Appendix A 2045 SOABM Travel Demand Model No-Build Refinements and South Stage Build Scenarios Requests

South Stage Road
Extension Project

Technical Memorandum

September 26, 2023 Project# 27003.014

To: Jin(xiang) Ren, PE, Oregon Department of Transportation Planning Analysis Unit

cc: Lisa Cornutt, Oregon Department of Transportation
Matt Brinkley and Karl MacNair, City of Medford
Joe Slaughter, City of Phoenix

From: Marc Butorac, PE, PTOE, PMP; Matt Bell; and Kelly Lausten, PE

RE: 2045 Southern Oregon Activity-Based Model (SOABM) Travel Demand Model No Build Refinements and South Stage Build Scenarios Requests

INTRODUCTION

This memorandum summarizes requested land use changes to the 2045 Southern Oregon Activity-Based Model (SOABM) for the purposes of the South Stage Extension Plan. The changes are based on discussions with the City of Medford and City of Phoenix and reflect expected future growth and development. The changes include modifications to the 2045 roadway network, the division of several Transportation Analysis Zones (TAZs) into new TAZs, addition of centroid connectors, and reallocation of housing and employment growth TAZ assignments, with a net zero change in total housing and employment growth for the area. In addition, two 2045 South Stage Extension Build Scenarios (Overpass and Interchange) requests are identified for model updates.

BACKGROUND

A transportation analysis is being conducted as part of the South Stage Extension Plan to evaluate an overcrossing and interchange alternative along I-5 between the Phoenix/Fern Valley (Exit 24) and South Medford (Exit 27) interchanges. The South Stage extension project is part of the adopted City of Medford Transportation System Plan (Projects 537A and 537B). The analysis includes an assessment of existing conditions, as well as future year 2045 conditions under three scenarios:

- No-build: assumes South Stage Road maintains its existing terminus just east of OR 99, along with an additional section of South Stage Road between the future extension of Golf View Drive and Phoenix Road (see below)

- Build with overpass: assumes South Stage Road is extended to connect to Phoenix Road, with an overpass at I-5
- Build with interchange: assumes South Stage Road is extended to connect to Phoenix Road, with an interchange at I-5

REQUESTED MODEL CHANGES

Based on a review of the current 2017 and 2045 SOABM and the needs of the South Stage transportation analysis, the City of Medford, City of Phoenix, and project team identified the following model changes and formally requests these updates be incorporated into the future model.

Roadway Network

The following changes are requested to the 2045 model to reflect improvements assumed to be in place, based on the Medford Transportation System Plan:

1. Phoenix Road widening
2. Partial South Stage Road extension (Phoenix Road to Golf View Drive extension)
3. Coal Mine Road realignment
4. Golf View Drive extension (Juanipero Way to South Stage Road extension)
5. East-west collector along southern UGB
6. Signalization Juanipero Way/North Phoenix Road intersection
7. Additional local roadway with Centennial Development
8. Additional collector roadway with Centennial Development
9. Stanford Avenue (collector) between Barnett Road and Coal Mine Road (Figure 1B)
10. Loan Oak Drive (collector) between Cherry Lane and Coal Mine Road (Figure 1B)

The changes are illustrated in Figure 1A and Figure 1B with yellow text boxes and numbers corresponding to the list above. The green text boxes indicate assumed intersection control and layout.

Figure 1A. Proposed Roadway Network Changes

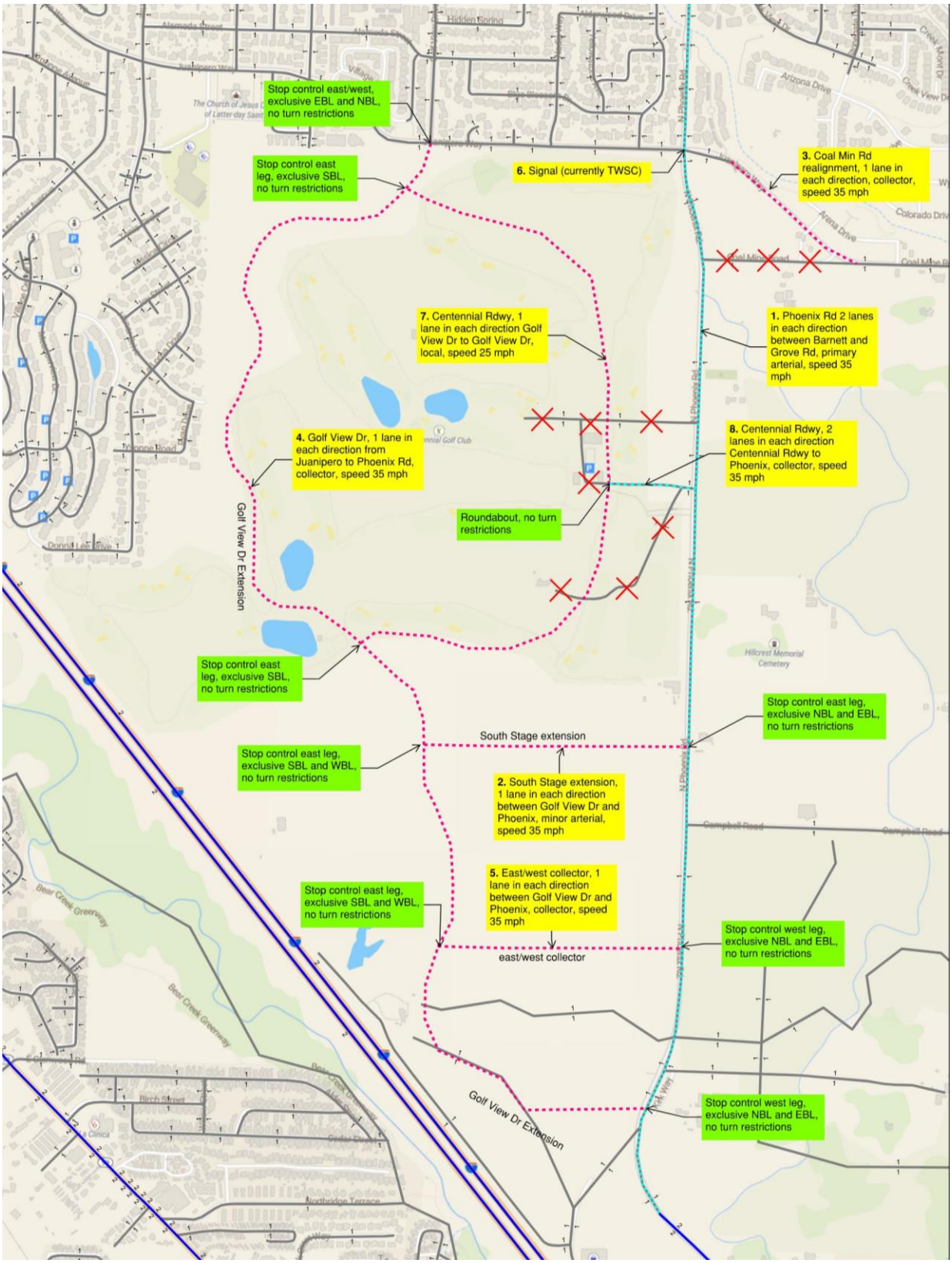
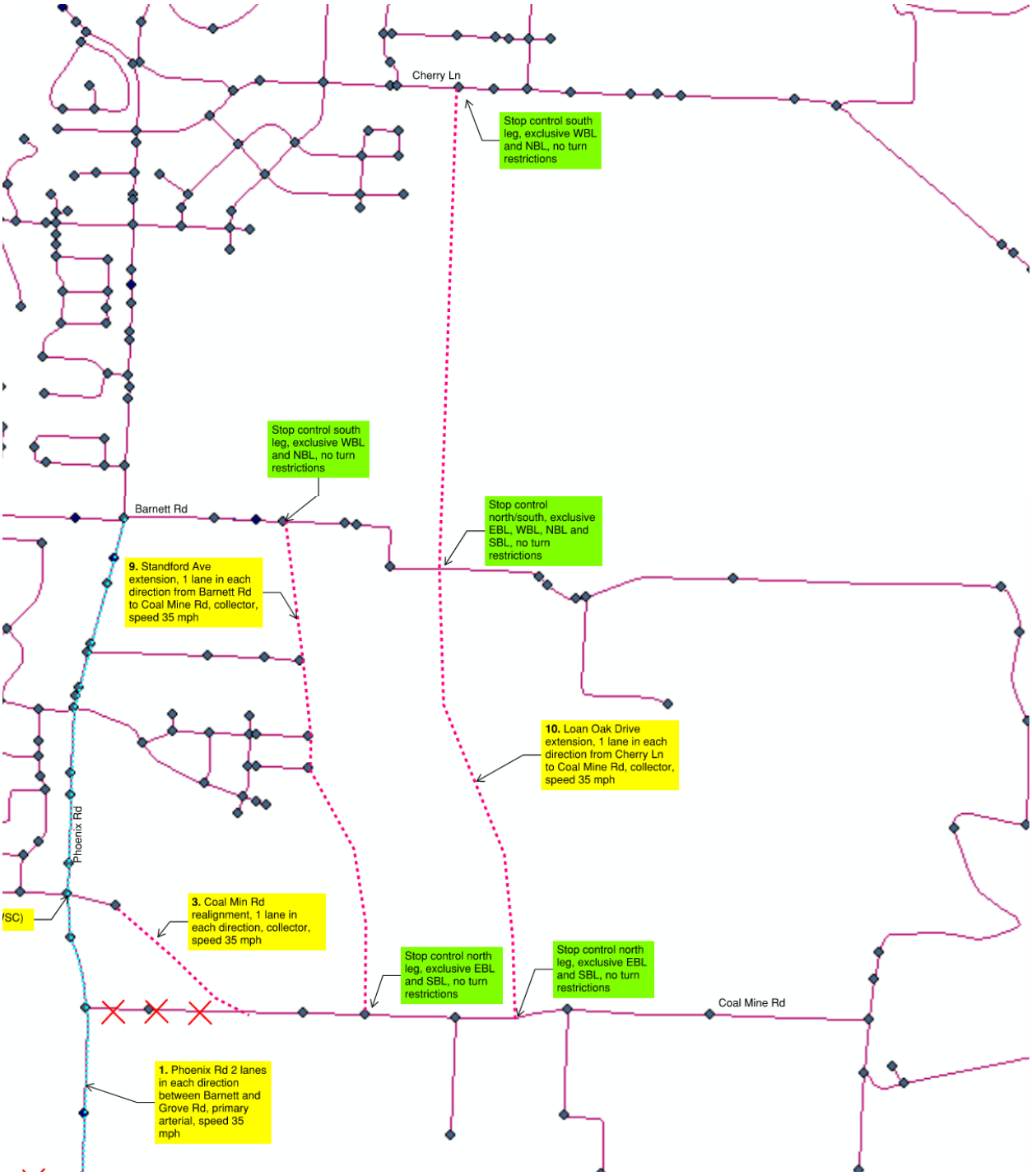


Figure 1B. Proposed Roadway Network Changes



Reallocation of Household and Employment Growth

There are three areas where a reallocation of household and employment growth is proposed to reflect anticipated future development, shown in Table 1. As indicated in the table, there is a net zero change in total employment and household growth within each area.

Table 1. Adjustments to 2045 Household and Employment Growth

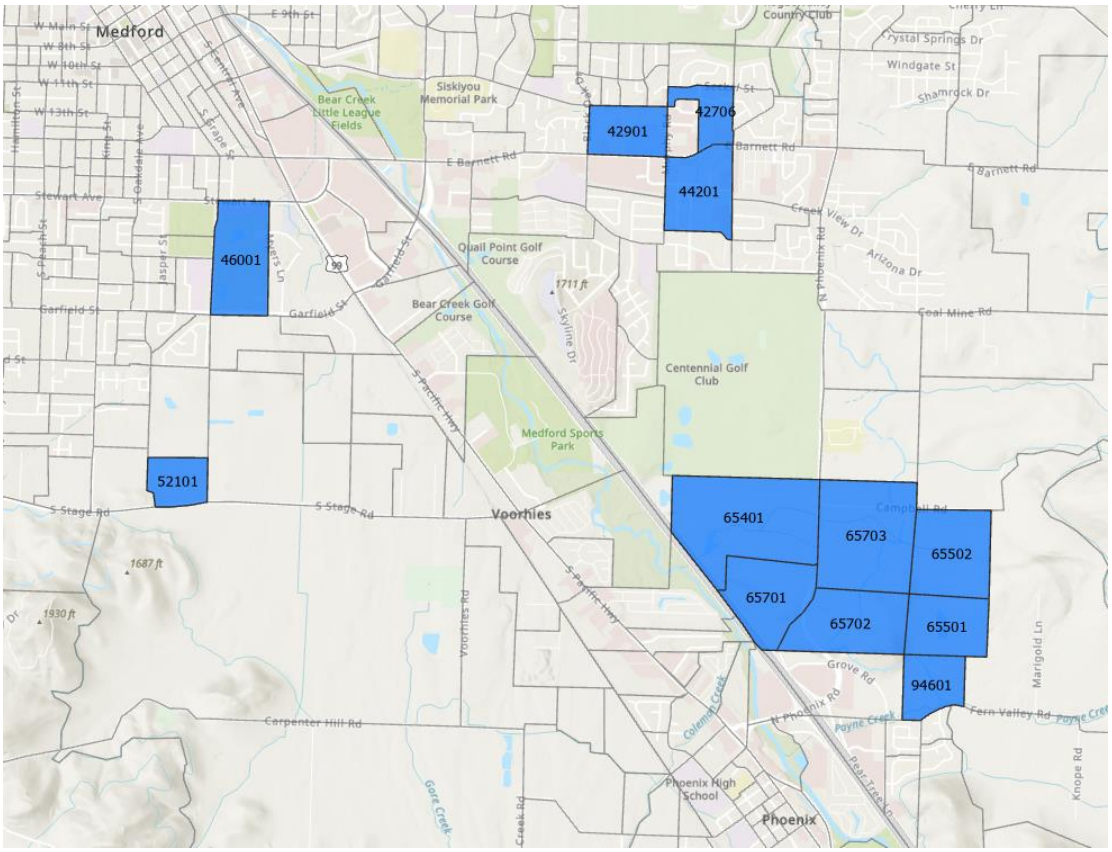
MAZ	Households				Employment				Notes
	2017	2045 (model)	2045 (pro-posed)	Growth (2017 to 2045 proposed)	2017	2045 (model)	2045 (pro-posed)	Growth (2017 to 2045 proposed	
65401	3	4	**141**	**138**	0	298	**525**	525	Expect more growth
65501	0	240	**25**	**25**	0	202	**20**	20	Not in UGB, expect lower growth, shift to surrounding area
65502	0	0	**58**	**58**	0	16	**100**	100	Expect more growth, smaller TAZ
65701	0	0	**50**	**50**	0	94	**275**	275	Expect more growth, smaller hilly TAZ
65702	2	42	**110**	**108**	2	1,004	**351**	349	Employment growth overloaded, spread to surrounding TAZs
65703	0	0	**140**	**140**	0	16	**450**	450	Expect more growth
94601	3	263	**25**	**22**	0	101	**10**	10	Not in UGB, expect lower growth, shift to surrounding area
Total	***8***	***549***	***549***	***541***	***2***	***1,731***	***1,731***	***1,729***	***No net change***
42706	70	80	80	10	62	66	**316**	**254**	New oncology building proposed
42901	0	0	0	0	3,269	4269	**3,919**	**650**	Shift some growth from hospital to surrounding area
44201	314	415	415	101	492	606	**706**	**214**	
Total	***384***	***495***	***495***	***111***	***3,823***	***4,941***	***4,941***	***1,118***	***No net change***
46001	1	101	**1**	**0**	273	302	302	29	Don't expect household growth on Golf Course property
52101	0	0	**100**	**100**	0	16	16	16	
Total	***1***	***101***	***101***	***0***	***273***	***318***	***318***	***0***	***No net change***

Bold indicates change in proposed households or employment in 2045 scenario

The 2045 households and employment and growth from 2017 are also provided in the attached excel file.

The MAZs listed in the table are shown in Figure 2.

Figure 2. MAZs with Adjustments to 2045 Household and Employment Growth



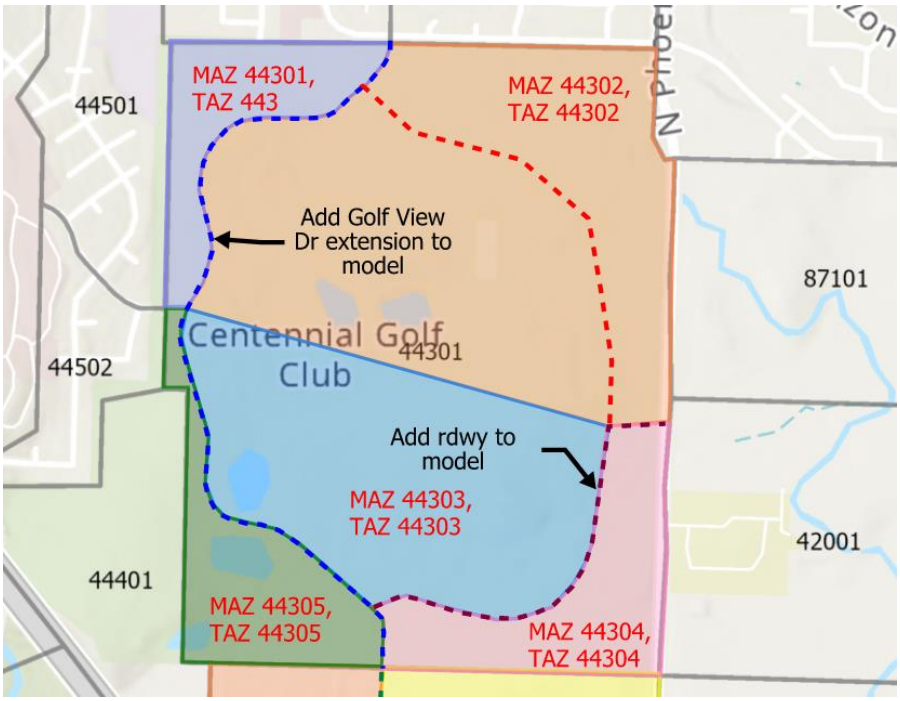
TAZ Subdivisions and Centroid Connectors

The subdivision of the following TAZs is requested to refine the assignment of trips to the transportation system, reflect significant roadways, and allow the model to evaluate the sensitivity of the proposed extension with the overpass and interchange build alternatives and future roadway network.

1. SPLIT TAZ 443 INTO 5 TAZS USING FUTURE ROADWAY NETWORK

As shown in Figure 3, it is proposed to split TAZ 443 into five TAZs using the future extension of Golf View Drive and additional roadways envisioned in the Medford TSP. This split will be important to understand how residents use Golf View Drive to access Barnett Road and South Stage Road under the various no-build and build scenarios.

Figure 3. TAZ 443 Division



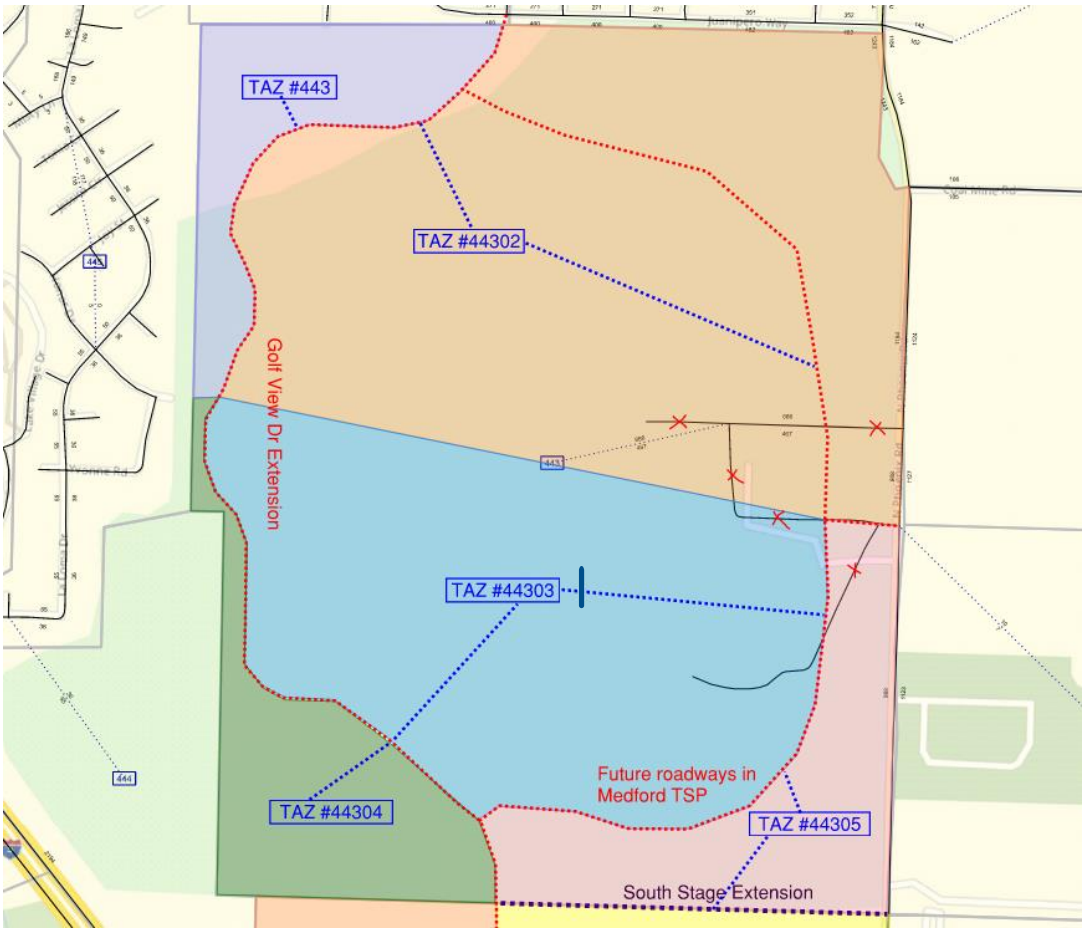
The proposed employment and household split for the five TAZs is provided in Table 2. The 2045 households and employment and growth from 2017 are also provided in the attached excel file.

Table 2. Households and Employment (existing TAZ 443)

MAZ	TAZ	Households			Employment			Notes
		2017	2045	Growth	2017	2045	Growth	
44301	443	2	1,702	1,700	0	296	296	**Existing TAZ**
44301	443	2	607	605	0	0	0	Multi-family proposed
44302	44302	0	400	400	0	50	50	Some employment-generating uses proposed, majority of residential development
44303	44303	0	220	220	0	0	0	Residential development
44304	44304	0	475	475	0	60	60	Some employment-generating uses proposed, some multi-family proposed
44305	44305	0	0	0	0	186	186	Majority of employment-generating uses located in this area
	Total	***2***	***1,702***	***1,700***	***0***	***296***	***296***	***No net change***

Figure 4 illustrates the proposed centroid connectors for the additional TAZs.

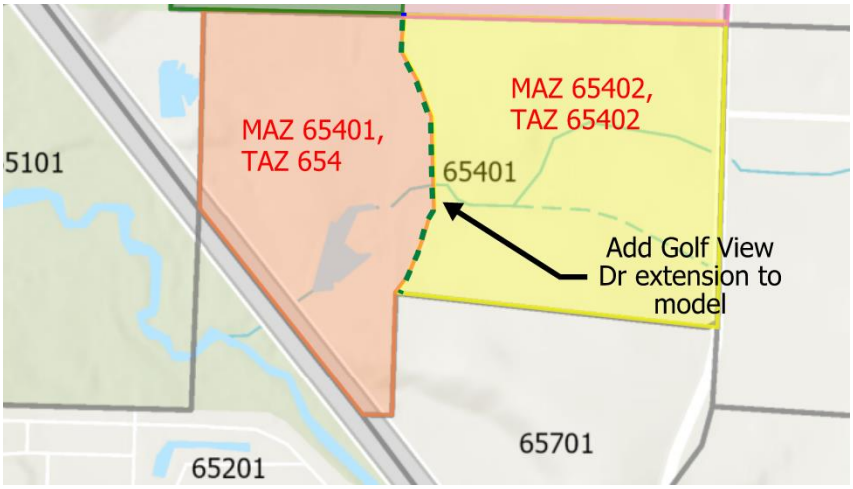
Figure 4. Additional TAZs, Roadways and Centroid Connectors (existing TAZ 443)



2. SPLIT TAZ 654 INTO 2 TAZS USING FUTURE EXTENSION OF GOLF VIEW DRIVE

As shown in Figure 5, it is proposed to split TAZ 654 into two TAZs using the future extension of Golf View Drive. This split will be important to understand how residents use Golf View Drive to access South Stage Road and Phoenix Road under the various no-build and build scenarios.

Figure 5. TAZ 654 Subdivision



The proposed employment and household split for the TAZs is provided in Table 3. The 2045 households and employment and growth from 2017 are also provided in the attached excel file.

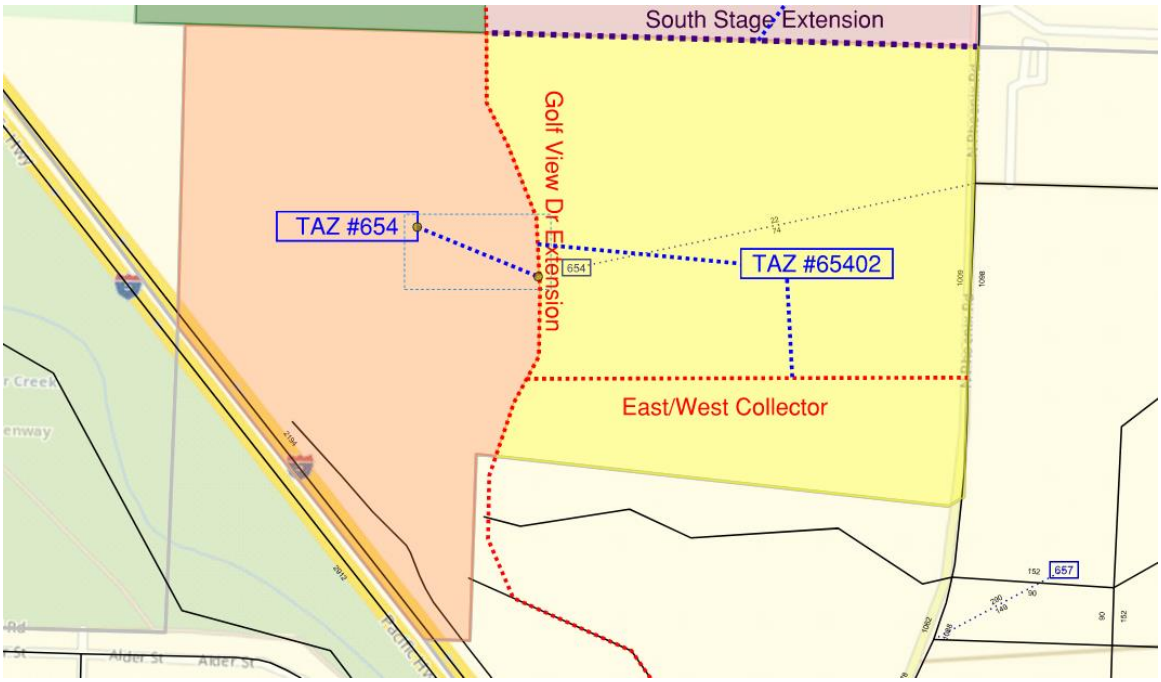
Table 3. Households and Employment (Existing TAZ 654)

MAZ	TAZ	Households			Employment			Notes
		2017	2045	Growth	2017	2045	Growth	
65401	654	3	141	138	0	525	525	**Existing TAZ**
65401	654	1	45	44	0	175	175	
65402	65402	2	96	94	0	350	350	More development potential due to location
	Total	***3***	***141***	***138***	***0***	***525***	***525***	***No Net Change***

Note: Household and employment numbers reflect those proposed in Table 1

Figure 6 illustrates the proposed centroid connectors for the additional TAZs.

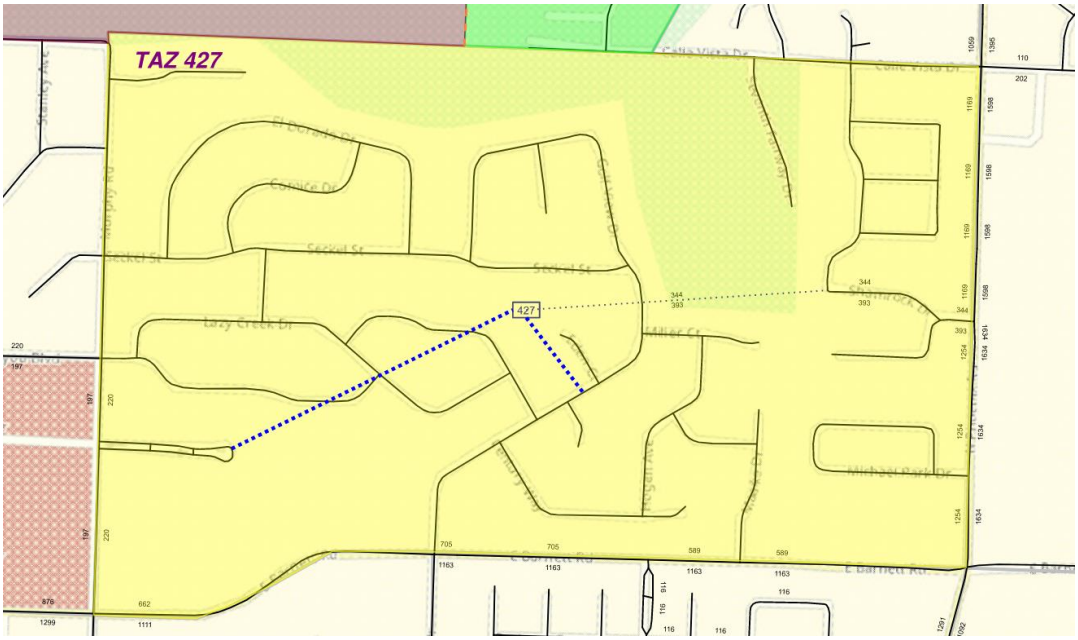
Figure 6. Additional TAZs, Roadways and Centroid Connectors for TAZ 65401



3. ADD CENTROID CONNECTORS TO TAZ 427

Two additional centroid connectors are proposed for TAZ 427 to acknowledge other key locations for trips to load onto the network, specifically Doctors Park Drive and Golf View Drive.

Figure 7. Additional Centroid Connectors for TAZ 427



ADDITIONAL SCENARIOS

In order to assess operations under the build scenarios, it is requested that two additional scenarios be developed, reflecting the requested model changes described in the previous section as well as additional modifications to South Stage Road. The two additional scenarios are illustrated in Figure 8 and Figure 9 (South Stage Interchange), with new or modified roadways compared to the no-build scenario highlighted in orange.

Figure 8. Build with South Stage Overpass Roadway Network Changes

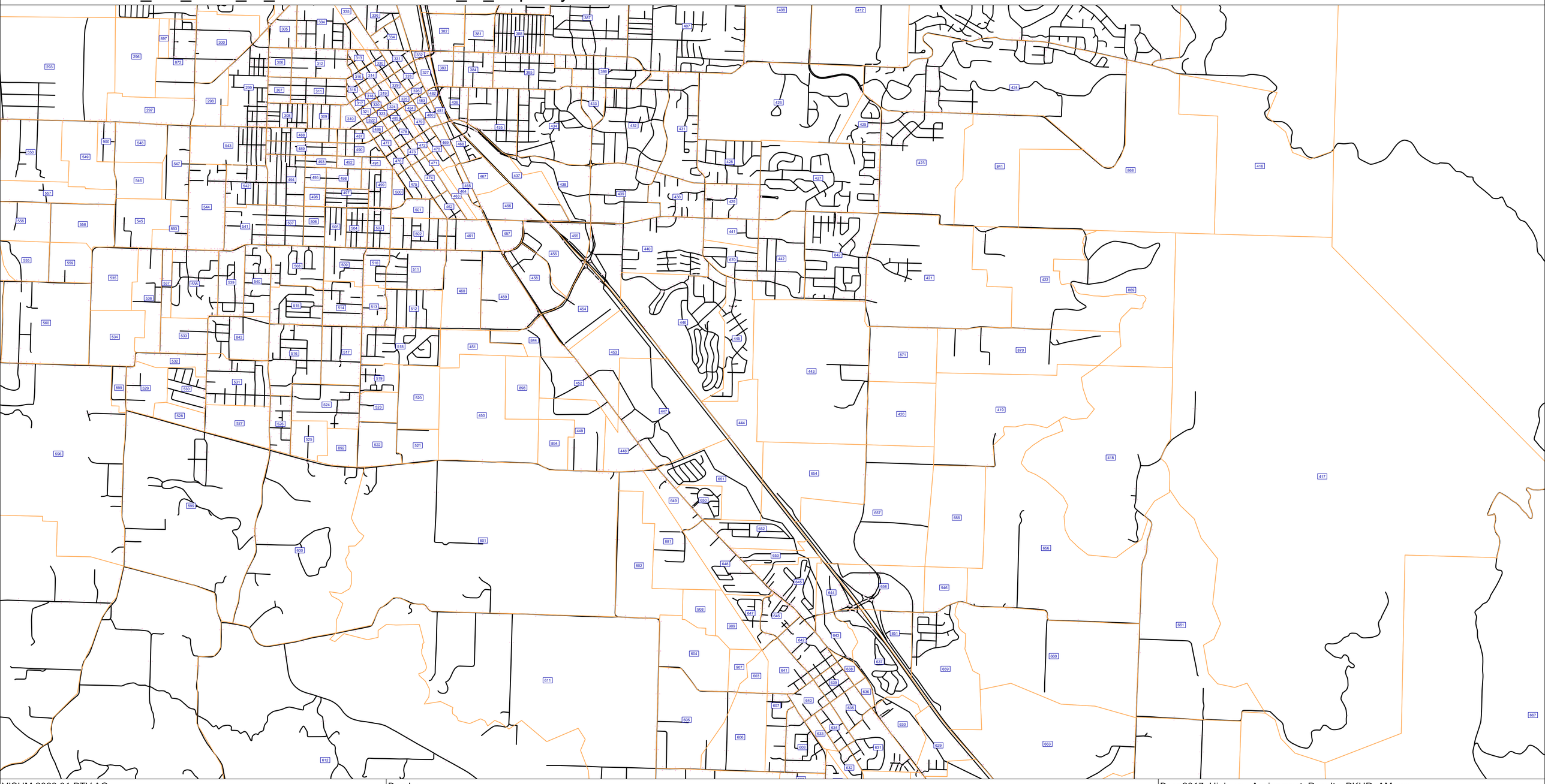
Figure 9. Build with South Stage Interchange Roadway Network Changes

NEXT STEPS

Please review the requested model changes and provide any questions or comments by Friday, September 29, 2023. If there are no additional questions or comments, please move forward with the requested model runs.

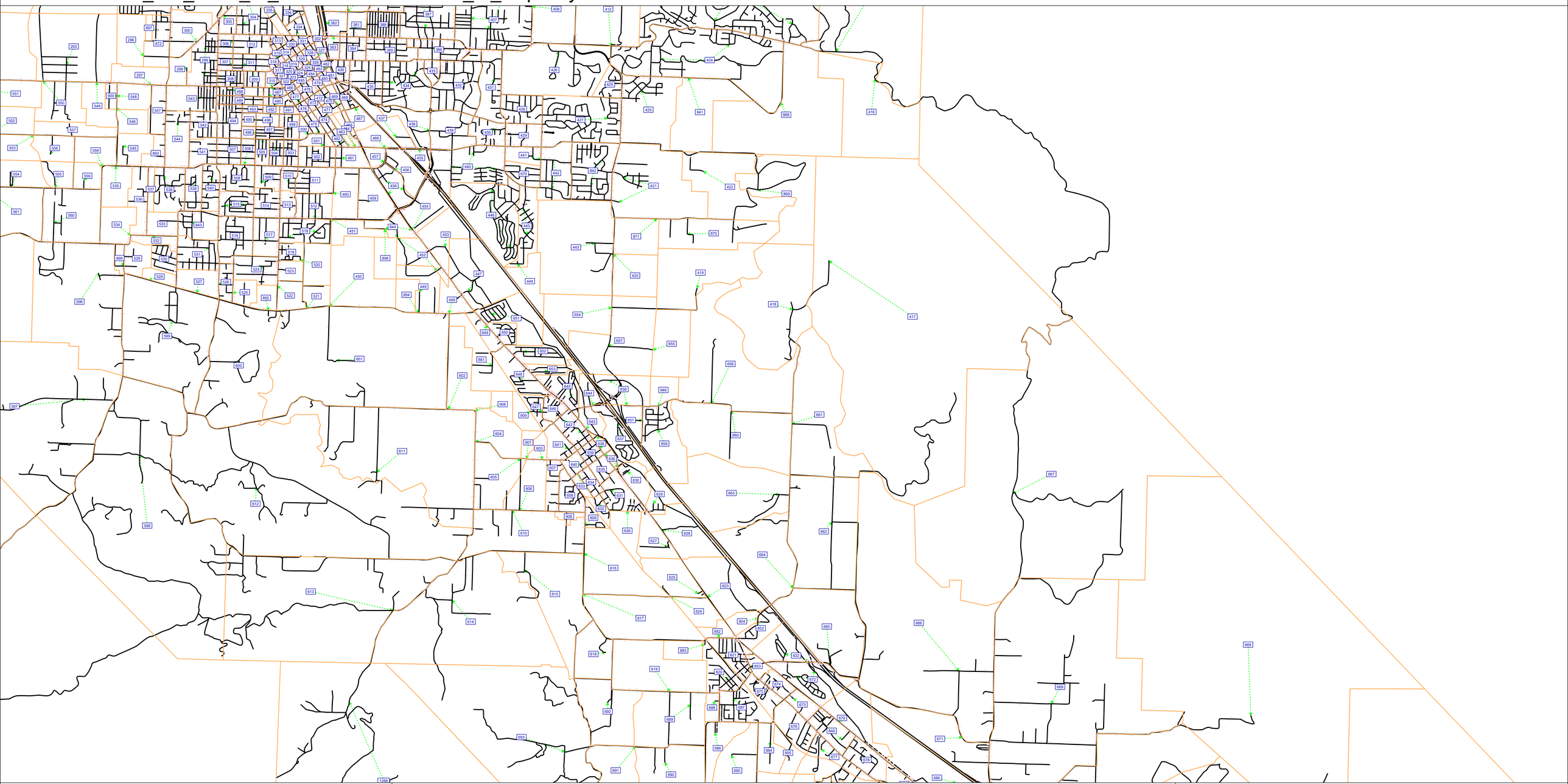
Appendix B Future Year 2045 Traffic Volume Development and Model Outputs

2017 Base Year_AM_Peak_hr_Volume and Demand_to_Capacity ratio



VISUM 2023.01 PTV AG	Bearb.:	Base2017_Highway_Assignment_Results_PKHR_AM.ver
erstellt am:20.10.2023		1:14132

2017 Base Year_PM_Peak_hr_Volume and Demand_to_Capacity ratio



VISUM 2023.01 PTV AG	Bearb.:	Base2017_Highway_Assignment_Results_PKHR_PM.ver
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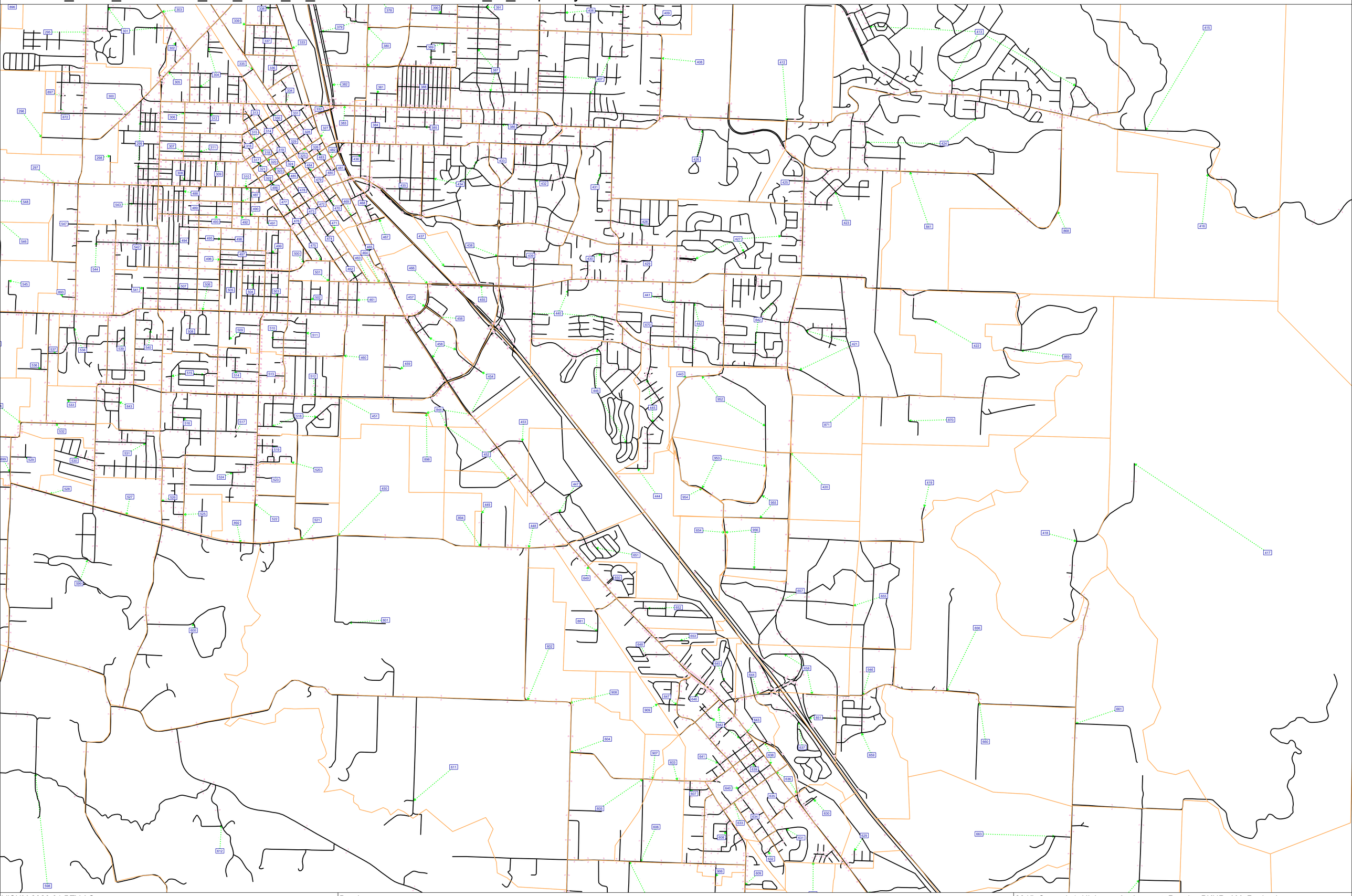
Revised_2045_Scenario1_AM_Peak_hr_Volumes and Demand_to_Capacity Ratios



