [veh/h]	139	1299	1177	1083	713	603
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	139	1299	1177	1083	713	603
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	35	325	294	271	178	0
Total Analysis Volume [veh/h]	139	1299	1177	1083	713	0
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Unsignalized	Permissive	Unsignalized
Signal Group	1	6	2	0	3	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	6	10	10	0	6	0
Maximum Green [s]	30	30	30	0	30	0
Amber [s]	3.0	3.0	3.0	0.0	3.0	0.0
All red [s]	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	40	62	22	0	28	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	0	7	0	0	0
Pedestrian Clearance [s]	0	0	11	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No	No		No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
Minimum Recall	No	No	No		No	
Maximum Recall	No	No	No		No	
Pedestrian Recall	No	No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L
C, Cycle Length [s]	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	66	53	16
g / C, Green / Cycle	0.10	0.74	0.59	0.17
(v / s)_i Volume / Saturation Flow Rate	0.08	0.19	0.23	0.14
s, saturation flow rate [veh/h]	1781	6792	5094	5188
c, Capacity [veh/h]	177	5004	3021	905
d1, Uniform Delay [s]	39.62	3.86	9.70	35.58
k, delay calibration	0.11	0.50	0.50	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.51	0.13	0.38	1.57
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.79	0.26	0.39	0.79
d, Delay for Lane Group [s/veh]	47.13	3.98	10.08	37.15
Lane Group LOS	D	A	B	D
Critical Lane Group	Yes	No	Yes	Yes
50th-Percentile Queue Length [veh/ln]	3.33	1.53	3.82	5.03
50th-Percentile Queue Length [ft/ln]	83.28	38.18	95.50	125.67
95th-Percentile Queue Length [veh/ln]	6.00	2.75	6.88	8.70
95th-Percentile Queue Length [ft/ln]	149.90	68.72	171.90	217.60

Movement, Approach, & Intersection Results

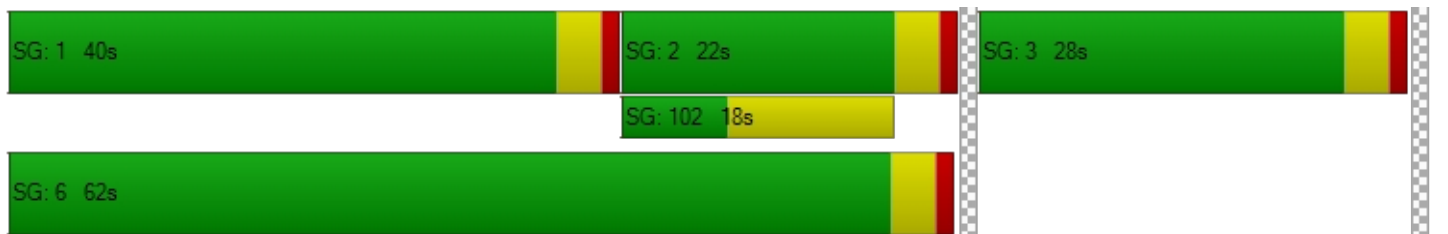
d_M, Delay for Movement [s/veh]	47.13	3.98	10.08	0.00	37.15	0.00
Movement LOS	D	A	B		D	
d_A, Approach Delay [s/veh]	8.15		10.08		37.15	
Approach LOS	A		B		D	
d_I, Intersection Delay [s/veh]	15.05					
Intersection LOS	B					
Intersection V/C	0.515					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	34.68
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.591
Crosswalk LOS	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1289	400	533
d_b, Bicycle Delay [s]	5.70	28.81	24.21
I_b,int, Bicycle LOS Score for Intersection	2.153	2.207	1.560
Bicycle LOS	B	B	A

Sequence

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



Intersection Level Of Service Report
Intersection 37: Bear St at SR-73 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	21.8
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.611

Intersection Setup

Name	Bear St			Bear St			SR-73 NB Ramps			SR-73 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0	0	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		
Crosswalk	No			No			No			Yes		

Volumes

Name	Bear St			Bear St			SR-73 NB Ramps			SR-73 NB Ramps		
Base Volume Input [veh/h]	186	388	0	0	1089	111	0	0	0	202	0	564
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	186	388	0	0	1089	111	0	0	0	202	0	564
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	47	97	0	0	272	28	0	0	0	51	0	141
Total Analysis Volume [veh/h]	186	388	0	0	1089	111	0	0	0	202	0	564
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Permiss	Split
Signal Group	1	6	0	0	2	0	0	0	0	0	7	0	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	6	10	0	0	10	0	0	0	0	0	6	0	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	24	38	0	0	14	0	0	0	0	0	52	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	11	0	0	0	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall	No	No			No						No		
Maximum Recall	No	No			No						No		
Pedestrian Recall	No	No			No						No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C		L	R
C, Cycle Length [s]	90	90	90	90		90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	11	61	45	45		21	21
g / C, Green / Cycle	0.13	0.67	0.50	0.50		0.24	0.24
(v / s)_i Volume / Saturation Flow Rate	0.10	0.11	0.22	0.22		0.11	0.20
s, saturation flow rate [veh/h]	1781	3560	3560	1783		1781	2813
c, Capacity [veh/h]	225	2396	1788	895		424	670
d1, Uniform Delay [s]	38.37	5.40	14.39	14.38		29.48	32.69
k, delay calibration	0.11	0.50	0.50	0.50		0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	7.50	0.15	0.81	1.61		0.83	2.97
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.83	0.16	0.45	0.45		0.48	0.84
d, Delay for Lane Group [s/veh]	45.87	5.55	15.20	16.00		30.31	35.65
Lane Group LOS	D	A	B	B		C	D
Critical Lane Group	Yes	No	Yes	No		No	Yes
50th-Percentile Queue Length [veh/ln]	4.41	1.20	5.13	5.33		3.78	5.98
50th-Percentile Queue Length [ft/ln]	110.22	29.99	128.26	133.19		94.56	149.50
95th-Percentile Queue Length [veh/ln]	7.85	2.16	8.84	9.11		6.81	9.99
95th-Percentile Queue Length [ft/ln]	196.31	53.99	221.12	227.83		170.21	249.76

Movement, Approach, & Intersection Results

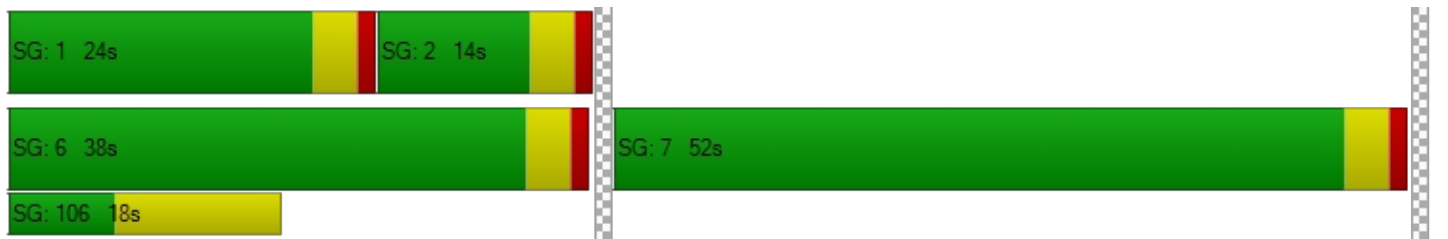
d_M, Delay for Movement [s/veh]	45.87	5.55	0.00	0.00	15.41	16.00	0.00	0.00	0.00	30.31	0.00	35.65
Movement LOS	D	A			B	B				C		D
d_A, Approach Delay [s/veh]	18.61				15.47		0.00		34.24			
Approach LOS	B				B		A		C			
d_I, Intersection Delay [s/veh]	21.84											
Intersection LOS	C											
Intersection V/C	0.611											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		0.0		11.0	
M_corner, Corner Circulation Area [ft ² /ped]	0.00		0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00		0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		0.00		0.00		34.68	
I_p,int, Pedestrian LOS Score for Intersection	0.000		0.000		0.000		2.317	
Crosswalk LOS	F		F		F		B	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	755		222		0		1066	
d_b, Bicycle Delay [s]	17.43		35.57		45.01		9.81	
I_b,int, Bicycle LOS Score for Intersection	2.033		2.220		4.132		1.560	
Bicycle LOS	B		B		D		A	

Sequence

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



Intersection Level Of Service Report
Intersection 38: Bear St at SR-73 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	23.8
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.712

Intersection Setup

Name	Bear St			Bear St			SR-73 SB Ramps			SR-73 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↑↑			↑↑↑			↑↑					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Bear St			Bear St			SR-73 SB Ramps			SR-73 SB Ramps		
Base Volume Input [veh/h]	0	425	440	676	696	0	140	1	237	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	425	440	676	696	0	140	1	237	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	106	110	169	174	0	35	0	59	0	0	0
Total Analysis Volume [veh/h]	0	425	440	676	696	0	140	1	237	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Permiss	Permiss
Signal Group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	6	10	0	0	10	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	18	0	42	60	0	0	35	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	7	0	0	7	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	L	C	L	C	
C, Cycle Length [s]	95	95	95	95	95	95	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	45	45	22	70	17	17	
g / C, Green / Cycle	0.47	0.47	0.23	0.74	0.18	0.18	
(v / s)_i Volume / Saturation Flow Rate	0.23	0.28	0.20	0.20	0.08	0.15	
s, saturation flow rate [veh/h]	1870	1589	3459	3560	1781	1590	
c, Capacity [veh/h]	876	745	794	2636	313	279	
d1, Uniform Delay [s]	17.36	18.55	35.06	3.98	35.05	37.98	
k, delay calibration	0.50	0.50	0.11	0.50	0.11	0.11	
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	1.92	3.42	2.70	0.24	1.00	7.25	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	0.48	0.59	0.85	0.26	0.45	0.85	
d, Delay for Lane Group [s/veh]	19.28	21.97	37.76	4.23	36.05	45.22	
Lane Group LOS	B	C	D	A	D	D	
Critical Lane Group	No	Yes	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	6.59	7.48	7.63	1.81	2.96	5.85	
50th-Percentile Queue Length [ft/ln]	164.76	187.06	190.77	45.15	73.89	146.15	
95th-Percentile Queue Length [veh/ln]	10.80	11.97	12.16	3.25	5.32	9.81	
95th-Percentile Queue Length [ft/ln]	270.01	299.21	304.03	81.27	133.01	245.28	

Movement, Approach, & Intersection Results

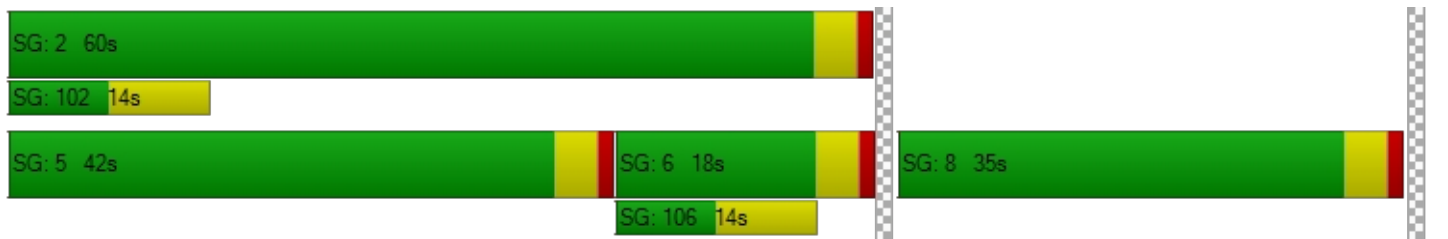
d_M, Delay for Movement [s/veh]	0.00	19.28	21.97	37.76	4.23	0.00	36.05	45.22	45.22	0.00	0.00	0.00
Movement LOS		B	C	D	A		D	D	D			
d_A, Approach Delay [s/veh]		20.65		20.75			41.83			0.00		
Approach LOS		C		C			D			A		
d_I, Intersection Delay [s/veh]		23.76										
Intersection LOS		C										
Intersection V/C		0.712										

Other Modes

g_Walk,mi, Effective Walk Time [s]		0.0		0.0		11.0		11.0
M_corner, Corner Circulation Area [ft ² /ped]		0.00		0.00		0.00		0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]		0.00		0.00		0.00		0.00
d_p, Pedestrian Delay [s]		0.00		0.00		37.14		37.14
I_p,int, Pedestrian LOS Score for Intersection		0.000		0.000		2.065		2.262
Crosswalk LOS		F		F		B		B
s_b, Saturation Flow Rate of the bicycle lane		2000		2000		2000		2000
c_b, Capacity of the bicycle lane [bicycles/h]		295		1179		653		0
d_b, Bicycle Delay [s]		34.54		8.01		21.56		47.51
I_b,int, Bicycle LOS Score for Intersection		2.273		2.692		2.183		4.132
Bicycle LOS		B		B		B		D

Sequence

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



Intersection Level Of Service Report
Intersection 12: SR-55 SB Ramps at MacArthur Blvd

Control Type:	Signalized	Delay (sec / veh):	12.7
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.772

Intersection Setup

Name	SR-55 SB Ramp			MacArthur Blvd			MacArthur Blvd					
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration				T T T T			T T T T			T T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	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	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		
Crosswalk	No			Yes			No			No		

Volumes

Name				SR-55 SB Ramp			MacArthur Blvd			MacArthur Blvd		
Base Volume Input [veh/h]	0	0	0	336	0	857	0	1412	1211	0	1820	703
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	336	0	857	0	1412	1211	0	1820	703
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	84	0	214	0	353	303	0	455	176
Total Analysis Volume [veh/h]	0	0	0	336	0	857	0	1412	1211	0	1820	703
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	0	0	0	5	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	6	0	0	0	10	0	0	10	0
Maximum Green [s]	0	0	0	30	0	0	0	30	0	0	30	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	45	0	0	0	50	0	0	50	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	14	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	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	R	C	C
C, Cycle Length [s]		56	56	56	56
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		21	21	27	27
g / C, Green / Cycle		0.38	0.38	0.48	0.48
(v / s)_i Volume / Saturation Flow Rate		0.10	0.30	0.28	0.36
s, saturation flow rate [veh/h]		3459	2813	5094	5094
c, Capacity [veh/h]		1301	1058	2452	2452
d1, Uniform Delay [s]		12.10	15.71	10.44	11.75
k, delay calibration		0.11	0.11	0.11	0.11
l, Upstream Filtering Factor		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		0.10	1.54	0.22	0.45
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.26	0.81	0.58	0.74
d, Delay for Lane Group [s/veh]		12.21	17.25	10.66	12.20
Lane Group LOS		B	B	B	B
Critical Lane Group		No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]		1.29	4.43	3.42	4.99
50th-Percentile Queue Length [ft/ln]		32.22	110.80	85.48	124.72
95th-Percentile Queue Length [veh/ln]		2.32	7.88	6.15	8.65
95th-Percentile Queue Length [ft/ln]		58.00	197.11	153.86	216.30

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	12.21	0.00	17.25	0.00	10.66	0.00	0.00	12.20	0.00
Movement LOS				B		B		B			B	
d_A, Approach Delay [s/veh]	0.00			15.83			10.66			12.20		
Approach LOS	A			B			B			B		
d_I, Intersection Delay [s/veh]	12.69											
Intersection LOS	B											
Intersection V/C	0.772											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	18.07	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	0.000	2.506	0.000	0.000
Crosswalk LOS	F	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	1465	1644	1644
d_b, Bicycle Delay [s]	27.99	2.00	0.89	0.89
I_b,int, Bicycle LOS Score for Intersection	4.132	1.560	2.336	2.561
Bicycle LOS	D	A	B	B

Sequence

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



Intersection Level Of Service Report
Intersection 13: SR-55 NB Ramps at MacArthur Blvd

Control Type:	Signalized	Delay (sec / veh):	9.5
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.689

Intersection Setup

Name	SR-55 NB Ramp						MacArthur Blvd			MacArthur Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	⇐⇐⇐						⇐⇐⇐			⇐⇐⇐		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	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		
Crosswalk	No			No			No			Yes		

Volumes

Name	SR-55 NB Ramp						MacArthur Blvd			MacArthur Blvd		
	Base Volume Input [veh/h]	763	0	496	0	0	0	0	845	886	0	1767
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	763	0	496	0	0	0	0	845	886	0	1767	1251
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	191	0	124	0	0	0	0	211	222	0	442	313
Total Analysis Volume [veh/h]	763	0	496	0	0	0	0	845	886	0	1767	1251
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	105
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	1	0	0	0	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	6	0	0	0	0	0	0	10	0	0	10	0
Maximum Green [s]	30	0	0	0	0	0	0	30	0	0	30	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	42	0	0	0	0	0	0	63	0	0	63	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	7	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	21	0	0	0	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No							No			No	
Maximum Recall	No							No			No	
Pedestrian Recall	No							No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L		C	C
C, Cycle Length [s]	45		45	45
L, Total Lost Time per Cycle [s]	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00		2.00	2.00
g_i, Effective Green Time [s]	13		24	24
g / C, Green / Cycle	0.30		0.53	0.53
(v / s)_i Volume / Saturation Flow Rate	0.22		0.24	0.35
s, saturation flow rate [veh/h]	3459		3560	5094
c, Capacity [veh/h]	1030		1876	2684
d1, Uniform Delay [s]	14.44		6.69	7.82
k, delay calibration	0.11		0.11	0.11
l, Upstream Filtering Factor	1.00		1.00	1.00
d2, Incremental Delay [s]	1.07		0.17	0.28
d3, Initial Queue Delay [s]	0.00		0.00	0.00
Rp, platoon ratio	1.00		1.00	1.00
PF, progression factor	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.74		0.45	0.66
d, Delay for Lane Group [s/veh]	15.51		6.86	8.09
Lane Group LOS	B		A	A
Critical Lane Group	Yes		No	Yes
50th-Percentile Queue Length [veh/ln]	3.08		1.75	2.85
50th-Percentile Queue Length [ft/ln]	77.12		43.82	71.27
95th-Percentile Queue Length [veh/ln]	5.55		3.16	5.13
95th-Percentile Queue Length [ft/ln]	138.82		78.88	128.29

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	15.51	0.00	0.00	0.00	0.00	0.00	0.00	6.86	0.00	0.00	8.09	0.00
Movement LOS	B							A			A	
d_A, Approach Delay [s/veh]	15.51			0.00			6.86			8.09		
Approach LOS	B			A			A			A		
d_I, Intersection Delay [s/veh]	9.46											
Intersection LOS	A											
Intersection V/C	0.689											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	13.05
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	2.838
Crosswalk LOS	F	F	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1673	0	2597	2597
d_b, Bicycle Delay [s]	0.61	22.72	2.03	2.03
I_b,int, Bicycle LOS Score for Intersection	1.560	4.132	2.257	2.531
Bicycle LOS	A	D	B	B

Sequence

Ring 1	1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 25: I-405 NB Off-Ramp at South Coast Drive

Control Type:	Signalized	Delay (sec / veh):	22.0
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.642

Intersection Setup

Name	I-405 NB Off-Ramp			The Cape Dwy			South Coast Drive			South Coast 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	1	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	I-405 NB Off-Ramp			The Cape Dwy			South Coast Drive			South Coast Drive		
Base Volume Input [veh/h]	543	34	220	32	0	44	49	481	0	0	435	38
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
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]	543	34	220	32	0	44	49	481	0	0	435	38
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	136	9	55	8	0	11	12	120	0	0	109	10
Total Analysis Volume [veh/h]	543	34	220	32	0	44	49	481	0	0	435	38
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	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Permiss	Split	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	7	0	0	5	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	10	0	6	0	0	6	10	0	0	10	0
Maximum Green [s]	0	30	0	30	0	0	30	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	57	0	57	0	0	10	33	0	0	23	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	14	0	0	0	0	0	11	0	0	11	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No		No				No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	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	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	R	L	C	C	C
C, Cycle Length [s]	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
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	40	40	40	40	40	4	42	34	34
g / C, Green / Cycle	0.44	0.44	0.44	0.44	0.44	0.05	0.47	0.38	0.38
(v / s)_i Volume / Saturation Flow Rate	0.40	0.08	0.08	0.03	0.03	0.03	0.14	0.13	0.13
s, saturation flow rate [veh/h]	1362	1655	1589	1125	1589	1781	3560	1870	1818
c, Capacity [veh/h]	661	736	707	508	707	84	1661	701	682
d1, Uniform Delay [s]	24.63	15.05	15.07	17.79	14.28	42.01	14.81	20.14	20.22
k, delay calibration	0.23	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.36	0.11	0.12	0.05	0.04	6.24	0.44	1.30	1.40
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.82	0.17	0.18	0.06	0.06	0.58	0.29	0.34	0.35
d, Delay for Lane Group [s/veh]	29.99	15.16	15.19	17.85	14.31	48.25	15.25	21.44	21.62
Lane Group LOS	C	B	B	B	B	D	B	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	11.35	1.56	1.52	0.42	0.51	1.20	3.00	3.70	3.72
50th-Percentile Queue Length [ft/ln]	283.66	38.98	38.08	10.58	12.64	30.02	75.10	92.48	93.11
95th-Percentile Queue Length [veh/ln]	16.87	2.81	2.74	0.76	0.91	2.16	5.41	6.66	6.70
95th-Percentile Queue Length [ft/ln]	421.77	70.17	68.54	19.04	22.76	54.04	135.18	166.47	167.60

Movement, Approach, & Intersection Results

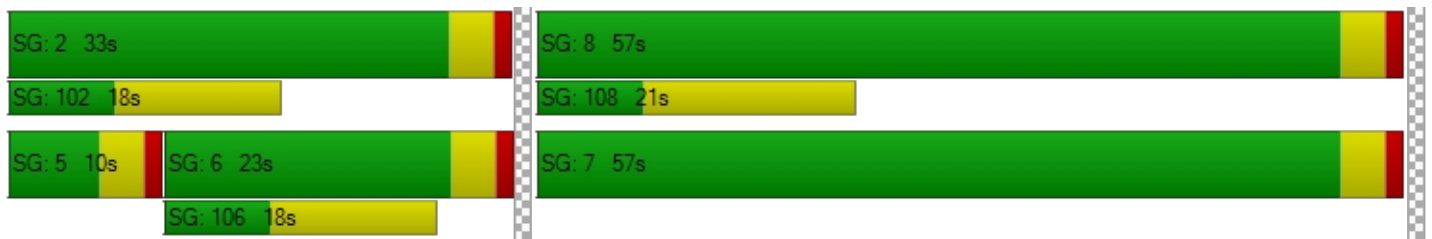
d_M, Delay for Movement [s/veh]	29.99	15.16	15.18	17.85	0.00	14.31	48.25	15.25	0.00	0.00	21.52	21.62
Movement LOS	C	B	B	B		B	D	B			C	C
d_A, Approach Delay [s/veh]	25.27			15.80			18.30			21.53		
Approach LOS	C			B			B			C		
d_I, Intersection Delay [s/veh]	21.97											
Intersection LOS	C											
Intersection V/C	0.642											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.67	34.67	0.00	34.67
I_p,int, Pedestrian LOS Score for Intersection	2.325	2.004	0.000	2.470
Crosswalk LOS	B	B	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1178	1178	644	422
d_b, Bicycle Delay [s]	7.61	7.61	20.67	28.01
I_b,int, Bicycle LOS Score for Intersection	2.875	1.560	1.997	1.950
Bicycle LOS	C	A	A	A

Sequence

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



Intersection Level Of Service Report
Intersection 28: Fairview Road at I-405 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	31.8
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.900

Intersection Setup

Name	Fairview Road			Fairview Road			I-405 NB Ramps			I-405 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	1	0	0	0	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		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Fairview Road			Fairview Road			I-405 NB Ramps			I-405 NB Ramps		
Base Volume Input [veh/h]	260	1536	0	0	2157	303	0	0	0	964	0	1223
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	260	1536	0	0	2157	303	0	0	0	964	0	1223
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	65	384	0	0	539	76	0	0	0	241	0	306
Total Analysis Volume [veh/h]	260	1536	0	0	2157	303	0	0	0	964	0	1223
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Permiss	Split
Signal Group	1	6	0	0	2	0	0	0	0	0	7	0	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	6	10	0	0	10	0	0	0	0	0	6	0	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	20	46	0	0	26	0	0	0	0	0	54	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	14	0	0	7	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall	No	No			No						No		
Maximum Recall	No	No			No						No		
Pedestrian Recall	No	No			No						No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	R		L	R
C, Cycle Length [s]	100	100	100	100		100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	16	44	24	24		48	48
g / C, Green / Cycle	0.16	0.44	0.24	0.24		0.48	0.48
(v / s)_i Volume / Saturation Flow Rate	0.15	0.30	0.21	0.19		0.28	0.43
s, saturation flow rate [veh/h]	1781	5094	10188	1589		3459	2813
c, Capacity [veh/h]	286	2264	2485	388		1645	1338
d1, Uniform Delay [s]	41.27	22.10	36.26	35.32		19.06	24.32
k, delay calibration	0.11	0.50	0.50	0.50		0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	10.83	1.66	4.43	14.47		0.33	2.88
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.91	0.68	0.87	0.78		0.59	0.91
d, Delay for Lane Group [s/veh]	52.10	23.76	40.69	49.79		19.40	27.20
Lane Group LOS	D	C	D	D		B	C
Critical Lane Group	Yes	No	Yes	No		No	Yes
50th-Percentile Queue Length [veh/ln]	7.08	9.55	8.77	8.34		7.88	13.17
50th-Percentile Queue Length [ft/ln]	177.10	238.70	219.26	208.49		197.07	329.28
95th-Percentile Queue Length [veh/ln]	11.45	14.62	13.63	13.08		12.49	19.12
95th-Percentile Queue Length [ft/ln]	286.22	365.39	340.68	326.89		312.19	478.08

Movement, Approach, & Intersection Results

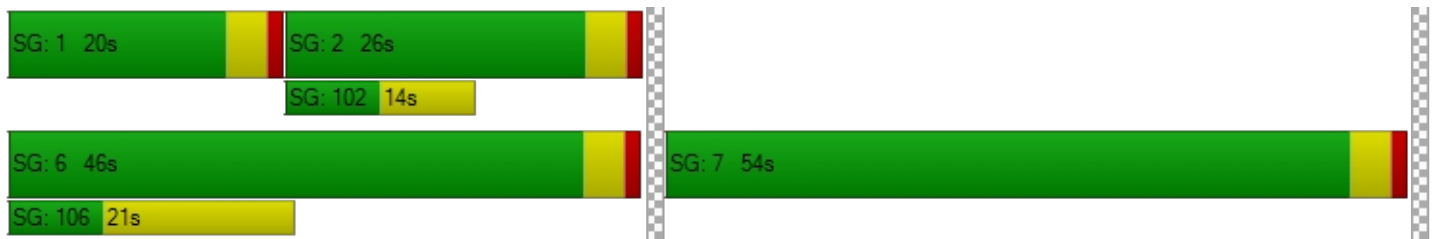
d_M, Delay for Movement [s/veh]	52.10	23.76	0.00	0.00	40.69	49.79	0.00	0.00	0.00	19.40	0.00	27.20
Movement LOS	D	C			D	D				B		C
d_A, Approach Delay [s/veh]	27.86				41.81		0.00		23.76			
Approach LOS	C				D		A		C			
d_I, Intersection Delay [s/veh]	31.80											
Intersection LOS	C											
Intersection V/C	0.900											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	39.61	39.61
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	1.977	2.731
Crosswalk LOS	F	F	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	840	440	0	1000
d_b, Bicycle Delay [s]	16.82	30.42	50.00	12.50
I_b,int, Bicycle LOS Score for Intersection	2.547	2.236	4.132	1.560
Bicycle LOS	B	B	D	A

Sequence

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



Intersection Level Of Service Report
Intersection 29: Fairview Road at I-405 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	22.0
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.728

Intersection Setup

Name	Fairview Rd			Fairview Rd			I-405 SB Ramps			I-405 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↑↑↑↑			↑↑↑↑			↑↑↑↑					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	1	0	0	1	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Fairview Rd			Fairview Rd			I-405 SB Ramps			I-405 SB Ramps		
Base Volume Input [veh/h]	0	1324	740	1191	1874	0	357	0	412	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1324	740	1191	1874	0	357	0	412	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	331	185	298	469	0	89	0	103	0	0	0
Total Analysis Volume [veh/h]	0	1324	740	1191	1874	0	357	0	412	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Permiss
Signal Group	0	6	0	5	2	0	3	0	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	10	0	6	10	0	6	0	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	30	0	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Split [s]	0	22	0	46	68	0	27	0	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	11	0	0	14	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No		No					
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No		No					
Maximum Recall		No		No	No		No					
Pedestrian Recall		No		No	No		No					
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	R	L	C	L	R	
C, Cycle Length [s]	95	95	95	95	95	95	95	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	
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]	40	40	40	26	70	17	17	
g / C, Green / Cycle	0.42	0.42	0.42	0.28	0.74	0.18	0.18	
(v / s)_i Volume / Saturation Flow Rate	0.24	0.26	0.26	0.23	0.37	0.10	0.15	
s, saturation flow rate [veh/h]	5094	1589	1589	5188	5094	3459	2813	
c, Capacity [veh/h]	2120	661	661	1447	3755	618	503	
d1, Uniform Delay [s]	21.40	21.88	21.88	32.06	5.19	35.74	37.55	
k, delay calibration	0.50	0.50	0.50	0.11	0.50	0.11	0.11	
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	1.19	4.40	4.40	1.23	0.48	0.86	3.38	
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	0.58	0.62	0.62	0.82	0.50	0.58	0.82	
d, Delay for Lane Group [s/veh]	22.59	26.29	26.29	33.29	5.67	36.60	40.93	
Lane Group LOS	C	C	C	C	A	D	D	
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	7.06	7.79	7.79	8.49	4.17	3.82	4.77	
50th-Percentile Queue Length [ft/ln]	176.53	194.77	194.77	212.15	104.17	95.38	119.32	
95th-Percentile Queue Length [veh/ln]	11.42	12.37	12.37	13.26	7.50	6.87	8.36	
95th-Percentile Queue Length [ft/ln]	285.48	309.21	309.21	331.58	187.50	171.69	208.89	

Movement, Approach, & Intersection Results

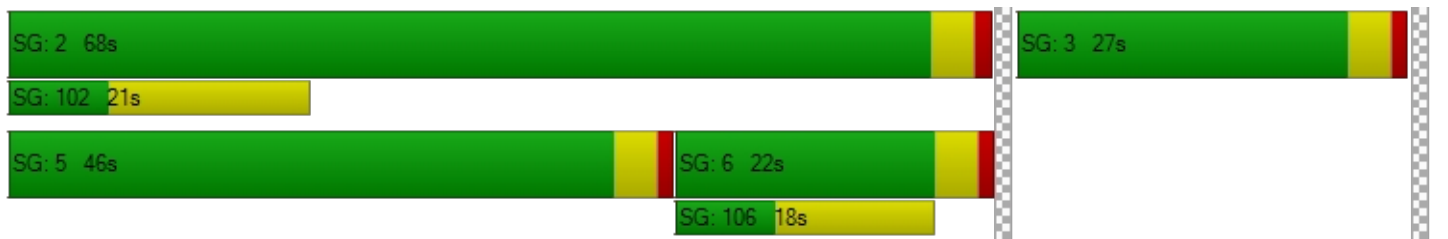
d_M, Delay for Movement [s/veh]	0.00	22.59	26.29	33.29	5.67	0.00	36.60	0.00	40.93	0.00	0.00	0.00
Movement LOS		C	C	C	A		D		D			
d_A, Approach Delay [s/veh]		24.07		16.40			38.92		0.00			
Approach LOS		C		B			D		A			
d_I, Intersection Delay [s/veh]	22.02											
Intersection LOS	C											
Intersection V/C	0.728											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	37.14	37.14
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.452	2.570
Crosswalk LOS	F	F	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	379	1347	484	0
d_b, Bicycle Delay [s]	31.21	5.06	27.29	47.51
I_b,int, Bicycle LOS Score for Intersection	2.411	3.245	1.560	4.132
Bicycle LOS	B	C	A	D

Sequence

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



Intersection Level Of Service Report
Intersection 30: Bristol Street at I-405 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	16.0
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.729

Intersection Setup

Name	Bristol Street			Bristol Street			I-405 NB Ramps			I-405 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	0	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	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	No			No			Yes			Yes		

Volumes

Name	Bristol Street			Bristol Street			I-405 NB Ramps			I-405 NB Ramps		
Base Volume Input [veh/h]	0	2600	211	0	2732	23	0	0	223	422	352	1468
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	2600	211	0	2732	23	0	0	223	422	352	1468
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	650	53	0	683	6	0	0	56	106	88	367
Total Analysis Volume [veh/h]	0	2600	211	0	2732	23	0	0	223	422	352	1468
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]	95
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss	Split	Permiss	Split	Split	Split	Overlap
Signal Group	0	6	0	0	2	0	0	0	8	0	4	4
Auxiliary Signal Groups												2,4
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	0	10	0	0	0	6	0	10	10
Maximum Green [s]	0	30	0	0	30	0	0	0	30	0	30	30
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0
Split [s]	0	34	0	0	34	0	0	0	38	0	23	23
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	18	0	0	14	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No				No		No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0
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	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	C	R	L	C	C	R
C, Cycle Length [s]	95	95	95	95	95	95	95	95
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	54	54	54	10	19	19	19	77
g / C, Green / Cycle	0.57	0.57	0.57	0.10	0.20	0.20	0.20	0.81
(v / s)_i Volume / Saturation Flow Rate	0.38	0.32	0.30	0.08	0.14	0.14	0.15	0.52
s, saturation flow rate [veh/h]	6792	6792	1856	2813	1781	1812	1702	2813
c, Capacity [veh/h]	3860	3860	1055	294	358	364	342	2282
d1, Uniform Delay [s]	14.35	13.11	12.59	41.39	35.50	35.40	35.78	3.54
k, delay calibration	0.50	0.50	0.50	0.11	0.11	0.11	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.96	0.62	1.85	3.99	2.76	2.55	3.40	1.41
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.67	0.57	0.52	0.76	0.72	0.71	0.76	0.64
d, Delay for Lane Group [s/veh]	15.30	13.73	14.44	45.38	38.26	37.95	39.19	4.95
Lane Group LOS	B	B	B	D	D	D	D	A
Critical Lane Group	No	No	No	Yes	No	No	Yes	Yes
50th-Percentile Queue Length [veh/ln]	9.19	7.09	7.19	2.68	5.77	5.74	5.86	3.65
50th-Percentile Queue Length [ft/ln]	229.82	177.18	179.77	66.95	144.2	143.5	146.6	91.16
95th-Percentile Queue Length [veh/ln]	14.17	11.45	11.59	4.82	9.71	9.67	9.84	6.56
95th-Percentile Queue Length [ft/ln]	354.13	286.34	289.72	120.50	242.7	241.7	245.9	164.0

Movement, Approach, & Intersection Results

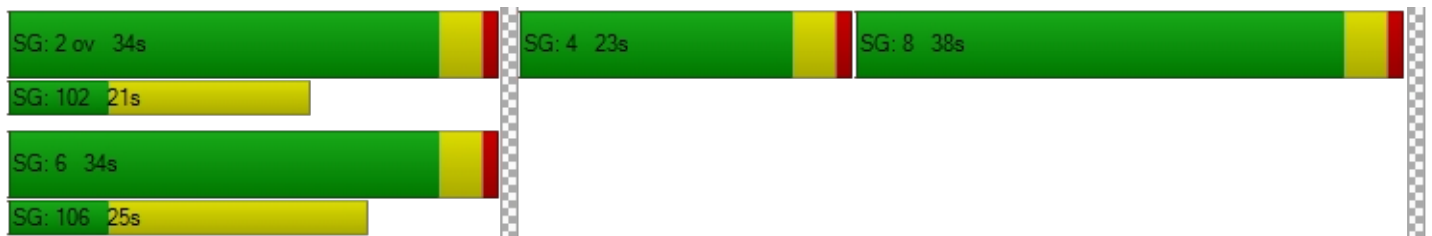
d_M, Delay for Movement [s/veh]	0.00	15.30	0.00	0.00	13.86	14.44	0.00	0.00	45.38	38.26	38.86	4.95
Movement LOS		B			B	B			D	D	D	A
d_A, Approach Delay [s/veh]	15.30		13.87			45.38			16.52			
Approach LOS	B		B			D			B			
d_I, Intersection Delay [s/veh]	16.00											
Intersection LOS	B											
Intersection V/C	0.729											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		11.0			11.0			
M_corner, Corner Circulation Area [ft ² /ped]	0.00		0.00		0.00			0.00			
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00		0.00		0.00			0.00			
d_p, Pedestrian Delay [s]	0.00		0.00		37.15			37.15			
I_p,int, Pedestrian LOS Score for Intersection	0.000		0.000		2.279			2.819			
Crosswalk LOS	F		F		B			C			
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000			2000			
c_b, Capacity of the bicycle lane [bicycles/h]	631		631		716			400			
d_b, Bicycle Delay [s]	22.25		22.25		19.60			30.41			
I_b,int, Bicycle LOS Score for Intersection	2.632		2.469		1.560			3.409			
Bicycle LOS	B		B		A			C			

