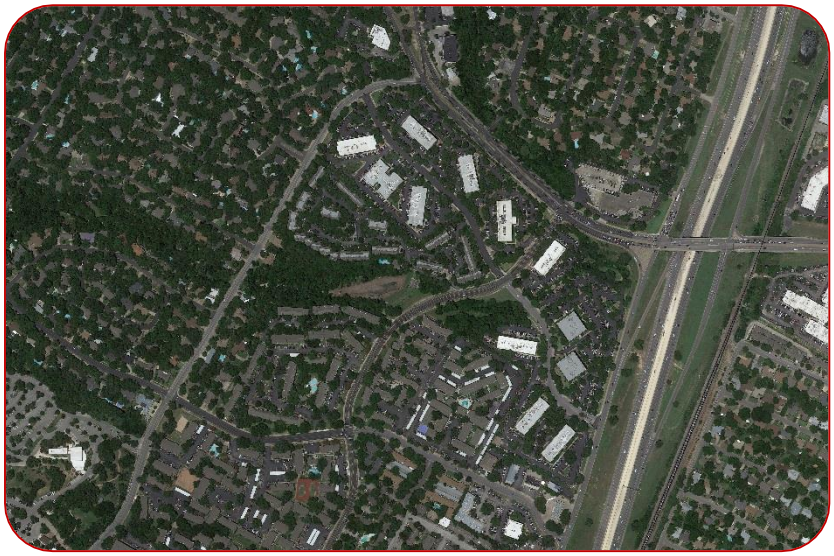
Austin Oaks TIA Appendix



JULY 26, 2016

Prepared By:

Kimley»Horn

Contact: Jeff Whitacre, P.E., AICP, PTP

Phone: 817-335-6511

APPENDIX

Appendix A: Tia Scoping Document

TRAFFIC IMPACT ANALYSIS SCOPE AND STUDY AREA

Date:	April 12, 2016
Project Name:	Austin Oaks - PUD
Location:	Mo-Pac (Loop 1) / Spicewood Springs Road
Owner's Agent:	Jeff Whitacre, P.E., AICP, PTP, Kimley-Horn & Associates
Phone:	(817) 339 – 2254

Scope must be approved and signed by staff prior to submittal of a Traffic Impact Analysis (TIA).

I. Data Collection

1. Background Information:

a. A Study Area Map that specifies major roadways and intersections within study area is shown as **Attachment A.**

2. **Intersections Capacity Analysis:** Calculations for a.m. and p.m. peak hours must be performed for the following intersections, showing (a) existing traffic conditions and (b) projected traffic conditions, identifying site, non-site, and total traffic. Capacity Analysis should include (but not limited to):

   a. Intersection Level of Service by movements
   b. V/C by movements
   c. Delay by movements
   d. Queueing analysis with 95% queue length by movement

1. Hart Ln. / Executive Center Dr.
2. Spicewood Springs Rd. / Hart Ln.
3. Spicewood Springs Rd. /Wood Hollow Dr.
4. Spicewood Springs Rd. / Loop 1 SBFR
5. Spicewood Springs Rd. / Loop 1 NBFR
6. Executive Center Dr. / Loop 1 SBFR
7. Greystone Dr. / Loop 1 SBFR
8. Far West Blvd. / Loop 1 SBFR
9. Far West Blvd. / Loop 1 NBFR
10. Steck Ave/Loop 1 SBFR
11. Far West Blvd. / Wood Hollow Dr.
12. Far West Blvd. / Hart Ln.
13. Hart Ln. / Greystone Dr.
14. Greystone Dr. / Wood Hollow Dr.
15. Executive Center Dr./Wood Hollow Dr.
16. All site driveways

Note: Existing signal timings shall be used for the intersection analyses, unless alternative timing proposals are approved by the Austin Transportation Department. Build out conditions should be analyzed using the TXDOT schematics for the future plans.

3. **Neighborhood Concerns**: Neighborhood concerns expressed through the public input process (i.e. "design charrette") are to be addressed in a separate document at the discretion of the applicant.

Identified neighborhood streets and intersections for supplemental review/study:

1. Far West Blvd. / Mesa Dr.
2. Greystone Dr. / Mesa Dr.
3. Spicewood Springs Rd. / Mesa Dr.
4. Greystone Dr. / Chimney Corners
5. Anderson Ln. / Shoal Creek Blvd.
6. Hart Ln. between Far West Blvd. and Executive Center Dr.
7. Wood Hollow Dr. between Far West Blvd. and Executive Center Dr.
8. Greystone Dr. between Hart Ln. and Loop 1 SBFR
9. Greystone Dr. between Mesa Dr. and Hart Ln.

II. Study Assumptions

1. **Data Assumptions:** The following assumptions must be included in the analysis. Any change in these assumptions must be approved by the Transportation Reviewer prior to submittal of the TIA. The assumptions are based on data provided by ITE.

   a. Background Traffic—Annual growth rate of 2% will be assumed. This rate will be verified in comparison with surrounding development data. The table below shows historic AADT on roadways in the vicinity of the proposed development provided by the TxDOT Statewide Planning Map. The average annual growth rate for the total AADT between 2007 and 2013 is approximately 2.1%.

Year	Volume				Annual Growth Rate	Average Annual Growth Rate
	SH 360	US 183	Loop 1	Total		
2013	47,881	188,725	172,032	408,638	1.40%	2.1%
2012	46,000	186,000	171,000	403,000	4.40%	
2011	44,000	178,000	164,000	386,000	-4.93%	
2010	45,000	187,000	174,000	406,000	5.73%	
2009	49,000	167,000	168,000	384,000	-1.29%	
2008	52,000	165,000	172,000	389,000	7.46%	
2007	55,000	141,000	166,000	362,000		

b. Other Projects to be Included: review conditions of PUD zoning case (C814-2008-0016), including TIA recommendations.

c. Trip Generation – Site-generated traffic estimates are determined based on the rates/equations specified in the 9th edition of Trip Generation Manual published by the Institute of Transportation Engineers (ITE).
   - The trips generated by the existing office development were assumed using the equation specified for General Office Building (ITE Code 710).
   - The trip generation rate for High-Turnover (Sit-Down) Restaurant (ITE Code 932) was used to calculate trips generated by proposed Restaurant and Retail space.
   - A table showing the trip generation rate/equation for each land use is included as **Attachment B**.
   - Tables showing the existing/proposed trip generation for each phase of development are included as **Attachment C.**

The following reduction factors are approved for the proposed land uses:

d. Internal capture – an internal capture rate of 5% is allowed for identified land uses. Staff does not support the assumption that significant percentages of routine peak hour trips will be contained within the site due to the isolated position of the site, both topographically and from the city center. In addition, the limited mix of land uses proposed does not offer a high opportunity for internal capture.

e. Transit trips – Applicant to coordinate with Capmetro for possibility of providing mass transit service along Spicewood Springs Road.

f. Pass-by-trips: – A 35% pass-by reduction is allowed for traffic on Spicewood Springs during the PM peak for restaurant land uses **only.**

2. **Trip Distribution:** The distribution of trips to/from the proposed development was determined based on the existing roadway network, existing traffic patterns, and the locations of the proposed driveways. Additionally, some trips to and from the site were distributed using 'Journey to Work' data provided by the United States Census Bureau.

Direction	Roadway	Site Traffic
From the north	Mo-Pac/Loop 1	25%
From the south	Hart Ln.	5%
From the south	Mo-Pac/Loop 1	25%
From the east	Anderson Ln.	20%
From the west	Spicewood Springs Rd.	20%
From the west	Far West Blvd.	5%

See **Attachment E** for the projected site trip distribution percentages.

3. **Other Considerations:** Each phase of the development will be analyzed separately.

Submittal Requirements

1. Traffic signal modeling requirements (Synchro files must be in real world coordinates):
   a. City of Austin timing sheets to be included in the appendix of the TIA.
   b. Submit five (5) hard copies and five (5) CD's containing the following: PDF of the TIA, Synchro Network for all conditions analyzed and background DXF or aerial format. Synchro files must be in real world coordinates.
   c. The CD must contain Excel spreadsheets for the following calculations:
      - overall trip generation,
      - internal and pass-by trip capture rates,
      - site trip distribution & assignment within roadway network and site driveways.
   d. A CAD file for the site plan, if available.
   e. All intersections must be modeled in one Synchro file (including unsignalized intersections).
   f. Synchro signal timing sheets to be included in the following format:
      - existing conditions (am + pm on one sheet),
      - six (6) future conditions:
        - (am background, am background + site, am background + site + mitigation)
        - (pm background, pm background + site, pm background + site + mitigation)
   g. Intersection LOS by movements, v/c by movements, and 95% queue length by movements in a tabular format (preferably in 11"x17") for scenarios noted in f.
   h. Model scenarios: 2016 Existing Conditions,
      2018 Build/No Build (2018 Background + Phase 1 Site Generated)
      2020 Build/No Build (2020 Background + Phase 1&2 Site Generated)
      2022 Build/ No Build (2022 Background + Phase 1,2&3 Site Generated)
      2024 Build/No Build (2024 Background + Phase 1,2,3&4 Site Generated)

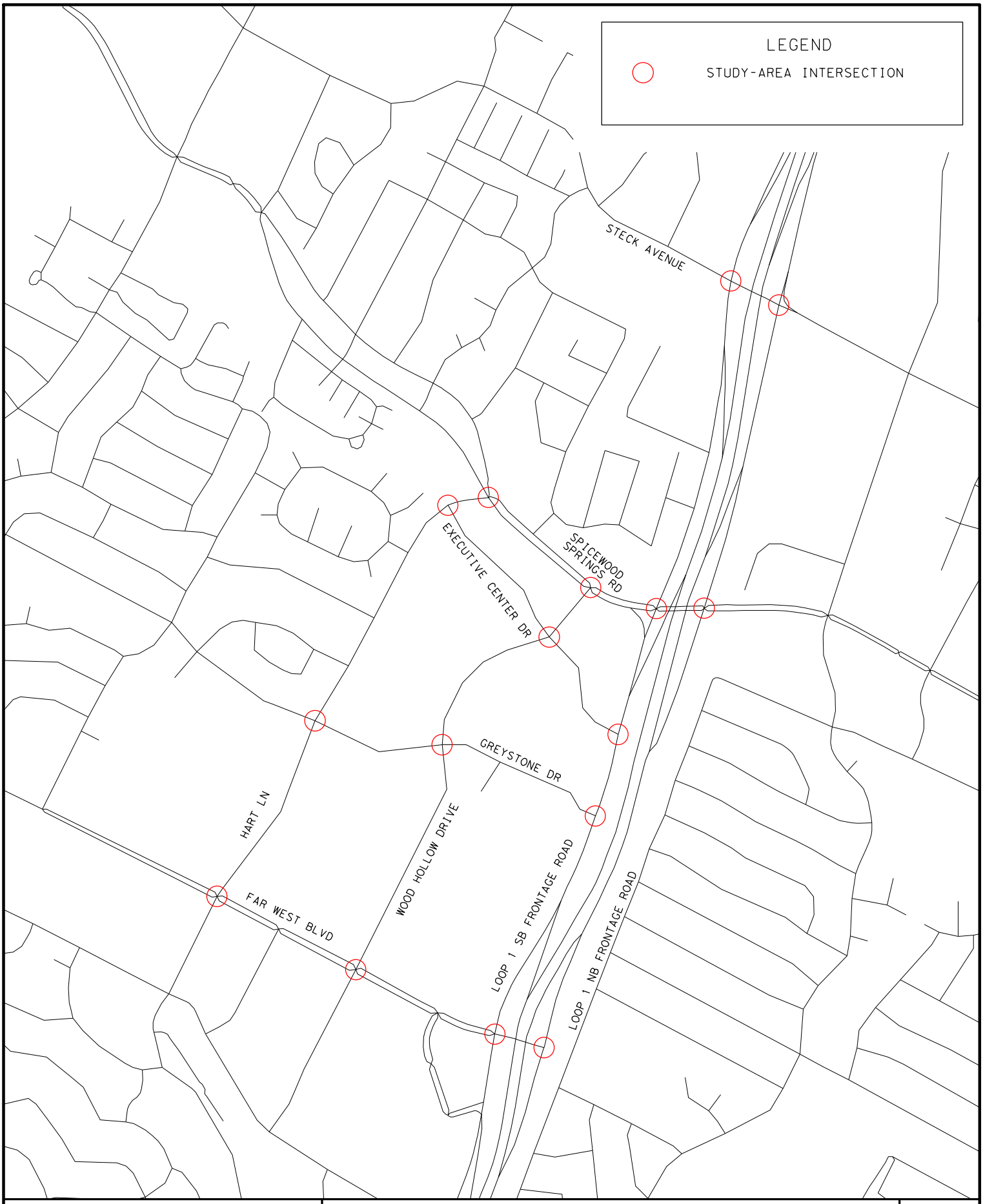
2. Maps
   a. A map showing all bicycle routes, bus transit and bus stops within ½ mile of the site
   b. A map showing all background projects and trip generation for each project,
   c. A map showing all roadways and driveways analyzed (labeled and dimensioned)
   d. An aerial map of all intersections with roadway improvements (dimensioned), including above ground utilities called out.

This scope and study is based upon the assumed development uses and intensities in the TIA Determination sheet dated March 10, 2016. Any change in these assumptions may require a change in the scope. For more detailed discussion on preparation of the TIA, please contact Land Use Review/Transportation of the Development Services Department.

Prepared by: Scott A. James Phone: (512) 974 – 2208
Scott A. James, P.E., PTOE

Appendix B: Roadway Map

DATE: 4/18/2016



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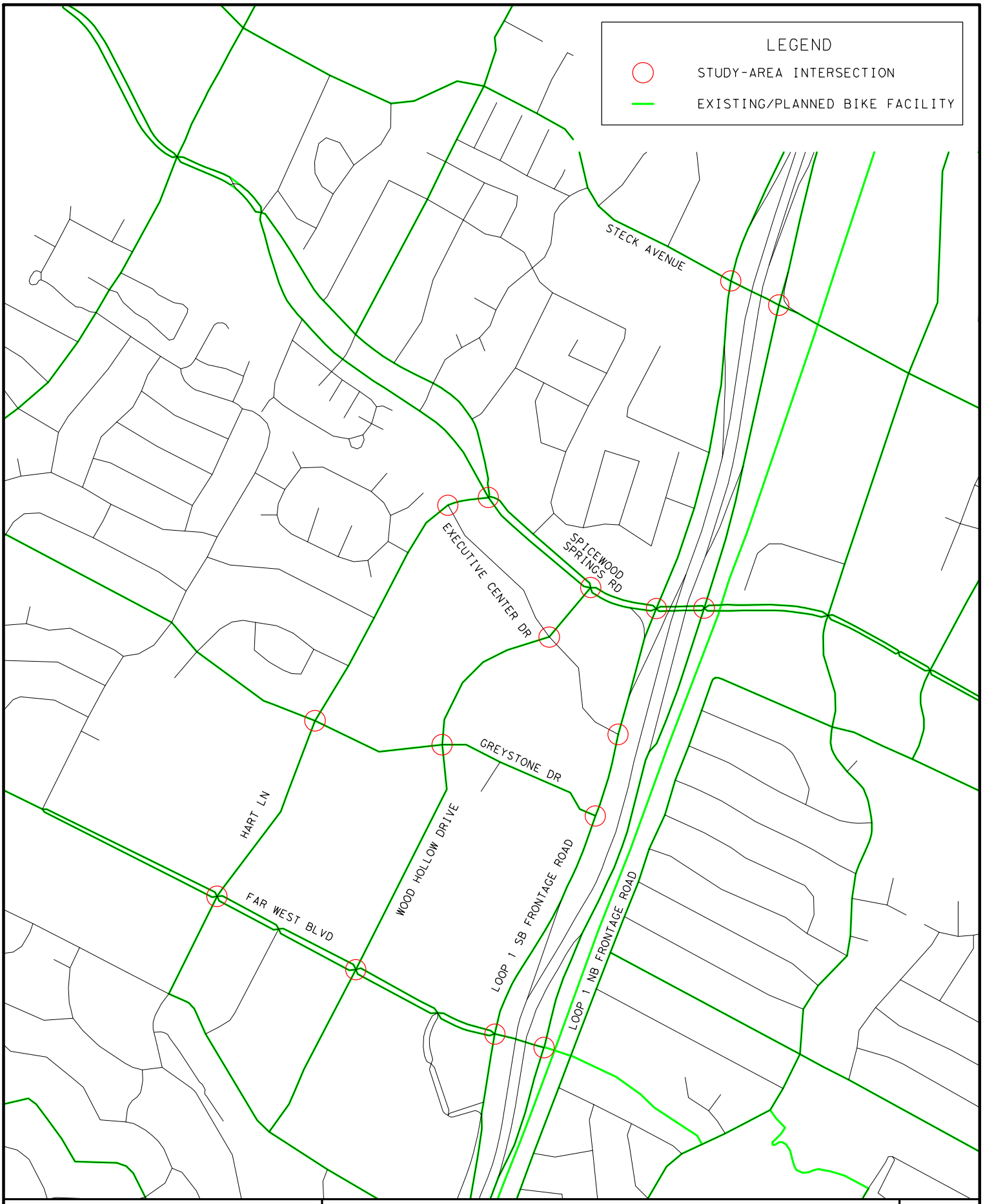
ROADWAY MAP

APPENDIX
B

Appendix C: Bike Map

DATE: 4/18/2016



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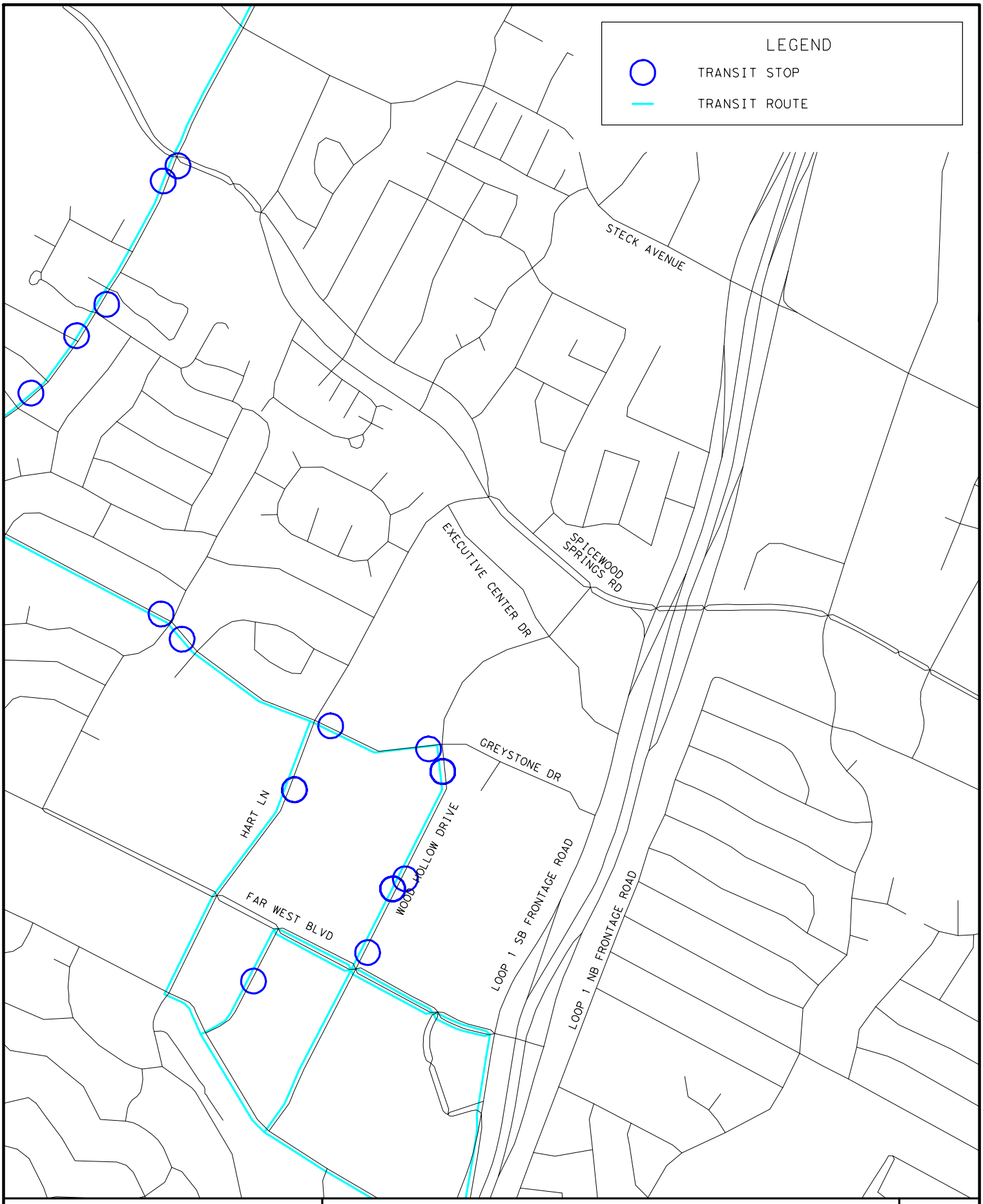
BIKE MAP