VISUM 2023.01 PTV AG	Bearb.:	2045_Scenario1_Highway_Assignment_Results_PKHR_AM_Revised.ver
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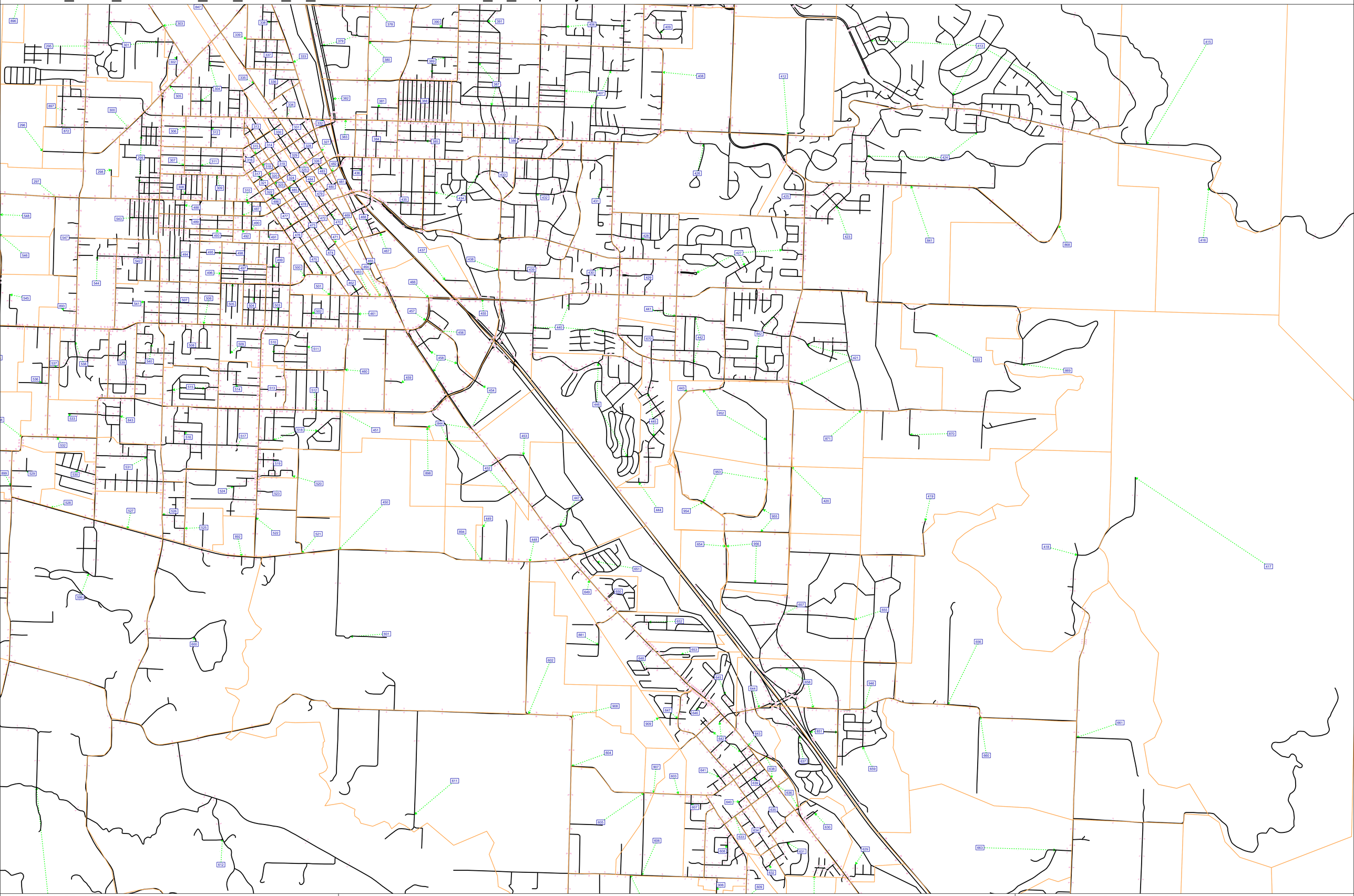
Revised_2045_Scenario1_PM_Peak_hr_Volumes and Demand_to_Capacity Ratios



VISUM 2023.01 PTV AG	Bearb.:	Highway_Assignment_Results_PKHR_PM.ver
erstellt am:27.10.2023		1:11786

Project #:	27003
Project Name:	South Stage
City, State:	Jackson County, OR
Scenario:	2045 No build - AM
Date:	10/16/2023
Filename/Path	K:\H_Projects\27\27003 - ODOT Transportation Planning On-call\014 - Southstage Road Extension Facility Plan\Analysis Files\Network Tool/27003_NetworkTool_AM.xlsm
Prepared By:	
Existing Count Year:	2023
Base Model Year	2017
Future Model Year	2045

103

Intersection Name	Leg	Movement	Left	Thru	Right	Existing Link Volume	Base Model Link Volume	Future Model Link volume	Base to Future Model Growth Factor	Adjusted Base Model Volumes	Base Model: Existing Volume	Ratio Method (Existing * Future/Base)	Difference Method (Ex. + Future - Base)	Average of Ratio & Difference Method	Selected 255 Volume	Growth Factor (From Ex. Count Year)	New Link Test	Removed Link Test	Check Summary	Volume Override
S Pacific Hwy/ Garfield St	South	In	32	430	359	821	825	952	0	852	1	917	921	919	919	112%	Okay	Okay	Okay	919
		Out	365	212	43	620	748	885	0	777	1	706	728	717	717	116%	Okay	Okay	Okay	717
	West	In	57	353	43	453	405	549	0	436	1	571	566	568	568	125%	Okay	Okay	Okay	568
		Out	32	212	15	259	259	326	0	273	1	309	312	310	310	120%	Okay	Okay	Okay	310
	North	In	185	212	15	412	242	430	0	282	1	628	560	594	594	144%	Okay	Okay	Okay	594
		Out	57	430	246	733	471	572	0	493	1	851	812	832	832	113%	Okay	Okay	Okay	832
	East	In	365	212	246	823	828	892	0	842	1	872	873	873	873	106%	Okay	Okay	Okay	873
		Out	185	353	359	897	822	1040	0	869	1	1074	1068	1071	1071	119%	Okay	Okay	Okay	1071
						5018	4600	5646	0	4824	1	5873	5840	5856	5856	117%	Okay	Okay	Okay	5884

103 Final Volumes

Int. Name	Approach	Movement	Left	Thru	Right	Base Model Link Volume	Future Model Link Volume	Initial 255 Future Volume	Adjusted Link Volume
S Pacific Hwy/ Garfield St	South	In	40	494	377	825	952	919	912
		Out	360	303	54	748	885	717	717
	West	In	77	434	54	405	549	568	564
		Out	40	245	25	259	326	310	310
	North	In	260	303	25	242	430	594	589
		Out	77	494	261	471	572	832	832
	East	In	360	245	261	828	892	873	866
		Out	260	434	377	822	1040	1071	1071
						4600	5646	5884	5860

104

Intersection Name	Leg	Movement	Left	Thru	Right	Existing Link Volume	Base Model Link Volume	Future Model Link volume	Base to Future Model Growth Factor	Adjusted Base Model Volumes	Base Model: Existing Volume	Ratio Method (Existing * Future/Base)	Difference Method (Ex. + Future - Base)	Average of Ratio & Difference Method	Selected 255 Volume	Growth Factor (From Ex. Count Year)	New Link Test	Removed Link Test	Check Summary	Volume Override
OR 99 / Stage Rd	South	In	111	449	11	571	546	719	0	583	1	704	707	706	706	124%	Okay	Okay	Okay	706
		Out	28	329	247	604	238	391	0	271	0	872	724	798	798	132%	Okay	Okay	Okay	798
	West	In	131	24	247	402	249	353	0	271	1	523	484	503	503	125%	Okay	Okay	Okay	503
		Out	111	15	60	186	121	199	0	138	1	269	247	258	258	139%	Okay	Okay	Okay	258
	North	In	20	329	60	409	211	299	0	230	1	532	478	505	505	123%	Okay	Okay	Okay	505
		Out	131	449	32	612	673	803	0	701	1	701	714	708	708	116%	Okay	Okay	Okay	708
	East	In	28	15	32	75	45	39	0	44	1	67	70	69	69	91%	Okay	Okay	Okay	69
		Out	20	24	11	55	18	17	0	18	0	53	54	53	54	99%	Okay	Okay	Okay	54
						2914	2101	2820	0	2255	1	3644	3479	3561	3561	122%	Okay	Okay	Okay	3601

104 Final Volumes

Int. Name	Approach	Movement	Left	Thru	Right	Base Model Link Volume	Future Model Link Volume	Initial 255 Future Volume	Adjusted Link Volume
OR 99 / Stage Rd	South	In	168	539	12	546	719	706	719
		Out	29	422	347	238	391	798	798
	West	In	143	24	347	249	353	503	513
		Out	168	15	75	121	199	258	258
	North	In	18	422	75	211	299	505	515
		Out	143	539	26	673	803	708	708
	East	In	29	15	26	45	39	69	70
		Out	18	24	12	18	17	54	54
						2101	2820	3601	3636

105

Assumed future volumes for base

Intersection Name	Leg	Movement	Left	Thru	Right	Existing Link Volume	Base Model Link Volume	Future Model Link volume	Base to Future Model Growth Factor	Adjusted Base Model Volumes	Base Model: Existing Volume	Ratio Method (Existing * Future/Base)	Difference Method (Ex. + Future - Base)	Average of Ratio & Difference Method	Selected 255 Volume	Growth Factor (From Ex. Count Year)	New Link Test	Removed Link Test	Check Summary	Volume Override
OR 99/ Phoenix Rd	South	In	21	373	1	395	185	327	0	215	1	600	507	553	553	140%	Okay	Okay	Okay	553
		Out	332	533	12	877	435	697	0	491	1	1245	1083	1164	1164	133%	Okay	Okay	Okay	1164
	West	In	16	1	12	29	34	34	0	34	1	29	29	29	29	100%	Okay	Okay	Okay	29
		Out	21	32	10	63	53	53	0	53	1	63	63	63	63	100%	Okay	Okay	Okay	63
	North	In	1	533	10	544	229	346	0	254	0	741	636	688	688	127%	Okay	Okay	Okay	688
		Out	16	373	171	560	322	515	0	363	1	794	712	753	753	134%	Okay	Okay	Okay	753
	East	In	332	32	171	535	344	545	0	387	1	753	693	723	723	135%	Okay	Okay	Okay	723
		Out	1	1	1	3	3	3	0	3	1	3	3	3	3	100%	Okay	Okay	Okay	3
						3006	1605	2520	0	1801	1	4206	3725	3965	3965	132%	Okay	Okay	Okay	3976

105 Final Volumes

Int. Name	Approach	Movement	Left	Thru	Right	Base Model Link Volume	Future Model Link Volume	Initial 255 Future Volume	Adjusted Link Volume
OR 99/ Phoenix Rd	South	In	23	525	1	185	327	553	550
		Out	476	675	13	435	697	1164	1164
	West	In	15	1	13	34	34	29	29
		Out	23	31	9	53	53	63	63
	North	In	1	675	9	229	346	688	685
		Out	15	525	212	322	515	753	753
	East	In	476	31	212	344	545	723	719
		Out	1	1	1	3	3	3	3
						1605	2520	3976	3965

106

Intersection Name	Leg	Movement	Left	Thru	Right	Existing Link Volume	Base Model Link Volume	Future Model Link volume	Base to Future Model Growth Factor	Adjusted Base Model Volumes	Base Model: Existing Volume	Ratio Method (Existing * Future/Base)	Difference Method (Ex. + Future - Base)	Average of Ratio & Difference Method	Selected 255 Volume	Growth Factor (From Ex. Count Year)	New Link Test	Removed Link Test	Check Summary	Volume Override
OR 99/ Bolz Rd	South	In	5	331	410	746	395	507	0.010	419	1	903	834	868	868	116%	Okay	Okay	Okay	868
		Out	1	584	9	594	244	258	0.002	247	0	620	605	613	613	103%	Okay	Okay	Okay	613
	West	In	24	74	9	107	86	248	0.067	121	1	220	234	227	227	212%	Okay	Okay	Okay	227
		Out	5	1	48	54	75	84	0.004	77	1	59	61	60	60	111%	Okay	Okay	Okay	60
	North	In	256	584	48	888	435	697	0.022	491	1	1260	1094	1177	1177	133%	Okay	Okay	Okay	1177
		Out	24	331	1	356	185	327	0.027	215	1	540	468	504	504	142%	Okay	Okay	Okay	504
	East	In	1	1	1	3	3	3	0.000	3	1	3	3	3	3	100%	Okay	Okay	Okay	3
		Out	256	74	410	740	412	514	0.009	434	1	877	820	848	848	115%	Okay	Okay	Okay	848
						3488	1835	2638	0	2007	1	4584	4119	4352	4352	125%	Okay	Okay	Okay	4301

106 Final Volumes

Int. Name	Approach	Movement	Left	Thru	Right	Base Model Link Volume	Future Model Link Volume	Initial 255 Future Volume	Adjusted Link Volume
OR 99/ Bolz Rd	South	In	3	437	334	395	507	868	773
		Out	1	602	10	244	258	613	613
	West	In	66	126	10	86	248	227	202
		Out	3	1	56	75	84	60	60
	North	In	389	602	56	435	697	1177	1047
		Out	66	437	1	185	327	504	504
	East	In	1	1	1	3	3	3	3
		Out	389	126	334	412	514	848	848
						1835	2638	4301	4050

108

Used 26 and 29 for the base year

Intersection Name	Leg	Movement	Left	Thru	Right	Existing Link Volume	Base Model Link Volume	Future Model Link volume	Base to Future Model Growth Factor	Adjusted Base Model Volumes	Base Model: Existing Volume	Ratio Method (Existing * Future/Base)	Difference Method (Ex. + Future - Base)	Average of Ratio & Difference Method	Selected 255 Volume	Growth Factor (From Ex. Count Year)	New Link Test	Removed Link Test	Check Summary	Volume Override
Garfield St/ Center Dr	South	In	1	2	4	7	26	60	0	33	5	13	34	23	23	331%	Okay	Okay	Okay	23
		Out	10	5	4	19	29	180	0	61	3	56	138	97	97	509%	Okay	Okay	Okay	97
	West	In	117	786	4	907	822	1040	0	869	1	1086	1078	1082	1082	119%	Okay	Okay	Okay	1082
		Out	1	701	106	808	828	892	0	842	1	856	858	857	857	106%	Okay	Okay	Okay	857
	North	In	208	5	106	319	134	192	0	146	0	418	365	391	391	123%	Okay	Okay	Okay	391
		Out	117	2	427	546	335	674	0	408	1	903	812	858	858	157%	Okay	Okay	Okay	858
	East	In	10	701	427	1138	1144	1653	0	1253	1	1501	1538	1520	1520	134%	Okay	Okay	Okay	1520
		Out	208	786	4	998	942	1199	0	997	1	1200	1200	1200	1200	120%	Okay	Okay	Okay	1200
						4742	4260	5890	0	4609	1	6060	6023	6041	6041	127%	Okay	Okay	Okay	6028

108 Final Volumes

Int. Name	Approach	Movement	Left	Thru	Right	Base Model Link Volume	Future Model Link Volume	Initial 255 Future Volume	Adjusted Link Volume
Garfield St/ Center Dr	South	In	2	7	13	26	60	23	23
		Out	56	24	17	29	180	97	97
	West	In	147	917	17	822	1040	1082	1081
		Out	2	757	98	828	892	857	857
	North	In	270	24	98	134	192	391	391
		Out	147	7	703	335	674	858	858
	East	In	56	757	703	1144	1653	1520	1516
		Out	270	917	13	942	1199	1200	1200
						4260	5890	6028	6023

109

Intersection Name	Leg	Movement	Left	Thru	Right	Existing Link Volume	Base Model Link Volume	Future Model Link volume	Base to Future Model Growth Factor	Adjusted Base Model Volumes	Base Model: Existing Volume	Ratio Method (Existing * Future/Base)	Difference Method (Ex. + Future - Base)	Average of Ratio & Difference Method	Selected 255 Volume	Growth Factor (From Ex. Count Year)	New Link Test	Removed Link Test	Check Summary	Volume Override
I-5 NB/SB Ramps/ Garfield St	South	In	263	0	334	597	877	950	0	893	1	635	654	645	645	108%	Okay	Okay	Okay	645
		Out	241	0	281	522	488	652	0	523	1	651	651	651	651	125%	Okay	Okay	Okay	651
	West	In	500	393	281	1174	942	1199	0	997	1	1412	1376	1394	1394	119%	Okay	Okay	Okay	1394
		Out	263	383	560	1206	1144	1653	0	1253	1	1591	1606	1598	1598	133%	Okay	Okay	Okay	1598
	North	In	880	0	560	1440	1052	1238	0	1092	1	1633	1586	1609	1609	112%	Okay	Okay	Okay	1609
		Out	500	0	467	967	743	799	0	755	1	1023	1011	1017	1017	105%	Okay	Okay	Okay	1017
	East	In	241	383	467	1091	1200	1407	0	1244	1	1234	1254	1244	1244	114%	Okay	Okay	Okay	1244
		Out	880	393	334	1607	1780	1691	0	1761	1	1543	1537	1540	1540	96%	Okay	Okay	Okay	1540
						8604	8226	9589	0	8518	1	9686	9675	9680	9680	113%	Okay	Okay	Okay	9698

109 Final Volumes

Int. Name	Approach	Movement	Left	Thru	Right	Base Model Link Volume	Future Model Link Volume	Initial 255 Future Volume	Adjusted Link Volume
I-5 NB/SB Ramps/ Garfield St	South	In	338	0	296	877	950	645	634
		Out	273	0	378	488	652	651	651
	West	In	570	422	378	942	1199	1394	1370
		Out	338	502	759	1144	1653	1598	1598
	North	In	822	0	759	1052	1238	1609	1581
		Out	570	0	448	743	799	1017	1017
	East	In	273	502	448	1200	1407	1244	1222
		Out	822	422	296	1780	1691	1540	1540
						8226	9589	9698	9613

112

Intersection Name	Leg	Movement	Left	Thru	Right	Existing Link Volume	Base Model Link Volume	Future Model Link volume	Base to Future Model Growth Factor	Adjusted Base Model Volumes	Base Model: Existing Volume	Ratio Method (Existing * Future/Base)	Difference Method (Ex. + Future - Base)	Average of Ratio & Difference Method	Selected 255 Volume	Growth Factor (From Ex. Count Year)	New Link Test	Removed Link Test	Check Summary	Volume Override
Highland Dr/ E Barnett Rd	South	In	105	349	993	1447	1780	1691	0	1761	1	1390	1377	1383	1383	96%	Okay	Okay	Okay	1383
		Out	480	375	133	988	1200	1407	0	1244	1	1117	1151	1134	1134	115%	Okay	Okay	Okay	1134
	West	In	86	432	133	651	476	612	0	505	1	789	758	773	773	119%	Okay	Okay	Okay	773
		Out	105	344	109	558	772	984	0	817	1	672	725	698	698	125%	Okay	Okay	Okay	698
	North	In	75	375	109	559	643	836	0	684	1	683	711	697	697	125%	Okay	Okay	Okay	697
		Out	86	349	33	468	553	630	0	570	1	518	529	523	523	112%	Okay	Okay	Okay	523
	East	In	480	344	33	857	980	1507	0	1093	1	1182	1271	1226	1226	143%	Okay	Okay	Okay	1226
		Out	75	432	993	1500	1354	1625	0	1412	1	1726	1713	1720	1720	115%	Okay	Okay	Okay	1720
						7028	7758	9292	0	8087	1	8075	8233	8154	8154	116%	Okay	Okay	Okay	8154

112 Final Volumes

Int. Name	Approach	Movement	Left	Thru	Right	Base Model Link Volume	Future Model Link Volume	Initial 255 Future Volume	Adjusted Link Volume
Highland Dr/ E Barnett Rd	South	In	61	334	991	1780	1691	1383	1385
		Out	635	407	92	1200	1407	1134	1134
	West	In	109	573	92	476	612	773	774
		Out	61	506	131	772	984	698	698
	North	In	156	407	131	643	836	697	695
		Out	109	334	80	553	630	523	523
	East	In	635	506	80	980	1507	1226	1222
		Out	156	573	991	1354	1625	1720	1720
						7758	9292	8154	8149

121

Intersection Name	Leg	Movement	Left	Thru	Right	Existing Link Volume	Base Model Link Volume	Future Model Link volume	Base to Future Model Growth Factor	Adjusted Base Model Volumes	Base Model: Existing Volume	Ratio Method (Existing * Future/Base)	Difference Method (Ex. + Future - Base)	Average of Ratio & Difference Method	Selected 255 Volume	Growth Factor (From Ex. Count Year)	New Link Test	Removed Link Test	Check Summary	Volume Override
N Phoenix Rd / Grove Rd	South	In	128	452	106	686	353	714	0	430	1	1138	970	1054	1054	154%	Okay	Okay	Okay	1054
		Out	156	377	74	607	404	800	0	489	1	993	918	956	956	157%	Okay	Okay	Okay	956
	West	In	19	2	74	95	12	27	0	15	0	169	107	138	107	112%	Okay	Okay	Okay	107
		Out	128	5	39	172	45	77	0	52	0	255	197	226	197	115%	Okay	Okay	Okay	197
	North	In	38	377	39	454	318	741	0	409	1	823	786	805	805	177%	Okay	Okay	Okay	805
		Out	19	452	33	504	304	611	0	370	1	833	745	789	789	157%	Okay	Okay	Okay	789
	East	In	156	5	33	194	120	86	0	113	1	148	167	158	158	81%	Okay	Okay	Okay	158
		Out	38	2	106	146	50	81	0	57	0	209	170	190	190	130%	Okay	Okay	Okay	190
						2858	1606	3137	0	1934	1	4636	4061	4348	4348	152%	Okay	Okay	Okay	4255

121 Final Volumes

Int. Name	Approach	Movement	Left	Thru	Right	Base Model Link Volume	Future Model Link Volume	Initial 255 Future Volume	Adjusted Link Volume
N Phoenix Rd / Grove Rd	South	In	156	752	145	353	714	1054	1053
		Out	136	730	90	404	800	956	956
	West	In	16	1	90	12	27	107	108
		Out	156	2	39	45	77	197	197
	North	In	43	730	39	318	741	805	812
		Out	16	752	21	304	611	789	789
	East	In	136	2	21	120	86	158	159
		Out	43	1	145	50	81	190	190
						1606	3137	4255	4263

122

Intersection Name	Leg	Movement	Left	Thru	Right	Existing Link Volume	Base Model Link Volume	Future Model Link volume	Base to Future Model Growth Factor	Adjusted Base Model Volumes	Base Model: Existing Volume	Ratio Method (Existing * Future/Base)	Difference Method (Ex. + Future - Base)	Average of Ratio & Difference Method	Selected 255 Volume	Growth Factor (From Ex. Count Year)	New Link Test	Removed Link Test	Check Summary	Volume Override
I-5 SB Ramps / N Phoenix Rd	South	In	1	1	1	3	3	3	0	3	1	3	3	3	3	100%	Okay	Okay	Okay	3
		Out	291	1	201	493	302	428	0	329	1	641	592	617	617	125%	Okay	Okay	Okay	617
	West	In	1	600	201	802	429	545	0	454	1	963	893	928	928	116%	Okay	Okay	Okay	928
		Out	1	336	283	620	389	618	0	438	1	875	800	837	837	135%	Okay	Okay	Okay	837
	North	In	122	1	283	406	220	439	0	267	1	668	578	623	623	153%	Okay	Okay	Okay	623
		Out	1	1	1	3	3	3	0	3	1	3	3	3	3	100%	Okay	Okay	Okay	3
	East	In	291	336	1	628	423	712	0	485	1	922	855	889	889	141%	Okay	Okay	Okay	889
		Out	122	600	1	723	382	650	0	439	1	1069	934	1002	1002	139%	Okay	Okay	Okay	1002
						3678	2151	3398	0	2418	1	5168	4658	4913	4913	134%	Okay	Okay	Okay	4901

122 Final Volumes

Int. Name	Approach	Movement	Left	Thru	Right	Base Model Link Volume	Future Model Link Volume	Initial 255 Future Volume	Adjusted Link Volume
I-5 SB Ramps / N Phoenix Rd	South	In	1	1	1	3	3	3	3
		Out	434	1	181	302	428	617	617
	West	In	1	752	181	429	545	928	934
		Out	1	459	378	389	618	837	837
	North	In	248	1	378	220	439	623	627
		Out	1	1	1	3	3	3	3
	East	In	434	459	1	423	712	889	894
		Out	248	752	1	382	650	1002	1002
						2151	3398	4901	4917

222

Intersection Name	Leg	Movement	Left	Thru	Right	Existing Link Volume	Base Model Link Volume	Future Model Link volume	Base to Future Model Growth Factor	Adjusted Base Model Volumes	Base Model: Existing Volume	Ratio Method (Existing * Future/Base)	Difference Method (Ex. + Future - Base)	Average of Ratio & Difference Method	Selected 255 Volume	Growth Factor (From Ex. Count Year)	New Link Test	Removed Link Test	Check Summary	Volume Override
I-5 NB Ramps / N Phoenix Rd	South	In	119	1	280	400	297	396	0	318	1	498	478	488	488	122%	Okay	Okay	Okay	488
		Out	1	1	1	3	3	3	0	3	1	3	3	3	3	100%	Okay	Okay	Okay	3
	West	In	317	383	1	701	382	650	0	439	1	1037	912	974	974	139%	Okay	Okay	Okay	974
		Out	119	495	1	615	423	712	0	485	1	903	842	873	873	142%	Okay	Okay	Okay	873
	North	In	1	1	1	3	3	3	0	3	1	3	3	3	3	100%	Okay	Okay	Okay	3
		Out	317	1	120	438	306	419	0	330	1	556	527	541	541	124%	Okay	Okay	Okay	541
	East	In	1	495	120	616	404	800	0	489	1	1008	927	968	968	157%	Okay	Okay	Okay	968
		Out	1	383	280	664	353	714	0	430	1	1102	948	1025	1025	154%	Okay	Okay	Okay	1025
						3440	2171	3697	0	2498	1	5091	4639	4865	4865	141%	Okay	Okay	Okay	4874

222 Final Volumes

Int. Name	Approach	Movement	Left	Thru	Right	Base Model Link Volume	Future Model Link Volume	Initial 255 Future Volume	Adjusted Link Volume
I-5 NB Ramps / N Phoenix Rd	South	In	101	1	388	297	396	488	490
		Out	1	1	1	3	3	3	3
	West	In	342	635	1	382	650	974	979
		Out	101	771	1	423	712	873	873
	North	In	1	1	1	3	3	3	3
		Out	342	1	198	306	419	541	541
	East	In	1	771	198	404	800	968	970
		Out	1	635	388	353	714	1025	1025
						2171	3697	4874	4883

118

Intersection Name	Leg	Movement	Left	Thru	Right	Existing Link Volume	Base Model Link Volume	Future Model Link volume	Base to Future Model Growth Factor	Adjusted Base Model Volumes	Base Model: Existing Volume	Ratio Method (Existing * Future/Base)	Difference Method (Ex. + Future - Base)	Average of Ratio & Difference Method	Selected 255 Volume	Growth Factor (From Ex. Count Year)	New Link Test	Removed Link Test	Check Summary	Volume Override
N Phoenix Rd/ E Barnett Rd	South	In	161	169	2	332	289	461	0	326	1	470	467	468	468	141%	Okay	Okay	Okay	468
		Out	2	334	160	496	307	561	0	361	1	770	696	733	733	148%	Okay	Okay	Okay	733
	West	In	56	7	160	223	166	181	0	169	1	239	235	237	237	106%	Okay	Okay	Okay	237
		Out	161	15	481	657	421	545	0	448	1	800	754	777	777	118%	Okay	Okay	Okay	777
	North	In	12	334	481	827	624	924	0	688	1	1110	1063	1086	1086	131%	Okay	Okay	Okay	1086
		Out	56	169	6	231	360	588	0	409	2	332	410	371	371	161%	Okay	Okay	Okay	371
	East	In	2	15	6	23	14	147	0	43	2	80	128	104	104	450%	Okay	Okay	Okay	104
		Out	12	7	2	21	4	20	0	7	0	57	34	45	45	215%	Okay	Okay	Okay	45
						2810	2185	3427	0	2451	1	3929	3786	3857	3857	137%	Okay	Okay	Okay	3821

118 Final Volumes

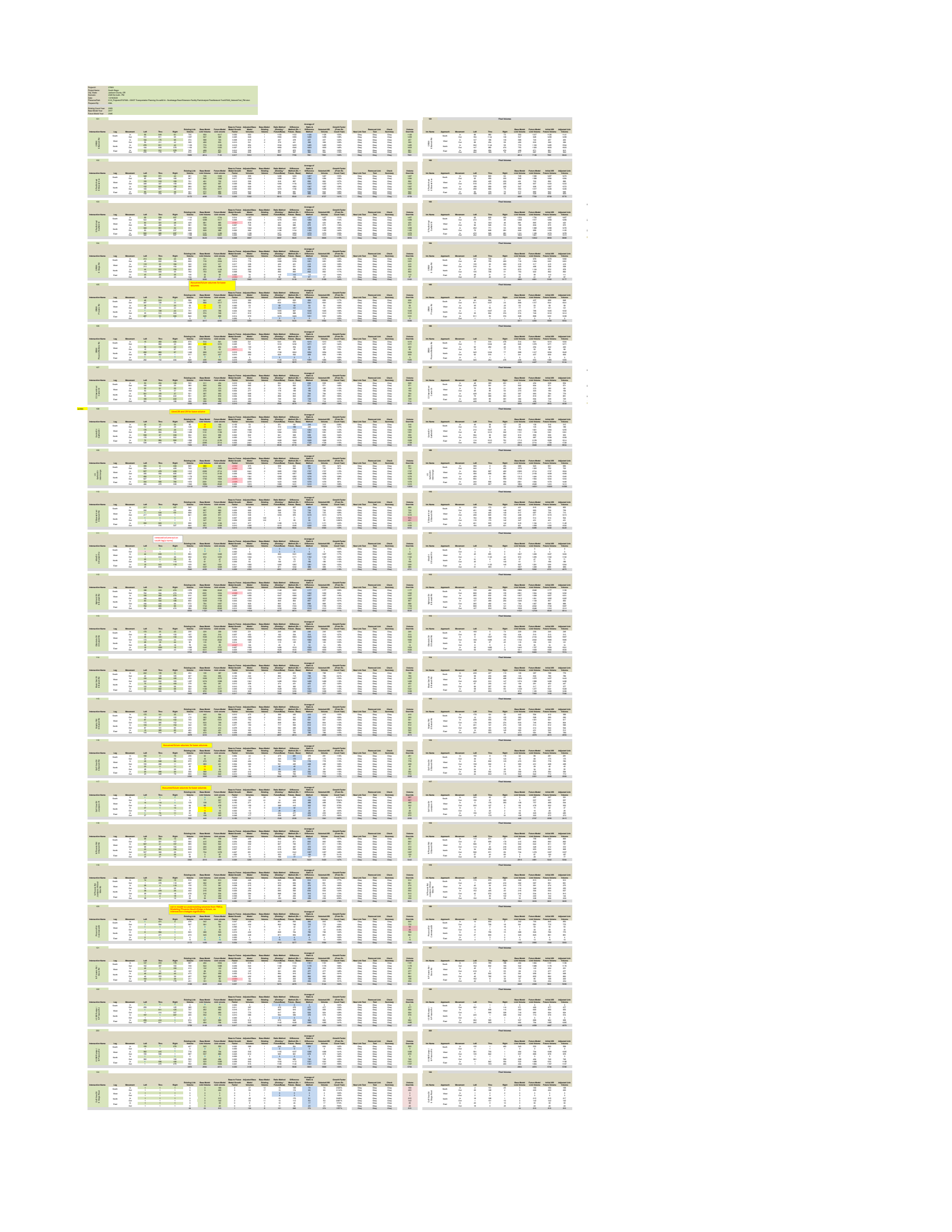
Int. Name	Approach	Movement	Left	Thru	Right	Base Model Link Volume	Future Model Link Volume	Initial 255 Future Volume	Adjusted Link Volume
N Phoenix Rd/ E Barnett Rd	South	In	190	281	5	289	461	468	476
		Out	12	548	173	307	561	733	733
	West	In	57	11	173	166	181	237	241
		Out	190	60	527	421	545	777	777
	North	In	29	548	527	624	924	1086	1104
		Out	57	281	34	360	588	371	371
	East	In	12	60	34	14	147	104	105
		Out	29	11	5	4	20	45	45
						2185	3427	3821	3852

119

Intersection Name	Leg	Movement	Left	Thru	Right	Existing Link Volume	Base Model Link Volume	Future Model Link volume	Base to Future Model Growth Factor	Adjusted Base Model Volumes	Base Model: Existing Volume	Ratio Method (Existing * Future/Base)	Difference Method (Ex. + Future - Base)	Average of Ratio & Difference Method	Selected 255 Volume	Growth Factor (From Ex. Count Year)	New Link Test	Removed Link Test	Check Summary	Volume Override
N Phoenix Rd/ Juanipero W/Coal Mine Rd	South	In	79	294	1	374	310	446	0	339	1	492	481	486	486	130%	Okay	Okay	Okay	486
		Out	2	308	74	384	325	656	0	396	1	636	644	640	640	167%	Okay	Okay	Okay	640
	West	In	13	1	74	88	82	211	0	110	1	169	189	179	179	204%	Okay	Okay	Okay	179
		Out	79	1	26	106	177	465	0	239	2	206	332	269	269	254%	Okay	Okay	Okay	269
	North	In	2	308	26	336	227	410	0	266	1	517	480	499	499	148%	Okay	Okay	Okay	499
		Out	13	294	2	309	155	258	0	177	1	450	390	420	420	136%	Okay	Okay	Okay	420
	East	In	2	1	2	5	56	413	0	133	27	16	286	151	151	3011%	Okay	Okay	Okay	151
		Out	2	1	1	4	16	100	0	34	9	12	70	41	41	1022%	Okay	Okay	Okay	41
						1606	1348	2959	0	1693	1	2807	2872	2839	2839	177%	Okay	Okay	Okay	2685

119 Final Volumes

Int. Name	Approach	Movement	Left	Thru	Right	Base Model Link Volume	Future Model Link Volume	Initial 255 Future Volume	Adjusted Link Volume
N Phoenix Rd/ Juanipero W/Coal Mine Rd	South	In	159	340	8	310	446	486	507
		Out	55	437	148	325	656	640	640
	West	In	26	14	148	82	211	179	187
		Out	159	47	63	177	465	269	269
	North	In	19	437	63	227	410	499	520
		Out	26	340	54	155	258	420	420
	East	In	55	47	54	56	413	151	157
		Out	19	14	8	16	100	41	41
						1348	2959	2685	2741



Appendix C Future Year 2045 No-Build Intersection Operations Analysis Worksheets

Vistro File: H:\...\27003_Southstage Vistro.vistro
Report File: H:\...\No-Build AM.pdf

Scenario 4 2045 No-Build AM
2/13/2024

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
103	OR99/Garfield Street	Signalized	HCM 7th Edition	EB Left	0.738	24.9	C
104	OR99/Stage Road	Signalized	HCM 7th Edition	EB Right	0.759	28.3	C
105	OR99/Phoenix Road	Signalized	HCM 7th Edition	EB Left	0.641	15.7	B
106	OR99/Phoenix Road-Bolz Road	Signalized	HCM 7th Edition	EB Thru	0.834	18.5	B
108	Garfield Street/Center Drive	Signalized	HCM 7th Edition	NB Left	0.766	14.7	B
109	I-5/Garfield Street Interchange	Signalized	HCM 7th Edition	EB Left	0.966	75.1	E
112	Barnett Road/Highland Drive	Signalized	HCM 7th Edition	SB Left	0.728	24.6	C
118	Barnett Road/Phoenix Road	Signalized	HCM 7th Edition	SB Left	0.779	22.1	C
119	Juanipero Way/Phoenix Road	Signalized	HCM 2010	WB Left	0.279	11.7	B
121	Phoenix Road/Grove Road	Signalized	HCM 7th Edition	EB Right	0.550	18.3	B
122	Phoenix/I-5 SB Ramps	Signalized	HCM 7th Edition	NEB Thru	0.281	16.5	B
222	Phoenix Rd/I-5 NB Ramps	Signalized	HCM 7th Edition	WB Thru	0.289	17.5	B

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

Intersection Level Of Service Report
Intersection 103: OR99/Garfield Street

Control Type:	Signalized	Delay (sec / veh):	24.9
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.738

Intersection Setup

Name	OR99			OR99			Garfield St			Garfield St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	200.00	100.00	335.00	175.00	100.00	500.00	215.00	100.00	100.00	300.00	100.00	220.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	1	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	500.00	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	OR99			OR99			Garfield St			Garfield St		
Base Volume Input [veh/h]	40	494	377	260	303	25	77	434	54	360	245	261
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	1.00	3.00	6.00	7.00	7.00	5.00	2.00	2.00	6.00	5.00	7.00
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	189	0	0	13	0	0	16	0	0	131
Total Hourly Volume [veh/h]	40	494	188	260	303	12	77	434	38	360	245	130
Peak Hour Factor	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	149	57	78	91	4	23	131	11	108	74	39
Total Analysis Volume [veh/h]	48	595	227	313	365	14	93	523	46	434	295	157
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	2			0			0			2		
v_ci, Inbound Pedestrian Volume crossing mi	2			0			0			2		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	1			0			1			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	138
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	5	2	2	1	6	6	7	4	0	3	8	8
Auxiliary Signal Groups			2,3			6,7						1,8
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	10	5	10	10	5	5	0	5	5	5
Maximum Green [s]	25	30	30	24	30	30	20	30	0	35	75	75
Amber [s]	3.5	4.7	4.7	3.5	4.7	4.7	3.5	4.0	0.0	3.5	4.0	4.0
All red [s]	0.5	0.7	0.7	0.5	0.7	0.7	0.5	0.5	0.0	0.5	0.5	0.5
Split [s]	29	36	36	28	36	36	24	34	0	39	80	80
Vehicle Extension [s]	2.1	4.7	4.7	2.1	4.7	4.7	2.5	2.5	0.0	2.1	2.5	2.5
Walk [s]	0	8	8	0	0	0	0	8	0	0	8	8
Pedestrian Clearance [s]	0	29	29	0	0	0	0	30	0	0	25	25
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	3.4	3.4	2.0	3.4	3.4	2.0	2.5	0.0	2.0	2.5	2.5
Minimum Recall	No	Yes	Yes	No	Yes	Yes	No	No		No	No	No
Maximum Recall	No	No	No	No	No	No	No	No		No	No	No
Pedestrian Recall	No	No	No	No	No	No	No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	0.0	20.0	20.0	20.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	4.00	5.40	4.00	4.00	5.40	4.00	4.00	4.50	4.50	4.00	4.50	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	3.40	0.00	2.00	3.40	0.00	2.00	2.50	2.50	2.00	2.50	0.00
g_i, Effective Green Time [s]	3	21	41	11	28	39	6	16	16	15	25	40
g / C, Green / Cycle	0.04	0.26	0.51	0.13	0.35	0.49	0.07	0.20	0.20	0.19	0.31	0.50
(v / s)_i Volume / Saturation Flow Rate	0.03	0.18	0.16	0.10	0.12	0.01	0.06	0.17	0.17	0.14	0.18	0.11
s, saturation flow rate [veh/h]	1667	3306	1440	3083	3148	1405	1601	1722	1670	3083	1681	1405
c, Capacity [veh/h]	69	850	736	411	1099	689	119	344	333	576	525	705
d1, Uniform Delay [s]	37.37	23.64	7.03	31.74	15.50	7.10	35.48	28.19	28.22	28.38	19.22	7.20
k, delay calibration	0.05	0.20	0.20	0.05	0.20	0.20	0.08	0.08	0.08	0.05	0.08	0.05
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.76	1.96	0.44	1.37	0.33	0.02	8.18	4.14	4.39	0.94	0.70	0.07
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.70	0.70	0.31	0.76	0.33	0.02	0.78	0.84	0.84	0.75	0.56	0.22
d, Delay for Lane Group [s/veh]	43.13	25.60	7.47	33.11	15.83	7.13	43.66	32.32	32.61	29.32	19.92	7.27
Lane Group LOS	D	C	A	C	B	A	D	C	C	C	B	A
Critical Lane Group	No	Yes	No	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.01	4.49	1.40	2.77	1.97	0.08	1.97	5.04	4.94	3.57	3.75	0.94
50th-Percentile Queue Length [ft/ln]	25.15	112.25	35.01	69.17	49.15	2.12	49.13	126.07	123.53	89.25	93.71	23.44
95th-Percentile Queue Length [veh/ln]	1.81	7.96	2.52	4.98	3.54	0.15	3.54	8.73	8.59	6.43	6.75	1.69
95th-Percentile Queue Length [ft/ln]	45.26	199.12	63.02	124.50	88.48	3.82	88.43	218.14	214.67	160.65	168.68	42.19