Sequence

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



Intersection Level Of Service Report
Intersection 31: Bristol Street at I-405 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	17.6
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.723

Intersection Setup

Name	Bristol Street		Bristol Street		I-405 SB Ramps	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration	↵ ↑ ↑ ↑		↑ ↑ ↵		↵↵↵↵	
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	1	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		Yes	

Volumes

Name	Bristol Street		Bristol Street		I-405 SB Ramps	
Base Volume Input [veh/h]	150	1835	1784	1129	998	381
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	150	1835	1784	1129	998	381
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	38	459	446	282	250	0
Total Analysis Volume [veh/h]	150	1835	1784	1129	998	0
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Unsignalized	Permissive	Unsignalized
Signal Group	1	6	2	0	3	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	6	10	10	0	6	0
Maximum Green [s]	30	30	30	0	30	0
Amber [s]	3.0	3.0	3.0	0.0	3.0	0.0
All red [s]	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	25	47	22	0	43	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	0	7	0	0	0
Pedestrian Clearance [s]	0	0	11	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No	No		No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
Minimum Recall	No	No	No		No	
Maximum Recall	No	No	No		No	
Pedestrian Recall	No	No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L
C, Cycle Length [s]	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	60	47	22
g / C, Green / Cycle	0.10	0.67	0.52	0.24
(v / s)_i Volume / Saturation Flow Rate	0.08	0.27	0.35	0.19
s, saturation flow rate [veh/h]	1781	6792	5094	5188
c, Capacity [veh/h]	187	4555	2654	1247
d1, Uniform Delay [s]	39.36	6.69	15.89	32.16
k, delay calibration	0.11	0.50	0.50	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.67	0.27	1.38	1.23
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.80	0.40	0.67	0.80
d, Delay for Lane Group [s/veh]	47.03	6.96	17.27	33.39
Lane Group LOS	D	A	B	C
Critical Lane Group	Yes	No	Yes	Yes
50th-Percentile Queue Length [veh/ln]	3.59	3.45	8.65	6.78
50th-Percentile Queue Length [ft/ln]	89.83	86.13	216.24	169.48
95th-Percentile Queue Length [veh/ln]	6.47	6.20	13.47	11.05
95th-Percentile Queue Length [ft/ln]	161.69	155.04	336.82	276.23

Movement, Approach, & Intersection Results

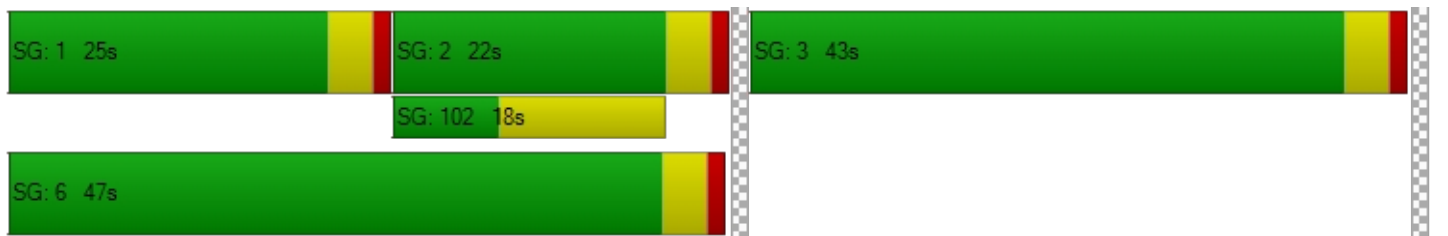
d_M, Delay for Movement [s/veh]	47.03	6.96	17.27	0.00	33.39	0.00
Movement LOS	D	A	B		C	
d_A, Approach Delay [s/veh]	9.98		17.27		33.39	
Approach LOS	A		B		C	
d_I, Intersection Delay [s/veh]	17.61					
Intersection LOS	B					
Intersection V/C	0.723					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	34.68
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.639
Crosswalk LOS	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	955	400	866
d_b, Bicycle Delay [s]	12.28	28.81	14.46
I_b,int, Bicycle LOS Score for Intersection	2.378	2.541	1.560
Bicycle LOS	B	B	A

Sequence

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



Intersection Level Of Service Report
Intersection 37: Bear St at SR-73 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	51.2
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.004

Intersection Setup

Name	Bear St			Bear St			SR-73 NB Ramps			SR-73 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0	0	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		
Crosswalk	No			No			No			Yes		

Volumes

Name	Bear St			Bear St			SR-73 NB Ramps			SR-73 NB Ramps		
Base Volume Input [veh/h]	176	686	0	0	1195	173	0	0	0	472	0	1532
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	176	686	0	0	1195	173	0	0	0	472	0	1532
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	44	172	0	0	299	43	0	0	0	118	0	383
Total Analysis Volume [veh/h]	176	686	0	0	1195	173	0	0	0	472	0	1532
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Permiss	Split
Signal Group	1	6	0	0	2	0	0	0	0	0	7	0	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	6	10	0	0	10	0	0	0	0	0	6	0	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	13	47	0	0	34	0	0	0	0	0	73	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	11	0	0	0	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall	No	No			No						No		
Maximum Recall	No	No			No						No		
Pedestrian Recall	No	No			No						No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C		L	R
C, Cycle Length [s]	120	120	120	120		120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	9	44	31	31		68	68
g / C, Green / Cycle	0.08	0.37	0.26	0.26		0.57	0.57
(v / s)_i Volume / Saturation Flow Rate	0.10	0.19	0.26	0.26		0.27	0.54
s, saturation flow rate [veh/h]	1781	3560	3560	1753		1781	2813
c, Capacity [veh/h]	135	1307	919	452		1008	1593
d1, Uniform Delay [s]	55.42	29.75	44.38	44.49		15.35	24.77
k, delay calibration	0.11	0.50	0.50	0.50		0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	148.64	1.51	28.01	44.44		0.34	4.80
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	1.30	0.52	0.99	1.01		0.47	0.96
d, Delay for Lane Group [s/veh]	204.06	31.26	72.40	88.93		15.69	29.57
Lane Group LOS	F	C	E	F		B	C
Critical Lane Group	Yes	No	No	Yes		No	Yes
50th-Percentile Queue Length [veh/ln]	9.64	8.01	16.96	18.89		7.52	20.50
50th-Percentile Queue Length [ft/ln]	241.09	200.37	424.09	472.32		187.94	512.51
95th-Percentile Queue Length [veh/ln]	16.00	12.66	23.72	26.16		12.01	27.93
95th-Percentile Queue Length [ft/ln]	400.10	316.44	592.96	653.95		300.35	698.14

Movement, Approach, & Intersection Results

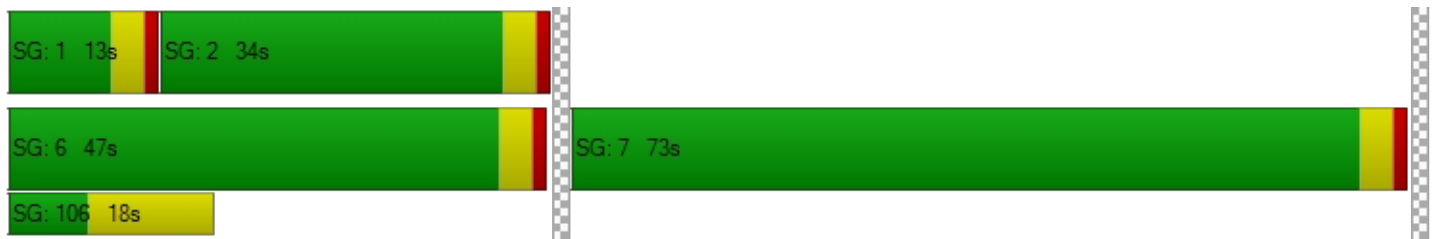
d_M, Delay for Movement [s/veh]	204.06	31.26	0.00	0.00	76.31	88.93	0.00	0.00	0.00	15.69	0.00	29.57
Movement LOS	F	C			E	F				B		C
d_A, Approach Delay [s/veh]	66.55		77.91		0.00		26.30					
Approach LOS	E		E		A		C					
d_I, Intersection Delay [s/veh]	51.17											
Intersection LOS	D											
Intersection V/C	1.004											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	49.49
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	2.633
Crosswalk LOS	F	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	717	500	0	1150
d_b, Bicycle Delay [s]	24.69	33.73	59.98	10.83
I_b,int, Bicycle LOS Score for Intersection	2.271	2.312	4.132	1.560
Bicycle LOS	B	B	D	A

Sequence

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



Intersection Level Of Service Report
Intersection 38: Bear St at SR-73 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	20.8
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.652

Intersection Setup

Name	Bear St			Bear St			SR-73 SB Ramps			SR-73 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↑↑			←↑↑			←↑↑					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Bear St			Bear St			SR-73 SB Ramps			SR-73 SB Ramps		
Base Volume Input [veh/h]	0	656	198	688	986	0	214	1	186	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	656	198	688	986	0	214	1	186	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	164	50	172	247	0	54	0	47	0	0	0
Total Analysis Volume [veh/h]	0	656	198	688	986	0	214	1	186	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Permiss	Permiss
Signal Group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	6	10	0	0	10	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	30	0	42	72	0	0	18	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	7	0	0	7	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	L	C	L	C	
C, Cycle Length [s]	90	90	90	90	90	90	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	44	44	21	69	13	13	
g / C, Green / Cycle	0.49	0.49	0.24	0.77	0.14	0.14	
(v / s)_i Volume / Saturation Flow Rate	0.23	0.25	0.20	0.28	0.12	0.12	
s, saturation flow rate [veh/h]	1870	1729	3459	3560	1781	1593	
c, Capacity [veh/h]	917	847	814	2742	251	225	
d1, Uniform Delay [s]	15.16	15.54	32.86	3.29	37.69	37.70	
k, delay calibration	0.50	0.50	0.11	0.50	0.11	0.11	
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	1.70	2.14	2.52	0.37	7.42	8.35	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	0.47	0.50	0.85	0.36	0.84	0.84	
d, Delay for Lane Group [s/veh]	16.86	17.67	35.38	3.66	45.11	46.05	
Lane Group LOS	B	B	D	A	D	D	
Critical Lane Group	No	Yes	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	5.88	6.09	7.26	2.09	4.98	4.53	
50th-Percentile Queue Length [ft/ln]	147.11	152.24	181.48	52.25	124.46	113.14	
95th-Percentile Queue Length [veh/ln]	9.86	10.14	11.68	3.76	8.64	8.01	
95th-Percentile Queue Length [ft/ln]	246.56	253.42	291.94	94.05	215.94	200.36	

Movement, Approach, & Intersection Results

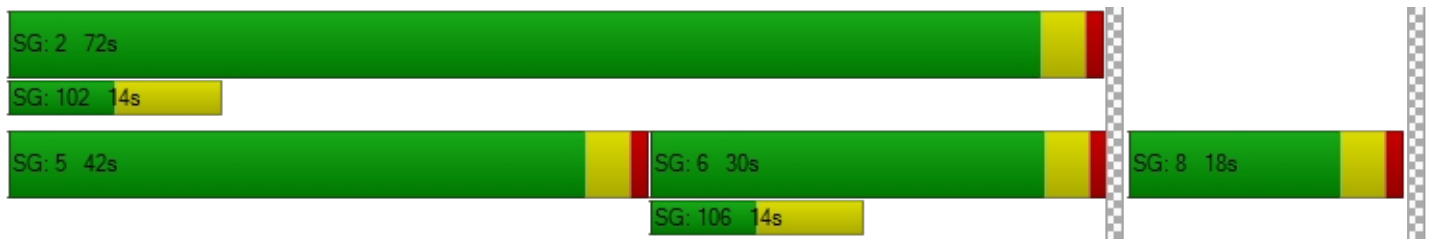
d_M, Delay for Movement [s/veh]	0.00	17.14	17.67	35.38	3.66	0.00	45.16	46.05	46.05	0.00	0.00	0.00
Movement LOS		B	B	D	A		D	D	D			
d_A, Approach Delay [s/veh]	17.27			16.70			45.55			0.00		
Approach LOS	B			B			D			A		
d_I, Intersection Delay [s/veh]	20.81											
Intersection LOS	C											
Intersection V/C	0.652											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0			0.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	0.00			0.00			34.68			34.68		
I_p,int, Pedestrian LOS Score for Intersection	0.000			0.000			2.070			2.147		
Crosswalk LOS	F			F			B			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	578			1511			311			0		
d_b, Bicycle Delay [s]	22.77			2.69			32.10			45.01		
I_b,int, Bicycle LOS Score for Intersection	2.264			2.941			2.221			4.132		
Bicycle LOS	B			C			B			D		

Sequence

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



APPENDIX E-X

**YEAR 2036 CUMULATIVE PLUS PROJECT PHASES 1, 2, AND 3
TRAFFIC CONDITIONS**

Intersection Level Of Service Report
Intersection 12: SR-55 SB Ramps at MacArthur Blvd

Control Type:	Signalized	Delay (sec / veh):	17.1
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.873

Intersection Setup

Name	SR-55 SB Ramp			MacArthur Blvd			MacArthur Blvd					
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration				T T T T			T T T T			T T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	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	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		
Crosswalk	No			Yes			No			No		

Volumes

Name				SR-55 SB Ramp			MacArthur Blvd			MacArthur Blvd		
Base Volume Input [veh/h]	0	0	0	1113	0	1077	0	1963	1265	0	1513	169
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	1113	0	1077	0	1963	1265	0	1513	169
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	278	0	269	0	491	316	0	378	42
Total Analysis Volume [veh/h]	0	0	0	1113	0	1077	0	1963	1265	0	1513	169
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	0	0	0	5	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	6	0	0	0	10	0	0	10	0
Maximum Green [s]	0	0	0	30	0	0	0	30	0	0	30	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	45	0	0	0	45	0	0	45	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	14	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	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	R	C	C
C, Cycle Length [s]		66	66	66	66
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		29	29	30	30
g / C, Green / Cycle		0.43	0.43	0.45	0.45
(v / s)_i Volume / Saturation Flow Rate		0.32	0.38	0.39	0.30
s, saturation flow rate [veh/h]		3459	2813	5094	5094
c, Capacity [veh/h]		1501	1221	2270	2270
d1, Uniform Delay [s]		15.72	17.27	16.64	14.55
k, delay calibration		0.11	0.11	0.11	0.11
l, Upstream Filtering Factor		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		0.74	2.28	1.07	0.34
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.74	0.88	0.86	0.67
d, Delay for Lane Group [s/veh]		16.46	19.55	17.71	14.89
Lane Group LOS		B	B	B	B
Critical Lane Group		No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]		6.37	6.99	8.04	5.34
50th-Percentile Queue Length [ft/ln]		159.15	174.80	200.99	133.44
95th-Percentile Queue Length [veh/ln]		10.50	11.33	12.69	9.13
95th-Percentile Queue Length [ft/ln]		262.59	283.21	317.25	228.16

Movement, Approach, & Intersection Results

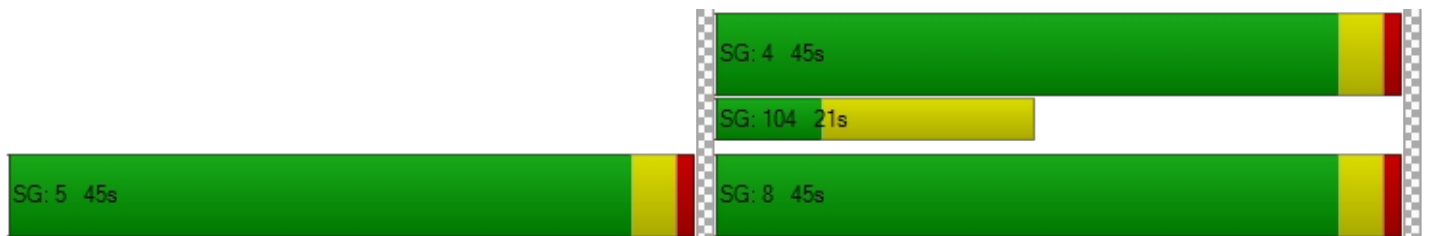
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	16.46	0.00	19.55	0.00	17.71	0.00	0.00	14.89	0.00
Movement LOS				B		B		B			B	
d_A, Approach Delay [s/veh]	0.00			17.98			17.71			14.89		
Approach LOS	A			B			B			B		
d_I, Intersection Delay [s/veh]	17.06											
Intersection LOS	B											
Intersection V/C	0.873											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	23.13	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	0.000	2.710	0.000	0.000
Crosswalk LOS	F	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	1234	1234	1234
d_b, Bicycle Delay [s]	33.22	4.87	4.87	4.87
I_b,int, Bicycle LOS Score for Intersection	4.132	1.560	2.639	2.392
Bicycle LOS	D	A	B	B

Sequence

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



Intersection Level Of Service Report
Intersection 13: SR-55 NB Ramps at MacArthur Blvd

Control Type:	Signalized	Delay (sec / veh):	38.2
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.985

Intersection Setup

Name	SR-55 NB Ramp						MacArthur Blvd			MacArthur Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	⇐⇐⇐						⇐⇐⇐			⇐⇐⇐		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	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		
Crosswalk	No			No			No			Yes		

Volumes

Name	SR-55 NB Ramp						MacArthur Blvd			MacArthur Blvd		
Base Volume Input [veh/h]	1062	0	1133	0	0	0	0	1945	1135	0	626	283
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	1062	0	1133	0	0	0	0	1945	1135	0	626	283
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	266	0	283	0	0	0	0	486	284	0	157	71
Total Analysis Volume [veh/h]	1062	0	1133	0	0	0	0	1945	1135	0	626	283
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	1	0	0	0	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	6	0	0	0	0	0	0	10	0	0	10	0
Maximum Green [s]	30	0	0	0	0	0	0	30	0	0	30	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	43	0	0	0	0	0	0	47	0	0	47	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	7	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	21	0	0	0	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No							No			No	
Maximum Recall	No							No			No	
Pedestrian Recall	No							No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L		C	C
C, Cycle Length [s]	60		60	60
L, Total Lost Time per Cycle [s]	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00		2.00	2.00
g_i, Effective Green Time [s]	22		30	30
g / C, Green / Cycle	0.36		0.50	0.50
(v / s)_i Volume / Saturation Flow Rate	0.31		0.55	0.12
s, saturation flow rate [veh/h]	3459		3560	5094
c, Capacity [veh/h]	1264		1784	2552
d1, Uniform Delay [s]	17.40		14.94	8.50
k, delay calibration	0.11		0.12	0.11
l, Upstream Filtering Factor	1.00		1.00	1.00
d2, Incremental Delay [s]	1.59		43.30	0.05
d3, Initial Queue Delay [s]	0.00		0.00	0.00
Rp, platoon ratio	1.00		1.00	1.00
PF, progression factor	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.84		1.09	0.25
d, Delay for Lane Group [s/veh]	18.99		58.24	8.55
Lane Group LOS	B		F	A
Critical Lane Group	Yes		Yes	No
50th-Percentile Queue Length [veh/ln]	6.16		20.38	1.30
50th-Percentile Queue Length [ft/ln]	153.92		509.58	32.41
95th-Percentile Queue Length [veh/ln]	10.23		29.60	2.33
95th-Percentile Queue Length [ft/ln]	255.66		739.98	58.34

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	18.99	0.00	0.00	0.00	0.00	0.00	0.00	58.24	0.00	0.00	8.55	0.00
Movement LOS	B							F			A	
d_A, Approach Delay [s/veh]	18.99			0.00			58.24			8.55		
Approach LOS	B			A			E			A		
d_I, Intersection Delay [s/veh]	38.20											
Intersection LOS	D											
Intersection V/C	0.985											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	19.92
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	2.848
Crosswalk LOS	F	F	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1304	0	1438	1438
d_b, Bicycle Delay [s]	3.62	29.91	2.37	2.37
I_b,int, Bicycle LOS Score for Intersection	1.560	4.132	3.164	1.904
Bicycle LOS	A	D	C	A

Sequence

Ring 1	1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 25: I-405 NB Off-Ramp at South Coast Drive

Control Type:	Signalized	Delay (sec / veh):	22.5
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.431

Intersection Setup

Name	I-405 NB Off-Ramp			The Cape Dwy			South Coast Drive			South Coast 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	1	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	I-405 NB Off-Ramp			The Cape Dwy			South Coast Drive			South Coast Drive		
Base Volume Input [veh/h]	401	7	105	55	0	82	22	257	0	0	140	19
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	401	7	105	55	0	82	22	257	0	0	140	19
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	100	2	26	14	0	21	6	64	0	0	35	5
Total Analysis Volume [veh/h]	401	7	105	55	0	82	22	257	0	0	140	19
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]	95
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Permiss	Split	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	7	0	0	5	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	10	0	6	0	0	6	10	0	0	10	0
Maximum Green [s]	0	30	0	30	0	0	30	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	63	0	63	0	0	10	32	0	0	22	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	14	0	0	0	0	0	11	0	0	11	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No		No				No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	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	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	R	L	C	C	C
C, Cycle Length [s]	95	95	95	95	95	95	95	95	95
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	33	33	33	33	33	3	54	47	47
g / C, Green / Cycle	0.35	0.35	0.35	0.35	0.35	0.03	0.57	0.50	0.50
(v / s)_i Volume / Saturation Flow Rate	0.30	0.03	0.03	0.04	0.05	0.01	0.07	0.04	0.04
s, saturation flow rate [veh/h]	1316	1620	1589	1281	1589	1781	3560	1870	1794
c, Capacity [veh/h]	511	565	554	469	554	50	2019	929	892
d1, Uniform Delay [s]	30.63	20.88	20.88	23.83	21.24	45.44	9.60	12.55	12.58
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.71	0.08	0.08	0.11	0.12	6.04	0.13	0.18	0.20
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.79	0.10	0.10	0.12	0.15	0.44	0.13	0.09	0.09
d, Delay for Lane Group [s/veh]	33.34	20.95	20.95	23.94	21.37	51.48	9.73	12.73	12.77
Lane Group LOS	C	C	C	C	C	D	A	B	B
Critical Lane Group	Yes	No	No	No	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	8.92	0.85	0.84	0.90	1.26	0.59	1.22	0.91	0.91
50th-Percentile Queue Length [ft/ln]	223.03	21.27	20.88	22.51	31.42	14.77	30.42	22.70	22.79
95th-Percentile Queue Length [veh/ln]	13.82	1.53	1.50	1.62	2.26	1.06	2.19	1.63	1.64
95th-Percentile Queue Length [ft/ln]	345.49	38.28	37.58	40.52	56.56	26.58	54.76	40.85	41.02

Movement, Approach, & Intersection Results

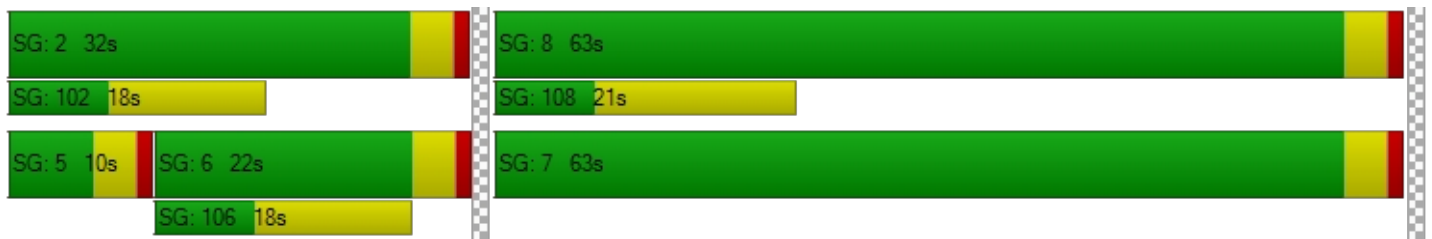
d_M, Delay for Movement [s/veh]	33.34	20.95	20.95	23.94	0.00	21.37	51.48	9.73	0.00	0.00	12.75	12.77
Movement LOS	C	C	C	C		C	D	A			B	B
d_A, Approach Delay [s/veh]	30.63			22.40			13.02			12.75		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]	22.47											
Intersection LOS	C											
Intersection V/C	0.431											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	37.14	37.14	0.00	37.14
I_p,int, Pedestrian LOS Score for Intersection	2.258	2.003	0.000	2.352
Crosswalk LOS	B	B	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1242	1242	589	379
d_b, Bicycle Delay [s]	6.82	6.82	23.63	31.21
I_b,int, Bicycle LOS Score for Intersection	2.406	1.560	1.790	1.691
Bicycle LOS	B	A	A	A

Sequence

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



Intersection Level Of Service Report
Intersection 28: Fairview Road at I-405 NB Ramps

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):	0.823

Intersection Setup

Name	Fairview Road			Fairview Road			I-405 NB Ramps			I-405 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	1	0	0	0	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		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Fairview Road			Fairview Road			I-405 NB Ramps			I-405 NB Ramps		
Base Volume Input [veh/h]	209	1024	0	0	2826	338	0	0	0	700	0	896
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	209	1024	0	0	2826	338	0	0	0	700	0	896
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	52	256	0	0	707	85	0	0	0	175	0	224
Total Analysis Volume [veh/h]	209	1024	0	0	2826	338	0	0	0	700	0	896
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Permiss	Split
Signal Group	1	6	0	0	2	0	0	0	0	0	7	0	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	6	10	0	0	10	0	0	0	0	0	6	0	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	21	39	0	0	18	0	0	0	0	0	51	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	14	0	0	7	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall	No	No			No						No		
Maximum Recall	No	No			No						No		
Pedestrian Recall	No	No			No						No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	R		L	R
C, Cycle Length [s]	90	90	90	90		90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	12	48	32	32		34	34
g / C, Green / Cycle	0.14	0.53	0.35	0.35		0.38	0.38
(v / s)_i Volume / Saturation Flow Rate	0.12	0.20	0.28	0.21		0.20	0.32
s, saturation flow rate [veh/h]	1781	5094	10188	1589		3459	2813
c, Capacity [veh/h]	247	2720	3575	558		1304	1061
d1, Uniform Delay [s]	37.84	12.23	26.25	24.09		21.90	25.63
k, delay calibration	0.11	0.50	0.50	0.50		0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	7.76	0.40	1.86	4.83		0.34	1.94
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.85	0.38	0.79	0.61		0.54	0.84
d, Delay for Lane Group [s/veh]	45.60	12.63	28.12	28.93		22.25	27.57
Lane Group LOS	D	B	C	C		C	C
Critical Lane Group	Yes	No	Yes	No		No	Yes
50th-Percentile Queue Length [veh/ln]	4.95	3.84	9.00	6.47		5.63	8.63
50th-Percentile Queue Length [ft/ln]	123.77	96.12	225.06	161.87		140.84	215.79
95th-Percentile Queue Length [veh/ln]	8.60	6.92	13.92	10.65		9.53	13.45
95th-Percentile Queue Length [ft/ln]	215.00	173.01	348.08	266.19		238.16	336.24

Movement, Approach, & Intersection Results

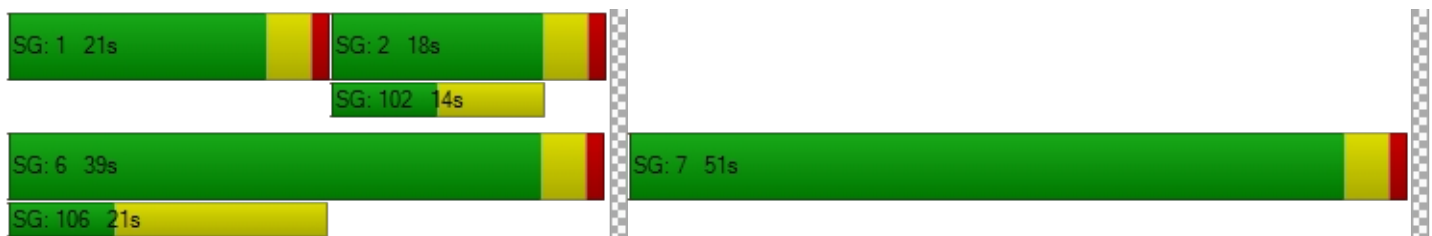
d_M, Delay for Movement [s/veh]	45.60	12.63	0.00	0.00	28.12	28.93	0.00	0.00	0.00	22.25	0.00	27.57
Movement LOS	D	B			C	C				C		C
d_A, Approach Delay [s/veh]	18.22				28.20		0.00		25.24			
Approach LOS	B				C		A		C			
d_I, Intersection Delay [s/veh]	25.36											
Intersection LOS	C											
Intersection V/C	0.823											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	34.68	34.68
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	1.956	2.611
Crosswalk LOS	F	F	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	778	311	0	1044
d_b, Bicycle Delay [s]	16.82	32.10	45.01	10.28
I_b,int, Bicycle LOS Score for Intersection	2.238	2.430	4.132	1.560
Bicycle LOS	B	B	D	A

Sequence

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



Intersection Level Of Service Report
Intersection 29: Fairview Road at I-405 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	34.8
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.985

Intersection Setup

Name	Fairview Rd			Fairview Rd			I-405 SB Ramps			I-405 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↑↑↑↓			↑↑↑↑			↑↑↓					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	1	0	0	1	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Fairview Rd			Fairview Rd			I-405 SB Ramps			I-405 SB Ramps		
Base Volume Input [veh/h]	0	1033	1287	1761	1912	0	222	0	374	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1033	1287	1761	1912	0	222	0	374	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	258	322	440	478	0	56	0	94	0	0	0
Total Analysis Volume [veh/h]	0	1033	1287	1761	1912	0	222	0	374	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Permiss
Signal Group	0	6	0	5	2	0	3	0	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	10	0	6	10	0	6	0	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	30	0	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Split [s]	0	50	0	41	91	0	19	0	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	11	0	0	14	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No		No					
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No		No					
Maximum Recall		No		No	No		No					
Pedestrian Recall		No		No	No		No					
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	R	L	C	L	R	
C, Cycle Length [s]	110	110	110	110	110	110	110	
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]	46	46	46	37	87	15	15	
g / C, Green / Cycle	0.42	0.42	0.42	0.34	0.79	0.14	0.14	
(v / s)_i Volume / Saturation Flow Rate	0.20	0.40	0.40	0.34	0.38	0.06	0.13	
s, saturation flow rate [veh/h]	5094	1589	1589	5188	5094	3459	2813	
c, Capacity [veh/h]	2129	664	664	1745	4027	473	384	
d1, Uniform Delay [s]	23.37	31.30	31.30	36.50	3.86	43.80	47.27	
k, delay calibration	0.50	0.50	0.50	0.11	0.50	0.11	0.11	
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	0.79	28.02	28.02	12.41	0.40	0.73	15.81	
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	0.49	0.97	0.97	1.01	0.47	0.47	0.97	
d, Delay for Lane Group [s/veh]	24.16	59.32	59.32	48.91	4.26	44.53	63.08	
Lane Group LOS	C	E	E	F	A	D	E	
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	6.59	21.28	21.28	17.24	3.73	2.83	5.91	
50th-Percentile Queue Length [ft/ln]	164.76	531.89	531.89	431.09	93.26	70.87	147.80	
95th-Percentile Queue Length [veh/ln]	10.80	28.84	28.84	24.21	6.71	5.10	9.90	
95th-Percentile Queue Length [ft/ln]	270.01	721.01	721.01	605.14	167.87	127.57	247.49	

Movement, Approach, & Intersection Results

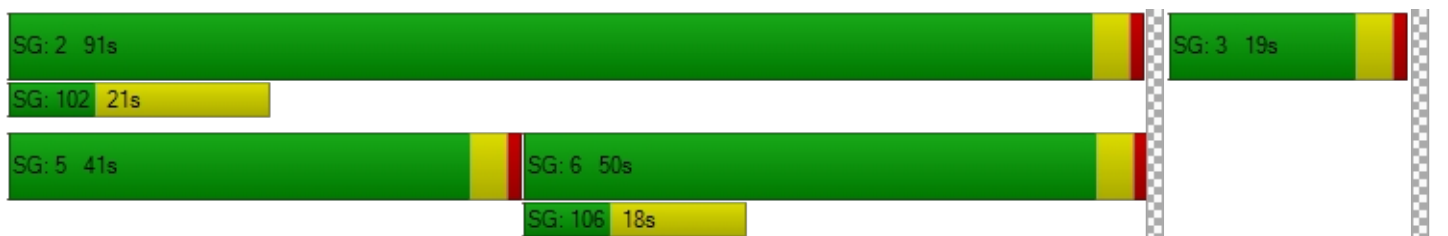
d_M, Delay for Movement [s/veh]	0.00	24.16	59.32	48.91	4.26	0.00	44.53	0.00	63.08	0.00	0.00	0.00
Movement LOS		C	E	F	A		D		E			
d_A, Approach Delay [s/veh]	43.66			25.67			56.17			0.00		
Approach LOS	D			C			E			A		
d_I, Intersection Delay [s/veh]	34.76											
Intersection LOS	C											
Intersection V/C	0.985											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0			0.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	0.00			0.00			44.55			44.55		
I_p,int, Pedestrian LOS Score for Intersection	0.000			0.000			2.426			2.940		
Crosswalk LOS	F			F			B			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	836			1582			273			0		
d_b, Bicycle Delay [s]	18.61			2.40			41.02			55.00		
I_b,int, Bicycle LOS Score for Intersection	2.517			3.580			1.560			4.132		
Bicycle LOS	B			D			A			D		

Sequence

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



Intersection Level Of Service Report
Intersection 30: Bristol Street at I-405 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	6.7
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.443

Intersection Setup

Name	Bristol Street			Bristol Street			I-405 NB Ramps			I-405 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	0	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	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	No			No			Yes			Yes		

Volumes

Name	Bristol Street			Bristol Street			I-405 NB Ramps			I-405 NB Ramps		
Base Volume Input [veh/h]	0	1852	220	0	2838	9	0	0	39	142	84	856
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1852	220	0	2838	9	0	0	39	142	84	856
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	463	55	0	710	2	0	0	10	36	21	214
Total Analysis Volume [veh/h]	0	1852	220	0	2838	9	0	0	39	142	84	856
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]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss	Split	Permiss	Split	Split	Split	Overlap
Signal Group	0	6	0	0	2	0	0	0	8	0	4	4
Auxiliary Signal Groups												2,4
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	0	10	0	0	0	6	0	10	10
Maximum Green [s]	0	30	0	0	30	0	0	0	30	0	30	30
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0
Split [s]	0	52	0	0	52	0	0	0	10	0	48	48
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	18	0	0	14	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No				No		No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0
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	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	C	R	L	C	C	R
C, Cycle Length [s]	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	83	83	83	4	11	11	11	98
g / C, Green / Cycle	0.75	0.75	0.75	0.04	0.10	0.10	0.10	0.89
(v / s)_i Volume / Saturation Flow Rate	0.27	0.34	0.31	0.01	0.04	0.04	0.05	0.30
s, saturation flow rate [veh/h]	6792	6792	1865	2813	1781	1788	1702	2813
c, Capacity [veh/h]	5097	5097	1400	107	182	183	174	2501
d1, Uniform Delay [s]	4.71	5.15	4.93	51.59	46.25	46.25	46.45	0.97
k, delay calibration	0.50	0.50	0.50	0.11	0.11	0.11	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.20	0.28	0.88	2.05	1.46	1.45	1.79	0.37
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.36	0.45	0.41	0.36	0.41	0.41	0.45	0.34
d, Delay for Lane Group [s/veh]	4.91	5.44	5.81	53.64	47.71	47.70	48.24	1.35
Lane Group LOS	A	A	A	D	D	D	D	A
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	3.08	4.14	4.21	0.55	1.97	1.98	2.09	0.44
50th-Percentile Queue Length [ft/ln]	76.91	103.62	105.28	13.87	49.26	49.45	52.14	10.96
95th-Percentile Queue Length [veh/ln]	5.54	7.46	7.58	1.00	3.55	3.56	3.75	0.79
95th-Percentile Queue Length [ft/ln]	138.43	186.52	189.41	24.96	88.67	89.02	93.85	19.74