APPENDIX
C

Appendix D: Transit Map

DATE: 4/18/2016



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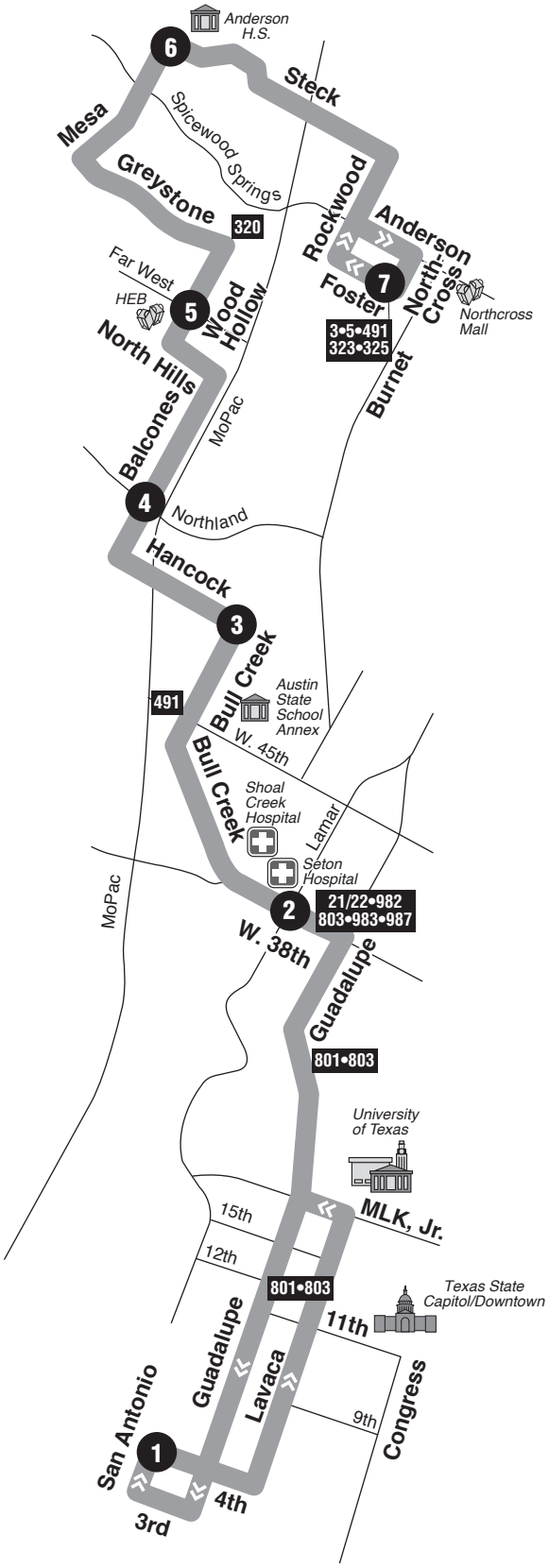
TRANSIT MAP

APPENDIX
D

19 Bull Creek

LOCAL



LEGEND:

1 Scheduled Timepoints

7•300 Connecting Routes

DESTINATIONS

- Northcross
- Anderson High School
- HEB
- Seton Medical Center
- Jefferson Square Shopping Area
- Texas State Capitol/Downtown

19 WEEKDAYS/NORTHBOUND

1 San Antonio at 4th	2 38th at Medical Pkwy.	3 Bull Creek at Hancock	4 Balcones at Northland	5 Wood Hollow at Far West	6 Steck at Mesa	7 Foster at Northcross	To Route/Garage
5:35	5:52	6:01	6:05	6:10	6:17	6:25	
6:35	6:57	7:06	7:10	7:15	7:23	7:32	
7:35	7:57	8:06	8:10	8:15	8:23	8:32	
8:10	8:32	8:41	8:45	8:50	8:58	9:07	
8:45	9:07	9:16	9:20	9:25	9:33	9:42	G
9:20	9:44	9:53	9:57	10:02	10:10	10:19	
10:05	10:29	10:38	10:42	10:47	10:55	11:04	
10:50	11:14	11:23	11:27	11:32	11:40	11:49	
11:35	11:59	12:08	12:12	12:17	12:25	12:34	
12:20	12:44	12:53	12:57	1:02	1:10	1:19	
1:05	1:29	1:38	1:42	1:47	1:55	2:04	
1:50	2:14	2:23	2:27	2:32	2:40	2:49	
2:35	2:59	3:08	3:12	3:17	3:25	3:34	
3:15	3:46	3:55	3:59	4:05	4:13	4:22	
3:55	4:26	4:35	4:39	4:45	4:53	5:02	
4:35	5:06	5:15	5:19	5:25	5:33	5:42	
5:15	5:46	5:55	5:59	6:05	6:13	6:22	G
5:55	6:26	6:35	6:39	6:45	6:53	7:02	
6:35	7:06	7:15	7:19	7:25	7:33	7:42	
7:20	7:41	7:50	7:54	7:59	8:07	8:15	
8:10	8:31	8:40	8:44	8:49	8:57	9:05	
8:55	9:16	9:25	9:29	9:34	9:42	9:50	G
9:35	9:56	10:05	10:09	10:14	10:22	10:30	G
10:21	10:42	10:51	10:55	11:00	11:08	11:16	G

19 WEEKDAYS/SOUTHBOUND

7 Foster at Northcross	6 Steck at Mesa	5 Wood Hollow at Far West	4 Balcones at Northland	3 Bull Creek at Hancock	2 38th at Medical Pkwy.	1 San Antonio at 4th	To Route/Garage
5:27	5:38	5:48	5:55	5:59	6:08	6:31	
6:27	6:38	6:48	6:55	6:59	7:08	7:31	
7:02	7:13	7:23	7:30	7:34	7:43	8:06	
7:37	7:50	7:59	8:05	8:09	8:18	8:41	
8:12	8:25	8:34	8:40	8:44	8:53	9:16	
8:57	9:10	9:19	9:25	9:29	9:38	10:01	
9:42	9:55	10:04	10:10	10:14	10:23	10:46	
10:27	10:40	10:49	10:55	10:59	11:08	11:31	
11:12	11:25	11:34	11:40	11:44	11:53	12:16	
11:57	12:10	12:19	12:25	12:29	12:38	1:01	
12:42	12:55	1:04	1:10	1:14	1:23	1:46	
1:27	1:40	1:49	1:55	1:59	2:08	2:31	
2:00	2:13	2:23	2:30	2:35	2:46	3:11	
2:40	2:53	3:03	3:10	3:15	3:26	3:51	
3:20	3:33	3:43	3:50	3:55	4:06	4:31	
4:00	4:13	4:23	4:30	4:35	4:46	5:11	
4:40	4:53	5:03	5:10	5:15	5:26	5:51	
5:20	5:33	5:43	5:50	5:55	6:06	6:31	
6:05	6:18	6:28	6:35	6:40	6:51	7:16	
7:10	7:20	7:28	7:34	7:38	7:46	8:06	
7:55	8:05	8:13	8:19	8:23	8:31	8:51	
8:35	8:45	8:53	8:59	9:03	9:11	9:31	
9:20	9:30	9:38	9:44	9:48	9:56	10:16	

19 SATURDAYS/NORTHBOUND

7:04	7:25	7:32	7:36	7:41	7:48	7:55	
8:04	8:25	8:32	8:36	8:41	8:48	8:55	
9:04	9:26	9:34	9:38	9:43	9:50	9:57	
10:04	10:26	10:34	10:38	10:43	10:50	10:57	
11:04	11:26	11:34	11:38	11:43	11:50	11:57	
12:04	12:26	12:34	12:38	12:43	12:50	12:57	
1:04	1:26	1:34	1:38	1:43	1:50	1:57	
2:04	2:26	2:34	2:38	2:43	2:50	2:57	
3:04	3:26	3:34	3:38	3:43	3:50	3:57	
4:04	4:26	4:34	4:38	4:43	4:50	4:57	
5:04	5:26	5:34	5:38	5:43	5:50	5:57	
6:04	6:26	6:34	6:38	6:43	6:50	6:57	
7:04	7:25	7:32	7:36	7:41	7:48	7:55	
8:04	8:25	8:32	8:36	8:41	8:48	8:55	
9:04	9:25	9:32	9:36	9:41	9:48	9:55	G

19 SATURDAYS/SOUTHBOUND

7:09	7:21	7:28	7:33	7:37	7:45	8:02	
8:08	8:20	8:27	8:32	8:36	8:44	9:01	
9:08	9:20	9:27	9:32	9:36	9:44	10:02	
10:08	10:20	10:27	10:32	10:36	10:44	11:02	
11:08	11:20	11:27	11:32	11:36	11:44	12:02	
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5:08	5:20	5:27	5:32	5:36	5:44	6:02	
6:08	6:20	6:27	6:32	6:36	6:44	7:02	
7:11	7:20	7:27	7:32	7:36	7:44	8:02	
8:11	8:20	8:27	8:32	8:36	8:44	9:02	
9:11	9:20	9:27	9:32	9:36	9:44	10:02	G

19 SUNDAYS/NORTHBOUND

7:30	7:51	7:58	8:02	8:07	8:14	8:21	
8:30	8:51	8:58	9:02	9:07	9:14	9:21	
9:30	9:52	10:00	10:04	10:09	10:16	10:23	
10:30	10:52	11:00	11:04	11:09	11:16	11:23	
11:30	11:52	12:00	12:04	12:09	12:16	12:23	
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5:30	5:52	6:00	6:04	6:09	6:16	6:23	
6:30	6:52	7:00	7:04	7:09	7:16	7:23	
7:30	7:51	7:58	8:02	8:07	8:14	8:21	G

19 SUNDAYS/SOUTHBOUND

7:35	7:46	7:53	7:58	8:02	8:10	8:28	
8:34	8:45	8:52	8:57	9:01	9:09	9:28	
9:34	9:45	9:52	9:57	10:01	10:09	10:28	
10:34	10:45	10:52	10:57	11:01	11:09	11:28	
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5:34	5:45	5:52	5:57	6:01	6:09	6:28	
6:37	6:46	6:53	6:58	7:02	7:10	7:28	
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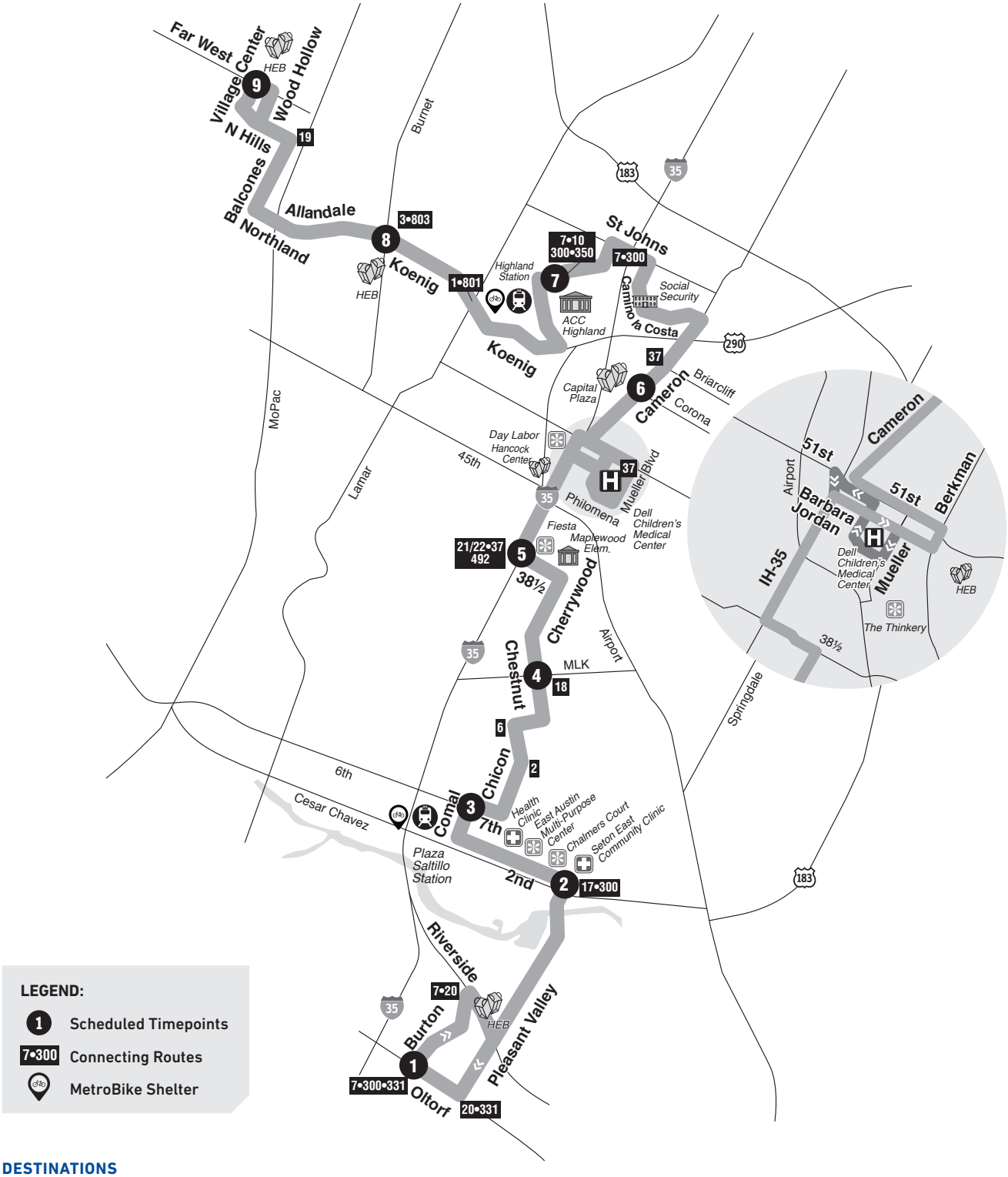
320 St. Johns

LOCAL



LEGEND:

- 1 Scheduled Timepoints
- 7•300 Connecting Routes
- MetroBike Shelter

DESTINATIONS

- Far West
- ACC Highland
- Highland Station
- Social Security Administration
- Dell Children's Medical Center
- Fiesta Mart
- Hancock Center
- Plaza Saltillo Station
- East Austin Multi-Purpose Center
- Seton East Community Clinic
- HEB

320 WEEKDAYS/NORTHBOUND

1 Oltorf at Burton	2 Pleasant Valley at 2nd	3 Comal at 6th	4 Chestnut at MLK	5 IH-35 at 38½	6 Cameron at Corona	7 ACC Highland	8 Koenig at Burnet	9 Far West at Village Ctr.	To Route/Garage
5:40	5:51	5:59	6:09	6:16	6:27	6:41	6:52	7:00	
6:14	6:25	6:33	6:43	6:50	7:01	7:15	7:26	7:34	
6:48	7:01	7:10	7:20	7:28	7:39	7:54	8:08	8:17	
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8:31	8:44	8:53	9:03	9:11	9:22	9:37	9:51	10:00	
9:05	9:18	9:27	9:37	9:45	9:56	10:11	10:25	10:34	
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10:13	10:26	10:34	10:45	10:53	11:04	11:19	11:31	11:40	
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8:04	8:16	8:23	8:32	8:39	8:50	9:02	9:12	9:20	
8:39	8:51	8:58	9:07	9:14	9:25	9:37	9:47	9:55	G
9:19	9:31	9:38	9:47	9:54	10:05	10:17	10:27	10:35	G
9:59	10:11	10:18	10:27	10:34	10:45	10:57	11:07	11:15	G

320 WEEKDAYS/SOUTHBOUND

9 Far West at Village Ctr.	8 Koenig at Burnet	7 ACC Highland	6 Cameron at Corona	5 IH-35 at 38½	4 Chestnut at MLK	3 Comal at 5th	2 Pleasant Valley at 2nd	1 Oltorf at Burton	To Route/Garage
5:40	5:50	6:01	6:15	6:28	6:36	6:46	6:52	7:02	
6:14	6:24	6:35	6:49	7:02	7:10	7:20	7:26	7:36	
6:48	7:01	7:13	7:29	7:45	7:53	8:03	8:09	8:19	
7:22	7:35	7:47	8:03	8:19	8:27	8:37	8:43	8:53	
7:56	8:09	8:21	8:37	8:53	9:01	9:11	9:17	9:27	
8:30	8:43	8:55	9:11	9:27	9:35	9:45	9:51	10:01	
9:04	9:17	9:29	9:45	10:01	10:09	10:19	10:25	10:35	
9:38	9:49	10:01	10:17	10:33	10:42	10:52	10:58	11:09	
10:12	10:23	10:35	10:51	11:07	11:16	11:27	11:33	11:44	
10:46	10:57	11:09	11:25	11:41	11:50	12:01	12:07	12:18	
11:20	11:31	11:43	11:59	12:15	12:24	12:35	12:41	12:52	
11:54	12:05	12:17	12:33	12:49	12:58	1:09	1:15	1:26	
12:28	12:39	12:51	1:07	1:23	1:32	1:43	1:49	2:00	
1:02	1:13	1:25	1:41	1:57	2:06	2:17	2:23	2:34	
1:36	1:47	1:59	2:15	2:31	2:40	2:51	2:57	3:08	
2:10	2:21	2:33	2:49	3:05	3:14	3:25	3:31	3:42	
2:44	2:55	3:07	3:23	3:39	3:48	3:59	4:05	4:16	
3:17	3:30	3:46	4:04	4:20	4:30	4:40	4:46	4:59	
3:52	4:05	4:21	4:39	4:55	5:05	5:15	5:21	5:34	
4:27	4:40	4:56	5:14	5:30	5:40	5:51	5:57	6:10	
5:02	5:15	5:31	5:49	6:05	6:15	6:26	6:32	6:45	
5:37	5:50	6:06	6:24	6:40	6:50	7:01	7:07	7:20	
6:12	6:25	6:41	6:59	7:15	7:25	7:36	7:42	7:55	
6:47	7:00	7:16	7:34	7:50	8:00	8:11	8:17	8:30	
7:25	7:35	7:46	8:00	8:13	8:21	8:31	8:37	8:48	
8:00	8:10	8:21	8:35	8:48	8:56	9:06	9:12	9:23	
8:35	8:45	8:55	9:09	9:22	9:30	9:40	9:46	9:57	G
9:10	9:20	9:30	9:44	9:57	10:05	10:15	10:21	10:32	G
9:45	9:55	10:05	10:19	10:32	10:40	10:50	10:56	11:07	G

320 SATURDAYS/NORTHBOUND

1 Oltorf at Burton	2 Pleasant Valley at 2nd	3 Comal at 6th	4 Chestnut at MLK	5 IH-35 at 38½	6 Cameron at Corona	7 ACC Highland	8 Koenig at Burnet	9 Far West at Village Ctr.	To Route/Garage
6:05	6:15	6:22	6:30	6:37	6:48	7:03	7:14	7:25	
6:35	6:45	6:53	7:01	7:09	7:20	7:35	7:47	7:58	
7:05	7:15	7:23	7:31	7:39	7:50	8:05	8:17	8:28	
7:36	7:46	7:54	8:02	8:10	8:21	8:36	8:48	8:59	
8:07	8:17	8:25	8:33	8:41	8:52	9:07	9:19	9:30	
8:38	8:48	8:56	9:04	9:12	9:23	9:38	9:50	10:01	
9:09	9:19	9:27	9:35	9:43	9:54	10:09	10:21	10:32	
9:40	9:50	9:58	10:06	10:14	10:25	10:40	10:52	11:03	
10:11	10:21	10:29	10:37	10:45	10:56	11:11	11:23	11:34	
10:42	10:52	11:00	11:08	11:16	11:27	11:42	11:54	12:05	
11:13	11:23	11:31	11:39	11:47	11:58	12:13	12:25	12:36	
11:44	11:54	12:02	12:10	12:18	12:29	12:44	12:56	1:07	
12:15	12:25	12:33	12:41	12:49	1:00	1:15	1:27	1:38	
12:46	12:56	1:04	1:12	1:20	1:31	1:46	1:58	2:09	
1:17	1:27	1:35	1:43	1:51	2:02	2:17	2:29	2:40	
1:48	1:58	2:06	2:14	2:22	2:33	2:48	3:00	3:11	
2:19	2:29	2:37	2:45	2:53	3:04	3:19	3:31	3:42	
2:50	3:00	3:08	3:16	3:24	3:35	3:50	4:02	4:13	
3:21	3:31	3:39	3:47	3:55	4:06	4:21	4:33	4:44	
3:52	4:02	4:10	4:18	4:26	4:37	4:52	5:04	5:15	
4:23	4:33	4:41	4:49	4:57	5:08	5:23	5:35	5:46	
4:54	5:04	5:12	5:20	5:28	5:39	5:54	6:06	6:17	
5:25	5:35	5:43	5:51	5:59	6:10	6:25	6:37	6:48	
5:56	6:06	6:14	6:22	6:30	6:41	6:56	7:08	7:19	
6:28	6:38	6:46	6:54	7:02	7:13	7:28	7:40	7:51	
6:59	7:08	7:15	7:22	7:29	7:40	7:55	8:06	8:17	G
7:30	7:39	7:46	7:53	8:00	8:11	8:26	8:37	8:48	G
8:06	8:15	8:22	8:29	8:36	8:47	9:02	9:13	9:24	G