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	43.13	25.60	7.47	33.11	15.83	7.13	43.66	32.45	32.61	29.32	19.92	7.27
Movement LOS	D	C	A	C	B	A	D	C	C	C	B	A
d_A, Approach Delay [s/veh]	21.84			23.47			34.04			22.28		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	24.93											
Intersection LOS	C											
Intersection V/C	0.738											

Other Modes

g_Walk,mi, Effective Walk Time [s]	12.0	12.0	0.0	12.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	3749.66
d_p, Pedestrian Delay [s]	28.86	28.86	0.00	28.86
l_p,int, Pedestrian LOS Score for Intersection	3.026	2.839	0.000	3.000
Crosswalk LOS	C	C	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	766	766	738	1890
d_b, Bicycle Delay [s]	15.22	15.22	15.91	0.12
l_b,int, Bicycle LOS Score for Intersection	2.433	2.141	2.119	3.238
Bicycle LOS	B	B	B	C

Sequence

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

Intersection Level Of Service Report
Intersection 104: OR99/Stage Road

Control Type:	Signalized	Delay (sec / veh):	28.3
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.759

Intersection Setup

Name	OR99			OR99			South Stage Road			South Stage Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Entry Pocket Length [ft]	160.00	100.00	100.00	160.00	100.00	100.00	100.00	100.00	20.00	130.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			45.00			45.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	OR99			OR99			South Stage Road			South Stage Road		
Base Volume Input [veh/h]	168	539	12	18	422	75	143	24	347	29	15	26
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.00	3.00	10.00	0.00	7.00	9.00	3.00	23.00	6.00	15.00	21.00	10.00
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]	168	539	12	18	422	75	143	24	347	29	15	26
Peak Hour Factor	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	48	155	3	5	121	22	41	7	100	8	4	7
Total Analysis Volume [veh/h]	193	620	14	21	485	86	164	28	399	33	17	30
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]	3			3			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	5	2	0	1	6	0	7	4	0	3	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	13	0	5	13	0	5	5	0	5	5	0
Maximum Green [s]	18	34	0	10	26	0	30	16	0	30	16	0
Amber [s]	3.5	4.7	0.0	3.5	4.7	0.0	3.0	3.5	0.0	3.0	3.5	0.0
All red [s]	0.5	0.7	0.0	0.5	0.7	0.0	1.0	0.5	0.0	1.0	0.5	0.0
Split [s]	9	51	0	19	51	0	0	19	0	0	19	0
Vehicle Extension [s]	2.5	5.8	0.0	2.5	5.8	0.0	3.0	2.5	0.0	3.0	2.5	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	33	0	0	29	0	0	21	0	0	23	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	3.4	0.0	2.0	3.4	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	Yes		Yes	Yes		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C
C, Cycle Length [s]	58	58	58	58	58	58	58	58	58	58	58
L, Total Lost Time per Cycle [s]	5.40	5.40	5.40	5.40	5.40	5.40	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	3.40	3.40	0.00	3.40	3.40	0.00	2.00	2.00	0.00	2.00
g_i, Effective Green Time [s]	27	21	21	27	16	16	22	16	16	22	12
g / C, Green / Cycle	0.46	0.37	0.37	0.46	0.27	0.27	0.38	0.27	0.27	0.38	0.21
(v / s)_i Volume / Saturation Flow Rate	0.24	0.19	0.19	0.02	0.18	0.18	0.11	0.02	0.28	0.03	0.04
s, saturation flow rate [veh/h]	815	1709	1693	917	1653	1555	1449	1432	1417	974	1312
c, Capacity [veh/h]	491	627	622	488	447	421	686	392	388	529	272
d1, Uniform Delay [s]	10.60	14.39	14.39	9.22	18.89	18.96	12.59	15.73	21.23	11.56	19.06
k, delay calibration	0.35	0.35	0.35	0.08	0.35	0.35	0.08	0.08	0.43	0.11	0.08
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.66	2.06	2.08	0.03	5.15	5.72	0.13	0.06	49.88	0.05	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	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.39	0.51	0.51	0.04	0.65	0.66	0.24	0.07	1.03	0.06	0.17
d, Delay for Lane Group [s/veh]	12.26	16.44	16.47	9.25	24.04	24.68	12.72	15.78	71.11	11.61	19.28
Lane Group LOS	B	B	B	A	C	C	B	B	F	B	B
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	1.51	3.25	3.23	0.11	3.57	3.48	1.21	0.24	9.75	0.26	0.51
50th-Percentile Queue Length [ft/ln]	37.77	81.13	80.63	2.85	89.26	86.99	30.29	6.01	243.79	6.44	12.83
95th-Percentile Queue Length [veh/ln]	2.72	5.84	5.81	0.20	6.43	6.26	2.18	0.43	15.11	0.46	0.92
95th-Percentile Queue Length [ft/ln]	67.98	146.03	145.13	5.12	160.67	156.59	54.52	10.82	377.85	11.58	23.09

Movement, Approach, & Intersection Results

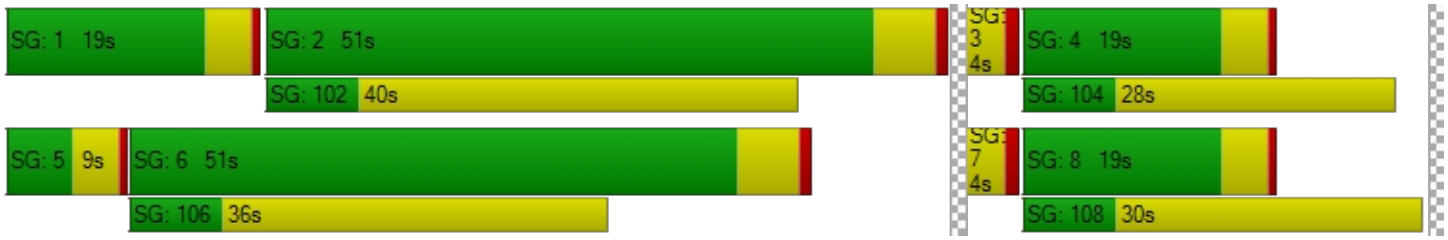
d_M, Delay for Movement [s/veh]	12.26	16.46	16.47	9.25	24.30	24.68	12.72	15.78	71.11	11.61	19.28	19.28
Movement LOS	B	B	B	A	C	C	B	B	F	B	B	B
d_A, Approach Delay [s/veh]	15.48			23.82			52.29			16.12		
Approach LOS	B			C			D			B		
d_I, Intersection Delay [s/veh]	28.27											
Intersection LOS	C											
Intersection V/C	0.759											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	19.21	19.21	19.21	19.21
l_p,int, Pedestrian LOS Score for Intersection	2.630	2.743	2.515	1.967
Crosswalk LOS	B	B	B	A
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1563	1563	514	514
d_b, Bicycle Delay [s]	1.40	1.40	16.10	16.10
l_b,int, Bicycle LOS Score for Intersection	2.242	2.048	2.535	1.692
Bicycle LOS	B	B	B	A

Sequence

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



Intersection Level Of Service Report
Intersection 105: OR99/Phoenix Road

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):	0.641

Intersection Setup

Name	OR99			OR99			Shopping Center Access			Phoenix Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0	0	0	0	0	0	2
Entry Pocket Length [ft]	80.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	225.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	OR99			OR99			Shopping Center Access			Phoenix Rd		
Base Volume Input [veh/h]	23	525	0	0	675	9	15	0	13	476	31	212
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	5.00	5.00	2.00	2.00	7.00	33.00	20.00	2.00	18.00	3.00	3.00	10.00
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	3	0	0	7	0	0	106
Total Hourly Volume [veh/h]	23	525	0	0	675	6	15	0	6	476	31	106
Peak Hour Factor	0.8600	0.8600	0.9500	0.9500	0.8600	0.8600	0.8600	0.9500	0.8600	0.8600	0.8600	0.8600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	153	0	0	196	2	4	0	2	138	9	31
Total Analysis Volume [veh/h]	27	610	0	0	785	7	17	0	7	553	36	123
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]	8			12			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	160
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Permiss	Split	Split	Split	Overlap
Signal Group	1	6	0	0	2	0	8	0	0	0	7	7
Auxiliary Signal Groups												5,7
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	5	10	0	0	10	0	5	0	0	0	5	5
Maximum Green [s]	10	30	0	0	30	0	20	0	0	0	30	30
Amber [s]	3.5	3.5	0.0	0.0	3.5	0.0	3.5	0.0	0.0	0.0	3.5	3.5
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	1.0	0.0	0.0	0.0	1.0	1.0
Split [s]	14	35	0	0	35	0	25	0	0	0	35	35
Vehicle Extension [s]	2.0	6.1	0.0	0.0	6.1	0.0	2.0	0.0	0.0	0.0	2.0	2.0
Walk [s]	0	0	0	0	7	0	7	0	0	0	7	7
Pedestrian Clearance [s]	0	0	0	0	23	0	26	0	0	0	27	27
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No		No				No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.5	2.5	0.0	0.0	2.5	0.0	2.5	0.0	0.0	0.0	2.5	2.5
Minimum Recall	No	Yes			Yes		No				No	No
Maximum Recall	No	No			No		No				No	No
Pedestrian Recall	No	No			No		No				No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	20.0	0.0	0.0	20.0	0.0	20.0	0.0	0.0	0.0	20.0	20.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	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	L	C	R
C, Cycle Length [s]	52	52	52	52	52	52	52	52	52
L, Total Lost Time per Cycle [s]	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.50	2.50	2.50	2.50	2.50	2.50	2.50	0.00
g_i, Effective Green Time [s]	17	17	19	19	1	1	12	12	21
g / C, Green / Cycle	0.32	0.32	0.37	0.37	0.03	0.03	0.23	0.23	0.40
(v / s)_i Volume / Saturation Flow Rate	0.03	0.19	0.24	0.24	0.01	0.01	0.18	0.18	0.05
s, saturation flow rate [veh/h]	902	3200	1653	1647	1403	1276	1627	1637	2425
c, Capacity [veh/h]	363	1014	609	607	41	37	370	372	962
d1, Uniform Delay [s]	11.71	12.58	10.81	10.82	25.03	24.87	17.15	17.14	7.77
k, delay calibration	0.04	0.42	0.42	0.42	0.04	0.04	0.04	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.03	2.20	4.44	4.50	2.53	0.91	1.48	1.46	0.02
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	1.33	1.33	1.33	1.33	1.00	1.00	1.33	1.33	1.33
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	0.07	0.60	0.65	0.65	0.42	0.19	0.79	0.79	0.13
d, Delay for Lane Group [s/veh]	11.74	14.79	15.24	15.32	27.56	25.78	18.63	18.60	7.79
Lane Group LOS	B	B	B	B	C	C	B	B	A
Critical Lane Group	Yes	No	No	Yes	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.17	2.47	3.23	3.24	0.22	0.09	2.79	2.80	0.30
50th-Percentile Queue Length [ft/ln]	4.15	61.79	80.80	81.05	5.53	2.21	69.78	70.05	7.42
95th-Percentile Queue Length [veh/ln]	0.30	4.45	5.82	5.84	0.40	0.16	5.02	5.04	0.53
95th-Percentile Queue Length [ft/ln]	7.47	111.21	145.45	145.90	9.96	3.97	125.61	126.09	13.36

Movement, Approach, & Intersection Results

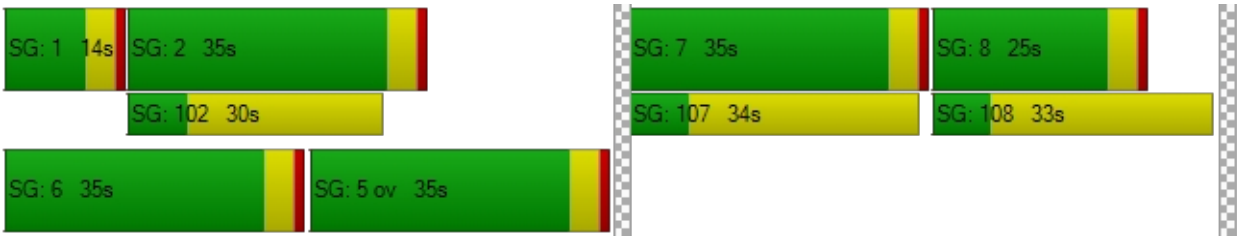
d_M, Delay for Movement [s/veh]	11.74	14.79	0.00	0.00	15.28	15.32	27.56	0.00	25.78	18.62	18.60	7.79
Movement LOS	B	B			B	B	C		C	B	B	A
d_A, Approach Delay [s/veh]	14.66			15.28			27.04			16.74		
Approach LOS	B			B			C			B		
d_I, Intersection Delay [s/veh]	15.71											
Intersection LOS	B											
Intersection V/C	0.641											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	30.5
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	16.27	16.27	16.27	4.52
l_p,int, Pedestrian LOS Score for Intersection	2.657	2.507	1.965	2.456
Crosswalk LOS	B	B	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1168	1168	785	1168
d_b, Bicycle Delay [s]	4.53	4.54	9.63	4.52
l_b,int, Bicycle LOS Score for Intersection	2.085	2.215	1.560	2.909
Bicycle LOS	B	B	A	C

Sequence

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



Intersection Level Of Service Report
Intersection 106: OR99/Phoenix Road-Bolz Road

Control Type:	Signalized	Delay (sec / veh):	18.5
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.834

Intersection Setup

Name	OR99			OR99			Bolz Rd			Bolz Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	2	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	120.00	100.00	100.00	200.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	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	Yes			Yes			Yes			Yes		

Volumes

Name	OR99			OR99			Bolz Rd			Bolz Rd		
Base Volume Input [veh/h]	3	437	334	389	602	56	66	126	10	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	5.00	4.00	5.00	6.00	5.00	5.00	1.00	0.00	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]	3	437	334	389	602	56	66	126	10	0	0	0
Peak Hour Factor	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	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]	1	133	102	119	184	17	20	38	3	0	0	0
Total Analysis Volume [veh/h]	4	533	407	474	734	68	80	154	12	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]	7			11			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Isolated
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	ProtPer	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Permiss	Permiss
Signal Group	1	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	10	0	5	10	0	0	5	0	0	0	0
Maximum Green [s]	25	45	0	40	40	0	0	25	0	0	0	0
Amber [s]	3.5	3.5	0.0	3.5	3.5	0.0	0.0	3.5	0.0	0.0	0.0	0.0
All red [s]	0.5	1.0	0.0	0.5	1.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0
Split [s]	29	50	0	44	45	0	0	29	0	0	0	0
Vehicle Extension [s]	2.5	1.4	0.0	2.5	4.1	0.0	0.0	4.0	0.0	0.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	0	0
Pedestrian Clearance [s]	0	24	0	0	16	0	0	29	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	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]	2.0	2.5	0.0	2.0	2.5	0.0	0.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall	No	Yes		No	Yes			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]	20.0	20.0	0.0	20.0	0.0	0.0	0.0	20.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	
C, Cycle Length [s]	54	54	54	54	54	54	54	
L, Total Lost Time per Cycle [s]	4.25	4.50	4.50	4.00	4.50	4.50	4.00	
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	0.00	2.50	2.50	2.00	2.50	2.50	2.00	
g_i, Effective Green Time [s]	19	19	19	12	19	19	11	
g / C, Green / Cycle	0.35	0.35	0.35	0.22	0.35	0.35	0.20	
(v / s)_i Volume / Saturation Flow Rate	0.00	0.19	0.32	0.17	0.27	0.27	0.16	
s, saturation flow rate [veh/h]	1443	2880	1275	2798	1500	1447	1525	
c, Capacity [veh/h]	576	995	440	620	530	511	312	
d1, Uniform Delay [s]	9.33	11.61	13.95	19.95	15.68	15.73	20.64	
k, delay calibration	0.08	0.04	0.04	0.08	0.16	0.16	0.15	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	0.00	0.17	3.60	1.49	3.44	3.70	6.26	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.33	1.33	1.33	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	0.01	0.54	0.92	0.76	0.77	0.77	0.79	
d, Delay for Lane Group [s/veh]	9.33	11.78	17.55	21.44	19.12	19.43	26.90	
Lane Group LOS	A	B	B	C	B	B	C	
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	0.02	1.84	3.62	2.67	4.36	4.28	3.23	
50th-Percentile Queue Length [ft/ln]	0.58	46.11	90.51	66.68	108.88	107.11	80.72	
95th-Percentile Queue Length [veh/ln]	0.04	3.32	6.52	4.80	7.78	7.68	5.81	
95th-Percentile Queue Length [ft/ln]	1.04	83.00	162.92	120.03	194.44	191.97	145.30	

Movement, Approach, & Intersection Results

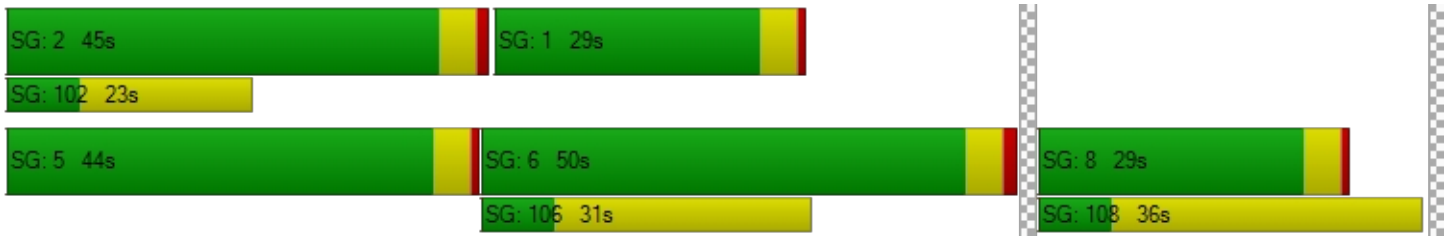
d_M, Delay for Movement [s/veh]	9.33	11.78	17.55	21.44	19.26	19.43	26.90	26.90	26.90	0.00	0.00	0.00
Movement LOS	A	B	B	C	B	B	C	C	C			
d_A, Approach Delay [s/veh]	14.25			20.08			26.90			0.00		
Approach LOS	B			C			C			A		
d_I, Intersection Delay [s/veh]	18.53											
Intersection LOS	B											
Intersection V/C	0.834											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	17.35	17.35	17.35	17.35
l_p,int, Pedestrian LOS Score for Intersection	2.699	2.732	1.845	2.191
Crosswalk LOS	B	B	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1670	1487	918	0
d_b, Bicycle Delay [s]	0.74	1.80	7.97	27.24
l_b,int, Bicycle LOS Score for Intersection	2.338	2.612	1.966	4.132
Bicycle LOS	B	B	A	D

Sequence

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



Intersection Level Of Service Report
Intersection 108: Garfield Street/Center Drive

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):	0.766

Intersection Setup

Name	Center Dr			Center Dr			Garfield St			Garfield St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	210.00	100.00	100.00	190.00	100.00	100.00	400.00	100.00	180.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Center Dr			Center Dr			Garfield St			Garfield St		
Base Volume Input [veh/h]	2	7	13	270	24	98	147	917	17	56	757	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 [%]	3.00	4.00	25.00	0.00	6.00	3.00	6.00	20.00	12.00	100.00	0.00	25.00
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	4	0	0	49	0	0	2	0	0	352
Total Hourly Volume [veh/h]	2	7	9	270	24	49	147	917	15	56	757	351
Peak Hour Factor	0.8100	0.8100	0.8100	0.8100	0.8100	0.8100	0.8100	0.8100	0.8100	0.8100	0.8100	0.8100
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	2	3	83	7	15	45	283	5	17	234	108
Total Analysis Volume [veh/h]	2	9	11	333	30	60	181	1132	19	69	935	433
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	6			1			1			6		
v_di, Inbound Pedestrian Volume crossing m	6			1			1			6		
v_co, Outbound Pedestrian Volume crossing	0			3			0			2		
v_ci, Inbound Pedestrian Volume crossing mi	0			2			0			3		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			1			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Overlap
Signal Group	5	2	0	1	6	0	7	4	0	3	8	8
Auxiliary Signal Groups												1,8
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	10	0	5	10	10
Maximum Green [s]	18	18	0	18	18	0	25	55	0	25	55	55
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	4.0
All red [s]	0.5	0.5	0.0	0.5	0.5	0.0	0.5	0.5	0.0	0.5	0.5	0.5
Split [s]	23	23	0	23	23	0	30	60	0	30	60	60
Vehicle Extension [s]	2.5	2.5	0.0	2.5	2.5	0.0	2.5	4.2	0.0	2.5	4.2	4.2
Walk [s]	0	8	0	0	8	0	0	8	0	0	8	8
Pedestrian Clearance [s]	0	34	0	0	33	0	0	16	0	0	31	31
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.5	2.5	0.0	2.5	2.5	0.0	2.5	2.5	0.0	2.5	2.5	2.5
Minimum Recall	No	No		No	No		No	Yes		No	Yes	Yes
Maximum Recall	No	No		No	No		No	No		No	No	No
Pedestrian Recall	No	No		No	No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	20.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	L	C	L	C	C	L	C	R
C, Cycle Length [s]	74	74	74	74	74	74	74	74	74	74
L, Total Lost Time per Cycle [s]	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.50	2.50	0.00	2.50	0.00	2.50	2.50	0.00	2.50	0.00
g_i, Effective Green Time [s]	0	17	11	6	44	35	35	44	35	50
g / C, Green / Cycle	0.00	0.22	0.14	0.08	0.59	0.47	0.47	0.59	0.47	0.67
(v / s)_i Volume / Saturation Flow Rate	0.00	0.01	0.12	0.06	0.31	0.39	0.39	0.48	0.28	0.36
s, saturation flow rate [veh/h]	1627	1530	2863	1469	586	1474	1465	145	3332	1190
c, Capacity [veh/h]	4	342	560	125	422	689	685	160	1555	795
d1, Uniform Delay [s]	37.10	22.77	30.91	33.23	7.14	11.79	11.80	13.82	9.89	1.66
k, delay calibration	0.08	0.08	0.08	0.08	0.17	0.17	0.17	0.50	0.17	0.17
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	43.97	0.05	0.75	5.71	1.05	4.32	4.37	8.29	0.57	0.89
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.33	1.33	1.33	1.33	1.33	1.33
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.45	0.06	0.59	0.72	0.43	0.84	0.84	0.43	0.60	0.54
d, Delay for Lane Group [s/veh]	81.06	22.82	31.66	38.93	8.19	16.11	16.17	22.11	10.46	2.55
Lane Group LOS	F	C	C	D	A	B	B	C	B	A
Critical Lane Group	No	No	No	Yes	No	No	Yes	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	0.09	0.27	2.82	1.74	0.67	5.58	5.57	0.59	3.49	0.84
50th-Percentile Queue Length [ft/ln]	2.26	6.80	70.45	43.38	16.81	139.58	139.20	14.68	87.31	20.98
95th-Percentile Queue Length [veh/ln]	0.16	0.49	5.07	3.12	1.21	9.46	9.44	1.06	6.29	1.51
95th-Percentile Queue Length [ft/ln]	4.06	12.23	126.80	78.08	30.26	236.46	235.94	26.43	157.16	37.77

Movement, Approach, & Intersection Results

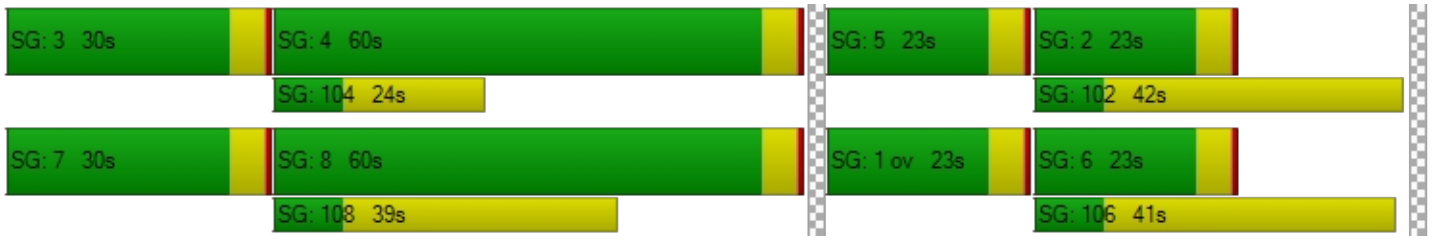
d_M, Delay for Movement [s/veh]	81.06	22.82	22.82	31.66	38.93	38.93	8.19	16.14	16.17	22.11	10.46	2.55
Movement LOS	F	C	C	C	D	D	A	B	B	C	B	A
d_A, Approach Delay [s/veh]	28.12			33.21			15.06			8.64		
Approach LOS	C			C			B			A		
d_I, Intersection Delay [s/veh]	14.67											
Intersection LOS	B											
Intersection V/C	0.766											

Other Modes

g_Walk,mi, Effective Walk Time [s]	12.0	12.0	12.0	12.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	2279.43	8893.33	1414.93
d_p, Pedestrian Delay [s]	26.18	26.18	26.18	26.18
l_p,int, Pedestrian LOS Score for Intersection	2.046	2.711	2.755	3.656
Crosswalk LOS	B	B	C	D
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	497	497	1492	1492
d_b, Bicycle Delay [s]	21.01	21.02	2.40	2.40
l_b,int, Bicycle LOS Score for Intersection	1.603	2.338	2.660	3.036
Bicycle LOS	A	B	B	C

Sequence

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



Intersection Level Of Service Report
Intersection 109: I-5/Garfield Street Interchange

Control Type:	Signalized	Delay (sec / veh):	75.1
Analysis Method:	HCM 7th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.966

Intersection Setup

Name	I-5 NB Off-ramp					I-5 SB Off-ramp				
Approach	Northbound					Southbound				
Lane Configuration										
Turning Movement	Left2	Left	Thru	Thru	Right	Left2	Left	Thru	Thru	Right
Lane Width [ft]	12.00	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	1	1	0	0	0	1
Entry Pocket Length [ft]	350.00	100.00	100.00	100.00	350.00	630.00	100.00	100.00	100.00	630.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00					30.00				
Grade [%]	0.00					0.00				
Curb Present	No					No				
Crosswalk	Yes					Yes				

Volumes

Name	I-5 NB Off-ramp					I-5 SB Off-ramp				
Base Volume Input [veh/h]	398	338	0	0	296	356	822	0	0	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
Heavy Vehicles Percentage [%]	3.00	3.00	0.00	0.00	2.00	2.00	2.00	0.00	0.00	7.00
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
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	148	0	0	0	0	380
Total Hourly Volume [veh/h]	398	338	0	0	148	356	822	0	0	379
Peak Hour Factor	0.9200	0.8500	1.0000	1.0000	0.8500	0.9200	0.8500	1.0000	1.0000	0.8500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	108	99	0	0	44	97	242	0	0	111
Total Analysis Volume [veh/h]	433	398	0	0	174	387	967	0	0	446
Presence of On-Street Parking	No				No	No				No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0					0				
v_di, Inbound Pedestrian Volume crossing th	0					0				
v_co, Outbound Pedestrian Volume along th	0					0				
v_ci, Inbound Pedestrian Volume along the e	0					0				
v_ab, Corner Pedestrian Volume [ped/h]	0					0				
Bicycle Volume [bicycles/h]	0					0				

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
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	Permissiv	Permissiv	Permissiv	Permissiv	Permissiv	Permissiv	Permissiv	Permissiv	Permissiv	Permissiv
Signal Group	2	2	0	0	0	6	6	0	0	0
Auxiliary Signal Groups										
Lead / Lag	Lead	Lead	-	-	-	Lead	Lead	-	-	-
Minimum Green [s]	6	6	0	0	0	6	6	0	0	0
Maximum Green [s]	75	75	0	0	0	75	75	0	0	0
Amber [s]	4.0	4.0	0.0	0.0	0.0	4.0	4.0	0.0	0.0	0.0
All red [s]	4.3	4.3	0.0	0.0	0.0	4.3	4.3	0.0	0.0	0.0
Split [s]	83	83	0	0	0	83	83	0	0	0
Vehicle Extension [s]	2.5	2.5	0.0	0.0	0.0	2.5	2.5	0.0	0.0	0.0
Walk [s]	8	8	0	0	0	8	8	0	0	0
Pedestrian Clearance [s]	12	12	0	0	0	12	12	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
Rest In Walk		No					No			
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	6.3	6.3	0.0	0.0	0.0	6.3	6.3	0.0	0.0	0.0
Minimum Recall		Yes					Yes			
Maximum Recall		No					No			
Pedestrian Recall		No					No			
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	20.0	0.0	0.0	0.0	0.0	20.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	R	L	R
C, Cycle Length [s]	173	173	173	173
L, Total Lost Time per Cycle [s]	8.30	8.30	8.30	8.30
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	6.30	6.30	6.30	6.30
g_i, Effective Green Time [s]	75	75	75	75
g / C, Green / Cycle	0.43	0.43	0.43	0.43
(v / s)_i Volume / Saturation Flow Rate	0.24	0.13	0.46	0.37
s, saturation flow rate [veh/h]	1636	1318	2116	1192
c, Capacity [veh/h]	730	570	932	516
d1, Uniform Delay [s]	38.46	32.20	51.87	44.65
k, delay calibration	0.08	0.08	0.08	0.33
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.47	0.22	23.27	12.31
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	0.55	0.31	1.04	0.87
d, Delay for Lane Group [s/veh]	38.93	32.43	75.14	56.96
Lane Group LOS	D	C	F	E
Critical Lane Group	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	6.62	4.94	23.83	19.18
50th-Percentile Queue Length [ft/ln]	165.61	123.43	595.74	479.59
95th-Percentile Queue Length [veh/ln]	10.85	8.58	32.73	26.37
95th-Percentile Queue Length [ft/ln]	271.14	214.53	818.18	659.16

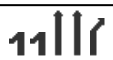
Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	38.93	0.00	0.00	32.43	0.00	75.14	0.00	0.00	56.96
Movement LOS		D			C		F			E
d_A, Approach Delay [s/veh]	36.95					69.40				
Approach LOS	D					E				
d_I, Intersection Delay [s/veh]	75.08									
Intersection LOS	E									
Intersection V/C	0.966									

Other Modes

g_Walk,mi, Effective Walk Time [s]	12.0	12.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00
d_p, Pedestrian Delay [s]	75.12	75.12
l_p,int, Pedestrian LOS Score for Intersection	2.448	2.885
Crosswalk LOS	B	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	862	862
d_b, Bicycle Delay [s]	28.09	28.09
l_b,int, Bicycle LOS Score for Intersection	1.560	1.560
Bicycle LOS	A	A

Intersection Setup

Name	Garfield St					Garfield St				
Approach	Eastbound					Westbound				
Lane Configuration										
Turning Movement	Left	Left	Thru	Right	Right	Left	Left	Thru	Right	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	0	0	1	2	0	0	0	1
Entry Pocket Length [ft]	275.00	100.00	100.00	100.00	275.00	200.00	100.00	100.00	100.00	200.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00					30.00				
Grade [%]	0.00					0.00				
Curb Present	No					No				
Crosswalk	No					No				

Volumes

Name	Garfield St					Garfield St				
Base Volume Input [veh/h]	570	0	422	0	378	273	0	502	0	448
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	5.00	0.00	3.00	0.00	3.00	1.00	0.00	1.00	0.00	3.00
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
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	189	0	0	0	0	224
Total Hourly Volume [veh/h]	570	0	422	0	189	273	0	502	0	224
Peak Hour Factor	0.8500	1.0000	0.8500	1.0000	0.8500	0.8500	1.0000	0.8500	1.0000	0.8500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	168	0	124	0	56	80	0	148	0	66
Total Analysis Volume [veh/h]	671	0	496	0	222	321	0	591	0	264
Presence of On-Street Parking	No				No	No				No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0					0				
v_di, Inbound Pedestrian Volume crossing th	0					0				
v_co, Outbound Pedestrian Volume along th	0					0				
v_ci, Inbound Pedestrian Volume along the e	0					0				
v_ab, Corner Pedestrian Volume [ped/h]	0					0				
Bicycle Volume [bicycles/h]	0					0				

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
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	Permissiv	Permissiv	Permissiv	Permissiv	Protected	Permissiv	Permissiv	Permissiv	Permissiv
Signal Group	7	0	4	0	0	3	0	8	0	0
Auxiliary Signal Groups										
Lead / Lag	Lead	-	-	-	-	Lead	-	-	-	-
Minimum Green [s]	6	0	10	0	0	6	0	10	0	0
Maximum Green [s]	35	0	45	0	0	35	0	45	0	0
Amber [s]	4.5	0.0	4.5	0.0	0.0	4.5	0.0	4.5	0.0	0.0
All red [s]	4.2	0.0	2.8	0.0	0.0	4.2	0.0	2.8	0.0	0.0
Split [s]	44	0	52	0	0	44	0	52	0	0
Vehicle Extension [s]	2.5	0.0	4.2	0.0	0.0	2.5	0.0	4.2	0.0	0.0
Walk [s]	0	0	8	0	0	0	0	8	0	0
Pedestrian Clearance [s]	0	0	12	0	0	0	0	15	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
Rest In Walk			No					No		
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	6.7	0.0	5.3	0.0	0.0	6.7	0.0	5.3	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
Detector Length [ft]	20.0	0.0	20.0	0.0	0.0	20.0	0.0	20.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	R	L	C	R
C, Cycle Length [s]	173	173	173	173	173	173
L, Total Lost Time per Cycle [s]	8.70	7.30	7.30	8.70	7.30	7.30
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]	6.70	5.30	5.30	6.70	5.30	5.30
g_i, Effective Green Time [s]	35	39	39	35	39	39
g / C, Green / Cycle	0.20	0.23	0.23	0.20	0.23	0.23
(v / s)_i Volume / Saturation Flow Rate	0.24	0.17	0.17	0.11	0.20	0.20
s, saturation flow rate [veh/h]	2798	2928	1307	2890	2975	1307
c, Capacity [veh/h]	564	661	295	583	672	295
d1, Uniform Delay [s]	63.41	56.20	56.23	56.66	58.38	58.64
k, delay calibration	0.08	0.17	0.22	0.08	0.17	0.30
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	88.01	2.64	7.71	0.60	5.84	21.20
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.33	1.33	1.33	1.33	1.33	1.33
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.19	0.75	0.75	0.55	0.88	0.89
d, Delay for Lane Group [s/veh]	151.41	58.84	63.94	57.26	64.22	79.84
Lane Group LOS	F	E	E	E	E	E
Critical Lane Group	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	19.01	9.80	9.20	5.96	12.54	12.52
50th-Percentile Queue Length [ft/ln]	475.22	245.04	229.89	148.93	313.48	312.98
95th-Percentile Queue Length [veh/ln]	28.54	14.94	14.17	9.96	18.35	18.32
95th-Percentile Queue Length [ft/ln]	713.49	373.40	354.22	249.00	458.66	458.05

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	151.41	0.00	58.84	0.00	63.94	57.26	0.00	64.22	0.00	79.84
Movement LOS	F		E		E	E		E		E
d_A, Approach Delay [s/veh]	104.38					65.83				
Approach LOS	F					E				
d_I, Intersection Delay [s/veh]	75.08									
Intersection LOS	E									
Intersection V/C	0.966									

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000
Crosswalk LOS	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	516	516
d_b, Bicycle Delay [s]	47.77	47.77
I_b,int, Bicycle LOS Score for Intersection	2.861	2.715
Bicycle LOS	C	B

Intersection Setup

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

Volumes

Name										
Base Volume Input [veh/h]	0	0	0	0	0	0	0	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
Heavy Vehicles Percentage [%]	2.00	0.00	2.00	0.00	2.00	2.00	0.00	2.00	0.00	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
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	0	0	0	0	0	0	0
Peak Hour Factor	0.9500	1.0000	0.9500	1.0000	0.9500	0.9500	1.0000	0.9500	1.0000	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
Total 15-Minute Volume [veh/h]	0	0	0	0	0	0	0	0	0	0
Total Analysis Volume [veh/h]	0	0	0	0	0	0	0	0	0	0
Presence of On-Street Parking										
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0					0				
v_di, Inbound Pedestrian Volume crossing th	0					0				
v_co, Outbound Pedestrian Volume along th	0					0				
v_ci, Inbound Pedestrian Volume along the e	0					0				
v_ab, Corner Pedestrian Volume [ped/h]	0					0				
Bicycle Volume [bicycles/h]	0					0				

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
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	Permissiv	Permissiv	Permissiv	Permissiv	Permissiv	Permissiv	Permissiv	Permissiv	Permissiv	Permissiv
Signal Group	0	0	0	0	0	0	0	0	0	0
Auxiliary Signal Groups										
Lead / Lag	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	0	0	0	0	0	0	0
Maximum Green [s]	0	0	0	0	0	0	0	0	0	0
Amber [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All red [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Split [s]	0	0	0	0	0	0	0	0	0	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	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
Rest In Walk										
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Minimum Recall										
Maximum Recall										
Pedestrian Recall										
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group Results

Movement, Approach, & Intersection Results

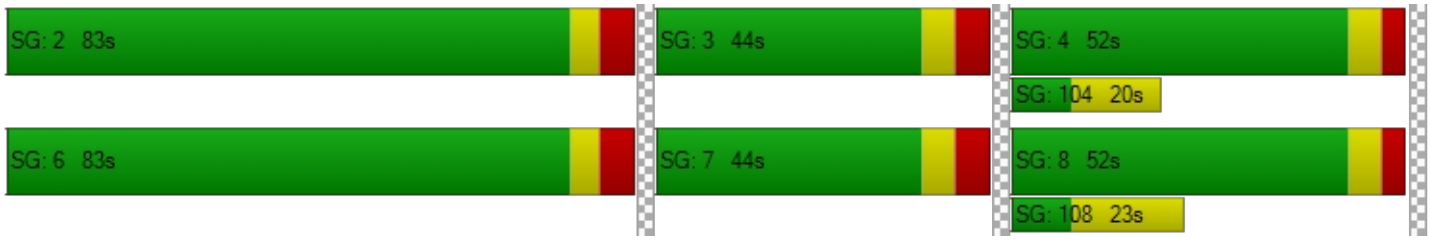
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS										
d_A, Approach Delay [s/veh]	0.00					0.00				
Approach LOS	A					A				
d_I, Intersection Delay [s/veh]	75.08									
Intersection LOS	E									
Intersection V/C	0.966									

Other Modes

g_Walk,mi, Effective Walk Time [s]	12.0	12.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00
d_p, Pedestrian Delay [s]	75.12	75.12
l_p,int, Pedestrian LOS Score for Intersection	2.102	2.310
Crosswalk LOS	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0
d_b, Bicycle Delay [s]	86.70	86.70
l_b,int, Bicycle LOS Score for Intersection	4.132	4.132
Bicycle LOS	D	D

Sequence

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



Intersection Level Of Service Report
Intersection 112: Barnett Road/Highland Drive

Control Type:	Signalized	Delay (sec / veh):	24.6
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.728