Movement, Approach, & Intersection Results

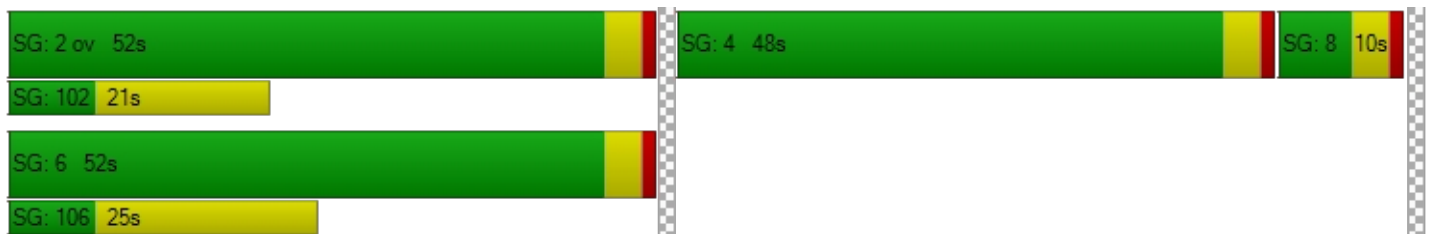
d_M, Delay for Movement [s/veh]	0.00	4.91	0.00	0.00	5.51	5.81	0.00	0.00	53.64	47.71	48.20	1.35
Movement LOS		A			A	A			D	D	D	A
d_A, Approach Delay [s/veh]	4.91		5.51			53.64			11.07			
Approach LOS	A		A			D			B			
d_I, Intersection Delay [s/veh]	6.67											
Intersection LOS	A											
Intersection V/C	0.443											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00		0.00		0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00		0.00		0.00			0.00		
d_p, Pedestrian Delay [s]	0.00		0.00		44.55			44.55		
I_p,int, Pedestrian LOS Score for Intersection	0.000		0.000		2.173			2.638		
Crosswalk LOS	F		F		B			B		
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	873		873		109			800		
d_b, Bicycle Delay [s]	17.47		17.47		49.16			19.80		
I_b,int, Bicycle LOS Score for Intersection	2.324		2.499		1.560			2.452		
Bicycle LOS	B		B		A			B		

Sequence

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



Intersection Level Of Service Report
Intersection 31: Bristol Street at I-405 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	15.5
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.537

Intersection Setup

Name	Bristol Street		Bristol Street		I-405 SB Ramps	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration	↵ ↑ ↑ ↑		↑ ↑ ↵		↵↵↵↵	
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	1	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		Yes	

Volumes

Name	Bristol Street		Bristol Street		I-405 SB Ramps	
Base Volume Input [veh/h]	139	1313	1226	1232	760	603
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	139	1313	1226	1232	760	603
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	35	328	307	308	190	0
Total Analysis Volume [veh/h]	139	1313	1226	1232	760	0
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Unsignalized	Permissive	Unsignalized
Signal Group	1	6	2	0	3	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	6	10	10	0	6	0
Maximum Green [s]	30	30	30	0	30	0
Amber [s]	3.0	3.0	3.0	0.0	3.0	0.0
All red [s]	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	36	58	22	0	32	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	0	7	0	0	0
Pedestrian Clearance [s]	0	0	11	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No	No		No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
Minimum Recall	No	No	No		No	
Maximum Recall	No	No	No		No	
Pedestrian Recall	No	No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L
C, Cycle Length [s]	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	65	52	17
g / C, Green / Cycle	0.10	0.72	0.58	0.19
(v / s)_i Volume / Saturation Flow Rate	0.08	0.19	0.24	0.15
s, saturation flow rate [veh/h]	1781	6792	5094	5188
c, Capacity [veh/h]	177	4922	2960	967
d1, Uniform Delay [s]	39.63	4.23	10.40	34.91
k, delay calibration	0.11	0.50	0.50	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.55	0.13	0.43	1.45
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.79	0.27	0.41	0.79
d, Delay for Lane Group [s/veh]	47.19	4.36	10.83	36.36
Lane Group LOS	D	A	B	D
Critical Lane Group	Yes	No	Yes	Yes
50th-Percentile Queue Length [veh/ln]	3.33	1.67	4.20	5.31
50th-Percentile Queue Length [ft/ln]	83.33	41.79	104.90	132.84
95th-Percentile Queue Length [veh/ln]	6.00	3.01	7.55	9.09
95th-Percentile Queue Length [ft/ln]	150.00	75.22	188.82	227.35

Movement, Approach, & Intersection Results

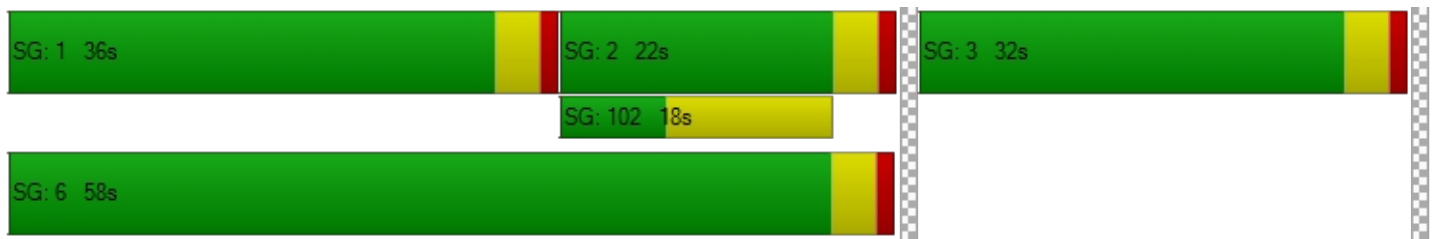
d_M, Delay for Movement [s/veh]	47.19	4.36	10.83	0.00	36.36	0.00
Movement LOS	D	A	B		D	
d_A, Approach Delay [s/veh]	8.46		10.83		36.36	
Approach LOS	A		B		D	
d_I, Intersection Delay [s/veh]	15.48					
Intersection LOS	B					
Intersection V/C	0.537					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	34.68
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.598
Crosswalk LOS	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1200	400	622
d_b, Bicycle Delay [s]	7.21	28.81	21.37
I_b,int, Bicycle LOS Score for Intersection	2.159	2.234	1.560
Bicycle LOS	B	B	A

Sequence

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



Intersection Level Of Service Report
Intersection 37: Bear St at SR-73 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	22.1
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.630

Intersection Setup

Name	Bear St			Bear St			SR-73 NB Ramps			SR-73 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0	0	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		
Crosswalk	No			No			No			Yes		

Volumes

Name	Bear St			Bear St			SR-73 NB Ramps			SR-73 NB Ramps		
Base Volume Input [veh/h]	186	390	0	0	1139	111	0	0	0	202	0	583
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	186	390	0	0	1139	111	0	0	0	202	0	583
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	47	98	0	0	285	28	0	0	0	51	0	146
Total Analysis Volume [veh/h]	186	390	0	0	1139	111	0	0	0	202	0	583
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Permiss	Split
Signal Group	1	6	0	0	2	0	0	0	0	0	7	0	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	6	10	0	0	10	0	0	0	0	0	6	0	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	20	34	0	0	14	0	0	0	0	0	56	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	11	0	0	0	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall	No	No			No						No		
Maximum Recall	No	No			No						No		
Pedestrian Recall	No	No			No						No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C		L	R
C, Cycle Length [s]	90	90	90	90		90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	11	60	45	45		22	22
g / C, Green / Cycle	0.13	0.67	0.50	0.50		0.25	0.25
(v / s)_i Volume / Saturation Flow Rate	0.10	0.11	0.23	0.23		0.11	0.21
s, saturation flow rate [veh/h]	1781	3560	3560	1786		1781	2813
c, Capacity [veh/h]	224	2371	1765	886		437	690
d1, Uniform Delay [s]	38.45	5.65	14.94	14.93		28.92	32.34
k, delay calibration	0.11	0.50	0.50	0.50		0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	7.81	0.15	0.91	1.79		0.76	2.94
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.83	0.16	0.47	0.47		0.46	0.84
d, Delay for Lane Group [s/veh]	46.26	5.80	15.85	16.72		29.68	35.28
Lane Group LOS	D	A	B	B		C	D
Critical Lane Group	Yes	No	Yes	No		No	Yes
50th-Percentile Queue Length [veh/ln]	4.43	1.25	5.51	5.72		3.74	6.16
50th-Percentile Queue Length [ft/ln]	110.73	31.18	137.65	142.98		93.40	154.03
95th-Percentile Queue Length [veh/ln]	7.88	2.24	9.35	9.64		6.72	10.23
95th-Percentile Queue Length [ft/ln]	197.02	56.12	233.86	241.03		168.12	255.80

Movement, Approach, & Intersection Results

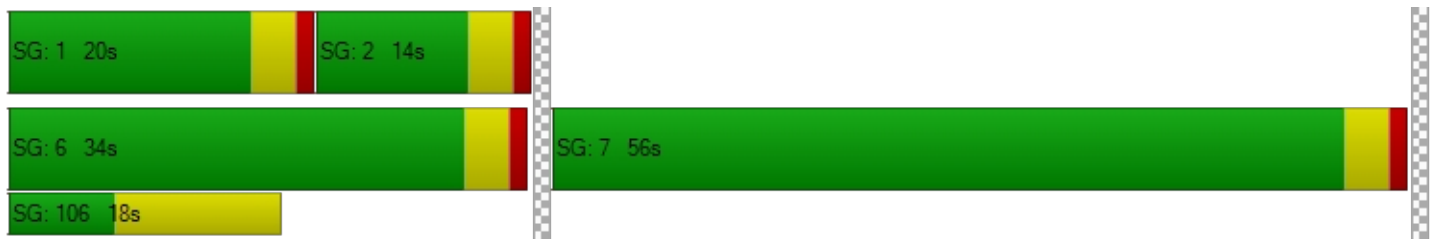
d_M, Delay for Movement [s/veh]	46.26	5.80	0.00	0.00	16.08	16.72	0.00	0.00	0.00	29.68	0.00	35.28
Movement LOS	D	A			B	B				C		D
d_A, Approach Delay [s/veh]	18.86				16.14		0.00		33.84			
Approach LOS	B				B		A		C			
d_I, Intersection Delay [s/veh]	22.06											
Intersection LOS	C											
Intersection V/C	0.630											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	34.68
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	2.322
Crosswalk LOS	F	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	666	222	0	1155
d_b, Bicycle Delay [s]	20.01	35.57	45.01	8.03
I_b,int, Bicycle LOS Score for Intersection	2.035	2.247	4.132	1.560
Bicycle LOS	B	B	D	A

Sequence

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



Intersection Level Of Service Report
Intersection 38: Bear St at SR-73 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	24.1
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.725

Intersection Setup

Name	Bear St			Bear St			SR-73 SB Ramps			SR-73 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↑↑			←↑↑			←↑↑					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Bear St			Bear St			SR-73 SB Ramps			SR-73 SB Ramps		
Base Volume Input [veh/h]	0	427	440	717	705	0	140	1	237	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	427	440	717	705	0	140	1	237	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	107	110	179	176	0	35	0	59	0	0	0
Total Analysis Volume [veh/h]	0	427	440	717	705	0	140	1	237	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Permiss	Permiss
Signal Group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	6	10	0	0	10	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	18	0	45	63	0	0	32	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	7	0	0	7	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	L	C	L	C	
C, Cycle Length [s]	95	95	95	95	95	95	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	43	43	23	70	17	17	
g / C, Green / Cycle	0.46	0.46	0.24	0.74	0.17	0.17	
(v / s)_i Volume / Saturation Flow Rate	0.23	0.28	0.21	0.20	0.08	0.15	
s, saturation flow rate [veh/h]	1870	1589	3459	3560	1781	1590	
c, Capacity [veh/h]	853	725	838	2638	312	278	
d1, Uniform Delay [s]	18.20	19.42	34.40	3.98	35.10	38.03	
k, delay calibration	0.50	0.50	0.11	0.50	0.11	0.11	
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	2.09	3.75	2.64	0.25	1.01	7.40	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	0.50	0.61	0.86	0.27	0.45	0.86	
d, Delay for Lane Group [s/veh]	20.29	23.17	37.04	4.23	36.11	45.43	
Lane Group LOS	C	C	D	A	D	D	
Critical Lane Group	No	Yes	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	6.84	7.73	8.05	1.83	2.96	5.86	
50th-Percentile Queue Length [ft/ln]	170.93	193.17	201.17	45.72	73.96	146.51	
95th-Percentile Queue Length [veh/ln]	11.13	12.29	12.70	3.29	5.33	9.83	
95th-Percentile Queue Length [ft/ln]	278.13	307.14	317.47	82.29	133.13	245.76	

Movement, Approach, & Intersection Results

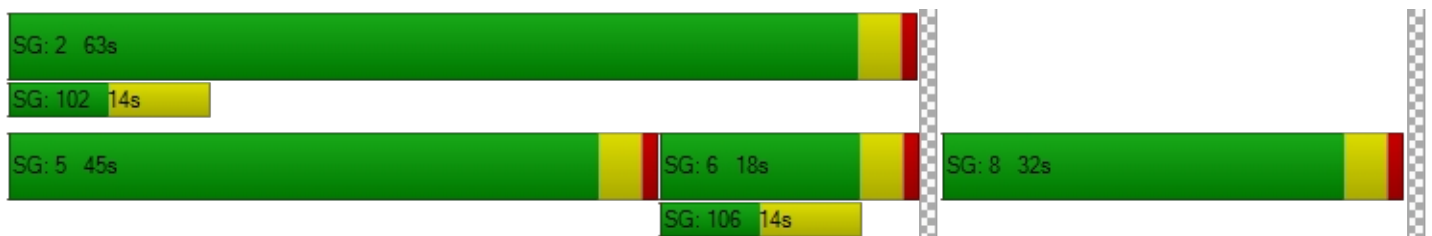
d_M, Delay for Movement [s/veh]	0.00	20.29	23.17	37.04	4.23	0.00	36.11	45.43	45.43	0.00	0.00	0.00
Movement LOS		C	C	D	A		D	D	D			
d_A, Approach Delay [s/veh]		21.75		20.77			41.98			0.00		
Approach LOS		C		C			D			A		
d_I, Intersection Delay [s/veh]		24.10										
Intersection LOS		C										
Intersection V/C		0.725										

Other Modes

g_Walk,mi, Effective Walk Time [s]		0.0		0.0		11.0		11.0
M_corner, Corner Circulation Area [ft ² /ped]		0.00		0.00		0.00		0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]		0.00		0.00		0.00		0.00
d_p, Pedestrian Delay [s]		0.00		0.00		37.14		37.14
I_p,int, Pedestrian LOS Score for Intersection		0.000		0.000		2.065		2.282
Crosswalk LOS		F		F		B		B
s_b, Saturation Flow Rate of the bicycle lane		2000		2000		2000		2000
c_b, Capacity of the bicycle lane [bicycles/h]		295		1242		589		0
d_b, Bicycle Delay [s]		34.54		6.83		23.63		47.51
I_b,int, Bicycle LOS Score for Intersection		2.275		2.733		2.183		4.132
Bicycle LOS		B		B		B		D

Sequence

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



Intersection Level Of Service Report
Intersection 12: SR-55 SB Ramps at MacArthur Blvd

Control Type:	Signalized	Delay (sec / veh):	14.1
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.809

Intersection Setup

Name	SR-55 SB Ramp			MacArthur Blvd			MacArthur Blvd					
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration				T T T T			T T T T			T T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	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	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		
Crosswalk	No			Yes			No			No		

Volumes

Name				SR-55 SB Ramp			MacArthur Blvd			MacArthur Blvd		
Base Volume Input [veh/h]	0	0	0	336	0	940	0	1468	1220	0	1867	703
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	336	0	940	0	1468	1220	0	1867	703
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	84	0	235	0	367	305	0	467	176
Total Analysis Volume [veh/h]	0	0	0	336	0	940	0	1468	1220	0	1867	703
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	0	0	0	5	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	6	0	0	0	10	0	0	10	0
Maximum Green [s]	0	0	0	30	0	0	0	30	0	0	30	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	48	0	0	0	52	0	0	52	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	14	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	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	R	C	C
C, Cycle Length [s]		60	60	60	60
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		24	24	28	28
g / C, Green / Cycle		0.40	0.40	0.47	0.47
(v / s)_i Volume / Saturation Flow Rate		0.10	0.33	0.29	0.37
s, saturation flow rate [veh/h]		3459	2813	5094	5094
c, Capacity [veh/h]		1373	1117	2393	2393
d1, Uniform Delay [s]		12.09	16.39	11.86	13.32
k, delay calibration		0.11	0.11	0.11	0.11
l, Upstream Filtering Factor		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		0.09	1.81	0.26	0.57
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.24	0.84	0.61	0.78
d, Delay for Lane Group [s/veh]		12.18	18.20	12.11	13.90
Lane Group LOS		B	B	B	B
Critical Lane Group		No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]		1.35	5.33	4.14	5.96
50th-Percentile Queue Length [ft/ln]		33.75	133.36	103.51	149.06
95th-Percentile Queue Length [veh/ln]		2.43	9.12	7.45	9.97
95th-Percentile Queue Length [ft/ln]		60.75	228.06	186.32	249.17

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	12.18	0.00	18.20	0.00	12.11	0.00	0.00	13.90	0.00
Movement LOS				B		B		B			B	
d_A, Approach Delay [s/veh]	0.00			16.62			12.11			13.90		
Approach LOS	A			B			B			B		
d_I, Intersection Delay [s/veh]	14.08											
Intersection LOS	B											
Intersection V/C	0.809											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	19.97	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	0.000	2.526	0.000	0.000
Crosswalk LOS	F	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	1468	1602	1602
d_b, Bicycle Delay [s]	29.96	2.12	1.19	1.19
I_b,int, Bicycle LOS Score for Intersection	4.132	1.560	2.367	2.586
Bicycle LOS	D	A	B	B

Sequence

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



Intersection Level Of Service Report
Intersection 13: SR-55 NB Ramps at MacArthur Blvd

Control Type:	Signalized	Delay (sec / veh):	9.8
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.699

Intersection Setup

Name	SR-55 NB Ramp						MacArthur Blvd			MacArthur Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	⇐⇐⇐						⇐⇐⇐			⇐⇐⇐		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	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		
Crosswalk	No			No			No			Yes		

Volumes

Name	SR-55 NB Ramp						MacArthur Blvd			MacArthur Blvd		
Base Volume Input [veh/h]	788	0	496	0	0	0	0	854	932	0	1790	1251
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	788	0	496	0	0	0	0	854	932	0	1790	1251
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	197	0	124	0	0	0	0	214	233	0	448	313
Total Analysis Volume [veh/h]	788	0	496	0	0	0	0	854	932	0	1790	1251
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	1	0	0	0	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	6	0	0	0	0	0	0	10	0	0	10	0
Maximum Green [s]	30	0	0	0	0	0	0	30	0	0	30	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	48	0	0	0	0	0	0	72	0	0	72	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	7	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	21	0	0	0	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No							No			No	
Maximum Recall	No							No			No	
Pedestrian Recall	No							No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L		C	C
C, Cycle Length [s]	47		47	47
L, Total Lost Time per Cycle [s]	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00		2.00	2.00
g_i, Effective Green Time [s]	14		25	25
g / C, Green / Cycle	0.30		0.53	0.53
(v / s)_i Volume / Saturation Flow Rate	0.23		0.24	0.35
s, saturation flow rate [veh/h]	3459		3560	5094
c, Capacity [veh/h]	1049		1874	2681
d1, Uniform Delay [s]	14.77		6.93	8.12
k, delay calibration	0.11		0.11	0.11
l, Upstream Filtering Factor	1.00		1.00	1.00
d2, Incremental Delay [s]	1.11		0.17	0.29
d3, Initial Queue Delay [s]	0.00		0.00	0.00
Rp, platoon ratio	1.00		1.00	1.00
PF, progression factor	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.75		0.46	0.67
d, Delay for Lane Group [s/veh]	15.88		7.11	8.42
Lane Group LOS	B		A	A
Critical Lane Group	Yes		No	Yes
50th-Percentile Queue Length [veh/ln]	3.32		1.88	3.08
50th-Percentile Queue Length [ft/ln]	82.90		47.05	77.01
95th-Percentile Queue Length [veh/ln]	5.97		3.39	5.54
95th-Percentile Queue Length [ft/ln]	149.22		84.69	138.61

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	15.88	0.00	0.00	0.00	0.00	0.00	0.00	7.11	0.00	0.00	8.42	0.00
Movement LOS	B							A			A	
d_A, Approach Delay [s/veh]	15.88			0.00			7.11			8.42		
Approach LOS	B			A			A			A		
d_I, Intersection Delay [s/veh]	9.80											
Intersection LOS	A											
Intersection V/C	0.699											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	13.69
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	2.845
Crosswalk LOS	F	F	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1881	0	2906	2906
d_b, Bicycle Delay [s]	0.08	23.40	4.81	4.81
I_b,int, Bicycle LOS Score for Intersection	1.560	4.132	2.264	2.544
Bicycle LOS	A	D	B	B

Sequence





Ring 1	1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 25: I-405 NB Off-Ramp at South Coast Drive

Control Type:	Signalized	Delay (sec / veh):	22.0
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.642

Intersection Setup

Name	I-405 NB Off-Ramp			The Cape Dwy			South Coast Drive			South Coast 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	1	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	I-405 NB Off-Ramp			The Cape Dwy			South Coast Drive			South Coast Drive		
Base Volume Input [veh/h]	543	34	220	32	0	44	49	482	0	0	434	38
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
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]	543	34	220	32	0	44	49	482	0	0	434	38
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	136	9	55	8	0	11	12	121	0	0	109	10
Total Analysis Volume [veh/h]	543	34	220	32	0	44	49	482	0	0	434	38
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	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Permiss	Split	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	7	0	0	5	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	10	0	6	0	0	6	10	0	0	10	0
Maximum Green [s]	0	30	0	30	0	0	30	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	57	0	57	0	0	10	33	0	0	23	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	14	0	0	0	0	0	11	0	0	11	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No		No				No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	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	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	R	L	C	C	C
C, Cycle Length [s]	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
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	40	40	40	40	40	4	42	34	34
g / C, Green / Cycle	0.44	0.44	0.44	0.44	0.44	0.05	0.47	0.38	0.38
(v / s)_i Volume / Saturation Flow Rate	0.40	0.08	0.08	0.03	0.03	0.03	0.14	0.13	0.13
s, saturation flow rate [veh/h]	1362	1655	1589	1125	1589	1781	3560	1870	1818
c, Capacity [veh/h]	661	736	707	508	707	84	1661	701	682
d1, Uniform Delay [s]	24.63	15.05	15.07	17.79	14.28	42.01	14.81	20.13	20.21
k, delay calibration	0.23	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.36	0.11	0.12	0.05	0.04	6.24	0.44	1.30	1.39
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.82	0.17	0.18	0.06	0.06	0.58	0.29	0.34	0.35
d, Delay for Lane Group [s/veh]	29.99	15.16	15.19	17.85	14.31	48.25	15.26	21.43	21.61
Lane Group LOS	C	B	B	B	B	D	B	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	11.35	1.56	1.52	0.42	0.51	1.20	3.01	3.69	3.72
50th-Percentile Queue Length [ft/ln]	283.66	38.98	38.08	10.58	12.64	30.02	75.28	92.25	92.88
95th-Percentile Queue Length [veh/ln]	16.87	2.81	2.74	0.76	0.91	2.16	5.42	6.64	6.69
95th-Percentile Queue Length [ft/ln]	421.77	70.17	68.54	19.04	22.76	54.04	135.50	166.06	167.18

Movement, Approach, & Intersection Results

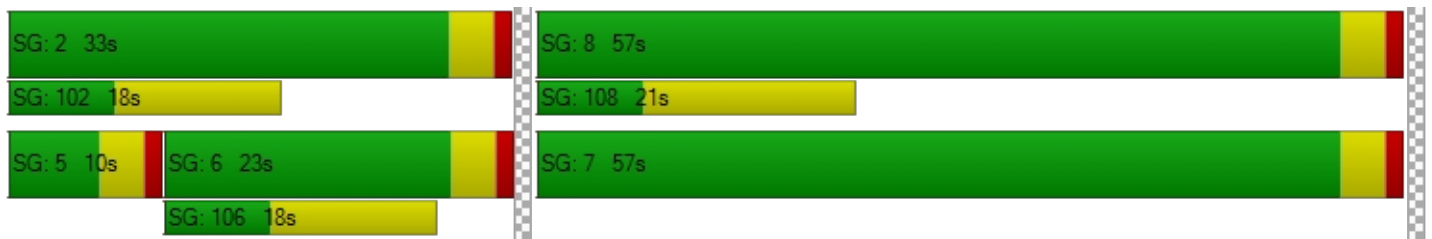
d_M, Delay for Movement [s/veh]	29.99	15.16	15.18	17.85	0.00	14.31	48.25	15.26	0.00	0.00	21.51	21.61
Movement LOS	C	B	B	B		B	D	B			C	C
d_A, Approach Delay [s/veh]	25.27			15.80			18.30			21.52		
Approach LOS	C			B			B			C		
d_I, Intersection Delay [s/veh]	21.97											
Intersection LOS	C											
Intersection V/C	0.642											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.67	34.67	0.00	34.67
I_p,int, Pedestrian LOS Score for Intersection	2.325	2.004	0.000	2.470
Crosswalk LOS	B	B	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1178	1178	644	422
d_b, Bicycle Delay [s]	7.61	7.61	20.67	28.01
I_b,int, Bicycle LOS Score for Intersection	2.875	1.560	1.998	1.949
Bicycle LOS	C	A	A	A

Sequence

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



Intersection Level Of Service Report
Intersection 28: Fairview Road at I-405 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	31.8
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.901

Intersection Setup

Name	Fairview Road			Fairview Road			I-405 NB Ramps			I-405 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	1	0	0	0	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		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Fairview Road			Fairview Road			I-405 NB Ramps			I-405 NB Ramps		
Base Volume Input [veh/h]	260	1542	0	0	2158	303	0	0	0	964	0	1223
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	260	1542	0	0	2158	303	0	0	0	964	0	1223
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	65	386	0	0	540	76	0	0	0	241	0	306
Total Analysis Volume [veh/h]	260	1542	0	0	2158	303	0	0	0	964	0	1223
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Permiss	Split
Signal Group	1	6	0	0	2	0	0	0	0	0	7	0	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	6	10	0	0	10	0	0	0	0	0	6	0	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	20	46	0	0	26	0	0	0	0	0	54	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	14	0	0	7	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall	No	No			No						No		
Maximum Recall	No	No			No						No		
Pedestrian Recall	No	No			No						No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	R		L	R
C, Cycle Length [s]	100	100	100	100		100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	16	44	24	24		48	48
g / C, Green / Cycle	0.16	0.44	0.24	0.24		0.48	0.48
(v / s)_i Volume / Saturation Flow Rate	0.15	0.30	0.21	0.19		0.28	0.43
s, saturation flow rate [veh/h]	1781	5094	10188	1589		3459	2813
c, Capacity [veh/h]	286	2264	2485	388		1645	1338
d1, Uniform Delay [s]	41.27	22.14	36.27	35.32		19.06	24.32
k, delay calibration	0.11	0.50	0.50	0.50		0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	10.83	1.68	4.44	14.47		0.33	2.88
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.91	0.68	0.87	0.78		0.59	0.91
d, Delay for Lane Group [s/veh]	52.10	23.82	40.71	49.79		19.40	27.20
Lane Group LOS	D	C	D	D		B	C
Critical Lane Group	Yes	No	Yes	No		No	Yes
50th-Percentile Queue Length [veh/ln]	7.08	9.60	8.78	8.34		7.88	13.17
50th-Percentile Queue Length [ft/ln]	177.10	240.09	219.42	208.49		197.07	329.28
95th-Percentile Queue Length [veh/ln]	11.45	14.69	13.64	13.08		12.49	19.12
95th-Percentile Queue Length [ft/ln]	286.22	367.15	340.89	326.89		312.19	478.08

Movement, Approach, & Intersection Results

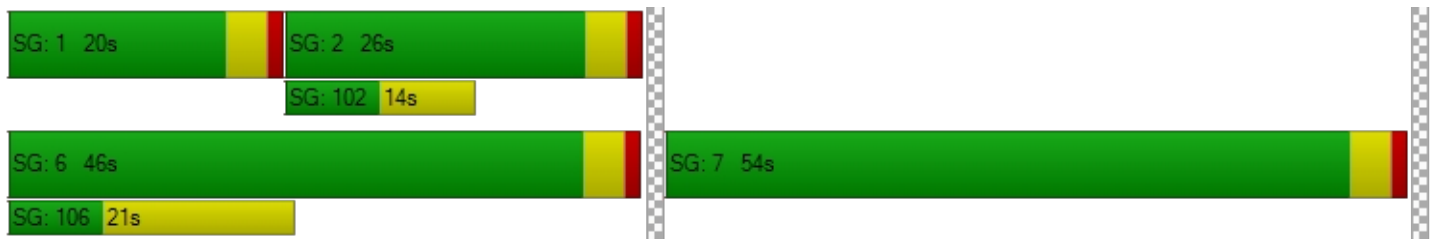
d_M, Delay for Movement [s/veh]	52.10	23.82	0.00	0.00	40.71	49.79	0.00	0.00	0.00	19.40	0.00	27.20
Movement LOS	D	C			D	D				B		C
d_A, Approach Delay [s/veh]	27.90			41.83			0.00			23.76		
Approach LOS	C			D			A			C		
d_I, Intersection Delay [s/veh]	31.81											
Intersection LOS	C											
Intersection V/C	0.901											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	39.61	39.61
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	1.977	2.731
Crosswalk LOS	F	F	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	840	440	0	1000
d_b, Bicycle Delay [s]	16.82	30.42	50.00	12.50
I_b,int, Bicycle LOS Score for Intersection	2.551	2.236	4.132	1.560
Bicycle LOS	B	B	D	A

Sequence

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



Intersection Level Of Service Report
Intersection 29: Fairview Road at I-405 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	23.5
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.719

Intersection Setup

Name	Fairview Rd			Fairview Rd			I-405 SB Ramps			I-405 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↑↑↑↓			↑↑↑↑			↑↑↓					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	1	0	0	1	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Fairview Rd			Fairview Rd			I-405 SB Ramps			I-405 SB Ramps		
Base Volume Input [veh/h]	0	1330	740	1191	1875	0	357	0	412	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1330	740	1191	1875	0	357	0	412	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	333	185	298	469	0	89	0	103	0	0	0
Total Analysis Volume [veh/h]	0	1330	740	1191	1875	0	357	0	412	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	105
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Permiss
Signal Group	0	6	0	5	2	0	3	0	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	10	0	6	10	0	6	0	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	30	0	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Split [s]	0	22	0	54	76	0	29	0	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	11	0	0	14	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No		No					
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No		No					
Maximum Recall		No		No	No		No					
Pedestrian Recall		No		No	No		No					
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	R	L	C	L	R	
C, Cycle Length [s]	105	105	105	105	105	105	105	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	
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]	46	46	46	29	79	18	18	
g / C, Green / Cycle	0.43	0.43	0.43	0.28	0.75	0.18	0.18	
(v / s)_i Volume / Saturation Flow Rate	0.24	0.26	0.26	0.23	0.37	0.10	0.15	
s, saturation flow rate [veh/h]	5094	1589	1589	5188	5094	3459	2813	
c, Capacity [veh/h]	2213	691	691	1429	3810	608	495	
d1, Uniform Delay [s]	22.20	22.70	22.70	35.77	5.28	39.76	41.78	
k, delay calibration	0.50	0.50	0.50	0.11	0.50	0.11	0.11	
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	1.04	3.82	3.82	1.34	0.46	0.90	3.73	
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	0.56	0.60	0.60	0.83	0.49	0.59	0.83	
d, Delay for Lane Group [s/veh]	23.24	26.53	26.53	37.11	5.73	40.67	45.51	
Lane Group LOS	C	C	C	D	A	D	D	
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	7.66	8.35	8.35	9.58	4.58	4.29	5.36	
50th-Percentile Queue Length [ft/ln]	191.59	208.80	208.80	239.49	114.43	107.18	134.05	
95th-Percentile Queue Length [veh/ln]	12.20	13.09	13.09	14.66	8.09	7.68	9.16	
95th-Percentile Queue Length [ft/ln]	305.09	327.29	327.29	366.38	202.14	192.07	228.99	

Movement, Approach, & Intersection Results

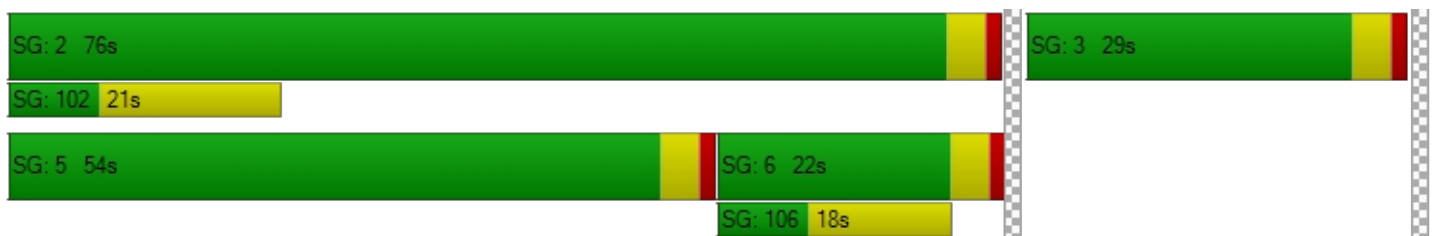
d_M, Delay for Movement [s/veh]	0.00	23.24	26.53	37.11	5.73	0.00	40.67	0.00	45.51	0.00	0.00	0.00
Movement LOS		C	C	D	A		D		D			
d_A, Approach Delay [s/veh]	24.55			17.92			43.26			0.00		
Approach LOS	C			B			D			A		
d_I, Intersection Delay [s/veh]	23.55											
Intersection LOS	C											
Intersection V/C	0.719											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0			0.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	0.00			0.00			42.07			42.07		
I_p,int, Pedestrian LOS Score for Intersection	0.000			0.000			2.457			2.575		
Crosswalk LOS	F			F			B			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	343			1372			476			0		
d_b, Bicycle Delay [s]	36.04			5.18			30.47			52.50		
I_b,int, Bicycle LOS Score for Intersection	2.413			3.246			1.560			4.132		
Bicycle LOS	B			C			A			D		

Sequence

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



Intersection Level Of Service Report
Intersection 30: Bristol Street at I-405 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	16.6
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.751

Intersection Setup

Name	Bristol Street			Bristol Street			I-405 NB Ramps			I-405 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	0	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	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	No			No			Yes			Yes		

Volumes

Name	Bristol Street			Bristol Street			I-405 NB Ramps			I-405 NB Ramps		
Base Volume Input [veh/h]	0	2708	211	0	2842	23	0	0	223	422	352	1553
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	2708	211	0	2842	23	0	0	223	422	352	1553
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	677	53	0	711	6	0	0	56	106	88	388
Total Analysis Volume [veh/h]	0	2708	211	0	2842	23	0	0	223	422	352	1553
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]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss	Split	Permiss	Split	Split	Split	Overlap
Signal Group	0	6	0	0	2	0	0	0	8	0	4	4
Auxiliary Signal Groups												2,4
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	0	10	0	0	0	6	0	10	10
Maximum Green [s]	0	30	0	0	30	0	0	0	30	0	30	30
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0
Split [s]	0	37	0	0	37	0	0	0	39	0	24	24
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	18	0	0	14	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No				No		No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0
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	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	C	R	L	C	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	58	58	58	10	20	20	20	82
g / C, Green / Cycle	0.58	0.58	0.58	0.10	0.20	0.20	0.20	0.82
(v / s)_i Volume / Saturation Flow Rate	0.40	0.34	0.31	0.08	0.14	0.14	0.15	0.55
s, saturation flow rate [veh/h]	6792	6792	1857	2813	1781	1812	1702	2813
c, Capacity [veh/h]	3912	3912	1070	291	358	364	342	2298
d1, Uniform Delay [s]	14.95	13.57	13.00	43.68	37.36	37.25	37.65	3.75
k, delay calibration	0.50	0.50	0.50	0.11	0.11	0.11	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.03	0.65	1.92	4.25	2.76	2.56	3.41	1.62
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.69	0.59	0.54	0.77	0.72	0.71	0.76	0.68
d, Delay for Lane Group [s/veh]	15.98	14.22	14.93	47.92	40.12	39.80	41.06	5.36
Lane Group LOS	B	B	B	D	D	D	D	A
Critical Lane Group	No	No	No	Yes	No	No	Yes	Yes
50th-Percentile Queue Length [veh/ln]	10.27	7.85	7.92	2.84	6.11	6.07	6.20	4.32
50th-Percentile Queue Length [ft/ln]	256.70	196.23	198.10	71.01	152.6	151.8	155.0	107.9
95th-Percentile Queue Length [veh/ln]	15.52	12.44	12.54	5.11	10.16	10.11	10.29	7.73
95th-Percentile Queue Length [ft/ln]	388.08	311.09	313.52	127.82	253.9	252.8	257.1	193.1