320 SATURDAYS/SOUTHBOUND

9 Far West at Village Ctr.	8 Koenig at Burnet	7 ACC Highland	6 Cameron at Corona	5 IH-35 at 38½	4 Chestnut at MLK	3 Comal at 5th	2 Pleasant Valley at 2nd	1 Oltorf at Burton	To Route/Garage
6:04	6:14	6:25	6:39	6:51	6:59	7:07	7:14	7:23	
6:34	6:44	6:56	7:10	7:23	7:32	7:40	7:48	7:57	
7:05	7:15	7:27	7:41	7:54	8:03	8:11	8:19	8:28	
7:36	7:46	7:58	8:12	8:25	8:34	8:42	8:50	8:59	
8:07	8:17	8:29	8:43	8:56	9:05	9:13	9:21	9:30	
8:38	8:48	9:00	9:14	9:27	9:36	9:44	9:52	10:01	
9:08	9:18	9:31	9:45	9:58	10:08	10:17	10:25	10:34	
9:39	9:49	10:02	10:16	10:29	10:39	10:48	10:56	11:05	
10:10	10:20	10:33	10:47	11:00	11:10	11:19	11:27	11:36	
10:41	10:51	11:04	11:18	11:31	11:41	11:50	11:58	12:07	
11:12	11:22	11:35	11:49	12:02	12:12	12:21	12:29	12:38	
11:43	11:53	12:06	12:20	12:33	12:43	12:52	1:00	1:09	
12:14	12:24	12:37	12:51	1:04	1:14	1:23	1:31	1:40	
12:45	12:55	1:08	1:22	1:35	1:45	1:54	2:02	2:11	
1:16	1:26	1:39	1:53	2:06	2:16	2:25	2:33	2:42	
1:47	1:57	2:10	2:24	2:37	2:47	2:56	3:04	3:13	
2:18	2:28	2:41	2:55	3:08	3:18	3:27	3:35	3:44	
2:49	2:59	3:12	3:26	3:39	3:49	3:57	4:05	4:14	
3:20	3:30	3:43	3:57	4:10	4:20	4:28	4:36	4:45	
3:51	4:01	4:14	4:28	4:41	4:51	4:59	5:07	5:16	
4:22	4:32	4:45	4:59	5:12	5:22	5:30	5:38	5:47	
4:53	5:03	5:16	5:30	5:43	5:53	6:01	6:09	6:18	
5:24	5:34	5:47	6:01	6:14	6:24	6:32	6:40	6:49	
5:55	6:05	6:18	6:32	6:45	6:55	7:03	7:11	7:20	
6:27	6:37	6:49	7:02	7:14	7:23	7:31	7:38	7:47	
6:58	7:08	7:20	7:33	7:45	7:54	8:02	8:09	8:18	G
7:29	7:39	7:51	8:04	8:16	8:25	8:33	8:40	8:49	G
8:00	8:10	8:22	8:35	8:47	8:56	9:04	9:11	9:20	G

320 SUNDAYS/NORTHBOUND

1 Oltorf at Burton	2 Pleasant Valley at 2nd	3 Comal at 6th	4 Chestnut at MLK	5 IH-35 at 38½	6 Cameron at Corona	7 ACC Highland	8 Koenig at Burnet	9 Far West at Village Ctr.	To Route/Garage
7:53	8:03	8:10	8:17	8:24	8:35	8:50	9:02	9:14	
8:23	8:33	8:40	8:47	8:54	9:05	9:20	9:32	9:44	
8:53	9:03	9:10	9:17	9:24	9:35	9:50	10:02	10:14	
9:23	9:33	9:40	9:47	9:54	10:05	10:20	10:32	10:44	
9:53	10:03	10:10	10:17	10:25	10:36	10:51	11:03	11:15	
10:23	10:33	10:40	10:47	10:55	11:06	11:21	11:33	11:45	
10:53	11:03	11:10	11:17	11:25	11:36	11:51	12:03	12:15	
11:23	11:33	11:40	11:47	11:55	12:06	12:21	12:33	12:45	
11:53	12:03	12:10	12:17	12:25	12:36	12:51	1:03	1:15	
12:23	12:33	12:40	12:47	12:55	1:06	1:21	1:33	1:45	
12:53	1:03	1:10	1:17	1:25	1:36	1:51	2:03	2:15	
1:23	1:33	1:40	1:47	1:55	2:06	2:21	2:33	2:45	
1:53	2:03	2:10	2:17	2:25	2:36	2:51	3:03	3:15	
2:23	2:33	2:40	2:47	2:55	3:06	3:21	3:33	3:45	
2:53	3:03	3:10	3:17	3:25	3:36	3:51	4:03	4:15	
3:23	3:33	3:40	3:47	3:55	4:06	4:21	4:33	4:45	
3:53	4:03	4:10	4:17	4:25	4:36	4:51	5:03	5:15	
4:23	4:33	4:40	4:47	4:55	5:06	5:21	5:33	5:45	
4:53	5:03	5:10	5:17	5:25	5:36	5:51	6:03	6:15	
5:23	5:33	5:40	5:47	5:55	6:06	6:21	6:33	6:45	
5:53	6:03	6:10	6:17	6:25	6:36	6:51	7:03	7:15	
6:23	6:33	6:40	6:47	6:55	7:06	7:21	7:33	7:45	
6:54	7:03	7:10	7:17	7:24	7:34	7:48	7:59	8:10	G
7:24	7:33	7:40	7:47	7:54	8:04	8:18	8:29	8:40	G
8:00	8:09	8:16	8:23	8:30	8:40	8:54	9:05	9:16	G

320 SUNDAYS/SOUTHBOUND

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7:54	8:04	8:15	8:29	8:42	8:51	8:59	9:06	9:15	
8:24	8:34	8:45	8:59	9:12	9:21	9:29	9:36	9:45	
8:54	9:04	9:15	9:29	9:42	9:51	9:59	10:06	10:15	
9:24	9:34	9:45	9:59	10:12	10:21	10:29	10:36	10:45	
9:54	10:04	10:15	10:29	10:42	10:51	10:59	11:06	11:15	
10:24	10:34	10:45	10:59	11:12	11:21	11:29	11:36	11:45	
10:54	11:04	11:15	11:29	11:42	11:51	11:59	12:06	12:15	
11:24	11:34	11:45	11:59	12:12	12:21	12:29	12:36	12:45	
11:54	12:04	12:15	12:29	12:42	12:51	12:59	1:06	1:15	
12:24	12:34	12:45	12:59	1:12	1:21	1:29	1:36	1:45	
12:54	1:04	1:15	1:29	1:42	1:51	1:59	2:06	2:15	
1:24	1:34	1:45	1:59	2:12	2:21	2:29	2:36	2:45	
1:54	2:04	2:15	2:29	2:42	2:51	2:59	3:06	3:15	
2:24	2:34	2:45	2:59	3:12	3:21	3:29	3:36	3:45	
2:54	3:04	3:15	3:29	3:42	3:51	3:59	4:06	4:15	
3:24	3:34	3:45	3:59	4:12	4:21	4:29	4:36	4:45	
3:54	4:04	4:15	4:29	4:42	4:51	4:59	5:06	5:15	
4:24	4:34	4:45	4:59	5:12	5:21	5:29	5:36	5:45	
4:54	5:04	5:15	5:29	5:42	5:51	5:59	6:06	6:15	
5:24	5:34	5:45	5:59	6:12	6:21	6:29	6:36	6:45	
5:54	6:04	6:15	6:29	6:42	6:51	6:59	7:06	7:15	
6:25	6:35	6:45	6:58	7:10	7:18	7:25	7:32	7:41	
6:55	7:05	7:15	7:28	7:40	7:48	7:55	8:02	8:11	G
7:25	7:35	7:45	7:58	8:10	8:18	8:25	8:32	8:41	G
8:00	8:10	8:20	8:33	8:45	8:53	9:00	9:07	9:16	G

600s UT Shuttles

LOCAL

Ut Shuttles (640-681) are open to the general public. Nonstudents pay regular fares.
Shuttle bus service is available when classes are in session. Shuttle service does not operate on Saturdays except during finals. Service operates as listed below on all other days.

- **SPRING REGISTRATION***—January 13–15, 2016 (Spring classes begin January 19, 2016)
- **SPRING BREAK***—March 14–20, 2016
- **NO SERVICE**—January 18, 2016 (MLK, Jr. Day)

January 2016						
S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24/31	25	26	27	28	29	30

February 2016						
S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29					

March 2016						
S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

April 2016						
S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

May 2016						
S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

June 2016						
S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

July 2016						
S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24/31	25	26	27	28	29	30

August 2016						
S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

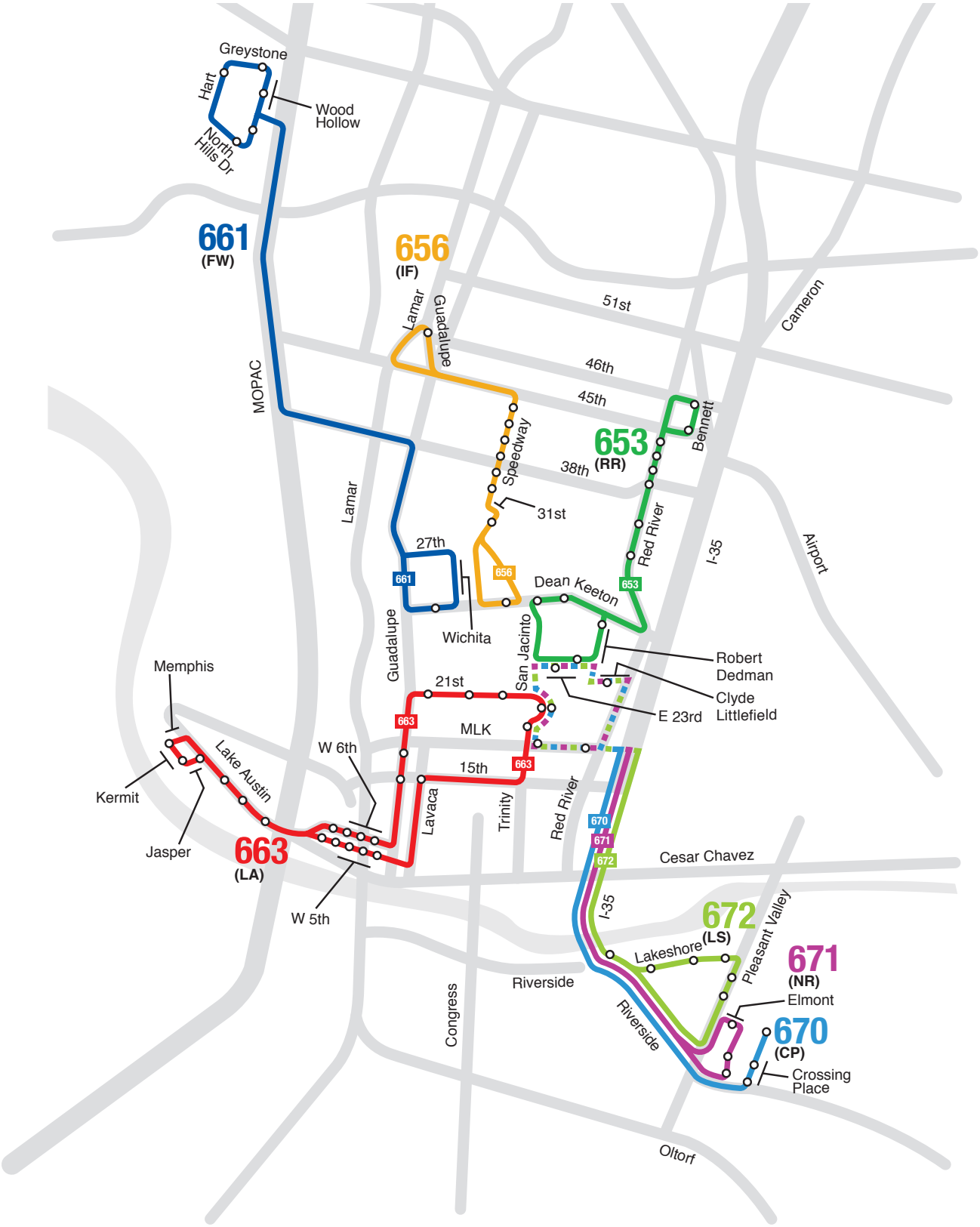
UT Calendar (Spring Full Service Begins January 19, 2016)

- **Full Service:** 641 East Campus and 640 Forty Acres operate until 11:00 p.m. Buses depart every 5 to 18 minutes on all routes from approximately 7:00 a.m. to 7:00 p.m. (check schedules for individual route times). After 7:00 p.m., buses depart approximately every 20 to 40 minutes.
- **Friday Service:** 640 FA (Forty Acres) and 642 WC (West Campus) run on a slightly reduced schedule.
- **Sunday Service:** Buses depart approximately every 20 to 70 minutes from 3:00 p.m. until 10:00 p.m.
- **Registration Service:** Buses depart approximately every 35 minutes on all routes from 8:00 a.m. to 6:00 p.m.
- **Finals Service:** Buses depart approximately every 10 to 20 minutes on all routes from 6:45 a.m. to 7:00 p.m. From 7:00 to 11:00 p.m., buses depart approximately every 40 minutes. 641 East Campus and 640 Forty Acres operate until 11:00 p.m.
- **Summer Service:** Buses depart approximately every 15 to 40 minutes on all routes from 6:45 a.m. to 7:00 p.m. From 7:00 to 11:00 p.m., buses depart approximately every 40 minutes.
- ☐ **No UT Shuttle Service**

**Reduced service levels. Call 512-474-1200 for actual times or refer to our website at capmetro.org. Passengers will be advised of any changes to this schedule through the distribution of passenger notices onboard buses. All UT Shuttle Bus frequencies are approximate. Some minor variations may occur.*

600s UT Shuttles

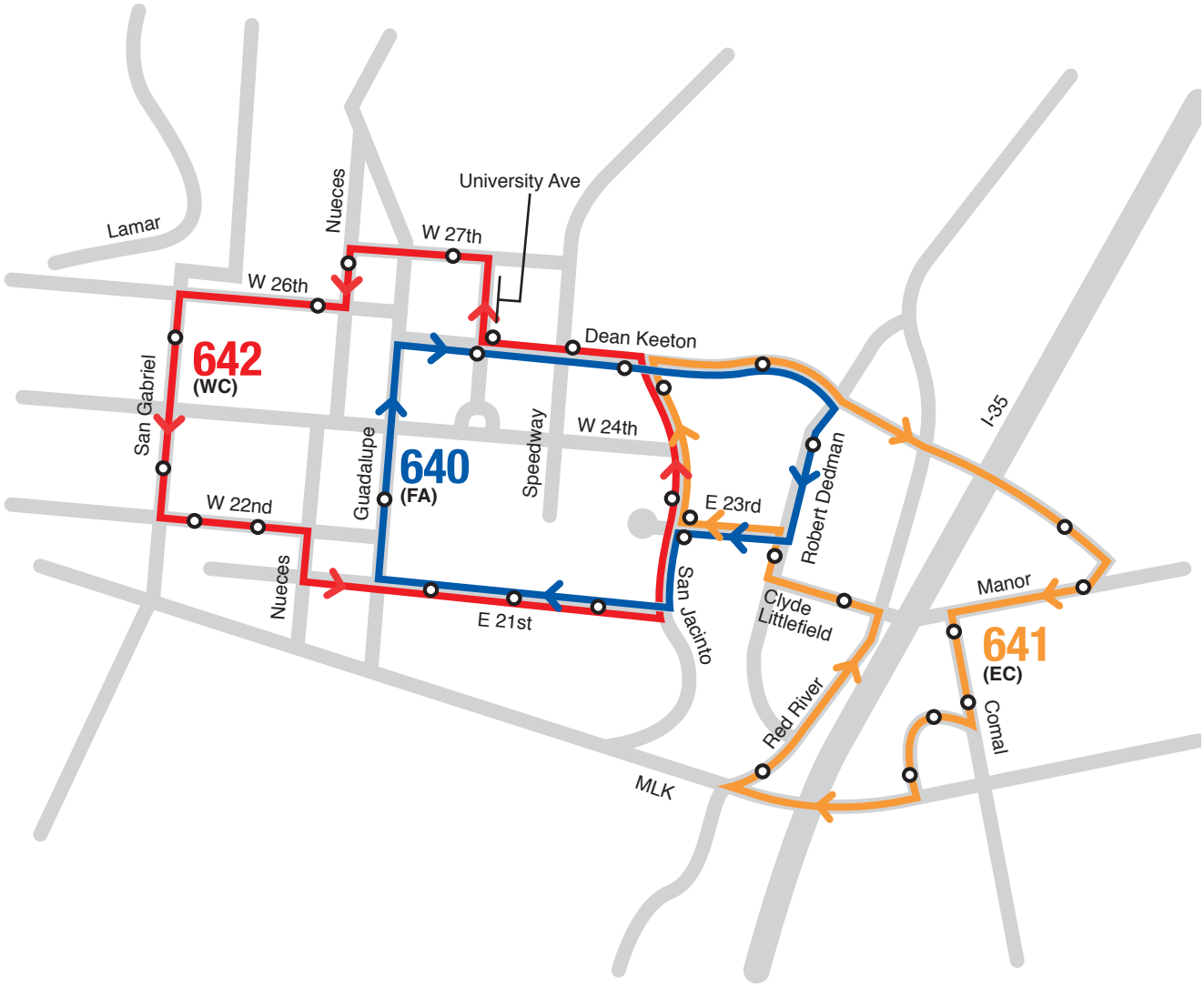
LOCAL



600s UT Shuttles

LOCAL

Campus Circulators



600s UT Shuttles

LOCAL

UT Schedules and Times

ROUTE NUMBER & NAME *Número y nombre de ruta*		FARE TYPE *Clase de tarifa*	WEEKDAY *días entre semana*			SATURDAY *sábado*		SUNDAY *domingo*	
			approximate frequency in minutes / frecuencia aproximada en minutos						
			PEAK	DAY	EVE	DAY	EVE	DAY	EVE
UT SHUTTLES									
Circulators and limited-stop service to/from University of Texas campus. *Rutas de circuito con servicio de paradas limitadas desde/hasta el campus de la Universidad de Texas.*									
640	★ Forty Acres	LOCAL	6-7	7	20	–	–	40	40
641	East Campus	LOCAL	10	10	20	–	–	40	40
642	★ West Campus	LOCAL	6-7	6	25	–	–	24	24
653	Red River	LOCAL	7	8-10	30	–	–	30	30
656	Intramural Fields	LOCAL	5	6	35	–	–	use Route 681	
661	Far West	LOCAL	4-5	6	20-40	–	–	use Route 681	
663	Lake Austin	LOCAL	11-12	15	20-40	–	–	44	44
670	Crossing Place	LOCAL	5	6-7	20	–	–	40	40
671	North Riverside	LOCAL	40	40	use Route 680	–	–	use Route 680	
672	Lakeshore	LOCAL	13-15	13-15	use Route 680	–	–	use Route 680	
680	Lakeshore/North Riverside	LOCAL	–	–	20	–	–	35	35
681	Intramural Fields/Far West	LOCAL	–	–	–	–	–	60	60

★ Operates at slightly reduced frequency on Friday.

Appendix E: Traffic Counts

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : farwest-hartam
Site Code : 00000027
Start Date : 3/27/2014
Page No : 1

Groups Printed- Autos

	Hart Ln Southbound					Far West Westbound					Hart Ln Northbound					Far West Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00	12	7	5	0	24	28	24	11	0	63	1	9	5	0	15	2	82	7	0	91	193
07:15	14	18	1	0	33	38	39	9	0	86	1	8	12	0	21	0	97	8	0	105	245
07:30	38	39	4	0	81	56	43	10	0	109	6	11	30	0	47	6	109	22	0	137	374
07:45	51	77	15	0	143	66	51	19	0	136	13	24	39	0	76	12	137	18	0	167	522
Total	115	141	25	0	281	188	157	49	0	394	21	52	86	0	159	20	425	55	0	500	1334
08:00	53	102	4	0	159	61	50	12	0	123	13	31	29	0	73	17	185	33	0	235	590
08:15	34	30	2	0	66	41	74	16	0	131	14	26	44	0	84	9	148	15	0	172	453
08:30	52	19	7	0	78	15	70	18	0	103	5	18	32	0	55	12	142	14	0	168	404
08:45	49	19	8	0	76	17	50	34	0	101	5	16	26	0	47	11	152	14	0	177	401
Total	188	170	21	0	379	134	244	80	0	458	37	91	131	0	259	49	627	76	0	752	1848
Grand Total	303	311	46	0	660	322	401	129	0	852	58	143	217	0	418	69	1052	131	0	1252	3182
Apprch %	45.9	47.1	7	0		37.8	47.1	15.1	0		13.9	34.2	51.9	0		5.5	84	10.5	0		
Total %	9.5	9.8	1.4	0	20.7	10.1	12.6	4.1	0	26.8	1.8	4.5	6.8	0	13.1	2.2	33.1	4.1	0	39.3	

	Hart Ln Southbound					Far West Westbound					Hart Ln Northbound					Far West Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45																					
07:45	51	77	**15**	0	143	**66**	51	**19**	0	**136**	13	24	39	0	76	12	137	18	0	167	522
08:00	**53**	**102**	4	0	**159**	61	50	12	0	123	13	**31**	29	0	73	**17**	**185**	**33**	0	**235**	**590**
08:15	34	30	2	0	66	41	**74**	16	0	131	**14**	26	**44**	0	**84**	9	148	15	0	172	453
08:30	52	19	7	0	78	15	70	18	0	103	5	18	32	0	55	12	142	14	0	168	404
Total Volume	190	228	28	0	446	183	245	65	0	493	45	99	144	0	288	50	612	80	0	742	1969
% App. Total	42.6	51.1	6.3	0		37.1	49.7	13.2	0		15.6	34.4	50	0		6.7	82.5	10.8	0		
PHF	.896	.559	.467	.000	.701	.693	.828	.855	.000	.906	.804	.798	.818	.000	.857	.735	.827	.606	.000	.789	.834

GRAM Traffic, Inc.