Intersection Setup

Name	Highland Dr			Highland Dr			Barnett Rd			Barnett Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	2	0	1	2	0	0
Entry Pocket Length [ft]	470.00	100.00	600.00	240.00	100.00	100.00	300.00	100.00	325.00	360.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Highland Dr			Highland Dr			Barnett Rd			Barnett Rd		
Base Volume Input [veh/h]	113	367	842	79	441	147	115	465	159	534	438	41
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.00	1.00	2.00	0.00	2.00	1.00	2.00	1.00	3.00	2.00	1.00	3.00
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]	113	367	842	79	441	147	115	465	159	534	438	41
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]	28	92	211	20	110	37	29	116	40	134	110	10
Total Analysis Volume [veh/h]	113	367	842	79	441	147	115	465	159	534	438	41
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	3			6			6			3		
v_di, Inbound Pedestrian Volume crossing m	3			6			6			3		
v_co, Outbound Pedestrian Volume crossing	1			3			1			3		
v_ci, Inbound Pedestrian Volume crossing mi	1			3			1			3		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	122
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	93.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	5	2	2	1	6	6	7	4	4	3	8	8
Auxiliary Signal Groups			2,3						4,5			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	5	5	5	5	5	8	8	5	8	8
Maximum Green [s]	30	40	40	30	40	40	60	50	50	60	50	50
Amber [s]	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All red [s]	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Split [s]	35	45	45	35	45	45	65	55	55	65	55	55
Vehicle Extension [s]	1.5	2.5	2.5	1.5	2.5	2.5	1.5	4.2	4.2	1.5	4.2	4.2
Walk [s]	0	7	7	0	7	7	0	5	5	0	5	5
Pedestrian Clearance [s]	0	22	22	0	22	22	0	26	26	0	26	26
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Minimum Recall	No	No	No	No	No		No	Yes	Yes	No	Yes	
Maximum Recall	No	No	No	No	No		No	No	No	No	No	
Pedestrian Recall	No	No	No	No	No		No	No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	C
C, Cycle Length [s]	83	83	83	83	83	83	83	83	83	83	83	83
L, Total Lost Time per Cycle [s]	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.50	2.50	0.00	2.50	2.50	2.50	2.50	2.50	0.00	2.50	2.50	2.50
g_i, Effective Green Time [s]	8	22	48	5	19	19	5	17	30	21	33	33
g / C, Green / Cycle	0.10	0.27	0.58	0.06	0.22	0.22	0.06	0.20	0.36	0.25	0.40	0.40
(v / s)_i Volume / Saturation Flow Rate	0.07	0.11	0.32	0.05	0.17	0.18	0.04	0.14	0.11	0.18	0.14	0.14
s, saturation flow rate [veh/h]	1701	3400	2658	1714	1772	1608	3277	3400	1492	3037	1786	1731
c, Capacity [veh/h]	174	912	1534	102	399	362	184	684	534	774	714	692
d1, Uniform Delay [s]	35.89	24.98	10.87	38.59	30.20	30.31	38.41	30.75	19.20	28.02	17.34	17.34
k, delay calibration	0.04	0.08	0.08	0.04	0.08	0.08	0.04	0.17	0.17	0.04	0.17	0.17
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.51	0.21	0.23	4.70	2.33	2.76	1.30	1.82	0.47	0.41	0.43	0.44
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.65	0.40	0.55	0.78	0.77	0.78	0.63	0.68	0.30	0.69	0.34	0.34
d, Delay for Lane Group [s/veh]	37.40	25.19	11.10	43.29	32.53	33.07	39.70	32.57	19.67	28.43	17.76	17.78
Lane Group LOS	D	C	B	D	C	C	D	C	B	C	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.23	2.91	4.28	1.69	5.80	5.41	1.14	4.30	2.15	4.60	3.10	3.02
50th-Percentile Queue Length [ft/ln]	55.73	72.64	106.90	42.26	144.89	135.26	28.62	107.41	53.79	115.08	77.61	75.38
95th-Percentile Queue Length [veh/ln]	4.01	5.23	7.67	3.04	9.74	9.22	2.06	7.70	3.87	8.12	5.59	5.43
95th-Percentile Queue Length [ft/ln]	100.31	130.76	191.68	76.07	243.60	230.62	51.51	192.40	96.83	203.04	139.70	135.69

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	37.40	25.19	11.10	43.29	32.69	33.07	39.70	32.57	19.67	28.43	17.77	17.78
Movement LOS	D	C	B	D	C	C	D	C	B	C	B	B
d_A, Approach Delay [s/veh]	17.26			34.03			30.91			23.39		
Approach LOS	B			C			C			C		
d_I, Intersection Delay [s/veh]	24.61											
Intersection LOS	C											
Intersection V/C	0.728											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	32.99	32.99	31.23	31.23
l_p,int, Pedestrian LOS Score for Intersection	2.934	2.529	2.823	2.903
Crosswalk LOS	C	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	976	976	1217	1217
d_b, Bicycle Delay [s]	10.88	10.88	6.37	6.37
l_b,int, Bicycle LOS Score for Intersection	2.650	2.110	2.169	2.395
Bicycle LOS	B	B	B	B

Sequence

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

Intersection Level Of Service Report
Intersection 118: Barnett Road/Phoenix Road

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):	0.779

Intersection Setup

Name	Phoenix Rd			Phoenix Rd			Barnett Rd			Barnett Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	75.00	100.00	100.00	135.00	100.00	100.00	175.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			40.00			40.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Phoenix Rd			Phoenix Rd			Barnett Rd			Barnett Rd		
Base Volume Input [veh/h]	190	281	5	29	548	527	57	11	173	12	60	34
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	4.00	11.00	7.00	4.00	1.00	2.00	0.00	3.00	9.00	7.00	0.00
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]	190	281	5	29	548	527	57	11	173	12	60	34
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]	48	70	1	7	137	132	14	3	43	3	15	9
Total Analysis Volume [veh/h]	190	281	5	29	548	527	57	11	173	12	60	34
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			1			2			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	155
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	5	2	2	1	6	6	7	4	4	3	8	8
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	8	8	5	8	8	5	8	8	5	6	6
Maximum Green [s]	28	40	40	17	40	40	28	40	40	17	40	40
Amber [s]	3.0	5.0	5.0	3.0	5.0	5.0	3.0	4.0	4.0	3.0	4.0	4.0
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	32	46	46	21	46	46	32	45	45	21	45	45
Vehicle Extension [s]	1.5	3.5	3.5	1.5	3.5	3.5	1.5	3.5	3.5	1.5	3.5	3.5
Walk [s]	0	8	8	0	8	8	0	8	8	0	8	8
Pedestrian Clearance [s]	0	12	12	0	18	18	0	23	23	0	23	23
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	4.0	4.0	2.0	4.0	4.0	2.0	3.0	3.0	2.0	3.0	3.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	20.0	20.0	0.0	0.0	0.0	20.0	20.0	20.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	C
C, Cycle Length [s]	68	68	68	68	68	68	68	68	68	68	68	68
L, Total Lost Time per Cycle [s]	4.00	6.00	6.00	4.00	6.00	6.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	4.00	4.00	2.00	4.00	4.00	0.00	3.00	3.00	0.00	3.00	3.00
g_i, Effective Green Time [s]	9	35	35	2	28	28	15	10	10	15	8	8
g / C, Green / Cycle	0.14	0.52	0.52	0.03	0.42	0.42	0.23	0.15	0.15	0.23	0.12	0.12
(v / s)_i Volume / Saturation Flow Rate	0.11	0.08	0.08	0.02	0.31	0.36	0.04	0.01	0.12	0.01	0.03	0.03
s, saturation flow rate [veh/h]	1714	1743	1732	1619	1743	1463	1436	1800	1471	1175	1700	1506
c, Capacity [veh/h]	233	909	904	51	727	610	444	272	223	515	200	177
d1, Uniform Delay [s]	28.39	8.43	8.43	32.33	16.78	17.98	21.03	24.52	27.56	20.45	27.11	27.18
k, delay calibration	0.04	0.13	0.13	0.04	0.13	0.17	0.13	0.13	0.13	0.04	0.13	0.13
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.63	0.10	0.10	3.75	1.95	5.84	0.16	0.07	6.89	0.01	0.73	0.94
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.81	0.16	0.16	0.57	0.75	0.86	0.13	0.04	0.78	0.02	0.24	0.26
d, Delay for Lane Group [s/veh]	31.02	8.53	8.53	36.08	18.73	23.82	21.19	24.59	34.45	20.46	27.84	28.13
Lane Group LOS	C	A	A	D	B	C	C	C	C	C	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.92	0.91	0.90	0.49	6.47	7.25	0.68	0.14	2.89	0.14	0.71	0.70
50th-Percentile Queue Length [ft/ln]	73.02	22.63	22.54	12.27	161.81	181.34	16.99	3.62	72.22	3.54	17.77	17.52
95th-Percentile Queue Length [veh/ln]	5.26	1.63	1.62	0.88	10.64	11.67	1.22	0.26	5.20	0.26	1.28	1.26
95th-Percentile Queue Length [ft/ln]	131.43	40.74	40.57	22.09	266.12	291.76	30.58	6.52	130.00	6.38	31.98	31.53

Movement, Approach, & Intersection Results

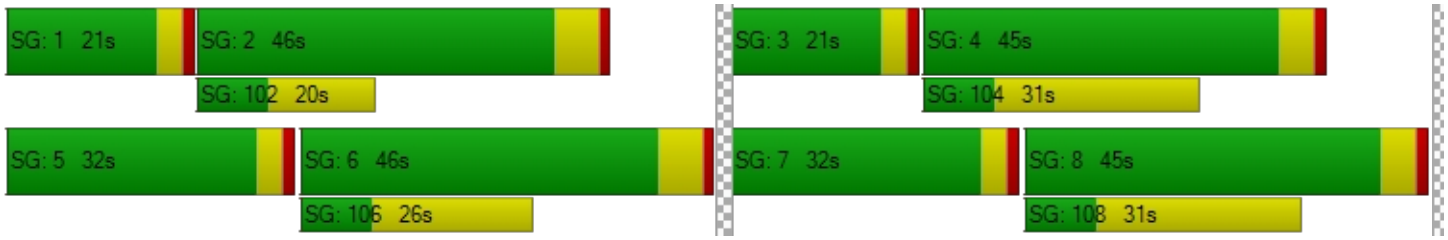
d_M, Delay for Movement [s/veh]	31.02	8.53	8.53	36.08	18.73	23.82	21.19	24.59	34.45	20.46	27.90	28.13
Movement LOS	C	A	A	D	B	C	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	17.51			21.61			30.87			27.13		
Approach LOS	B			C			C			C		
d_I, Intersection Delay [s/veh]	22.06											
Intersection LOS	C											
Intersection V/C	0.779											

Other Modes

g_Walk,mi, Effective Walk Time [s]	12.0	12.0	12.0	12.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	22.83	22.83	22.83	22.83
l_p,int, Pedestrian LOS Score for Intersection	2.600	2.678	2.547	2.151
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1185	1185	1185	1185
d_b, Bicycle Delay [s]	5.61	5.62	5.62	5.61
l_b,int, Bicycle LOS Score for Intersection	1.952	2.470	1.957	1.647
Bicycle LOS	A	B	A	A

Sequence

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



Intersection Level Of Service Report
Intersection 119: Juanipero Way/Phoenix Road

Control Type:	Signalized	Delay (sec / veh):	11.7
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.279

Intersection Setup

Name	Phoenix Rd			Phoenix Rd			Juanipero Way			Juanipero Way		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	130.00	100.00	100.00	155.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	45.00			45.00			25.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Phoenix Rd			Phoenix Rd			Juanipero Way			Juanipero Way		
Base Volume Input [veh/h]	159	340	8	19	437	63	26	14	148	55	47	54
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.00	2.00	0.00	5.00	3.00	0.00	3.00	0.00	1.00	0.00	0.00	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	340	8	19	437	63	26	14	148	55	47	54
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]	40	85	2	5	109	16	7	4	37	14	12	14
Total Analysis Volume [veh/h]	159	340	8	19	437	63	26	14	148	55	47	54
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
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	6	0	0	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	0	10	0	0	10	0	0	10	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	43	0	0	43	0	0	27	0	0	27	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	6	0	0	9	0	0	15	0	0	15	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	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	L	C
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	39	39	39	39	39	39	23	23	23	23
g / C, Green / Cycle	0.56	0.56	0.56	0.56	0.56	0.56	0.33	0.33	0.33	0.33
(v / s)_i Volume / Saturation Flow Rate	0.18	0.09	0.09	0.02	0.14	0.14	0.02	0.10	0.04	0.06
s, saturation flow rate [veh/h]	886	1863	1848	999	1845	1765	1276	1636	1243	1736
c, Capacity [veh/h]	508	1038	1029	585	1028	983	433	538	384	570
d1, Uniform Delay [s]	12.58	7.57	7.58	9.55	7.96	7.97	19.64	17.51	21.93	16.75
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.61	0.35	0.35	0.10	0.58	0.61	0.27	1.44	0.78	0.68
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.31	0.17	0.17	0.03	0.25	0.25	0.06	0.30	0.14	0.18
d, Delay for Lane Group [s/veh]	14.19	7.92	7.93	9.65	8.54	8.58	19.91	18.95	22.71	17.43
Lane Group LOS	B	A	A	A	A	A	B	B	C	B
Critical Lane Group	Yes	No	No	No	No	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.58	1.07	1.07	0.14	1.65	1.61	0.34	2.08	0.78	1.20
50th-Percentile Queue Length [ft/ln]	39.56	26.82	26.68	3.56	41.32	40.16	8.60	52.10	19.58	29.95
95th-Percentile Queue Length [veh/ln]	2.85	1.93	1.92	0.26	2.98	2.89	0.62	3.75	1.41	2.16
95th-Percentile Queue Length [ft/ln]	71.20	48.28	48.02	6.41	74.38	72.28	15.48	93.79	35.25	53.92

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	14.19	7.93	7.93	9.65	8.56	8.58	19.91	18.95	18.95	22.71	17.43	17.43
Movement LOS	B	A	A	A	A	A	B	B	B	C	B	B
d_A, Approach Delay [s/veh]	9.89			8.60			19.08			19.29		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	11.73											
Intersection LOS	B											
Intersection V/C	0.279											

Sequence

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

Intersection Level Of Service Report
Intersection 121: Phoenix Road/Grove Road

Control Type:	Signalized	Delay (sec / veh):	18.3
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.550

Intersection Setup

Name	Phoenix Rd			Phoenix Rd			Grove Rd			Grove Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	210.00	100.00	250.00	455.00	100.00	40.00	165.00	100.00	100.00	670.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	45.00			45.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Phoenix Rd			Phoenix Rd			Grove Rd			Grove Rd		
Base Volume Input [veh/h]	156	752	145	43	730	39	16	1	90	136	2	21
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	5.00	1.00	16.00	3.00	3.00	6.00	6.00	0.00	3.00	22.00	20.00	0.00
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	73	0	0	20	0	0	27	0	0	6
Total Hourly Volume [veh/h]	156	752	72	43	730	19	16	1	63	136	2	15
Peak Hour Factor	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
Other Adjustment Factor	1.0000	1.0000	1.0000	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	202	19	12	196	5	4	0	17	37	1	4
Total Analysis Volume [veh/h]	168	809	77	46	785	20	17	1	68	146	2	16
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	1			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			1			0		
v_co, Outbound Pedestrian Volume crossing	0			0			1			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			1			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	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 Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	5	2	0	1	6	0	7	4	0	3	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	5	0	5	5	0
Maximum Green [s]	20	40	0	20	40	0	10	15	0	20	20	0
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	25	45	0	25	45	0	15	20	0	25	25	0
Vehicle Extension [s]	2.5	4.1	0.0	2.5	4.1	0.0	4.0	2.0	0.0	2.5	4.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	23	0	0	23	0	0	27	0	0	26	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall	No	Yes		No	Yes		No	No		No	No	
Maximum Recall	No	No		No	No		No	Yes		No	Yes	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	L	C
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	3.00	3.00	0.00	3.00	3.00	0.00	3.00	0.00	3.00
g_i, Effective Green Time [s]	33	25	25	33	22	22	27	15	27	21
g / C, Green / Cycle	0.47	0.36	0.36	0.47	0.32	0.32	0.39	0.21	0.39	0.29
(v / s)_i Volume / Saturation Flow Rate	0.19	0.24	0.06	0.06	0.24	0.01	0.01	0.05	0.12	0.01
s, saturation flow rate [veh/h]	905	3306	1299	804	3253	1417	1322	1489	1214	1274
c, Capacity [veh/h]	434	1182	465	412	1043	454	737	318	566	374
d1, Uniform Delay [s]	10.71	15.27	12.40	11.40	21.33	16.41	13.39	22.72	14.87	17.74
k, delay calibration	0.16	0.16	0.16	0.08	0.16	0.16	0.50	0.50	0.08	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.83	1.04	0.24	0.09	1.65	0.06	0.06	1.56	0.18	0.24
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.39	0.68	0.17	0.11	0.75	0.04	0.02	0.22	0.26	0.05
d, Delay for Lane Group [s/veh]	11.54	16.31	12.64	11.49	22.97	16.47	13.45	24.28	15.05	17.98
Lane Group LOS	B	B	B	B	C	B	B	C	B	B
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	0.96	3.84	0.62	0.33	5.23	0.20	0.17	1.03	1.51	0.22
50th-Percentile Queue Length [ft/ln]	23.88	96.11	15.49	8.19	130.70	5.07	4.18	25.83	37.65	5.58
95th-Percentile Queue Length [veh/ln]	1.72	6.92	1.12	0.59	8.98	0.37	0.30	1.86	2.71	0.40
95th-Percentile Queue Length [ft/ln]	42.98	172.99	27.89	14.74	224.44	9.13	7.53	46.50	67.77	10.04

Movement, Approach, & Intersection Results

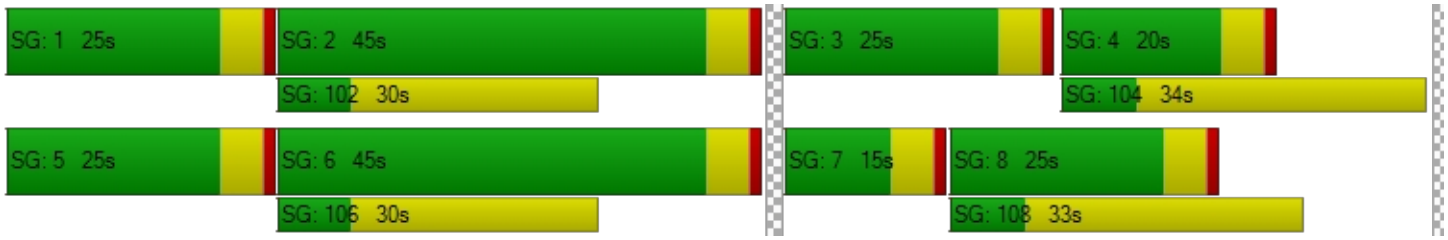
d_M, Delay for Movement [s/veh]	11.54	16.31	12.64	11.49	22.97	16.47	13.45	24.28	24.28	15.05	17.98	17.98
Movement LOS	B	B	B	B	C	B	B	C	C	B	B	B
d_A, Approach Delay [s/veh]	15.28			22.20			22.14			15.37		
Approach LOS	B			C			C			B		
d_I, Intersection Delay [s/veh]	18.29											
Intersection LOS	B											
Intersection V/C	0.550											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	16293.88	0.00	15388.91	0.00
d_p, Pedestrian Delay [s]	24.84	24.84	24.84	24.84
l_p,int, Pedestrian LOS Score for Intersection	3.070	2.895	2.181	2.079
Crosswalk LOS	C	C	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1144	1144	429	572
d_b, Bicycle Delay [s]	6.41	6.41	21.58	17.83
l_b,int, Bicycle LOS Score for Intersection	2.489	2.278	1.746	1.840
Bicycle LOS	B	B	A	A

Sequence

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



Intersection Level Of Service Report
Intersection 122: Phoenix/I-5 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	16.5
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.281

Intersection Setup

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

Volumes

Name							Phoenix Rd					
Base Volume Input [veh/h]	0	0	0	0	0	0	0	752	0	459	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 [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.00	0.00	7.00	0.00	0.00
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	0	0	0	0	752	0	459	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.9000	1.0000	0.9000	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	0	0	0	0	209	0	128	0	0
Total Analysis Volume [veh/h]	0	0	0	0	0	0	0	836	0	510	0	0
Presence of On-Street Parking							No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound 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			1			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	6.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Split	Split
Signal Group	0	0	0	0	0	0	0	2	0	8	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	0	0	0	0	10	0	10	0	0
Maximum Green [s]	0	0	0	0	0	0	0	30	0	30	0	0
Amber [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	0.0	4.0	0.0	0.0
All red [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	2.0	0.0	0.0
Split [s]	0	0	0	0	0	0	0	35	0	35	0	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.1	0.0	3.0	0.0	0.0
Walk [s]	0	0	0	0	0	0	0	8	0	8	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	12	0	12	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		
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	4.0	0.0	0.0
Minimum Recall								No		No		
Maximum Recall								Yes		Yes		
Pedestrian Recall								No		No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0	0.0	20.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	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, Cycle Length [s]			70	70
L, Total Lost Time per Cycle [s]			5.00	6.00
l1_p, Permitted Start-Up Lost Time [s]			0.00	0.00
l2, Clearance Lost Time [s]			3.00	4.00
g_i, Effective Green Time [s]			30	29
g / C, Green / Cycle			0.43	0.41
(v / s)_i Volume / Saturation Flow Rate			0.26	0.16
s, saturation flow rate [veh/h]			3253	3148
c, Capacity [veh/h]			1392	1307
d1, Uniform Delay [s]			15.45	14.30
k, delay calibration			0.50	0.50
I, Upstream Filtering Factor			1.00	1.00
d2, Incremental Delay [s]			1.93	0.88
d3, Initial Queue Delay [s]			0.00	0.00
Rp, platoon ratio			1.00	1.00
PF, progression factor			1.00	1.00

Lane Group Results

X, volume / capacity			0.60	0.39
d, Delay for Lane Group [s/veh]			17.38	15.18
Lane Group LOS			B	B
Critical Lane Group			Yes	No
50th-Percentile Queue Length [veh/ln]			5.01	2.75
50th-Percentile Queue Length [ft/ln]			125.25	68.69
95th-Percentile Queue Length [veh/ln]			8.68	4.95
95th-Percentile Queue Length [ft/ln]			217.03	123.63

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17.38	0.00	15.18	0.00	0.00
Movement LOS								B		B		
d_A, Approach Delay [s/veh]	0.00			0.00			17.38			15.18		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	16.54											
Intersection LOS	B											
Intersection V/C	0.281											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	12.0	0.0	12.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	24.06	0.00	24.06
l_p,int, Pedestrian LOS Score for Intersection	0.000	1.700	0.000	1.948
Crosswalk LOS	F	A	F	A
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	856	828
d_b, Bicycle Delay [s]	35.03	35.03	11.45	12.03
l_b,int, Bicycle LOS Score for Intersection	4.132	4.132	2.249	1.980
Bicycle LOS	D	D	B	A

Sequence

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

Intersection Level Of Service Report
Intersection 222: Phoenix Rd/I-5 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	17.5
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.289

Intersection Setup

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

Volumes

Name				Phoenix Rd			Phoenix Rd					
Base Volume Input [veh/h]	635	0	0	0	0	771	0	0	0	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 [%]	7.00	0.00	0.00	0.00	0.00	6.00	0.00	0.00	0.00	0.00	0.00	0.00
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]	635	0	0	0	0	771	0	0	0	0	0	0
Peak Hour Factor	0.9200	1.0000	1.0000	1.0000	1.0000	0.9200	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]	173	0	0	0	0	210	0	0	0	0	0	0
Total Analysis Volume [veh/h]	690	0	0	0	0	838	0	0	0	0	0	0
Presence of On-Street Parking	No		No	No		No						
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound 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]	70
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	6.00

Phasing & Timing

Control Type	Permiss	Split	Split	Split	Split	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	2	0	0	0	0	8	0	0	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	10	0	0	0	0	10	0	0	0	0	0	0
Maximum Green [s]	30	0	0	0	0	30	0	0	0	0	0	0
Amber [s]	4.0	0.0	0.0	0.0	0.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0
Split [s]	35	0	0	0	0	35	0	0	0	0	0	0
Vehicle Extension [s]	6.1	0.0	0.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	8	0	0	0	0	8	0	0	0	0	0	0
Pedestrian Clearance [s]	12	0	0	0	0	12	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						
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	3.0	0.0	0.0	0.0	0.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0
Minimum Recall	No					No						
Maximum Recall	Yes					Yes						
Pedestrian Recall	No					No						
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	0.0	0.0	0.0	0.0	20.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	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, Cycle Length [s]	70	70		
L, Total Lost Time per Cycle [s]	5.00	6.00		
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00		
l2, Clearance Lost Time [s]	3.00	4.00		
g_i, Effective Green Time [s]	30	29		
g / C, Green / Cycle	0.43	0.41		
(v / s)_i Volume / Saturation Flow Rate	0.22	0.26		
s, saturation flow rate [veh/h]	3148	3174		
c, Capacity [veh/h]	1347	1318		
d1, Uniform Delay [s]	14.70	16.29		
k, delay calibration	0.50	0.50		
I, Upstream Filtering Factor	1.00	1.00		
d2, Incremental Delay [s]	1.40	2.35		
d3, Initial Queue Delay [s]	0.00	0.00		
Rp, platoon ratio	1.00	1.00		
PF, progression factor	1.00	1.00		

Lane Group Results

X, volume / capacity	0.51	0.64		
d, Delay for Lane Group [s/veh]	16.10	18.63		
Lane Group LOS	B	B		
Critical Lane Group	No	Yes		
50th-Percentile Queue Length [veh/ln]	3.90	5.27		
50th-Percentile Queue Length [ft/ln]	97.60	131.80		
95th-Percentile Queue Length [veh/ln]	7.03	9.04		
95th-Percentile Queue Length [ft/ln]	175.67	225.93		

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	16.10	0.00	0.00	0.00	0.00	18.63	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS	B					B						
d_A, Approach Delay [s/veh]	16.10			18.63			0.00			0.00		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	17.49											
Intersection LOS	B											
Intersection V/C	0.289											

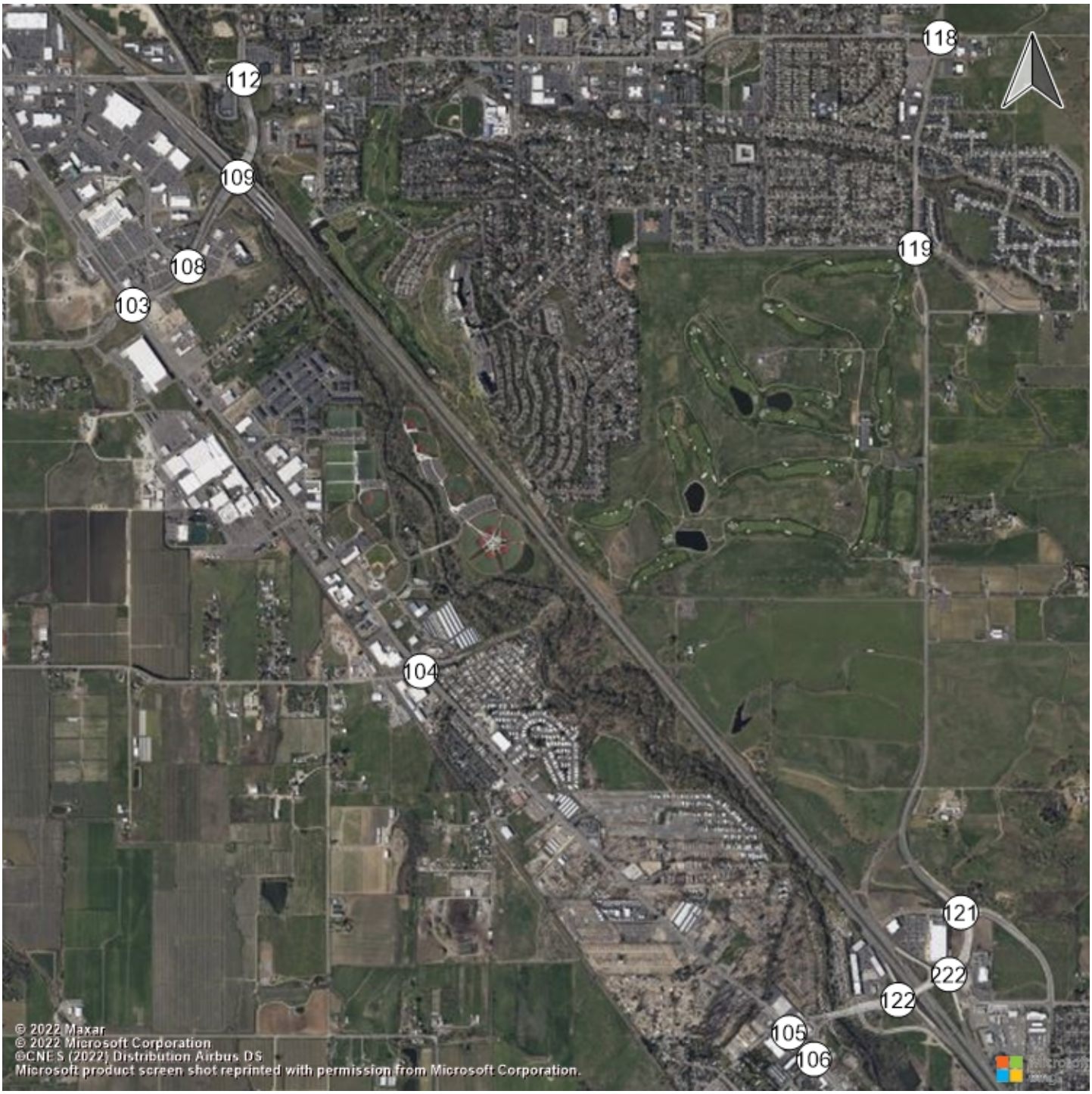
Other Modes

g_Walk,mi, Effective Walk Time [s]	12.0	0.0	12.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	24.06	0.00	24.06	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.036	0.000	1.700	0.000
Crosswalk LOS	B	F	A	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	856	828	0	0
d_b, Bicycle Delay [s]	11.45	12.03	35.03	35.03
l_b,int, Bicycle LOS Score for Intersection	2.129	2.251	4.132	4.132
Bicycle LOS	B	B	D	D

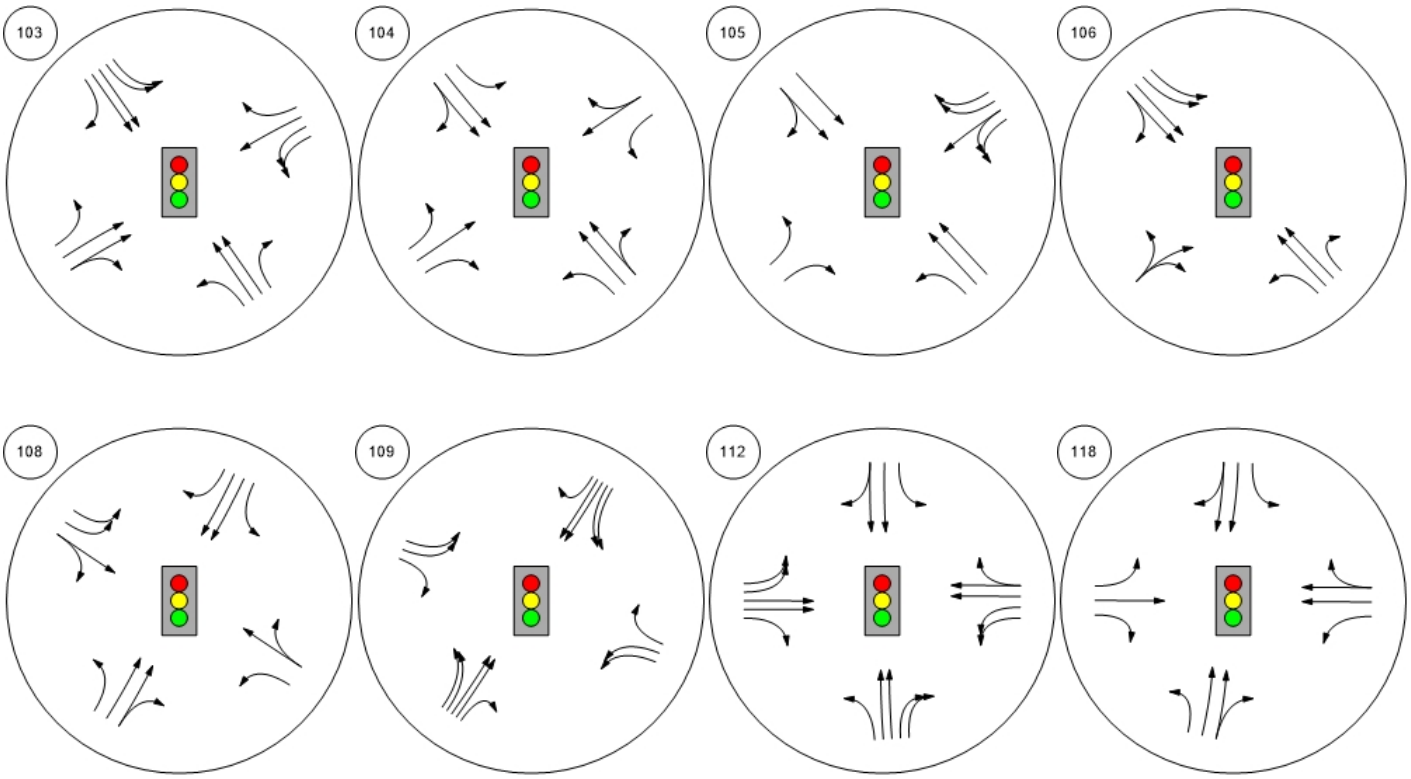
Sequence

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

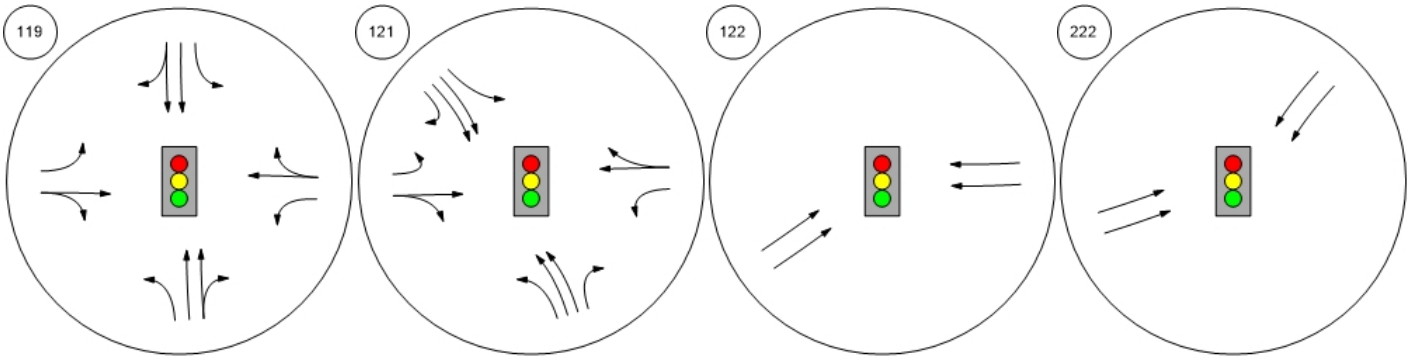
Study Intersections



Lane Configuration and Traffic Control



Lane Configuration and Traffic Control



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Report File: H:\...\No-Build PM.pdf

Scenario 3 2045 No-Build PM
2/13/2024

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
101	OR99/E Barnett Road	Signalized	HCM 7th Edition	EB Left	0.997	38.7	D
102	O99/E Stewart Avenue	Signalized	HCM 7th Edition	EB Right	0.872	45.8	D
103	OR99/Garfield Street	Signalized	HCM 7th Edition	NB Thru	0.966	51.3	D
104	OR99/Stage Road	Signalized	HCM 7th Edition	EB Right	0.836	29.5	C
105	OR99/Phoenix Road	Signalized	HCM 7th Edition	EB Left	0.774	22.7	C
106	OR99/Phoenix Road-Bolz Road	Signalized	HCM 7th Edition	EB Thru	0.977	66.1	E
107	Stewart Avenue/Center Drive	Signalized	HCM 7th Edition	NB Left	0.660	21.1	C
108	Garfield Street/Center Drive	Signalized	HCM 7th Edition	SB Left	0.732	72.2	E
109	I-5/Garfield Street Interchange	Signalized	HCM 7th Edition	SB Right	0.840	49.0	D
110	Barnett Road/Stewart Avenue	Signalized	HCM 7th Edition	SB Thru	0.845	29.2	C
111	Barnett Road/Alba Drive	Signalized	HCM 7th Edition	EB Left	0.601	7.4	A
112	Barnett Road/Highland Drive	Signalized	HCM 7th Edition	SB Right	0.877	47.9	D
113	Barnett Road/Ellendale Drive	Signalized	HCM 7th Edition	EB Left	0.688	18.0	B
114	Barnett Road/Black Oak Drive	Signalized	HCM 7th Edition	WB Left	0.980	59.7	E
115	Barnett Road/Murphy Road	Signalized	HCM 7th Edition	SB Right	0.603	33.8	C
116	Barnett Road/Golf View Drive	Signalized	HCM 7th Edition	NB Left	0.455	10.1	B
117	Juanipero Way/Golf View Drive	Two-way stop	HCM 7th Edition	NB Left	1.067	130.2	F
118	Barnett Road/Phoenix Road	Signalized	HCM 7th Edition	WB Right	0.862	29.9	C

119	Juanipero Way/Phoenix Road	Signalized	HCM 2010	WB Left	0.360	17.7	B
120	Phoenix Road/Commercial Drive	Two-way stop	HCM 7th Edition	WB Thru	0.031	43.6	E
121	Phoenix Road/Grove Road	Signalized	HCM 7th Edition	EB Right	0.698	20.1	C
122	Phoenix/I-5 SB Ramps	Signalized	HCM 7th Edition	NEB Thru	0.325	18.1	B
124	Golf View Drive/S Stage Road	Two-way stop	HCM 7th Edition	WB Left	0.032	10.9	B
222	Phoenix Rd/I-5 NB Ramps	Signalized	HCM 7th Edition	WB Thru	0.323	18.8	B

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

Intersection Level Of Service Report
Intersection 101: OR99/E Barnett Road

Control Type:	Signalized	Delay (sec / veh):	38.7
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.997

Intersection Setup

Name	OR99			OR99			E Barnett Rd			E Barnett Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	2	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	110.00	100.00	100.00	225.00	100.00	100.00	75.00	100.00	100.00	200.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	OR99			OR99			E Barnett Rd			E Barnett Rd		
Base Volume Input [veh/h]	86	982	73	302	1144	58	147	186	130	184	254	474
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.00	3.00	3.00	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]	86	982	73	302	1144	58	147	186	130	184	254	474
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	246	18	76	286	15	37	47	33	46	64	119
Total Analysis Volume [veh/h]	86	982	73	302	1144	58	147	186	130	184	254	474
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	7			3			4			8		
v_di, Inbound Pedestrian Volume crossing m	8			4			3			7		
v_co, Outbound Pedestrian Volume crossing	6			3			5			3		
v_ci, Inbound Pedestrian Volume crossing mi	5			3			6			3		
v_ab, Corner Pedestrian Volume [ped/h]	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]	90.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	5	2	2	1	6	6	7	4	4	3	8	1
Auxiliary Signal Groups												1,8
Lead / Lag	Lead	-	-	Lag	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	8	8	5	8	8	5	8	8	5	10	5
Maximum Green [s]	20	28	28	34	34	34	16	25	25	16	25	34
Amber [s]	4.0	4.0	4.0	5.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0	5.0
All red [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
Split [s]	9	34	34	29	54	54	24	34	34	23	33	29
Vehicle Extension [s]	1.0	3.0	3.0	2.0	3.0	3.0	2.0	1.5	1.5	1.0	1.5	2.0
Walk [s]	0	6	6	0	6	6	0	6	6	0	3	0
Pedestrian Clearance [s]	0	20	20	0	23	23	0	20	20	0	26	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	3.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	3.0
Minimum Recall	No	No		No	No		No	No		No	No	No
Maximum Recall	No	Yes		No	No		No	No		No	No	No
Pedestrian Recall	No	No		No	No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	5.00	5.00	5.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	3.00	3.00	3.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	8	53	53	14	59	59	16	21	21	15	20	59
g / C, Green / Cycle	0.06	0.44	0.44	0.12	0.49	0.49	0.13	0.18	0.18	0.12	0.17	0.50
(v / s)_i Volume / Saturation Flow Rate	0.05	0.30	0.30	0.09	0.34	0.34	0.16	0.09	0.10	0.11	0.14	0.32
s, saturation flow rate [veh/h]	1674	1757	1712	3277	1772	1740	920	1772	1511	1687	1772	1504
c, Capacity [veh/h]	108	769	749	386	870	854	168	317	271	209	301	746
d1, Uniform Delay [s]	55.38	27.27	27.30	51.44	23.60	23.67	54.87	44.61	44.87	51.69	48.28	22.25
k, delay calibration	0.04	0.50	0.50	0.04	0.50	0.50	0.50	0.04	0.04	0.04	0.17	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.06	5.13	5.30	1.33	4.57	4.73	43.15	0.50	0.66	4.65	9.52	4.11
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.80	0.69	0.70	0.78	0.70	0.70	0.88	0.52	0.55	0.88	0.84	0.64
d, Delay for Lane Group [s/veh]	60.44	32.40	32.59	52.77	28.17	28.40	98.02	45.11	45.53	56.34	57.79	26.36
Lane Group LOS	E	C	C	D	C	C	F	D	D	E	E	C
Critical Lane Group	No	No	Yes	No	No	No	Yes	No	No	No	Yes	Yes
50th-Percentile Queue Length [veh/ln]	2.70	13.07	12.81	4.45	13.81	13.72	6.45	4.50	4.08	5.66	8.08	10.33
50th-Percentile Queue Length [ft/ln]	67.45	326.85	320.32	111.18	345.28	342.95	161.27	112.40	101.98	141.44	201.97	258.32
95th-Percentile Queue Length [veh/ln]	4.86	19.00	18.68	7.91	19.91	19.79	10.62	7.97	7.34	9.56	12.74	15.60
95th-Percentile Queue Length [ft/ln]	121.40	475.10	467.08	197.64	497.65	494.80	265.40	199.34	183.56	238.97	318.51	390.11

Movement, Approach, & Intersection Results

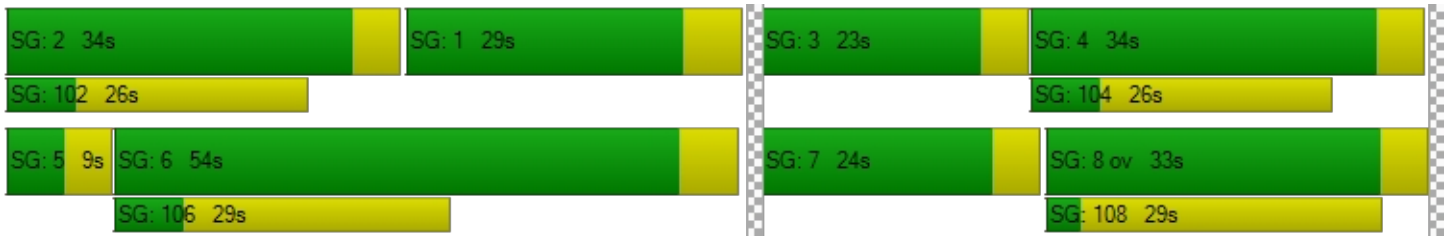
d_M, Delay for Movement [s/veh]	60.44	32.49	32.59	52.77	28.28	28.40	98.02	45.16	45.53	56.34	57.79	26.36
Movement LOS	E	C	C	D	C	C	F	D	D	E	E	C
d_A, Approach Delay [s/veh]	34.60			33.20			62.04			41.16		
Approach LOS	C			C			E			D		
d_I, Intersection Delay [s/veh]	38.73											
Intersection LOS	D											
Intersection V/C	0.997											