Movement, Approach, & Intersection Results

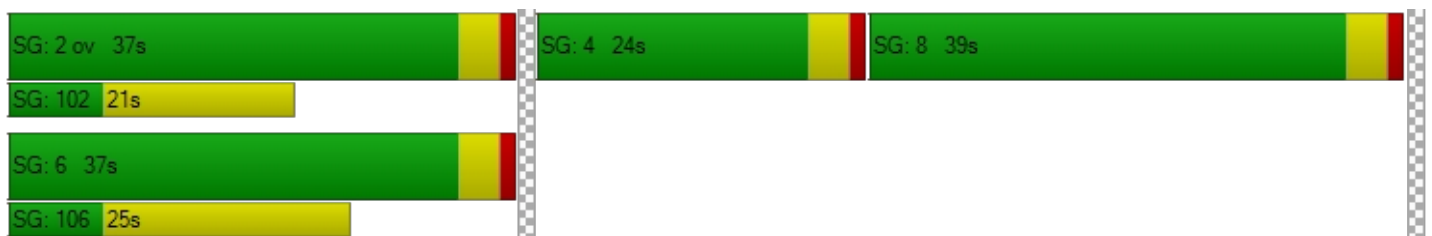
d_M, Delay for Movement [s/veh]	0.00	15.98	0.00	0.00	14.35	14.93	0.00	0.00	47.92	40.12	40.73	5.36
Movement LOS		B			B	B			D	D	D	A
d_A, Approach Delay [s/veh]	15.98			14.36			47.92			16.99		
Approach LOS	B			B			D			B		
d_I, Intersection Delay [s/veh]	16.58											
Intersection LOS	B											
Intersection V/C	0.751											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0			0.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	0.00			0.00			39.61			39.61		
I_p,int, Pedestrian LOS Score for Intersection	0.000			0.000			2.282			2.836		
Crosswalk LOS	F			F			B			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	660			660			700			400		
d_b, Bicycle Delay [s]	22.45			22.45			21.13			32.00		
I_b,int, Bicycle LOS Score for Intersection	2.677			2.505			1.560			3.479		
Bicycle LOS	B			B			A			C		

Sequence

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



Intersection Level Of Service Report
Intersection 31: Bristol Street at I-405 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	19.0
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.739

Intersection Setup

Name	Bristol Street		Bristol Street		I-405 SB Ramps	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration	↵		↵↵		↵↵↵↵	
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	1	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		Yes	

Volumes

Name	Bristol Street		Bristol Street		I-405 SB Ramps	
Base Volume Input [veh/h]	150	1859	1795	1178	1083	381
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	150	1859	1795	1178	1083	381
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	38	465	449	295	271	0
Total Analysis Volume [veh/h]	150	1859	1795	1178	1083	0
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Unsignalized	Permissive	Unsignalized
Signal Group	1	6	2	0	3	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	6	10	10	0	6	0
Maximum Green [s]	30	30	30	0	30	0
Amber [s]	3.0	3.0	3.0	0.0	3.0	0.0
All red [s]	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	14	56	42	0	39	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	0	7	0	0	0
Pedestrian Clearance [s]	0	0	11	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No	No		No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
Minimum Recall	No	No	No		No	
Maximum Recall	No	No	No		No	
Pedestrian Recall	No	No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L
C, Cycle Length [s]	95	95	95	95
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	10	63	49	24
g / C, Green / Cycle	0.10	0.66	0.52	0.25
(v / s)_i Volume / Saturation Flow Rate	0.08	0.27	0.35	0.21
s, saturation flow rate [veh/h]	1781	6792	5094	5188
c, Capacity [veh/h]	182	4500	2639	1314
d1, Uniform Delay [s]	41.81	7.45	17.03	33.48
k, delay calibration	0.11	0.50	0.50	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.94	0.28	1.44	1.36
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.82	0.41	0.68	0.82
d, Delay for Lane Group [s/veh]	50.76	7.73	18.47	34.85
Lane Group LOS	D	A	B	C
Critical Lane Group	Yes	No	Yes	Yes
50th-Percentile Queue Length [veh/ln]	3.86	3.94	9.43	7.84
50th-Percentile Queue Length [ft/ln]	96.56	98.50	235.67	196.07
95th-Percentile Queue Length [veh/ln]	6.95	7.09	14.46	12.44
95th-Percentile Queue Length [ft/ln]	173.80	177.31	361.55	310.90

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	50.76	7.73	18.47	0.00	34.85	0.00
Movement LOS	D	A	B		C	
d_A, Approach Delay [s/veh]	10.94		18.47		34.85	
Approach LOS	B		B		C	
d_I, Intersection Delay [s/veh]	19.01					
Intersection LOS	B					
Intersection V/C	0.739					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	37.14
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.655
Crosswalk LOS	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1095	800	737
d_b, Bicycle Delay [s]	9.74	17.11	18.95
I_b,int, Bicycle LOS Score for Intersection	2.388	2.547	1.560
Bicycle LOS	B	B	A

Sequence

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



Intersection Level Of Service Report
Intersection 37: Bear St at SR-73 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	53.8
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.017

Intersection Setup

Name	Bear St			Bear St			SR-73 NB Ramps			SR-73 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0	0	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		
Crosswalk	No			No			No			Yes		

Volumes

Name	Bear St			Bear St			SR-73 NB Ramps			SR-73 NB Ramps		
Base Volume Input [veh/h]	176	687	0	0	1209	173	0	0	0	472	0	1558
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	176	687	0	0	1209	173	0	0	0	472	0	1558
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	44	172	0	0	302	43	0	0	0	118	0	390
Total Analysis Volume [veh/h]	176	687	0	0	1209	173	0	0	0	472	0	1558
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Permiss	Split
Signal Group	1	6	0	0	2	0	0	0	0	0	7	0	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	6	10	0	0	10	0	0	0	0	0	6	0	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	13	47	0	0	34	0	0	0	0	0	73	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	11	0	0	0	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall	No	No			No						No		
Maximum Recall	No	No			No						No		
Pedestrian Recall	No	No			No						No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C		L	R
C, Cycle Length [s]	120	120	120	120		120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	9	44	30	30		68	68
g / C, Green / Cycle	0.08	0.36	0.25	0.25		0.57	0.57
(v / s)_i Volume / Saturation Flow Rate	0.10	0.19	0.26	0.26		0.27	0.55
s, saturation flow rate [veh/h]	1781	3560	3560	1754		1781	2813
c, Capacity [veh/h]	135	1294	905	446		1015	1604
d1, Uniform Delay [s]	55.42	30.12	44.72	44.72		15.09	24.85
k, delay calibration	0.11	0.50	0.50	0.50		0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	148.64	1.56	34.47	51.44		0.33	5.73
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	1.30	0.53	1.02	1.03		0.46	0.97
d, Delay for Lane Group [s/veh]	204.06	31.68	79.19	96.16		15.42	30.57
Lane Group LOS	F	C	F	F		B	C
Critical Lane Group	Yes	No	No	Yes		No	Yes
50th-Percentile Queue Length [veh/ln]	9.64	8.09	17.67	19.51		7.43	21.22
50th-Percentile Queue Length [ft/ln]	241.09	202.29	441.69	487.68		185.80	530.60
95th-Percentile Queue Length [veh/ln]	16.00	12.76	24.83	27.29		11.90	28.78
95th-Percentile Queue Length [ft/ln]	400.10	318.92	620.69	682.25		297.58	719.48

Movement, Approach, & Intersection Results

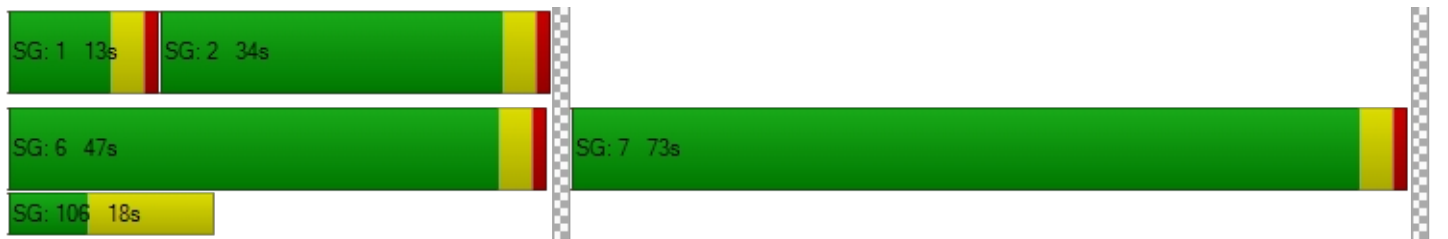
d_M, Delay for Movement [s/veh]	204.06	31.68	0.00	0.00	83.23	96.16	0.00	0.00	0.00	15.42	0.00	30.57
Movement LOS	F	C			F	F				B		C
d_A, Approach Delay [s/veh]	66.84				84.85		0.00		27.05			
Approach LOS	E				F		A		C			
d_I, Intersection Delay [s/veh]	53.77											
Intersection LOS	D											
Intersection V/C	1.017											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	49.49
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	2.640
Crosswalk LOS	F	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	717	500	0	1150
d_b, Bicycle Delay [s]	24.69	33.73	59.98	10.83
I_b,int, Bicycle LOS Score for Intersection	2.272	2.320	4.132	1.560
Bicycle LOS	B	B	D	A

Sequence

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



Intersection Level Of Service Report
Intersection 38: Bear St at SR-73 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	20.9
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.657

Intersection Setup

Name	Bear St			Bear St			SR-73 SB Ramps			SR-73 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↑↑			↑↑↑			↑↑					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Bear St			Bear St			SR-73 SB Ramps			SR-73 SB Ramps		
Base Volume Input [veh/h]	0	657	198	703	985	0	214	1	186	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	657	198	703	985	0	214	1	186	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	164	50	176	246	0	54	0	47	0	0	0
Total Analysis Volume [veh/h]	0	657	198	703	985	0	214	1	186	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Permiss	Permiss
Signal Group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	6	10	0	0	10	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	30	0	42	72	0	0	18	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	7	0	0	7	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	L	C	L	C	
C, Cycle Length [s]	90	90	90	90	90	90	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	44	44	22	69	13	13	
g / C, Green / Cycle	0.49	0.49	0.24	0.77	0.14	0.14	
(v / s)_i Volume / Saturation Flow Rate	0.23	0.25	0.20	0.28	0.12	0.12	
s, saturation flow rate [veh/h]	1870	1729	3459	3560	1781	1593	
c, Capacity [veh/h]	908	840	830	2742	251	225	
d1, Uniform Delay [s]	15.44	15.82	32.65	3.29	37.69	37.70	
k, delay calibration	0.50	0.50	0.11	0.50	0.11	0.11	
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	1.75	2.20	2.51	0.37	7.42	8.35	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	0.47	0.51	0.85	0.36	0.84	0.84	
d, Delay for Lane Group [s/veh]	17.18	18.02	35.16	3.66	45.11	46.05	
Lane Group LOS	B	B	D	A	D	D	
Critical Lane Group	No	Yes	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	5.96	6.17	7.40	2.09	4.98	4.53	
50th-Percentile Queue Length [ft/ln]	149.10	154.33	185.11	52.17	124.46	113.14	
95th-Percentile Queue Length [veh/ln]	9.97	10.25	11.87	3.76	8.64	8.01	
95th-Percentile Queue Length [ft/ln]	249.23	256.20	296.68	93.91	215.94	200.36	

Movement, Approach, & Intersection Results

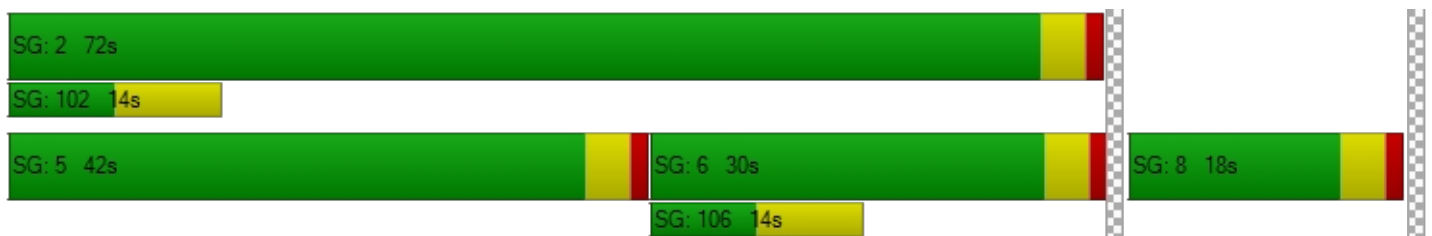
d_M, Delay for Movement [s/veh]	0.00	17.48	18.02	35.16	3.66	0.00	45.16	46.05	46.05	0.00	0.00	0.00
Movement LOS		B	B	D	A		D	D	D			
d_A, Approach Delay [s/veh]		17.60		16.78			45.55		0.00			
Approach LOS		B		B			D		A			
d_I, Intersection Delay [s/veh]	20.94											
Intersection LOS	C											
Intersection V/C	0.657											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	34.68	34.68
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.070	2.154
Crosswalk LOS	F	F	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	578	1511	311	0
d_b, Bicycle Delay [s]	22.77	2.69	32.10	45.01
I_b,int, Bicycle LOS Score for Intersection	2.265	2.952	2.221	4.132
Bicycle LOS	B	C	B	D

Sequence

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



APPENDIX E-XI

**YEAR 2045 BUILDOUT
TRAFFIC CONDITIONS**

Intersection Level Of Service Report
Intersection 12: SR-55 SB Ramps at MacArthur Blvd

Control Type:	Signalized	Delay (sec / veh):	17.6
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.883

Intersection Setup

Name	SR-55 SB Ramp			MacArthur Blvd			MacArthur Blvd					
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration				T T T T			T T T T			T T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	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	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		
Crosswalk	No			Yes			No			No		

Volumes

Name				SR-55 SB Ramp			MacArthur Blvd			MacArthur Blvd		
Base Volume Input [veh/h]	0	0	0	1169	0	1132	0	1909	1268	0	1586	177
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	1169	0	1132	0	1909	1268	0	1586	177
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	292	0	283	0	477	317	0	397	44
Total Analysis Volume [veh/h]	0	0	0	1169	0	1132	0	1909	1268	0	1586	177
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	0	0	0	5	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	6	0	0	0	10	0	0	10	0
Maximum Green [s]	0	0	0	30	0	0	0	30	0	0	30	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	46	0	0	0	44	0	0	44	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	14	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	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	R	C	C
C, Cycle Length [s]		67	67	67	67
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		30	30	29	29
g / C, Green / Cycle		0.44	0.44	0.44	0.44
(v / s)_i Volume / Saturation Flow Rate		0.34	0.40	0.37	0.31
s, saturation flow rate [veh/h]		3459	2813	5094	5094
c, Capacity [veh/h]		1526	1241	2240	2240
d1, Uniform Delay [s]		15.84	17.55	16.85	15.30
k, delay calibration		0.11	0.11	0.11	0.11
l, Upstream Filtering Factor		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		0.83	3.02	0.99	0.42
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.77	0.91	0.85	0.71
d, Delay for Lane Group [s/veh]		16.67	20.57	17.84	15.72
Lane Group LOS		B	C	B	B
Critical Lane Group		No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]		6.81	7.64	7.88	5.88
50th-Percentile Queue Length [ft/ln]		170.25	190.93	196.97	146.89
95th-Percentile Queue Length [veh/ln]		11.09	12.17	12.48	9.85
95th-Percentile Queue Length [ft/ln]		277.24	304.23	312.06	246.28

Movement, Approach, & Intersection Results

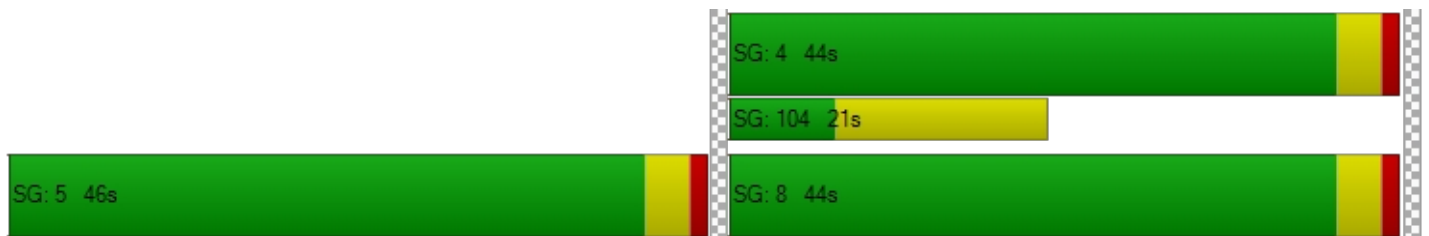
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	16.67	0.00	20.57	0.00	17.84	0.00	0.00	15.72	0.00
Movement LOS				B		C		B			B	
d_A, Approach Delay [s/veh]	0.00			18.59			17.84			15.72		
Approach LOS	A			B			B			B		
d_I, Intersection Delay [s/veh]	17.56											
Intersection LOS	B											
Intersection V/C	0.883											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	23.38	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	0.000	2.732	0.000	0.000
Crosswalk LOS	F	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	1254	1195	1195
d_b, Bicycle Delay [s]	33.48	4.65	5.43	5.43
I_b,int, Bicycle LOS Score for Intersection	4.132	1.560	2.610	2.432
Bicycle LOS	D	A	B	B

Sequence

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



Intersection Level Of Service Report
Intersection 13: SR-55 NB Ramps at MacArthur Blvd

Control Type:	Signalized	Delay (sec / veh):	26.9
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.953

Intersection Setup

Name	SR-55 NB Ramp						MacArthur Blvd			MacArthur Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	⇐⇐⇐						⇐⇐⇐			⇐⇐⇐		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	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		
Crosswalk	No			No			No			Yes		

Volumes

Name	SR-55 NB Ramp						MacArthur Blvd			MacArthur Blvd		
Base Volume Input [veh/h]	1013	0	1190	0	0	0	0	1889	1037	0	495	297
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	1013	0	1190	0	0	0	0	1889	1037	0	495	297
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	253	0	298	0	0	0	0	472	259	0	124	74
Total Analysis Volume [veh/h]	1013	0	1190	0	0	0	0	1889	1037	0	495	297
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	1	0	0	0	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	6	0	0	0	0	0	0	10	0	0	10	0
Maximum Green [s]	30	0	0	0	0	0	0	30	0	0	30	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	46	0	0	0	0	0	0	44	0	0	44	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	7	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	21	0	0	0	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No							No			No	
Maximum Recall	No							No			No	
Pedestrian Recall	No							No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L		C	C
C, Cycle Length [s]	59		59	59
L, Total Lost Time per Cycle [s]	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00		2.00	2.00
g_i, Effective Green Time [s]	21		30	30
g / C, Green / Cycle	0.35		0.51	0.51
(v / s)_i Volume / Saturation Flow Rate	0.29		0.53	0.10
s, saturation flow rate [veh/h]	3459		3560	5094
c, Capacity [veh/h]	1221		1819	2602
d1, Uniform Delay [s]	17.39		14.36	7.78
k, delay calibration	0.11		0.11	0.11
l, Upstream Filtering Factor	1.00		1.00	1.00
d2, Incremental Delay [s]	1.52		21.91	0.04
d3, Initial Queue Delay [s]	0.00		0.00	0.00
Rp, platoon ratio	1.00		1.00	1.00
PF, progression factor	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.83		1.04	0.19
d, Delay for Lane Group [s/veh]	18.91		36.27	7.82
Lane Group LOS	B		F	A
Critical Lane Group	Yes		Yes	No
50th-Percentile Queue Length [veh/ln]	5.75		14.98	0.94
50th-Percentile Queue Length [ft/ln]	143.84		374.54	23.43
95th-Percentile Queue Length [veh/ln]	9.69		21.93	1.69
95th-Percentile Queue Length [ft/ln]	242.18		548.29	42.17

Movement, Approach, & Intersection Results

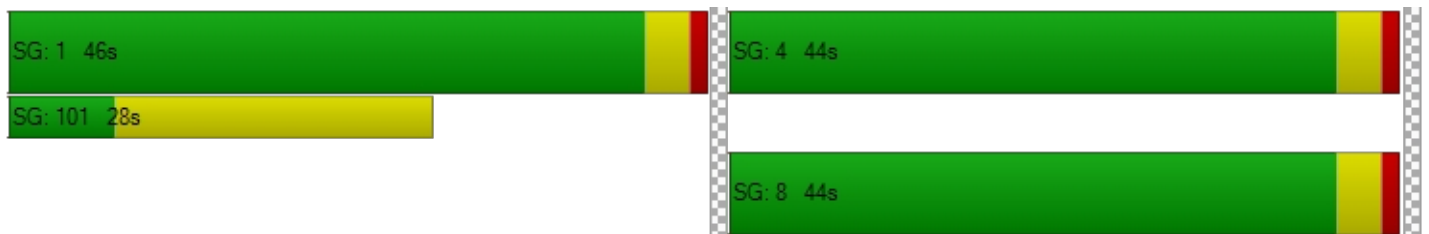
d_M, Delay for Movement [s/veh]	18.91	0.00	0.00	0.00	0.00	0.00	0.00	36.27	0.00	0.00	7.82	0.00
Movement LOS	B							F			A	
d_A, Approach Delay [s/veh]	18.91			0.00			36.27			7.82		
Approach LOS	B			A			D			A		
d_I, Intersection Delay [s/veh]	26.95											
Intersection LOS	C											
Intersection V/C	0.953											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	19.37
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	2.816
Crosswalk LOS	F	F	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1432	0	1363	1363
d_b, Bicycle Delay [s]	2.37	29.34	2.97	2.97
I_b,int, Bicycle LOS Score for Intersection	1.560	4.132	3.118	1.832
Bicycle LOS	A	D	C	A

Sequence





Ring 1	1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 25: I-405 NB Off-Ramp at South Coast Drive

Control Type:	Signalized	Delay (sec / veh):	21.3
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.460

Intersection Setup

Name	I-405 NB Off-Ramp			The Cape Dwy			South Coast Drive			South Coast 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	1	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	I-405 NB Off-Ramp			The Cape Dwy			South Coast Drive			South Coast Drive		
Base Volume Input [veh/h]	421	7	110	58	0	86	23	276	0	0	140	20
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
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]	421	7	110	58	0	86	23	276	0	0	140	20
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	105	2	28	15	0	22	6	69	0	0	35	5
Total Analysis Volume [veh/h]	421	7	110	58	0	86	23	276	0	0	140	20
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	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Permiss	Split	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	7	0	0	5	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	10	0	6	0	0	6	10	0	0	10	0
Maximum Green [s]	0	30	0	30	0	0	30	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	58	0	58	0	0	10	32	0	0	22	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	14	0	0	0	0	0	11	0	0	11	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No		No				No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	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	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	R	L	C	C	C
C, Cycle Length [s]	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
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	33	33	33	33	33	3	49	42	42
g / C, Green / Cycle	0.37	0.37	0.37	0.37	0.37	0.03	0.54	0.47	0.47
(v / s)_i Volume / Saturation Flow Rate	0.32	0.04	0.04	0.05	0.05	0.01	0.08	0.04	0.04
s, saturation flow rate [veh/h]	1311	1618	1589	1275	1589	1781	3560	1870	1791
c, Capacity [veh/h]	535	593	583	492	583	52	1938	880	843
d1, Uniform Delay [s]	28.28	18.73	18.73	21.61	19.08	42.96	10.12	13.17	13.20
k, delay calibration	0.12	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.92	0.07	0.07	0.11	0.12	5.74	0.15	0.20	0.22
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.79	0.10	0.10	0.12	0.15	0.44	0.14	0.09	0.09
d, Delay for Lane Group [s/veh]	31.19	18.81	18.81	21.71	19.20	48.69	10.28	13.38	13.42
Lane Group LOS	C	B	B	C	B	D	B	B	B
Critical Lane Group	Yes	No	No	No	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	8.77	0.80	0.79	0.87	1.20	0.58	1.31	0.92	0.92
50th-Percentile Queue Length [ft/ln]	219.18	20.12	19.77	21.68	29.89	14.54	32.86	22.88	22.98
95th-Percentile Queue Length [veh/ln]	13.62	1.45	1.42	1.56	2.15	1.05	2.37	1.65	1.65
95th-Percentile Queue Length [ft/ln]	340.58	36.22	35.59	39.03	53.80	26.17	59.16	41.18	41.37

Movement, Approach, & Intersection Results

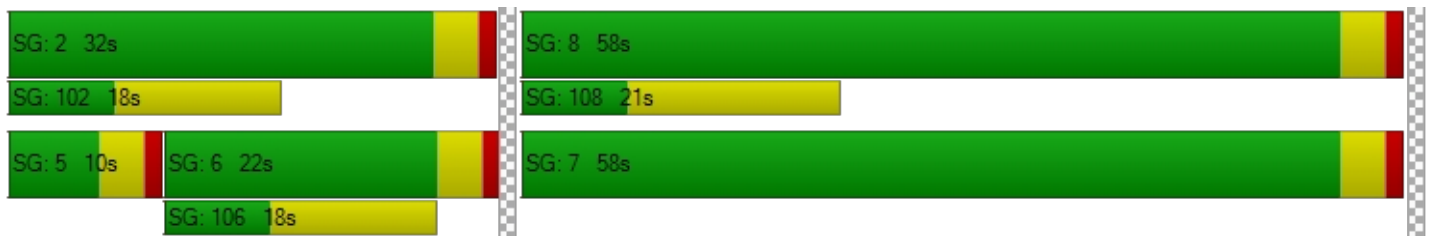
d_M, Delay for Movement [s/veh]	31.19	18.81	18.81	21.71	0.00	19.20	48.69	10.28	0.00	0.00	13.40	13.42
Movement LOS	C	B	B	C		B	D	B			B	B
d_A, Approach Delay [s/veh]	28.50			20.21			13.23			13.40		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]	21.34											
Intersection LOS	C											
Intersection V/C	0.460											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.67	34.67	0.00	34.67
I_p,int, Pedestrian LOS Score for Intersection	2.262	2.003	0.000	2.360
Crosswalk LOS	B	B	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1200	1200	622	400
d_b, Bicycle Delay [s]	7.20	7.20	21.36	28.80
I_b,int, Bicycle LOS Score for Intersection	2.447	1.560	1.806	1.692
Bicycle LOS	B	A	A	A

Sequence

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



Intersection Level Of Service Report
Intersection 28: Fairview Road at I-405 NB Ramps

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):	0.855

Intersection Setup

Name	Fairview Road			Fairview Road			I-405 NB Ramps			I-405 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	1	0	0	0	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		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Fairview Road			Fairview Road			I-405 NB Ramps			I-405 NB Ramps		
Base Volume Input [veh/h]	219	1082	0	0	2953	355	0	0	0	735	0	941
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	219	1082	0	0	2953	355	0	0	0	735	0	941
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	55	271	0	0	738	89	0	0	0	184	0	235
Total Analysis Volume [veh/h]	219	1082	0	0	2953	355	0	0	0	735	0	941
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Permiss	Split
Signal Group	1	6	0	0	2	0	0	0	0	0	7	0	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	6	10	0	0	10	0	0	0	0	0	6	0	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	24	42	0	0	18	0	0	0	0	0	53	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	14	0	0	7	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall	No	No			No						No		
Maximum Recall	No	No			No						No		
Pedestrian Recall	No	No			No						No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	R		L	R
C, Cycle Length [s]	95	95	95	95		95	95
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	14	50	32	32		37	37
g / C, Green / Cycle	0.14	0.52	0.34	0.34		0.39	0.39
(v / s)_i Volume / Saturation Flow Rate	0.12	0.21	0.29	0.22		0.21	0.33
s, saturation flow rate [veh/h]	1781	5094	10188	1589		3459	2813
c, Capacity [veh/h]	256	2673	3452	539		1352	1100
d1, Uniform Delay [s]	39.71	13.62	29.25	26.74		22.38	26.48
k, delay calibration	0.11	0.50	0.50	0.50		0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	7.96	0.46	2.95	6.21		0.34	2.03
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.85	0.40	0.86	0.66		0.54	0.86
d, Delay for Lane Group [s/veh]	47.66	14.08	32.20	32.96		22.72	28.50
Lane Group LOS	D	B	C	C		C	C
Critical Lane Group	Yes	No	Yes	No		No	Yes
50th-Percentile Queue Length [veh/ln]	5.49	4.54	10.56	7.58		6.22	9.63
50th-Percentile Queue Length [ft/ln]	137.24	113.38	264.06	189.61		155.50	240.87
95th-Percentile Queue Length [veh/ln]	9.33	8.03	15.89	12.10		10.31	14.73
95th-Percentile Queue Length [ft/ln]	233.30	200.69	397.31	302.52		257.75	368.14

Movement, Approach, & Intersection Results

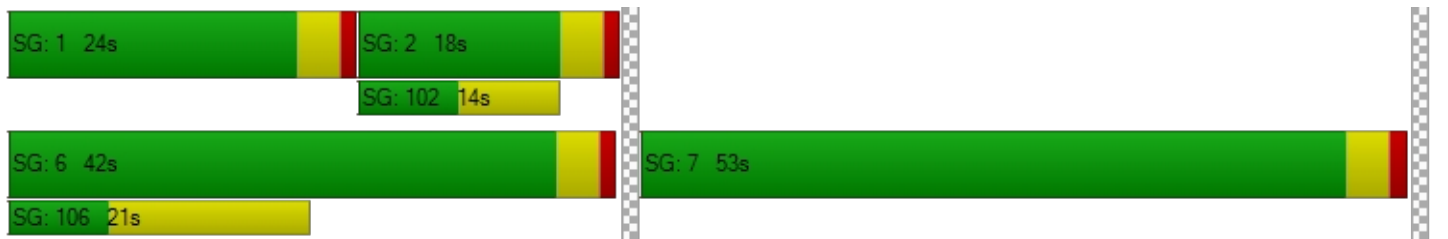
d_M, Delay for Movement [s/veh]	47.66	14.08	0.00	0.00	32.20	32.96	0.00	0.00	0.00	22.72	0.00	28.50
Movement LOS	D	B			C	C				C		C
d_A, Approach Delay [s/veh]	19.73				32.28		0.00		25.97			
Approach LOS	B				C		A		C			
d_I, Intersection Delay [s/veh]	28.00											
Intersection LOS	C											
Intersection V/C	0.855											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	37.14	37.14
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	1.985	2.629
Crosswalk LOS	F	F	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	800	295	0	1031
d_b, Bicycle Delay [s]	17.11	34.54	47.51	11.14
I_b,int, Bicycle LOS Score for Intersection	2.275	2.469	4.132	1.560
Bicycle LOS	B	B	D	A

Sequence

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



Intersection Level Of Service Report
Intersection 29: Fairview Road at I-405 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	41.7
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.023

Intersection Setup

Name	Fairview Rd			Fairview Rd			I-405 SB Ramps			I-405 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↑↑↑↓			↔↔↑↑			↔↔↓					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	1	0	0	1	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Fairview Rd			Fairview Rd			I-405 SB Ramps			I-405 SB Ramps		
Base Volume Input [veh/h]	0	1092	1351	1849	1994	0	233	0	393	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1092	1351	1849	1994	0	233	0	393	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	273	338	462	499	0	58	0	98	0	0	0
Total Analysis Volume [veh/h]	0	1092	1351	1849	1994	0	233	0	393	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Permiss
Signal Group	0	6	0	5	2	0	3	0	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	10	0	6	10	0	6	0	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	30	0	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Split [s]	0	53	0	46	99	0	21	0	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	11	0	0	14	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No		No					
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No		No					
Maximum Recall		No		No	No		No					
Pedestrian Recall		No		No	No		No					
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	R	L	C	L	R	
C, Cycle Length [s]	120	120	120	120	120	120	120	
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]	49	49	49	42	95	17	17	
g / C, Green / Cycle	0.41	0.41	0.41	0.35	0.79	0.14	0.14	
(v / s)_i Volume / Saturation Flow Rate	0.21	0.42	0.42	0.36	0.39	0.07	0.14	
s, saturation flow rate [veh/h]	5094	1589	1589	5188	5094	3459	2813	
c, Capacity [veh/h]	2080	649	649	1815	4031	491	399	
d1, Uniform Delay [s]	26.74	35.50	35.50	39.00	4.29	47.36	51.34	
k, delay calibration	0.50	0.50	0.50	0.11	0.50	0.11	0.11	
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	0.95	46.44	46.44	15.01	0.44	0.71	17.56	
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	0.53	1.04	1.04	1.02	0.49	0.47	0.98	
d, Delay for Lane Group [s/veh]	27.69	81.93	81.93	54.01	4.72	48.07	68.90	
Lane Group LOS	C	F	F	F	A	D	E	
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	7.98	26.83	26.83	20.00	4.60	3.26	6.85	
50th-Percentile Queue Length [ft/ln]	199.61	670.80	670.80	499.96	115.03	81.53	171.20	
95th-Percentile Queue Length [veh/ln]	12.62	36.39	36.39	27.69	8.12	5.87	11.14	
95th-Percentile Queue Length [ft/ln]	315.46	909.74	909.74	692.13	202.97	146.76	278.49	

Movement, Approach, & Intersection Results

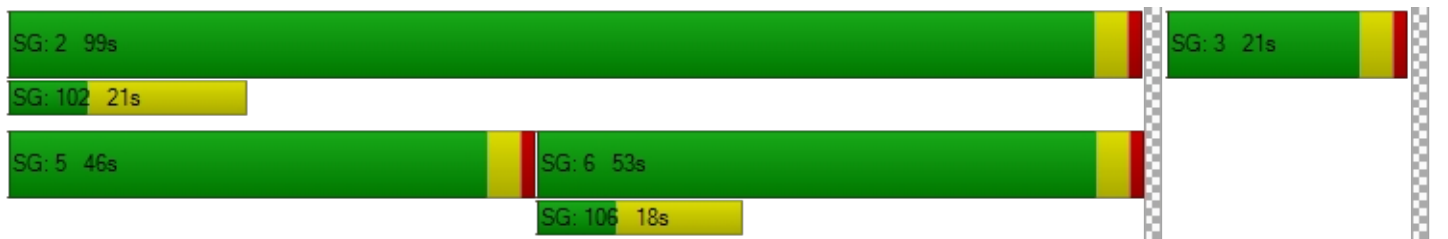
d_M, Delay for Movement [s/veh]	0.00	27.69	81.93	54.01	4.72	0.00	48.07	0.00	68.90	0.00	0.00	0.00
Movement LOS		C	F	F	A		D		E			
d_A, Approach Delay [s/veh]	57.69			28.44			61.15			0.00		
Approach LOS	E			C			E			A		
d_I, Intersection Delay [s/veh]	41.74											
Intersection LOS	D											
Intersection V/C	1.023											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0			0.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	0.00			0.00			49.50			49.50		
I_p,int, Pedestrian LOS Score for Intersection	0.000			0.000			2.436			2.994		
Crosswalk LOS	F			F			B			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	817			1584			283			0		
d_b, Bicycle Delay [s]	21.00			2.60			44.20			59.99		
I_b,int, Bicycle LOS Score for Intersection	2.567			3.673			1.560			4.132		
Bicycle LOS	B			D			A			D		

Sequence

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



Intersection Level Of Service Report
Intersection 30: Bristol Street at I-405 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	8.8
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.485

Intersection Setup

Name	Bristol Street			Bristol Street			I-405 NB Ramps			I-405 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	0	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	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	No			No			Yes			Yes		

Volumes

Name	Bristol Street			Bristol Street			I-405 NB Ramps			I-405 NB Ramps		
Base Volume Input [veh/h]	0	1947	231	0	2710	9	0	0	41	304	88	896
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1947	231	0	2710	9	0	0	41	304	88	896
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	487	58	0	678	2	0	0	10	76	22	224
Total Analysis Volume [veh/h]	0	1947	231	0	2710	9	0	0	41	304	88	896
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	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss	Split	Permiss	Split	Split	Split	Overlap
Signal Group	0	6	0	0	2	0	0	0	8	0	4	4
Auxiliary Signal Groups												2,4
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	0	10	0	0	0	6	0	10	10
Maximum Green [s]	0	30	0	0	30	0	0	0	30	0	30	30
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0
Split [s]	0	29	0	0	29	0	0	0	10	0	51	51
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	18	0	0	14	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No				No		No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0
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	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	C	R	L	C	C	R
C, Cycle Length [s]	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
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	60	60	60	4	14	14	14	78
g / C, Green / Cycle	0.67	0.67	0.67	0.04	0.15	0.15	0.15	0.87
(v / s)_i Volume / Saturation Flow Rate	0.29	0.32	0.29	0.01	0.09	0.09	0.05	0.32
s, saturation flow rate [veh/h]	6792	6792	1865	2813	1781	1781	1702	2813
c, Capacity [veh/h]	4546	4546	1248	124	273	273	261	2440
d1, Uniform Delay [s]	6.90	7.24	6.95	41.76	35.28	35.28	34.03	1.16
k, delay calibration	0.50	0.50	0.50	0.11	0.11	0.11	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.30	0.36	1.11	1.55	1.77	1.77	0.76	0.43
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.43	0.48	0.44	0.33	0.56	0.56	0.34	0.37
d, Delay for Lane Group [s/veh]	7.20	7.61	8.06	43.31	37.04	37.04	34.78	1.59
Lane Group LOS	A	A	A	D	D	D	C	A
Critical Lane Group	No	Yes	No	Yes	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	3.75	4.40	4.50	0.46	3.18	3.18	1.75	0.42
50th-Percentile Queue Length [ft/ln]	93.74	110.02	112.44	11.61	79.38	79.38	43.82	10.56
95th-Percentile Queue Length [veh/ln]	6.75	7.84	7.98	0.84	5.72	5.72	3.16	0.76
95th-Percentile Queue Length [ft/ln]	168.72	196.03	199.39	20.89	142.8	142.8	78.88	19.01