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Georgetown, TX 78626
512-832-8650

File Name : farwest-hartam
Site Code : 00000027
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	Hart Ln Southbound					Far West Westbound					Hart Ln Northbound					Far West Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	07:30					07:30					07:45					08:00					
+0 mins.	38	39	4	0	81	56	43	10	0	109	13	24	39	0	76	**17**	**185**	**33**	0	**235**	
+15 mins.	51	77	**15**	0	143	**66**	51	**19**	0	**136**	13	**31**	29	0	73	9	148	15	0	172	
+30 mins.	**53**	**102**	4	0	**159**	61	50	12	0	123	**14**	26	**44**	0	**84**	12	142	14	0	168	
+45 mins.	34	30	2	0	66	41	**74**	16	0	131	5	18	32	0	55	11	152	14	0	177	
Total Volume	176	248	25	0	449	224	218	57	0	499	45	99	144	0	288	49	627	76	0	752	
% App. Total	39.2	55.2	5.6	0		44.9	43.7	11.4	0		15.6	34.4	50	0		6.5	83.4	10.1	0		
PHF	.830	.608	.417	.000	.706	.848	.736	.750	.000	.917	.804	.798	.818	.000	.857	.721	.847	.576	.000	.800	

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : FarWest-HartPM
Site Code : 00000027
Start Date : 3/27/2014
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Groups Printed- Autos

	Hart Ln Southbound					Far West Westbound					Hart Ln Northbound					Far West Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
16:00	38	11	14	0	63	34	104	20	0	158	13	26	29	0	68	10	121	9	0	140	429
16:15	33	27	10	0	70	50	100	43	0	193	15	20	38	0	73	10	132	5	0	147	483
16:30	44	21	11	0	76	38	115	38	0	191	13	35	21	0	69	7	99	11	0	117	453
16:45	46	13	9	0	68	36	117	26	0	179	9	23	32	0	64	12	138	9	0	159	470
Total	161	72	44	0	277	158	436	127	0	721	50	104	120	0	274	39	490	34	0	563	1835
17:00	31	16	14	0	61	35	129	31	0	195	18	39	31	0	88	10	123	10	0	143	487
17:15	34	19	14	0	67	25	113	35	0	173	14	31	12	0	57	10	128	14	0	152	449
17:30	14	19	9	0	42	44	121	45	0	210	17	37	21	0	75	14	114	6	0	134	461
17:45	29	16	16	0	61	29	116	28	0	173	14	33	27	0	74	12	102	13	0	127	435
Total	108	70	53	0	231	133	479	139	0	751	63	140	91	0	294	46	467	43	0	556	1832
Grand Total	269	142	97	0	508	291	915	266	0	1472	113	244	211	0	568	85	957	77	0	1119	3667
Apprch %	53	28	19.1	0		19.8	62.2	18.1	0		19.9	43	37.1	0		7.6	85.5	6.9	0		
Total %	7.3	3.9	2.6	0	13.9	7.9	25	7.3	0	40.1	3.1	6.7	5.8	0	15.5	2.3	26.1	2.1	0	30.5	

	Hart Ln Southbound					Far West Westbound					Hart Ln Northbound					Far West Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:15																					
16:15	33	**27**	10	0	70	**50**	100	**43**	0	193	15	20	**38**	0	73	10	132	5	0	147	483
16:30	44	21	11	0	**76**	38	115	38	0	191	13	35	21	0	69	7	99	**11**	0	117	453
16:45	**46**	13	9	0	68	36	117	26	0	179	9	23	32	0	64	**12**	**138**	9	0	**159**	470
17:00	31	16	**14**	0	61	35	**129**	31	0	**195**	**18**	**39**	31	0	**88**	10	123	10	0	143	**487**
Total Volume	154	77	44	0	275	159	461	138	0	758	55	117	122	0	294	39	492	35	0	566	1893
% App. Total	56	28	16	0		21	60.8	18.2	0		18.7	39.8	41.5	0		6.9	86.9	6.2	0		
PHF	.837	.713	.786	.000	.905	.795	.893	.802	.000	.972	.764	.750	.803	.000	.835	.813	.891	.795	.000	.890	.972

GRAM Traffic, Inc.

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File Name : FarWest-HartPM
Site Code : 00000027
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	Hart Ln Southbound					Far West Westbound					Hart Ln Northbound					Far West Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	16:00					16:15					16:15					16:45					
+0 mins.	38	11	**14**	0	63	**50**	100	**43**	0	193	15	20	**38**	0	73	12	**138**	9	0	**159**	
+15 mins.	33	**27**	10	0	70	38	115	38	0	191	13	35	21	0	69	10	123	10	0	143	
+30 mins.	44	21	11	0	**76**	36	117	26	0	179	9	23	32	0	64	10	128	**14**	0	152	
+45 mins.	**46**	13	9	0	68	35	**129**	31	0	**195**	**18**	**39**	31	0	**88**	**14**	114	6	0	134	
Total Volume	161	72	44	0	277	159	461	138	0	758	55	117	122	0	294	46	503	39	0	588	
% App. Total	58.1	26	15.9	0		21	60.8	18.2	0		18.7	39.8	41.5	0		7.8	85.5	6.6	0		
PHF	.875	.667	.786	.000	.911	.795	.893	.802	.000	.972	.764	.750	.803	.000	.835	.821	.911	.696	.000	.925	

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : FarWest-WoodhollowAM
Site Code : 00000034
Start Date : 3/27/2014
Page No : 1

Groups Printed- Autos

	Wood Hollow Dr Southbound					Far West Blvd Westbound					Wood Hollow Dr Northbound					Far West Blvd Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00	26	3	4	0	33	13	73	9	0	95	2	6	32	0	40	5	76	0	0	81	249
07:15	34	15	10	0	59	25	71	8	0	104	0	6	44	0	50	5	116	5	0	126	339
07:30	51	15	12	0	78	21	95	10	0	126	2	12	39	0	53	10	147	4	0	161	418
07:45	64	28	15	0	107	30	129	6	0	165	8	15	63	0	86	12	208	8	0	228	586
Total	175	61	41	0	277	89	368	33	0	490	12	39	178	0	229	32	547	17	0	596	1592
08:00	53	33	10	0	96	27	144	13	0	184	3	25	67	0	95	23	246	18	0	287	662
08:15	65	21	12	0	98	24	143	21	0	188	6	11	75	0	92	16	257	10	0	283	661
08:30	66	26	11	0	103	29	107	24	0	160	5	10	55	0	70	20	221	9	0	250	583
08:45	53	27	16	0	96	24	114	26	0	164	8	29	63	0	100	9	214	5	0	228	588
Total	237	107	49	0	393	104	508	84	0	696	22	75	260	0	357	68	938	42	0	1048	2494
Grand Total	412	168	90	0	670	193	876	117	0	1186	34	114	438	0	586	100	1485	59	0	1644	4086
Apprch %	61.5	25.1	13.4	0		16.3	73.9	9.9	0		5.8	19.5	74.7	0		6.1	90.3	3.6	0		
Total %	10.1	4.1	2.2	0	16.4	4.7	21.4	2.9	0	29	0.8	2.8	10.7	0	14.3	2.4	36.3	1.4	0	40.2	

	Wood Hollow Dr Southbound					Far West Blvd Westbound					Wood Hollow Dr Northbound					Far West Blvd Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00																					
08:00	53	**33**	10	0	96	27	**144**	13	0	184	3	25	67	0	95	**23**	246	**18**	0	**287**	**662**
08:15	65	21	12	0	98	24	143	21	0	**188**	6	11	**75**	0	92	16	**257**	10	0	283	661
08:30	**66**	26	11	0	**103**	**29**	107	24	0	160	5	10	55	0	70	20	221	9	0	250	583
08:45	53	27	**16**	0	96	24	114	**26**	0	164	**8**	**29**	63	0	**100**	9	214	5	0	228	588
Total Volume	237	107	49	0	393	104	508	84	0	696	22	75	260	0	357	68	938	42	0	1048	2494
% App. Total	60.3	27.2	12.5	0		14.9	73	12.1	0		6.2	21	72.8	0		6.5	89.5	4	0		
PHF	.898	.811	.766	.000	.954	.897	.882	.808	.000	.926	.688	.647	.867	.000	.893	.739	.912	.583	.000	.913	.942

GRAM Traffic, Inc.

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512-832-8650

File Name : FarWest-WoodhollowAM
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	Wood Hollow Dr Southbound					Far West Blvd Westbound					Wood Hollow Dr Northbound					Far West Blvd Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	07:45					07:45					08:00					07:45					
+0 mins.	64	28	**15**	0	**107**	**30**	129	6	0	165	3	25	67	0	95	12	208	8	0	228	
+15 mins.	53	**33**	10	0	96	27	**144**	13	0	184	6	11	**75**	0	92	**23**	246	**18**	0	**287**	
+30 mins.	65	21	12	0	98	24	143	21	0	**188**	5	10	55	0	70	16	**257**	10	0	283	
+45 mins.	**66**	26	11	0	103	29	107	**24**	0	160	**8**	**29**	63	0	**100**	20	221	9	0	250	
Total Volume	248	108	48	0	404	110	523	64	0	697	22	75	260	0	357	71	932	45	0	1048	
% App. Total	61.4	26.7	11.9	0		15.8	75	9.2	0		6.2	21	72.8	0		6.8	88.9	4.3	0		
PHF	.939	.818	.800	.000	.944	.917	.908	.667	.000	.927	.688	.647	.867	.000	.893	.772	.907	.625	.000	.913	

GRAM Traffic, Inc.

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File Name : FarWest-WoodhollowPM
Site Code : 00000034
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Groups Printed- Autos

	Wood Hollow Dr Southbound					Far West Blvd Westbound					Wood Hollow Dr Northbound					Far West Blvd Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
16:00	31	16	9	0	56	45	149	30	0	224	8	28	61	0	97	24	182	11	0	217	594
16:15	28	22	8	0	58	48	147	19	0	214	12	26	57	0	95	15	195	9	0	219	586
16:30	29	18	6	0	53	56	154	34	0	244	15	30	49	0	94	22	205	14	0	241	632
16:45	24	25	8	0	57	39	140	19	0	198	19	37	55	0	111	12	174	10	0	196	562
Total	112	81	31	0	224	188	590	102	0	880	54	121	222	0	397	73	756	44	0	873	2374
17:00	28	16	11	0	55	46	138	28	0	212	22	34	57	0	113	30	173	14	0	217	597
17:15	56	25	8	0	89	46	162	33	0	241	19	39	101	0	159	25	191	14	0	230	719
17:30	32	27	4	0	63	52	133	29	0	214	28	48	73	0	149	17	150	16	0	183	609
17:45	23	21	10	0	54	56	168	24	0	248	20	43	52	0	115	18	166	12	0	196	613
Total	139	89	33	0	261	200	601	114	0	915	89	164	283	0	536	90	680	56	0	826	2538
Grand Total	251	170	64	0	485	388	1191	216	0	1795	143	285	505	0	933	163	1436	100	0	1699	4912
Apprch %	51.8	35.1	13.2	0		21.6	66.4	12	0		15.3	30.5	54.1	0		9.6	84.5	5.9	0		
Total %	5.1	3.5	1.3	0	9.9	7.9	24.2	4.4	0	36.5	2.9	5.8	10.3	0	19	3.3	29.2	2	0	34.6	

	Wood Hollow Dr Southbound					Far West Blvd Westbound					Wood Hollow Dr Northbound					Far West Blvd Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 17:00																					
17:00	28	16	**11**	0	55	46	138	28	0	212	22	34	57	0	113	**30**	173	14	0	217	597
17:15	**56**	25	8	0	**89**	46	162	**33**	0	241	19	39	**101**	0	**159**	25	**191**	14	0	**230**	**719**
17:30	32	**27**	4	0	63	52	133	29	0	214	**28**	**48**	73	0	149	17	150	**16**	0	183	609
17:45	23	21	10	0	54	**56**	**168**	24	0	**248**	20	43	52	0	115	18	166	12	0	196	613
Total Volume	139	89	33	0	261	200	601	114	0	915	89	164	283	0	536	90	680	56	0	826	2538
% App. Total	53.3	34.1	12.6	0		21.9	65.7	12.5	0		16.6	30.6	52.8	0		10.9	82.3	6.8	0		
PHF	.621	.824	.750	.000	.733	.893	.894	.864	.000	.922	.795	.854	.700	.000	.843	.750	.890	.875	.000	.898	.882

GRAM Traffic, Inc.

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Georgetown, TX 78626
512-832-8650

File Name : FarWest-WoodhollowPM
Site Code : 00000034
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	Wood Hollow Dr Southbound					Far West Blvd Westbound					Wood Hollow Dr Northbound					Far West Blvd Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	16:45					17:00					17:00					16:30					
+0 mins.	24	25	8	0	57	46	138	28	0	212	22	34	57	0	113	22	**205**	**14**	0	**241**	
+15 mins.	28	16	**11**	0	55	46	162	**33**	0	241	19	39	**101**	0	**159**	12	174	10	0	196	
+30 mins.	**56**	25	8	0	**89**	52	133	29	0	214	**28**	**48**	73	0	149	**30**	173	14	0	217	
+45 mins.	32	**27**	4	0	63	**56**	**168**	24	0	**248**	20	43	52	0	115	25	191	14	0	230	
Total Volume	140	93	31	0	264	200	601	114	0	915	89	164	283	0	536	89	743	52	0	884	
% App. Total	53	35.2	11.7	0		21.9	65.7	12.5	0		16.6	30.6	52.8	0		10.1	84	5.9	0		
PHF	.625	.861	.705	.000	.742	.893	.894	.864	.000	.922	.795	.854	.700	.000	.843	.742	.906	.929	.000	.917	

GRAM Traffic, Inc.

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Georgetown, TX 78626
512-832-8650

File Name : FarWest-MopacSBam
Site Code : 00000032
Start Date : 3/26/2014
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Groups Printed- Autos

	Loop 1 - SB MoPac Service Rd Southbound					Far West Blvd Westbound					Northbound					Far West Blvd Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00	37	87	134	0	258	4	60	0	0	64	0	0	0	0	0	0	70	102	0	172	494
07:15	25	74	142	0	241	3	82	0	0	85	0	0	0	0	0	0	88	117	0	205	531
07:30	30	94	158	0	282	1	90	0	0	91	0	0	0	0	0	0	141	106	0	247	620
07:45	26	105	174	0	305	7	122	0	0	129	0	0	0	0	0	0	170	99	0	269	703
Total	118	360	608	0	1086	15	354	0	0	369	0	0	0	0	0	0	469	424	0	893	2348
08:00	38	113	191	0	342	2	95	0	0	97	0	0	0	0	0	0	196	109	0	305	744
08:15	24	126	204	0	354	6	126	0	0	132	0	0	0	0	0	0	180	100	0	280	766
08:30	29	128	209	0	366	4	125	0	0	129	0	0	0	0	0	0	168	89	0	257	752
08:45	28	102	188	0	318	4	122	0	0	126	0	0	0	0	0	0	170	107	0	277	721
Total	119	469	792	0	1380	16	468	0	0	484	0	0	0	0	0	0	714	405	0	1119	2983
Grand Total	237	829	1400	0	2466	31	822	0	0	853	0	0	0	0	0	0	1183	829	0	2012	5331
Apprch %	9.6	33.6	56.8	0		3.6	96.4	0	0		0	0	0	0		0	58.8	41.2	0		
Total %	4.4	15.6	26.3	0	46.3	0.6	15.4	0	0	16	0	0	0	0	0	0	22.2	15.6	0	37.7	

	Loop 1 - SB MoPac Service Rd Southbound					Far West Blvd Westbound					Northbound					Far West Blvd Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00																					
08:00	**38**	113	191	0	342	2	95	0	0	97	0	0	0	0	0	0	**196**	**109**	0	**305**	744
08:15	24	126	204	0	354	**6**	**126**	0	0	**132**	0	0	0	0	0	0	180	100	0	280	**766**
08:30	29	**128**	**209**	0	**366**	4	125	0	0	129	0	0	0	0	0	0	168	89	0	257	752
08:45	28	102	188	0	318	4	122	0	0	126	0	0	0	0	0	0	170	107	0	277	721
Total Volume	119	469	792	0	1380	16	468	0	0	484	0	0	0	0	0	0	714	405	0	1119	2983
% App. Total	8.6	34	57.4	0		3.3	96.7	0	0		0	0	0	0		0	63.8	36.2	0		
PHF	.783	.916	.947	.000	.943	.667	.929	.000	.000	.917	.000	.000	.000	.000	.000	.000	.911	.929	.000	.917	.974

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : FarWest-MopacSBam
Site Code : 00000032
Start Date : 3/26/2014
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	Loop 1 - SB MoPac Service Rd Southbound					Far West Blvd Westbound					Northbound					Far West Blvd Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	08:00					07:45					07:00					08:00					
+0 mins.	**38**	113	191	0	342	**7**	122	0	0	129	0	0	0	0	0	0	**196**	**109**	0	**305**	
+15 mins.	24	126	204	0	354	2	95	0	0	97	0	0	0	0	0	0	180	100	0	280	
+30 mins.	29	**128**	**209**	0	**366**	6	**126**	0	0	**132**	0	0	0	0	0	0	168	89	0	257	
+45 mins.	28	102	188	0	318	4	125	0	0	129	0	0	0	0	0	0	170	107	0	277	
Total Volume	119	469	792	0	1380	19	468	0	0	487	0	0	0	0	0	0	714	405	0	1119	
% App. Total	8.6	34	57.4	0		3.9	96.1	0	0		0	0	0	0		0	63.8	36.2	0		
PHF	.783	.916	.947	.000	.943	.679	.929	.000	.000	.922	.000	.000	.000	.000	.000	.000	.911	.929	.000	.917	

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : FarWest-MopacSBpm
Site Code : 00000032
Start Date : 3/26/2014
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Groups Printed- Autos

	Loop 1 - SB MoPac Service Rd Southbound					Far West Blvd Westbound					Northbound					Far West Blvd Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
16:00	73	53	148	0	274	5	103	0	0	108	0	0	0	0	0	0	199	86	0	285	667
16:15	76	62	139	0	277	4	64	0	0	68	0	0	0	0	0	0	205	99	0	304	649
16:30	60	50	161	5	276	5	70	0	0	75	0	0	0	0	0	0	206	90	0	296	647
16:45	63	61	166	3	293	2	90	0	0	92	0	0	0	0	0	0	231	83	0	314	699
Total	272	226	614	8	1120	16	327	0	0	343	0	0	0	0	0	0	841	358	0	1199	2662
17:00	82	78	187	0	347	1	108	0	0	109	0	0	0	0	0	0	249	93	0	342	798
17:15	74	100	199	0	373	3	71	0	0	74	0	0	0	0	0	0	289	84	0	373	820
17:30	89	111	270	4	474	4	99	0	0	103	0	0	0	0	0	0	274	75	0	349	926
17:45	89	77	168	0	334	1	94	9	0	104	0	0	0	0	0	0	213	91	0	304	742
Total	334	366	824	4	1528	9	372	9	0	390	0	0	0	0	0	0	1025	343	0	1368	3286
Grand Total	606	592	1438	12	2648	25	699	9	0	733	0	0	0	0	0	0	1866	701	0	2567	5948
Apprch %	22.9	22.4	54.3	0.5		3.4	95.4	1.2	0		0	0	0	0		0	72.7	27.3	0		
Total %	10.2	10	24.2	0.2	44.5	0.4	11.8	0.2	0	12.3	0	0	0	0	0	0	31.4	11.8	0	43.2	

	Loop 1 - SB MoPac Service Rd Southbound					Far West Blvd Westbound					Northbound					Far West Blvd Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 17:00																					
17:00	82	78	187	0	347	1	**108**	0	0	**109**	0	0	0	0	0	0	249	**93**	0	342	798
17:15	74	100	199	0	373	3	71	0	0	74	0	0	0	0	0	0	**289**	84	0	**373**	820
17:30	**89**	**111**	**270**	**4**	**474**	**4**	99	0	0	103	0	0	0	0	0	0	274	75	0	349	**926**
17:45	89	77	168	0	334	1	94	**9**	0	104	0	0	0	0	0	0	213	91	0	304	742
Total Volume	334	366	824	4	1528	9	372	9	0	390	0	0	0	0	0	0	1025	343	0	1368	3286
% App. Total	21.9	24	53.9	0.3		2.3	95.4	2.3	0		0	0	0	0		0	74.9	25.1	0		
PHF	.938	.824	.763	.250	.806	.563	.861	.250	.000	.894	.000	.000	.000	.000	.000	.000	.887	.922	.000	.917	.887

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : FarWest-MopacSBpm
Site Code : 00000032
Start Date : 3/26/2014
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	Loop 1 - SB MoPac Service Rd Southbound					Far West Blvd Westbound					Northbound					Far West Blvd Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	17:00					17:00					16:00					16:45					
+0 mins.	82	78	187	0	347	1	**108**	0	0	**109**	0	0	0	0	0	0	231	83	0	314	
+15 mins.	74	100	199	0	373	3	71	0	0	74	0	0	0	0	0	0	249	**93**	0	342	
+30 mins.	**89**	**111**	**270**	**4**	**474**	**4**	99	0	0	103	0	0	0	0	0	0	**289**	84	0	**373**	
+45 mins.	89	77	168	0	334	1	94	**9**	0	104	0	0	0	0	0	0	274	75	0	349	
Total Volume	334	366	824	4	1528	9	372	9	0	390	0	0	0	0	0	0	1043	335	0	1378	
% App. Total	21.9	24	53.9	0.3		2.3	95.4	2.3	0		0	0	0	0		0	75.7	24.3	0		
PHF	.938	.824	.763	.250	.806	.563	.861	.250	.000	.894	.000	.000	.000	.000	.000	.000	.902	.901	.000	.924	

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : farwest-mopacnbam
Site Code : 00000027
Start Date : 3/26/2014
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Groups Printed- Autos