Other Modes

g_Walk,mi, Effective Walk Time [s]	10.0	7.0	10.0	10.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	50.42	53.20	50.42	50.42
l_p,int, Pedestrian LOS Score for Intersection	2.960	3.268	2.390	2.649
Crosswalk LOS	C	C	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	500	817	500	483
d_b, Bicycle Delay [s]	33.75	21.00	33.75	34.50
l_b,int, Bicycle LOS Score for Intersection	2.501	2.800	1.942	3.064
Bicycle LOS	B	C	A	C

Sequence

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



Intersection Level Of Service Report
Intersection 102: O99/E Stewart Avenue

Control Type:	Signalized	Delay (sec / veh):	45.8
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.872

Intersection Setup

Name	OR99			OR99			E Stewart Ave			Stewart Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	1	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	300.00	100.00	500.00	125.00	100.00	100.00	250.00	100.00	100.00	220.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	45.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	OR99			OR99			E Stewart Ave			Stewart Ave		
Base Volume Input [veh/h]	518	893	62	188	959	225	258	405	233	92	479	75
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.00	3.00	3.00	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]	518	893	62	188	959	225	258	405	233	92	479	75
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]	130	223	16	47	240	56	65	101	58	23	120	19
Total Analysis Volume [veh/h]	518	893	62	188	959	225	258	405	233	92	479	75
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			1			2			0		
v_di, Inbound Pedestrian Volume crossing m	0			2			1			0		
v_co, Outbound Pedestrian Volume crossing	1			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			1			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	176
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	5	2	2	1	6	6	7	4	4	3	8	8
Auxiliary Signal Groups			2,3									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	13	13	5	13	13	5	6	6	5	6	6
Maximum Green [s]	24	50	50	24	50	50	30	30	30	30	30	30
Amber [s]	3.5	4.7	4.7	3.5	4.7	4.7	3.5	4.0	4.0	3.5	4.0	4.0
All red [s]	0.5	0.7	0.7	0.5	0.7	0.7	0.5	0.5	0.5	0.5	0.5	0.5
Split [s]	37	60	60	55	78	78	20	46	46	15	41	41
Vehicle Extension [s]	1.5	4.7	4.7	1.5	4.7	4.7	2.5	2.5	2.5	2.5	2.5	2.5
Walk [s]	0	7	7	0	7	7	0	7	7	0	7	7
Pedestrian Clearance [s]	0	2	2	0	30	30	0	30	30	0	25	25
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	3.4	3.4	2.0	3.4	3.4	2.0	2.5	2.5	2.0	2.5	2.5
Minimum Recall	No	Yes	Yes	No	Yes		No	No		No	No	
Maximum Recall	No	No	No	No	No		No	No		No	No	
Pedestrian Recall	No	No	No	No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	20.0	20.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0	20.0	20.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	C	L	C	C
C, Cycle Length [s]	117	117	117	117	117	117	117	117	117	117	117	117
L, Total Lost Time per Cycle [s]	4.00	5.40	4.00	4.00	5.40	5.40	4.00	4.50	4.50	4.00	4.50	4.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	3.40	0.00	2.00	3.40	3.40	2.00	2.50	2.50	2.00	2.50	2.50
g_i, Effective Green Time [s]	21	57	71	9	46	46	12	25	25	8	22	22
g / C, Green / Cycle	0.18	0.49	0.61	0.07	0.39	0.39	0.10	0.21	0.21	0.07	0.19	0.19
(v / s)_i Volume / Saturation Flow Rate	0.16	0.27	0.04	0.06	0.34	0.35	0.08	0.19	0.19	0.05	0.16	0.16
s, saturation flow rate [veh/h]	3250	3346	1494	3277	1772	1656	3277	1772	1555	1687	1772	1689
c, Capacity [veh/h]	574	1637	906	244	686	641	323	377	331	120	329	313
d1, Uniform Delay [s]	47.47	20.93	9.50	53.45	33.63	33.84	51.90	45.11	45.13	53.67	46.44	46.49
k, delay calibration	0.04	0.20	0.20	0.04	0.35	0.36	0.08	0.24	0.24	0.08	0.15	0.15
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.23	0.53	0.06	1.93	11.82	13.64	3.44	15.60	17.54	7.30	8.66	9.46
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.90	0.55	0.07	0.77	0.89	0.90	0.80	0.90	0.90	0.76	0.86	0.87
d, Delay for Lane Group [s/veh]	49.69	21.46	9.56	55.39	45.45	47.48	55.33	60.70	62.66	60.97	55.11	55.95
Lane Group LOS	D	C	A	E	D	D	E	E	E	E	E	E
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	7.36	8.10	0.61	2.77	17.90	17.32	3.84	11.12	9.96	2.89	8.69	8.40
50th-Percentile Queue Length [ft/ln]	184.01	202.51	15.37	69.18	447.48	433.00	95.95	277.88	248.92	72.26	217.30	210.11
95th-Percentile Queue Length [veh/ln]	11.81	12.77	1.11	4.98	24.84	24.15	6.91	16.58	15.13	5.20	13.53	13.16
95th-Percentile Queue Length [ft/ln]	295.25	319.20	27.67	124.52	620.94	603.63	172.72	414.57	378.29	130.07	338.18	328.97

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	49.69	21.46	9.56	55.39	46.19	47.48	55.33	61.02	62.66	60.97	55.45	55.95
Movement LOS	D	C	A	E	D	D	E	E	E	E	E	E
d_A, Approach Delay [s/veh]	30.89			47.66			59.81			56.30		
Approach LOS	C			D			E			E		
d_I, Intersection Delay [s/veh]	45.78											
Intersection LOS	D											
Intersection V/C	0.872											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	48.26	48.26	48.26	48.26
l_p,int, Pedestrian LOS Score for Intersection	3.183	2.958	2.867	2.609
Crosswalk LOS	C	C	C	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	930	1236	706	621
d_b, Bicycle Delay [s]	16.83	8.57	24.57	27.91
l_b,int, Bicycle LOS Score for Intersection	2.775	2.692	2.299	2.093
Bicycle LOS	C	B	B	B

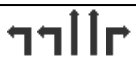
Sequence

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

Intersection Level Of Service Report
Intersection 103: OR99/Garfield Street

Control Type:	Signalized	Delay (sec / veh):	51.3
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.966

Intersection Setup

Name	OR99			OR99			Garfield St			Garfield St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	200.00	100.00	335.00	175.00	100.00	500.00	215.00	100.00	100.00	300.00	100.00	220.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	1	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	500.00	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	OR99			OR99			Garfield St			Garfield St		
Base Volume Input [veh/h]	96	808	563	452	771	53	76	300	46	472	526	281
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	3.00	3.00	2.00	2.00	7.00	2.00	4.00	6.00	3.00	4.00	5.00
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	282	0	0	27	0	0	14	0	0	141
Total Hourly Volume [veh/h]	96	808	281	452	771	26	76	300	32	472	526	140
Peak Hour Factor	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	27	227	79	127	217	7	21	84	9	133	148	39
Total Analysis Volume [veh/h]	108	908	316	508	866	29	85	337	36	530	591	157
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	2			0			0			2		
v_ci, Inbound Pedestrian Volume crossing mi	2			0			0			2		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	1			1			1			1		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	138
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	5	2	2	1	6	6	7	4	0	3	8	8
Auxiliary Signal Groups			2,3			6,7						1,8
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	10	5	10	10	5	5	0	5	5	5
Maximum Green [s]	25	30	30	24	30	30	20	30	0	35	75	75
Amber [s]	3.5	4.7	4.7	3.5	4.7	4.7	3.5	4.0	0.0	3.5	4.0	4.0
All red [s]	0.5	0.7	0.7	0.5	0.7	0.7	0.5	0.5	0.0	0.5	0.5	0.5
Split [s]	11	46	46	22	57	57	10	44	0	26	60	60
Vehicle Extension [s]	2.1	4.7	4.7	2.1	4.7	4.7	2.5	2.5	0.0	2.1	2.5	2.5
Walk [s]	0	8	8	0	0	0	0	8	0	0	8	8
Pedestrian Clearance [s]	0	29	29	0	0	0	0	30	0	0	25	25
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	3.4	3.4	2.0	3.4	3.4	2.0	2.5	0.0	2.0	2.5	2.5
Minimum Recall	No	Yes	Yes	No	Yes	Yes	No	No		No	No	No
Maximum Recall	No	No	No	No	No	No	No	No		No	No	No
Pedestrian Recall	No	No	No	No	No	No	No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	0.0	20.0	20.0	20.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	122	122	122	122	122	122	122	122	122	122	122	122
L, Total Lost Time per Cycle [s]	4.00	5.40	4.00	4.00	5.40	4.00	4.00	4.50	4.50	4.00	4.50	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	3.40	0.00	2.00	3.40	0.00	2.00	2.50	2.50	2.00	2.50	0.00
g_i, Effective Green Time [s]	10	30	60	22	42	55	8	28	28	24	45	71
g / C, Green / Cycle	0.08	0.25	0.49	0.18	0.34	0.45	0.07	0.23	0.23	0.20	0.37	0.58
(v / s)_i Volume / Saturation Flow Rate	0.06	0.28	0.22	0.16	0.26	0.02	0.05	0.11	0.11	0.17	0.35	0.11
s, saturation flow rate [veh/h]	1667	3253	1440	3186	3279	1391	1640	1695	1633	3160	1695	1417
c, Capacity [veh/h]	132	800	705	563	1126	630	107	392	378	631	620	820
d1, Uniform Delay [s]	53.74	41.02	13.06	45.64	29.04	13.43	54.89	36.27	36.32	42.94	30.30	6.26
k, delay calibration	0.05	0.21	0.38	0.05	0.20	0.20	0.08	0.08	0.08	0.05	0.12	0.07
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.72	68.01	1.57	2.77	2.11	0.06	9.35	0.68	0.72	1.45	9.90	0.07
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.82	1.14	0.45	0.90	0.77	0.05	0.79	0.48	0.49	0.84	0.95	0.19
d, Delay for Lane Group [s/veh]	59.46	109.04	14.63	48.41	31.15	13.48	64.25	36.95	37.05	44.39	40.20	6.33
Lane Group LOS	E	F	B	D	C	B	E	D	D	D	D	A
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	3.38	18.80	3.94	7.33	10.03	0.34	2.79	4.45	4.35	7.30	16.64	1.05
50th-Percentile Queue Length [ft/ln]	84.47	470.01	98.43	183.26	250.63	8.57	69.87	111.15	108.70	182.48	416.04	26.15
95th-Percentile Queue Length [veh/ln]	6.08	27.81	7.09	11.77	15.22	0.62	5.03	7.90	7.77	11.73	23.33	1.88
95th-Percentile Queue Length [ft/ln]	152.05	695.26	177.17	294.26	380.44	15.43	125.76	197.60	194.19	293.25	583.30	47.07

Movement, Approach, & Intersection Results

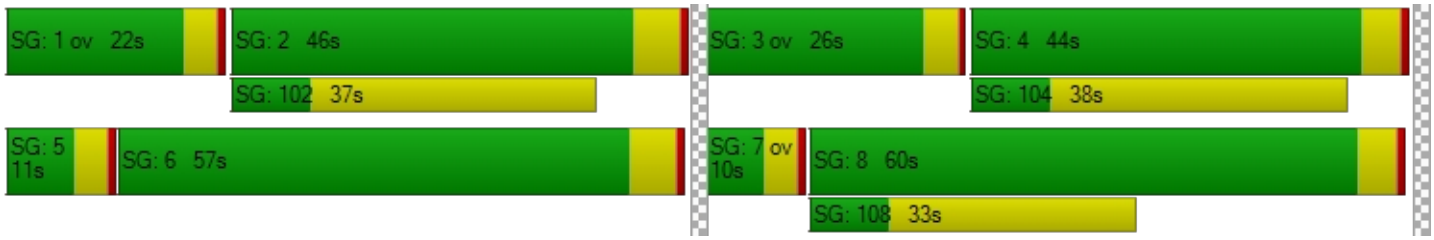
d_M, Delay for Movement [s/veh]	59.46	109.04	14.63	48.41	31.15	13.48	64.25	36.99	37.05	44.39	40.20	6.33
Movement LOS	E	F	B	D	C	B	E	D	D	D	D	A
d_A, Approach Delay [s/veh]	82.62			37.03			42.05			37.78		
Approach LOS	F			D			D			D		
d_I, Intersection Delay [s/veh]	51.34											
Intersection LOS	D											
Intersection V/C	0.966											

Other Modes

g_Walk,mi, Effective Walk Time [s]	12.0	12.0	0.0	12.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	2024.55
d_p, Pedestrian Delay [s]	49.55	49.55	0.00	49.55
l_p,int, Pedestrian LOS Score for Intersection	3.365	3.025	0.000	3.132
Crosswalk LOS	C	C	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	666	846	648	910
d_b, Bicycle Delay [s]	27.14	20.29	27.87	18.10
l_b,int, Bicycle LOS Score for Intersection	2.891	2.739	1.949	3.901
Bicycle LOS	C	B	A	D

Sequence

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



Intersection Level Of Service Report
Intersection 104: OR99/Stage Road

Control Type:	Signalized	Delay (sec / veh):	29.5
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.836

Intersection Setup

Name	OR99			OR99			South Stage Road			South Stage Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Entry Pocket Length [ft]	160.00	100.00	100.00	160.00	100.00	100.00	100.00	100.00	20.00	130.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			45.00			45.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	OR99			OR99			South Stage Road			South Stage Road		
Base Volume Input [veh/h]	316	726	41	37	750	191	135	20	263	48	31	31
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	3.00	0.00	1.00	6.00	4.00	0.00	2.00	0.00	4.00	3.00
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]	316	726	41	37	750	191	135	20	263	48	31	31
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	86	197	11	10	204	52	37	5	71	13	8	8
Total Analysis Volume [veh/h]	343	789	45	40	815	208	147	22	286	52	34	34
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]	240
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	5	2	0	1	6	0	7	4	0	3	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	13	0	5	13	0	5	5	0	5	5	0
Maximum Green [s]	18	34	0	10	26	0	30	16	0	30	16	0
Amber [s]	3.5	4.7	0.0	3.5	4.7	0.0	3.0	3.5	0.0	3.0	3.5	0.0
All red [s]	0.5	0.7	0.0	0.5	0.7	0.0	1.0	0.5	0.0	1.0	0.5	0.0
Split [s]	91	48	0	102	59	0	54	69	0	21	36	0
Vehicle Extension [s]	2.5	5.8	0.0	2.5	5.8	0.0	3.0	2.5	0.0	3.0	2.5	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	33	0	0	29	0	0	21	0	0	23	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	3.4	0.0	2.0	3.4	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	Yes		Yes	Yes		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C
C, Cycle Length [s]	74	74	74	74	74	74	74	74	74	74	74
L, Total Lost Time per Cycle [s]	5.40	5.40	5.40	5.40	5.40	5.40	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	3.40	3.40	0.00	3.40	3.40	0.00	2.00	2.00	0.00	2.00
g_i, Effective Green Time [s]	42	35	35	42	25	25	23	16	16	23	12
g / C, Green / Cycle	0.56	0.47	0.47	0.56	0.34	0.34	0.31	0.21	0.21	0.31	0.16
(v / s)_i Volume / Saturation Flow Rate	0.37	0.24	0.24	0.05	0.31	0.31	0.10	0.01	0.20	0.04	0.04
s, saturation flow rate [veh/h]	926	1722	1690	784	1736	1616	1429	1750	1464	1220	1557
c, Capacity [veh/h]	500	808	793	467	592	551	536	376	314	512	255
d1, Uniform Delay [s]	13.78	13.89	13.90	8.52	23.30	23.31	19.43	23.29	28.57	18.17	27.24
k, delay calibration	0.42	0.35	0.35	0.08	0.43	0.43	0.08	0.08	0.34	0.11	0.08
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.38	1.69	1.72	0.06	16.60	17.63	0.20	0.05	24.54	0.09	0.41
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.69	0.52	0.52	0.09	0.89	0.90	0.27	0.06	0.91	0.10	0.27
d, Delay for Lane Group [s/veh]	20.16	15.58	15.62	8.57	39.91	40.94	19.63	23.33	53.11	18.25	27.65
Lane Group LOS	C	B	B	A	D	D	B	C	D	B	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	3.58	4.89	4.81	0.23	10.41	9.85	1.75	0.29	6.65	0.63	1.07
50th-Percentile Queue Length [ft/ln]	89.39	122.22	120.23	5.85	260.13	246.22	43.80	7.19	166.19	15.81	26.73
95th-Percentile Queue Length [veh/ln]	6.44	8.51	8.41	0.42	15.70	15.00	3.15	0.52	10.88	1.14	1.92
95th-Percentile Queue Length [ft/ln]	160.89	212.87	210.14	10.52	392.39	374.89	78.84	12.93	271.89	28.45	48.11

Movement, Approach, & Intersection Results

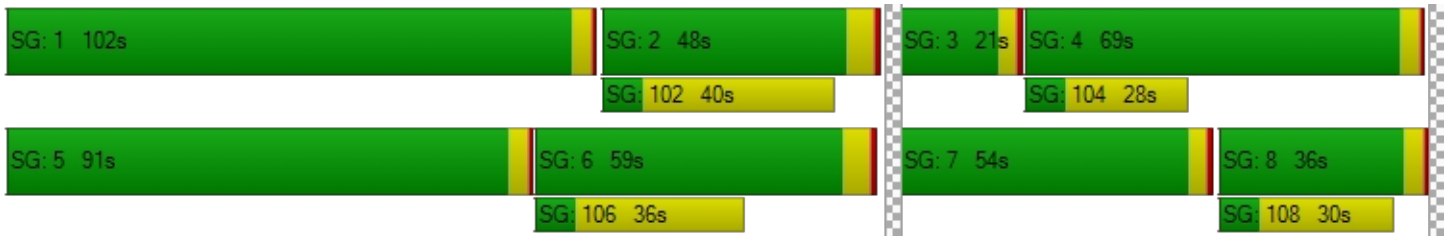
d_M, Delay for Movement [s/veh]	20.16	15.60	15.62	8.57	40.27	40.94	19.63	23.33	53.11	18.25	27.65	27.65
Movement LOS	C	B	B	A	D	D	B	C	D	B	C	C
d_A, Approach Delay [s/veh]	16.93			39.21			40.85			23.58		
Approach LOS	B			D			D			C		
d_I, Intersection Delay [s/veh]	29.49											
Intersection LOS	C											
Intersection V/C	0.836											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	27.05	27.05	27.05	27.05
l_p,int, Pedestrian LOS Score for Intersection	2.762	2.924	2.680	2.019
Crosswalk LOS	C	C	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1144	1439	1746	859
d_b, Bicycle Delay [s]	6.82	2.92	0.60	12.11
l_b,int, Bicycle LOS Score for Intersection	2.531	2.437	2.310	1.758
Bicycle LOS	B	B	B	A

Sequence

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



Intersection Level Of Service Report
Intersection 105: OR99/Phoenix Road

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):	0.774

Intersection Setup

Name	OR99			OR99			Shopping Center Access			Phoenix Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0	0	0	0	0	0	2
Entry Pocket Length [ft]	80.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	225.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	OR99			OR99			Shopping Center Access			Phoenix Rd		
Base Volume Input [veh/h]	44	604	0	0	1007	24	35	0	23	611	53	374
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	7.00	5.00	2.00	2.00	3.00	5.00	3.00	2.00	10.00	4.00	4.00	4.00
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	7	0	0	12	0	0	187
Total Hourly Volume [veh/h]	44	604	0	0	1007	17	35	0	11	611	53	187
Peak Hour Factor	0.9200	0.9200	0.9500	0.9500	0.9200	0.9200	0.9200	0.9500	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	164	0	0	274	5	10	0	3	166	14	51
Total Analysis Volume [veh/h]	48	657	0	0	1095	18	38	0	12	664	58	203
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]	160
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Permiss	Split	Split	Split	Overlap
Signal Group	1	6	0	0	2	0	8	0	0	0	7	7
Auxiliary Signal Groups												5,7
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	5	10	0	0	10	0	5	0	0	0	5	5
Maximum Green [s]	10	30	0	0	30	0	20	0	0	0	30	30
Amber [s]	3.5	3.5	0.0	0.0	3.5	0.0	3.5	0.0	0.0	0.0	3.5	3.5
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	1.0	0.0	0.0	0.0	1.0	1.0
Split [s]	15	41	0	0	63	0	38	0	0	0	44	44
Vehicle Extension [s]	2.0	6.1	0.0	0.0	6.1	0.0	2.0	0.0	0.0	0.0	2.0	2.0
Walk [s]	0	0	0	0	7	0	7	0	0	0	7	7
Pedestrian Clearance [s]	0	0	0	0	23	0	26	0	0	0	27	27
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No		No				No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.5	2.5	0.0	0.0	2.5	0.0	2.5	0.0	0.0	0.0	2.5	2.5
Minimum Recall	No	Yes			Yes		No				No	No
Maximum Recall	No	No			No		No				No	No
Pedestrian Recall	No	No			No		No				No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	20.0	0.0	0.0	20.0	0.0	20.0	0.0	0.0	0.0	20.0	20.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	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	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.50	2.50	2.50	2.50	2.50	2.50	2.50	0.00
g_i, Effective Green Time [s]	21	21	27	27	3	3	18	18	32
g / C, Green / Cycle	0.29	0.29	0.39	0.39	0.04	0.04	0.26	0.26	0.47
(v / s)_i Volume / Saturation Flow Rate	0.11	0.21	0.33	0.33	0.02	0.01	0.22	0.22	0.08
s, saturation flow rate [veh/h]	425	3200	1709	1699	1627	1370	1614	1626	2550
c, Capacity [veh/h]	274	944	674	670	73	62	418	421	1190
d1, Uniform Delay [s]	17.50	18.56	14.53	14.58	32.60	32.12	21.71	21.67	7.48
k, delay calibration	0.16	0.42	0.45	0.45	0.04	0.04	0.04	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.45	3.54	10.08	10.42	2.11	0.57	2.12	2.01	0.02
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	1.33	1.33	1.33	1.33	1.00	1.00	1.33	1.33	1.33
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	0.18	0.70	0.83	0.83	0.52	0.19	0.86	0.86	0.17
d, Delay for Lane Group [s/veh]	17.94	22.10	24.61	24.99	34.71	32.68	23.83	23.68	7.50
Lane Group LOS	B	C	C	C	C	C	C	C	A
Critical Lane Group	Yes	No	No	Yes	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.49	4.16	7.12	7.20	0.65	0.20	4.80	4.79	0.57
50th-Percentile Queue Length [ft/ln]	12.26	103.94	178.01	179.90	16.24	4.96	119.97	119.71	14.27
95th-Percentile Queue Length [veh/ln]	0.88	7.48	11.50	11.60	1.17	0.36	8.39	8.38	1.03
95th-Percentile Queue Length [ft/ln]	22.06	187.09	287.42	289.89	29.22	8.93	209.78	209.43	25.68

Movement, Approach, & Intersection Results

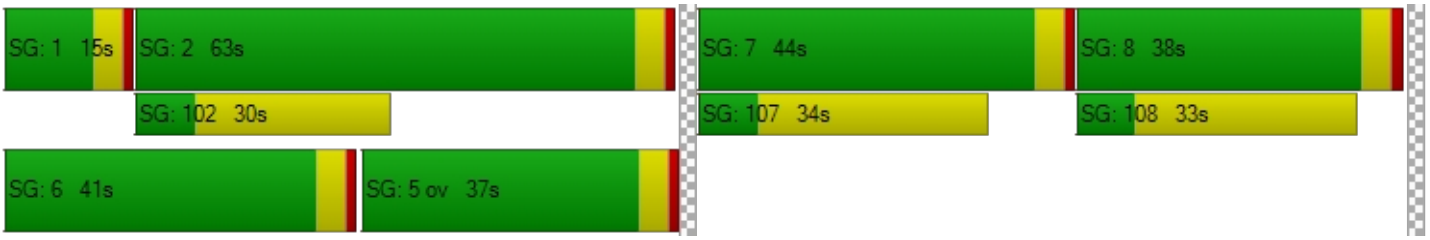
d_M, Delay for Movement [s/veh]	17.94	22.10	0.00	0.00	24.80	24.99	34.71	0.00	32.68	23.76	23.68	7.50
Movement LOS	B	C			C	C	C		C	C	C	A
d_A, Approach Delay [s/veh]	21.82			24.80			34.22			20.19		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	22.69											
Intersection LOS	C											
Intersection V/C	0.774											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	36.5
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	24.68	24.68	24.68	7.88
l_p,int, Pedestrian LOS Score for Intersection	2.771	2.664	2.025	2.615
Crosswalk LOS	C	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1048	1680	962	1135
d_b, Bicycle Delay [s]	7.88	0.89	9.37	6.52
l_b,int, Bicycle LOS Score for Intersection	2.141	2.484	1.560	3.394
Bicycle LOS	B	B	A	C

Sequence

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



Intersection Level Of Service Report
Intersection 106: OR99/Phoenix Road-Bolz Road

Control Type:	Signalized	Delay (sec / veh):	66.1
Analysis Method:	HCM 7th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.977

Intersection Setup

Name	OR99			OR99			Bolz Rd			Bolz Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	2	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	120.00	100.00	100.00	200.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	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	Yes			Yes			Yes			Yes		

Volumes

Name	OR99			OR99			Bolz Rd			Bolz Rd		
Base Volume Input [veh/h]	12	516	476	345	1224	77	92	262	46	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 [%]	0.00	5.00	2.00	2.00	4.00	0.00	10.00	5.00	0.00	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]	12	516	476	345	1224	77	92	262	46	0	0	0
Peak Hour Factor	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	145	134	97	344	22	26	74	13	0	0	0
Total Analysis Volume [veh/h]	13	580	535	388	1375	87	103	294	52	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	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Isolated
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	ProtPer	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Permiss	Permiss
Signal Group	1	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	10	0	5	10	0	0	5	0	0	0	0
Maximum Green [s]	25	45	0	40	40	0	0	25	0	0	0	0
Amber [s]	3.5	3.5	0.0	3.5	3.5	0.0	0.0	3.5	0.0	0.0	0.0	0.0
All red [s]	0.5	1.0	0.0	0.5	1.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0
Split [s]	9	36	0	9	36	0	0	45	0	0	0	0
Vehicle Extension [s]	2.5	1.4	0.0	2.5	4.1	0.0	0.0	4.0	0.0	0.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	0	0
Pedestrian Clearance [s]	0	24	0	0	16	0	0	29	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	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]	2.0	2.5	0.0	2.0	2.5	0.0	0.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall	No	Yes		No	Yes			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]	20.0	20.0	0.0	20.0	0.0	0.0	0.0	20.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	
C, Cycle Length [s]	91	91	91	91	91	91	91	
L, Total Lost Time per Cycle [s]	4.25	4.50	4.50	4.00	4.50	4.50	4.00	
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	0.00	2.50	2.50	2.00	2.50	2.50	2.00	
g_i, Effective Green Time [s]	39	38	38	15	40	40	25	
g / C, Green / Cycle	0.43	0.42	0.42	0.16	0.44	0.44	0.28	
(v / s)_i Volume / Saturation Flow Rate	0.02	0.20	0.41	0.14	0.48	0.49	0.31	
s, saturation flow rate [veh/h]	761	2880	1318	2867	1525	1494	1466	
c, Capacity [veh/h]	371	1213	555	473	673	659	405	
d1, Uniform Delay [s]	22.08	13.90	19.21	36.53	25.30	25.30	32.80	
k, delay calibration	0.16	0.04	0.29	0.08	0.50	0.50	0.50	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	0.06	0.11	21.76	2.69	60.94	67.84	77.96	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.33	1.33	1.33	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	0.04	0.48	0.96	0.82	1.09	1.11	1.11	
d, Delay for Lane Group [s/veh]	22.14	14.01	40.97	39.22	86.24	93.13	110.76	
Lane Group LOS	C	B	D	D	F	F	F	
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	0.12	3.05	11.74	4.24	24.84	25.59	17.32	
50th-Percentile Queue Length [ft/ln]	2.98	76.14	293.42	106.04	620.99	639.77	432.93	
95th-Percentile Queue Length [veh/ln]	0.21	5.48	17.36	7.62	35.08	36.42	25.65	
95th-Percentile Queue Length [ft/ln]	5.37	137.06	433.88	190.48	876.90	910.38	641.30	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	22.14	14.01	40.97	39.22	89.46	93.13	110.76	110.76	110.76	0.00	0.00	0.00
Movement LOS	C	B	D	D	F	F	F	F	F			
d_A, Approach Delay [s/veh]	26.89			79.10			110.76			0.00		
Approach LOS	C			E			F			A		
d_I, Intersection Delay [s/veh]	66.06											
Intersection LOS	E											
Intersection V/C	0.977											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.93	34.93	34.93	34.93
l_p,int, Pedestrian LOS Score for Intersection	2.868	2.864	1.995	2.308
Crosswalk LOS	C	C	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	696	696	906	0
d_b, Bicycle Delay [s]	19.24	19.24	13.54	45.26
l_b,int, Bicycle LOS Score for Intersection	2.490	3.086	2.300	4.132
Bicycle LOS	B	C	B	D

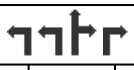
Sequence

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

Intersection Level Of Service Report
Intersection 107: Stewart Avenue/Center Drive

Control Type:	Signalized	Delay (sec / veh):	21.1
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.660

Intersection Setup

Name	Stewart Ave			Stewart Ave			Center Dr			Center Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	2	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	250.00	100.00	175.00	225.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			Yes			No		

Volumes

Name	Stewart Ave			Stewart Ave			Center Dr			Center Dr		
Base Volume Input [veh/h]	48	385	201	428	301	50	75	84	21	248	85	391
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	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]	48	385	201	428	301	50	75	84	21	248	85	391
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	96	50	107	75	13	19	21	5	62	21	98
Total Analysis Volume [veh/h]	48	385	201	428	301	50	75	84	21	248	85	391
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			3			3			0		
v_di, Inbound Pedestrian Volume crossing m	0			3			3			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]	156
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	7	4	4	3	8	8	1	6	6	5	2	2
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	4	5	5	4	5	5	4	4	4	4	4	4
Maximum Green [s]	28	45	45	28	45	45	28	32	32	32	32	32
Amber [s]	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All red [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
Split [s]	10	37	37	26	53	53	55	76	76	17	38	38
Vehicle Extension [s]	2.0	3.0	3.0	2.0	3.0	3.0	1.5	2.0	2.0	1.5	2.0	2.0
Walk [s]	0	7	7	0	7	7	0	7	7	0	7	7
Pedestrian Clearance [s]	0	25	25	0	26	26	0	27	27	0	26	26
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	54	54	54	54	54	54	54	54	54	54	54	54
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	2	10	10	9	18	18	3	8	8	6	11	11
g / C, Green / Cycle	0.04	0.20	0.20	0.18	0.33	0.33	0.06	0.14	0.14	0.11	0.20	0.20
(v / s)_i Volume / Saturation Flow Rate	0.03	0.11	0.13	0.13	0.10	0.10	0.04	0.03	0.03	0.08	0.15	0.15
s, saturation flow rate [veh/h]	1687	3373	1506	3277	1772	1680	1687	1772	1653	3277	1589	1506
c, Capacity [veh/h]	65	660	294	578	591	560	95	253	236	372	319	302
d1, Uniform Delay [s]	25.63	19.67	20.11	21.01	13.31	13.32	25.11	20.39	20.42	22.89	20.32	20.36
k, delay calibration	0.04	0.11	0.11	0.04	0.11	0.11	0.04	0.04	0.04	0.04	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.04	0.82	2.78	0.71	0.29	0.31	5.47	0.15	0.17	0.77	1.44	1.59
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.74	0.58	0.68	0.74	0.30	0.31	0.79	0.21	0.22	0.67	0.76	0.77
d, Delay for Lane Group [s/veh]	31.66	20.49	22.89	21.72	13.60	13.62	30.58	20.54	20.59	23.65	21.76	21.95
Lane Group LOS	C	C	C	C	B	B	C	C	C	C	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.66	2.01	2.29	2.32	1.41	1.35	1.04	0.57	0.55	1.46	2.79	2.69
50th-Percentile Queue Length [ft/ln]	16.59	50.19	57.26	57.90	35.37	33.78	26.02	14.14	13.85	36.43	69.69	67.22
95th-Percentile Queue Length [veh/ln]	1.19	3.61	4.12	4.17	2.55	2.43	1.87	1.02	1.00	2.62	5.02	4.84
95th-Percentile Queue Length [ft/ln]	29.87	90.34	103.07	104.22	63.66	60.81	46.83	25.45	24.92	65.57	125.44	121.00

Movement, Approach, & Intersection Results

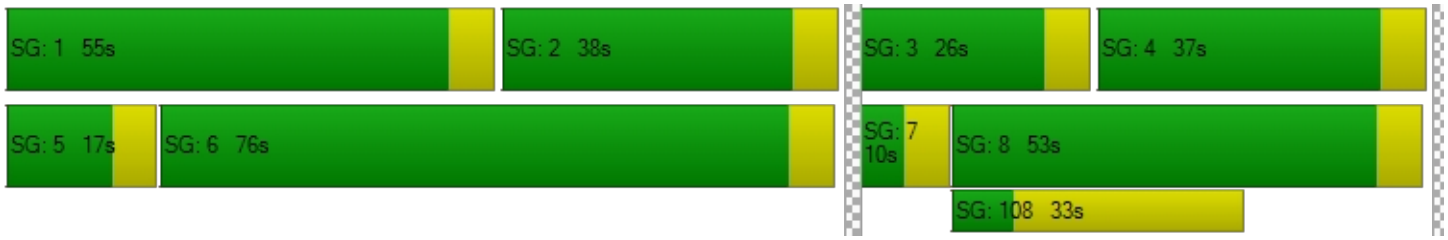
d_M, Delay for Movement [s/veh]	31.66	20.49	22.89	21.72	13.61	13.62	30.58	20.56	20.59	23.65	21.76	21.88
Movement LOS	C	C	C	C	B	B	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	22.10			18.06			24.74			22.47		
Approach LOS	C			B			C			C		
d_I, Intersection Delay [s/veh]	21.06											
Intersection LOS	C											
Intersection V/C	0.660											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	11.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	16.98	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.176	0.000
Crosswalk LOS	F	F	B	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1192	1788	2644	1229
d_b, Bicycle Delay [s]	4.38	0.30	2.79	3.99
l_b,int, Bicycle LOS Score for Intersection	2.083	2.202	1.708	2.754
Bicycle LOS	B	B	A	C

Sequence

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



Intersection Level Of Service Report
Intersection 108: Garfield Street/Center Drive

Control Type:	Signalized	Delay (sec / veh):	72.2
Analysis Method:	HCM 7th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.732

Intersection Setup

Name	Center Dr			Center Dr			Garfield St			Garfield St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	210.00	100.00	100.00	190.00	100.00	100.00	400.00	100.00	180.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Center Dr			Center Dr			Garfield St			Garfield St		
Base Volume Input [veh/h]	49	38	127	594	36	302	210	1007	39	114	1010	791
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.00	7.00	2.00	3.00	4.00	2.00	2.00	3.00	0.00	0.00	4.00	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	38	0	0	151	0	0	2	0	0	396
Total Hourly Volume [veh/h]	49	38	89	594	36	151	210	1007	37	114	1010	395
Peak Hour Factor	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	13	10	23	155	9	39	55	262	10	30	263	103
Total Analysis Volume [veh/h]	51	40	93	619	38	157	219	1049	39	119	1052	411
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	6			1			1			6		
v_di, Inbound Pedestrian Volume crossing m	6			1			1			6		
v_co, Outbound Pedestrian Volume crossing	0			3			0			2		
v_ci, Inbound Pedestrian Volume crossing mi	0			2			0			3		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			2			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	130
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Overlap
Signal Group	5	2	0	1	6	0	7	4	0	3	8	8
Auxiliary Signal Groups												1,8
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	10	0	5	10	10
Maximum Green [s]	18	18	0	18	18	0	25	55	0	25	55	55
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	4.0
All red [s]	0.5	0.5	0.0	0.5	0.5	0.0	0.5	0.5	0.0	0.5	0.5	0.5
Split [s]	11	62	0	27	46	0	13	29	0	28	44	44
Vehicle Extension [s]	2.5	2.5	0.0	2.5	2.5	0.0	2.5	4.2	0.0	2.5	4.2	4.2
Walk [s]	0	8	0	0	8	0	0	8	0	0	8	8
Pedestrian Clearance [s]	0	34	0	0	33	0	0	16	0	0	31	31
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.5	2.5	0.0	2.5	2.5	0.0	2.5	2.5	0.0	2.5	2.5	2.5
Minimum Recall	No	No		No	No		No	Yes		No	Yes	Yes
Maximum Recall	No	No		No	No		No	No		No	No	No
Pedestrian Recall	No	No		No	No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	20.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	L	C	L	C	C	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.50	2.50	0.00	2.50	0.00	2.50	2.50	0.00	2.50	0.00
g_i, Effective Green Time [s]	4	23	12	15	50	41	41	50	39	56
g / C, Green / Cycle	0.04	0.26	0.14	0.16	0.55	0.45	0.45	0.55	0.43	0.61
(v / s)_i Volume / Saturation Flow Rate	0.03	0.09	0.22	0.13	0.36	0.32	0.32	0.17	0.33	0.28
s, saturation flow rate [veh/h]	1614	1457	2784	1461	602	1709	1687	692	3227	1460
c, Capacity [veh/h]	65	376	363	235	359	770	760	381	1378	896
d1, Uniform Delay [s]	43.11	27.45	39.77	36.83	15.00	13.96	13.97	9.86	16.02	3.83
k, delay calibration	0.08	0.08	0.08	0.16	0.21	0.17	0.17	0.14	0.17	0.17
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	14.46	0.42	319.25	10.32	3.31	1.90	1.94	0.58	1.37	0.56
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.33	1.33	1.33	1.33	1.33	1.33
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.79	0.35	1.71	0.83	0.61	0.71	0.71	0.31	0.76	0.46
d, Delay for Lane Group [s/veh]	57.57	27.87	359.03	47.15	18.31	15.86	15.91	10.45	17.39	4.39
Lane Group LOS	E	C	F	D	B	B	B	B	B	A
Critical Lane Group	No	No	Yes	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.38	2.35	19.95	4.77	1.50	6.31	6.26	0.67	6.75	1.65
50th-Percentile Queue Length [ft/ln]	34.46	58.79	498.74	119.29	37.41	157.78	156.38	16.79	168.83	41.31
95th-Percentile Queue Length [veh/ln]	2.48	4.23	32.57	8.35	2.69	10.43	10.36	1.21	11.01	2.97
95th-Percentile Queue Length [ft/ln]	62.03	105.82	814.20	208.86	67.33	260.77	258.92	30.21	275.37	74.35

Movement, Approach, & Intersection Results

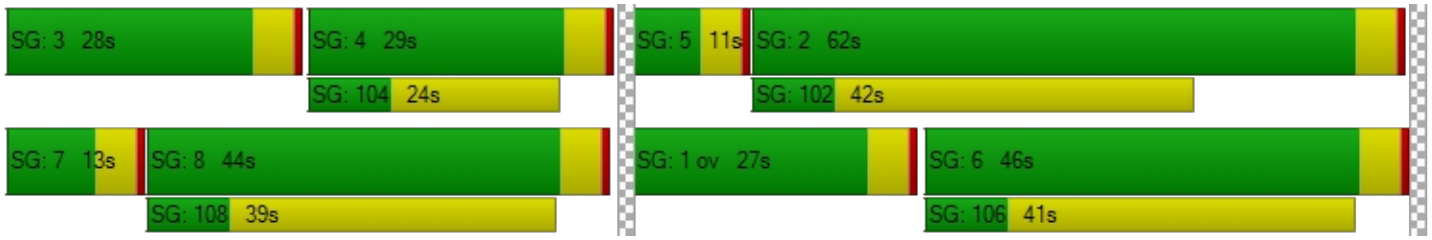
d_M, Delay for Movement [s/veh]	57.57	27.87	27.87	359.03	47.15	47.15	18.31	15.88	15.91	10.45	17.39	4.39
Movement LOS	E	C	C	F	D	D	B	B	B	B	B	A
d_A, Approach Delay [s/veh]	36.10			284.32			16.29			13.49		
Approach LOS	D			F			B			B		
d_I, Intersection Delay [s/veh]	72.22											
Intersection LOS	E											
Intersection V/C	0.732											

Other Modes

g_Walk,mi, Effective Walk Time [s]	12.0	12.0	12.0	12.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	1655.06	6703.40	876.24
d_p, Pedestrian Delay [s]	34.03	34.03	34.03	34.03
l_p,int, Pedestrian LOS Score for Intersection	2.236	3.026	2.832	4.106
Crosswalk LOS	B	C	C	D
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1271	917	542	873
d_b, Bicycle Delay [s]	6.01	13.27	24.05	14.36
l_b,int, Bicycle LOS Score for Intersection	1.926	3.152	2.640	3.191
Bicycle LOS	A	C	B	C

Sequence

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



Intersection Level Of Service Report
Intersection 109: I-5/Garfield Street Interchange