Movement, Approach, & Intersection Results

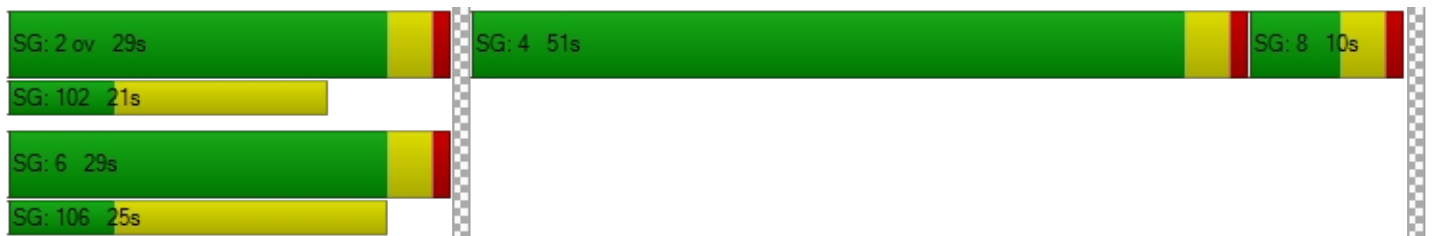
d_M, Delay for Movement [s/veh]	0.00	7.20	0.00	0.00	7.69	8.06	0.00	0.00	43.31	37.04	34.78	1.59
Movement LOS		A			A	A			D	D	C	A
d_A, Approach Delay [s/veh]	7.20			7.70			43.31			12.23		
Approach LOS	A			A			D			B		
d_I, Intersection Delay [s/veh]	8.75											
Intersection LOS	A											
Intersection V/C	0.485											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0			0.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	0.00			0.00			34.68			34.68		
I_p,int, Pedestrian LOS Score for Intersection	0.000			0.000			2.164			2.662		
Crosswalk LOS	F			F			B			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	555			555			133			1044		
d_b, Bicycle Delay [s]	23.48			23.48			39.21			10.28		
I_b,int, Bicycle LOS Score for Intersection	2.363			2.457			1.560			2.622		
Bicycle LOS	B			B			A			B		

Sequence

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



Intersection Level Of Service Report
Intersection 31: Bristol Street at I-405 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	15.6
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.547

Intersection Setup

Name	Bristol Street		Bristol Street		I-405 SB Ramps	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration	↵ ↑ ↑ ↑		↑ ↑ ↵		↵↵↵↵	
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	1	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		Yes	

Volumes

Name	Bristol Street		Bristol Street		I-405 SB Ramps	
Base Volume Input [veh/h]	139	1385	1234	1175	796	624
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	139	1385	1234	1175	796	624
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	35	346	309	294	199	0
Total Analysis Volume [veh/h]	139	1385	1234	1175	796	0
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Unsignalized	Permissive	Unsignalized
Signal Group	1	6	2	0	3	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	6	10	10	0	6	0
Maximum Green [s]	30	30	30	0	30	0
Amber [s]	3.0	3.0	3.0	0.0	3.0	0.0
All red [s]	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	34	56	22	0	34	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	0	7	0	0	0
Pedestrian Clearance [s]	0	0	11	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No	No		No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
Minimum Recall	No	No	No		No	
Maximum Recall	No	No	No		No	
Pedestrian Recall	No	No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L
C, Cycle Length [s]	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	64	52	18
g / C, Green / Cycle	0.10	0.72	0.57	0.19
(v / s)_i Volume / Saturation Flow Rate	0.08	0.20	0.24	0.15
s, saturation flow rate [veh/h]	1781	6792	5094	5188
c, Capacity [veh/h]	176	4865	2918	1011
d1, Uniform Delay [s]	39.64	4.55	10.84	34.47
k, delay calibration	0.11	0.50	0.50	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.58	0.15	0.45	1.40
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.79	0.28	0.42	0.79
d, Delay for Lane Group [s/veh]	47.22	4.70	11.30	35.88
Lane Group LOS	D	A	B	D
Critical Lane Group	Yes	No	Yes	Yes
50th-Percentile Queue Length [veh/ln]	3.33	1.88	4.35	5.54
50th-Percentile Queue Length [ft/ln]	83.37	46.98	108.71	138.48
95th-Percentile Queue Length [veh/ln]	6.00	3.38	7.77	9.40
95th-Percentile Queue Length [ft/ln]	150.06	84.56	194.21	234.98

Movement, Approach, & Intersection Results

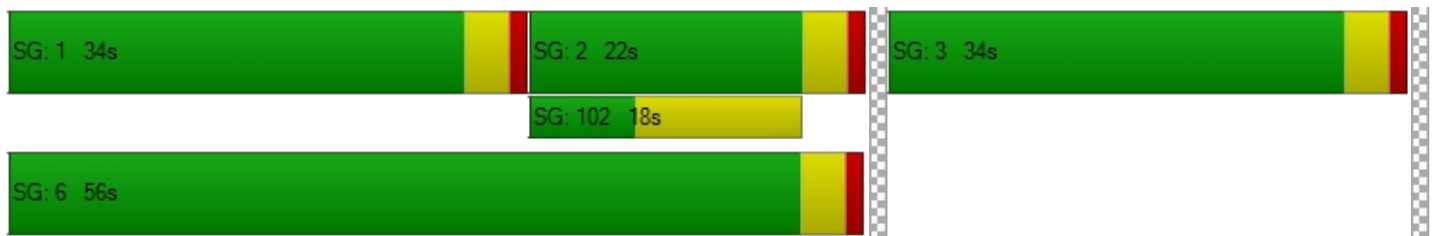
d_M, Delay for Movement [s/veh]	47.22	4.70	11.30	0.00	35.88	0.00
Movement LOS	D	A	B		D	
d_A, Approach Delay [s/veh]	8.58		11.30		35.88	
Approach LOS	A		B		D	
d_I, Intersection Delay [s/veh]	15.64					
Intersection LOS	B					
Intersection V/C	0.547					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	34.68
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.604
Crosswalk LOS	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1155	400	666
d_b, Bicycle Delay [s]	8.03	28.81	20.01
I_b,int, Bicycle LOS Score for Intersection	2.188	2.238	1.560
Bicycle LOS	B	B	A

Sequence

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



Intersection Level Of Service Report
Intersection 37: Bear St at SR-73 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	22.9
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.674

Intersection Setup

Name	Bear St			Bear St			SR-73 NB Ramps			SR-73 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0	0	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		
Crosswalk	No			No			No			Yes		

Volumes

Name	Bear St			Bear St			SR-73 NB Ramps			SR-73 NB Ramps		
Base Volume Input [veh/h]	195	415	0	0	1216	117	0	0	0	212	0	633
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	195	415	0	0	1216	117	0	0	0	212	0	633
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	49	104	0	0	304	29	0	0	0	53	0	158
Total Analysis Volume [veh/h]	195	415	0	0	1216	117	0	0	0	212	0	633
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Permiss	Split
Signal Group	1	6	0	0	2	0	0	0	0	0	7	0	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	6	10	0	0	10	0	0	0	0	0	6	0	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	16	46	0	0	30	0	0	0	0	0	44	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	11	0	0	0	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall	No	No			No						No		
Maximum Recall	No	No			No						No		
Pedestrian Recall	No	No			No						No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C		L	R
C, Cycle Length [s]	90	90	90	90		90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	12	58	43	43		24	24
g / C, Green / Cycle	0.13	0.65	0.47	0.47		0.26	0.26
(v / s)_i Volume / Saturation Flow Rate	0.11	0.12	0.25	0.25		0.12	0.22
s, saturation flow rate [veh/h]	1781	3560	3560	1787		1781	2813
c, Capacity [veh/h]	230	2307	1689	848		469	741
d1, Uniform Delay [s]	38.34	6.32	16.58	16.56		27.74	31.53
k, delay calibration	0.11	0.50	0.50	0.50		0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	8.39	0.17	1.18	2.32		0.68	2.95
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.85	0.18	0.53	0.52		0.45	0.85
d, Delay for Lane Group [s/veh]	46.73	6.49	17.76	18.87		28.42	34.48
Lane Group LOS	D	A	B	B		C	C
Critical Lane Group	Yes	No	Yes	No		No	Yes
50th-Percentile Queue Length [veh/ln]	4.67	1.44	6.35	6.61		3.83	6.65
50th-Percentile Queue Length [ft/ln]	116.87	36.12	158.65	165.18		95.73	166.28
95th-Percentile Queue Length [veh/ln]	8.22	2.60	10.48	10.82		6.89	10.88
95th-Percentile Queue Length [ft/ln]	205.52	65.01	261.93	270.57		172.32	272.02

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	46.73	6.49	0.00	0.00	18.06	18.87	0.00	0.00	0.00	28.42	0.00	34.48
Movement LOS	D	A			B	B				C		C
d_A, Approach Delay [s/veh]	19.35				18.13		0.00		32.96			
Approach LOS	B				B		A		C			
d_I, Intersection Delay [s/veh]	22.89											
Intersection LOS	C											
Intersection V/C	0.674											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		0.0		11.0	
M_corner, Corner Circulation Area [ft ² /ped]	0.00		0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00		0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		0.00		0.00		34.68	
I_p,int, Pedestrian LOS Score for Intersection	0.000		0.000		0.000		2.337	
Crosswalk LOS	F		F		F		B	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	933		578		0		889	
d_b, Bicycle Delay [s]	12.81		22.77		45.01		13.90	
I_b,int, Bicycle LOS Score for Intersection	2.063		2.293		4.132		1.560	
Bicycle LOS	B		B		D		A	

Sequence

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



Intersection Level Of Service Report
Intersection 38: Bear St at SR-73 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	26.6
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.767

Intersection Setup

Name	Bear St			Bear St			SR-73 SB Ramps			SR-73 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↑↑			↑↑↑			↑↑					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Bear St			Bear St			SR-73 SB Ramps			SR-73 SB Ramps		
Base Volume Input [veh/h]	0	454	462	736	864	0	147	34	250	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	454	462	736	864	0	147	34	250	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	114	116	184	216	0	37	9	63	0	0	0
Total Analysis Volume [veh/h]	0	454	462	736	864	0	147	34	250	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	105
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Permiss	Permiss
Signal Group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	6	10	0	0	10	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	18	0	40	58	0	0	47	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	7	0	0	7	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	L	C	L	C	
C, Cycle Length [s]	105	105	105	105	105	105	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	47	47	25	76	21	21	
g / C, Green / Cycle	0.44	0.44	0.24	0.72	0.20	0.20	
(v / s)_i Volume / Saturation Flow Rate	0.24	0.29	0.21	0.24	0.08	0.18	
s, saturation flow rate [veh/h]	1870	1589	3459	3560	1781	1619	
c, Capacity [veh/h]	829	705	839	2578	356	323	
d1, Uniform Delay [s]	21.48	22.93	38.25	5.28	36.65	40.78	
k, delay calibration	0.50	0.50	0.11	0.50	0.11	0.11	
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	2.59	4.72	3.13	0.35	0.77	7.65	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	0.55	0.66	0.88	0.34	0.41	0.88	
d, Delay for Lane Group [s/veh]	24.07	27.64	41.38	5.63	37.42	48.42	
Lane Group LOS	C	C	D	A	D	D	
Critical Lane Group	No	Yes	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	8.60	9.62	9.34	3.07	3.35	7.73	
50th-Percentile Queue Length [ft/ln]	215.05	240.47	233.56	76.76	83.84	193.31	
95th-Percentile Queue Length [veh/ln]	13.41	14.70	14.36	5.53	6.04	12.29	
95th-Percentile Queue Length [ft/ln]	335.29	367.62	358.88	138.18	150.91	307.32	

Movement, Approach, & Intersection Results

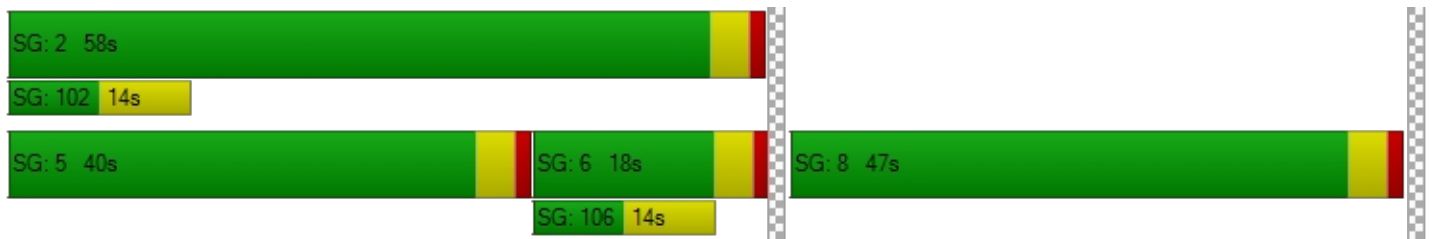
d_M, Delay for Movement [s/veh]	0.00	24.07	27.64	41.38	5.63	0.00	37.42	48.42	48.42	0.00	0.00	0.00
Movement LOS		C	C	D	A		D	D	D			
d_A, Approach Delay [s/veh]		25.87		22.07			44.67			0.00		
Approach LOS		C		C			D			A		
d_I, Intersection Delay [s/veh]	26.56											
Intersection LOS	C											
Intersection V/C	0.767											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	42.07	42.07
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.088	2.323
Crosswalk LOS	F	F	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	267	1029	819	0
d_b, Bicycle Delay [s]	39.43	12.38	18.30	52.50
I_b,int, Bicycle LOS Score for Intersection	2.315	2.880	2.271	4.132
Bicycle LOS	B	C	B	D

Sequence

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



Intersection Level Of Service Report
Intersection 12: SR-55 SB Ramps at MacArthur Blvd

Control Type:	Signalized	Delay (sec / veh):	14.0
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.808

Intersection Setup

Name	SR-55 SB Ramp			MacArthur Blvd			MacArthur Blvd					
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration				T T T T			T T T T			T T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	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	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		
Crosswalk	No			Yes			No			No		

Volumes

Name				SR-55 SB Ramp			MacArthur Blvd			MacArthur Blvd		
Base Volume Input [veh/h]	0	0	0	353	0	913	0	1549	1272	0	1913	738
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	353	0	913	0	1549	1272	0	1913	738
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	88	0	228	0	387	318	0	478	185
Total Analysis Volume [veh/h]	0	0	0	353	0	913	0	1549	1272	0	1913	738
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	0	0	0	5	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	6	0	0	0	10	0	0	10	0
Maximum Green [s]	0	0	0	30	0	0	0	30	0	0	30	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	47	0	0	0	53	0	0	53	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	14	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	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	R	C	C
C, Cycle Length [s]		60	60	60	60
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		23	23	29	29
g / C, Green / Cycle		0.39	0.39	0.48	0.48
(v / s)_i Volume / Saturation Flow Rate		0.10	0.32	0.30	0.38
s, saturation flow rate [veh/h]		3459	2813	5094	5094
c, Capacity [veh/h]		1346	1095	2433	2433
d1, Uniform Delay [s]		12.49	16.60	11.78	13.13
k, delay calibration		0.11	0.11	0.11	0.11
l, Upstream Filtering Factor		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		0.10	1.74	0.28	0.58
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.26	0.83	0.64	0.79
d, Delay for Lane Group [s/veh]		12.59	18.34	12.06	13.71
Lane Group LOS		B	B	B	B
Critical Lane Group		No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]		1.45	5.20	4.37	6.06
50th-Percentile Queue Length [ft/ln]		36.34	129.93	109.28	151.53
95th-Percentile Queue Length [veh/ln]		2.62	8.94	7.80	10.10
95th-Percentile Queue Length [ft/ln]		65.42	223.40	195.01	252.47

Movement, Approach, & Intersection Results

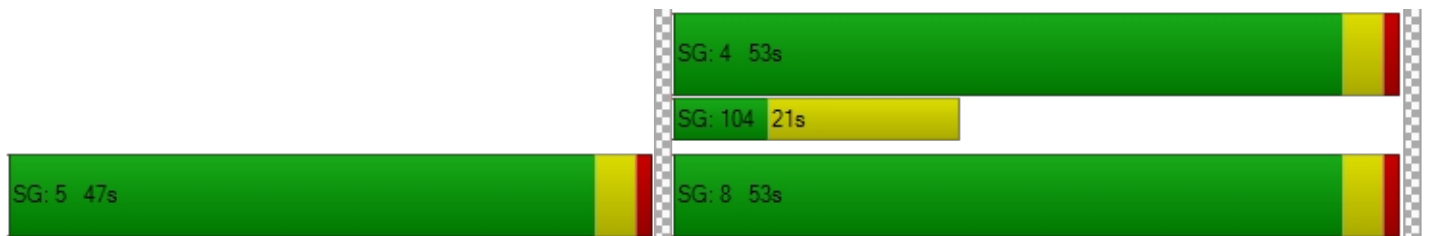
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	12.59	0.00	18.34	0.00	12.06	0.00	0.00	13.71	0.00
Movement LOS				B		B		B			B	
d_A, Approach Delay [s/veh]	0.00			16.74			12.06			13.71		
Approach LOS	A			B			B			B		
d_I, Intersection Delay [s/veh]	13.98											
Intersection LOS	B											
Intersection V/C	0.808											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	19.98	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	0.000	2.524	0.000	0.000
Crosswalk LOS	F	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	1435	1635	1635
d_b, Bicycle Delay [s]	29.97	2.39	1.00	1.00
I_b,int, Bicycle LOS Score for Intersection	4.132	1.560	2.412	2.612
Bicycle LOS	D	A	B	B

Sequence

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



Intersection Level Of Service Report
Intersection 13: SR-55 NB Ramps at MacArthur Blvd

Control Type:	Signalized	Delay (sec / veh):	9.8
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.696

Intersection Setup

Name	SR-55 NB Ramp						MacArthur Blvd			MacArthur Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	⇐⇐⇐						⇐⇐⇐			⇐⇐⇐		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	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		
Crosswalk	No			No			No			Yes		

Volumes

Name	SR-55 NB Ramp						MacArthur Blvd			MacArthur Blvd		
	Base Volume Input [veh/h]	797	0	521	0	0	0	0	851	930	0	1753
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	797	0	521	0	0	0	0	851	930	0	1753	1314
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	199	0	130	0	0	0	0	213	233	0	438	329
Total Analysis Volume [veh/h]	797	0	521	0	0	0	0	851	930	0	1753	1314
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	1	0	0	0	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	6	0	0	0	0	0	0	10	0	0	10	0
Maximum Green [s]	30	0	0	0	0	0	0	30	0	0	30	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	41	0	0	0	0	0	0	59	0	0	59	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	7	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	21	0	0	0	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No							No			No	
Maximum Recall	No							No			No	
Pedestrian Recall	No							No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L		C	C
C, Cycle Length [s]	46		46	46
L, Total Lost Time per Cycle [s]	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00		2.00	2.00
g_i, Effective Green Time [s]	14		24	24
g / C, Green / Cycle	0.31		0.52	0.52
(v / s)_i Volume / Saturation Flow Rate	0.23		0.24	0.34
s, saturation flow rate [veh/h]	3459		3560	5094
c, Capacity [veh/h]	1064		1847	2643
d1, Uniform Delay [s]	14.36		7.02	8.14
k, delay calibration	0.11		0.11	0.11
l, Upstream Filtering Factor	1.00		1.00	1.00
d2, Incremental Delay [s]	1.08		0.18	0.29
d3, Initial Queue Delay [s]	0.00		0.00	0.00
Rp, platoon ratio	1.00		1.00	1.00
PF, progression factor	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.75		0.46	0.66
d, Delay for Lane Group [s/veh]	15.44		7.19	8.43
Lane Group LOS	B		A	A
Critical Lane Group	Yes		No	Yes
50th-Percentile Queue Length [veh/ln]	3.24		1.86	2.97
50th-Percentile Queue Length [ft/ln]	81.09		46.61	74.20
95th-Percentile Queue Length [veh/ln]	5.84		3.36	5.34
95th-Percentile Queue Length [ft/ln]	145.96		83.89	133.56

Movement, Approach, & Intersection Results

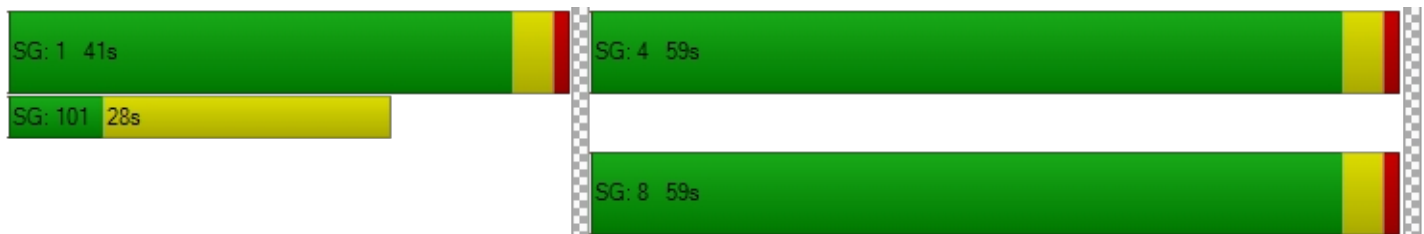
d_M, Delay for Movement [s/veh]	15.44	0.00	0.00	0.00	0.00	0.00	0.00	7.19	0.00	0.00	8.43	0.00
Movement LOS	B							A			A	
d_A, Approach Delay [s/veh]	15.44			0.00			7.19			8.43		
Approach LOS	B			A			A			A		
d_I, Intersection Delay [s/veh]	9.76											
Intersection LOS	A											
Intersection V/C	0.696											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	13.27
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	2.837
Crosswalk LOS	F	F	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1612	0	2396	2396
d_b, Bicycle Delay [s]	0.86	22.96	0.90	0.90
I_b,int, Bicycle LOS Score for Intersection	1.560	4.132	2.262	2.524
Bicycle LOS	A	D	B	B

Sequence

Ring 1	1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 25: I-405 NB Off-Ramp at South Coast Drive

Control Type:	Signalized	Delay (sec / veh):	22.6
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.676

Intersection Setup

Name	I-405 NB Off-Ramp			The Cape Dwy			South Coast Drive			South Coast 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	1	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	I-405 NB Off-Ramp			The Cape Dwy			South Coast Drive			South Coast Drive		
Base Volume Input [veh/h]	570	36	231	34	0	46	51	504	0	0	463	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	570	36	231	34	0	46	51	504	0	0	463	40
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	143	9	58	9	0	12	13	126	0	0	116	10
Total Analysis Volume [veh/h]	570	36	231	34	0	46	51	504	0	0	463	40
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	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Permiss	Split	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	7	0	0	5	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	10	0	6	0	0	6	10	0	0	10	0
Maximum Green [s]	0	30	0	30	0	0	30	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	58	0	58	0	0	10	32	0	0	22	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	14	0	0	0	0	0	11	0	0	11	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No		No				No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	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	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	R	L	C	C	C
C, Cycle Length [s]	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
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	42	42	42	42	42	4	40	32	32
g / C, Green / Cycle	0.46	0.46	0.46	0.46	0.46	0.05	0.45	0.35	0.35
(v / s)_i Volume / Saturation Flow Rate	0.42	0.08	0.08	0.03	0.03	0.03	0.14	0.13	0.14
s, saturation flow rate [veh/h]	1360	1656	1589	1112	1589	1781	3560	1870	1819
c, Capacity [veh/h]	684	768	737	522	737	86	1592	663	645
d1, Uniform Delay [s]	23.90	14.08	14.11	16.85	13.32	41.98	16.02	21.65	21.75
k, delay calibration	0.24	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.93	0.11	0.12	0.05	0.04	6.44	0.52	1.65	1.77
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.83	0.18	0.18	0.07	0.06	0.60	0.32	0.38	0.39
d, Delay for Lane Group [s/veh]	29.83	14.19	14.22	16.90	13.36	48.42	16.54	23.30	23.52
Lane Group LOS	C	B	B	B	B	D	B	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	11.90	1.56	1.54	0.43	0.50	1.25	3.33	4.16	4.19
50th-Percentile Queue Length [ft/ln]	297.51	39.11	38.39	10.84	12.61	31.29	83.32	104.01	104.77
95th-Percentile Queue Length [veh/ln]	17.56	2.82	2.76	0.78	0.91	2.25	6.00	7.49	7.54
95th-Percentile Queue Length [ft/ln]	438.95	70.40	69.10	19.52	22.70	56.32	149.97	187.21	188.59

Movement, Approach, & Intersection Results

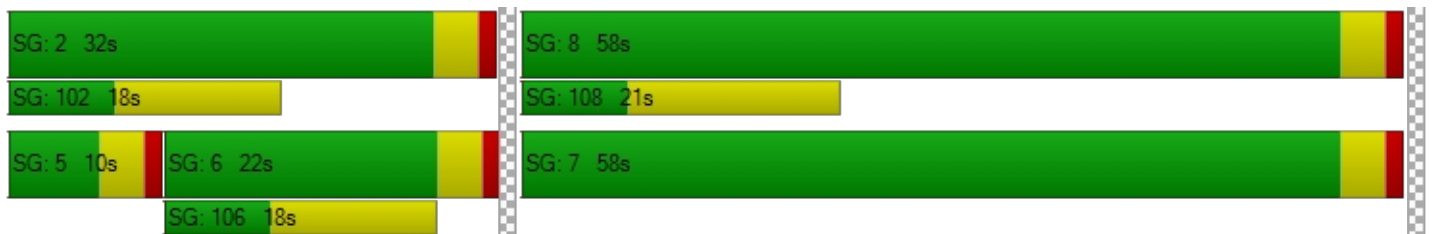
d_M, Delay for Movement [s/veh]	29.83	14.19	14.21	16.90	0.00	13.36	48.42	16.54	0.00	0.00	23.40	23.52
Movement LOS	C	B	B	B		B	D	B			C	C
d_A, Approach Delay [s/veh]	24.85			14.86			19.47			23.41		
Approach LOS	C			B			B			C		
d_I, Intersection Delay [s/veh]	22.57											
Intersection LOS	C											
Intersection V/C	0.676											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.67	34.67	0.00	34.67
I_p,int, Pedestrian LOS Score for Intersection	2.335	2.007	0.000	2.489
Crosswalk LOS	B	B	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1200	1200	622	400
d_b, Bicycle Delay [s]	7.20	7.20	21.36	28.80
I_b,int, Bicycle LOS Score for Intersection	2.941	1.560	2.017	1.975
Bicycle LOS	C	A	B	A

Sequence

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



Intersection Level Of Service Report
Intersection 28: Fairview Road at I-405 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	37.9
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.924

Intersection Setup

Name	Fairview Road			Fairview Road			I-405 NB Ramps			I-405 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	1	0	0	0	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		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Fairview Road			Fairview Road			I-405 NB Ramps			I-405 NB Ramps		
Base Volume Input [veh/h]	263	1613	0	0	2274	318	0	0	0	1012	0	1284
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	263	1613	0	0	2274	318	0	0	0	1012	0	1284
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	66	403	0	0	569	80	0	0	0	253	0	321
Total Analysis Volume [veh/h]	263	1613	0	0	2274	318	0	0	0	1012	0	1284
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	115
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Permiss	Split
Signal Group	1	6	0	0	2	0	0	0	0	0	7	0	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	6	10	0	0	10	0	0	0	0	0	6	0	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	23	52	0	0	29	0	0	0	0	0	63	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	14	0	0	7	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall	No	No			No						No		
Maximum Recall	No	No			No						No		
Pedestrian Recall	No	No			No						No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	R		L	R
C, Cycle Length [s]	115	115	115	115		115	115
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	19	50	28	28		57	57
g / C, Green / Cycle	0.16	0.44	0.24	0.24		0.49	0.49
(v / s)_i Volume / Saturation Flow Rate	0.15	0.32	0.22	0.20		0.29	0.46
s, saturation flow rate [veh/h]	1781	5094	10188	1589		3459	2813
c, Capacity [veh/h]	289	2230	2450	382		1704	1386
d1, Uniform Delay [s]	47.30	26.59	42.69	41.45		20.91	27.22
k, delay calibration	0.13	0.50	0.50	0.50		0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	12.52	2.08	7.68	18.70		0.33	3.22
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.91	0.72	0.93	0.83		0.59	0.93
d, Delay for Lane Group [s/veh]	59.82	28.66	50.37	60.15		21.25	30.44
Lane Group LOS	E	C	D	E		C	C
Critical Lane Group	Yes	No	Yes	No		No	Yes
50th-Percentile Queue Length [veh/ln]	8.37	12.29	11.30	10.48		9.60	16.34
50th-Percentile Queue Length [ft/ln]	209.23	307.29	282.56	262.11		240.06	408.60
95th-Percentile Queue Length [veh/ln]	13.11	18.04	16.82	15.79		14.68	22.97
95th-Percentile Queue Length [ft/ln]	327.85	451.03	420.40	394.87		367.12	574.35

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	59.82	28.66	0.00	0.00	50.37	60.15	0.00	0.00	0.00	21.25	0.00	30.44
Movement LOS	E	C			D	E				C		C
d_A, Approach Delay [s/veh]	33.03				51.57		0.00		26.39			
Approach LOS	C				D		A		C			
d_I, Intersection Delay [s/veh]	37.88											
Intersection LOS	D											
Intersection V/C	0.924											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	47.01	47.01
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.002	2.759
Crosswalk LOS	F	F	B	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	835	435	0	1026
d_b, Bicycle Delay [s]	19.51	35.21	57.49	13.63
I_b,int, Bicycle LOS Score for Intersection	2.591	2.272	4.132	1.560
Bicycle LOS	B	B	D	A

Sequence

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



Intersection Level Of Service Report
Intersection 29: Fairview Road at I-405 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	30.9
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.870

Intersection Setup

Name	Fairview Rd			Fairview Rd			I-405 SB Ramps			I-405 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↑↑↑↓			↔↔↑↑			↔↔↓					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	1	0	0	1	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Fairview Rd			Fairview Rd			I-405 SB Ramps			I-405 SB Ramps		
Base Volume Input [veh/h]	0	2307	777	1251	1977	0	375	0	433	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	2307	777	1251	1977	0	375	0	433	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	577	194	313	494	0	94	0	108	0	0	0
Total Analysis Volume [veh/h]	0	2307	777	1251	1977	0	375	0	433	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Permiss
Signal Group	0	6	0	5	2	0	3	0	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	10	0	6	10	0	6	0	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	30	0	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Split [s]	0	45	0	46	91	0	29	0	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	11	0	0	14	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No		No					
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No		No					
Maximum Recall		No		No	No		No					
Pedestrian Recall		No		No	No		No					
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	R	L	C	L	R	
C, Cycle Length [s]	120	120	120	120	120	120	120	
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]	53	53	53	33	91	21	21	
g / C, Green / Cycle	0.45	0.45	0.45	0.28	0.76	0.18	0.18	
(v / s)_i Volume / Saturation Flow Rate	0.36	0.39	0.39	0.24	0.39	0.11	0.15	
s, saturation flow rate [veh/h]	5094	1589	1589	5188	5094	3459	2813	
c, Capacity [veh/h]	2273	709	709	1437	3853	612	497	
d1, Uniform Delay [s]	28.89	30.06	30.06	41.31	5.81	45.58	48.03	
k, delay calibration	0.50	0.50	0.50	0.11	0.50	0.11	0.11	
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	3.34	13.73	13.73	1.77	0.49	1.00	4.85	
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	0.81	0.87	0.87	0.87	0.51	0.61	0.87	
d, Delay for Lane Group [s/veh]	32.22	43.79	43.79	43.08	6.30	46.58	52.88	
Lane Group LOS	C	D	D	D	A	D	D	
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	15.79	18.41	18.41	11.89	5.81	5.25	6.62	
50th-Percentile Queue Length [ft/ln]	394.85	460.19	460.19	297.18	145.28	131.17	165.39	
95th-Percentile Queue Length [veh/ln]	22.31	25.44	25.44	17.54	9.76	9.00	10.83	
95th-Percentile Queue Length [ft/ln]	557.79	636.10	636.10	438.53	244.11	225.09	270.85	

Movement, Approach, & Intersection Results

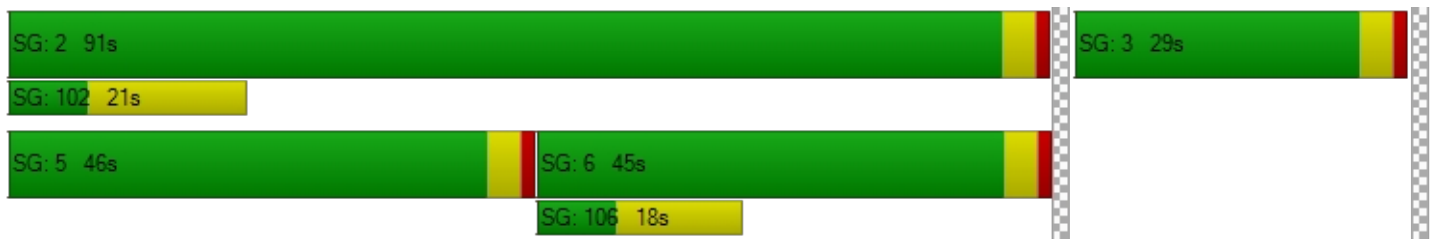
d_M, Delay for Movement [s/veh]	0.00	32.22	43.79	43.08	6.30	0.00	46.58	0.00	52.88	0.00	0.00	0.00
Movement LOS		C	D	D	A		D		D			
d_A, Approach Delay [s/veh]		36.85		20.56			49.95			0.00		
Approach LOS		D		C			D			A		
d_I, Intersection Delay [s/veh]	30.95											
Intersection LOS	C											
Intersection V/C	0.870											

Other Modes

g_Walk,mi, Effective Walk Time [s]		0.0		0.0		11.0		11.0
M_corner, Corner Circulation Area [ft ² /ped]		0.00		0.00		0.00		0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]		0.00		0.00		0.00		0.00
d_p, Pedestrian Delay [s]		0.00		0.00		49.49		49.49
I_p,int, Pedestrian LOS Score for Intersection		0.000		0.000		2.471		2.613
Crosswalk LOS		F		F		B		B
s_b, Saturation Flow Rate of the bicycle lane		2000		2000		2000		2000
c_b, Capacity of the bicycle lane [bicycles/h]		684		1450		417		0
d_b, Bicycle Delay [s]		25.99		4.53		37.59		59.98
I_b,int, Bicycle LOS Score for Intersection		2.832		3.335		1.560		4.132
Bicycle LOS		C		C		A		D

Sequence

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



Intersection Level Of Service Report
Intersection 30: Bristol Street at I-405 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	16.8
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.768

Intersection Setup

Name	Bristol Street			Bristol Street			I-405 NB Ramps			I-405 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	0	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	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	No			No			Yes			Yes		

Volumes

Name	Bristol Street			Bristol Street			I-405 NB Ramps			I-405 NB Ramps		
Base Volume Input [veh/h]	0	2742	275	0	2981	24	0	0	234	443	370	1554
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	2742	275	0	2981	24	0	0	234	443	370	1554
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	686	69	0	745	6	0	0	59	111	93	389
Total Analysis Volume [veh/h]	0	2742	275	0	2981	24	0	0	234	443	370	1554
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	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss	Split	Permiss	Split	Split	Split	Overlap
Signal Group	0	6	0	0	2	0	0	0	8	0	4	4
Auxiliary Signal Groups												2,4
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	0	10	0	0	0	6	0	10	10
Maximum Green [s]	0	30	0	0	30	0	0	0	30	0	30	30
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0
Split [s]	0	49	0	0	49	0	0	0	18	0	23	23
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	18	0	0	14	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No				No		No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0
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	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	C	R	L	C	C	R
C, Cycle Length [s]	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
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	49	49	49	10	19	19	19	72
g / C, Green / Cycle	0.55	0.55	0.55	0.11	0.21	0.21	0.21	0.80
(v / s)_i Volume / Saturation Flow Rate	0.40	0.35	0.32	0.08	0.15	0.15	0.16	0.55
s, saturation flow rate [veh/h]	6792	6792	1857	2813	1781	1812	1702	2813
c, Capacity [veh/h]	3715	3715	1016	302	379	385	362	2262
d1, Uniform Delay [s]	15.52	14.32	13.68	39.19	32.98	32.88	33.26	3.87
k, delay calibration	0.50	0.50	0.50	0.11	0.11	0.11	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.35	0.88	2.53	4.25	2.54	2.35	3.12	1.73
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.74	0.65	0.59	0.77	0.72	0.70	0.75	0.69
d, Delay for Lane Group [s/veh]	16.87	15.21	16.21	43.44	35.51	35.23	36.38	5.60
Lane Group LOS	B	B	B	D	D	D	D	A
Critical Lane Group	No	No	No	Yes	No	No	Yes	Yes
50th-Percentile Queue Length [veh/ln]	10.02	8.06	8.19	2.66	5.65	5.62	5.74	4.02
50th-Percentile Queue Length [ft/ln]	250.62	201.46	204.86	66.59	141.2	140.4	143.5	100.5
95th-Percentile Queue Length [veh/ln]	15.22	12.71	12.89	4.79	9.55	9.50	9.67	7.24
95th-Percentile Queue Length [ft/ln]	380.44	317.84	322.22	119.86	238.6	237.6	241.8	180.9