	Southbound					Westbound					Mopac Frontage Northbound					Far West Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00	0	0	0	0	0	0	0	0	0	0	67	3	0	0	70	101	0	0	0	101	171
07:15	0	0	0	0	0	0	0	0	0	0	87	7	0	0	94	108	0	0	0	108	202
07:30	0	0	0	0	0	0	0	0	0	0	92	3	0	0	95	175	0	0	0	175	270
07:45	0	0	0	0	0	0	0	0	0	0	130	2	0	0	132	195	0	0	0	195	327
Total	0	0	0	0	0	0	0	0	0	0	376	15	0	0	391	579	0	0	0	579	970
08:00	0	0	0	0	0	0	0	0	0	0	96	0	0	0	96	236	0	0	0	236	332
08:15	0	0	0	0	0	0	0	0	0	0	130	0	0	0	130	218	0	0	0	218	348
08:30	0	0	0	0	0	0	0	0	0	0	128	0	0	0	128	199	0	0	0	199	327
08:45	0	0	0	0	0	0	0	0	0	0	127	0	0	0	127	197	0	0	0	197	324
Total	0	0	0	0	0	0	0	0	0	0	481	0	0	0	481	850	0	0	0	850	1331
Grand Total	0	0	0	0	0	0	0	0	0	0	857	15	0	0	872	1429	0	0	0	1429	2301
Apprch %	0	0	0	0		0	0	0	0		98.3	1.7	0	0		100	0	0	0		
Total %	0	0	0	0	0	0	0	0	0	0	37.2	0.7	0	0	37.9	62.1	0	0	0	62.1	

	Southbound					Westbound					Mopac Frontage Northbound					Far West Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45																					
07:45	0	0	0	0	0	0	0	0	0	0	**130**	**2**	0	0	**132**	195	0	0	0	195	327
08:00	0	0	0	0	0	0	0	0	0	0	96	0	0	0	96	**236**	0	0	0	**236**	332
08:15	0	0	0	0	0	0	0	0	0	0	130	0	0	0	130	218	0	0	0	218	**348**
08:30	0	0	0	0	0	0	0	0	0	0	128	0	0	0	128	199	0	0	0	199	327
Total Volume	0	0	0	0	0	0	0	0	0	0	484	2	0	0	486	848	0	0	0	848	1334
% App. Total	0	0	0	0		0	0	0	0		99.6	0.4	0	0		100	0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.931	.250	.000	.000	.920	.898	.000	.000	.000	.898	.958

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : farwest-mopacnbam
Site Code : 00000027
Start Date : 3/26/2014
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	Southbound					Westbound					Mopac Frontage Northbound					Far West Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	07:00					07:00					07:45					08:00					
+0 mins.	0	0	0	0	0	0	0	0	0	0	**130**	**2**	0	0	**132**	**236**	0	0	0	**236**	
+15 mins.	0	0	0	0	0	0	0	0	0	0	96	0	0	0	96	218	0	0	0	218	
+30 mins.	0	0	0	0	0	0	0	0	0	0	130	0	0	0	130	199	0	0	0	199	
+45 mins.	0	0	0	0	0	0	0	0	0	0	128	0	0	0	128	197	0	0	0	197	
Total Volume	0	0	0	0	0	0	0	0	0	0	484	2	0	0	486	850	0	0	0	850	
% App. Total	0	0	0	0		0	0	0	0		99.6	0.4	0	0		100	0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.931	.250	.000	.000	.920	.900	.000	.000	.000	.900	

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : FarWest-MopacNBpm
Site Code : 00000027
Start Date : 3/26/2014
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Groups Printed- Autos

	Southbound					Westbound					Mopac Frontage Northbound					Far West Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
16:00	0	0	0	0	0	0	0	0	0	0	81	4	0	0	85	289	0	0	0	289	374
16:15	0	0	0	0	0	0	0	0	0	0	66	2	0	0	68	257	0	0	0	257	325
16:30	0	0	0	0	0	0	0	0	0	0	82	8	0	0	90	322	0	0	0	322	412
16:45	0	0	0	0	0	0	0	0	0	0	86	6	0	0	92	299	0	0	0	299	391
Total	0	0	0	0	0	0	0	0	0	0	315	20	0	0	335	1167	0	0	0	1167	1502
17:00	0	0	0	0	0	0	0	0	0	0	74	10	0	0	84	401	0	0	0	401	485
17:15	0	0	0	0	0	0	0	0	0	0	66	1	0	0	67	339	0	0	0	339	406
17:30	0	0	0	0	0	0	0	0	0	0	100	5	0	0	105	329	0	0	0	329	434
17:45	0	0	0	0	0	0	0	0	0	0	70	3	0	0	73	248	0	0	0	248	321
Total	0	0	0	0	0	0	0	0	0	0	310	19	0	0	329	1317	0	0	0	1317	1646
Grand Total	0	0	0	0	0	0	0	0	0	0	625	39	0	0	664	2484	0	0	0	2484	3148
Apprch %	0	0	0	0		0	0	0	0		94.1	5.9	0	0		100	0	0	0		
Total %	0	0	0	0	0	0	0	0	0	0	19.9	1.2	0	0	21.1	78.9	0	0	0	78.9	

	Southbound					Westbound					Mopac Frontage Northbound					Far West Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:45																					
16:45	0	0	0	0	0	0	0	0	0	0	86	6	0	0	92	299	0	0	0	299	391
17:00	0	0	0	0	0	0	0	0	0	0	74	**10**	0	0	84	**401**	0	0	0	**401**	**485**
17:15	0	0	0	0	0	0	0	0	0	0	66	1	0	0	67	339	0	0	0	339	406
17:30	0	0	0	0	0	0	0	0	0	0	**100**	5	0	0	**105**	329	0	0	0	329	434
Total Volume	0	0	0	0	0	0	0	0	0	0	326	22	0	0	348	1368	0	0	0	1368	1716
% App. Total	0	0	0	0		0	0	0	0		93.7	6.3	0	0		100	0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.815	.550	.000	.000	.829	.853	.000	.000	.000	.853	.885

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : FarWest-MopacNBpm
Site Code : 00000027
Start Date : 3/26/2014
Page No : 2

	Southbound					Westbound					Mopac Frontage Northbound					Far West Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	16:00					16:00					16:45					16:45					
+0 mins.	0	0	0	0	0	0	0	0	0	0	86	6	0	0	92	299	0	0	0	299	
+15 mins.	0	0	0	0	0	0	0	0	0	0	74	**10**	0	0	84	**401**	0	0	0	**401**	
+30 mins.	0	0	0	0	0	0	0	0	0	0	66	1	0	0	67	339	0	0	0	339	
+45 mins.	0	0	0	0	0	0	0	0	0	0	**100**	5	0	0	**105**	329	0	0	0	329	
Total Volume	0	0	0	0	0	0	0	0	0	0	326	22	0	0	348	1368	0	0	0	1368	
% App. Total	0	0	0	0		0	0	0	0		93.7	6.3	0	0		100	0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.815	.550	.000	.000	.829	.853	.000	.000	.000	.853	

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : Spice-MopacSBam
Site Code : 00000021
Start Date : 3/26/2014
Page No : 1

Groups Printed- Autos

	Loop 1 -SB MoPac Service Rd Southbound					Spicewood Springs Rd Westbound					Loop 1 - SB MoPac Service Rd Northbound					Spicewood Springs Rd Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00	42	68	33	0	143	63	59	0	0	122	0	0	0	0	0	0	70	70	0	140	405
07:15	59	134	48	0	241	84	98	0	0	182	0	0	0	0	0	0	100	103	0	203	626
07:30	62	229	91	0	382	100	131	0	0	231	0	0	0	0	0	0	150	122	0	272	885
07:45	86	298	151	0	535	149	166	0	0	315	0	0	0	0	0	0	185	161	0	346	1196
Total	249	729	323	0	1301	396	454	0	0	850	0	0	0	0	0	0	505	456	0	961	3112
08:00	78	237	154	0	469	118	212	0	0	330	0	0	0	0	0	0	199	146	0	345	1144
08:15	72	262	149	0	483	157	237	0	0	394	0	0	0	0	0	0	185	157	0	342	1219
08:30	84	242	125	0	451	124	203	0	0	327	0	0	0	0	0	0	255	116	0	371	1149
08:45	68	238	160	0	466	102	184	0	0	286	0	0	0	0	0	0	243	95	0	338	1090
Total	302	979	588	0	1869	501	836	0	0	1337	0	0	0	0	0	0	882	514	0	1396	4602
Grand Total	551	1708	911	0	3170	897	1290	0	0	2187	0	0	0	0	0	0	1387	970	0	2357	7714
Apprch %	17.4	53.9	28.7	0		41	59	0	0		0	0	0	0		0	58.8	41.2	0		
Total %	7.1	22.1	11.8	0	41.1	11.6	16.7	0	0	28.4	0	0	0	0	0	0	18	12.6	0	30.6	

	Loop 1 -SB MoPac Service Rd Southbound					Spicewood Springs Rd Westbound					Loop 1 - SB MoPac Service Rd Northbound					Spicewood Springs Rd Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45																					
07:45	**86**	**298**	151	0	**535**	149	166	0	0	315	0	0	0	0	0	0	185	**161**	0	346	1196
08:00	78	237	**154**	0	469	118	212	0	0	330	0	0	0	0	0	0	199	146	0	345	1144
08:15	72	262	149	0	483	**157**	**237**	0	0	**394**	0	0	0	0	0	0	185	157	0	342	**1219**
08:30	84	242	125	0	451	124	203	0	0	327	0	0	0	0	0	0	**255**	116	0	**371**	1149
Total Volume	320	1039	579	0	1938	548	818	0	0	1366	0	0	0	0	0	0	824	580	0	1404	4708
% App. Total	16.5	53.6	29.9	0		40.1	59.9	0	0		0	0	0	0		0	58.7	41.3	0		
PHF	.930	.872	.940	.000	.906	.873	.863	.000	.000	.867	.000	.000	.000	.000	.000	.000	.808	.901	.000	.946	.966

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : Spice-MopacSBam
Site Code : 00000021
Start Date : 3/26/2014
Page No : 2

	Loop 1 -SB MoPac Service Rd Southbound					Spicewood Springs Rd Westbound					Loop 1 - SB MoPac Service Rd Northbound					Spicewood Springs Rd Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	07:45					07:45					07:00					07:45					
+0 mins.	**86**	**298**	151	0	**535**	149	166	0	0	315	0	0	0	0	0	0	185	**161**	0	346	
+15 mins.	78	237	**154**	0	469	118	212	0	0	330	0	0	0	0	0	0	199	146	0	345	
+30 mins.	72	262	149	0	483	**157**	**237**	0	0	**394**	0	0	0	0	0	0	185	157	0	342	
+45 mins.	84	242	125	0	451	124	203	0	0	327	0	0	0	0	0	0	**255**	116	0	**371**	
Total Volume	320	1039	579	0	1938	548	818	0	0	1366	0	0	0	0	0	0	824	580	0	1404	
% App. Total	16.5	53.6	29.9	0		40.1	59.9	0	0		0	0	0	0		0	58.7	41.3	0		
PHF	.930	.872	.940	.000	.906	.873	.863	.000	.000	.867	.000	.000	.000	.000	.000	.000	.808	.901	.000	.946	

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : Spice-MopacSBpm
Site Code : 00000021
Start Date : 3/26/2014
Page No : 1

Groups Printed- Autos

	Loop 1 - SB MoPac Service Rd Southbound					Spicewood Springs Rd Westbound					Loop 1 - SB Mopac Service Rd Northbound					Spicewood Springs Rd Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
16:00	65	37	71	0	173	120	153	0	0	273	0	0	0	0	0	0	164	67	0	231	677
16:15	73	30	56	0	159	147	184	0	0	331	0	0	0	0	0	0	172	53	0	225	715
16:30	88	21	59	0	168	125	190	0	0	315	0	0	0	0	0	0	185	67	0	252	735
16:45	87	30	63	0	180	134	260	0	0	394	0	0	0	0	0	0	190	50	0	240	814
Total	313	118	249	0	680	526	787	0	0	1313	0	0	0	0	0	0	711	237	0	948	2941
17:00	123	39	94	0	256	138	207	0	0	345	0	0	0	0	0	0	247	68	0	315	916
17:15	147	58	78	0	283	172	294	0	0	466	0	0	0	0	0	0	276	75	0	351	1100
17:30	144	52	64	0	260	122	298	0	0	420	0	0	0	0	0	0	303	66	0	369	1049
17:45	136	31	107	0	274	128	347	0	0	475	0	0	0	0	0	0	268	61	0	329	1078
Total	550	180	343	0	1073	560	1146	0	0	1706	0	0	0	0	0	0	1094	270	0	1364	4143
Grand Total	863	298	592	0	1753	1086	1933	0	0	3019	0	0	0	0	0	0	1805	507	0	2312	7084
Apprch %	49.2	17	33.8	0		36	64	0	0		0	0	0	0		0	78.1	21.9	0		
Total %	12.2	4.2	8.4	0	24.7	15.3	27.3	0	0	42.6	0	0	0	0	0	0	25.5	7.2	0	32.6	

	Loop 1 - SB MoPac Service Rd Southbound					Spicewood Springs Rd Westbound					Loop 1 - SB Mopac Service Rd Northbound					Spicewood Springs Rd Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 17:00																					
17:00	123	39	94	0	256	138	207	0	0	345	0	0	0	0	0	0	247	68	0	315	916
17:15	**147**	**58**	78	0	**283**	**172**	294	0	0	466	0	0	0	0	0	0	276	**75**	0	351	**1100**
17:30	144	52	64	0	260	122	298	0	0	420	0	0	0	0	0	0	**303**	66	0	**369**	1049
17:45	136	31	**107**	0	274	128	**347**	0	0	**475**	0	0	0	0	0	0	268	61	0	329	1078
Total Volume	550	180	343	0	1073	560	1146	0	0	1706	0	0	0	0	0	0	1094	270	0	1364	4143
% App. Total	51.3	16.8	32	0		32.8	67.2	0	0		0	0	0	0		0	80.2	19.8	0		
PHF	.935	.776	.801	.000	.948	.814	.826	.000	.000	.898	.000	.000	.000	.000	.000	.000	.903	.900	.000	.924	.942

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : Spice-MopacSBpm
Site Code : 00000021
Start Date : 3/26/2014
Page No : 2

	Loop 1 - SB MoPac Service Rd Southbound					Spicewood Springs Rd Westbound					Loop 1 - SB Mopac Service Rd Northbound					Spicewood Springs Rd Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	17:00					17:00					16:00					17:00					
+0 mins.	123	39	94	0	256	138	207	0	0	345	0	0	0	0	0	0	247	68	0	315	
+15 mins.	**147**	**58**	78	0	**283**	**172**	294	0	0	466	0	0	0	0	0	0	276	**75**	0	351	
+30 mins.	144	52	64	0	260	122	298	0	0	420	0	0	0	0	0	0	**303**	66	0	**369**	
+45 mins.	136	31	**107**	0	274	128	**347**	0	0	**475**	0	0	0	0	0	0	268	61	0	329	
Total Volume	550	180	343	0	1073	560	1146	0	0	1706	0	0	0	0	0	0	1094	270	0	1364	
% App. Total	51.3	16.8	32	0		32.8	67.2	0	0		0	0	0	0		0	80.2	19.8	0		
PHF	.935	.776	.801	.000	.948	.814	.826	.000	.000	.898	.000	.000	.000	.000	.000	.000	.903	.900	.000	.924	

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : Spicewood-MopacNBam
Site Code : 00000034
Start Date : 3/26/2014
Page No : 1

Groups Printed- Autos

	Loop 1 - NB MoPac Service Rd Southbound					Spicewood Springs Rd Westbound					Loop 1 - NB MoPac Service Rd Northbound					Spicewood Springs Rd Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00	0	0	0	0	0	0	69	13	0	82	33	1	57	0	91	24	98	0	0	122	295
07:15	0	0	0	0	0	0	107	26	0	133	65	0	88	0	153	28	108	0	0	136	422
07:30	0	0	0	0	0	0	130	35	1	166	60	0	99	0	159	37	153	0	0	190	515
07:45	0	0	0	0	0	0	197	41	0	238	53	3	102	0	158	60	183	0	0	243	639
Total	0	0	0	0	0	0	503	115	1	619	211	4	346	0	561	149	542	0	0	691	1871
08:00	0	0	0	0	0	0	210	38	0	248	78	2	134	0	214	65	204	0	0	269	731
08:15	0	0	0	0	0	0	210	70	0	280	76	5	109	0	190	57	202	0	0	259	729
08:30	0	0	0	0	0	0	228	56	0	284	98	4	112	0	214	69	190	0	0	259	757
08:45	0	0	0	0	0	0	203	57	0	260	84	1	111	0	196	74	189	0	0	263	719
Total	0	0	0	0	0	0	851	221	0	1072	336	12	466	0	814	265	785	0	0	1050	2936
Grand Total	0	0	0	0	0	0	1354	336	1	1691	547	16	812	0	1375	414	1327	0	0	1741	4807
Apprch %	0	0	0	0		0	80.1	19.9	0.1		39.8	1.2	59.1	0		23.8	76.2	0	0		
Total %	0	0	0	0	0	0	28.2	7	0	35.2	11.4	0.3	16.9	0	28.6	8.6	27.6	0	0	36.2	

	Loop 1 - NB MoPac Service Rd Southbound					Spicewood Springs Rd Westbound					Loop 1 - NB MoPac Service Rd Northbound					Spicewood Springs Rd Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00																					
08:00	0	0	0	0	0	0	210	38	0	248	78	2	**134**	0	**214**	65	**204**	0	0	**269**	731
08:15	0	0	0	0	0	0	210	**70**	0	280	76	**5**	109	0	190	57	202	0	0	259	729
08:30	0	0	0	0	0	0	**228**	56	0	**284**	**98**	4	112	0	214	69	190	0	0	259	**757**
08:45	0	0	0	0	0	0	203	57	0	260	84	1	111	0	196	**74**	189	0	0	263	719
Total Volume	0	0	0	0	0	0	851	221	0	1072	336	12	466	0	814	265	785	0	0	1050	2936
% App. Total	0	0	0	0		0	79.4	20.6	0		41.3	1.5	57.2	0		25.2	74.8	0	0		
PHF	.000	.000	.000	.000	.000	.000	.933	.789	.000	.944	.857	.600	.869	.000	.951	.895	.962	.000	.000	.976	.970

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : Spicewood-MopacNBam
Site Code : 00000034
Start Date : 3/26/2014
Page No : 2

	Loop 1 - NB MoPac Service Rd Southbound					Spicewood Springs Rd Westbound					Loop 1 - NB MoPac Service Rd Northbound					Spicewood Springs Rd Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	07:00					08:00					08:00					08:00					
+0 mins.	0	0	0	0	0	0	210	38	0	248	78	2	**134**	0	**214**	65	**204**	0	0	**269**	
+15 mins.	0	0	0	0	0	0	210	**70**	0	280	76	**5**	109	0	190	57	202	0	0	259	
+30 mins.	0	0	0	0	0	0	**228**	56	0	**284**	**98**	4	112	0	214	69	190	0	0	259	
+45 mins.	0	0	0	0	0	0	203	57	0	260	84	1	111	0	196	**74**	189	0	0	263	
Total Volume	0	0	0	0	0	0	851	221	0	1072	336	12	466	0	814	265	785	0	0	1050	
% App. Total	0	0	0	0		0	79.4	20.6	0		41.3	1.5	57.2	0		25.2	74.8	0	0		
PHF	.000	.000	.000	.000	.000	.000	.933	.789	.000	.944	.857	.600	.869	.000	.951	.895	.962	.000	.000	.976	

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : Spicewood-MopacNBpm
Site Code : 00000034
Start Date : 3/26/2014
Page No : 1

Groups Printed- Autos

	Loop 1 - NB MoPac Service Rd Southbound					Spicewood Springs Rd Westbound					Loop 1 - NB MoPac Service Rd Northbound					Spicewood Springs Rd Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
16:00	0	0	0	0	0	0	212	85	0	297	75	12	123	0	210	75	145	0	0	220	727
16:15	0	0	0	0	0	0	239	108	1	348	41	6	100	0	147	102	174	0	0	276	771
16:30	0	0	0	0	0	0	222	125	0	347	44	5	117	0	166	92	187	0	0	279	792
16:45	0	0	0	0	0	0	235	117	1	353	57	8	114	0	179	99	159	0	0	258	790
Total	0	0	0	0	0	0	908	435	2	1345	217	31	454	0	702	368	665	0	0	1033	3080
17:00	0	0	0	0	0	0	206	100	0	306	54	8	109	0	171	103	203	0	0	306	783
17:15	0	0	0	0	0	0	278	95	0	373	45	10	133	0	188	122	224	0	0	346	907
17:30	0	0	0	0	0	0	255	101	0	356	63	13	111	0	187	112	278	0	0	390	933
17:45	0	0	0	0	0	0	266	90	1	357	74	7	142	0	223	102	255	0	0	357	937
Total	0	0	0	0	0	0	1005	386	1	1392	236	38	495	0	769	439	960	0	0	1399	3560
Grand Total	0	0	0	0	0	0	1913	821	3	2737	453	69	949	0	1471	807	1625	0	0	2432	6640
Apprch %	0	0	0	0		0	69.9	30	0.1		30.8	4.7	64.5	0		33.2	66.8	0	0		
Total %	0	0	0	0	0	0	28.8	12.4	0	41.2	6.8	1	14.3	0	22.2	12.2	24.5	0	0	36.6	