Control Type:	Signalized	Delay (sec / veh):	49.0
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.840

Intersection Setup

Name	I-5 NB Off-ramp					I-5 SB Off-ramp				
Approach	Northbound					Southbound				
Lane Configuration										
Turning Movement	Left2	Left	Thru	Thru	Right	Left2	Left	Thru	Thru	Right
Lane Width [ft]	12.00	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	1	1	0	0	0	1
Entry Pocket Length [ft]	350.00	100.00	100.00	100.00	350.00	630.00	100.00	100.00	100.00	630.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00					30.00				
Grade [%]	0.00					0.00				
Curb Present	No					No				
Crosswalk	Yes					Yes				

Volumes

Name	I-5 NB Off-ramp					I-5 SB Off-ramp				
Base Volume Input [veh/h]	398	399	0	0	284	356	459	0	0	881
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.00	2.00	0.00	0.00	1.00	2.00	1.00	0.00	0.00	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
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	142	0	0	0	0	441
Total Hourly Volume [veh/h]	398	399	0	0	142	356	459	0	0	440
Peak Hour Factor	0.9200	0.9400	1.0000	1.0000	0.9400	0.9200	0.9400	1.0000	1.0000	0.9400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	108	106	0	0	38	97	122	0	0	117
Total Analysis Volume [veh/h]	433	424	0	0	151	387	488	0	0	468
Presence of On-Street Parking	No				No	No				No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0					0				
v_di, Inbound Pedestrian Volume crossing th	0					0				
v_co, Outbound Pedestrian Volume along th	0					0				
v_ci, Inbound Pedestrian Volume along the e	0					0				
v_ab, Corner Pedestrian Volume [ped/h]	0					0				
Bicycle Volume [bicycles/h]	0					0				

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
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	Permissiv	Permissiv	Permissiv	Permissiv	Permissiv	Permissiv	Permissiv	Permissiv	Permissiv	Permissiv
Signal Group	2	2	0	0	0	6	6	0	0	0
Auxiliary Signal Groups										
Lead / Lag	Lead	Lead	-	-	-	Lead	Lead	-	-	-
Minimum Green [s]	6	6	0	0	0	6	6	0	0	0
Maximum Green [s]	75	75	0	0	0	75	75	0	0	0
Amber [s]	4.0	4.0	0.0	0.0	0.0	4.0	4.0	0.0	0.0	0.0
All red [s]	4.3	4.3	0.0	0.0	0.0	4.3	4.3	0.0	0.0	0.0
Split [s]	83	83	0	0	0	83	83	0	0	0
Vehicle Extension [s]	2.5	2.5	0.0	0.0	0.0	2.5	2.5	0.0	0.0	0.0
Walk [s]	8	8	0	0	0	8	8	0	0	0
Pedestrian Clearance [s]	12	12	0	0	0	12	12	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
Rest In Walk		No					No			
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	6.3	6.3	0.0	0.0	0.0	6.3	6.3	0.0	0.0	0.0
Minimum Recall		Yes					Yes			
Maximum Recall		No					No			
Pedestrian Recall		No					No			
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	20.0	0.0	0.0	0.0	0.0	20.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	R	L	R
C, Cycle Length [s]	144	144	144	144
L, Total Lost Time per Cycle [s]	8.30	8.30	8.30	8.30
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	6.30	6.30	6.30	6.30
g_i, Effective Green Time [s]	49	49	49	49
g / C, Green / Cycle	0.34	0.34	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.24	0.10	0.20	0.32
s, saturation flow rate [veh/h]	1796	1476	2420	1464
c, Capacity [veh/h]	637	500	841	496
d1, Uniform Delay [s]	42.81	35.16	40.97	46.40
k, delay calibration	0.08	0.08	0.08	0.14
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.90	0.25	0.47	11.48
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	0.67	0.30	0.58	0.94
d, Delay for Lane Group [s/veh]	43.71	35.41	41.44	57.88
Lane Group LOS	D	D	D	E
Critical Lane Group	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	6.77	4.01	7.42	17.83
50th-Percentile Queue Length [ft/ln]	169.13	100.18	185.47	445.68
95th-Percentile Queue Length [veh/ln]	11.03	7.21	11.89	24.75
95th-Percentile Queue Length [ft/ln]	275.77	180.32	297.14	618.79

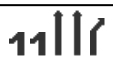
Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	43.71	0.00	0.00	35.41	0.00	41.44	0.00	0.00	57.88
Movement LOS		D			D		D			E
d_A, Approach Delay [s/veh]	41.53					49.49				
Approach LOS	D					D				
d_I, Intersection Delay [s/veh]	49.02									
Intersection LOS	D									
Intersection V/C	0.840									

Other Modes

g_Walk,mi, Effective Walk Time [s]	12.0	12.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00
d_p, Pedestrian Delay [s]	60.60	60.60
l_p,int, Pedestrian LOS Score for Intersection	2.430	2.924
Crosswalk LOS	B	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1036	1036
d_b, Bicycle Delay [s]	16.75	16.75
l_b,int, Bicycle LOS Score for Intersection	1.560	1.560
Bicycle LOS	A	A

Intersection Setup

Name	Garfield St					Garfield St				
Approach	Eastbound					Westbound				
Lane Configuration										
Turning Movement	Left	Left	Thru	Right	Right	Left	Left	Thru	Right	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	0	0	1	2	0	0	0	1
Entry Pocket Length [ft]	275.00	100.00	100.00	100.00	275.00	200.00	100.00	100.00	100.00	200.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00					30.00				
Grade [%]	0.00					0.00				
Curb Present	No					No				
Crosswalk	No					No				

Volumes

Name	Garfield St					Garfield St				
Base Volume Input [veh/h]	694	0	667	0	462	240	0	658	0	550
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00
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
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	231	0	0	0	0	275
Total Hourly Volume [veh/h]	694	0	667	0	231	240	0	658	0	275
Peak Hour Factor	0.9400	1.0000	0.9400	1.0000	0.9400	0.9400	1.0000	0.9400	1.0000	0.9400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	185	0	177	0	61	64	0	175	0	73
Total Analysis Volume [veh/h]	738	0	710	0	246	255	0	700	0	293
Presence of On-Street Parking	No				No	No				No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0					0				
v_di, Inbound Pedestrian Volume crossing th	0					0				
v_co, Outbound Pedestrian Volume along th	0					0				
v_ci, Inbound Pedestrian Volume along the e	0					0				
v_ab, Corner Pedestrian Volume [ped/h]	0					0				
Bicycle Volume [bicycles/h]	0					0				

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
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	Permissiv	Permissiv	Permissiv	Permissiv	Protected	Permissiv	Permissiv	Permissiv	Permissiv
Signal Group	7	0	4	0	0	3	0	8	0	0
Auxiliary Signal Groups										
Lead / Lag	Lead	-	-	-	-	Lead	-	-	-	-
Minimum Green [s]	6	0	10	0	0	6	0	10	0	0
Maximum Green [s]	35	0	45	0	0	35	0	45	0	0
Amber [s]	4.5	0.0	4.5	0.0	0.0	4.5	0.0	4.5	0.0	0.0
All red [s]	4.2	0.0	2.8	0.0	0.0	4.2	0.0	2.8	0.0	0.0
Split [s]	44	0	52	0	0	44	0	52	0	0
Vehicle Extension [s]	2.5	0.0	4.2	0.0	0.0	2.5	0.0	4.2	0.0	0.0
Walk [s]	0	0	8	0	0	0	0	8	0	0
Pedestrian Clearance [s]	0	0	12	0	0	0	0	15	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
Rest In Walk			No					No		
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	6.7	0.0	5.3	0.0	0.0	6.7	0.0	5.3	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
Detector Length [ft]	20.0	0.0	20.0	0.0	0.0	20.0	0.0	20.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	R	L	C	R
C, Cycle Length [s]	144	144	144	144	144	144
L, Total Lost Time per Cycle [s]	8.70	7.30	7.30	8.70	7.30	7.30
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]	6.70	5.30	5.30	6.70	5.30	5.30
g_i, Effective Green Time [s]	35	36	36	35	36	36
g / C, Green / Cycle	0.24	0.25	0.25	0.24	0.25	0.25
(v / s)_i Volume / Saturation Flow Rate	0.24	0.21	0.17	0.08	0.21	0.20
s, saturation flow rate [veh/h]	3134	3306	1476	3211	3306	1476
c, Capacity [veh/h]	760	828	370	779	828	370
d1, Uniform Delay [s]	48.35	45.66	42.89	39.94	45.48	44.67
k, delay calibration	0.08	0.17	0.17	0.08	0.17	0.21
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.93	4.06	3.13	0.18	3.73	7.31
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.33	1.33	1.33	1.33	1.33	1.33
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.97	0.86	0.67	0.33	0.85	0.79
d, Delay for Lane Group [s/veh]	56.28	49.73	46.03	40.12	49.20	51.99
Lane Group LOS	E	D	D	D	D	D
Critical Lane Group	Yes	Yes	No	No	No	No
50th-Percentile Queue Length [veh/ln]	13.34	11.83	7.55	3.38	11.57	9.85
50th-Percentile Queue Length [ft/ln]	333.51	295.72	188.65	84.60	289.18	246.30
95th-Percentile Queue Length [veh/ln]	19.33	17.47	12.05	6.09	17.14	15.00
95th-Percentile Queue Length [ft/ln]	483.26	436.73	301.28	152.28	428.62	375.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	56.28	0.00	49.73	0.00	46.03	40.12	0.00	49.20	0.00	51.99
Movement LOS	E		D		D	D		D		D
d_A, Approach Delay [s/veh]	52.04					48.00				
Approach LOS	D					D				
d_I, Intersection Delay [s/veh]	49.02									
Intersection LOS	D									
Intersection V/C	0.840									

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000
Crosswalk LOS	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	620	620
d_b, Bicycle Delay [s]	34.33	34.33
l_b,int, Bicycle LOS Score for Intersection	3.148	2.816
Bicycle LOS	C	C

Intersection Setup

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

Volumes

Name										
Base Volume Input [veh/h]	0	0	0	0	0	0	0	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
Heavy Vehicles Percentage [%]	2.00	0.00	2.00	0.00	2.00	2.00	0.00	2.00	0.00	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
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	0	0	0	0	0	0	0
Peak Hour Factor	0.9500	1.0000	0.9500	1.0000	0.9500	0.9500	1.0000	0.9500	1.0000	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
Total 15-Minute Volume [veh/h]	0	0	0	0	0	0	0	0	0	0
Total Analysis Volume [veh/h]	0	0	0	0	0	0	0	0	0	0
Presence of On-Street Parking										
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0					0				
v_di, Inbound Pedestrian Volume crossing th	0					0				
v_co, Outbound Pedestrian Volume along th	0					0				
v_ci, Inbound Pedestrian Volume along the e	0					0				
v_ab, Corner Pedestrian Volume [ped/h]	0					0				
Bicycle Volume [bicycles/h]	0					0				

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
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	Permissiv	Permissiv	Permissiv	Permissiv	Permissiv	Permissiv	Permissiv	Permissiv	Permissiv	Permissiv
Signal Group	0	0	0	0	0	0	0	0	0	0
Auxiliary Signal Groups										
Lead / Lag	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	0	0	0	0	0	0	0
Maximum Green [s]	0	0	0	0	0	0	0	0	0	0
Amber [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All red [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Split [s]	0	0	0	0	0	0	0	0	0	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	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
Rest In Walk										
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Minimum Recall										
Maximum Recall										
Pedestrian Recall										
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group Results

Movement, Approach, & Intersection Results

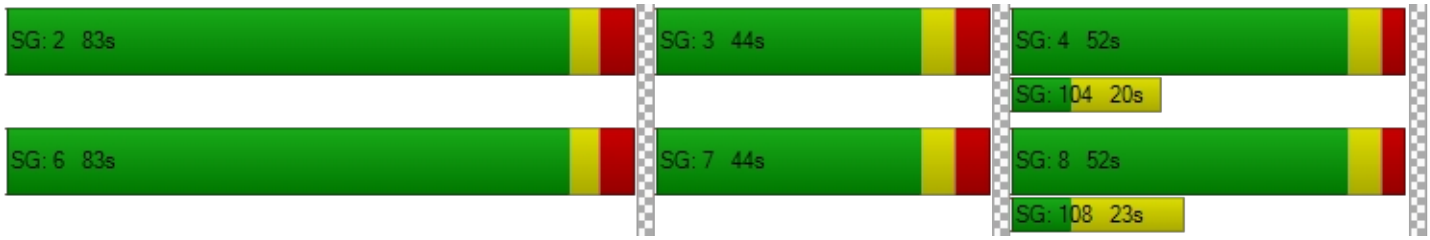
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS										
d_A, Approach Delay [s/veh]	0.00					0.00				
Approach LOS	A					A				
d_I, Intersection Delay [s/veh]	49.02									
Intersection LOS	D									
Intersection V/C	0.840									

Other Modes

g_Walk,mi, Effective Walk Time [s]	12.0	12.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00
d_p, Pedestrian Delay [s]	60.60	60.60
l_p,int, Pedestrian LOS Score for Intersection	2.094	2.373
Crosswalk LOS	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0
d_b, Bicycle Delay [s]	72.10	72.10
l_b,int, Bicycle LOS Score for Intersection	4.132	4.132
Bicycle LOS	D	D

Sequence

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



Intersection Level Of Service Report
Intersection 110: Barnett Road/Stewart Avenue

Control Type:	Signalized	Delay (sec / veh):	29.2
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.845

Intersection Setup

Name	Stewart Ave			Stewart Ave			Barnett Rd			Barnett Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Entry Pocket Length [ft]	155.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	200.00	240.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Stewart Ave			Stewart Ave			Barnett Rd			Barnett Rd		
Base Volume Input [veh/h]	258	173	421	164	188	152	116	445	149	401	605	142
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	0.00	2.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
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]	258	173	421	164	188	152	116	445	149	401	605	142
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	43	105	41	47	38	29	111	37	100	151	36
Total Analysis Volume [veh/h]	258	173	421	164	188	152	116	445	149	401	605	142
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]	200
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	87.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	ProtPer	Permiss	Overlap	ProtPer	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	5	2	2	1	6	0	7	4	4	3	8	0
Auxiliary Signal Groups			2,3									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	4	10	10	4	10	0	4	10	10	4	10	0
Maximum Green [s]	12	20	20	12	20	0	20	35	35	35	35	0
Amber [s]	3.5	4.0	4.0	3.5	4.0	0.0	3.5	4.0	4.0	3.5	4.0	0.0
All red [s]	0.5	0.5	0.5	0.5	0.5	0.0	0.5	0.5	0.5	0.5	0.5	0.0
Split [s]	26	76	76	48	98	0	8	39	39	37	68	0
Vehicle Extension [s]	2.0	0.0	0.0	2.0	2.5	0.0	2.0	4.2	4.2	2.0	4.2	0.0
Walk [s]	7	7	7	0	7	0	0	7	7	6	7	0
Pedestrian Clearance [s]	10	22	22	0	24	0	0	27	27	22	12	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.5	2.5	2.0	2.5	0.0	2.0	2.5	2.5	2.0	2.5	0.0
Minimum Recall	No	No	No	No	No		No	Yes		No	Yes	
Maximum Recall	No	No	No	No	No		No	No		No	No	
Pedestrian Recall	No	No	No	No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	20.0	20.0	20.0	20.0	20.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	R	L	C	C
C, Cycle Length [s]	85	85	85	85	85	85	85	85	85	85	85
L, Total Lost Time per Cycle [s]	4.50	4.50	4.00	4.50	4.50	4.00	4.50	4.50	4.00	4.50	4.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.50	0.00	0.00	2.50	2.00	2.50	2.50	2.00	2.50	2.50
g_i, Effective Green Time [s]	34	23	49	34	19	7	16	16	22	30	30
g / C, Green / Cycle	0.40	0.27	0.58	0.40	0.22	0.09	0.19	0.19	0.26	0.36	0.36
(v / s)_i Volume / Saturation Flow Rate	0.20	0.10	0.28	0.15	0.20	0.07	0.13	0.10	0.24	0.22	0.22
s, saturation flow rate [veh/h]	1289	1800	1506	1075	1668	1714	3400	1518	1701	1786	1670
c, Capacity [veh/h]	438	487	875	495	375	147	632	282	438	639	597
d1, Uniform Delay [s]	20.07	25.05	10.36	17.04	32.10	38.14	32.46	31.29	30.68	22.40	22.41
k, delay calibration	0.28	0.04	0.50	0.43	0.31	0.04	0.17	0.17	0.08	0.17	0.17
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.21	0.16	1.89	1.56	19.46	3.51	2.21	2.34	6.03	1.41	1.51
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.59	0.36	0.48	0.33	0.91	0.79	0.70	0.53	0.91	0.60	0.61
d, Delay for Lane Group [s/veh]	23.27	25.21	12.25	18.60	51.56	41.65	34.67	33.62	36.71	23.81	23.93
Lane Group LOS	C	C	B	B	D	D	C	C	D	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.72	2.72	4.42	2.24	8.60	2.44	4.31	2.84	8.29	6.17	5.80
50th-Percentile Queue Length [ft/ln]	93.12	67.97	110.39	56.01	215.03	60.95	107.80	71.02	207.17	154.27	145.07
95th-Percentile Queue Length [veh/ln]	6.70	4.89	7.86	4.03	13.41	4.39	7.72	5.11	13.01	10.24	9.75
95th-Percentile Queue Length [ft/ln]	167.61	122.34	196.54	100.82	335.27	109.71	192.94	127.84	325.20	256.12	243.84

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	23.27	25.21	12.25	18.60	51.56	51.56	41.65	34.67	33.62	36.71	23.85	23.93
Movement LOS	C	C	B	B	D	D	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	18.22			40.84			35.59			28.35		
Approach LOS	B			D			D			C		
d_I, Intersection Delay [s/veh]	29.22											
Intersection LOS	C											
Intersection V/C	0.845											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	32.15	32.15	32.15	32.15
l_p,int, Pedestrian LOS Score for Intersection	2.658	2.241	2.868	2.860
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1685	2203	813	1496
d_b, Bicycle Delay [s]	1.05	0.44	14.95	2.69
l_b,int, Bicycle LOS Score for Intersection	2.965	2.391	2.145	2.507
Bicycle LOS	C	B	B	B

Sequence

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

Intersection Level Of Service Report
Intersection 111: Barnett Road/Alba Drive

Control Type:	Signalized	Delay (sec / veh):	7.4
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.601

Intersection Setup

Name	Alba Drive		Barnett Rd		Barnett Rd		
Approach	Southbound		Eastbound		Westbound		
Lane Configuration							
Turning Movement	Left	Right	Left	Thru	U-turn	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		35.00		35.00		
Grade [%]	0.00		0.00		0.00		
Curb Present	No		No		No		
Crosswalk	Yes		Yes		Yes		

Volumes

Name	Alba Drive		Barnett Rd		Barnett Rd		
Base Volume Input [veh/h]	31	40	45	955	0	1120	140
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	1.00	1.00	0.00	1.00	1.00
Proportion of CAVs [%]	0.00						
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	31	40	45	955	0	1120	140
Peak Hour Factor	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
Total 15-Minute Volume [veh/h]	8	10	11	239	0	280	35
Total Analysis Volume [veh/h]	31	40	45	955	0	1120	140
Presence of On-Street Parking	No	No	No	No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		1		0		
v_di, Inbound Pedestrian Volume crossing m	1		0		0		
v_co, Outbound Pedestrian Volume crossing	3		0		2		
v_ci, Inbound Pedestrian Volume crossing mi	2		0		3		
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]	103
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	57.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permissive	Permissive	Protected	Permissive	Protected	Permissive	Permissive
Signal Group	6	6	7	4	3	8	8
Auxiliary Signal Groups							
Lead / Lag	Lead	-	Lead	-	Lead	-	-
Minimum Green [s]	5	5	5	10	5	10	10
Maximum Green [s]	30	30	20	35	20	40	40
Amber [s]	3.5	3.5	3.5	4.0	3.5	4.0	4.0
All red [s]	0.5	0.5	0.5	1.0	0.5	1.0	1.0
Split [s]	34	34	24	40	24	45	45
Vehicle Extension [s]	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Walk [s]	6	6	0	6	0	6	6
Pedestrian Clearance [s]	19	19	0	13	0	13	13
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No		No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	3.0	2.0	3.0	3.0
Minimum Recall	No		No	Yes	No	Yes	
Maximum Recall	No		No	No	No	No	
Pedestrian Recall	No		No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	20.0	20.0	20.0	20.0	20.0	20.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	L	C	L	C	C
C, Cycle Length [s]	43	43	43	43	43	43
L, Total Lost Time per Cycle [s]	4.00	4.00	5.00	4.00	5.00	5.00
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	3.00	2.00	3.00	3.00
g_i, Effective Green Time [s]	3	2	27	0	24	24
g / C, Green / Cycle	0.07	0.05	0.62	0.00	0.57	0.57
(v / s)_i Volume / Saturation Flow Rate	0.04	0.03	0.28	0.00	0.36	0.36
s, saturation flow rate [veh/h]	1605	1701	3400	1714	1786	1715
c, Capacity [veh/h]	113	84	2122	0	1027	986
d1, Uniform Delay [s]	19.25	19.78	4.19	0.00	6.00	6.02
k, delay calibration	0.23	0.23	0.23	0.23	0.23	0.23
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	11.48	11.05	0.32	0.00	1.34	1.41
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	0.63	0.54	0.45	0.00	0.62	0.63
d, Delay for Lane Group [s/veh]	30.73	30.83	4.51	0.00	7.34	7.43
Lane Group LOS	C	C	A	A	A	A
Critical Lane Group	Yes	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.98	0.63	0.98	0.00	2.29	2.23
50th-Percentile Queue Length [ft/ln]	24.49	15.79	24.48	0.00	57.30	55.84
95th-Percentile Queue Length [veh/ln]	1.76	1.14	1.76	0.00	4.13	4.02
95th-Percentile Queue Length [ft/ln]	44.09	28.42	44.07	0.00	103.14	100.52

Movement, Approach, & Intersection Results

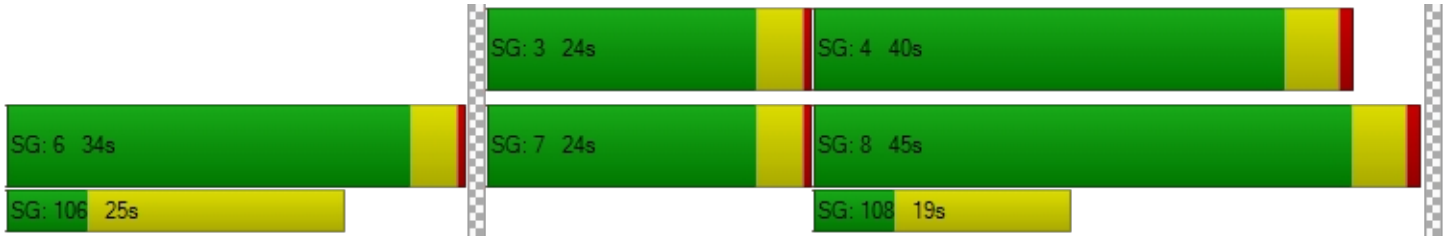
d_M, Delay for Movement [s/veh]	30.73	30.73	30.83	4.51	0.00	7.38	7.43
Movement LOS	C	C	C	A	A	A	A
d_A, Approach Delay [s/veh]	30.73		5.69		7.38		
Approach LOS	C		A		A		
d_I, Intersection Delay [s/veh]	7.37						
Intersection LOS	A						
Intersection V/C	0.601						

Other Modes

g_Walk,mi, Effective Walk Time [s]	10.0	10.0	10.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	12.43	12.43	12.43
l_p,int, Pedestrian LOS Score for Intersection	1.777	2.750	2.769
Crosswalk LOS	A	B	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1412	1647	1882
d_b, Bicycle Delay [s]	1.84	0.66	0.07
l_b,int, Bicycle LOS Score for Intersection	1.677	2.385	2.599
Bicycle LOS	A	B	B

Sequence

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



Intersection Level Of Service Report
Intersection 112: Barnett Road/Highland Drive

Control Type:	Signalized	Delay (sec / veh):	47.9
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.877

Intersection Setup

Name	Highland Dr			Highland Dr			Barnett Rd			Barnett Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	2	0	1	2	0	0
Entry Pocket Length [ft]	470.00	100.00	600.00	240.00	100.00	100.00	300.00	100.00	325.00	360.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Highland Dr			Highland Dr			Barnett Rd			Barnett Rd		
Base Volume Input [veh/h]	133	482	554	127	469	254	265	632	155	668	878	141
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.00	1.00	2.00	0.00	2.00	1.00	2.00	1.00	3.00	2.00	1.00	3.00
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]	133	482	554	127	469	254	265	632	155	668	878	141
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]	33	121	139	32	117	64	66	158	39	167	220	35
Total Analysis Volume [veh/h]	133	482	554	127	469	254	265	632	155	668	878	141
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	1			5			5			1		
v_di, Inbound Pedestrian Volume crossing m	1			5			5			1		
v_co, Outbound Pedestrian Volume crossing	11			7			10			6		
v_ci, Inbound Pedestrian Volume crossing mi	10			6			11			7		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	1			0			4			1		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	122
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	93.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	5	2	2	1	6	6	7	4	4	3	8	8
Auxiliary Signal Groups			2,3						4,5			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	5	5	5	5	5	8	8	5	8	8
Maximum Green [s]	30	40	40	30	40	40	60	50	50	60	50	50
Amber [s]	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All red [s]	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Split [s]	11	34	34	11	34	34	11	36	36	41	66	66
Vehicle Extension [s]	1.5	2.5	2.5	1.5	2.5	2.5	1.5	4.2	4.2	1.5	4.2	4.2
Walk [s]	0	7	7	0	7	7	0	5	5	0	5	5
Pedestrian Clearance [s]	0	22	22	0	22	22	0	26	26	0	26	26
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Minimum Recall	No	No	No	No	No		No	Yes	Yes	No	Yes	
Maximum Recall	No	No	No	No	No		No	No	No	No	No	
Pedestrian Recall	No	No	No	No	No		No	No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	C
C, Cycle Length [s]	143	143	143	143	143	143	143	143	143	143	143	143
L, Total Lost Time per Cycle [s]	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.50	2.50	0.00	2.50	2.50	2.50	2.50	2.50	0.00	2.50	2.50	2.50
g_i, Effective Green Time [s]	14	35	85	12	34	34	14	32	50	45	63	63
g / C, Green / Cycle	0.10	0.25	0.59	0.09	0.24	0.24	0.10	0.23	0.35	0.32	0.45	0.45
(v / s)_i Volume / Saturation Flow Rate	0.08	0.14	0.21	0.07	0.22	0.22	0.08	0.19	0.11	0.30	0.29	0.30
s, saturation flow rate [veh/h]	1701	3400	2639	1714	1772	1549	3277	3400	1461	2261	1786	1690
c, Capacity [veh/h]	163	835	1564	150	420	368	315	766	514	714	795	752
d1, Uniform Delay [s]	63.37	47.37	14.94	64.24	53.03	53.21	63.49	52.65	33.43	47.43	30.90	31.32
k, delay calibration	0.04	0.08	0.08	0.04	0.27	0.28	0.04	0.17	0.17	0.04	0.36	0.37
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.81	0.47	0.10	5.01	16.97	20.60	2.37	3.51	0.50	2.66	2.92	3.53
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.82	0.58	0.35	0.85	0.91	0.92	0.84	0.83	0.30	0.94	0.65	0.67
d, Delay for Lane Group [s/veh]	67.18	47.85	15.04	69.25	70.00	73.81	65.86	56.16	33.92	50.09	33.81	34.85
Lane Group LOS	E	D	B	E	E	E	E	E	C	D	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.93	7.64	4.65	4.77	15.37	13.99	4.82	11.08	3.97	11.64	14.31	14.28
50th-Percentile Queue Length [ft/ln]	123.16	191.01	116.37	119.32	384.13	349.70	120.46	277.04	99.29	290.99	357.83	357.11
95th-Percentile Queue Length [veh/ln]	8.57	12.17	8.19	8.36	21.79	20.12	8.42	16.54	7.15	17.23	20.52	20.48
95th-Percentile Queue Length [ft/ln]	214.16	304.34	204.83	208.89	544.84	503.04	210.46	413.53	178.72	430.87	512.95	512.07

Movement, Approach, & Intersection Results

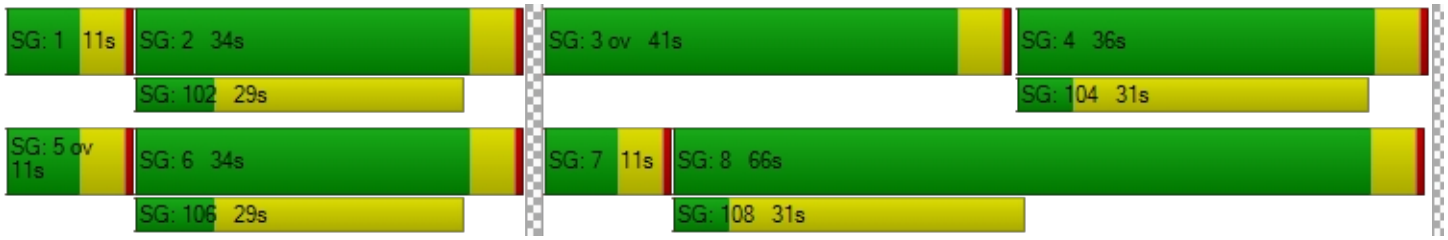
d_M, Delay for Movement [s/veh]	67.18	47.85	15.04	69.25	70.69	73.81	65.86	56.16	33.92	50.09	34.24	34.85
Movement LOS	E	D	B	E	E	E	E	E	C	D	C	C
d_A, Approach Delay [s/veh]	34.50			71.41			55.33			40.57		
Approach LOS	C			E			E			D		
d_I, Intersection Delay [s/veh]	47.85											
Intersection LOS	D											
Intersection V/C	0.877											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	62.60	62.60	60.74	60.74
l_p,int, Pedestrian LOS Score for Intersection	2.960	2.662	2.992	3.044
Crosswalk LOS	C	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	414	414	442	862
d_b, Bicycle Delay [s]	44.89	44.87	43.38	23.09
l_b,int, Bicycle LOS Score for Intersection	2.524	2.261	2.428	2.951
Bicycle LOS	B	B	B	C

Sequence

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



Intersection Level Of Service Report
Intersection 113: Barnett Road/Ellendale Drive

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):	0.688

Intersection Setup

Name	Ellendale Dr			Ellendale Dr			Barnett Rd			Barnett Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	75.00	100.00	100.00	85.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			25.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Ellendale Dr			Ellendale Dr			Barnett Rd			Barnett Rd		
Base Volume Input [veh/h]	169	5	74	50	27	45	6	1507	154	32	1466	3
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
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]	169	5	74	50	27	45	6	1507	154	32	1466	3
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	42	1	19	13	7	11	2	377	39	8	367	1
Total Analysis Volume [veh/h]	169	5	74	50	27	45	6	1507	154	32	1466	3
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	2			1			2			1		
v_di, Inbound Pedestrian Volume crossing m	2			1			2			1		
v_co, Outbound Pedestrian Volume crossing	0			9			9			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			9			9			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	144
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	6.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	5	2	2	1	6	6	7	4	4	3	8	8
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	5	5	5	5	5	8	8	5	8	8
Maximum Green [s]	13	31	31	8	31	31	8	76	76	8	76	76
Amber [s]	3.5	3.5	3.5	3.5	3.5	3.5	3.5	4.0	4.0	3.5	4.0	4.0
All red [s]	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Split [s]	10	36	36	11	37	37	9	81	81	16	88	88
Vehicle Extension [s]	2.5	2.5	2.5	2.5	2.5	2.5	2.5	4.2	4.2	2.5	4.2	4.2
Walk [s]	0	7	7	0	7	7	0	7	7	0	7	7
Pedestrian Clearance [s]	0	20	20	0	24	24	0	16	16	0	18	18
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.5	2.5	2.0	2.5	2.5
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	Yes		No	Yes	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	L	C	L	C	C	L	C	C
C, Cycle Length [s]	144	144	144	144	144	144	144	144	144	144
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.50	4.50	4.00	4.50	4.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.00	0.00	2.00	2.00	2.50	2.50	2.00	2.50	2.50
g_i, Effective Green Time [s]	25	16	25	15	1	103	103	4	105	105
g / C, Green / Cycle	0.17	0.11	0.17	0.10	0.01	0.71	0.71	0.03	0.73	0.73
(v / s)_i Volume / Saturation Flow Rate	0.12	0.05	0.03	0.05	0.00	0.47	0.48	0.02	0.41	0.41
s, saturation flow rate [veh/h]	1466	1545	1442	1565	1714	1786	1728	1714	1800	1799
c, Capacity [veh/h]	277	176	267	165	13	1273	1232	43	1315	1314
d1, Uniform Delay [s]	56.79	59.59	50.61	60.42	71.14	11.18	11.35	69.70	8.84	8.84
k, delay calibration	0.08	0.08	0.08	0.08	0.08	0.50	0.50	0.08	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.62	1.33	0.25	1.35	16.88	2.67	2.90	16.41	1.72	1.72
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.61	0.45	0.19	0.44	0.45	0.66	0.67	0.74	0.56	0.56
d, Delay for Lane Group [s/veh]	58.41	60.93	50.86	61.78	88.02	13.85	14.25	86.12	10.56	10.56
Lane Group LOS	E	E	D	E	F	B	B	F	B	B
Critical Lane Group	Yes	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.73	2.76	1.58	2.56	0.28	14.10	14.14	1.37	10.12	10.12
50th-Percentile Queue Length [ft/ln]	143.30	68.98	39.55	64.09	7.06	352.62	353.51	34.20	252.97	252.90
95th-Percentile Queue Length [veh/ln]	9.66	4.97	2.85	4.61	0.51	20.26	20.31	2.46	15.34	15.33
95th-Percentile Queue Length [ft/ln]	241.46	124.16	71.19	115.36	12.71	506.60	507.68	61.55	383.40	383.30

Movement, Approach, & Intersection Results

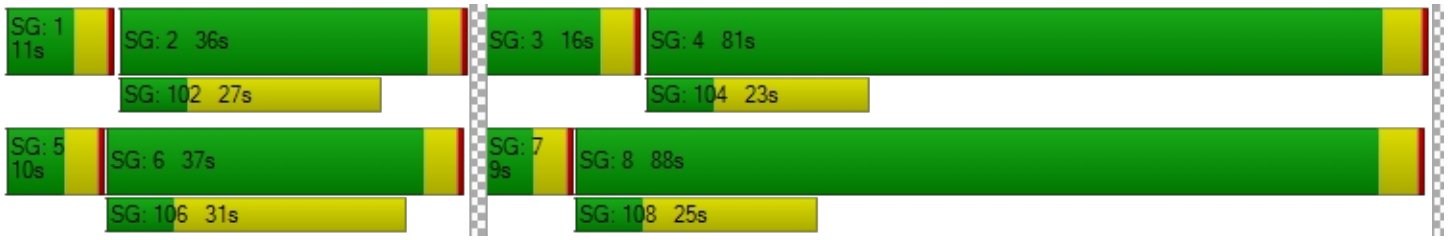
d_M, Delay for Movement [s/veh]	58.41	60.93	60.93	50.86	61.78	61.78	88.02	14.03	14.25	86.12	10.56	10.56
Movement LOS	E	E	E	D	E	E	F	B	B	F	B	B
d_A, Approach Delay [s/veh]	59.21			57.30			14.31			12.17		
Approach LOS	E			E			B			B		
d_I, Intersection Delay [s/veh]	18.03											
Intersection LOS	B											
Intersection V/C	0.688											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	61.42	61.42	61.42	61.42
l_p,int, Pedestrian LOS Score for Intersection	2.137	1.999	3.154	3.044
Crosswalk LOS	B	A	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	444	458	1062	1160
d_b, Bicycle Delay [s]	43.56	42.78	15.82	12.71
l_b,int, Bicycle LOS Score for Intersection	1.969	1.761	2.935	2.798
Bicycle LOS	A	A	C	C

Sequence

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



Intersection Level Of Service Report
Intersection 114: Barnett Road/Black Oak Drive

Control Type:	Signalized	Delay (sec / veh):	59.7
Analysis Method:	HCM 7th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.980

Intersection Setup

Name	Black Oak Dr			Black Oak Dr			Barnett Rd			Barnett Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	75.00	100.00	100.00	70.00	100.00	100.00	85.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			25.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Black Oak Dr			Black Oak Dr			Barnett Rd			Barnett Rd		
Base Volume Input [veh/h]	439	227	113	67	233	147	90	856	498	58	910	60
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00
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]	439	227	113	67	233	147	90	856	498	58	910	60
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]	110	57	28	17	58	37	23	214	125	15	228	15
Total Analysis Volume [veh/h]	439	227	113	67	233	147	90	856	498	58	910	60
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	1			6			7			1		
v_di, Inbound Pedestrian Volume crossing m	1			7			6			1		
v_co, Outbound Pedestrian Volume crossing	3			3			3			3		
v_ci, Inbound Pedestrian Volume crossing mi	3			3			3			3		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	144
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	95.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	5	2	2	1	6	6	7	4	4	3	8	8
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lag	-	-
Minimum Green [s]	3	5	5	3	5	5	3	8	8	5	8	8
Maximum Green [s]	13	48	48	13	48	48	17	50	50	17	50	50
Amber [s]	3.5	4.0	4.0	3.5	4.0	4.0	3.5	4.0	4.0	3.5	4.0	4.0
All red [s]	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Split [s]	33	62	62	8	37	37	13	65	65	9	61	61
Vehicle Extension [s]	1.5	2.0	2.0	1.5	2.0	2.0	1.5	3.5	3.5	1.5	3.5	3.5
Walk [s]	0	8	8	0	8	8	0	8	8	0	8	8
Pedestrian Clearance [s]	0	22	22	0	22	22	0	17	17	0	17	17
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.5	2.5	2.0	2.5	2.5	2.0	2.5	2.5	2.0	2.5	2.5
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	Yes		No	Yes	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	L	C	L	C	C	L	C	C
C, Cycle Length [s]	144	144	144	144	144	144	144	144	144	144
L, Total Lost Time per Cycle [s]	4.50	4.50	4.50	4.50	4.00	4.50	4.50	4.00	4.50	4.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.50	0.00	2.50	2.00	2.50	2.50	2.00	2.50	2.50
g_i, Effective Green Time [s]	66	58	66	33	9	60	60	5	57	57
g / C, Green / Cycle	0.46	0.40	0.46	0.23	0.06	0.42	0.42	0.03	0.39	0.39
(v / s)_i Volume / Saturation Flow Rate	0.33	0.20	0.06	0.23	0.05	0.40	0.42	0.03	0.27	0.27
s, saturation flow rate [veh/h]	1348	1699	1117	1672	1714	1772	1550	1714	1800	1759
c, Capacity [veh/h]	457	679	424	378	105	744	650	60	708	692
d1, Uniform Delay [s]	43.30	32.44	23.95	55.72	67.00	40.49	41.46	69.43	36.41	36.43
k, delay calibration	0.30	0.04	0.11	0.18	0.04	0.50	0.50	0.04	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	24.17	0.21	0.17	28.60	7.55	23.81	32.74	27.19	5.50	5.64
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.96	0.50	0.16	1.00	0.86	0.96	0.99	0.97	0.69	0.69
d, Delay for Lane Group [s/veh]	67.47	32.65	24.13	84.31	74.55	64.30	74.19	96.62	41.91	42.07
Lane Group LOS	E	C	C	F	E	E	E	F	D	D
Critical Lane Group	Yes	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	14.36	9.12	1.35	16.84	3.49	28.76	28.02	2.58	15.34	15.05
50th-Percentile Queue Length [ft/ln]	359.08	227.98	33.87	420.97	87.24	719.06	700.45	64.52	383.61	376.16
95th-Percentile Queue Length [veh/ln]	20.58	14.07	2.44	23.63	6.28	37.56	36.70	4.65	21.77	21.41
95th-Percentile Queue Length [ft/ln]	514.47	351.80	60.97	590.83	157.03	938.94	917.47	116.14	544.22	535.20

Movement, Approach, & Intersection Results

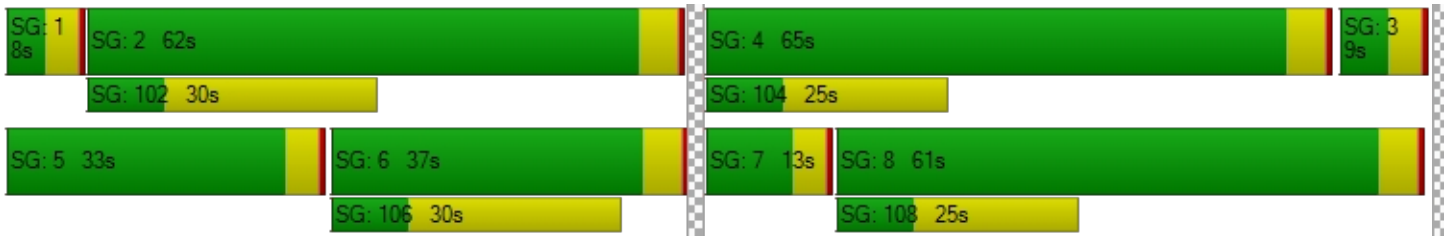
d_M, Delay for Movement [s/veh]	67.47	32.65	32.65	24.13	84.31	84.31	74.55	65.98	74.19	96.62	41.99	42.07
Movement LOS	E	C	C	C	F	F	E	E	E	F	D	D
d_A, Approach Delay [s/veh]	52.27			75.29			69.35			45.07		
Approach LOS	D			E			E			D		
d_I, Intersection Delay [s/veh]	59.72											
Intersection LOS	E											
Intersection V/C	0.980											