Movement, Approach, & Intersection Results

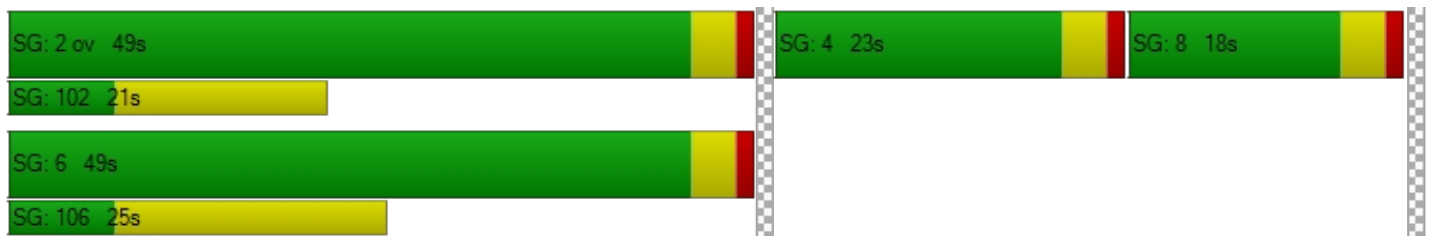
d_M, Delay for Movement [s/veh]	0.00	16.87	0.00	0.00	15.40	16.21	0.00	0.00	43.44	35.51	36.07	5.60
Movement LOS		B			B	B			D	D	D	A
d_A, Approach Delay [s/veh]	16.87		15.41			43.44			15.94			
Approach LOS	B		B			D			B			
d_I, Intersection Delay [s/veh]	16.82											
Intersection LOS	B											
Intersection V/C	0.768											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		11.0			11.0			
M_corner, Corner Circulation Area [ft ² /ped]	0.00		0.00		0.00			0.00			
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00		0.00		0.00			0.00			
d_p, Pedestrian Delay [s]	0.00		0.00		34.72			34.72			
I_p,int, Pedestrian LOS Score for Intersection	0.000		0.000		2.284			2.837			
Crosswalk LOS	F		F		B			C			
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000			2000			
c_b, Capacity of the bicycle lane [bicycles/h]	999		999		311			422			
d_b, Bicycle Delay [s]	11.29		11.29		32.13			28.05			
I_b,int, Bicycle LOS Score for Intersection	2.691		2.551		1.560			3.512			
Bicycle LOS	B		B		A			D			

Sequence

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



Intersection Level Of Service Report
Intersection 31: Bristol Street at I-405 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	19.8
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.756

Intersection Setup

Name	Bristol Street		Bristol Street		I-405 SB Ramps	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration	↵ ↑ ↑ ↑		↑ ↑ ↵		↵↵↵↵	
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	1	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		Yes	

Volumes

Name	Bristol Street		Bristol Street		I-405 SB Ramps	
Base Volume Input [veh/h]	158	1929	1893	1232	1061	400
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	158	1929	1893	1232	1061	400
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	40	482	473	308	265	0
Total Analysis Volume [veh/h]	158	1929	1893	1232	1061	0
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Unsignalized	Permissive	Unsignalized
Signal Group	1	6	2	0	3	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	6	10	10	0	6	0
Maximum Green [s]	30	30	30	0	30	0
Amber [s]	3.0	3.0	3.0	0.0	3.0	0.0
All red [s]	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	27	49	22	0	51	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	0	7	0	0	0
Pedestrian Clearance [s]	0	0	11	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No	No		No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
Minimum Recall	No	No	No		No	
Maximum Recall	No	No	No		No	
Pedestrian Recall	No	No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L
C, Cycle Length [s]	100	100	100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	11	67	52	25
g / C, Green / Cycle	0.11	0.67	0.52	0.25
(v / s)_i Volume / Saturation Flow Rate	0.09	0.28	0.37	0.20
s, saturation flow rate [veh/h]	1781	6792	5094	5188
c, Capacity [veh/h]	193	4552	2658	1296
d1, Uniform Delay [s]	43.62	7.60	18.20	35.37
k, delay calibration	0.11	0.50	0.50	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.26	0.29	1.65	1.33
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.82	0.42	0.71	0.82
d, Delay for Lane Group [s/veh]	51.89	7.89	19.85	36.70
Lane Group LOS	D	A	B	D
Critical Lane Group	Yes	No	Yes	Yes
50th-Percentile Queue Length [veh/ln]	4.24	4.32	10.84	8.14
50th-Percentile Queue Length [ft/ln]	105.96	108.01	271.11	203.56
95th-Percentile Queue Length [veh/ln]	7.61	7.73	16.25	12.82
95th-Percentile Queue Length [ft/ln]	190.37	193.23	406.13	320.55

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	51.89	7.89	19.85	0.00	36.70	0.00
Movement LOS	D	A	B		D	
d_A, Approach Delay [s/veh]	11.22		19.85		36.70	
Approach LOS	B		B		D	
d_I, Intersection Delay [s/veh]	19.83					
Intersection LOS	B					
Intersection V/C	0.756					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	39.61
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.656
Crosswalk LOS	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	900	360	940
d_b, Bicycle Delay [s]	15.13	33.62	14.05
I_b,int, Bicycle LOS Score for Intersection	2.420	2.601	1.560
Bicycle LOS	B	B	A

Sequence

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



Intersection Level Of Service Report
Intersection 37: Bear St at SR-73 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	73.9
Analysis Method:	HCM 7th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.102

Intersection Setup

Name	Bear St			Bear St			SR-73 NB Ramps			SR-73 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0	0	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		
Crosswalk	No			No			No			Yes		

Volumes

Name	Bear St			Bear St			SR-73 NB Ramps			SR-73 NB Ramps		
Base Volume Input [veh/h]	245	768	0	0	1299	182	0	0	0	496	0	1612
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	245	768	0	0	1299	182	0	0	0	496	0	1612
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	61	192	0	0	325	46	0	0	0	124	0	403
Total Analysis Volume [veh/h]	245	768	0	0	1299	182	0	0	0	496	0	1612
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Permiss	Split
Signal Group	1	6	0	0	2	0	0	0	0	0	7	0	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	6	10	0	0	10	0	0	0	0	0	6	0	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	19	54	0	0	35	0	0	0	0	0	66	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	11	0	0	0	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall	No	No			No						No		
Maximum Recall	No	No			No						No		
Pedestrian Recall	No	No			No						No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C		L	R
C, Cycle Length [s]	120	120	120	120		120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	15	50	31	31		62	62
g / C, Green / Cycle	0.13	0.42	0.26	0.26		0.52	0.52
(v / s)_i Volume / Saturation Flow Rate	0.14	0.22	0.28	0.28		0.28	0.57
s, saturation flow rate [veh/h]	1781	3560	3560	1756		1781	2813
c, Capacity [veh/h]	223	1486	921	454		919	1452
d1, Uniform Delay [s]	52.47	25.96	44.46	44.46		19.48	29.03
k, delay calibration	0.12	0.50	0.50	0.50		0.13	0.14
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	60.10	1.29	50.87	67.69		0.57	52.92
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	1.10	0.52	1.07	1.09		0.54	1.11
d, Delay for Lane Group [s/veh]	112.57	27.25	95.33	112.15		20.05	81.95
Lane Group LOS	F	C	F	F		C	F
Critical Lane Group	Yes	No	No	Yes		No	Yes
50th-Percentile Queue Length [veh/ln]	10.43	8.37	20.07	21.92		9.25	30.52
50th-Percentile Queue Length [ft/ln]	260.67	209.18	501.74	547.91		231.15	762.95
95th-Percentile Queue Length [veh/ln]	16.35	13.11	28.58	31.10		14.23	42.86
95th-Percentile Queue Length [ft/ln]	408.85	327.77	714.46	777.61		355.82	1071.60

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	112.57	27.25	0.00	0.00	99.37	112.15	0.00	0.00	0.00	20.05	0.00	81.95
Movement LOS	F	C			F	F				C		F
d_A, Approach Delay [s/veh]	47.89				100.94		0.00		67.39			
Approach LOS	D				F		A		E			
d_I, Intersection Delay [s/veh]	73.89											
Intersection LOS	E											
Intersection V/C	1.102											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	49.50
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	2.659
Crosswalk LOS	F	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	833	517	0	1033
d_b, Bicycle Delay [s]	20.41	33.00	59.99	14.01
I_b,int, Bicycle LOS Score for Intersection	2.395	2.374	4.132	1.560
Bicycle LOS	B	B	D	A

Sequence

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



Intersection Level Of Service Report
Intersection 38: Bear St at SR-73 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	22.0
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.740

Intersection Setup

Name	Bear St			Bear St			SR-73 SB Ramps			SR-73 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↑↑			↑↑↑			↑↑					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Bear St			Bear St			SR-73 SB Ramps			SR-73 SB Ramps		
Base Volume Input [veh/h]	0	827	208	760	1041	0	225	1	195	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	827	208	760	1041	0	225	1	195	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	207	52	190	260	0	56	0	49	0	0	0
Total Analysis Volume [veh/h]	0	827	208	760	1041	0	225	1	195	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Permiss	Permiss
Signal Group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	6	10	0	0	10	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	18	0	47	65	0	0	25	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	7	0	0	7	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	L	C	L	C	
C, Cycle Length [s]	90	90	90	90	90	90	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	41	41	23	68	14	14	
g / C, Green / Cycle	0.46	0.46	0.26	0.76	0.15	0.15	
(v / s)_i Volume / Saturation Flow Rate	0.28	0.30	0.22	0.29	0.12	0.12	
s, saturation flow rate [veh/h]	1870	1746	3459	3560	1781	1593	
c, Capacity [veh/h]	854	798	892	2703	271	242	
d1, Uniform Delay [s]	18.37	18.88	31.77	3.69	36.99	37.00	
k, delay calibration	0.50	0.50	0.11	0.50	0.11	0.11	
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	3.18	4.07	2.42	0.42	6.10	6.82	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	0.61	0.65	0.85	0.39	0.82	0.82	
d, Delay for Lane Group [s/veh]	21.55	22.95	34.19	4.11	43.08	43.82	
Lane Group LOS	C	C	C	A	D	D	
Critical Lane Group	No	Yes	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	8.40	8.76	7.93	2.46	5.11	4.63	
50th-Percentile Queue Length [ft/ln]	210.11	219.09	198.34	61.51	127.67	115.66	
95th-Percentile Queue Length [veh/ln]	13.16	13.62	12.55	4.43	8.81	8.15	
95th-Percentile Queue Length [ft/ln]	328.97	340.46	313.83	110.72	220.33	203.84	

Movement, Approach, & Intersection Results

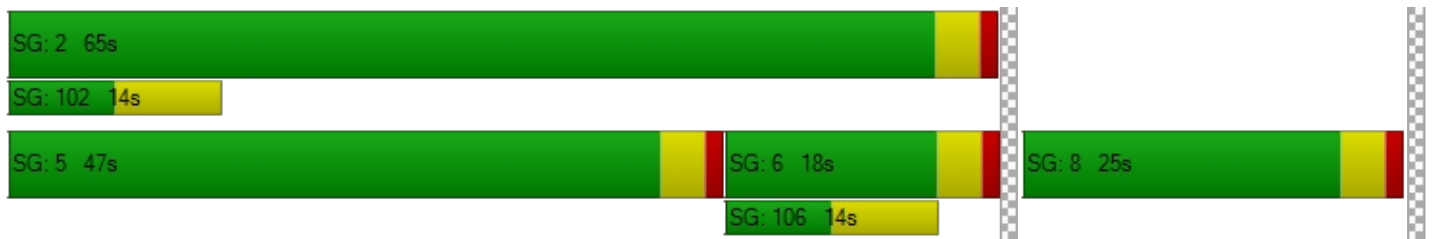
d_M, Delay for Movement [s/veh]	0.00	22.08	22.95	34.19	4.11	0.00	43.13	43.82	43.82	0.00	0.00	0.00
Movement LOS		C	C	C	A		D	D	D			
d_A, Approach Delay [s/veh]	22.25			16.80			43.43			0.00		
Approach LOS	C			B			D			A		
d_I, Intersection Delay [s/veh]	21.97											
Intersection LOS	C											
Intersection V/C	0.740											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0			0.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	0.00			0.00			34.68			34.68		
I_p,int, Pedestrian LOS Score for Intersection	0.000			0.000			2.077			2.187		
Crosswalk LOS	F			F			B			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	311			1355			467			0		
d_b, Bicycle Delay [s]	32.10			4.68			26.46			45.01		
I_b,int, Bicycle LOS Score for Intersection	2.413			3.045			2.254			4.132		
Bicycle LOS	B			C			B			D		

Sequence

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



APPENDIX E-XII

**YEAR 2045 CUMULATIVE PLUS PROJECT PHASES 1, 2, AND 3
TRAFFIC CONDITIONS**

Intersection Level Of Service Report
Intersection 12: SR-55 SB Ramps at MacArthur Blvd

Control Type:	Signalized	Delay (sec / veh):	19.0
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.942

Intersection Setup

Name	SR-55 SB Ramp			MacArthur Blvd			MacArthur Blvd					
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration				T T T T			T T T T			T T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	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	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		
Crosswalk	No			Yes			No			No		

Volumes

Name				SR-55 SB Ramp			MacArthur Blvd			MacArthur Blvd		
Base Volume Input [veh/h]	0	0	0	1169	0	1176	0	2102	1325	0	1609	177
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	1169	0	1176	0	2102	1325	0	1609	177
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	292	0	294	0	526	331	0	402	44
Total Analysis Volume [veh/h]	0	0	0	1169	0	1176	0	2102	1325	0	1609	177
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	0	0	0	5	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	6	0	0	0	10	0	0	10	0
Maximum Green [s]	0	0	0	30	0	0	0	30	0	0	30	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	45	0	0	0	45	0	0	45	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	14	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	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	R	C	C
C, Cycle Length [s]		68	68	68	68
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		30	30	30	30
g / C, Green / Cycle		0.44	0.44	0.44	0.44
(v / s)_i Volume / Saturation Flow Rate		0.34	0.42	0.41	0.32
s, saturation flow rate [veh/h]		3459	2813	5094	5094
c, Capacity [veh/h]		1525	1240	2249	2249
d1, Uniform Delay [s]		16.05	18.25	18.04	15.49
k, delay calibration		0.11	0.11	0.11	0.11
l, Upstream Filtering Factor		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		0.83	4.77	2.30	0.43
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.77	0.95	0.93	0.72
d, Delay for Lane Group [s/veh]		16.88	23.02	20.34	15.93
Lane Group LOS		B	C	C	B
Critical Lane Group		No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]		6.95	8.57	9.60	6.09
50th-Percentile Queue Length [ft/ln]		173.66	214.21	240.12	152.19
95th-Percentile Queue Length [veh/ln]		11.27	13.37	14.69	10.13
95th-Percentile Queue Length [ft/ln]		281.72	334.22	367.19	253.35

Movement, Approach, & Intersection Results

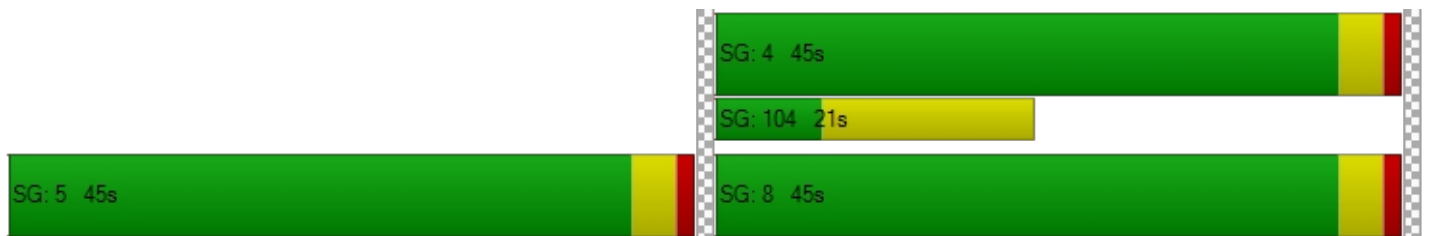
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	16.88	0.00	23.02	0.00	20.34	0.00	0.00	15.93	0.00
Movement LOS				B		C		C			B	
d_A, Approach Delay [s/veh]	0.00			19.96			20.34			15.93		
Approach LOS	A			B			C			B		
d_I, Intersection Delay [s/veh]	19.02											
Intersection LOS	B											
Intersection V/C	0.942											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	23.85	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	0.000	2.742	0.000	0.000
Crosswalk LOS	F	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	1207	1207	1207
d_b, Bicycle Delay [s]	33.96	5.33	5.33	5.33
I_b,int, Bicycle LOS Score for Intersection	4.132	1.560	2.716	2.445
Bicycle LOS	D	A	B	B

Sequence

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



Intersection Level Of Service Report
Intersection 13: SR-55 NB Ramps at MacArthur Blvd

Control Type:	Signalized	Delay (sec / veh):	34.2
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.972

Intersection Setup

Name	SR-55 NB Ramp						MacArthur Blvd			MacArthur Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	⇐⇐⇐						⇐⇐⇐			⇐⇐⇐		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	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		
Crosswalk	No			No			No			Yes		

Volumes

Name	SR-55 NB Ramp						MacArthur Blvd			MacArthur Blvd		
	Base Volume Input [veh/h]	1024	0	1190	0	0	0	0	1937	1184	0	507
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
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]	1024	0	1190	0	0	0	0	1937	1184	0	507	297
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	256	0	298	0	0	0	0	484	296	0	127	74
Total Analysis Volume [veh/h]	1024	0	1190	0	0	0	0	1937	1184	0	507	297
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	1	0	0	0	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	6	0	0	0	0	0	0	10	0	0	10	0
Maximum Green [s]	30	0	0	0	0	0	0	30	0	0	30	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	32	0	0	0	0	0	0	58	0	0	58	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	7	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	21	0	0	0	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No							No			No	
Maximum Recall	No							No			No	
Pedestrian Recall	No							No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L		C	C
C, Cycle Length [s]	59		59	59
L, Total Lost Time per Cycle [s]	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00		2.00	2.00
g_i, Effective Green Time [s]	21		30	30
g / C, Green / Cycle	0.36		0.51	0.51
(v / s)_i Volume / Saturation Flow Rate	0.30		0.54	0.10
s, saturation flow rate [veh/h]	3459		3560	5094
c, Capacity [veh/h]	1232		1810	2589
d1, Uniform Delay [s]	17.38		14.51	7.92
k, delay calibration	0.11		0.11	0.11
l, Upstream Filtering Factor	1.00		1.00	1.00
d2, Incremental Delay [s]	1.53		34.62	0.04
d3, Initial Queue Delay [s]	0.00		0.00	0.00
Rp, platoon ratio	1.00		1.00	1.00
PF, progression factor	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.83		1.07	0.20
d, Delay for Lane Group [s/veh]	18.91		49.12	7.96
Lane Group LOS	B		F	A
Critical Lane Group	Yes		Yes	No
50th-Percentile Queue Length [veh/ln]	5.84		18.19	0.98
50th-Percentile Queue Length [ft/ln]	146.02		454.85	24.42
95th-Percentile Queue Length [veh/ln]	9.80		26.48	1.76
95th-Percentile Queue Length [ft/ln]	245.11		661.94	43.95

Movement, Approach, & Intersection Results

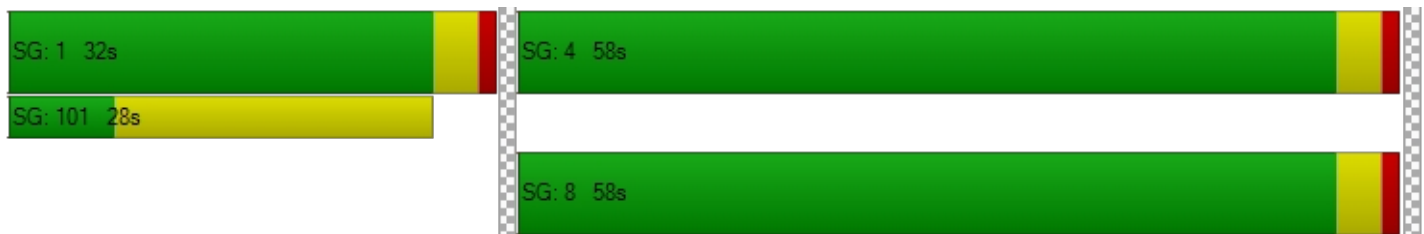
d_M, Delay for Movement [s/veh]	18.91	0.00	0.00	0.00	0.00	0.00	0.00	49.12	0.00	0.00	7.96	0.00
Movement LOS	B							F			A	
d_A, Approach Delay [s/veh]	18.91			0.00			49.12			7.96		
Approach LOS	B			A			D			A		
d_I, Intersection Delay [s/veh]	34.18											
Intersection LOS	C											
Intersection V/C	0.972											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	19.50
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	2.826
Crosswalk LOS	F	F	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	950	0	1832	1832
d_b, Bicycle Delay [s]	8.12	29.47	0.21	0.21
I_b,int, Bicycle LOS Score for Intersection	1.560	4.132	3.158	1.838
Bicycle LOS	A	D	C	A

Sequence

Ring 1	1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 25: I-405 NB Off-Ramp at South Coast Drive

Control Type:	Signalized	Delay (sec / veh):	21.3
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.461

Intersection Setup

Name	I-405 NB Off-Ramp			The Cape Dwy			South Coast Drive			South Coast 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	1	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	I-405 NB Off-Ramp			The Cape Dwy			South Coast Drive			South Coast Drive		
Base Volume Input [veh/h]	421	7	110	58	0	86	23	278	0	0	149	20
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
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]	421	7	110	58	0	86	23	278	0	0	149	20
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	105	2	28	15	0	22	6	70	0	0	37	5
Total Analysis Volume [veh/h]	421	7	110	58	0	86	23	278	0	0	149	20
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	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Permiss	Split	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	7	0	0	5	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	10	0	6	0	0	6	10	0	0	10	0
Maximum Green [s]	0	30	0	30	0	0	30	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	57	0	57	0	0	10	33	0	0	23	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	14	0	0	0	0	0	11	0	0	11	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No		No				No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	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	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	R	L	C	C	C
C, Cycle Length [s]	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
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	33	33	33	33	33	3	49	42	42
g / C, Green / Cycle	0.37	0.37	0.37	0.37	0.37	0.03	0.54	0.47	0.47
(v / s)_i Volume / Saturation Flow Rate	0.32	0.04	0.04	0.05	0.05	0.01	0.08	0.05	0.05
s, saturation flow rate [veh/h]	1311	1618	1589	1275	1589	1781	3560	1870	1795
c, Capacity [veh/h]	534	593	583	491	583	52	1939	880	845
d1, Uniform Delay [s]	28.31	18.74	18.74	21.63	19.09	42.96	10.12	13.20	13.22
k, delay calibration	0.13	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.10	0.07	0.07	0.11	0.12	5.74	0.16	0.22	0.24
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.79	0.10	0.10	0.12	0.15	0.44	0.14	0.10	0.10
d, Delay for Lane Group [s/veh]	31.41	18.82	18.82	21.73	19.21	48.69	10.28	13.41	13.46
Lane Group LOS	C	B	B	C	B	D	B	B	B
Critical Lane Group	Yes	No	No	No	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	8.80	0.80	0.79	0.87	1.20	0.58	1.33	0.97	0.97
50th-Percentile Queue Length [ft/ln]	219.92	20.12	19.77	21.69	29.89	14.54	33.13	24.23	24.34
95th-Percentile Queue Length [veh/ln]	13.66	1.45	1.42	1.56	2.15	1.05	2.39	1.74	1.75
95th-Percentile Queue Length [ft/ln]	341.52	36.21	35.59	39.04	53.80	26.17	59.63	43.62	43.81

Movement, Approach, & Intersection Results

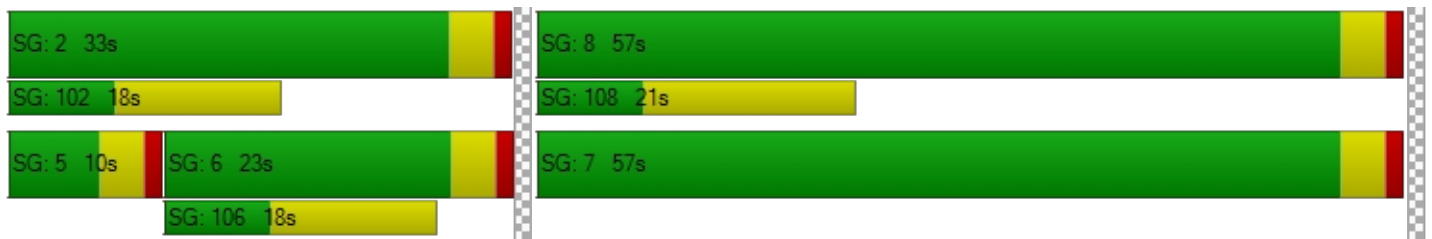
d_M, Delay for Movement [s/veh]	31.41	18.82	18.82	21.73	0.00	19.21	48.69	10.28	0.00	0.00	13.43	13.46
Movement LOS	C	B	B	C		B	D	B			B	B
d_A, Approach Delay [s/veh]	28.67			20.23			13.21			13.44		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]	21.34											
Intersection LOS	C											
Intersection V/C	0.461											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.67	34.67	0.00	34.67
I_p,int, Pedestrian LOS Score for Intersection	2.262	2.003	0.000	2.363
Crosswalk LOS	B	B	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1178	1178	644	422
d_b, Bicycle Delay [s]	7.61	7.61	20.67	28.01
I_b,int, Bicycle LOS Score for Intersection	2.447	1.560	1.808	1.699
Bicycle LOS	B	A	A	A

Sequence

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



Intersection Level Of Service Report
Intersection 28: Fairview Road at I-405 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	29.6
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.841

Intersection Setup

Name	Fairview Road			Fairview Road			I-405 NB Ramps			I-405 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	1	0	0	0	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		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Fairview Road			Fairview Road			I-405 NB Ramps			I-405 NB Ramps		
Base Volume Input [veh/h]	219	1085	0	0	2971	355	0	0	0	735	0	941
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	219	1085	0	0	2971	355	0	0	0	735	0	941
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	55	271	0	0	743	89	0	0	0	184	0	235
Total Analysis Volume [veh/h]	219	1085	0	0	2971	355	0	0	0	735	0	941
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Permiss	Split
Signal Group	1	6	0	0	2	0	0	0	0	0	7	0	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	6	10	0	0	10	0	0	0	0	0	6	0	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	20	60	0	0	40	0	0	0	0	0	50	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	14	0	0	7	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall	No	No			No						No		
Maximum Recall	No	No			No						No		
Pedestrian Recall	No	No			No						No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	R		L	R
C, Cycle Length [s]	110	110	110	110		110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	15	61	42	42		41	41
g / C, Green / Cycle	0.14	0.55	0.38	0.38		0.37	0.37
(v / s)_i Volume / Saturation Flow Rate	0.12	0.21	0.29	0.22		0.21	0.33
s, saturation flow rate [veh/h]	1781	5094	10188	1589		3459	2813
c, Capacity [veh/h]	248	2823	3858	602		1290	1049
d1, Uniform Delay [s]	46.46	13.88	29.96	27.33		27.45	32.48
k, delay calibration	0.11	0.50	0.50	0.50		0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	10.02	0.40	1.54	4.20		0.40	3.02
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.88	0.38	0.77	0.59		0.57	0.90
d, Delay for Lane Group [s/veh]	56.48	14.28	31.50	31.53		27.84	35.49
Lane Group LOS	E	B	C	C		C	D
Critical Lane Group	Yes	No	Yes	No		No	Yes
50th-Percentile Queue Length [veh/ln]	6.54	5.04	11.53	8.06		7.66	11.94
50th-Percentile Queue Length [ft/ln]	163.43	125.96	288.19	201.52		191.57	298.51
95th-Percentile Queue Length [veh/ln]	10.73	8.72	17.10	12.72		12.20	17.61
95th-Percentile Queue Length [ft/ln]	268.26	217.99	427.40	317.93		305.07	440.18

Movement, Approach, & Intersection Results

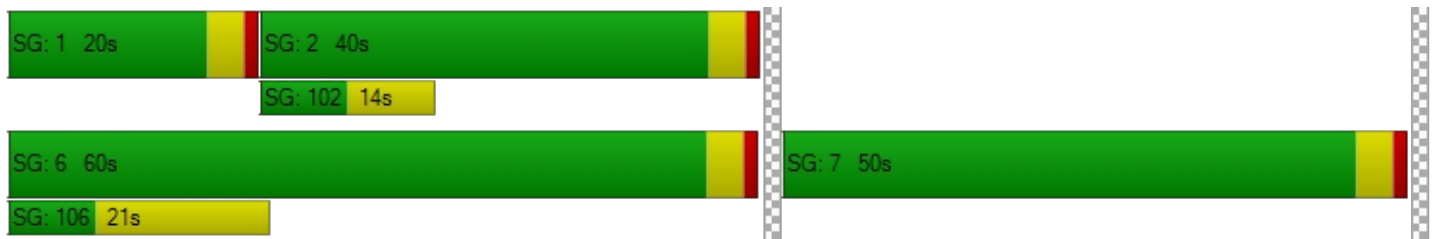
d_M, Delay for Movement [s/veh]	56.48	14.28	0.00	0.00	31.50	31.53	0.00	0.00	0.00	27.84	0.00	35.49
Movement LOS	E	B			C	C				C		D
d_A, Approach Delay [s/veh]	21.37				31.50		0.00		32.14			
Approach LOS	C				C		A		C			
d_I, Intersection Delay [s/veh]	29.58											
Intersection LOS	C											
Intersection V/C	0.841											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	44.54	44.54
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	1.993	2.636
Crosswalk LOS	F	F	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1018	655	0	836
d_b, Bicycle Delay [s]	13.25	24.88	54.99	18.61
I_b,int, Bicycle LOS Score for Intersection	2.277	2.474	4.132	1.560
Bicycle LOS	B	B	D	A

Sequence

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



Intersection Level Of Service Report
Intersection 29: Fairview Road at I-405 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	42.7
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.023

Intersection Setup

Name	Fairview Rd			Fairview Rd			I-405 SB Ramps			I-405 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T			T			T					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	1	0	0	1	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Fairview Rd			Fairview Rd			I-405 SB Ramps			I-405 SB Ramps		
Base Volume Input [veh/h]	0	1095	1351	1849	2012	0	233	0	393	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1095	1351	1849	2012	0	233	0	393	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	274	338	462	503	0	58	0	98	0	0	0
Total Analysis Volume [veh/h]	0	1095	1351	1849	2012	0	233	0	393	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Permiss
Signal Group	0	6	0	5	2	0	3	0	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	10	0	6	10	0	6	0	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	30	0	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Split [s]	0	54	0	45	99	0	21	0	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	11	0	0	14	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No		No					
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No		No					
Maximum Recall		No		No	No		No					
Pedestrian Recall		No		No	No		No					
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	R	L	C	L	R	
C, Cycle Length [s]	120	120	120	120	120	120	120	
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]	50	50	50	41	95	17	17	
g / C, Green / Cycle	0.42	0.42	0.42	0.34	0.79	0.14	0.14	
(v / s)_i Volume / Saturation Flow Rate	0.21	0.42	0.42	0.36	0.39	0.07	0.14	
s, saturation flow rate [veh/h]	5094	1589	1589	5188	5094	3459	2813	
c, Capacity [veh/h]	2122	662	662	1772	4031	491	399	
d1, Uniform Delay [s]	26.01	35.00	35.00	39.50	4.31	47.36	51.34	
k, delay calibration	0.50	0.50	0.50	0.11	0.50	0.11	0.11	
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	0.90	40.18	40.18	23.92	0.44	0.71	17.56	
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	0.52	1.02	1.02	1.04	0.50	0.47	0.98	
d, Delay for Lane Group [s/veh]	26.91	75.18	75.18	63.42	4.76	48.07	68.90	
Lane Group LOS	C	F	F	F	A	D	E	
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	7.88	26.18	26.18	21.02	4.67	3.26	6.85	
50th-Percentile Queue Length [ft/ln]	196.91	654.52	654.52	525.47	116.75	81.53	171.20	
95th-Percentile Queue Length [veh/ln]	12.48	35.10	35.10	29.37	8.21	5.87	11.14	
95th-Percentile Queue Length [ft/ln]	311.97	877.45	877.45	734.23	205.36	146.76	278.49	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	26.91	75.18	63.42	4.76	0.00	48.07	0.00	68.90	0.00	0.00	0.00
Movement LOS		C	F	F	A		D		E			
d_A, Approach Delay [s/veh]	53.57			32.85			61.15			0.00		
Approach LOS	D			C			E			A		
d_I, Intersection Delay [s/veh]	42.71											
Intersection LOS	D											
Intersection V/C	1.023											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0			0.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	0.00			0.00			49.50			49.50		
I_p,int, Pedestrian LOS Score for Intersection	0.000			0.000			2.436			2.994		
Crosswalk LOS	F			F			B			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	833			1584			283			0		
d_b, Bicycle Delay [s]	20.41			2.60			44.20			59.99		
I_b,int, Bicycle LOS Score for Intersection	2.569			3.683			1.560			4.132		
Bicycle LOS	B			D			A			D		

Sequence

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



Intersection Level Of Service Report
Intersection 30: Bristol Street at I-405 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	9.1
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.531

Intersection Setup

Name	Bristol Street			Bristol Street			I-405 NB Ramps			I-405 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	0	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	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	No			No			Yes			Yes		

Volumes

Name	Bristol Street			Bristol Street			I-405 NB Ramps			I-405 NB Ramps		
Base Volume Input [veh/h]	0	2009	231	0	3051	9	0	0	41	304	88	943
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	2009	231	0	3051	9	0	0	41	304	88	943
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	502	58	0	763	2	0	0	10	76	22	236
Total Analysis Volume [veh/h]	0	2009	231	0	3051	9	0	0	41	304	88	943
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	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss	Split	Permiss	Split	Split	Split	Overlap
Signal Group	0	6	0	0	2	0	0	0	8	0	4	4
Auxiliary Signal Groups												2,4
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	0	10	0	0	0	6	0	10	10
Maximum Green [s]	0	30	0	0	30	0	0	0	30	0	30	30
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0
Split [s]	0	29	0	0	29	0	0	0	10	0	51	51
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	18	0	0	14	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No				No		No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0
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	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	C	R	L	C	C	R
C, Cycle Length [s]	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
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	60	60	60	4	14	14	14	78
g / C, Green / Cycle	0.67	0.67	0.67	0.04	0.16	0.16	0.16	0.87
(v / s)_i Volume / Saturation Flow Rate	0.30	0.36	0.33	0.01	0.09	0.09	0.05	0.34
s, saturation flow rate [veh/h]	6792	6792	1865	2813	1781	1781	1702	2813
c, Capacity [veh/h]	4518	4518	1241	124	281	281	268	2440
d1, Uniform Delay [s]	7.16	7.89	7.51	41.76	34.94	34.94	33.70	1.19
k, delay calibration	0.50	0.50	0.50	0.11	0.11	0.11	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.32	0.47	1.40	1.55	1.63	1.63	0.71	0.46
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.44	0.54	0.49	0.33	0.54	0.54	0.33	0.39
d, Delay for Lane Group [s/veh]	7.48	8.36	8.91	43.31	36.56	36.56	34.40	1.66
Lane Group LOS	A	A	A	D	D	D	C	A
Critical Lane Group	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.99	5.37	5.45	0.46	3.15	3.15	1.74	0.46
50th-Percentile Queue Length [ft/ln]	99.79	134.21	136.34	11.61	78.78	78.78	43.54	11.42
95th-Percentile Queue Length [veh/ln]	7.18	9.17	9.28	0.84	5.67	5.67	3.13	0.82
95th-Percentile Queue Length [ft/ln]	179.61	229.21	232.09	20.89	141.8	141.8	78.37	20.55