	Loop 1 - NB MoPac Service Rd Southbound					Spicewood Springs Rd Westbound					Loop 1 - NB MoPac Service Rd Northbound					Spicewood Springs Rd Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 17:00																					
17:00	0	0	0	0	0	0	206	100	0	306	54	8	109	0	171	103	203	0	0	306	783
17:15	0	0	0	0	0	0	**278**	95	0	**373**	45	10	133	0	188	**122**	224	0	0	346	907
17:30	0	0	0	0	0	0	255	**101**	0	356	63	**13**	111	0	187	112	**278**	0	0	**390**	933
17:45	0	0	0	0	0	0	266	90	**1**	357	**74**	7	**142**	0	**223**	102	255	0	0	357	**937**
Total Volume	0	0	0	0	0	0	1005	386	1	1392	236	38	495	0	769	439	960	0	0	1399	3560
% App. Total	0	0	0	0		0	72.2	27.7	0.1		30.7	4.9	64.4	0		31.4	68.6	0	0		
PHF	.000	.000	.000	.000	.000	.000	.904	.955	.250	.933	.797	.731	.871	.000	.862	.900	.863	.000	.000	.897	.950

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : Spicewood-MopacNBpm
Site Code : 00000034
Start Date : 3/26/2014
Page No : 2

	Loop 1 - NB MoPac Service Rd Southbound					Spicewood Springs Rd Westbound					Loop 1 - NB MoPac Service Rd Northbound					Spicewood Springs Rd Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	16:00					17:00					17:00					17:00					
+0 mins.	0	0	0	0	0	0	206	100	0	306	54	8	109	0	171	103	203	0	0	306	
+15 mins.	0	0	0	0	0	0	**278**	95	0	**373**	45	10	133	0	188	**122**	224	0	0	346	
+30 mins.	0	0	0	0	0	0	255	**101**	0	356	63	**13**	111	0	187	112	**278**	0	0	**390**	
+45 mins.	0	0	0	0	0	0	266	90	**1**	357	**74**	7	**142**	0	**223**	102	255	0	0	357	
Total Volume	0	0	0	0	0	0	1005	386	1	1392	236	38	495	0	769	439	960	0	0	1399	
% App. Total	0	0	0	0		0	72.2	27.7	0.1		30.7	4.9	64.4	0		31.4	68.6	0	0		
PHF	.000	.000	.000	.000	.000	.000	.904	.955	.250	.933	.797	.731	.871	.000	.862	.900	.863	.000	.000	.897	

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : Spice-WoodhollowAM
Site Code : 00000028
Start Date : 3/27/2014
Page No : 1

Groups Printed- Autos

	Spicewood Springs Rd Southbound					Wood Hollow Dr Westbound					Spicewood Springs Rd Northbound					Wood Hollow Dr Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00	1	111	14	0	126	0	0	1	0	1	20	75	1	0	96	0	0	11	0	11	234
07:15	2	194	9	0	205	0	0	0	0	0	32	124	3	0	159	4	0	29	0	33	397
07:30	1	236	19	0	256	0	0	2	0	2	67	132	2	0	201	9	0	33	1	43	502
07:45	1	269	27	0	297	0	0	1	0	1	74	148	2	0	224	4	0	43	0	47	569
Total	5	810	69	0	884	0	0	4	0	4	193	479	8	0	680	17	0	116	1	134	1702
08:00	1	257	17	0	275	3	0	1	0	4	71	151	2	1	225	15	1	37	0	53	557
08:15	2	213	23	0	238	1	0	0	0	1	89	184	4	1	278	10	2	26	0	38	555
08:30	3	227	24	1	255	2	0	0	0	2	89	201	2	0	292	14	1	25	0	40	589
08:45	2	166	14	0	182	0	0	1	0	1	72	156	3	1	232	10	0	49	0	59	474
Total	8	863	78	1	950	6	0	2	0	8	321	692	11	3	1027	49	4	137	0	190	2175
Grand Total	13	1673	147	1	1834	6	0	6	0	12	514	1171	19	3	1707	66	4	253	1	324	3877
Apprch %	0.7	91.2	8	0.1		50	0	50	0		30.1	68.6	1.1	0.2		20.4	1.2	78.1	0.3		
Total %	0.3	43.2	3.8	0	47.3	0.2	0	0.2	0	0.3	13.3	30.2	0.5	0.1	44	1.7	0.1	6.5	0	8.4	

	Spicewood Springs Rd Southbound					Wood Hollow Dr Westbound					Spicewood Springs Rd Northbound					Wood Hollow Dr Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45																					
07:45	1	**269**	**27**	0	**297**	0	0	**1**	0	1	74	148	2	0	224	4	0	**43**	0	47	569
08:00	1	257	17	0	275	**3**	0	1	0	**4**	71	151	2	**1**	225	**15**	1	37	0	**53**	557
08:15	2	213	23	0	238	1	0	0	0	1	**89**	184	**4**	1	278	10	**2**	26	0	38	555
08:30	**3**	227	24	**1**	255	2	0	0	0	2	89	**201**	2	0	**292**	14	1	25	0	40	**589**
Total Volume	7	966	91	1	1065	6	0	2	0	8	323	684	10	2	1019	43	4	131	0	178	2270
% App. Total	0.7	90.7	8.5	0.1		75	0	25	0		31.7	67.1	1	0.2		24.2	2.2	73.6	0		
PHF	.583	.898	.843	.250	.896	.500	.000	.500	.000	.500	.907	.851	.625	.500	.872	.717	.500	.762	.000	.840	.963

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : Spice-WoodhollowAM
Site Code : 00000028
Start Date : 3/27/2014
Page No : 2

	Spicewood Springs Rd Southbound					Wood Hollow Dr Westbound					Spicewood Springs Rd Northbound					Wood Hollow Dr Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	07:30					07:30					08:00					08:00					
+0 mins.	1	236	19	0	256	0	0	**2**	0	2	71	151	2	**1**	225	**15**	1	37	0	53	
+15 mins.	1	**269**	**27**	0	**297**	0	0	1	0	1	**89**	184	**4**	1	278	10	**2**	26	0	38	
+30 mins.	1	257	17	0	275	**3**	0	1	0	**4**	89	**201**	2	0	**292**	14	1	25	0	40	
+45 mins.	**2**	213	23	0	238	1	0	0	0	1	72	156	3	1	232	10	0	**49**	0	**59**	
Total Volume	5	975	86	0	1066	4	0	4	0	8	321	692	11	3	1027	49	4	137	0	190	
% App. Total	0.5	91.5	8.1	0		50	0	50	0		31.3	67.4	1.1	0.3		25.8	2.1	72.1	0		
PHF	.625	.906	.796	.000	.897	.333	.000	.500	.000	.500	.902	.861	.688	.750	.879	.817	.500	.699	.000	.805	

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : Spice-WoodhollowPM
Site Code : 00000028
Start Date : 3/27/2014
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Groups Printed- Autos

	Spicewood Springs Rd Southbound					Wood Hollow Dr Westbound					Spicewood Springs Rd Northbound					Wood Hollow Dr Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
16:00	4	206	15	0	225	2	2	0	0	4	28	183	2	2	215	23	1	54	1	79	523
16:15	1	185	7	0	193	2	0	1	0	3	23	165	0	0	188	25	2	29	0	56	440
16:30	1	190	4	0	195	3	1	1	0	5	17	147	0	2	166	23	1	38	0	62	428
16:45	0	126	4	0	130	4	2	0	0	6	24	121	1	2	148	30	5	38	1	74	358
Total	6	707	30	0	743	11	5	2	0	18	92	616	3	6	717	101	9	159	2	271	1749
17:00	1	263	5	0	269	0	0	3	0	3	23	162	0	1	186	56	1	82	0	139	597
17:15	1	256	8	2	267	1	1	6	0	8	21	189	0	0	210	48	1	61	0	110	595
17:30	1	206	5	1	213	0	0	3	0	3	23	198	0	0	221	38	0	59	0	97	534
17:45	2	135	4	1	142	0	3	1	0	4	24	147	1	1	173	18	5	40	0	63	382
Total	5	860	22	4	891	1	4	13	0	18	91	696	1	2	790	160	7	242	0	409	2108
Grand Total	11	1567	52	4	1634	12	9	15	0	36	183	1312	4	8	1507	261	16	401	2	680	3857
Apprch %	0.7	95.9	3.2	0.2		33.3	25	41.7	0		12.1	87.1	0.3	0.5		38.4	2.4	59	0.3		
Total %	0.3	40.6	1.3	0.1	42.4	0.3	0.2	0.4	0	0.9	4.7	34	0.1	0.2	39.1	6.8	0.4	10.4	0.1	17.6	

	Spicewood Springs Rd Southbound					Wood Hollow Dr Westbound					Spicewood Springs Rd Northbound					Wood Hollow Dr Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 17:00																					
17:00	1	**263**	5	0	**269**	0	0	3	0	3	23	162	0	**1**	186	**56**	1	**82**	0	**139**	**597**
17:15	1	256	**8**	**2**	267	**1**	1	**6**	0	**8**	21	189	0	0	210	48	1	61	0	110	595
17:30	1	206	5	1	213	0	0	3	0	3	23	**198**	0	0	**221**	38	0	59	0	97	534
17:45	**2**	135	4	1	142	0	**3**	1	0	4	**24**	147	**1**	1	173	18	**5**	40	0	63	382
Total Volume	5	860	22	4	891	1	4	13	0	18	91	696	1	2	790	160	7	242	0	409	2108
% App. Total	0.6	96.5	2.5	0.4		5.6	22.2	72.2	0		11.5	88.1	0.1	0.3		39.1	1.7	59.2	0		
PHF	.625	.817	.688	.500	.828	.250	.333	.542	.000	.563	.948	.879	.250	.500	.894	.714	.350	.738	.000	.736	.883

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : Spice-WoodhollowPM
Site Code : 00000028
Start Date : 3/27/2014
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	Spicewood Springs Rd Southbound					Wood Hollow Dr Westbound					Spicewood Springs Rd Northbound					Wood Hollow Dr Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	17:00					16:30					17:00					16:45					
+0 mins.	1	**263**	5	0	**269**	3	1	1	0	5	23	162	0	**1**	186	30	**5**	38	**1**	74	
+15 mins.	1	256	**8**	**2**	267	**4**	**2**	0	0	6	21	189	0	0	210	**56**	1	**82**	0	**139**	
+30 mins.	1	206	5	1	213	0	0	3	0	3	23	**198**	0	0	**221**	48	1	61	0	110	
+45 mins.	**2**	135	4	1	142	1	1	**6**	0	**8**	**24**	147	**1**	1	173	38	0	59	0	97	
Total Volume	5	860	22	4	891	8	4	10	0	22	91	696	1	2	790	172	7	240	1	420	
% App. Total	0.6	96.5	2.5	0.4		36.4	18.2	45.5	0		11.5	88.1	0.1	0.3		41	1.7	57.1	0.2		
PHF	.625	.817	.688	.500	.828	.500	.500	.417	.000	.688	.948	.879	.250	.500	.894	.768	.350	.732	.250	.755	

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : Hart-GreyAM
Site Code : 00000008
Start Date : 3/27/2014
Page No : 1

Groups Printed- Autos

	Hart Lane Southbound					Greystone Dr Westbound					Hart Lane Northbound					Greystone Dr Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00	5	5	0	0	10	4	5	1	0	10	1	3	1	0	5	2	14	7	0	23	48
07:15	3	14	2	0	19	16	4	1	0	21	3	13	1	0	17	4	33	7	0	44	101
07:30	2	36	3	0	41	18	20	1	0	39	5	13	6	0	24	3	23	24	0	50	154
07:45	1	75	6	0	82	23	16	3	0	42	13	25	7	0	45	7	44	47	0	98	267
Total	11	130	11	0	152	61	45	6	0	112	22	54	15	0	91	16	114	85	0	215	570
08:00	5	88	4	0	97	17	12	1	0	30	15	31	6	0	52	8	55	38	0	101	280
08:15	6	41	4	0	51	18	16	0	0	34	12	35	13	0	60	9	26	17	0	52	197
08:30	2	38	11	0	51	14	12	3	0	29	5	22	5	0	32	11	18	20	0	49	161
08:45	4	42	5	0	51	13	22	2	0	37	8	32	7	0	47	6	35	13	0	54	189
Total	17	209	24	0	250	62	62	6	0	130	40	120	31	0	191	34	134	88	0	256	827
Grand Total	28	339	35	0	402	123	107	12	0	242	62	174	46	0	282	50	248	173	0	471	1397
Apprch %	7	84.3	8.7	0		50.8	44.2	5	0		22	61.7	16.3	0		10.6	52.7	36.7	0		
Total %	2	24.3	2.5	0	28.8	8.8	7.7	0.9	0	17.3	4.4	12.5	3.3	0	20.2	3.6	17.8	12.4	0	33.7	

	Hart Lane Southbound					Greystone Dr Westbound					Hart Lane Northbound					Greystone Dr Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45																					
07:45	1	75	6	0	82	**23**	**16**	**3**	0	**42**	13	25	7	0	45	7	44	**47**	0	98	267
08:00	5	**88**	4	0	**97**	17	12	1	0	30	**15**	31	6	0	52	8	**55**	38	0	**101**	**280**
08:15	**6**	41	4	0	51	18	16	0	0	34	12	**35**	**13**	0	**60**	9	26	17	0	52	197
08:30	2	38	**11**	0	51	14	12	3	0	29	5	22	5	0	32	**11**	18	20	0	49	161
Total Volume	14	242	25	0	281	72	56	7	0	135	45	113	31	0	189	35	143	122	0	300	905
% App. Total	5	86.1	8.9	0		53.3	41.5	5.2	0		23.8	59.8	16.4	0		11.7	47.7	40.7	0		
PHF	.583	.688	.568	.000	.724	.783	.875	.583	.000	.804	.750	.807	.596	.000	.788	.795	.650	.649	.000	.743	.808

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : Hart-GreyAM
Site Code : 00000008
Start Date : 3/27/2014
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	Hart Lane Southbound					Greystone Dr Westbound					Hart Lane Northbound					Greystone Dr Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	07:45					07:30					08:00					07:30					
+0 mins.	1	75	6	0	82	18	**20**	1	0	39	**15**	31	6	0	52	3	23	24	0	50	
+15 mins.	5	**88**	4	0	**97**	**23**	16	**3**	0	**42**	12	**35**	**13**	0	**60**	7	44	**47**	0	98	
+30 mins.	**6**	41	4	0	51	17	12	1	0	30	5	22	5	0	32	8	**55**	38	0	**101**	
+45 mins.	2	38	**11**	0	51	18	16	0	0	34	8	32	7	0	47	**9**	26	17	0	52	
Total Volume	14	242	25	0	281	76	64	5	0	145	40	120	31	0	191	27	148	126	0	301	
% App. Total	5	86.1	8.9	0		52.4	44.1	3.4	0		20.9	62.8	16.2	0		9	49.2	41.9	0		
PHF	.583	.688	.568	.000	.724	.826	.800	.417	.000	.863	.667	.857	.596	.000	.796	.750	.673	.670	.000	.745	

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : Hart-GreyPM
Site Code : 00000008
Start Date : 3/27/2014
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Groups Printed- Autos

	Hart Ln Southbound					Greystone Dr Westbound					Hart Ln Northbound					Greystone Dr Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
16:00	3	11	2	0	16	15	24	4	0	43	19	21	13	0	53	2	19	12	0	33	145
16:15	1	29	3	0	33	12	23	6	0	41	8	27	7	0	42	7	9	13	0	29	145
16:30	3	26	7	0	36	17	33	3	0	53	16	30	10	0	56	3	13	26	0	42	187
16:45	2	30	9	0	41	11	30	12	0	53	22	49	14	0	85	4	13	17	0	34	213
Total	9	96	21	0	126	55	110	25	0	190	65	127	44	0	236	16	54	68	0	138	690
17:00	2	38	9	0	49	19	31	12	0	62	19	44	14	0	77	11	10	11	0	32	220
17:15	5	31	14	0	50	25	26	15	0	66	23	38	13	0	74	10	21	11	0	42	232
17:30	1	23	20	0	44	18	26	10	0	54	17	56	8	0	81	5	19	6	0	30	209
17:45	5	18	10	0	33	19	38	8	0	65	27	38	12	0	77	7	17	14	0	38	213
Total	13	110	53	0	176	81	121	45	0	247	86	176	47	0	309	33	67	42	0	142	874
Grand Total	22	206	74	0	302	136	231	70	0	437	151	303	91	0	545	49	121	110	0	280	1564
Apprch %	7.3	68.2	24.5	0		31.1	52.9	16	0		27.7	55.6	16.7	0		17.5	43.2	39.3	0		
Total %	1.4	13.2	4.7	0	19.3	8.7	14.8	4.5	0	27.9	9.7	19.4	5.8	0	34.8	3.1	7.7	7	0	17.9	

	Hart Ln Southbound					Greystone Dr Westbound					Hart Ln Northbound					Greystone Dr Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:45																					
16:45	2	30	9	0	41	11	30	12	0	53	22	49	**14**	0	**85**	4	13	**17**	0	34	213
17:00	2	**38**	9	0	49	19	**31**	12	0	62	19	44	14	0	77	**11**	10	11	0	32	220
17:15	**5**	31	14	0	**50**	**25**	26	**15**	0	**66**	**23**	38	13	0	74	10	**21**	11	0	**42**	**232**
17:30	1	23	**20**	0	44	18	26	10	0	54	17	**56**	8	0	81	5	19	6	0	30	209
Total Volume	10	122	52	0	184	73	113	49	0	235	81	187	49	0	317	30	63	45	0	138	874
% App. Total	5.4	66.3	28.3	0		31.1	48.1	20.9	0		25.6	59	15.5	0		21.7	45.7	32.6	0		
PHF	.500	.803	.650	.000	.920	.730	.911	.817	.000	.890	.880	.835	.875	.000	.932	.682	.750	.662	.000	.821	.942

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : Hart-GreyPM
Site Code : 00000008
Start Date : 3/27/2014
Page No : 2

	Hart Ln Southbound					Greystone Dr Westbound					Hart Ln Northbound					Greystone Dr Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	16:45					17:00					16:45					16:30					
+0 mins.	2	30	9	0	41	19	31	12	0	62	22	49	**14**	0	**85**	3	13	**26**	0	**42**	
+15 mins.	2	**38**	9	0	49	**25**	26	**15**	0	**66**	19	44	14	0	77	4	13	17	0	34	
+30 mins.	**5**	31	14	0	**50**	18	26	10	0	54	**23**	38	13	0	74	**11**	10	11	0	32	
+45 mins.	1	23	**20**	0	44	19	**38**	8	0	65	17	**56**	8	0	81	10	**21**	11	0	42	
Total Volume	10	122	52	0	184	81	121	45	0	247	81	187	49	0	317	28	57	65	0	150	
% App. Total	5.4	66.3	28.3	0		32.8	49	18.2	0		25.6	59	15.5	0		18.7	38	43.3	0		
PHF	.500	.803	.650	.000	.920	.810	.796	.750	.000	.936	.880	.835	.875	.000	.932	.636	.679	.625	.000	.893	

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : Grey-WoodhollowAM
Site Code : 00000024
Start Date : 3/26/2014
Page No : 1

Groups Printed- Autos

	Woodhollow Southbound					Greystone Westbound					Woodhollow Northbound					Greystone Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00	0	8	1	0	9	7	16	6	0	29	4	12	6	0	22	4	23	19	0	46	106
07:15	8	13	5	0	26	5	21	2	0	28	4	9	2	0	15	3	27	17	0	47	116
07:30	7	33	5	0	45	16	26	8	0	50	3	32	11	0	46	6	32	21	0	59	200
07:45	3	36	14	0	53	10	34	5	0	49	4	28	9	0	41	9	27	60	0	96	239
Total	18	90	25	0	133	38	97	21	0	156	15	81	28	0	124	22	109	117	0	248	661
08:00	5	30	8	0	43	10	19	10	0	39	4	31	8	0	43	9	26	39	0	74	199
08:15	4	41	11	0	56	15	33	6	0	54	10	22	13	0	45	5	33	33	0	71	226
08:30	3	25	5	0	33	9	20	5	0	34	7	36	13	0	56	7	23	30	0	60	183
08:45	8	23	5	0	36	14	28	13	0	55	9	35	12	0	56	9	22	20	0	51	198
Total	20	119	29	0	168	48	100	34	0	182	30	124	46	0	200	30	104	122	0	256	806
Grand Total	38	209	54	0	301	86	197	55	0	338	45	205	74	0	324	52	213	239	0	504	1467
Apprch %	12.6	69.4	17.9	0		25.4	58.3	16.3	0		13.9	63.3	22.8	0		10.3	42.3	47.4	0		
Total %	2.6	14.2	3.7	0	20.5	5.9	13.4	3.7	0	23	3.1	14	5	0	22.1	3.5	14.5	16.3	0	34.4	

	Woodhollow Southbound					Greystone Westbound					Woodhollow Northbound					Greystone Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30																					
07:30	**7**	33	5	0	45	**16**	26	8	0	50	3	**32**	11	0	**46**	6	32	21	0	59	200
07:45	3	36	**14**	0	53	10	**34**	5	0	49	4	28	9	0	41	**9**	27	**60**	0	**96**	**239**
08:00	5	30	8	0	43	10	19	**10**	0	39	4	31	8	0	43	9	26	39	0	74	199
08:15	4	**41**	11	0	**56**	15	33	6	0	**54**	**10**	22	**13**	0	45	5	**33**	33	0	71	226
Total Volume	19	140	38	0	197	51	112	29	0	192	21	113	41	0	175	29	118	153	0	300	864
% App. Total	9.6	71.1	19.3	0		26.6	58.3	15.1	0		12	64.6	23.4	0		9.7	39.3	51	0		
PHF	.679	.854	.679	.000	.879	.797	.824	.725	.000	.889	.525	.883	.788	.000	.951	.806	.894	.638	.000	.781	.904

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : Grey-WoodhollowAM
Site Code : 00000024
Start Date : 3/26/2014
Page No : 2