Other Modes

g_Walk,mi, Effective Walk Time [s]	12.0	12.0	12.0	12.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	238.48	0.00
d_p, Pedestrian Delay [s]	60.50	60.50	60.50	60.50
l_p,int, Pedestrian LOS Score for Intersection	2.387	2.185	3.140	2.831
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	799	451	840	785
d_b, Bicycle Delay [s]	25.98	43.17	24.21	26.58
l_b,int, Bicycle LOS Score for Intersection	2.845	2.297	2.751	2.408
Bicycle LOS	C	B	C	B

Sequence

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



Intersection Level Of Service Report
Intersection 115: Barnett Road/Murphy Road

Control Type:	Signalized	Delay (sec / veh):	33.8
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.603

Intersection Setup

Name	Murphy Rd			Murphy Rd			Barnett Rd			Barnett Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	120.00	100.00	100.00	75.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			40.00			35.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Murphy Rd			Murphy Rd			Barnett Rd			Barnett Rd		
Base Volume Input [veh/h]	178	191	30	201	121	274	208	555	155	14	353	145
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.00	0.00	0.00	1.00	0.00
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]	178	191	30	201	121	274	208	555	155	14	353	145
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	48	8	50	30	69	52	139	39	4	88	36
Total Analysis Volume [veh/h]	178	191	30	201	121	274	208	555	155	14	353	145
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			1			0		
v_di, Inbound Pedestrian Volume crossing m	0			1			0			0		
v_co, Outbound Pedestrian Volume crossing	0			3			0			2		
v_ci, Inbound Pedestrian Volume crossing mi	0			2			0			3		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	144
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	75.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	5	2	2	1	6	6	7	4	4	3	8	8
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	5	5	5	5	5	8	8	5	8	8
Maximum Green [s]	16	50	50	16	50	50	8	68	68	12	68	68
Amber [s]	3.5	4.0	4.0	3.5	4.0	4.0	3.5	4.0	4.0	3.5	4.0	4.0
All red [s]	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Split [s]	28	48	48	46	66	66	22	41	41	9	28	28
Vehicle Extension [s]	2.0	3.5	3.5	2.0	3.5	3.5	2.0	4.0	4.0	2.0	4.0	4.0
Walk [s]	0	7	7	0	7	7	0	7	7	0	7	7
Pedestrian Clearance [s]	0	20	20	0	22	22	0	19	19	0	15	15
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.5	2.5	2.0	2.5	2.5	2.0	2.5	2.5	2.0	2.5	2.5
Minimum Recall	No	No		No	No		No	Yes		No	Yes	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	L	C	L	C	C	L	C	C
C, Cycle Length [s]	144	144	144	144	144	144	144	144	144	144
L, Total Lost Time per Cycle [s]	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.50	0.00	2.50	0.00	2.50	2.50	0.00	2.50	2.50
g_i, Effective Green Time [s]	55	37	55	39	80	74	74	80	64	64
g / C, Green / Cycle	0.38	0.26	0.38	0.27	0.55	0.51	0.51	0.55	0.44	0.44
(v / s)_i Volume / Saturation Flow Rate	0.15	0.13	0.15	0.25	0.20	0.21	0.21	0.02	0.14	0.15
s, saturation flow rate [veh/h]	1194	1758	1334	1602	1054	1757	1627	802	1786	1607
c, Capacity [veh/h]	295	455	463	429	566	897	830	416	790	711
d1, Uniform Delay [s]	35.39	45.28	31.92	51.27	17.30	21.88	21.88	15.83	26.21	26.32
k, delay calibration	0.13	0.13	0.04	0.13	0.50	0.50	0.50	0.04	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.39	0.97	0.24	9.89	1.84	1.39	1.51	0.01	1.11	1.28
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.60	0.49	0.43	0.92	0.37	0.41	0.41	0.03	0.33	0.34
d, Delay for Lane Group [s/veh]	37.78	46.25	32.16	61.16	19.14	23.27	23.39	15.84	27.31	27.60
Lane Group LOS	D	D	C	E	B	C	C	B	C	C
Critical Lane Group	Yes	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	4.52	6.89	4.89	14.80	3.78	8.03	7.46	0.21	5.98	5.58
50th-Percentile Queue Length [ft/ln]	113.04	172.37	122.15	369.91	94.51	200.73	186.53	5.16	149.58	139.40
95th-Percentile Queue Length [veh/ln]	8.01	11.20	8.51	21.10	6.80	12.68	11.94	0.37	9.99	9.45
95th-Percentile Queue Length [ft/ln]	200.22	280.03	212.78	527.62	170.11	316.90	298.52	9.29	249.87	236.21

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	37.78	46.25	46.25	32.16	61.16	61.16	19.14	23.31	23.39	15.84	27.39	27.60
Movement LOS	D	D	D	C	E	E	B	C	C	B	C	C
d_A, Approach Delay [s/veh]	42.47			51.38			22.38			27.13		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	33.82											
Intersection LOS	C											
Intersection V/C	0.603											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	61.46	61.46	61.46	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.197	2.592	2.786	0.000
Crosswalk LOS	B	B	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	604	854	507	326
d_b, Bicycle Delay [s]	35.10	23.66	40.16	50.45
l_b,int, Bicycle LOS Score for Intersection	2.218	2.543	2.317	1.982
Bicycle LOS	B	B	B	A

Sequence

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

Intersection Level Of Service Report
Intersection 116: Barnett Road/Golf View Drive

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):	0.455

Intersection Setup

Name	Golf View Dr			Golf View Dr			Barnett Rd			Barnett Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			25.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Golf View Dr			Golf View Dr			Barnett Rd			Barnett Rd		
Base Volume Input [veh/h]	158	8	116	24	13	8	24	632	123	39	332	23
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.00	0.00	0.00	1.00	0.00
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]	158	8	116	24	13	8	24	632	123	39	332	23
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]	40	2	29	6	3	2	6	158	31	10	83	6
Total Analysis Volume [veh/h]	158	8	116	24	13	8	24	632	123	39	332	23
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			1		
v_di, Inbound Pedestrian Volume crossing m	1			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			1			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			1		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	72
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	21.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	2	2	2	6	6	6	4	4	4	8	8	8
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	5	5	5	5	5	5	8	8	8	8	8	8
Maximum Green [s]	32	32	32	32	32	32	31	31	31	31	31	31
Amber [s]	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All red [s]	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Split [s]	36	36	36	36	36	36	36	36	36	36	36	36
Vehicle Extension [s]	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Walk [s]	6	6	6	6	6	6	6	6	6	6	6	6
Pedestrian Clearance [s]	13	13	13	13	13	13	11	11	11	11	11	11
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			Yes			Yes	
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]	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C	C	C	C
C, Cycle Length [s]	72	72	72	72	72	72	72
L, Total Lost Time per Cycle [s]	4.50	4.50	4.50	4.50	4.50	4.50	4.50
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.50	2.50	2.50	2.50	2.50	2.50	2.50
g_i, Effective Green Time [s]	11	11	11	52	52	52	52
g / C, Green / Cycle	0.16	0.16	0.16	0.72	0.72	0.72	0.72
(v / s)_i Volume / Saturation Flow Rate	0.11	0.08	0.05	0.24	0.24	0.14	0.13
s, saturation flow rate [veh/h]	1413	1542	998	1711	1509	1331	1594
c, Capacity [veh/h]	244	246	236	1277	1080	1013	1140
d1, Uniform Delay [s]	28.90	27.66	26.22	3.81	3.84	3.35	3.35
k, delay calibration	0.15	0.15	0.15	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.07	2.27	0.55	0.67	0.85	0.40	0.35
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	0.65	0.50	0.19	0.32	0.34	0.18	0.18
d, Delay for Lane Group [s/veh]	32.96	29.94	26.78	4.48	4.69	3.75	3.70
Lane Group LOS	C	C	C	A	A	A	A
Critical Lane Group	Yes	No	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	2.81	2.07	0.69	1.51	1.38	0.60	0.67
50th-Percentile Queue Length [ft/ln]	70.32	51.63	17.26	37.68	34.52	15.03	16.70
95th-Percentile Queue Length [veh/ln]	5.06	3.72	1.24	2.71	2.49	1.08	1.20
95th-Percentile Queue Length [ft/ln]	126.58	92.93	31.07	67.82	62.13	27.06	30.06

Movement, Approach, & Intersection Results

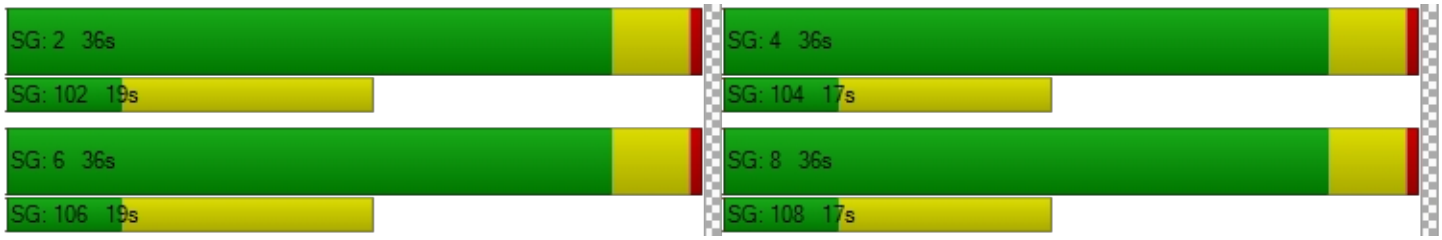
d_M, Delay for Movement [s/veh]	32.96	29.94	29.94	26.78	26.78	26.78	4.48	4.56	4.69	3.75	3.72	3.70
Movement LOS	C	C	C	C	C	C	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	31.63			26.78			4.58			3.72		
Approach LOS	C			C			A			A		
d_I, Intersection Delay [s/veh]	10.11											
Intersection LOS	B											
Intersection V/C	0.455											

Other Modes

g_Walk,mi, Effective Walk Time [s]	10.0	10.0	10.0	10.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	26.69	26.69	26.69	26.69
l_p,int, Pedestrian LOS Score for Intersection	2.108	1.779	2.760	2.533
Crosswalk LOS	B	A	C	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	875	875	875	875
d_b, Bicycle Delay [s]	11.39	11.39	11.39	11.39
l_b,int, Bicycle LOS Score for Intersection	2.025	1.634	2.202	1.885
Bicycle LOS	B	A	B	A

Sequence

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



Intersection Level Of Service Report
Intersection 117: Juanipero Way/Golf View Drive

Control Type:	Two-way stop	Delay (sec / veh):	130.2
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.067

Intersection Setup

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

Volumes

Name				Golf View Dr			Juanipero W			Juanipero Way		
Base Volume Input [veh/h]	220	20	91	4	37	5	5	176	363	156	127	2
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	220	20	91	4	37	5	5	176	363	156	127	2
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	55	5	23	1	9	1	1	44	91	39	32	1
Total Analysis Volume [veh/h]	220	20	91	4	37	5	5	176	363	156	127	2
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	1.07	0.08	0.13	0.02	0.18	0.01	0.00	0.00	0.00	0.15	0.00	0.00
d_M, Delay for Movement [s/veh]	130.17	20.29	12.00	24.50	25.73	12.38	7.48	0.00	0.00	9.12	0.00	0.00
Movement LOS	F	C	B	C	D	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	9.98	0.78	0.78	0.06	0.65	0.65	0.01	0.00	0.00	0.53	0.00	0.00
95th-Percentile Queue Length [ft/ln]	249.54	19.38	19.38	1.62	16.32	16.32	0.26	0.00	0.00	13.33	0.00	0.00
d_A, Approach Delay [s/veh]	91.04			24.17			0.07			4.99		
Approach LOS	F			C			A			A		
d_I, Intersection Delay [s/veh]	27.12											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 118: Barnett Road/Phoenix Road

Control Type:	Signalized	Delay (sec / veh):	29.9
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.862

Intersection Setup

Name	Phoenix Rd			Phoenix Rd			Barnett Rd			Barnett Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	75.00	100.00	100.00	135.00	100.00	100.00	175.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			40.00			40.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Phoenix Rd			Phoenix Rd			Barnett Rd			Barnett Rd		
Base Volume Input [veh/h]	113	671	21	34	656	218	596	21	179	57	40	89
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	4.00	11.00	7.00	4.00	1.00	2.00	0.00	3.00	9.00	7.00	0.00
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]	113	671	21	34	656	218	596	21	179	57	40	89
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]	28	168	5	9	164	55	149	5	45	14	10	22
Total Analysis Volume [veh/h]	113	671	21	34	656	218	596	21	179	57	40	89
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			1			2			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	155
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	5	2	2	1	6	6	7	4	4	3	8	8
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	8	8	5	8	8	5	8	8	5	6	6
Maximum Green [s]	28	40	40	8	40	40	28	40	40	17	40	40
Amber [s]	3.0	5.0	5.0	3.0	5.0	5.0	3.0	4.0	4.0	3.0	4.0	4.0
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	15	50	50	9	44	44	60	83	83	13	36	36
Vehicle Extension [s]	1.5	3.5	3.5	1.5	3.5	3.5	1.5	3.5	3.5	1.5	3.5	3.5
Walk [s]	0	8	8	0	8	8	0	8	8	0	8	8
Pedestrian Clearance [s]	0	12	12	0	18	18	0	23	23	0	23	23
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	4.0	4.0	2.0	4.0	4.0	2.0	3.0	3.0	2.0	3.0	3.0
Minimum Recall	No	No		Yes	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	20.0	20.0	0.0	0.0	0.0	20.0	20.0	20.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	C
C, Cycle Length [s]	89	89	89	89	89	89	89	89	89	89	89	89
L, Total Lost Time per Cycle [s]	4.00	6.00	6.00	6.00	6.00	6.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	4.00	4.00	0.00	4.00	4.00	0.00	3.00	3.00	0.00	3.00	3.00
g_i, Effective Green Time [s]	7	32	32	38	27	27	39	32	32	39	7	7
g / C, Green / Cycle	0.08	0.36	0.36	0.43	0.30	0.30	0.44	0.36	0.36	0.44	0.08	0.08
(v / s)_i Volume / Saturation Flow Rate	0.07	0.20	0.20	0.04	0.26	0.26	0.38	0.01	0.12	0.05	0.02	0.06
s, saturation flow rate [veh/h]	1714	1743	1725	835	1743	1585	1585	1800	1474	1186	1700	1445
c, Capacity [veh/h]	143	620	614	364	531	483	747	641	525	635	143	122
d1, Uniform Delay [s]	40.06	23.08	23.08	15.80	29.15	29.23	21.61	18.69	20.98	14.30	38.24	39.79
k, delay calibration	0.04	0.13	0.13	0.04	0.15	0.16	0.34	0.13	0.13	0.04	0.13	0.13
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.69	0.96	0.97	0.04	5.75	6.69	6.01	0.02	0.46	0.02	1.27	9.71
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.79	0.56	0.56	0.09	0.86	0.87	0.80	0.03	0.34	0.09	0.28	0.73
d, Delay for Lane Group [s/veh]	43.75	24.04	24.05	15.84	34.90	35.92	27.63	18.71	21.44	14.32	39.51	49.51
Lane Group LOS	D	C	C	B	C	D	C	B	C	B	D	D
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.48	5.63	5.58	0.38	9.40	8.75	10.83	0.27	2.62	0.65	0.86	2.20
50th-Percentile Queue Length [ft/ln]	62.06	140.85	139.45	9.38	235.05	218.86	270.77	6.78	65.56	16.14	21.48	55.02
95th-Percentile Queue Length [veh/ln]	4.47	9.53	9.45	0.68	14.43	13.61	16.23	0.49	4.72	1.16	1.55	3.96
95th-Percentile Queue Length [ft/ln]	111.72	238.16	236.28	16.88	360.77	340.17	405.70	12.21	118.00	29.05	38.66	99.03

Movement, Approach, & Intersection Results

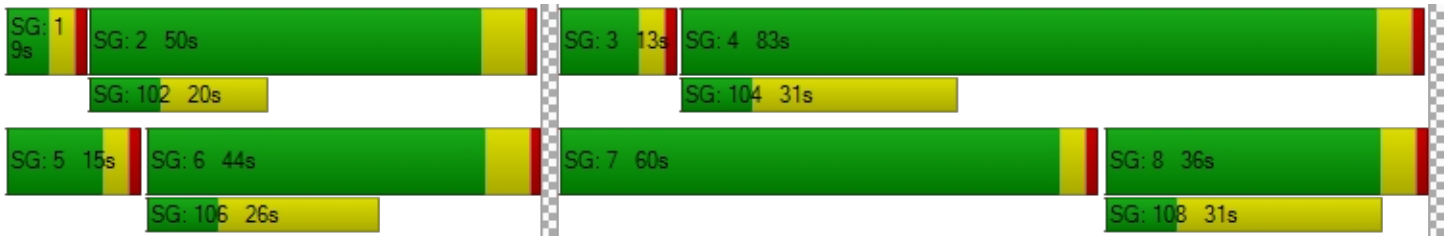
d_M, Delay for Movement [s/veh]	43.75	24.05	24.05	15.84	35.21	35.92	27.63	18.71	21.44	14.32	39.51	49.51
Movement LOS	D	C	C	B	D	D	C	B	C	B	D	D
d_A, Approach Delay [s/veh]	26.81			34.66			26.00			36.57		
Approach LOS	C			C			C			D		
d_I, Intersection Delay [s/veh]	29.89											
Intersection LOS	C											
Intersection V/C	0.862											

Other Modes

g_Walk,mi, Effective Walk Time [s]	12.0	12.0	12.0	12.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	33.27	33.27	33.27	33.27
l_p,int, Pedestrian LOS Score for Intersection	2.770	2.977	2.601	2.367
Crosswalk LOS	C	C	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	990	855	1754	697
d_b, Bicycle Delay [s]	11.35	14.59	0.67	18.87
l_b,int, Bicycle LOS Score for Intersection	2.224	2.309	2.873	1.713
Bicycle LOS	B	B	C	A

Sequence

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



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Version 2023 (SP 0-2)

Intersection Level Of Service Report

Intersection 119: Juanipero Way/Phoenix Road

Control Type:	Signalized	Delay (sec / veh):	17.7
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.360

Intersection Setup

Name	Phoenix Rd			Phoenix Rd			Juanipero Way			Juanipero Way		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	130.00	100.00	100.00	155.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	45.00			45.00			25.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Phoenix Rd			Phoenix Rd			Juanipero Way			Juanipero Way		
Base Volume Input [veh/h]	179	670	63	152	445	40	42	24	210	7	35	102
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.00	2.00	0.00	5.00	3.00	0.00	3.00	0.00	1.00	0.00	0.00	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	670	63	152	445	40	42	24	210	7	35	102
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	168	16	38	111	10	11	6	53	2	9	26
Total Analysis Volume [veh/h]	179	670	63	152	445	40	42	24	210	7	35	102
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
Pedestrian Volume [ped/h]	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	Fixed time
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	6	0	0	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	0	10	0	0	10	0	0	10	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	67	0	0	67	0	0	43	0	0	43	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	6	0	0	9	0	0	15	0	0	15	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	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	L	C
C, Cycle Length [s]	110	110	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	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	63	63	63	63	63	63	39	39	39	39
g / C, Green / Cycle	0.57	0.57	0.57	0.57	0.57	0.57	0.35	0.35	0.35	0.35
(v / s)_i Volume / Saturation Flow Rate	0.20	0.20	0.20	0.22	0.13	0.13	0.03	0.14	0.01	0.08
s, saturation flow rate [veh/h]	898	1863	1807	700	1845	1792	1235	1640	1165	1679
c, Capacity [veh/h]	504	1067	1035	379	1056	1026	410	582	332	595
d1, Uniform Delay [s]	17.96	12.55	12.55	21.42	11.58	11.59	29.60	26.73	32.90	24.95
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.95	0.90	0.93	3.14	0.52	0.53	0.50	2.07	0.12	0.90
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

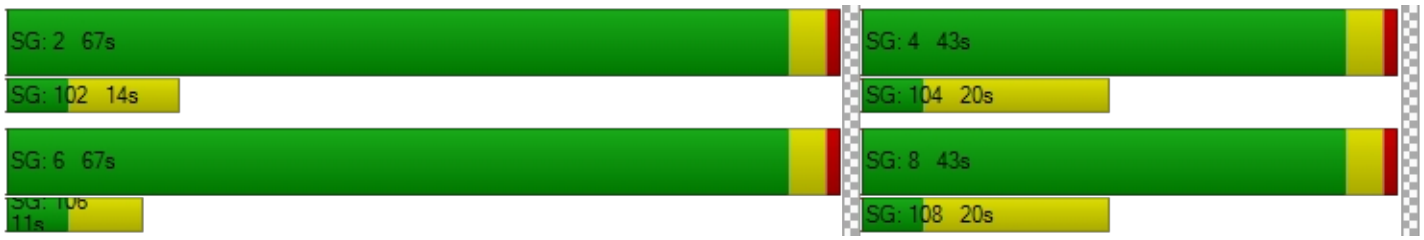
X, volume / capacity	0.35	0.35	0.35	0.40	0.23	0.23	0.10	0.40	0.02	0.23
d, Delay for Lane Group [s/veh]	19.91	13.45	13.48	24.56	12.10	12.12	30.10	28.79	33.01	25.85
Lane Group LOS	B	B	B	C	B	B	C	C	C	C
Critical Lane Group	No	No	No	Yes	No	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.97	4.68	4.55	2.91	2.84	2.77	0.90	4.99	0.16	2.66
50th-Percentile Queue Length [ft/ln]	74.23	116.97	113.69	72.86	71.00	69.35	22.48	124.79	3.91	66.52
95th-Percentile Queue Length [veh/ln]	5.34	8.23	8.05	5.25	5.11	4.99	1.62	8.66	0.28	4.79
95th-Percentile Queue Length [ft/ln]	133.61	205.66	201.13	131.14	127.81	124.84	40.47	216.39	7.04	119.73

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	19.91	13.46	13.48	24.56	12.11	12.12	30.10	28.79	28.79	33.01	25.85	25.85
Movement LOS	B	B	B	C	B	B	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	14.73			15.08			28.99			26.20		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	17.68											
Intersection LOS	B											
Intersection V/C	0.360											

Sequence

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



Intersection Level Of Service Report
Intersection 120: Phoenix Road/Commercial Drive

Control Type:	Two-way stop	Delay (sec / veh):	43.6
Analysis Method:	HCM 7th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.031

Intersection Setup

Name	Phoenix Rd			Phoenix Rd			S Stage Rd			Commercial 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	0	1	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	50.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	55.00			55.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Phoenix Rd			Phoenix Rd			S Stage Rd			Commercial Drive		
Base Volume Input [veh/h]	14	833	2	4	756	15	27	7	18	1	3	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	1.00	25.00	0.00	1.00	2.00	2.00	2.00	2.00	0.00	2.00	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
Total Hourly Volume [veh/h]	14	833	2	4	756	15	27	7	18	1	3	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]	4	208	1	1	189	4	7	2	5	0	1	0
Total Analysis Volume [veh/h]	14	833	2	4	756	15	27	7	18	1	3	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.01	0.00	0.00	0.01	0.00	0.21	0.07	0.03	0.01	0.03	0.00
d_M, Delay for Movement [s/veh]	9.36	0.00	0.00	9.48	0.00	0.00	39.94	43.40	12.50	37.55	43.58	12.57
Movement LOS	A	A	A	A	A	A	E	E	B	E	E	B
95th-Percentile Queue Length [veh/ln]	0.05	0.00	0.00	0.01	0.00	0.00	0.75	0.33	0.33	0.12	0.12	0.12
95th-Percentile Queue Length [ft/ln]	1.27	0.00	0.00	0.37	0.00	0.00	18.65	8.32	8.32	3.06	3.06	3.06
d_A, Approach Delay [s/veh]	0.15			0.05			30.91			42.08		
Approach LOS	A			A			D			E		
d_I, Intersection Delay [s/veh]	1.16											
Intersection LOS	E											

Intersection Level Of Service Report
Intersection 121: Phoenix Road/Grove Road

Control Type:	Signalized	Delay (sec / veh):	20.1
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.698

Intersection Setup

Name	Phoenix Rd			Phoenix Rd			Grove Rd			Grove Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	210.00	100.00	250.00	455.00	100.00	40.00	165.00	100.00	100.00	670.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	45.00			45.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Phoenix Rd			Phoenix Rd			Grove Rd			Grove Rd		
Base Volume Input [veh/h]	216	785	188	42	832	55	45	3	183	162	6	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	18.00	0.00	5.00	0.00	2.00	17.00	2.00	15.00	0.00	0.00
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	94	0	0	28	0	0	55	0	0	10
Total Hourly Volume [veh/h]	216	785	94	42	832	27	45	3	128	162	6	23
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	59	213	26	11	226	7	12	1	35	44	2	6
Total Analysis Volume [veh/h]	235	853	102	46	904	29	49	3	139	176	7	25
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	1			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			1			0		
v_co, Outbound Pedestrian Volume crossing	0			0			1			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			1			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			1			0			1		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	5	2	0	1	6	0	7	4	0	3	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	5	0	5	5	0
Maximum Green [s]	20	40	0	20	40	0	10	15	0	20	20	0
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	36	0	10	35	0	11	39	0	15	43	0
Vehicle Extension [s]	2.5	4.1	0.0	2.5	4.1	0.0	4.0	2.0	0.0	2.5	4.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	23	0	0	23	0	0	27	0	0	26	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall	No	Yes		No	Yes		No	No		No	No	
Maximum Recall	No	No		No	No		No	Yes		No	Yes	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	L	C
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	3.00	3.00	0.00	3.00	3.00	0.00	3.00	0.00	3.00
g_i, Effective Green Time [s]	41	32	32	41	28	28	29	15	29	21
g / C, Green / Cycle	0.51	0.41	0.41	0.51	0.35	0.35	0.36	0.19	0.36	0.26
(v / s)_i Volume / Saturation Flow Rate	0.27	0.26	0.08	0.06	0.28	0.02	0.03	0.11	0.14	0.02
s, saturation flow rate [veh/h]	866	3279	1276	761	3200	1456	1434	1290	1263	1522
c, Capacity [veh/h]	421	1334	519	412	1134	516	634	243	474	396
d1, Uniform Delay [s]	13.02	14.15	11.57	11.27	23.15	16.94	16.60	29.52	18.77	22.29
k, delay calibration	0.16	0.16	0.16	0.08	0.16	0.16	0.50	0.50	0.08	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.73	0.76	0.27	0.09	1.94	0.07	0.24	9.93	0.36	0.40
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.56	0.64	0.20	0.11	0.80	0.06	0.08	0.59	0.37	0.08
d, Delay for Lane Group [s/veh]	14.75	14.91	11.84	11.35	25.09	17.01	16.83	39.46	19.13	22.69
Lane Group LOS	B	B	B	B	C	B	B	D	B	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	1.43	4.08	0.84	0.35	7.05	0.33	0.61	3.07	2.28	0.48
50th-Percentile Queue Length [ft/ln]	35.87	101.90	21.02	8.85	176.35	8.16	15.14	76.79	56.97	12.11
95th-Percentile Queue Length [veh/ln]	2.58	7.34	1.51	0.64	11.41	0.59	1.09	5.53	4.10	0.87
95th-Percentile Queue Length [ft/ln]	64.57	183.41	37.83	15.94	285.24	14.68	27.25	138.23	102.54	21.79

Movement, Approach, & Intersection Results

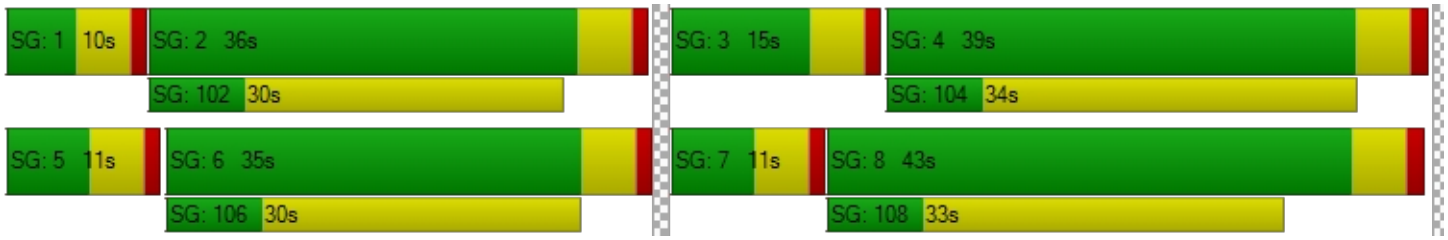
d_M, Delay for Movement [s/veh]	14.75	14.91	11.84	11.35	25.09	17.01	16.83	39.46	39.46	19.13	22.69	22.69
Movement LOS	B	B	B	B	C	B	B	D	D	B	C	C
d_A, Approach Delay [s/veh]	14.62			24.21			33.65			19.68		
Approach LOS	B			C			C			B		
d_I, Intersection Delay [s/veh]	20.10											
Intersection LOS	C											
Intersection V/C	0.698											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	13169.76	0.00	12462.86	0.00
d_p, Pedestrian Delay [s]	29.55	29.55	29.55	29.55
l_p,int, Pedestrian LOS Score for Intersection	3.163	2.955	2.358	2.126
Crosswalk LOS	C	C	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	779	754	855	955
d_b, Bicycle Delay [s]	14.83	15.45	13.05	10.87
l_b,int, Bicycle LOS Score for Intersection	2.619	2.390	1.966	1.919
Bicycle LOS	B	B	A	A

Sequence

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



Intersection Level Of Service Report
Intersection 122: Phoenix/I-5 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	18.1
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.325

Intersection Setup

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

Volumes

Name							Phoenix Rd					
Base Volume Input [veh/h]	0	0	0	0	0	0	0	838	0	595	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 [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00	0.00	4.00	0.00	0.00
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	0	0	0	0	838	0	595	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.8800	1.0000	0.8800	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	0	0	0	0	238	0	169	0	0
Total Analysis Volume [veh/h]	0	0	0	0	0	0	0	952	0	676	0	0
Presence of On-Street Parking							No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound 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]	1			4			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	6.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Split	Split
Signal Group	0	0	0	0	0	0	0	2	0	8	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	0	0	0	0	10	0	10	0	0
Maximum Green [s]	0	0	0	0	0	0	0	30	0	30	0	0
Amber [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	0.0	4.0	0.0	0.0
All red [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	2.0	0.0	0.0
Split [s]	0	0	0	0	0	0	0	35	0	35	0	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.1	0.0	3.0	0.0	0.0
Walk [s]	0	0	0	0	0	0	0	8	0	8	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	12	0	12	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		
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	4.0	0.0	0.0
Minimum Recall								No		No		
Maximum Recall								Yes		Yes		
Pedestrian Recall								No		No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0	0.0	20.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	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, Cycle Length [s]			70	70
L, Total Lost Time per Cycle [s]			5.00	6.00
l1_p, Permitted Start-Up Lost Time [s]			0.00	0.00
l2, Clearance Lost Time [s]			3.00	4.00
g_i, Effective Green Time [s]			30	29
g / C, Green / Cycle			0.43	0.41
(v / s)_i Volume / Saturation Flow Rate			0.30	0.21
s, saturation flow rate [veh/h]			3200	3227
c, Capacity [veh/h]			1369	1340
d1, Uniform Delay [s]			16.34	15.16
k, delay calibration			0.50	0.50
I, Upstream Filtering Factor			1.00	1.00
d2, Incremental Delay [s]			2.94	1.36
d3, Initial Queue Delay [s]			0.00	0.00
Rp, platoon ratio			1.00	1.00
PF, progression factor			1.00	1.00

Lane Group Results

X, volume / capacity			0.70	0.50
d, Delay for Lane Group [s/veh]			19.28	16.52
Lane Group LOS			B	B
Critical Lane Group			Yes	No
50th-Percentile Queue Length [veh/ln]			6.14	3.89
50th-Percentile Queue Length [ft/ln]			153.61	97.23
95th-Percentile Queue Length [veh/ln]			10.21	7.00
95th-Percentile Queue Length [ft/ln]			255.24	175.02

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.28	0.00	16.52	0.00	0.00
Movement LOS								B		B		
d_A, Approach Delay [s/veh]	0.00			0.00			19.28			16.52		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	18.13											
Intersection LOS	B											
Intersection V/C	0.325											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	12.0	0.0	12.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	24.06	0.00	24.06
l_p,int, Pedestrian LOS Score for Intersection	0.000	1.700	0.000	2.029
Crosswalk LOS	F	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]	0	0	856	828
d_b, Bicycle Delay [s]	35.03	35.03	11.45	12.03
l_b,int, Bicycle LOS Score for Intersection	4.132	4.132	2.345	2.117
Bicycle LOS	D	D	B	B

Sequence

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

Intersection Level Of Service Report
Intersection 124: Golf View Drive/S Stage Road

Control Type:	Two-way stop	Delay (sec / veh):	10.9
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.032

Intersection Setup

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

Volumes

Name	Golf View Dr		Golf View Dr		S Stage Rd	
Base Volume Input [veh/h]	131	25	18	198	20	10
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	131	25	18	198	20	10
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	33	6	5	50	5	3
Total Analysis Volume [veh/h]	131	25	18	198	20	10
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.03	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	7.56	0.00	10.94	8.96
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.04	0.00	0.10	0.03
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.96	0.00	2.47	0.83
d_A, Approach Delay [s/veh]	0.00		0.63		10.28	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	1.11					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 222: Phoenix Rd/I-5 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	18.8
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.323

Intersection Setup

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

Volumes

Name				Phoenix Rd			Phoenix Rd					
Base Volume Input [veh/h]	703	0	0	0	0	842	0	0	0	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 [%]	7.00	0.00	0.00	0.00	0.00	6.00	0.00	0.00	0.00	0.00	0.00	0.00
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]	703	0	0	0	0	842	0	0	0	0	0	0
Peak Hour Factor	0.9000	1.0000	1.0000	1.0000	1.0000	0.9000	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]	195	0	0	0	0	234	0	0	0	0	0	0
Total Analysis Volume [veh/h]	781	0	0	0	0	936	0	0	0	0	0	0
Presence of On-Street Parking	No		No	No		No						
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound 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]	1			2			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	6.00

Phasing & Timing

Control Type	Permiss	Split	Split	Split	Split	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	2	0	0	0	0	8	0	0	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	10	0	0	0	0	10	0	0	0	0	0	0
Maximum Green [s]	30	0	0	0	0	30	0	0	0	0	0	0
Amber [s]	4.0	0.0	0.0	0.0	0.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0
Split [s]	35	0	0	0	0	35	0	0	0	0	0	0
Vehicle Extension [s]	6.1	0.0	0.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	8	0	0	0	0	8	0	0	0	0	0	0
Pedestrian Clearance [s]	12	0	0	0	0	12	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						
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	3.0	0.0	0.0	0.0	0.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0
Minimum Recall	No					No						
Maximum Recall	Yes					Yes						
Pedestrian Recall	No					No						
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	0.0	0.0	0.0	0.0	20.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	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, Cycle Length [s]	70	70		
L, Total Lost Time per Cycle [s]	5.00	6.00		
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00		
l2, Clearance Lost Time [s]	3.00	4.00		
g_i, Effective Green Time [s]	30	29		
g / C, Green / Cycle	0.43	0.41		
(v / s)_i Volume / Saturation Flow Rate	0.25	0.29		
s, saturation flow rate [veh/h]	3148	3174		
c, Capacity [veh/h]	1347	1318		
d1, Uniform Delay [s]	15.27	17.00		
k, delay calibration	0.50	0.50		
I, Upstream Filtering Factor	1.00	1.00		
d2, Incremental Delay [s]	1.83	3.26		
d3, Initial Queue Delay [s]	0.00	0.00		
Rp, platoon ratio	1.00	1.00		
PF, progression factor	1.00	1.00		

Lane Group Results

X, volume / capacity	0.58	0.71		
d, Delay for Lane Group [s/veh]	17.10	20.26		
Lane Group LOS	B	C		
Critical Lane Group	No	Yes		
50th-Percentile Queue Length [veh/ln]	4.62	6.24		
50th-Percentile Queue Length [ft/ln]	115.59	156.05		
95th-Percentile Queue Length [veh/ln]	8.15	10.34		
95th-Percentile Queue Length [ft/ln]	203.75	258.48		

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	17.10	0.00	0.00	0.00	0.00	20.26	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS	B					C						
d_A, Approach Delay [s/veh]	17.10			20.26			0.00			0.00		
Approach LOS	B			C			A			A		
d_I, Intersection Delay [s/veh]	18.82											
Intersection LOS	B											
Intersection V/C	0.323											

Other Modes

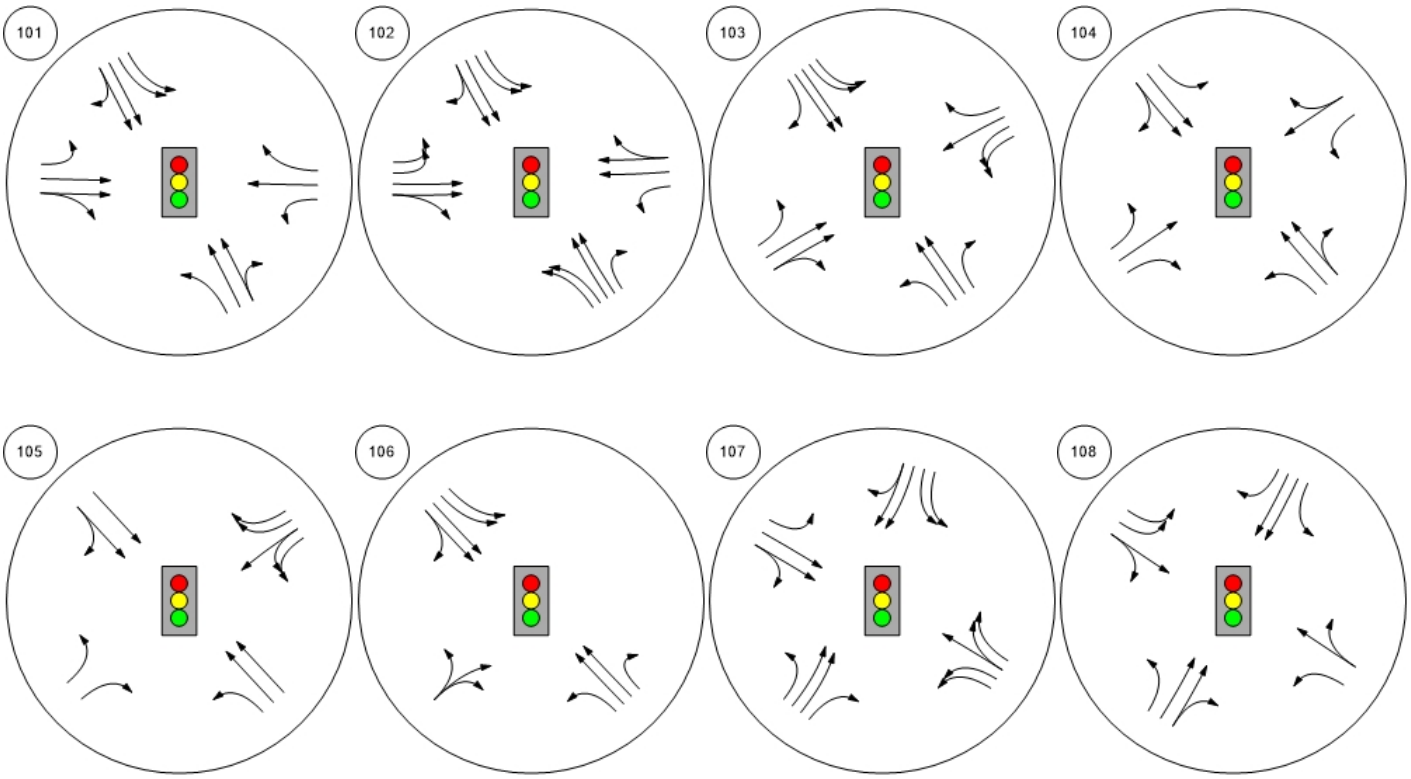
g_Walk,mi, Effective Walk Time [s]	12.0	0.0	12.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	24.06	0.00	24.06	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.080	0.000	1.700	0.000
Crosswalk LOS	B	F	A	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	856	828	0	0
d_b, Bicycle Delay [s]	11.46	12.05	35.03	35.03
l_b,int, Bicycle LOS Score for Intersection	2.204	2.332	4.132	4.132
Bicycle LOS	B	B	D	D