Movement, Approach, & Intersection Results

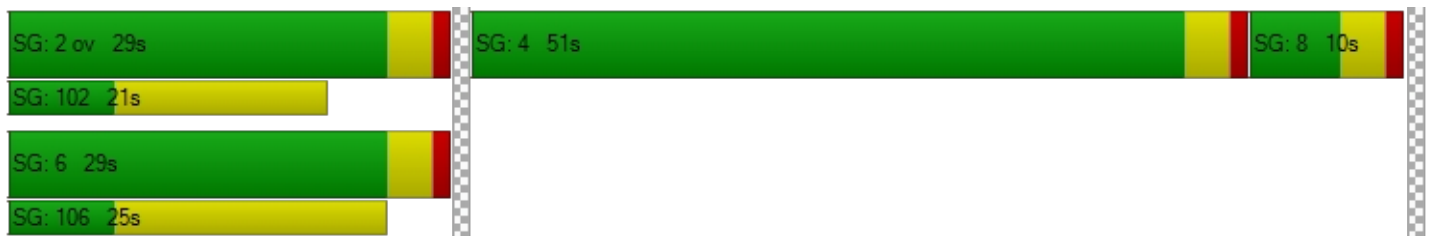
d_M, Delay for Movement [s/veh]	0.00	7.48	0.00	0.00	8.47	8.91	0.00	0.00	43.31	36.56	34.40	1.66
Movement LOS		A			A	A			D	D	C	A
d_A, Approach Delay [s/veh]	7.48			8.47			43.31			11.76		
Approach LOS	A			A			D			B		
d_I, Intersection Delay [s/veh]	9.07											
Intersection LOS	A											
Intersection V/C	0.531											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	34.68	34.68
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.164	2.669
Crosswalk LOS	F	F	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	555	555	133	1044
d_b, Bicycle Delay [s]	23.48	23.48	39.21	10.28
I_b,int, Bicycle LOS Score for Intersection	2.388	2.569	1.560	2.661
Bicycle LOS	B	B	A	B

Sequence

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



Intersection Level Of Service Report
Intersection 31: Bristol Street at I-405 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	16.1
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.568

Intersection Setup

Name	Bristol Street		Bristol Street		I-405 SB Ramps	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration	↵		↵		↵↵↵	
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	1	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		Yes	

Volumes

Name	Bristol Street		Bristol Street		I-405 SB Ramps	
Base Volume Input [veh/h]	139	1399	1283	1324	843	624
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	139	1399	1283	1324	843	624
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	35	350	321	331	211	0
Total Analysis Volume [veh/h]	139	1399	1283	1324	843	0
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Unsignalized	Permissive	Unsignalized
Signal Group	1	6	2	0	3	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	6	10	10	0	6	0
Maximum Green [s]	30	30	30	0	30	0
Amber [s]	3.0	3.0	3.0	0.0	3.0	0.0
All red [s]	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	30	52	22	0	38	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	0	7	0	0	0
Pedestrian Clearance [s]	0	0	11	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No	No		No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
Minimum Recall	No	No	No		No	
Maximum Recall	No	No	No		No	
Pedestrian Recall	No	No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L
C, Cycle Length [s]	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	63	51	19
g / C, Green / Cycle	0.10	0.71	0.56	0.21
(v / s)_i Volume / Saturation Flow Rate	0.08	0.21	0.25	0.16
s, saturation flow rate [veh/h]	1781	6792	5094	5188
c, Capacity [veh/h]	176	4788	2861	1070
d1, Uniform Delay [s]	39.66	4.94	11.56	33.88
k, delay calibration	0.11	0.50	0.50	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.66	0.16	0.51	1.33
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.79	0.29	0.45	0.79
d, Delay for Lane Group [s/veh]	47.32	5.09	12.07	35.21
Lane Group LOS	D	A	B	D
Critical Lane Group	Yes	No	Yes	Yes
50th-Percentile Queue Length [veh/ln]	3.34	2.03	4.75	5.83
50th-Percentile Queue Length [ft/ln]	83.47	50.73	118.63	145.65
95th-Percentile Queue Length [veh/ln]	6.01	3.65	8.32	9.78
95th-Percentile Queue Length [ft/ln]	150.24	91.31	207.94	244.62

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	47.32	5.09	12.07	0.00	35.21	0.00
Movement LOS	D	A	B		D	
d_A, Approach Delay [s/veh]	8.91		12.07		35.21	
Approach LOS	A		B		D	
d_I, Intersection Delay [s/veh]	16.07					
Intersection LOS	B					
Intersection V/C	0.568					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	34.68
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.612
Crosswalk LOS	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1066	400	755
d_b, Bicycle Delay [s]	9.81	28.81	17.43
I_b,int, Bicycle LOS Score for Intersection	2.194	2.265	1.560
Bicycle LOS	B	B	A

Sequence

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



Intersection Level Of Service Report
Intersection 37: Bear St at SR-73 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	25.0
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.682

Intersection Setup

Name	Bear St			Bear St			SR-73 NB Ramps			SR-73 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0	0	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		
Crosswalk	No			No			No			Yes		

Volumes

Name	Bear St			Bear St			SR-73 NB Ramps			SR-73 NB Ramps		
Base Volume Input [veh/h]	195	417	0	0	1266	117	0	0	0	212	0	652
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	195	417	0	0	1266	117	0	0	0	212	0	652
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	49	104	0	0	317	29	0	0	0	53	0	163
Total Analysis Volume [veh/h]	195	417	0	0	1266	117	0	0	0	212	0	652
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Permiss	Split
Signal Group	1	6	0	0	2	0	0	0	0	0	7	0	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	6	10	0	0	10	0	0	0	0	0	6	0	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	23	37	0	0	14	0	0	0	0	0	63	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	11	0	0	0	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall	No	No			No						No		
Maximum Recall	No	No			No						No		
Pedestrian Recall	No	No			No						No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C		L	R
C, Cycle Length [s]	100	100	100	100		100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	13	65	48	48		27	27
g / C, Green / Cycle	0.13	0.65	0.48	0.48		0.27	0.27
(v / s)_i Volume / Saturation Flow Rate	0.11	0.12	0.26	0.26		0.12	0.23
s, saturation flow rate [veh/h]	1781	3560	3560	1790		1781	2813
c, Capacity [veh/h]	230	2323	1722	865		476	752
d1, Uniform Delay [s]	42.59	6.84	18.00	17.96		30.46	34.93
k, delay calibration	0.11	0.50	0.50	0.50		0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	8.43	0.17	1.20	2.34		0.65	3.19
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.85	0.18	0.54	0.53		0.45	0.87
d, Delay for Lane Group [s/veh]	51.03	7.01	19.20	20.31		31.12	38.12
Lane Group LOS	D	A	B	C		C	D
Critical Lane Group	Yes	No	Yes	No		No	Yes
50th-Percentile Queue Length [veh/ln]	5.21	1.65	7.41	7.68		4.29	7.74
50th-Percentile Queue Length [ft/ln]	130.14	41.31	185.36	191.95		107.24	193.62
95th-Percentile Queue Length [veh/ln]	8.95	2.97	11.88	12.22		7.69	12.31
95th-Percentile Queue Length [ft/ln]	223.69	74.37	297.00	305.56		192.16	307.72

Movement, Approach, & Intersection Results

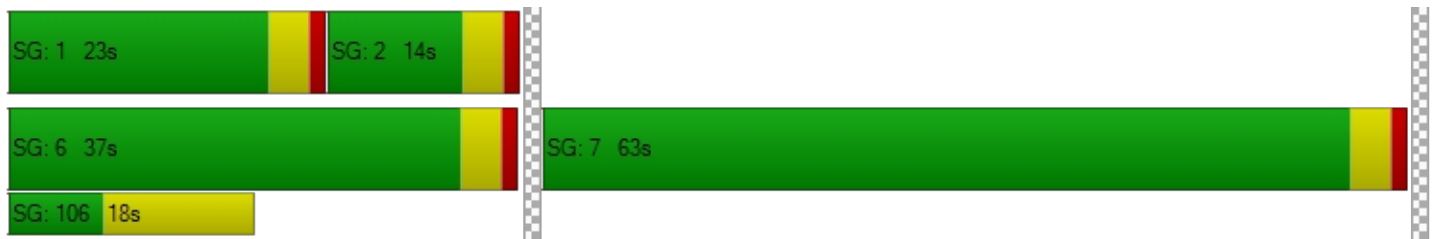
d_M, Delay for Movement [s/veh]	51.03	7.01	0.00	0.00	19.50	20.31	0.00	0.00	0.00	31.12	0.00	38.12
Movement LOS	D	A			B	C				C		D
d_A, Approach Delay [s/veh]	21.03				19.57		0.00		36.40			
Approach LOS	C				B		A		D			
d_I, Intersection Delay [s/veh]	24.97											
Intersection LOS	C											
Intersection V/C	0.682											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		0.0		11.0	
M_corner, Corner Circulation Area [ft ² /ped]	0.00		0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00		0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		0.00		0.00		39.61	
I_p,int, Pedestrian LOS Score for Intersection	0.000		0.000		0.000		2.347	
Crosswalk LOS	F		F		F		B	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	660		200		0		1180	
d_b, Bicycle Delay [s]	22.45		40.50		50.00		8.41	
I_b,int, Bicycle LOS Score for Intersection	2.065		2.320		4.132		1.560	
Bicycle LOS	B		B		D		A	

Sequence

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



Intersection Level Of Service Report
Intersection 38: Bear St at SR-73 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	30.7
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.768

Intersection Setup

Name	Bear St			Bear St			SR-73 SB Ramps			SR-73 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↑↑			↑↑↑↑			↑↑					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Bear St			Bear St			SR-73 SB Ramps			SR-73 SB Ramps		
Base Volume Input [veh/h]	0	456	462	777	873	0	147	34	250	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	456	462	777	873	0	147	34	250	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	114	116	194	218	0	37	9	63	0	0	0
Total Analysis Volume [veh/h]	0	456	462	777	873	0	147	34	250	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Permiss	Permiss
Signal Group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	6	10	0	0	10	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	49	0	39	88	0	0	32	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	7	0	0	7	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	L	C	L	C	
C, Cycle Length [s]	120	120	120	120	120	120	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	55	55	30	89	23	23	
g / C, Green / Cycle	0.46	0.46	0.25	0.74	0.19	0.19	
(v / s)_i Volume / Saturation Flow Rate	0.24	0.29	0.22	0.25	0.08	0.18	
s, saturation flow rate [veh/h]	1870	1589	3459	3560	1781	1619	
c, Capacity [veh/h]	859	730	856	2636	344	312	
d1, Uniform Delay [s]	23.17	24.70	43.80	5.36	42.56	47.36	
k, delay calibration	0.50	0.50	0.11	0.50	0.11	0.23	
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	2.34	4.14	4.08	0.34	0.84	18.38	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	0.53	0.63	0.91	0.33	0.43	0.91	
d, Delay for Lane Group [s/veh]	25.52	28.85	47.87	5.70	43.40	65.73	
Lane Group LOS	C	C	D	A	D	E	
Critical Lane Group	No	Yes	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	9.69	10.70	11.60	3.46	3.93	9.86	
50th-Percentile Queue Length [ft/ln]	242.23	267.52	290.04	86.60	98.15	246.55	
95th-Percentile Queue Length [veh/ln]	14.79	16.07	17.19	6.24	7.07	15.01	
95th-Percentile Queue Length [ft/ln]	369.86	401.63	429.69	155.88	176.67	375.30	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	25.52	28.85	47.87	5.70	0.00	43.40	65.73	65.73	0.00	0.00	0.00
Movement LOS		C	C	D	A		D	E	E			
d_A, Approach Delay [s/veh]		27.19		25.56			58.12		0.00			
Approach LOS		C		C			E		A			
d_I, Intersection Delay [s/veh]	30.74											
Intersection LOS	C											
Intersection V/C	0.768											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	49.49	49.49
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.094	2.349
Crosswalk LOS	F	F	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	750	1400	467	0
d_b, Bicycle Delay [s]	23.42	5.39	35.25	59.98
I_b,int, Bicycle LOS Score for Intersection	2.317	2.921	2.271	4.132
Bicycle LOS	B	C	B	D

Sequence

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



Intersection Level Of Service Report
Intersection 12: SR-55 SB Ramps at MacArthur Blvd

Control Type:	Signalized	Delay (sec / veh):	15.4
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.846

Intersection Setup

Name	SR-55 SB Ramp			MacArthur Blvd			MacArthur Blvd					
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration				T T T T			T T T T			T T T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	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	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		
Crosswalk	No			Yes			No			No		

Volumes

Name				SR-55 SB Ramp			MacArthur Blvd			MacArthur Blvd		
Base Volume Input [veh/h]	0	0	0	353	0	996	0	1605	1281	0	1960	738
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	353	0	996	0	1605	1281	0	1960	738
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	88	0	249	0	401	320	0	490	185
Total Analysis Volume [veh/h]	0	0	0	353	0	996	0	1605	1281	0	1960	738
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	0	0	0	5	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	6	0	0	0	10	0	0	10	0
Maximum Green [s]	0	0	0	30	0	0	0	30	0	0	30	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	46	0	0	0	49	0	0	49	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	14	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	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	R	C	C
C, Cycle Length [s]		63	63	63	63
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		26	26	29	29
g / C, Green / Cycle		0.41	0.41	0.46	0.46
(v / s)_i Volume / Saturation Flow Rate		0.10	0.35	0.32	0.38
s, saturation flow rate [veh/h]		3459	2813	5094	5094
c, Capacity [veh/h]		1416	1152	2365	2365
d1, Uniform Delay [s]		12.30	17.10	13.28	14.78
k, delay calibration		0.11	0.11	0.11	0.11
l, Upstream Filtering Factor		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		0.09	2.08	0.35	0.79
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.25	0.86	0.68	0.83
d, Delay for Lane Group [s/veh]		12.39	19.18	13.62	15.57
Lane Group LOS		B	B	B	B
Critical Lane Group		No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]		1.49	6.11	5.17	7.09
50th-Percentile Queue Length [ft/ln]		37.28	152.80	129.18	177.36
95th-Percentile Queue Length [veh/ln]		2.68	10.17	8.89	11.46
95th-Percentile Queue Length [ft/ln]		67.11	254.16	222.37	286.56

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	12.39	0.00	19.18	0.00	13.62	0.00	0.00	15.57	0.00
Movement LOS				B		B		B			B	
d_A, Approach Delay [s/veh]	0.00			17.40			13.62			15.57		
Approach LOS	A			B			B			B		
d_I, Intersection Delay [s/veh]	15.44											
Intersection LOS	B											
Intersection V/C	0.846											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	21.56	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	0.000	2.543	0.000	0.000
Crosswalk LOS	F	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	1329	1424	1424
d_b, Bicycle Delay [s]	31.61	3.56	2.62	2.62
I_b,int, Bicycle LOS Score for Intersection	4.132	1.560	2.442	2.638
Bicycle LOS	D	A	B	B

Sequence

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



Intersection Level Of Service Report
Intersection 13: SR-55 NB Ramps at MacArthur Blvd

Control Type:	Signalized	Delay (sec / veh):	10.1
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.706

Intersection Setup

Name	SR-55 NB Ramp						MacArthur Blvd			MacArthur Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	⇐⇐⇐									⇐⇐⇐		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	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		
Crosswalk	No			No			No			Yes		

Volumes

Name	SR-55 NB Ramp						MacArthur Blvd			MacArthur Blvd		
	Base Volume Input [veh/h]	822	0	521	0	0	0	0	860	976	0	1776
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	822	0	521	0	0	0	0	860	976	0	1776	1314
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	206	0	130	0	0	0	0	215	244	0	444	329
Total Analysis Volume [veh/h]	822	0	521	0	0	0	0	860	976	0	1776	1314
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	1	0	0	0	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	6	0	0	0	0	0	0	10	0	0	10	0
Maximum Green [s]	30	0	0	0	0	0	0	30	0	0	30	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	45	0	0	0	0	0	0	65	0	0	65	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	7	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	21	0	0	0	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No							No			No	
Maximum Recall	No							No			No	
Pedestrian Recall	No							No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L		C	C
C, Cycle Length [s]	47		47	47
L, Total Lost Time per Cycle [s]	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00		2.00	2.00
g_i, Effective Green Time [s]	15		25	25
g / C, Green / Cycle	0.31		0.52	0.52
(v / s)_i Volume / Saturation Flow Rate	0.24		0.24	0.35
s, saturation flow rate [veh/h]	3459		3560	5094
c, Capacity [veh/h]	1083		1845	2640
d1, Uniform Delay [s]	14.69		7.26	8.46
k, delay calibration	0.11		0.11	0.11
l, Upstream Filtering Factor	1.00		1.00	1.00
d2, Incremental Delay [s]	1.12		0.18	0.30
d3, Initial Queue Delay [s]	0.00		0.00	0.00
Rp, platoon ratio	1.00		1.00	1.00
PF, progression factor	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.76		0.47	0.67
d, Delay for Lane Group [s/veh]	15.81		7.45	8.76
Lane Group LOS	B		A	A
Critical Lane Group	Yes		No	Yes
50th-Percentile Queue Length [veh/ln]	3.48		2.00	3.20
50th-Percentile Queue Length [ft/ln]	87.08		49.96	80.05
95th-Percentile Queue Length [veh/ln]	6.27		3.60	5.76
95th-Percentile Queue Length [ft/ln]	156.74		89.93	144.09

Movement, Approach, & Intersection Results

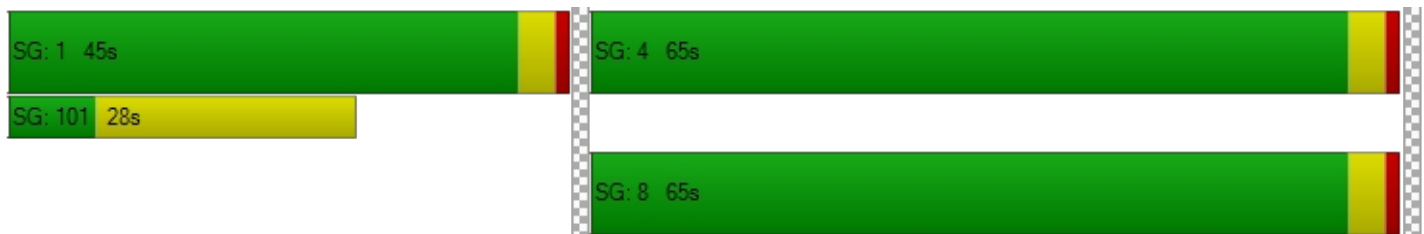
d_M, Delay for Movement [s/veh]	15.81	0.00	0.00	0.00	0.00	0.00	0.00	7.45	0.00	0.00	8.76	0.00
Movement LOS	B							A			A	
d_A, Approach Delay [s/veh]	15.81			0.00			7.45			8.76		
Approach LOS	B			A			A			A		
d_I, Intersection Delay [s/veh]	10.11											
Intersection LOS	B											
Intersection V/C	0.706											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	13.92
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	2.844
Crosswalk LOS	F	F	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1734	0	2580	2580
d_b, Bicycle Delay [s]	0.42	23.65	1.99	1.99
I_b,int, Bicycle LOS Score for Intersection	1.560	4.132	2.269	2.536
Bicycle LOS	A	D	B	B

Sequence

Ring 1	1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 25: I-405 NB Off-Ramp at South Coast Drive

Control Type:	Signalized	Delay (sec / veh):	22.6
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.676

Intersection Setup

Name	I-405 NB Off-Ramp			The Cape Dwy			South Coast Drive			South Coast 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	1	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	I-405 NB Off-Ramp			The Cape Dwy			South Coast Drive			South Coast Drive		
Base Volume Input [veh/h]	570	36	231	34	0	46	51	505	0	0	462	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	570	36	231	34	0	46	51	505	0	0	462	40
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	143	9	58	9	0	12	13	126	0	0	116	10
Total Analysis Volume [veh/h]	570	36	231	34	0	46	51	505	0	0	462	40
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	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Permiss	Split	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	7	0	0	5	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	10	0	6	0	0	6	10	0	0	10	0
Maximum Green [s]	0	30	0	30	0	0	30	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	58	0	58	0	0	10	32	0	0	22	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	14	0	0	0	0	0	11	0	0	11	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No		No				No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	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	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	R	L	C	C	C
C, Cycle Length [s]	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
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	42	42	42	42	42	4	40	32	32
g / C, Green / Cycle	0.46	0.46	0.46	0.46	0.46	0.05	0.45	0.35	0.35
(v / s)_i Volume / Saturation Flow Rate	0.42	0.08	0.08	0.03	0.03	0.03	0.14	0.13	0.14
s, saturation flow rate [veh/h]	1360	1656	1589	1112	1589	1781	3560	1870	1819
c, Capacity [veh/h]	684	768	737	522	737	86	1592	663	645
d1, Uniform Delay [s]	23.90	14.08	14.11	16.85	13.32	41.98	16.02	21.64	21.74
k, delay calibration	0.24	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.93	0.11	0.12	0.05	0.04	6.44	0.52	1.64	1.77
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.83	0.18	0.18	0.07	0.06	0.60	0.32	0.38	0.39
d, Delay for Lane Group [s/veh]	29.83	14.19	14.22	16.90	13.36	48.42	16.55	23.29	23.50
Lane Group LOS	C	B	B	B	B	D	B	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	11.90	1.56	1.54	0.43	0.50	1.25	3.34	4.15	4.18
50th-Percentile Queue Length [ft/ln]	297.51	39.11	38.39	10.84	12.61	31.29	83.51	103.76	104.53
95th-Percentile Queue Length [veh/ln]	17.56	2.82	2.76	0.78	0.91	2.25	6.01	7.47	7.53
95th-Percentile Queue Length [ft/ln]	438.95	70.40	69.10	19.52	22.70	56.32	150.32	186.77	188.15

Movement, Approach, & Intersection Results

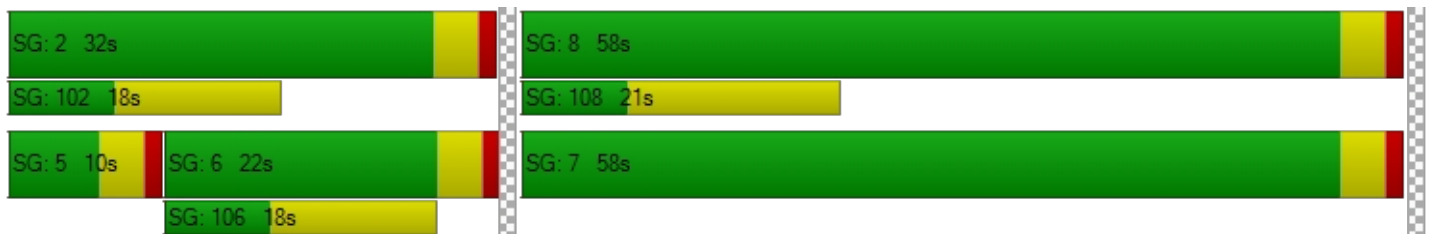
d_M, Delay for Movement [s/veh]	29.83	14.19	14.21	16.90	0.00	13.36	48.42	16.55	0.00	0.00	23.39	23.50
Movement LOS	C	B	B	B		B	D	B			C	C
d_A, Approach Delay [s/veh]	24.85			14.86			19.47			23.40		
Approach LOS	C			B			B			C		
d_I, Intersection Delay [s/veh]	22.56											
Intersection LOS	C											
Intersection V/C	0.676											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.67	34.67	0.00	34.67
I_p,int, Pedestrian LOS Score for Intersection	2.335	2.007	0.000	2.489
Crosswalk LOS	B	B	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1200	1200	622	400
d_b, Bicycle Delay [s]	7.20	7.20	21.36	28.80
I_b,int, Bicycle LOS Score for Intersection	2.941	1.560	2.018	1.974
Bicycle LOS	C	A	B	A

Sequence

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



Intersection Level Of Service Report
Intersection 28: Fairview Road at I-405 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	37.9
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.924

Intersection Setup

Name	Fairview Road			Fairview Road			I-405 NB Ramps			I-405 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵			↵↵						↵↵↵↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	1	0	0	0	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		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Fairview Road			Fairview Road			I-405 NB Ramps			I-405 NB Ramps		
Base Volume Input [veh/h]	263	1619	0	0	2275	318	0	0	0	1012	0	1284
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	263	1619	0	0	2275	318	0	0	0	1012	0	1284
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	66	405	0	0	569	80	0	0	0	253	0	321
Total Analysis Volume [veh/h]	263	1619	0	0	2275	318	0	0	0	1012	0	1284
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	115
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Permiss	Split
Signal Group	1	6	0	0	2	0	0	0	0	0	7	0	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	6	10	0	0	10	0	0	0	0	0	6	0	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	23	52	0	0	29	0	0	0	0	0	63	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	14	0	0	7	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall	No	No			No						No		
Maximum Recall	No	No			No						No		
Pedestrian Recall	No	No			No						No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	R		L	R
C, Cycle Length [s]	115	115	115	115		115	115
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	19	50	28	28		57	57
g / C, Green / Cycle	0.16	0.44	0.24	0.24		0.49	0.49
(v / s)_i Volume / Saturation Flow Rate	0.15	0.32	0.22	0.20		0.29	0.46
s, saturation flow rate [veh/h]	1781	5094	10188	1589		3459	2813
c, Capacity [veh/h]	289	2230	2450	382		1704	1386
d1, Uniform Delay [s]	47.30	26.63	42.69	41.45		20.91	27.22
k, delay calibration	0.13	0.50	0.50	0.50		0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	12.52	2.10	7.71	18.70		0.33	3.22
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.91	0.73	0.93	0.83		0.59	0.93
d, Delay for Lane Group [s/veh]	59.82	28.74	50.40	60.15		21.25	30.44
Lane Group LOS	E	C	D	E		C	C
Critical Lane Group	Yes	No	Yes	No		No	Yes
50th-Percentile Queue Length [veh/ln]	8.37	12.36	11.31	10.48		9.60	16.34
50th-Percentile Queue Length [ft/ln]	209.23	309.05	282.80	262.11		240.06	408.60
95th-Percentile Queue Length [veh/ln]	13.11	18.13	16.83	15.79		14.68	22.97
95th-Percentile Queue Length [ft/ln]	327.85	453.20	420.70	394.87		367.12	574.35

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	59.82	28.74	0.00	0.00	50.40	60.15	0.00	0.00	0.00	21.25	0.00	30.44
Movement LOS	E	C			D	E				C		C
d_A, Approach Delay [s/veh]	33.08				51.60		0.00		26.39			
Approach LOS	C				D		A		C			
d_I, Intersection Delay [s/veh]	37.90											
Intersection LOS	D											
Intersection V/C	0.924											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	47.01	47.01
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.002	2.759
Crosswalk LOS	F	F	B	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	835	435	0	1026
d_b, Bicycle Delay [s]	19.51	35.21	57.49	13.63
I_b,int, Bicycle LOS Score for Intersection	2.595	2.273	4.132	1.560
Bicycle LOS	B	B	D	A

Sequence

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



Intersection Level Of Service Report
Intersection 29: Fairview Road at I-405 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	31.0
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.871

Intersection Setup

Name	Fairview Rd			Fairview Rd			I-405 SB Ramps			I-405 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↑↑↑↑↑			↑↑↑↑↑			↑↑↑↑↑					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	1	0	0	1	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Fairview Rd			Fairview Rd			I-405 SB Ramps			I-405 SB Ramps		
Base Volume Input [veh/h]	0	2313	777	1251	1978	0	375	0	433	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	2313	777	1251	1978	0	375	0	433	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	578	194	313	495	0	94	0	108	0	0	0
Total Analysis Volume [veh/h]	0	2313	777	1251	1978	0	375	0	433	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

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

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Permiss
Signal Group	0	6	0	5	2	0	3	0	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	10	0	6	10	0	6	0	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	30	0	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Split [s]	0	45	0	46	91	0	29	0	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	11	0	0	14	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No		No					
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No		No					
Maximum Recall		No		No	No		No					
Pedestrian Recall		No		No	No		No					
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	R	L	C	L	R	
C, Cycle Length [s]	120	120	120	120	120	120	120	
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]	53	53	53	33	91	21	21	
g / C, Green / Cycle	0.45	0.45	0.45	0.28	0.76	0.18	0.18	
(v / s)_i Volume / Saturation Flow Rate	0.36	0.39	0.39	0.24	0.39	0.11	0.15	
s, saturation flow rate [veh/h]	5094	1589	1589	5188	5094	3459	2813	
c, Capacity [veh/h]	2273	709	709	1437	3853	612	497	
d1, Uniform Delay [s]	28.92	30.09	30.09	41.31	5.81	45.58	48.03	
k, delay calibration	0.50	0.50	0.50	0.11	0.50	0.11	0.11	
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	3.37	13.87	13.87	1.77	0.49	1.00	4.85	
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	0.82	0.87	0.87	0.87	0.51	0.61	0.87	
d, Delay for Lane Group [s/veh]	32.29	43.97	43.97	43.08	6.30	46.58	52.88	
Lane Group LOS	C	D	D	D	A	D	D	
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	15.85	18.49	18.49	11.89	5.82	5.25	6.62	
50th-Percentile Queue Length [ft/ln]	396.17	462.16	462.16	297.18	145.40	131.17	165.39	
95th-Percentile Queue Length [veh/ln]	22.38	25.54	25.54	17.54	9.77	9.00	10.83	
95th-Percentile Queue Length [ft/ln]	559.39	638.44	638.44	438.53	244.27	225.09	270.85	

Movement, Approach, & Intersection Results

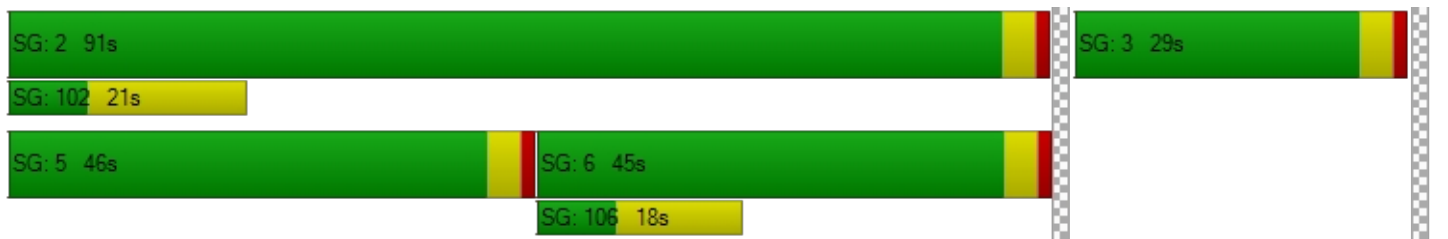
d_M, Delay for Movement [s/veh]	0.00	32.29	43.97	43.08	6.30	0.00	46.58	0.00	52.88	0.00	0.00	0.00
Movement LOS		C	D	D	A		D		D			
d_A, Approach Delay [s/veh]		36.96		20.55			49.95			0.00		
Approach LOS		D		C			D			A		
d_I, Intersection Delay [s/veh]	31.00											
Intersection LOS	C											
Intersection V/C	0.871											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	49.49	49.49
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.471	2.613
Crosswalk LOS	F	F	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	684	1450	417	0
d_b, Bicycle Delay [s]	25.99	4.53	37.59	59.98
I_b,int, Bicycle LOS Score for Intersection	2.834	3.336	1.560	4.132
Bicycle LOS	C	C	A	D

Sequence

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



Intersection Level Of Service Report
Intersection 30: Bristol Street at I-405 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	17.1
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.794

Intersection Setup

Name	Bristol Street			Bristol Street			I-405 NB Ramps			I-405 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0	0	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	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	No			No			Yes			Yes		

Volumes

Name	Bristol Street			Bristol Street			I-405 NB Ramps			I-405 NB Ramps		
Base Volume Input [veh/h]	0	2850	275	0	3091	24	0	0	234	443	370	1639
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	2850	275	0	3091	24	0	0	234	443	370	1639
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	713	69	0	773	6	0	0	59	111	93	410
Total Analysis Volume [veh/h]	0	2850	275	0	3091	24	0	0	234	443	370	1639
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	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss	Split	Permiss	Split	Split	Split	Overlap
Signal Group	0	6	0	0	2	0	0	0	8	0	4	4
Auxiliary Signal Groups												2,4
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	0	10	0	0	0	6	0	10	10
Maximum Green [s]	0	30	0	0	30	0	0	0	30	0	30	30
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0
Split [s]	0	51	0	0	51	0	0	0	16	0	23	23
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	18	0	0	14	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No				No		No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0
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	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	C	R	L	C	C	R
C, Cycle Length [s]	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
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	50	50	50	9	19	19	19	73
g / C, Green / Cycle	0.55	0.55	0.55	0.11	0.21	0.21	0.21	0.81
(v / s)_i Volume / Saturation Flow Rate	0.42	0.37	0.34	0.08	0.15	0.15	0.16	0.58
s, saturation flow rate [veh/h]	6792	6792	1857	2813	1781	1812	1702	2813
c, Capacity [veh/h]	3727	3727	1019	297	379	385	362	2267
d1, Uniform Delay [s]	15.82	14.50	13.82	39.35	32.98	32.88	33.26	4.08
k, delay calibration	0.50	0.50	0.50	0.11	0.11	0.11	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.55	0.97	2.73	4.63	2.54	2.35	3.12	2.04
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.76	0.67	0.61	0.79	0.72	0.70	0.75	0.72
d, Delay for Lane Group [s/veh]	17.37	15.47	16.55	43.97	35.51	35.23	36.38	6.12
Lane Group LOS	B	B	B	D	D	D	D	A
Critical Lane Group	No	No	No	Yes	No	No	Yes	Yes
50th-Percentile Queue Length [veh/ln]	10.69	8.50	8.63	2.68	5.65	5.62	5.74	4.51
50th-Percentile Queue Length [ft/ln]	267.34	212.54	215.85	67.01	141.2	140.4	143.5	112.8
95th-Percentile Queue Length [veh/ln]	16.06	13.28	13.45	4.83	9.55	9.50	9.67	8.00
95th-Percentile Queue Length [ft/ln]	401.41	332.08	336.32	120.63	238.6	237.6	241.8	199.9

Movement, Approach, & Intersection Results

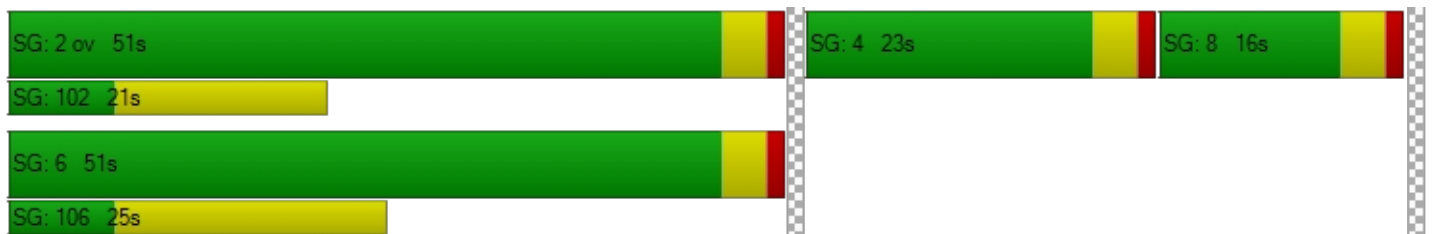
d_M, Delay for Movement [s/veh]	0.00	17.37	0.00	0.00	15.68	16.55	0.00	0.00	43.97	35.51	36.07	6.12
Movement LOS		B			B	B			D	D	D	A
d_A, Approach Delay [s/veh]	17.37			15.69			43.97			15.93		
Approach LOS	B			B			D			B		
d_I, Intersection Delay [s/veh]	17.07											
Intersection LOS	B											
Intersection V/C	0.794											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0			0.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	0.00			0.00			34.72			34.72		
I_p,int, Pedestrian LOS Score for Intersection	0.000			0.000			2.284			2.851		
Crosswalk LOS	F			F			B			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	1043			1043			266			422		
d_b, Bicycle Delay [s]	10.31			10.31			33.85			28.05		
I_b,int, Bicycle LOS Score for Intersection	2.735			2.588			1.560			3.583		
Bicycle LOS	B			B			A			D		

Sequence

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



Intersection Level Of Service Report
Intersection 31: Bristol Street at I-405 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	20.3
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.782

Intersection Setup

Name	Bristol Street		Bristol Street		I-405 SB Ramps	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration	↵		↵↵		↵↵↵↵	
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	1	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		Yes	