	Woodhollow Southbound					Greystone Westbound					Woodhollow Northbound					Greystone Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	07:30					07:30					08:00					07:45					
+0 mins.	**7**	33	5	0	45	**16**	26	8	0	50	4	31	8	0	43	**9**	27	**60**	0	**96**	
+15 mins.	3	36	**14**	0	53	10	**34**	5	0	49	**10**	22	**13**	0	45	9	26	39	0	74	
+30 mins.	5	30	8	0	43	10	19	**10**	0	39	7	**36**	13	0	**56**	5	**33**	33	0	71	
+45 mins.	4	**41**	11	0	**56**	15	33	6	0	**54**	9	35	12	0	56	7	23	30	0	60	
Total Volume	19	140	38	0	197	51	112	29	0	192	30	124	46	0	200	30	109	162	0	301	
% App. Total	9.6	71.1	19.3	0		26.6	58.3	15.1	0		15	62	23	0		10	36.2	53.8	0		
PHF	.679	.854	.679	.000	.879	.797	.824	.725	.000	.889	.750	.861	.885	.000	.893	.833	.826	.675	.000	.784	

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : Grey-WoodhollowPM
Site Code : 00000024
Start Date : 3/26/2014
Page No : 1

Groups Printed- Autos

	Woodhollow Southbound					Greystone Westbound					Woodhollow Northbound					Greystone Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
16:00	2	20	3	0	25	5	35	4	0	44	13	40	15	0	68	3	16	12	0	31	168
16:15	1	20	6	0	27	12	34	5	0	51	11	32	15	0	58	7	18	6	0	31	167
16:30	7	30	7	0	44	19	39	4	0	62	9	30	20	0	59	2	9	9	0	20	185
16:45	4	23	4	0	31	16	44	10	0	70	14	44	15	0	73	2	25	12	0	39	213
Total	14	93	20	0	127	52	152	23	0	227	47	146	65	0	258	14	68	39	0	121	733
17:00	8	28	2	0	38	28	40	10	0	78	19	46	21	0	86	7	20	20	0	47	249
17:15	8	28	6	0	42	24	49	14	0	87	14	55	13	0	82	8	15	10	0	33	244
17:30	2	23	6	0	31	15	68	14	0	97	22	53	16	0	91	5	16	10	0	31	250
17:45	3	32	10	0	45	16	55	18	0	89	19	44	17	0	80	12	15	7	0	34	248
Total	21	111	24	0	156	83	212	56	0	351	74	198	67	0	339	32	66	47	0	145	991
Grand Total	35	204	44	0	283	135	364	79	0	578	121	344	132	0	597	46	134	86	0	266	1724
Apprch %	12.4	72.1	15.5	0		23.4	63	13.7	0		20.3	57.6	22.1	0		17.3	50.4	32.3	0		
Total %	2	11.8	2.6	0	16.4	7.8	21.1	4.6	0	33.5	7	20	7.7	0	34.6	2.7	7.8	5	0	15.4	

	Woodhollow Southbound					Greystone Westbound					Woodhollow Northbound					Greystone Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 17:00																					
17:00	**8**	28	2	0	38	**28**	40	10	0	78	19	46	**21**	0	86	7	**20**	**20**	0	**47**	249
17:15	8	28	6	0	42	24	49	14	0	87	14	**55**	13	0	82	8	15	10	0	33	244
17:30	2	23	6	0	31	15	**68**	14	0	**97**	**22**	53	16	0	**91**	5	16	10	0	31	**250**
17:45	3	**32**	**10**	0	**45**	16	55	**18**	0	89	19	44	17	0	80	**12**	15	7	0	34	248
Total Volume	21	111	24	0	156	83	212	56	0	351	74	198	67	0	339	32	66	47	0	145	991
% App. Total	13.5	71.2	15.4	0		23.6	60.4	16	0		21.8	58.4	19.8	0		22.1	45.5	32.4	0		
PHF	.656	.867	.600	.000	.867	.741	.779	.778	.000	.905	.841	.900	.798	.000	.931	.667	.825	.588	.000	.771	.991

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : Grey-WoodhollowPM
Site Code : 00000024
Start Date : 3/26/2014
Page No : 2

	Woodhollow Southbound					Greystone Westbound					Woodhollow Northbound					Greystone Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	17:00					17:00					17:00					16:45					
+0 mins.	**8**	28	2	0	38	**28**	40	10	0	78	19	46	**21**	0	86	2	**25**	12	0	39	
+15 mins.	8	28	6	0	42	24	49	14	0	87	14	**55**	13	0	82	7	20	**20**	0	**47**	
+30 mins.	2	23	6	0	31	15	**68**	14	0	**97**	**22**	53	16	0	**91**	**8**	15	10	0	33	
+45 mins.	3	**32**	**10**	0	**45**	16	55	**18**	0	89	19	44	17	0	80	5	16	10	0	31	
Total Volume	21	111	24	0	156	83	212	56	0	351	74	198	67	0	339	22	76	52	0	150	
% App. Total	13.5	71.2	15.4	0		23.6	60.4	16	0		21.8	58.4	19.8	0		14.7	50.7	34.7	0		
PHF	.656	.867	.600	.000	.867	.741	.779	.778	.000	.905	.841	.900	.798	.000	.931	.688	.760	.650	.000	.798	

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : Grey-MopacSBam
Site Code : 00000028
Start Date : 3/26/2014
Page No : 1

Groups Printed- Autos

	Loop 1 - SB Mopac Service Rd Southbound					Greystone Dr Westbound					Loop 1 - SB Mopac Service Rd Northbound					Greystone Dr Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00	0	443	26	0	469	0	0	0	0	0	0	0	0	0	0	0	0	33	0	33	502
07:15	0	675	20	0	695	0	0	0	0	0	0	0	0	0	0	0	0	37	0	37	732
07:30	0	722	24	0	746	0	0	0	0	0	0	0	0	0	0	0	0	64	0	64	810
07:45	0	794	38	0	832	0	0	0	0	0	0	0	0	0	0	0	0	41	0	41	873
Total	0	2634	108	0	2742	0	0	0	0	0	0	0	0	0	0	0	0	175	0	175	2917
08:00	0	768	38	0	806	0	0	0	0	0	0	0	0	0	0	0	0	39	0	39	845
08:15	0	763	41	0	804	0	0	0	0	0	0	0	0	0	0	0	0	58	0	58	862
08:30	0	674	34	0	708	0	0	0	0	0	0	0	0	0	0	0	0	49	0	49	757
08:45	0	657	36	0	693	0	0	0	0	0	0	0	0	0	0	0	0	46	0	46	739
Total	0	2862	149	0	3011	0	0	0	0	0	0	0	0	0	0	0	0	192	0	192	3203
Grand Total	0	5496	257	0	5753	0	0	0	0	0	0	0	0	0	0	0	0	367	0	367	6120
Apprch %	0	95.5	4.5	0		0	0	0	0		0	0	0	0		0	0	100	0		
Total %	0	89.8	4.2	0	94	0	0	0	0	0	0	0	0	0	0	0	0	6	0	6	

	Loop 1 - SB Mopac Service Rd Southbound					Greystone Dr Westbound					Loop 1 - SB Mopac Service Rd Northbound					Greystone Dr Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30																					
07:30	0	722	24	0	746	0	0	0	0	0	0	0	0	0	0	0	0	**64**	0	**64**	810
07:45	0	**794**	38	0	**832**	0	0	0	0	0	0	0	0	0	0	0	0	41	0	41	**873**
08:00	0	768	38	0	806	0	0	0	0	0	0	0	0	0	0	0	0	39	0	39	845
08:15	0	763	**41**	0	804	0	0	0	0	0	0	0	0	0	0	0	0	58	0	58	862
Total Volume	0	3047	141	0	3188	0	0	0	0	0	0	0	0	0	0	0	0	202	0	202	3390
% App. Total	0	95.6	4.4	0		0	0	0	0		0	0	0	0		0	0	100	0		
PHF	.000	.959	.860	.000	.958	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.789	.000	.789	.971

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : Grey-MopacSBam
Site Code : 00000028
Start Date : 3/26/2014
Page No : 2

	Loop 1 - SB Mopac Service Rd Southbound					Greystone Dr Westbound					Loop 1 - SB Mopac Service Rd Northbound					Greystone Dr Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	07:30					07:00					07:00					07:30					
+0 mins.	0	722	24	0	746	0	0	0	0	0	0	0	0	0	0	0	0	**64**	0	**64**	
+15 mins.	0	**794**	38	0	**832**	0	0	0	0	0	0	0	0	0	0	0	0	41	0	41	
+30 mins.	0	768	38	0	806	0	0	0	0	0	0	0	0	0	0	0	0	39	0	39	
+45 mins.	0	763	**41**	0	804	0	0	0	0	0	0	0	0	0	0	0	0	58	0	58	
Total Volume	0	3047	141	0	3188	0	0	0	0	0	0	0	0	0	0	0	0	202	0	202	
% App. Total	0	95.6	4.4	0		0	0	0	0		0	0	0	0		0	0	100	0		
PHF	.000	.959	.860	.000	.958	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.789	.000	.789	

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : Grey-MopacSBpm
Site Code : 00000028
Start Date : 3/26/2014
Page No : 1

Groups Printed- Autos

	Loop 1 - SB MoPac Service Rd Southbound					Westbound					Loop 1 - SB MoPac Service Rd Northbound					Greystone Dr Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
16:00	0	360	40	0	400	0	0	0	0	0	0	0	0	0	0	0	0	31	0	31	431
16:15	0	353	57	0	410	0	0	0	0	0	0	0	0	0	0	0	0	35	0	35	445
16:30	0	288	71	0	359	0	0	0	0	0	0	0	0	0	0	0	0	21	0	21	380
16:45	0	297	61	0	358	0	0	0	0	0	0	0	0	0	0	0	0	34	0	34	392
Total	0	1298	229	0	1527	0	0	0	0	0	0	0	0	0	0	0	0	121	0	121	1648
17:00	0	412	78	0	490	0	0	0	0	0	0	0	0	0	0	0	0	56	0	56	546
17:15	0	439	95	0	534	0	0	0	0	0	0	0	0	0	0	0	0	39	0	39	573
17:30	0	350	76	0	426	0	0	0	0	0	0	0	0	0	0	0	0	37	0	37	463
17:45	0	312	72	0	384	0	0	0	0	0	0	0	0	0	0	0	0	29	0	29	413
Total	0	1513	321	0	1834	0	0	0	0	0	0	0	0	0	0	0	0	161	0	161	1995
Grand Total	0	2811	550	0	3361	0	0	0	0	0	0	0	0	0	0	0	0	282	0	282	3643
Apprch %	0	83.6	16.4	0		0	0	0	0		0	0	0	0		0	0	100	0		
Total %	0	77.2	15.1	0	92.3	0	0	0	0	0	0	0	0	0	0	0	0	7.7	0	7.7	

	Loop 1 - SB MoPac Service Rd Southbound					Westbound					Loop 1 - SB MoPac Service Rd Northbound					Greystone Dr Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 17:00																					
17:00	0	412	78	0	490	0	0	0	0	0	0	0	0	0	0	0	0	**56**	0	**56**	546
17:15	0	**439**	**95**	0	**534**	0	0	0	0	0	0	0	0	0	0	0	0	39	0	39	**573**
17:30	0	350	76	0	426	0	0	0	0	0	0	0	0	0	0	0	0	37	0	37	463
17:45	0	312	72	0	384	0	0	0	0	0	0	0	0	0	0	0	0	29	0	29	413
Total Volume	0	1513	321	0	1834	0	0	0	0	0	0	0	0	0	0	0	0	161	0	161	1995
% App. Total	0	82.5	17.5	0		0	0	0	0		0	0	0	0		0	0	100	0		
PHF	.000	.862	.845	.000	.859	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.719	.000	.719	.870

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : Grey-MopacSBpm
Site Code : 00000028
Start Date : 3/26/2014
Page No : 2

	Loop 1 - SB MoPac Service Rd Southbound					Westbound					Loop 1 - SB MoPac Service Rd Northbound					Greystone Dr Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	17:00					16:00					16:00					16:45					
+0 mins.	0	412	78	0	490	0	0	0	0	0	0	0	0	0	0	0	0	34	0	34	
+15 mins.	0	**439**	**95**	0	**534**	0	0	0	0	0	0	0	0	0	0	0	0	**56**	0	**56**	
+30 mins.	0	350	76	0	426	0	0	0	0	0	0	0	0	0	0	0	0	39	0	39	
+45 mins.	0	312	72	0	384	0	0	0	0	0	0	0	0	0	0	0	0	37	0	37	
Total Volume	0	1513	321	0	1834	0	0	0	0	0	0	0	0	0	0	0	0	166	0	166	
% App. Total	0	82.5	17.5	0		0	0	0	0		0	0	0	0		0	0	100	0		
PHF	.000	.862	.845	.000	.859	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.741	.000	.741	

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : Exc-MopacSBam
Site Code : 00000002
Start Date : 3/26/2014
Page No : 1

Groups Printed- Autos

	Loop 1 - SB MoPac Service Rd Southbound					Westbound					Loop 1 - SB MoPac Service Rd Northbound					Executive Center Dr Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00	0	346	13	0	359	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	361
07:15	0	462	12	0	474	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	474
07:30	0	652	17	0	669	0	0	0	0	0	0	0	0	0	0	0	0	5	0	5	674
07:45	0	614	13	0	627	0	0	0	0	0	0	0	0	0	0	0	0	9	0	9	636
Total	0	2074	55	0	2129	0	0	0	0	0	0	0	0	0	0	0	0	16	0	16	2145
08:00	0	671	28	0	699	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	702
08:15	0	622	29	0	651	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	652
08:30	0	588	26	0	614	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	617
08:45	0	500	28	0	528	0	0	0	0	0	0	0	0	0	0	0	0	12	0	12	540
Total	0	2381	111	0	2492	0	0	0	0	0	0	0	0	0	0	0	0	19	0	19	2511
Grand Total	0	4455	166	0	4621	0	0	0	0	0	0	0	0	0	0	0	0	35	0	35	4656
Apprch %	0	96.4	3.6	0		0	0	0	0		0	0	0	0		0	0	100	0		
Total %	0	95.7	3.6	0	99.2	0	0	0	0	0	0	0	0	0	0	0	0	0.8	0	0.8	

	Loop 1 - SB MoPac Service Rd Southbound					Westbound					Loop 1 - SB MoPac Service Rd Northbound					Executive Center Dr Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30																					
07:30	0	652	17	0	669	0	0	0	0	0	0	0	0	0	0	0	0	5	0	5	674
07:45	0	614	13	0	627	0	0	0	0	0	0	0	0	0	0	0	0	**9**	0	**9**	636
08:00	0	**671**	28	0	**699**	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	**702**
08:15	0	622	**29**	0	651	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	652
Total Volume	0	2559	87	0	2646	0	0	0	0	0	0	0	0	0	0	0	0	18	0	18	2664
% App. Total	0	96.7	3.3	0		0	0	0	0		0	0	0	0		0	0	100	0		
PHF	.000	.953	.750	.000	.946	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.500	.000	.500	.949

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : Exc-MopacSBam
Site Code : 00000002
Start Date : 3/26/2014
Page No : 2

	Loop 1 - SB MoPac Service Rd Southbound					Westbound					Loop 1 - SB MoPac Service Rd Northbound					Executive Center Dr Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	07:30					07:00					07:00					08:00					
+0 mins.	0	652	17	0	669	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	
+15 mins.	0	614	13	0	627	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	
+30 mins.	0	**671**	28	0	**699**	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	
+45 mins.	0	622	**29**	0	651	0	0	0	0	0	0	0	0	0	0	0	0	**12**	0	**12**	
Total Volume	0	2559	87	0	2646	0	0	0	0	0	0	0	0	0	0	0	0	19	0	19	
% App. Total	0	96.7	3.3	0		0	0	0	0		0	0	0	0		0	0	100	0		
PHF	.000	.953	.750	.000	.946	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.396	.000	.396	

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : Exc-MopacSBpm
Site Code : 00000002
Start Date : 3/26/2014
Page No : 1

Groups Printed- Autos

	Loop 1 - SB Mopac Service Rd Southbound					Westbound					Loop 1 - SB Mopac Service Rd Northbound					Executive Center Dr Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
16:00	0	370	9	0	379	0	0	0	0	0	0	0	0	0	0	0	0	27	0	27	406
16:15	0	375	9	0	384	0	0	0	0	0	0	0	0	0	0	0	0	37	0	37	421
16:30	0	377	5	0	382	0	0	0	0	0	0	0	0	0	0	0	0	29	0	29	411
16:45	0	353	6	0	359	0	0	0	0	0	0	0	0	0	0	0	0	21	0	21	380
Total	0	1475	29	0	1504	0	0	0	0	0	0	0	0	0	0	0	0	114	0	114	1618
17:00	0	420	8	0	428	0	0	0	0	0	0	0	0	0	0	0	0	50	0	50	478
17:15	0	459	9	0	468	0	0	0	0	0	0	0	0	0	0	0	0	51	0	51	519
17:30	0	506	4	0	510	0	0	0	0	0	0	0	0	0	0	0	0	33	0	33	543
17:45	0	406	5	0	411	0	0	0	0	0	0	0	0	0	0	0	0	30	0	30	441
Total	0	1791	26	0	1817	0	0	0	0	0	0	0	0	0	0	0	0	164	0	164	1981
Grand Total	0	3266	55	0	3321	0	0	0	0	0	0	0	0	0	0	0	0	278	0	278	3599
Apprch %	0	98.3	1.7	0		0	0	0	0		0	0	0	0		0	0	100	0		
Total %	0	90.7	1.5	0	92.3	0	0	0	0	0	0	0	0	0	0	0	0	7.7	0	7.7	

	Loop 1 - SB Mopac Service Rd Southbound					Westbound					Loop 1 - SB Mopac Service Rd Northbound					Executive Center Dr Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 17:00																					
17:00	0	420	8	0	428	0	0	0	0	0	0	0	0	0	0	0	0	50	0	50	478
17:15	0	459	**9**	0	468	0	0	0	0	0	0	0	0	0	0	0	0	**51**	0	**51**	519
17:30	0	**506**	4	0	**510**	0	0	0	0	0	0	0	0	0	0	0	0	33	0	33	**543**
17:45	0	406	5	0	411	0	0	0	0	0	0	0	0	0	0	0	0	30	0	30	441
Total Volume	0	1791	26	0	1817	0	0	0	0	0	0	0	0	0	0	0	0	164	0	164	1981
% App. Total	0	98.6	1.4	0		0	0	0	0		0	0	0	0		0	0	100	0		
PHF	.000	.885	.722	.000	.891	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.804	.000	.804	.912

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : Exc-MopacSBpm
Site Code : 00000002
Start Date : 3/26/2014
Page No : 2

	Loop 1 - SB Mopac Service Rd Southbound					Westbound					Loop 1 - SB Mopac Service Rd Northbound					Executive Center Dr Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	17:00					16:00					16:00					17:00					
+0 mins.	0	420	8	0	428	0	0	0	0	0	0	0	0	0	0	0	0	50	0	50	
+15 mins.	0	459	**9**	0	468	0	0	0	0	0	0	0	0	0	0	0	0	**51**	0	**51**	
+30 mins.	0	**506**	4	0	**510**	0	0	0	0	0	0	0	0	0	0	0	0	33	0	33	
+45 mins.	0	406	5	0	411	0	0	0	0	0	0	0	0	0	0	0	0	30	0	30	
Total Volume	0	1791	26	0	1817	0	0	0	0	0	0	0	0	0	0	0	0	164	0	164	
% App. Total	0	98.6	1.4	0		0	0	0	0		0	0	0	0		0	0	100	0		
PHF	.000	.885	.722	.000	.891	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.804	.000	.804	

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : Exc-WoodhollowAM
Site Code : 00000002
Start Date : 3/27/2014
Page No : 1

Groups Printed- Autos

	Wood Hollow Dr Southbound					Executive Center Dr Westbound					Wood Hollow Dr Northbound					Executive Center Dr Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00	6	4	5	0	15	0	2	0	0	2	1	18	2	0	21	0	3	1	0	4	42
07:15	7	15	8	0	30	0	2	1	0	3	4	23	2	0	29	0	3	0	0	3	65
07:30	13	25	14	0	52	1	1	0	0	2	4	29	4	0	37	4	2	2	0	8	99
07:45	13	33	14	0	60	0	1	0	0	1	3	30	8	0	41	3	5	4	0	12	114
Total	39	77	41	0	157	1	6	1	0	8	12	100	16	0	128	7	13	7	0	27	320
08:00	18	39	24	0	81	0	0	4	0	4	6	46	10	0	62	1	1	0	0	2	149
08:15	21	47	31	1	100	0	4	2	0	6	2	41	7	0	50	1	3	1	0	5	161
08:30	25	42	30	0	97	0	1	2	0	3	7	35	8	0	50	4	2	2	0	8	158
08:45	26	43	32	0	101	1	4	9	0	14	9	45	7	0	61	2	7	1	0	10	186
Total	90	171	117	1	379	1	9	17	0	27	24	167	32	0	223	8	13	4	0	25	654
Grand Total	129	248	158	1	536	2	15	18	0	35	36	267	48	0	351	15	26	11	0	52	974
Apprch %	24.1	46.3	29.5	0.2		5.7	42.9	51.4	0		10.3	76.1	13.7	0		28.8	50	21.2	0		
Total %	13.2	25.5	16.2	0.1	55	0.2	1.5	1.8	0	3.6	3.7	27.4	4.9	0	36	1.5	2.7	1.1	0	5.3	