Sequence

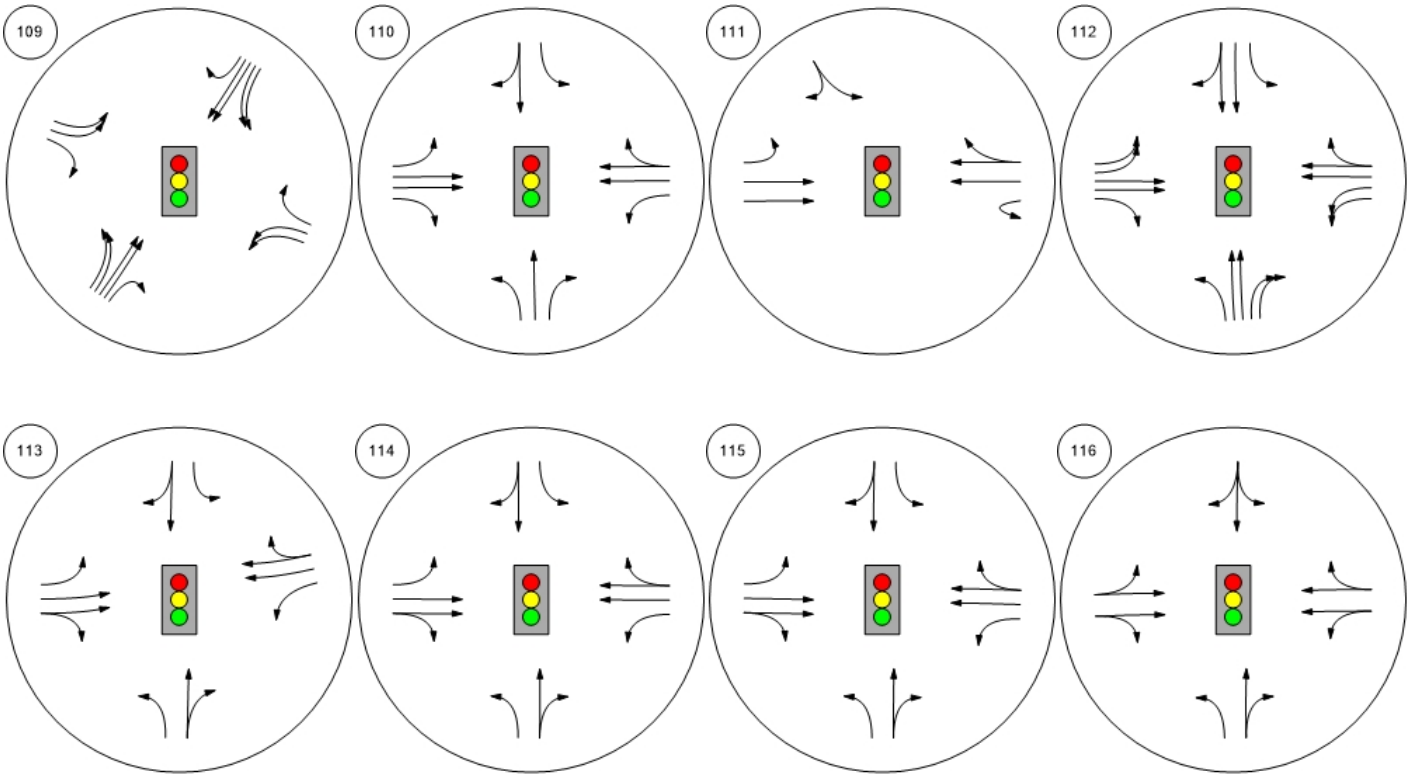
Ring 1	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Study Intersections

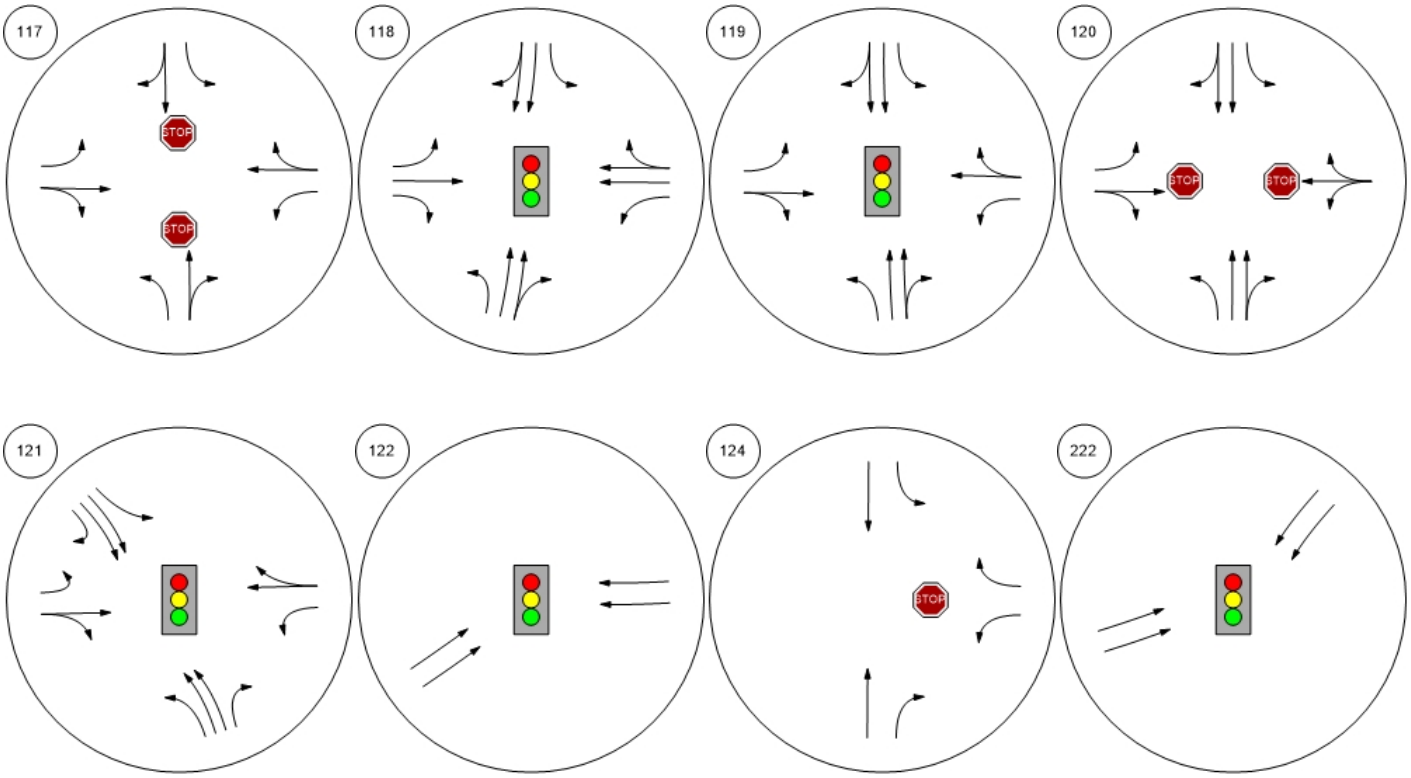
Lane Configuration and Traffic Control



Lane Configuration and Traffic Control



Lane Configuration and Traffic Control



Appendix D Future Year 2045 No-Build Freeway Operations Analysis Worksheets

HCS7 Freeway Diverge Report

Project Information			
Analyst	AEG	Date	12/15/2023
Agency		Analysis Year	2045 (No-Build)
Jurisdiction		Time Analyzed	Weekday AM Peak Hour
Project Description	Garfield Street/I-5 NB Off Ramp	Units	U.S. Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	67.7	35.0
Segment Length (L) / Deceleration Length (LA),ft	1500	250
Terrain Type	Level	Specific Grade
Percent Grade, %	-	5.00
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	1768	634
Peak Hour Factor (PHF)	0.87	0.86
Total Trucks, %	9.90	2.30
Single-Unit Trucks (SUT), %	-	30
Tractor-Trailers (TT), %	-	70
Heavy Vehicle Adjustment Factor (fHV)	0.910	0.924
Flow Rate (vi),pc/h	2233	798
Capacity (c), pc/h	4700	2000
Volume-to-Capacity Ratio (v/c)	0.48	0.40

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (DS)	0.500
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	54.8
Prop. Freeway Vehicles in Lane 1 and 2 (PFD)	1.000	Outer Lanes Freeway Speed (SO), mi/h	74.3
Flow in Lanes 1 and 2 (v12), pc/h	2233	Ramp Junction Speed (S), mi/h	54.8
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	20.4
Level of Service (LOS)	C	Density in Ramp Influence Area (DR), pc/mi/ln	21.2

HCS7 Freeway Diverge Report

Project Information			
Analyst	AEG	Date	12/15/2023
Agency		Analysis Year	2045 (No-Build)
Jurisdiction		Time Analyzed	Weekday AM Peak Hour
Project Description	Garfield Street/I-5 SB Off Ramp - SB	Units	U.S. Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	56.8	50.0
Segment Length (L) / Deceleration Length (LA),ft	1500	160
Terrain Type	Level	Specific Grade
Percent Grade, %	-	1.50
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	3063	1581
Peak Hour Factor (PHF)	0.93	0.91
Total Trucks, %	9.90	3.00
Single-Unit Trucks (SUT), %	-	30
Tractor-Trailers (TT), %	-	70
Heavy Vehicle Adjustment Factor (fHV)	0.910	0.945
Flow Rate (vi),pc/h	3619	1838
Capacity (c), pc/h	4500	2100
Volume-to-Capacity Ratio (v/c)	0.80	0.88

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (DS)	0.398
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	50.9
Prop. Freeway Vehicles in Lane 1 and 2 (PFD)	1.000	Outer Lanes Freeway Speed (SO), mi/h	62.3
Flow in Lanes 1 and 2 (v12), pc/h	3619	Ramp Junction Speed (S), mi/h	50.9
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	35.6
Level of Service (LOS)	D	Density in Ramp Influence Area (DR), pc/mi/ln	33.9

HCS7 Freeway Diverge Report

Project Information			
Analyst	AEG	Date	12/15/2023
Agency		Analysis Year	2045 (No-Build)
Jurisdiction		Time Analyzed	Weekday AM Peak Hour
Project Description	Phoenix Road /I-5 NB Off Ramp	Units	U.S. Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	67.2	35.0
Segment Length (L) / Deceleration Length (LA),ft	1500	215
Terrain Type	Level	Specific Grade
Percent Grade, %	-	1.50
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	1788	561
Peak Hour Factor (PHF)	0.94	0.93
Total Trucks, %	9.90	7.60
Single-Unit Trucks (SUT), %	-	30
Tractor-Trailers (TT), %	-	70
Heavy Vehicle Adjustment Factor (fHV)	0.910	0.909
Flow Rate (vi),pc/h	2090	664
Capacity (c), pc/h	4700	2000
Volume-to-Capacity Ratio (v/c)	0.44	0.33

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (DS)	0.488
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	54.9
Prop. Freeway Vehicles in Lane 1 and 2 (PFD)	1.000	Outer Lanes Freeway Speed (SO), mi/h	73.7
Flow in Lanes 1 and 2 (v12), pc/h	2090	Ramp Junction Speed (S), mi/h	54.9
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	19.0
Level of Service (LOS)	C	Density in Ramp Influence Area (DR), pc/mi/ln	20.3

HCS7 Freeway Diverge Report

Project Information			
Analyst	AEG	Date	12/15/2023
Agency		Analysis Year	2045 (No-Build)
Jurisdiction		Time Analyzed	Weekday AM Peak Hour
Project Description	Phoenix Road /I-5 SB Off Ramp	Units	U.S. Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	66.8	35.0
Segment Length (L) / Deceleration Length (LA),ft	1500	215
Terrain Type	Level	Specific Grade
Percent Grade, %	-	5.50
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	2133	501
Peak Hour Factor (PHF)	0.93	0.92
Total Trucks, %	9.90	14.30
Single-Unit Trucks (SUT), %	-	30
Tractor-Trailers (TT), %	-	70
Heavy Vehicle Adjustment Factor (fHV)	0.910	0.843
Flow Rate (vi),pc/h	2520	646
Capacity (c), pc/h	4700	2000
Volume-to-Capacity Ratio (v/c)	0.54	0.32

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (DS)	0.486
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	54.7
Prop. Freeway Vehicles in Lane 1 and 2 (PFD)	1.000	Outer Lanes Freeway Speed (SO), mi/h	73.3
Flow in Lanes 1 and 2 (v12), pc/h	2520	Ramp Junction Speed (S), mi/h	54.7
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	23.0
Level of Service (LOS)	C	Density in Ramp Influence Area (DR), pc/mi/ln	24.0

HCS7 Basic Freeway Report

Project Information

Analyst	AEG	Date	12/15/2023
Agency		Analysis Year	2045 (No-Build)
Jurisdiction		Time Analyzed	AM Peak Hour
Project Description	Between Garfield Street Ramps - NB	Units	U.S. Customary

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	60.0	Total Ramp Density (TRD), ramps/mi	0.83
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	57.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	1257	Heavy Vehicle Adjustment Factor (f_{HV})	0.910
Peak Hour Factor	0.87	Flow Rate (V_p), pc/h/ln	794
Total Trucks, %	9.90	Capacity (c), pc/h/ln	2272
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2272
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.35
Passenger Car Equivalent (E_T)	2.00		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	57.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	13.9
Total Ramp Density Adjustment	2.8	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	57.2		

HCS7 Freeway Merge Report

Project Information			
Analyst	AEG	Date	12/15/2023
Agency		Analysis Year	2045 (No-Build)
Jurisdiction		Time Analyzed	Weekday AM Peak Hour
Project Description	Garfield Street/I-5 NB On Ramp	Units	U.S. Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	57.2	35.0
Segment Length (L) / Acceleration Length (LA),ft	1500	650
Terrain Type	Level	Specific Grade
Percent Grade, %	-	3.00
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	1257	1018
Peak Hour Factor (PHF)	0.87	0.77
Total Trucks, %	9.90	6.00
Single-Unit Trucks (SUT), %	-	30
Tractor-Trailers (TT), %	-	70
Heavy Vehicle Adjustment Factor (fHV)	0.910	0.910
Flow Rate (vi),pc/h	1588	1453
Capacity (c), pc/h	4500	2000
Volume-to-Capacity Ratio (v/c)	0.68	0.73

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (MS)	0.357
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	51.8
Prop. Freeway Vehicles in Lane 1 and 2 (PFM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	57.2
Flow in Lanes 1 and 2 (v12), pc/h	1588	Ramp Junction Speed (S), mi/h	51.8
Flow Entering Ramp-Infl. Area (vR12), pc/h	3041	Average Density (D), pc/mi/ln	29.4
Level of Service (LOS)	C	Density in Ramp Influence Area (DR), pc/mi/ln	24.5

HCS7 Freeway Diverge Report

Project Information

Analyst	AEG	Date	12/15/2023
Agency		Analysis Year	2045 (No-Build)
Jurisdiction		Time Analyzed	Weekday PM Peak Hour
Project Description	Garfield Street/I-5 NB Off Ramp	Units	U.S. Customary

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	67.7	35.0
Segment Length (L) / Deceleration Length (LA),ft	1500	250
Terrain Type	Level	Specific Grade
Percent Grade, %	-	5.00
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	2705	689
Peak Hour Factor (PHF)	0.91	0.83
Total Trucks, %	9.90	1.30
Single-Unit Trucks (SUT), %	-	30
Tractor-Trailers (TT), %	-	70
Heavy Vehicle Adjustment Factor (fHV)	0.910	0.953
Flow Rate (vi),pc/h	3267	871
Capacity (c), pc/h	4700	2000
Volume-to-Capacity Ratio (v/c)	0.70	0.44

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (DS)	0.506
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	54.7
Prop. Freeway Vehicles in Lane 1 and 2 (PFD)	1.000	Outer Lanes Freeway Speed (SO), mi/h	74.3
Flow in Lanes 1 and 2 (v12), pc/h	3267	Ramp Junction Speed (S), mi/h	54.7
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	29.9
Level of Service (LOS)	D	Density in Ramp Influence Area (DR), pc/mi/ln	30.1

HCS7 Basic Freeway Report

Project Information

Analyst	AEG	Date	12/15/2023
Agency		Analysis Year	2045 (No-Build)
Jurisdiction		Time Analyzed	Weekday PM Peak Hour
Project Description	Between Garfield Street Ramps - NB	Units	U.S. Customary

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	60.0	Total Ramp Density (TRD), ramps/mi	0.83
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	57.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	2016	Heavy Vehicle Adjustment Factor (f_{HV})	0.910
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1178
Total Trucks, %	9.90	Capacity (c), pc/h/ln	2272
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2272
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.52
Passenger Car Equivalent (E_T)	2.00		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	57.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	20.6
Total Ramp Density Adjustment	2.8	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	57.2		

HCS7 Freeway Merge Report

Project Information			
Analyst	AEG	Date	12/15/2023
Agency		Analysis Year	2045 (No-Build)
Jurisdiction		Time Analyzed	Weekday PM Peak Hour
Project Description	Garfield Street/I-5 NB On Ramp	Units	U.S. Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	57.2	35.0
Segment Length (L) / Acceleration Length (LA),ft	1500	650
Terrain Type	Level	Specific Grade
Percent Grade, %	-	3.00
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	2016	1244
Peak Hour Factor (PHF)	0.94	0.92
Total Trucks, %	9.90	1.40
Single-Unit Trucks (SUT), %	-	30
Tractor-Trailers (TT), %	-	70
Heavy Vehicle Adjustment Factor (fHV)	0.910	0.962
Flow Rate (vi),pc/h	2357	1406
Capacity (c), pc/h	4500	2000
Volume-to-Capacity Ratio (v/c)	0.84	0.70

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (MS)	0.444
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	50.5
Prop. Freeway Vehicles in Lane 1 and 2 (PFM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	57.2
Flow in Lanes 1 and 2 (v12), pc/h	2357	Ramp Junction Speed (S), mi/h	50.5
Flow Entering Ramp-Infl. Area (vR12), pc/h	3763	Average Density (D), pc/mi/ln	37.3
Level of Service (LOS)	D	Density in Ramp Influence Area (DR), pc/mi/ln	30.2

HCS7 Freeway Merge Report

Project Information			
Analyst	AEG	Date	12/15/2023
Agency		Analysis Year	2045 (No-Build)
Jurisdiction		Time Analyzed	Weekday PM Peak Hour
Project Description	Garfield Street/I-5 SB On Ramp	Units	U.S. Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	66.8	50.0
Segment Length (L) / Acceleration Length (LA),ft	1500	550
Terrain Type	Level	Specific Grade
Percent Grade, %	-	2.00
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	1621	702
Peak Hour Factor (PHF)	0.96	0.89
Total Trucks, %	9.90	0.60
Single-Unit Trucks (SUT), %	-	30
Tractor-Trailers (TT), %	-	70
Heavy Vehicle Adjustment Factor (fHV)	0.910	0.986
Flow Rate (vi),pc/h	1856	800
Capacity (c), pc/h	4700	2100
Volume-to-Capacity Ratio (v/c)	0.57	0.38

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (MS)	0.322
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	58.8
Prop. Freeway Vehicles in Lane 1 and 2 (PFM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	66.8
Flow in Lanes 1 and 2 (v12), pc/h	1856	Ramp Junction Speed (S), mi/h	58.8
Flow Entering Ramp-Infl. Area (vR12), pc/h	2656	Average Density (D), pc/mi/ln	22.6
Level of Service (LOS)	C	Density in Ramp Influence Area (DR), pc/mi/ln	22.4

HCS7 Freeway Merge Report

Project Information			
Analyst	AEG	Date	12/15/2023
Agency		Analysis Year	2045 (No-Build)
Jurisdiction		Time Analyzed	Weekday PM Peak Hour
Project Description	Phoenix Road /I-5 NB On Ramp	Units	U.S. Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	68.2	35.0
Segment Length (L) / Acceleration Length (LA),ft	1500	750
Terrain Type	Level	Specific Grade
Percent Grade, %	-	3.00
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	2032	673
Peak Hour Factor (PHF)	0.93	0.85
Total Trucks, %	9.90	6.20
Single-Unit Trucks (SUT), %	-	30
Tractor-Trailers (TT), %	-	70
Heavy Vehicle Adjustment Factor (fHV)	0.910	0.914
Flow Rate (vi),pc/h	2401	866
Capacity (c), pc/h	4700	2000
Volume-to-Capacity Ratio (v/c)	0.70	0.43

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (MS)	0.371
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	58.5
Prop. Freeway Vehicles in Lane 1 and 2 (PFM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	68.2
Flow in Lanes 1 and 2 (v12), pc/h	2401	Ramp Junction Speed (S), mi/h	58.5
Flow Entering Ramp-Infl. Area (vR12), pc/h	3267	Average Density (D), pc/mi/ln	27.9
Level of Service (LOS)	C	Density in Ramp Influence Area (DR), pc/mi/ln	25.9

HCS7 Freeway Merge Report

Project Information			
Analyst	AEG	Date	12/15/2023
Agency		Analysis Year	2045 (No-Build)
Jurisdiction		Time Analyzed	Weekday PM Peak Hour
Project Description	Phoenix Road /I-5 SB On Ramp	Units	U.S. Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	67.2	35.0
Segment Length (L) / Acceleration Length (LA),ft	1500	400
Terrain Type	Level	Specific Grade
Percent Grade, %	-	3.50
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	1679	548
Peak Hour Factor (PHF)	0.94	0.89
Total Trucks, %	9.90	5.00
Single-Unit Trucks (SUT), %	-	30
Tractor-Trailers (TT), %	-	70
Heavy Vehicle Adjustment Factor (fHV)	0.910	0.909
Flow Rate (vi),pc/h	1963	677
Capacity (c), pc/h	4700	2000
Volume-to-Capacity Ratio (v/c)	0.56	0.34

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (MS)	0.348
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	58.4
Prop. Freeway Vehicles in Lane 1 and 2 (PFM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	67.2
Flow in Lanes 1 and 2 (v12), pc/h	1963	Ramp Junction Speed (S), mi/h	58.4
Flow Entering Ramp-Infl. Area (vR12), pc/h	2640	Average Density (D), pc/mi/ln	22.6
Level of Service (LOS)	C	Density in Ramp Influence Area (DR), pc/mi/ln	23.3

HCS7 Basic Freeway Report

Project Information

Analyst	AEG	Date	12/15/2023
Agency		Analysis Year	2045 (No-Build)
Jurisdiction		Time Analyzed	Weekday PM Peak Hour
Project Description	Between Garfield Street Ramps - SB	Units	U.S. Customary

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	60.0	Total Ramp Density (TRD), ramps/mi	1.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	56.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	1621	Heavy Vehicle Adjustment Factor (f_{HV})	0.910
Peak Hour Factor	0.96	Flow Rate (V_p), pc/h/ln	928
Total Trucks, %	9.90	Capacity (c), pc/h/ln	2268
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2268
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.41
Passenger Car Equivalent (E_T)	2.00		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	16.3
Total Ramp Density Adjustment	3.2	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	56.8		

HCS7 Basic Freeway Report

Project Information

Analyst	AEG	Date	12/15/2025
Agency		Analysis Year	2045 (No-Build)
Jurisdiction		Time Analyzed	Weekday PM Peak Hour
Project Description	Between Phoenix Road Ramps - NB	Units	U.S. Customary

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	68.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	2032	Heavy Vehicle Adjustment Factor (f_{HV})	1.000
Peak Hour Factor	0.93	Flow Rate (V_p), pc/h/ln	1092
Total Trucks, %	0.00	Capacity (c), pc/h/ln	2382
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2382
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.46
Passenger Car Equivalent (E_T)	2.00		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	68.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	16.0
Total Ramp Density Adjustment	1.8	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	68.2		

HCS7 Basic Freeway Report

Project Information

Analyst	AEG	Date	12/15/2023
Agency		Analysis Year	2045
Jurisdiction		Time Analyzed	Weekday PM Peak Hour
Project Description	Between Phoenix Road Ramps - SB	Units	U.S. Customary

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.83
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	67.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	1679	Heavy Vehicle Adjustment Factor (f_{HV})	0.910
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	982
Total Trucks, %	9.90	Capacity (c), pc/h/ln	2372
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2372
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.41
Passenger Car Equivalent (E_T)	2.00		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	14.6
Total Ramp Density Adjustment	2.8	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.2		

HCS7 Basic Freeway Report

Project Information

Analyst	AEG	Date	12/15/2023
Agency		Analysis Year	2045 (No-Build)
Jurisdiction		Time Analyzed	Weekday PM Peak Hour
Project Description	Garfield Street to Phoenix Road - NB	Units	U.S. Customary

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	67.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	2705	Heavy Vehicle Adjustment Factor (f_{HV})	0.910
Peak Hour Factor	0.91	Flow Rate (V_p), pc/h/ln	1634
Total Trucks, %	9.90	Capacity (c), pc/h/ln	2377
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2377
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.69
Passenger Car Equivalent (E_T)	2.00		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	66.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	24.7
Total Ramp Density Adjustment	2.3	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.7		

HCS7 Basic Freeway Report

Project Information

Analyst	AEG	Date	8/14/2023
Agency		Analysis Year	2045 (No-Build)
Jurisdiction		Time Analyzed	Weekday PM Peak Hour
Project Description	Garfield St to Phoenix Rd - SB	Units	U.S. Customary

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	1.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	66.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	2323	Heavy Vehicle Adjustment Factor (f_{HV})	0.910
Peak Hour Factor	0.93	Flow Rate (V_p), pc/h/ln	1372
Total Trucks, %	9.90	Capacity (c), pc/h/ln	2368
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2368
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.58
Passenger Car Equivalent (E_T)	2.00		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	66.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	20.5
Total Ramp Density Adjustment	3.2	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	66.8		

HCS7 Basic Freeway Report

Project Information

Analyst	AEG	Date	8/14/2023
Agency		Analysis Year	2045 (No-Build)
Jurisdiction		Time Analyzed	Weekday PM Peak Hour
Project Description	North of Garfield Street Interchange - NB	Units	U.S. Customary

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	60.0	Total Ramp Density (TRD), ramps/mi	0.83
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	57.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3260	Heavy Vehicle Adjustment Factor (f_{HV})	0.910
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1906
Total Trucks, %	9.90	Capacity (c), pc/h/ln	2272
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2272
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.84
Passenger Car Equivalent (E_T)	2.00		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	33.8
Total Ramp Density Adjustment	2.8	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	57.2		

HCS7 Basic Freeway Report

Project Information

Analyst	AEG	Date	12/15/2023
Agency		Analysis Year	2045 (No-Build)
Jurisdiction		Time Analyzed	Weekday PM Peak Hour
Project Description	North of Garfield Street Interchange - SB	Units	U.S. Customary

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	60.0	Total Ramp Density (TRD), ramps/mi	0.83
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	57.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	2960	Heavy Vehicle Adjustment Factor (f_{HV})	0.910
Peak Hour Factor	0.93	Flow Rate (V_p), pc/h/ln	1749
Total Trucks, %	9.90	Capacity (c), pc/h/ln	2272
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2272
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.77
Passenger Car Equivalent (E_T)	2.00		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	57.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	30.6
Total Ramp Density Adjustment	2.8	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	57.2		

HCS7 Basic Freeway Report

Project Information

Analyst	AEG	Date	12/15/2023
Agency		Analysis Year	2045 (No-Build)
Jurisdiction		Time Analyzed	Weekday PM Peak Hour
Project Description	South of Phoenix Road Interchange - NB	Units	U.S. Customary

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.83
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	67.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	2557	Heavy Vehicle Adjustment Factor (f_{HV})	0.910
Peak Hour Factor	0.93	Flow Rate (V_p), pc/h/ln	1510
Total Trucks, %	9.90	Capacity (c), pc/h/ln	2372
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2372
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.64
Passenger Car Equivalent (E_T)	2.00		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	66.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	22.6
Total Ramp Density Adjustment	2.8	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.2		

HCS7 Basic Freeway Report

Project Information

Analyst	AEG	Date	8/14/2023
Agency		Analysis Year	2045 (No-Build)
Jurisdiction		Time Analyzed	Weekday PM Peak Hour
Project Description	South of Phoenix Road Interchange - SB	Units	U.S. Customary

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	1.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	66.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	2227	Heavy Vehicle Adjustment Factor (f_{HV})	0.910
Peak Hour Factor	0.95	Flow Rate (V_p), pc/h/ln	1288
Total Trucks, %	9.90	Capacity (c), pc/h/ln	2368
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2368
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.54
Passenger Car Equivalent (E_T)	2.00		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	66.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	19.3
Total Ramp Density Adjustment	3.2	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	66.8		

HCS7 Freeway Diverge Report

Project Information			
Analyst	AEG	Date	12/15/2023
Agency		Analysis Year	2045 (No-Build)
Jurisdiction		Time Analyzed	Weekday PM Peak Hour
Project Description	Garfield Street/I-5 SB Off Ramp - SB	Units	U.S. Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	56.8	50.0
Segment Length (L) / Deceleration Length (LA),ft	1500	160
Terrain Type	Level	Specific Grade
Percent Grade, %	-	1.50
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	2960	1339
Peak Hour Factor (PHF)	0.93	0.91
Total Trucks, %	9.90	2.80
Single-Unit Trucks (SUT), %	-	30
Tractor-Trailers (TT), %	-	70
Heavy Vehicle Adjustment Factor (fHV)	0.910	0.947
Flow Rate (vi),pc/h	3498	1554
Capacity (c), pc/h	4500	2100
Volume-to-Capacity Ratio (v/c)	0.78	0.74

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (DS)	0.373
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	51.3
Prop. Freeway Vehicles in Lane 1 and 2 (PFD)	1.000	Outer Lanes Freeway Speed (SO), mi/h	62.3
Flow in Lanes 1 and 2 (v12), pc/h	3498	Ramp Junction Speed (S), mi/h	51.3
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	34.1
Level of Service (LOS)	D	Density in Ramp Influence Area (DR), pc/mi/ln	32.9

HCS7 Freeway Diverge Report

Project Information			
Analyst	AEG	Date	12/15/2023
Agency		Analysis Year	20232045 (No-Build)
Jurisdiction		Time Analyzed	Weekday PM Peak Hour
Project Description	Phoenix Road /I-5 NB Off Ramp	Units	U.S. Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	67.2	35.0
Segment Length (L) / Deceleration Length (LA),ft	1500	215
Terrain Type	Level	Specific Grade
Percent Grade, %	-	1.50
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	2557	525
Peak Hour Factor (PHF)	0.93	0.93
Total Trucks, %	9.90	6.20
Single-Unit Trucks (SUT), %	-	30
Tractor-Trailers (TT), %	-	70
Heavy Vehicle Adjustment Factor (fHV)	0.910	0.919
Flow Rate (vi),pc/h	3021	614
Capacity (c), pc/h	4700	2000
Volume-to-Capacity Ratio (v/c)	0.64	0.31

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (DS)	0.483
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	55.0
Prop. Freeway Vehicles in Lane 1 and 2 (PFD)	1.000	Outer Lanes Freeway Speed (SO), mi/h	73.7
Flow in Lanes 1 and 2 (v12), pc/h	3021	Ramp Junction Speed (S), mi/h	55.0
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	27.5
Level of Service (LOS)	D	Density in Ramp Influence Area (DR), pc/mi/ln	28.3

HCS7 Freeway Diverge Report

Project Information

Analyst	AEG	Date	12/15/2023
Agency		Analysis Year	2045 (No-Build)
Jurisdiction		Time Analyzed	Weekday PM Peak Hour
Project Description	Phoenix Road /I-5 SB Off Ramp	Units	U.S. Customary

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	66.8	35.0
Segment Length (L) / Deceleration Length (LA),ft	1500	215
Terrain Type	Level	Specific Grade
Percent Grade, %	-	5.50
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	2323	644
Peak Hour Factor (PHF)	0.93	0.91
Total Trucks, %	9.90	5.30
Single-Unit Trucks (SUT), %	-	30
Tractor-Trailers (TT), %	-	70
Heavy Vehicle Adjustment Factor (fHV)	0.910	0.908
Flow Rate (vi),pc/h	2745	779
Capacity (c), pc/h	4700	2000
Volume-to-Capacity Ratio (v/c)	0.58	0.39

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (DS)	0.498
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	54.4
Prop. Freeway Vehicles in Lane 1 and 2 (PFD)	1.000	Outer Lanes Freeway Speed (SO), mi/h	73.3
Flow in Lanes 1 and 2 (v12), pc/h	2745	Ramp Junction Speed (S), mi/h	54.4
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	25.2
Level of Service (LOS)	C	Density in Ramp Influence Area (DR), pc/mi/ln	25.9

HCS7 Freeway Merge Report

Project Information			
Analyst	AEG	Date	12/15/2023
Agency		Analysis Year	2045 (No-Build)
Jurisdiction		Time Analyzed	Weekday AM Peak Hour
Project Description	Garfield Street/I-5 SB On Ramp	Units	U.S. Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	66.8	50.0
Segment Length (L) / Acceleration Length (LA),ft	1500	550
Terrain Type	Level	Specific Grade
Percent Grade, %	-	2.50
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	1482	651
Peak Hour Factor (PHF)	0.90	0.96
Total Trucks, %	9.90	2.80
Single-Unit Trucks (SUT), %	-	30
Tractor-Trailers (TT), %	-	70
Heavy Vehicle Adjustment Factor (fHV)	0.910	0.938
Flow Rate (vi),pc/h	1810	723
Capacity (c), pc/h	4700	2100
Volume-to-Capacity Ratio (v/c)	0.54	0.34

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (MS)	0.315
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	59.0
Prop. Freeway Vehicles in Lane 1 and 2 (PFM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	66.8
Flow in Lanes 1 and 2 (v12), pc/h	1810	Ramp Junction Speed (S), mi/h	59.0
Flow Entering Ramp-Infl. Area (vR12), pc/h	2533	Average Density (D), pc/mi/ln	21.5
Level of Service (LOS)	C	Density in Ramp Influence Area (DR), pc/mi/ln	21.5

HCS7 Freeway Merge Report

Project Information			
Analyst	AEG	Date	12/15/2023
Agency		Analysis Year	2045 (No-Build)
Jurisdiction		Time Analyzed	Weekday AM Peak Hour
Project Description	Phoenix Road /I-5 NB On Ramp	Units	U.S. Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	68.2	35.0
Segment Length (L) / Acceleration Length (LA),ft	1500	750
Terrain Type	Level	Specific Grade
Percent Grade, %	-	3.00
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	1227	664
Peak Hour Factor (PHF)	0.91	0.75
Total Trucks, %	9.90	12.10
Single-Unit Trucks (SUT), %	-	30
Tractor-Trailers (TT), %	-	70
Heavy Vehicle Adjustment Factor (fHV)	0.910	0.869
Flow Rate (vi),pc/h	1482	1019
Capacity (c), pc/h	4700	2000
Volume-to-Capacity Ratio (v/c)	0.53	0.51

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (MS)	0.316
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	59.9
Prop. Freeway Vehicles in Lane 1 and 2 (PFM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	68.2
Flow in Lanes 1 and 2 (v12), pc/h	1482	Ramp Junction Speed (S), mi/h	59.9
Flow Entering Ramp-Infl. Area (vR12), pc/h	2501	Average Density (D), pc/mi/ln	20.9
Level of Service (LOS)	B	Density in Ramp Influence Area (DR), pc/mi/ln	19.9

HCS7 Freeway Merge Report

Project Information			
Analyst	AEG	Date	12/15/2023
Agency		Analysis Year	2045 (No-Build)
Jurisdiction		Time Analyzed	Weekday AM Peak Hour
Project Description	Phoenix Road /I-5 SB On Ramp	Units	U.S. Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	67.2	35.0
Segment Length (L) / Acceleration Length (LA),ft	1500	400
Terrain Type	Level	Specific Grade
Percent Grade, %	-	3.50
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	1632	591
Peak Hour Factor (PHF)	0.88	0.79
Total Trucks, %	9.90	8.20
Single-Unit Trucks (SUT), %	-	30
Tractor-Trailers (TT), %	-	70
Heavy Vehicle Adjustment Factor (fHV)	0.910	0.891
Flow Rate (vi),pc/h	2038	840
Capacity (c), pc/h	4700	2000
Volume-to-Capacity Ratio (v/c)	0.61	0.42

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (MS)	0.362
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	58.1
Prop. Freeway Vehicles in Lane 1 and 2 (PFM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	67.2
Flow in Lanes 1 and 2 (v12), pc/h	2038	Ramp Junction Speed (S), mi/h	58.1
Flow Entering Ramp-Infl. Area (vR12), pc/h	2878	Average Density (D), pc/mi/ln	24.8
Level of Service (LOS)	C	Density in Ramp Influence Area (DR), pc/mi/ln	25.1

HCS7 Basic Freeway Report

Project Information

Analyst	AEG	Date	12/15/2023
Agency		Analysis Year	2045 (No-Build)
Jurisdiction		Time Analyzed	AM Peak Hour
Project Description	Between Garfield St Ramps -SB	Units	U.S. Customary

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	60.0	Total Ramp Density (TRD), ramps/mi	1.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	56.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	1482	Heavy Vehicle Adjustment Factor (f_{HV})	0.910
Peak Hour Factor	0.90	Flow Rate (V_p), pc/h/ln	905
Total Trucks, %	9.90	Capacity (c), pc/h/ln	2268
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2268
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.40
Passenger Car Equivalent (E_T)	2.00		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	15.9
Total Ramp Density Adjustment	3.2	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	56.8		

HCS7 Basic Freeway Report

Project Information

Analyst	AEG	Date	12/15/2023
Agency		Analysis Year	2045
Jurisdiction		Time Analyzed	AM Peak Hour
Project Description	Between Phoenix Road Ramps - NB	Units	U.S. Customary

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	68.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	1227	Heavy Vehicle Adjustment Factor (f_{HV})	0.910
Peak Hour Factor	0.91	Flow Rate (V_p), pc/h/ln	741
Total Trucks, %	9.90	Capacity (c), pc/h/ln	2382
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2382
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.31
Passenger Car Equivalent (E_T)	2.00		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	68.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	10.9
Total Ramp Density Adjustment	1.8	Level of Service (LOS)	A
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	68.2		

HCS7 Basic Freeway Report

Project Information

Analyst	AEG	Date	12/15/2023
Agency		Analysis Year	2045 (No-Build)
Jurisdiction		Time Analyzed	AM Peak Hour
Project Description	Between Phoenix Rd Ramps - SB	Units	U.S. Customary

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.83
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	67.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	1632	Heavy Vehicle Adjustment Factor (f_{HV})	0.910
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	1019
Total Trucks, %	9.90	Capacity (c), pc/h/ln	2372
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2372
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.43
Passenger Car Equivalent (E_T)	2.00		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	15.2
Total Ramp Density Adjustment	2.8	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.2		

HCS7 Basic Freeway Report

Project Information

Analyst	AEG	Date	12/15/2023
Agency		Analysis Year	2045 (No-Build)
Jurisdiction		Time Analyzed	AM Peak Hour
Project Description	Garfield Street to Phoenix Road - NB	Units	U.S. Customary

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	67.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	1891	Heavy Vehicle Adjustment Factor (f_{HV})	0.910
Peak Hour Factor	0.87	Flow Rate (V_p), pc/h/ln	1194
Total Trucks, %	9.90	Capacity (c), pc/h/ln	2377
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2377
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.50
Passenger Car Equivalent (E_T)	2.00		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	17.6
Total Ramp Density Adjustment	2.3	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.7		

HCS7 Basic Freeway Report

Project Information

Analyst	AEG	Date	12/15/2023
Agency		Analysis Year	2045 (No-Build)
Jurisdiction		Time Analyzed	AM Peak Hour
Project Description	Garfield St to Phoenix Rd - SB	Units	U.S. Customary

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	1.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	66.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	2133	Heavy Vehicle Adjustment Factor (f_{HV})	0.910
Peak Hour Factor	0.93	Flow Rate (V_p), pc/h/ln	1260
Total Trucks, %	9.90	Capacity (c), pc/h/ln	2368
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2368
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.53
Passenger Car Equivalent (E_T)	2.00		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	66.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	18.9
Total Ramp Density Adjustment	3.2	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	66.8		

HCS7 Basic Freeway Report

Project Information

Analyst	AEG	Date	12/15/2023
Agency		Analysis Year	2045 (No-Build)
Jurisdiction		Time Analyzed	AM Peak Hour
Project Description	North of Garfield Street Interchange - NB	Units	U.S. Customary

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	60.0	Total Ramp Density (TRD), ramps/mi	0.83
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	57.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	2275	Heavy Vehicle Adjustment Factor (f_{HV})	0.910
Peak Hour Factor	0.82	Flow Rate (V_p), pc/h/ln	1524
Total Trucks, %	9.90	Capacity (c), pc/h/ln	2272
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2272
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.67
Passenger Car Equivalent (E_T)	2.00		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	57.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	26.6
Total Ramp Density Adjustment	2.8	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	57.2		

HCS7 Basic Freeway Report

Project Information

Analyst	AEG	Date	12/15/2023
Agency		Analysis Year	2045 (No-Build)
Jurisdiction		Time Analyzed	AM Peak Hour
Project Description	North of Garfield Street Interchange - SB	Units	U.S. Customary

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	60.0	Total Ramp Density (TRD), ramps/mi	0.83
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	57.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3063	Heavy Vehicle Adjustment Factor (f_{HV})	0.910
Peak Hour Factor	0.91	Flow Rate (V_p), pc/h/ln	1850
Total Trucks, %	9.90	Capacity (c), pc/h/ln	2272
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2272
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.81
Passenger Car Equivalent (E_T)	2.00		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	32.6
Total Ramp Density Adjustment	2.8	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	57.2		

HCS7 Basic Freeway Report

Project Information

Analyst	AEG	Date	12/15/2023
Agency		Analysis Year	2045 (No-Build)
Jurisdiction		Time Analyzed	AM Peak Hour
Project Description	South of Phoenix Road Interchange - NB	Units	U.S. Customary

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	0.83
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	67.2
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	1788	Heavy Vehicle Adjustment Factor (f_{HV})	0.910
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1045
Total Trucks, %	9.90	Capacity (c), pc/h/ln	2372
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2372
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.44
Passenger Car Equivalent (E_T)	2.00		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	67.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	15.6
Total Ramp Density Adjustment	2.8	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	67.2		

HCS7 Basic Freeway Report

Project Information

Analyst	AEG	Date	12/15/2023
Agency		Analysis Year	2045 (No-Build)
Jurisdiction		Time Analyzed	AM Peak Hour
Project Description	South of Phoenix Road Interchange - SB	Units	U.S. Customary

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	1.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	66.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	2223	Heavy Vehicle Adjustment Factor (f_{HV})	0.910
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1328
Total Trucks, %	9.90	Capacity (c), pc/h/ln	2368
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2368
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.56
Passenger Car Equivalent (E_T)	2.00		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	66.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	19.9
Total Ramp Density Adjustment	3.2	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	66.8		