Volumes

Name	Bristol Street		Bristol Street		I-405 SB Ramps	
Base Volume Input [veh/h]	158	1953	1904	1281	1146	400
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	158	1953	1904	1281	1146	400
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	40	488	476	320	287	0
Total Analysis Volume [veh/h]	158	1953	1904	1281	1146	0
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Unsignalized	Permissive	Unsignalized
Signal Group	1	6	2	0	3	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	6	10	10	0	6	0
Maximum Green [s]	30	30	30	0	30	0
Amber [s]	3.0	3.0	3.0	0.0	3.0	0.0
All red [s]	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	22	44	22	0	51	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	0	7	0	0	0
Pedestrian Clearance [s]	0	0	11	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No	No		No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
Minimum Recall	No	No	No		No	
Maximum Recall	No	No	No		No	
Pedestrian Recall	No	No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L
C, Cycle Length [s]	95	95	95	95
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	10	61	47	26
g / C, Green / Cycle	0.11	0.65	0.49	0.27
(v / s)_i Volume / Saturation Flow Rate	0.09	0.29	0.37	0.22
s, saturation flow rate [veh/h]	1781	6792	5094	5188
c, Capacity [veh/h]	194	4381	2518	1405
d1, Uniform Delay [s]	41.42	8.40	19.41	32.43
k, delay calibration	0.11	0.50	0.50	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.13	0.33	2.17	1.21
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.82	0.45	0.76	0.82
d, Delay for Lane Group [s/veh]	49.56	8.73	21.58	33.64
Lane Group LOS	D	A	C	C
Critical Lane Group	Yes	No	Yes	Yes
50th-Percentile Queue Length [veh/ln]	4.02	4.54	11.10	8.18
50th-Percentile Queue Length [ft/ln]	100.43	113.57	277.56	204.52
95th-Percentile Queue Length [veh/ln]	7.23	8.04	16.57	12.87
95th-Percentile Queue Length [ft/ln]	180.77	200.96	414.18	321.79

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	49.56	8.73	21.58	0.00	33.64	0.00
Movement LOS	D	A	C		C	
d_A, Approach Delay [s/veh]	11.79		21.58		33.64	
Approach LOS	B		C		C	
d_I, Intersection Delay [s/veh]	20.25					
Intersection LOS	C					
Intersection V/C	0.782					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	37.14
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.667
Crosswalk LOS	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	842	379	989
d_b, Bicycle Delay [s]	15.93	31.21	12.13
I_b,int, Bicycle LOS Score for Intersection	2.430	2.607	1.560
Bicycle LOS	B	B	A

Sequence

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



Intersection Level Of Service Report
Intersection 37: Bear St at SR-73 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	78.6
Analysis Method:	HCM 7th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.120

Intersection Setup

Name	Bear St			Bear St			SR-73 NB Ramps			SR-73 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0	0	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		
Crosswalk	No			No			No			Yes		

Volumes

Name	Bear St			Bear St			SR-73 NB Ramps			SR-73 NB Ramps		
Base Volume Input [veh/h]	245	769	0	0	1313	182	0	0	0	496	0	1638
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	245	769	0	0	1313	182	0	0	0	496	0	1638
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	61	192	0	0	328	46	0	0	0	124	0	410
Total Analysis Volume [veh/h]	245	769	0	0	1313	182	0	0	0	496	0	1638
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	115
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Permiss	Split
Signal Group	1	6	0	0	2	0	0	0	0	0	7	0	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	6	10	0	0	10	0	0	0	0	0	6	0	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	18	51	0	0	33	0	0	0	0	0	64	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	11	0	0	0	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall	No	No			No						No		
Maximum Recall	No	No			No						No		
Pedestrian Recall	No	No			No						No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C		L	R
C, Cycle Length [s]	115	115	115	115		115	115
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	14	47	29	29		60	60
g / C, Green / Cycle	0.12	0.41	0.25	0.25		0.52	0.52
(v / s)_i Volume / Saturation Flow Rate	0.14	0.22	0.28	0.28		0.28	0.58
s, saturation flow rate [veh/h]	1781	3560	3560	1757		1781	2813
c, Capacity [veh/h]	218	1460	900	444		927	1464
d1, Uniform Delay [s]	50.44	25.52	42.94	42.94		18.32	27.56
k, delay calibration	0.11	0.50	0.50	0.50		0.12	0.14
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	69.10	1.36	63.83	80.35		0.54	56.47
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	1.12	0.53	1.11	1.12		0.54	1.12
d, Delay for Lane Group [s/veh]	119.54	26.89	106.78	123.29		18.86	84.03
Lane Group LOS	F	C	F	F		B	F
Critical Lane Group	Yes	No	No	Yes		No	Yes
50th-Percentile Queue Length [veh/ln]	10.43	8.11	20.62	22.39		8.67	30.43
50th-Percentile Queue Length [ft/ln]	260.67	202.84	515.62	559.76		216.77	760.75
95th-Percentile Queue Length [veh/ln]	16.50	12.79	29.78	32.23		13.50	42.98
95th-Percentile Queue Length [ft/ln]	412.45	319.63	744.49	805.74		337.50	1074.51

Movement, Approach, & Intersection Results

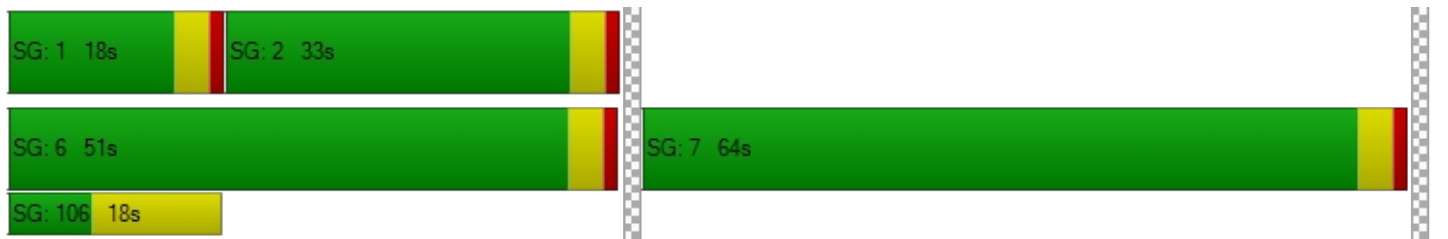
d_M, Delay for Movement [s/veh]	119.54	26.89	0.00	0.00	110.76	123.29	0.00	0.00	0.00	18.86	0.00	84.03
Movement LOS	F	C			F	F				B		F
d_A, Approach Delay [s/veh]	49.27			112.28			0.00			68.88		
Approach LOS	D			F			A			E		
d_I, Intersection Delay [s/veh]	78.57											
Intersection LOS	E											
Intersection V/C	1.120											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	47.01
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	2.663
Crosswalk LOS	F	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	818	504	0	1044
d_b, Bicycle Delay [s]	20.09	32.14	57.49	13.14
I_b,int, Bicycle LOS Score for Intersection	2.396	2.382	4.132	1.560
Bicycle LOS	B	B	D	A

Sequence

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



Intersection Level Of Service Report
Intersection 38: Bear St at SR-73 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	23.0
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.739

Intersection Setup

Name	Bear St			Bear St			SR-73 SB Ramps			SR-73 SB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↑↑			↑↑↑			↑↑					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Bear St			Bear St			SR-73 SB Ramps			SR-73 SB Ramps		
Base Volume Input [veh/h]	0	828	208	775	1040	0	225	1	195	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	828	208	775	1040	0	225	1	195	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	207	52	194	260	0	56	0	49	0	0	0
Total Analysis Volume [veh/h]	0	828	208	775	1040	0	225	1	195	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Permiss	Permiss
Signal Group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	6	10	0	0	10	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	18	0	58	76	0	0	19	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	7	0	0	7	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	L	C	L	C	
C, Cycle Length [s]	95	95	95	95	95	95	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	
g_i, Effective Green Time [s]	44	44	25	73	14	14	
g / C, Green / Cycle	0.47	0.47	0.26	0.77	0.15	0.15	
(v / s)_i Volume / Saturation Flow Rate	0.28	0.30	0.22	0.29	0.12	0.12	
s, saturation flow rate [veh/h]	1870	1746	3459	3560	1781	1593	
c, Capacity [veh/h]	874	816	903	2743	259	232	
d1, Uniform Delay [s]	18.66	19.18	33.44	3.54	39.63	39.64	
k, delay calibration	0.50	0.50	0.11	0.50	0.11	0.11	
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	2.95	3.75	2.51	0.40	7.99	8.92	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	0.59	0.63	0.86	0.38	0.86	0.86	
d, Delay for Lane Group [s/veh]	21.61	22.93	35.95	3.94	47.62	48.56	
Lane Group LOS	C	C	D	A	D	D	
Critical Lane Group	No	Yes	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	8.72	9.08	8.62	2.48	5.56	5.05	
50th-Percentile Queue Length [ft/ln]	218.03	226.95	215.38	62.08	139.12	126.19	
95th-Percentile Queue Length [veh/ln]	13.56	14.02	13.43	4.47	9.43	8.73	
95th-Percentile Queue Length [ft/ln]	339.11	350.49	335.72	111.74	235.84	218.31	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	22.11	22.93	35.95	3.94	0.00	47.68	48.56	48.56	0.00	0.00	0.00
Movement LOS		C	C	D	A		D	D	D			
d_A, Approach Delay [s/veh]	22.27			17.61			48.07			0.00		
Approach LOS	C			B			D			A		
d_I, Intersection Delay [s/veh]	23.00											
Intersection LOS	C											
Intersection V/C	0.739											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0			0.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	0.00			0.00			37.14			37.14		
I_p,int, Pedestrian LOS Score for Intersection	0.000			0.000			2.079			2.197		
Crosswalk LOS	F			F			B			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	295			1516			316			0		
d_b, Bicycle Delay [s]	34.54			2.79			33.69			47.51		
I_b,int, Bicycle LOS Score for Intersection	2.414			3.057			2.254			4.132		
Bicycle LOS	B			C			B			D		

Sequence

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



APPENDIX E-XIII

**YEAR 2045 BUILDOUT PLUS PROJECT PHASES 1, 2, AND 3
TRAFFIC CONDITIONS WITH IMPROVEMENTS**

Intersection Level Of Service Report
Intersection 37: Bear St at SR-73 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	22.7
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.649

Intersection Setup

Name	Bear St			Bear St			SR-73 NB Ramps			SR-73 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵			↵						+ ↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0	0	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		
Crosswalk	No			No			No			Yes		

Volumes

Name	Bear St			Bear St			SR-73 NB Ramps			SR-73 NB Ramps		
Base Volume Input [veh/h]	195	417	0	0	1266	117	0	0	0	212	0	652
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	195	417	0	0	1266	117	0	0	0	212	0	652
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	49	104	0	0	317	29	0	0	0	53	0	163
Total Analysis Volume [veh/h]	195	417	0	0	1266	117	0	0	0	212	0	652
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Split	Split
Signal Group	1	6	0	0	2	0	0	0	0	0	7	7	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	6	10	0	0	10	0	0	0	0	0	6	6	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	30	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0
Split [s]	29	43	0	0	14	0	0	0	0	0	47	47	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	11	0	0	0	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No							No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No			No							No	
Maximum Recall	No	No			No							No	
Pedestrian Recall	No	No			No							No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C		C	R
C, Cycle Length [s]	90	90	90	90		90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	12	61	45	45		21	21
g / C, Green / Cycle	0.13	0.68	0.50	0.50		0.23	0.23
(v / s)_i Volume / Saturation Flow Rate	0.11	0.12	0.26	0.26		0.19	0.19
s, saturation flow rate [veh/h]	1781	3560	3560	1790		1712	2813
c, Capacity [veh/h]	236	2409	1780	895		401	660
d1, Uniform Delay [s]	38.06	5.33	15.19	15.16		32.41	32.74
k, delay calibration	0.11	0.50	0.50	0.50		0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	7.24	0.16	1.08	2.12		3.57	2.73
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.83	0.17	0.52	0.52		0.79	0.83
d, Delay for Lane Group [s/veh]	45.31	5.49	16.27	17.28		35.99	35.47
Lane Group LOS	D	A	B	B		D	D
Critical Lane Group	Yes	No	Yes	No		No	Yes
50th-Percentile Queue Length [veh/ln]	4.60	1.28	6.25	6.49		6.76	5.76
50th-Percentile Queue Length [ft/ln]	114.88	31.99	156.13	162.32		168.93	143.90
95th-Percentile Queue Length [veh/ln]	8.11	2.30	10.34	10.67		11.02	9.69
95th-Percentile Queue Length [ft/ln]	202.77	57.58	258.59	266.79		275.51	242.26

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	45.31	5.49	0.00	0.00	16.54	17.28	0.00	0.00	0.00	35.99	35.99	35.54
Movement LOS	D	A			B	B				D	D	D
d_A, Approach Delay [s/veh]	18.17				16.61		0.00		35.66			
Approach LOS	B				B		A		D			
d_I, Intersection Delay [s/veh]	22.70											
Intersection LOS	C											
Intersection V/C	0.649											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	34.68
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	2.341
Crosswalk LOS	F	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	866	222	0	955
d_b, Bicycle Delay [s]	14.46	35.57	45.01	12.28
I_b,int, Bicycle LOS Score for Intersection	2.065	2.320	4.132	2.985
Bicycle LOS	B	B	D	C

Sequence

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



**Intersection Level Of Service Report
Intersection 37: Bear St at SR-73 NB Ramps**

Control Type:	Signalized	Delay (sec / veh):	54.7
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.023

Intersection Setup

Name	Bear St			Bear St			SR-73 NB Ramps			SR-73 NB Ramps		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵			↵						+ ↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0	0	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		
Crosswalk	No			No			No			Yes		

Volumes

Name	Bear St			Bear St			SR-73 NB Ramps			SR-73 NB Ramps		
Base Volume Input [veh/h]	245	769	0	0	1313	182	0	0	0	496	0	1638
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	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]	245	769	0	0	1313	182	0	0	0	496	0	1638
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	61	192	0	0	328	46	0	0	0	124	0	410
Total Analysis Volume [veh/h]	245	769	0	0	1313	182	0	0	0	496	0	1638
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	105
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Split	Split
Signal Group	1	6	0	0	2	0	0	0	0	0	7	7	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	Lead	-	-
Minimum Green [s]	6	10	0	0	10	0	0	0	0	0	6	6	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	30	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0
Split [s]	14	46	0	0	32	0	0	0	0	0	59	59	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	11	0	0	0	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No							No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No			No							No	
Maximum Recall	No	No			No							No	
Pedestrian Recall	No	No			No							No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C		C	R
C, Cycle Length [s]	105	105	105	105		105	105
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00
g_i, Effective Green Time [s]	10	43	29	29		54	54
g / C, Green / Cycle	0.10	0.41	0.28	0.28		0.51	0.51
(v / s)_i Volume / Saturation Flow Rate	0.14	0.22	0.28	0.28		0.45	0.48
s, saturation flow rate [veh/h]	1781	3560	3560	1757		1708	2813
c, Capacity [veh/h]	172	1466	986	486		875	1441
d1, Uniform Delay [s]	47.41	23.17	37.96	37.96		22.76	24.25
k, delay calibration	0.11	0.50	0.50	0.50		0.37	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	197.19	1.35	31.45	47.24		9.50	4.08
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	1.42	0.52	1.01	1.02		0.88	0.95
d, Delay for Lane Group [s/veh]	244.60	24.52	69.41	85.20		32.27	28.33
Lane Group LOS	F	C	F	F		C	C
Critical Lane Group	Yes	No	No	Yes		No	Yes
50th-Percentile Queue Length [veh/ln]	13.92	7.28	16.71	18.62		18.21	15.81
50th-Percentile Queue Length [ft/ln]	347.92	182.02	417.67	465.48		455.32	395.19
95th-Percentile Queue Length [veh/ln]	22.51	11.71	23.57	26.09		25.21	22.33
95th-Percentile Queue Length [ft/ln]	562.70	292.65	589.34	652.31		630.29	558.20

Movement, Approach, & Intersection Results

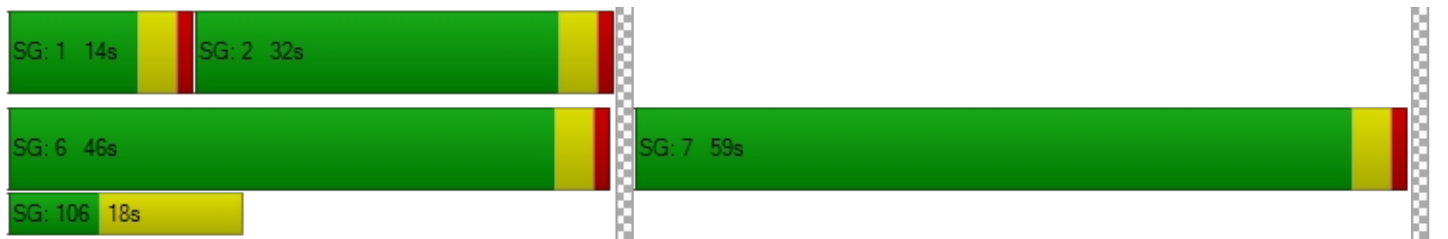
d_M, Delay for Movement [s/veh]	244.60	24.52	0.00	0.00	73.21	85.20	0.00	0.00	0.00	32.27	32.27	28.90
Movement LOS	F	C			E	F				C	C	C
d_A, Approach Delay [s/veh]	77.69			74.67			0.00			29.75		
Approach LOS	E			E			A			C		
d_I, Intersection Delay [s/veh]	54.68											
Intersection LOS	D											
Intersection V/C	1.023											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	42.07
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	2.659
Crosswalk LOS	F	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	800	533	0	1048
d_b, Bicycle Delay [s]	18.90	28.23	52.49	11.90
I_b,int, Bicycle LOS Score for Intersection	2.396	2.382	4.132	5.081
Bicycle LOS	B	B	D	F

Sequence

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





Date: August 18, 2023
Prepared by: Meaghan Truman, mtruman@epdsolutions.com
To: Maryam Molavi, California Department of Transportation, Planning Division
Project: Related Bristol Specific Plan Supplemental EIR
Subject: **Response to California Department of Transportation Comment Letter, Dated April 13, 2023**

On behalf of the City of Santa Ana, EPD Solutions, Inc. has prepared responses to the comments provided by the California Department of Transportation (Caltrans) on April 13, 2023, on the Notice of Preparation (NOP) for the Related Bristol Specific Plan Supplemental EIR. Specific comments are bracketed and numbered in the attached letter for reference purposes and correspond to the following responses. In addition, a memorandum was prepared by the Project Transportation Engineer, Linscott, Law, & Greenspan, providing responses to technical comments and questions provided by Caltrans and is referenced herein.

Response A1. This comment states that Caltrans has received the NOP, provides a summary of the proposed Project, and states that it is a responsible agency and has provided comments. This comment provides the basis for the Caltrans letter and is general in nature. The comment does not reference a specific environmental concern for analysis within the Draft Subsequent EIR. The City recognizes Caltrans as a responsible agency and welcomes future coordination related to transportation improvements.

Response A2. The comment requests the preparation of a Vehicle Miles Traveled (VMT) based Traffic Impact Study (TIS). Consistent with the comment, a VMT Screening Memo was prepared for the Project and included as Appendix O of the Draft Supplemental EIR. The VMT analysis determined that the Project screens out of a full VMT analysis per Criteria 3 of the City of Santa Ana Traffic Impact Study Guidelines as the Project site is located in a Transit Priority Area and is consistent with the Southern California Association of Governments (SCAG) Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS); and therefore, would result in less than significant impacts related to VMT.

Response A3. The comment states that the TIS should identify safety or operational impacts to existing or proposed state facilities. The Traffic Impact Analysis (TIA) prepared for the proposed Project includes an analysis of existing and projected peak hour operating conditions at nine State-controlled study intersections in Section 9 of the TIA, as summarized in the attached memorandum prepared by Linscott, Law, & Greenspan. As discussed in the attached traffic memorandum, full buildout of the Project would not result in any safety or operational impacts to State facilities in the Existing Plus Project Phase 1, Existing Plus Project Phases 1 and 2, Existing Plus Project Phases 1, 2, and 3, Year 2030, Year 2032, or Year 2036 analysis scenarios. As discussed in Section 9.7 of the TIA, operational deficiencies and queueing past ramp storage capacity would occur in the Year 2045 Plus Project Phases 1, 2, and 3 analysis scenario for the Bear Street at SR-73 northbound ramp; however, these

deficiencies would also occur in the Year 2045 scenario without the Project. Therefore, these deficiencies would result from the overall buildout of the area and are not a direct result of Project implementation.

Response A4. The comment states that the TIS should include a queueing analysis for on- and off-ramps from local streets within the State right-of-way, and potential spill beyond the storage lane needs to be addressed for safety concerns. A queueing analysis was conducted for the Project site as part of the TIA, which determined that the Project would result in adequate storage capacity for the Caltrans on- and off-ramps. At ramps in which the queueing exceeds the storage provided, spillover queues can be accommodated upstream of the turn pockets. Summaries of the results are provided in Tables 9-2, 9-4, 9-6, 9-8, 9-10, 9-12, and 9-14 of the TIA and included in the attached traffic memorandum, which shows that none of the analysis scenarios would result in the potential for spill beyond the designated storage lane with the exception of the Year 2045 scenario for the Bear Street at the SR-73 northbound ramp, which would also occur without the Project. As such, the Project would not cause a potential safety concern at Caltrans intersections. In addition, queueing and potential safety effects of specific development projects would be analyzed by the City's Traffic Engineering Division as part of the City's development review and permitting process.

Response A5. This comment states that Caltrans supports inclusion of bicycle parking and recommends the use of the "Essentials of Bike Parking" guide for installation of bike storage. The proposed Project is a Specific Plan to guide future development in the area, and the Project does not include a specific development. As described in Section 3.0, *Development Plan*, of the Specific Plan, bicycle racks would be provided in conjunction with commercial, office, and residential implementing projects. Section 4.0, *Development Regulations*, provides the number of bicycle spaces and racks that are required per development. However, no specific development project is being proposed; thus, no exact construction features and details regarding bicycle rack designs exist. Instead, specifics regarding storage sizing and distance of the bike parking from walls and objects would be included in the Development Project Review (DPR) package of future proposed development project applications, which would be reviewed by the City as part of the permitting process. This comment is related to Project features and does not provide any concerns or questions regarding the content or adequacy of the Draft Supplemental EIR.

Response A6. This comment states that the design principles of Complete Streets should be implemented. As detailed on page 5.13-2 of the Draft Supplemental EIR, the proposed Project would implement the City's complete streets planning of the Mobility Element by providing new and improved pedestrian and bicycle circulation facilities near existing bus routes. Also, pursuant to General Plan Policy M-1.6, the proposed Specific Plan facilitates various street improvements that include widened parkways, bike lanes, improved sidewalk conditions, and a greenlink pedestrian path that would accommodate all users.

Also, Chapter 5.0 of the proposed Specific Plan includes the Complete Street principles (pg. 5-3). Section 3.4.1, *Vehicular Circulation*, of the Specific Plan lists proposed street improvements. In addition, pedestrian zone street cross sections are shown on pages 4-11 to 4-14 of the Specific Plan. Also, development specific details for each proposed

development within the Specific Plan area, such as bike parking, pedestrian LED lighting, and signage would be reviewed by the City as part of the permitting process. This comment is related to Project features and does not provide any concerns or questions regarding the content or adequacy of the Draft Supplemental EIR.

Response A7. This comment recommends the use of shared drop-off locations and automated parcel systems for high-density residential developments. Shared on-street loading zones are permitted under the Specific Plan as per Chapter 5.0, *Design Guidelines* (pg. 5-7). As previously mentioned, no specific development project is being proposed; thus, no exact features and details regarding shared drop-off locations, loading zones, and automated parcel systems designs exist. However, future developments within the Specific Plan area may consider the use of automated parcel systems and circulation designs, including drop-off, loading zones, and parcel systems would be reviewed by the City as part of the permitting process. This comment is related to Project features and does not provide any concerns or questions regarding the content or adequacy of the Draft Supplemental EIR.

Response A8. This comment recommends off-street truck parking to preserve on-street space for alternative modes of transportation. Similarly, alley space and similar areas should be used if available. As per Chapter 3.0 (pg. 3-4) of the Specific Plan, parking would be largely provided through above/underground structures. In addition, there would be designated delivery/service access to the retail portion of the Project site, as shown in Figure 3-7 of the Specific Plan. As previously mentioned, no specific development project is being proposed; thus, no exact features and details regarding truck parking needs exist. However, future developments within the Specific Plan area would include parking facilities that would be reviewed by the City as part of the permitting process. This comment is related to Project truck parking features and does not provide any concerns or questions regarding the adequacy of the Draft Supplemental EIR.

Response A9. This comment requests for on-street truck parking to be wide enough for freight trucks, as to not encroach bike lanes or street lanes. As per Section 4.5, *Loading*, of the Specific Plan, loading zones must be a minimum of 8 feet in width (pg. 4-16). As previously mentioned, no specific development project is being proposed; thus, no exact features and details regarding truck parking exist. However, future developments within the Specific Plan area would include parking facilities that would be reviewed by the City, including its Planning and Building and its Public Works agencies, as part of the permitting process, which would ensure that potential conflict between loading areas and bicycle or street lanes would not occur. This comment is related to Project design features and does not provide any concerns or questions regarding the adequacy of the Draft Supplemental EIR.

Response A10. This comment recommends on-street freight-only parking and delivery time windows. As per Section 4.5, *Loading*, of the Specific Plan, every building involving the receipt or distribution by vehicle of materials or merchandise incidental to carrying on such activity shall be provided with at least one (1) space for standing, loading and unloading of vehicles to avoid undue interference with the public use of on-site travel aisles, streets, private roadways, and alleys. Further, on-street loading times should be minimized during the business hours of 11 am – 5 pm where feasible (pg. 4-16). As previously mentioned, no specific development project is being proposed; thus, no exact features and details

regarding freight truck parking exist. However, the need and location for freight truck parking would be considered in future proposed developments within the Specific Plan area. This comment is related to Project features and does not provide any concerns or questions regarding the adequacy of the Draft Supplemental EIR.

Response A11. This comment states that speed signs for truckers should be posted throughout individual study areas. Off-site street improvements would include appropriate speed signage, as required by the City's traffic engineering requirements and implemented through project specific permitting. Section 5.10, *Signage*, of the Specific Plan states that a Master Sign Program would be developed for the Specific Plan area. Onsite roadways would be required to provide speed signs pursuant to applicable state and City requirements that would also be verified through the City's development permitting procedures. This comment is related to Project features and does not provide any concerns or questions regarding the adequacy of the Draft Supplemental EIR.

Response A12. This comment states that bike parking may need to accommodate cargo bikes. As mentioned under Section 4.4, *Parking*, of the Specific Plan (pg. 4-15), bike parking would be provided based on use type. As described previously in Response A5, no specific development project is being proposed; thus, no exact construction features and details regarding bicycle rack designs exist. Instead, specifics regarding bike parking would be reviewed by the City as part of the permitting process for individual development projects. This comment is related to Project features and does not provide any concerns or questions regarding the adequacy of the Draft Supplemental EIR.

Response A13. This comment states that Caltrans recognizes the responsibility to provide equitable transportation systems for underserved communities. This comment does not raise any specific environmental concern with the analysis within the Draft Supplemental EIR or requirements of the proposed Specific Plan.

Response A14. This comment recommends a discussion on equity and transportation accessibility in the EIR. According to Section 15382 of the CEQA Guidelines, "[a]n economic or social change by itself shall not be considered a significant impact on the environment." Socioeconomic characteristics should be considered in CEQA only to the extent that they create adverse impacts on the physical environment.

However, this Project would be consistent with the policies set forth in the General Plan Update (as discussed in Section 5.8, *Land Use*, of the Draft Supplemental EIR), in which multiple policies relate to environmental justice. In addition, the Draft Supplemental EIR Section 3.0, *Project Description*, and Section 5.13, *Transportation*, describe that implementation of the proposed Specific Plan would provide new multimodal transportation facilities, including, sidewalks, bicycle lanes, bus route accessibility, and roadway improvements that would increase transportation accessibility to all segments of the City's population.

Response A15. This comment states that a discussion of the City's multimodal mobility strategies should be included, as well as a discussion of connections to existing services. As described in the previous response, the proposed Project would increase multimodal mobility. Section 3.4.4, *Transit*, of the Specific Plan lists the existing Orange County Transportation Authority

(OCTA) bus routes that are adjacent to the Specific Plan area. In addition, Section 3.4.5, *Rideshare*, of the Specific Plan states that rideshare locations would be specifically located as a part of a DPR package for future development projects. The Project includes development and improvements of existing sidewalks and bicycle routes that would connect to existing nearby developments and bus stops. OCTA bus routes and their connections to nearby train stations are also discussed in Section 5.13, *Transportation*, of the Draft Supplemental EIR.

Response A16. This comment recommends the use of public transit within the Project site. As discussed in the Draft Supplemental EIR Section 5.13.3 and 5.13.6, the Project is within a Transit Priority Area and High Quality Transit Area and would encourage the use of sidewalks, bike routes, and the existing transit that is adjacent to the Project site. The Project is located in the immediate vicinity of six OCTA bus routes, some of which connect to Metrolink stations and will connect to the future OC Streetcar that is under construction. As detailed on page 5.13-12 of the Draft Supplemental EIR, the proposed Project would provide new facilities to enhance the use of public transit, pedestrian, and bicycle mobility. The Specific Plan includes provisions for the addition of a Class IV bike lane on Bristol Street, MacArthur Boulevard, and Sunflower Boulevard with a median buffer, which would enhance bicycle facilities within the Specific Plan's vicinity.

Response A17. This comment states that adequate wayfinding signage to transit stops should be provided. Section 5.10, *Signage*, of the Specific Plan states that a Master Sign Program would be developed, to provide design guidance within the Specific Plan area. The Master Sign Program would include provision for wayfinding signs. This comment does not provide any concerns or questions regarding the adequacy of the Draft Supplemental EIR.

Response A18. This comment states that any Project work within the vicinity of the State right of way must obtain an encroachment permit. Section 12.0 of the Traffic Study lists the recommended intersection improvements to be completed by the Project, as well as cumulative projects within the vicinity. One improvement under the jurisdiction of Caltrans is recommended (No. 37 under Section 12.2.7, *Year 2045 Buildout Plus Project Phases 1, 2, and 3 Recommended Improvements*) on Bear Street at SR-73 NB Ramps, which recommends restriping the existing westbound left-turn lane to provide a shared left/right turn lane. At the time this improvement needs to be implemented, the City would coordinate with Caltrans and an encroachment permit would be obtained as required.

Response A19. This comment requests continued coordination with Caltrans for any future developments that could potentially impact State transportation facilities. This comment does not provide any concerns or questions regarding the adequacy of the Draft Supplemental EIR. Caltrans District 12 will remain on the mailing list for the Project and will receive notification of availability of the Final Supplemental EIR, in addition to all other public notices for development projects that could potentially impact Caltrans facilities.

California Department of Transportation



DISTRICT 12
1750 East 4th Street, Suite 100 | SANTA ANA, CA 92705
(657) 328-6000 | FAX (657) 328-6522 TTY 711
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April 13, 2023

Ali Pezeshkpour
City of Santa Ana Planning Division
20 Civic Center Plaza, M-20
Santa Ana, CA 92701



File: IGR/CEQA
SCH#2020029087
LDR LOG #2020-02243
I-405 & SR-55

Dear Mr. Pezeshkpour

Thank you for including the California Department of Transportation (Caltrans) in the review of the Notice of Preparation of a Supplemental Environmental Impact Report and Public Scoping Meeting for the Related Bristol Specific Plan Project. The Project proposes a Specific Plan to replace the existing General Commercial (C2) and Regional Commercial (CR) zoning on the Project site. The Specific Plan would include a site-specific plan for the Project site, identifying the allowable site uses, development standards, design guidelines, and the processes and procedures for the approval of future development within the Specific Plan area. In addition to the proposed Specific Plan, the Project also includes redevelopment of the site in three phases. The Project proposes to demolish the existing shopping center and related infrastructure and provide a mixed-use development with (i) up to 3,750 multi-family residential units; (ii) up to 350,000 sf of commercial uses; (iii) a hotel with up to 250 rooms; (iv) a senior living/continuum of care use with up to 200 units; and (v) approximately 13.1 acres of parks, pedestrian paseos, and common open space. The Project would result in a FAR of 2.7 and density of 92 du/ac. Parking would be provided by above- and below-ground parking structures providing shared parking as well as ground level parking. The nearest state facility to the project site is Interstate 405 (I-405-).

A1

The mission of Caltrans is to provide a safe and reliable transportation network that serves all people and respects the environment. Caltrans is a responsible agency on this project and has the following comments:

Traffic Operations

1. A Vehicle Miles Traveled (VMT) based Traffic Impact Study (TIS) should be provided for this project. Please use the Governor's Office of Planning and research guidance to identify VMT related impacts.

A2

- 2. The TIS should identify the proposed project's near term and long-term potential safety or operational impacts on or adjacent to any existing or proposed state facilities. A3
- 3. The TIS needs to address potential impacts on storage capacity for the right turn and left turn pockets for the on-ramps and off-ramps from local city streets within the State right of way. In addition, all potential spill beyond designated storage lane must be addressed for safety concern. A4

System Planning

- 4. Caltrans supports the inclusion of bicycle storage facilities pursuant to CALGreen code. Caltrans also recommends following bicycle parking best practices described in the “Essentials of Bike Parking” guide created by the Association of Pedestrian and Bicycle Professionals (link to online PDF: <https://www.apbp.org/Publications>). Bike parking should be installed a minimum of 24” away from walls and other objects (e.g., trash cans, plants, etc.). With the growing popularity of electric bikes and cargo/utility bikes (which tend to be bigger and heavier), Caltrans also recommends that bicycle storage facilities be designed to accommodate a range of bicycle styles, sizes, and weights. A5
- 5. Caltrans supports the design of Complete Streets that include high-quality pedestrian, bicycle, and transit facilities that are safe and comfortable for users of all ages and abilities. Improvements may include providing secure bicycle parking, pedestrian-oriented LED lighting, wayfinding signage, and comfortable connections to nearby active transportation and/or transit facilities. Complete Streets improvements also promote regional connectivity, improve air quality, reduce congestion, promote improved first-/last-mile connections, and increase safety for all modes of transportation. Continue to incorporate Complete Streets in project development. A6

Transportation Planning (Goods Movement/Freight)

- 6. Consider how many individual packages will be delivered daily to individual residences within the areas identified for increased housing production. Shared drop-off locations can help reduce the amount of driving done by delivery trucks and can increase the efficiency of deliveries in densely developed areas. Similarly, high-density residential developments should consider automated parcel systems (i.e., Amazon Lockers) so that deliveries can be made with one truck stop instead of multiple stops to individual residences. A7

- 7. As the General Plan is implemented, consider accounting for off-street truck parking to help free up on-street space for other modes, such as city traffic, walking, and bicycling. Similarly, utilize alley space or similar areas, if available, to reduce the need for on-street parking which may conflict with highway/street flows. | A8
- 8. If truck parking (i.e., for home deliveries) is to be on-street, ensure the width of the parking lane is wide enough for freight trucks without encroaching on bicycle lanes or street lanes. | A9
- 9. Please consider designated on-street freight-only parking and delivery time windows to reduce the need for double parking. This strategy also helps prevent street traffic congestion. | A10
- 10. Please ensure that, throughout the individual study areas, the city provides posted speed signs for truckers to follow. | A11
- 11. Bicycle parking design may need to accommodate cargo bikes, such as for food delivery services, to encourage and facilitate the growing use of food delivery services and parcel deliveries. This can alleviate the need for delivery trucks and associated GHG emissions. | A12
- 12. Caltrans recognizes our responsibility to assist communities of color and under-served communities by removing barriers to provide a more equitable transportation system for all. | A13

Equity

- 13. The Department firmly embraces racial equity, inclusion, and diversity. These values are foundational to achieving our vision of a cleaner, safer, and more accessible and more connected transportation system. Please consider including a discussion on equity in the environmental document. | A14

Transit

- 14. Provide discussion about City's multimodal mobility strategies. City should look for transit opportunities to connect current bus services and expand services for regional connectivity to include connectivity to the closest train station for Metrolink and Amtrak Pacific Surfliner rail services. | A15

15. Encourage the use of transit among future residents, visitors, and workers of the development. Increasing multimodal transportation will lead to a reduction to congestion, Vehicle Miles Traveled, and improve air quality.

A16

16. Provide adequate wayfinding signage to transit stops within the project vicinity and local roadways.

A17

Encroachment Permit

17. Any project work proposed in the vicinity of the State right of way would require an encroachment permit and all environmental concerns must be adequately addressed. If the environmental documentation for the project does not meet Caltrans's requirements for work done within State right of way, additional documentation would be required before approval of the encroachment permit. Please coordinate with Caltrans to meet requirements for any work within or near State right of way. For specific details for Encroachment Permits procedure, please refer to the Caltrans's Encroachment Permits Manual at: <http://www.dot.ca.gov/hq/traffops/developserv/permits>

A18

Please continue to coordinate with Caltrans for any future developments that could potentially impact State transportation facilities. If you have any questions, please do not hesitate to contact Maryam Molavi, at Maryam.Molavi@dot.ca.gov.

A19

Sincerely,



Scott Shelley
Branch Chief, Regional-LDR-Transit Planning
District 12