	Wood Hollow Dr Southbound					Executive Center Dr Westbound					Wood Hollow Dr Northbound					Executive Center Dr Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00																					
08:00	18	39	24	0	81	0	0	4	0	4	6	**46**	**10**	0	**62**	1	1	0	0	2	149
08:15	21	**47**	31	**1**	100	0	**4**	2	0	6	2	41	7	0	50	1	3	1	0	5	161
08:30	25	42	30	0	97	0	1	2	0	3	7	35	8	0	50	**4**	2	**2**	0	8	158
08:45	**26**	43	**32**	0	**101**	**1**	4	**9**	0	**14**	**9**	45	7	0	61	2	**7**	1	0	**10**	**186**
Total Volume	90	171	117	1	379	1	9	17	0	27	24	167	32	0	223	8	13	4	0	25	654
% App. Total	23.7	45.1	30.9	0.3		3.7	33.3	63	0		10.8	74.9	14.3	0		32	52	16	0		
PHF	.865	.910	.914	.250	.938	.250	.563	.472	.000	.482	.667	.908	.800	.000	.899	.500	.464	.500	.000	.625	.879

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : Exc-WoodhollowAM
Site Code : 00000002
Start Date : 3/27/2014
Page No : 2

	Wood Hollow Dr Southbound					Executive Center Dr Westbound					Wood Hollow Dr Northbound					Executive Center Dr Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	08:00					08:00					08:00					07:00					
+0 mins.	18	39	24	0	81	0	0	4	0	4	6	**46**	**10**	0	**62**	0	3	1	0	4	
+15 mins.	21	**47**	31	**1**	100	0	**4**	2	0	6	2	41	7	0	50	0	3	0	0	3	
+30 mins.	25	42	30	0	97	0	1	2	0	3	7	35	8	0	50	**4**	2	2	0	8	
+45 mins.	**26**	43	**32**	0	**101**	**1**	4	**9**	0	**14**	**9**	45	7	0	61	3	**5**	**4**	0	**12**	
Total Volume	90	171	117	1	379	1	9	17	0	27	24	167	32	0	223	7	13	7	0	27	
% App. Total	23.7	45.1	30.9	0.3		3.7	33.3	63	0		10.8	74.9	14.3	0		25.9	48.1	25.9	0		
PHF	.865	.910	.914	.250	.938	.250	.563	.472	.000	.482	.667	.908	.800	.000	.899	.438	.650	.438	.000	.563	

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : Exc-WoodhollowPM
Site Code : 00000002
Start Date : 3/27/2014
Page No : 1

Groups Printed- Autos

	Wood Hollow Dr Southbound					Executive Center Dr Westbound					Wood Hollow Dr Northbound					Executive Center Dr Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
16:00	4	24	12	0	40	0	5	8	0	13	6	55	2	0	63	7	6	2	0	15	131
16:15	3	36	2	0	41	2	5	15	0	22	2	49	0	0	51	12	13	1	0	26	140
16:30	3	26	8	0	37	3	0	14	0	17	4	34	4	0	42	7	9	1	0	17	113
16:45	6	25	4	0	35	2	3	11	0	16	3	40	3	0	46	17	11	0	0	28	125
Total	16	111	26	0	153	7	13	48	0	68	15	178	9	0	202	43	39	4	0	86	509
17:00	2	22	7	0	31	4	5	17	0	26	0	58	0	0	58	17	10	5	0	32	147
17:15	5	30	3	0	38	12	2	40	0	54	1	77	1	0	79	12	23	11	0	46	217
17:30	4	31	2	0	37	0	2	17	0	19	5	57	1	0	63	12	6	2	0	20	139
17:45	2	27	3	0	32	2	3	23	0	28	1	57	4	0	62	14	14	5	0	33	155
Total	13	110	15	0	138	18	12	97	0	127	7	249	6	0	262	55	53	23	0	131	658
Grand Total	29	221	41	0	291	25	25	145	0	195	22	427	15	0	464	98	92	27	0	217	1167
Apprch %	10	75.9	14.1	0		12.8	12.8	74.4	0		4.7	92	3.2	0		45.2	42.4	12.4	0		
Total %	2.5	18.9	3.5	0	24.9	2.1	2.1	12.4	0	16.7	1.9	36.6	1.3	0	39.8	8.4	7.9	2.3	0	18.6	

	Wood Hollow Dr Southbound					Executive Center Dr Westbound					Wood Hollow Dr Northbound					Executive Center Dr Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 17:00																					
17:00	2	22	**7**	0	31	4	**5**	17	0	26	0	58	0	0	58	**17**	10	5	0	32	147
17:15	**5**	30	3	0	**38**	**12**	2	**40**	0	**54**	1	**77**	1	0	**79**	12	**23**	**11**	0	**46**	**217**
17:30	4	**31**	2	0	37	0	2	17	0	19	**5**	57	1	0	63	12	6	2	0	20	139
17:45	2	27	3	0	32	2	3	23	0	28	1	57	**4**	0	62	14	14	5	0	33	155
Total Volume	13	110	15	0	138	18	12	97	0	127	7	249	6	0	262	55	53	23	0	131	658
% App. Total	9.4	79.7	10.9	0		14.2	9.4	76.4	0		2.7	95	2.3	0		42	40.5	17.6	0		
PHF	.650	.887	.536	.000	.908	.375	.600	.606	.000	.588	.350	.808	.375	.000	.829	.809	.576	.523	.000	.712	.758

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : Exc-WoodhollowPM
Site Code : 00000002
Start Date : 3/27/2014
Page No : 2

	Wood Hollow Dr Southbound					Executive Center Dr Westbound					Wood Hollow Dr Northbound					Executive Center Dr Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	16:00					17:00					17:00					17:00					
+0 mins.	4	24	**12**	0	40	4	**5**	17	0	26	0	58	0	0	58	**17**	10	5	0	32	
+15 mins.	3	**36**	2	0	**41**	**12**	2	**40**	0	**54**	1	**77**	1	0	**79**	12	**23**	**11**	0	**46**	
+30 mins.	3	26	8	0	37	0	2	17	0	19	**5**	57	1	0	63	12	6	2	0	20	
+45 mins.	**6**	25	4	0	35	2	3	23	0	28	1	57	**4**	0	62	14	14	5	0	33	
Total Volume	16	111	26	0	153	18	12	97	0	127	7	249	6	0	262	55	53	23	0	131	
% App. Total	10.5	72.5	17	0		14.2	9.4	76.4	0		2.7	95	2.3	0		42	40.5	17.6	0		
PHF	.667	.771	.542	.000	.933	.375	.600	.606	.000	.588	.350	.808	.375	.000	.829	.809	.576	.523	.000	.712	

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : Exc-HartAM
Site Code : 00000021
Start Date : 3/27/2014
Page No : 1

Groups Printed- Autos

	Hart Ln Southbound					Executive Center Dr Westbound					Hart Ln Northbound					Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00	4	12	0	0	16	2	0	2	0	4	0	9	1	0	10	0	0	0	0	0	30
07:15	6	16	0	0	22	2	0	3	0	5	0	14	3	0	17	0	0	0	0	0	44
07:30	6	20	0	0	26	2	0	2	0	4	0	26	1	0	27	0	0	0	0	0	57
07:45	9	67	0	0	76	2	0	2	0	4	0	27	2	0	29	0	0	0	0	0	109
Total	25	115	0	0	140	8	0	9	0	17	0	76	7	0	83	0	0	0	0	0	240
08:00	21	90	0	0	111	2	0	2	0	4	0	47	5	0	52	0	0	0	0	0	167
08:15	19	69	0	0	88	2	0	1	0	3	0	63	4	0	67	0	0	0	0	0	158
08:30	13	56	0	0	69	0	0	7	0	7	0	41	1	0	42	0	1	0	0	1	119
08:45	17	44	0	0	61	2	0	3	0	5	0	47	6	0	53	0	0	0	0	0	119
Total	70	259	0	0	329	6	0	13	0	19	0	198	16	0	214	0	1	0	0	1	563
Grand Total	95	374	0	0	469	14	0	22	0	36	0	274	23	0	297	0	1	0	0	1	803
Apprch %	20.3	79.7	0	0		38.9	0	61.1	0		0	92.3	7.7	0		0	100	0	0		
Total %	11.8	46.6	0	0	58.4	1.7	0	2.7	0	4.5	0	34.1	2.9	0	37	0	0.1	0	0	0.1	

	Hart Ln Southbound					Executive Center Dr Westbound					Hart Ln Northbound					Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00																					
08:00	**21**	**90**	0	0	**111**	**2**	0	2	0	4	0	47	5	0	52	0	0	0	0	0	**167**
08:15	19	69	0	0	88	2	0	1	0	3	0	**63**	4	0	**67**	0	0	0	0	0	158
08:30	13	56	0	0	69	0	0	**7**	0	**7**	0	41	1	0	42	0	**1**	0	0	**1**	119
08:45	17	44	0	0	61	2	0	3	0	5	0	47	**6**	0	53	0	0	0	0	0	119
Total Volume	70	259	0	0	329	6	0	13	0	19	0	198	16	0	214	0	1	0	0	1	563
% App. Total	21.3	78.7	0	0		31.6	0	68.4	0		0	92.5	7.5	0		0	100	0	0		
PHF	.833	.719	.000	.000	.741	.750	.000	.464	.000	.679	.000	.786	.667	.000	.799	.000	.250	.000	.000	.250	.843

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : Exc-HartAM
Site Code : 00000021
Start Date : 3/27/2014
Page No : 2

	Hart Ln Southbound					Executive Center Dr Westbound					Hart Ln Northbound					Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	07:45					08:00					08:00					07:45					
+0 mins.	9	67	0	0	76	**2**	0	2	0	4	0	47	5	0	52	0	0	0	0	0	
+15 mins.	**21**	**90**	0	0	**111**	2	0	1	0	3	0	**63**	4	0	**67**	0	0	0	0	0	
+30 mins.	19	69	0	0	88	0	0	**7**	0	**7**	0	41	1	0	42	0	0	0	0	0	
+45 mins.	13	56	0	0	69	2	0	3	0	5	0	47	**6**	0	53	0	**1**	0	0	**1**	
Total Volume	62	282	0	0	344	6	0	13	0	19	0	198	16	0	214	0	1	0	0	1	
% App. Total	18	82	0	0		31.6	0	68.4	0		0	92.5	7.5	0		0	100	0	0		
PHF	.738	.783	.000	.000	.775	.750	.000	.464	.000	.679	.000	.786	.667	.000	.799	.000	.250	.000	.000	.250	

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : Exc-HartPM
Site Code : 00000021
Start Date : 3/27/2014
Page No : 1

Groups Printed- Autos

	Hart Ln Southbound					Executive Center Westbound					Hart Ln Northbound					Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
16:00	5	38	0	0	43	3	0	12	0	15	0	46	2	0	48	0	0	0	0	0	106
16:15	1	41	0	0	42	2	0	17	0	19	0	44	4	0	48	0	0	0	0	0	109
16:30	1	58	0	0	59	2	0	15	0	17	0	49	0	0	49	0	0	0	0	0	125
16:45	5	44	0	0	49	3	0	10	0	13	0	46	1	0	47	0	0	0	0	0	109
Total	12	181	0	0	193	10	0	54	0	64	0	185	7	0	192	0	0	0	0	0	449
17:00	5	37	0	0	42	6	0	19	0	25	0	51	3	0	54	0	0	0	0	0	121
17:15	4	47	0	0	51	7	0	36	0	43	0	83	4	0	87	0	0	0	0	0	181
17:30	0	53	0	0	53	2	0	18	0	20	0	68	0	0	68	0	0	0	0	0	141
17:45	5	29	0	0	34	1	0	15	0	16	0	48	0	0	48	0	1	0	0	1	99
Total	14	166	0	0	180	16	0	88	0	104	0	250	7	0	257	0	1	0	0	1	542
Grand Total	26	347	0	0	373	26	0	142	0	168	0	435	14	0	449	0	1	0	0	1	991
Apprch %	7	93	0	0		15.5	0	84.5	0		0	96.9	3.1	0		0	100	0	0		
Total %	2.6	35	0	0	37.6	2.6	0	14.3	0	17	0	43.9	1.4	0	45.3	0	0.1	0	0	0.1	

	Hart Ln Southbound					Executive Center Westbound					Hart Ln Northbound					Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:45																					
16:45	**5**	44	0	0	49	3	0	10	0	13	0	46	1	0	47	0	0	0	0	0	109
17:00	5	37	0	0	42	6	0	19	0	25	0	51	3	0	54	0	0	0	0	0	121
17:15	4	47	0	0	51	**7**	0	**36**	0	**43**	0	**83**	**4**	0	**87**	0	0	0	0	0	**181**
17:30	0	**53**	0	0	**53**	2	0	18	0	20	0	68	0	0	68	0	0	0	0	0	141
Total Volume	14	181	0	0	195	18	0	83	0	101	0	248	8	0	256	0	0	0	0	0	552
% App. Total	7.2	92.8	0	0		17.8	0	82.2	0		0	96.9	3.1	0		0	0	0	0		
PHF	.700	.854	.000	.000	.920	.643	.000	.576	.000	.587	.000	.747	.500	.000	.736	.000	.000	.000	.000	.000	.762

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : Exc-HartPM
Site Code : 00000021
Start Date : 3/27/2014
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	Hart Ln Southbound					Executive Center Westbound					Hart Ln Northbound					Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	16:30					17:00					17:00					17:00					
+0 mins.	1	**58**	0	0	**59**	6	0	19	0	25	0	51	3	0	54	0	0	0	0	0	
+15 mins.	**5**	44	0	0	49	**7**	0	**36**	0	**43**	0	**83**	**4**	0	**87**	0	0	0	0	0	
+30 mins.	5	37	0	0	42	2	0	18	0	20	0	68	0	0	68	0	0	0	0	0	
+45 mins.	4	47	0	0	51	1	0	15	0	16	0	48	0	0	48	0	**1**	0	0	**1**	
Total Volume	15	186	0	0	201	16	0	88	0	104	0	250	7	0	257	0	1	0	0	1	
% App. Total	7.5	92.5	0	0		15.4	0	84.6	0		0	97.3	2.7	0		0	100	0	0		
PHF	.750	.802	.000	.000	.852	.571	.000	.611	.000	.605	.000	.753	.438	.000	.739	.000	.250	.000	.000	.250	

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : Spice-HartAM
Site Code : 00000032
Start Date : 3/27/2014
Page No : 1

Groups Printed- Autos

	Southbound					Spicewood Springs Westbound					Hart Ln Northbound					Spicewood Springs Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00	0	0	0	0	0	7	73	0	0	80	2	0	6	0	8	0	97	9	0	106	194
07:15	0	0	0	0	0	8	93	0	0	101	7	0	14	0	21	0	165	17	0	182	304
07:30	0	0	0	0	0	19	118	0	0	137	12	0	21	0	33	0	226	23	0	249	419
07:45	0	0	0	0	0	33	107	0	0	140	15	0	23	0	38	0	239	69	0	308	486
Total	0	0	0	0	0	67	391	0	0	458	36	0	64	0	100	0	727	118	0	845	1403
08:00	0	0	0	0	0	33	164	0	0	197	20	0	32	0	52	0	290	79	0	369	618
08:15	0	0	0	0	0	41	178	0	0	219	22	0	38	0	60	0	248	51	0	299	578
08:30	0	0	0	0	0	32	223	0	0	255	26	0	35	0	61	0	242	39	0	281	597
08:45	0	0	0	0	0	35	219	0	0	254	20	0	27	0	47	0	254	41	0	295	596
Total	0	0	0	0	0	141	784	0	0	925	88	0	132	0	220	0	1034	210	0	1244	2389
Grand Total	0	0	0	0	0	208	1175	0	0	1383	124	0	196	0	320	0	1761	328	0	2089	3792
Apprch %	0	0	0	0		15	85	0	0		38.8	0	61.2	0		0	84.3	15.7	0		
Total %	0	0	0	0	0	5.5	31	0	0	36.5	3.3	0	5.2	0	8.4	0	46.4	8.6	0	55.1	

	Southbound					Spicewood Springs Westbound					Hart Ln Northbound					Spicewood Springs Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00																					
08:00	0	0	0	0	0	33	164	0	0	197	20	0	32	0	52	0	**290**	**79**	0	**369**	**618**
08:15	0	0	0	0	0	**41**	178	0	0	219	22	0	**38**	0	60	0	248	51	0	299	578
08:30	0	0	0	0	0	32	**223**	0	0	**255**	**26**	0	35	0	**61**	0	242	39	0	281	597
08:45	0	0	0	0	0	35	219	0	0	254	20	0	27	0	47	0	254	41	0	295	596
Total Volume	0	0	0	0	0	141	784	0	0	925	88	0	132	0	220	0	1034	210	0	1244	2389
% App. Total	0	0	0	0		15.2	84.8	0	0		40	0	60	0		0	83.1	16.9	0		
PHF	.000	.000	.000	.000	.000	.860	.879	.000	.000	.907	.846	.000	.868	.000	.902	.000	.891	.665	.000	.843	.966

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : Spice-HartAM
Site Code : 00000032
Start Date : 3/27/2014
Page No : 2

	Southbound					Spicewood Springs Westbound					Hart Ln Northbound					Spicewood Springs Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	07:00					08:00					08:00					07:45					
+0 mins.	0	0	0	0	0	33	164	0	0	197	20	0	32	0	52	0	239	69	0	308	
+15 mins.	0	0	0	0	0	**41**	178	0	0	219	22	0	**38**	0	60	0	**290**	**79**	0	**369**	
+30 mins.	0	0	0	0	0	32	**223**	0	0	**255**	**26**	0	35	0	**61**	0	248	51	0	299	
+45 mins.	0	0	0	0	0	35	219	0	0	254	20	0	27	0	47	0	242	39	0	281	
Total Volume	0	0	0	0	0	141	784	0	0	925	88	0	132	0	220	0	1019	238	0	1257	
% App. Total	0	0	0	0		15.2	84.8	0	0		40	0	60	0		0	81.1	18.9	0		
PHF	.000	.000	.000	.000	.000	.860	.879	.000	.000	.907	.846	.000	.868	.000	.902	.000	.878	.753	.000	.852	

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : Spice-HartPM
Site Code : 00000032
Start Date : 3/27/2014
Page No : 1

Groups Printed- Autos

	Southbound					Spicewood Springs Westbound					Hart Ln Northbound					Spicewood Springs Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
16:00	0	0	0	0	0	28	212	0	0	240	30	0	23	0	53	0	177	20	0	197	490
16:15	0	0	0	0	0	24	196	0	0	220	30	0	42	0	72	0	154	27	0	181	473
16:30	0	0	0	0	0	28	208	0	0	236	32	0	33	0	65	0	187	33	0	220	521
16:45	0	0	0	0	0	21	235	0	0	256	33	0	33	0	66	0	170	36	0	206	528
Total	0	0	0	0	0	101	851	0	0	952	125	0	131	0	256	0	688	116	0	804	2012
17:00	0	0	0	0	0	22	242	0	0	264	42	0	45	0	87	0	177	26	0	203	554
17:15	0	0	0	0	0	31	254	0	0	285	59	0	71	0	130	0	211	29	0	240	655
17:30	0	0	0	0	0	31	257	0	0	288	46	0	43	0	89	0	166	28	0	194	571
17:45	0	0	0	0	0	25	266	0	0	291	37	0	37	0	74	0	192	21	0	213	578
Total	0	0	0	0	0	109	1019	0	0	1128	184	0	196	0	380	0	746	104	0	850	2358
Grand Total	0	0	0	0	0	210	1870	0	0	2080	309	0	327	0	636	0	1434	220	0	1654	4370
Apprch %	0	0	0	0		10.1	89.9	0	0		48.6	0	51.4	0		0	86.7	13.3	0		
Total %	0	0	0	0	0	4.8	42.8	0	0	47.6	7.1	0	7.5	0	14.6	0	32.8	5	0	37.8	

	Southbound					Spicewood Springs Westbound					Hart Ln Northbound					Spicewood Springs Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 17:00																					
17:00	0	0	0	0	0	22	242	0	0	264	42	0	45	0	87	0	177	26	0	203	554
17:15	0	0	0	0	0	**31**	254	0	0	285	**59**	0	**71**	0	**130**	0	**211**	**29**	0	**240**	**655**
17:30	0	0	0	0	0	31	257	0	0	288	46	0	43	0	89	0	166	28	0	194	571
17:45	0	0	0	0	0	25	**266**	0	0	**291**	37	0	37	0	74	0	192	21	0	213	578
Total Volume	0	0	0	0	0	109	1019	0	0	1128	184	0	196	0	380	0	746	104	0	850	2358
% App. Total	0	0	0	0		9.7	90.3	0	0		48.4	0	51.6	0		0	87.8	12.2	0		
PHF	.000	.000	.000	.000	.000	.879	.958	.000	.000	.969	.780	.000	.690	.000	.731	.000	.884	.897	.000	.885	.900

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : Spice-HartPM
Site Code : 00000032
Start Date : 3/27/2014
Page No : 2

	Southbound					Spicewood Springs Westbound					Hart Ln Northbound					Spicewood Springs Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	16:00					17:00					17:00					16:30					
+0 mins.	0	0	0	0	0	22	242	0	0	264	42	0	45	0	87	0	187	33	0	220	
+15 mins.	0	0	0	0	0	**31**	254	0	0	285	**59**	0	**71**	0	**130**	0	170	**36**	0	206	
+30 mins.	0	0	0	0	0	31	257	0	0	288	46	0	43	0	89	0	177	26	0	203	
+45 mins.	0	0	0	0	0	25	**266**	0	0	**291**	37	0	37	0	74	0	**211**	29	0	**240**	
Total Volume	0	0	0	0	0	109	1019	0	0	1128	184	0	196	0	380	0	745	124	0	869	
% App. Total	0	0	0	0		9.7	90.3	0	0		48.4	0	51.6	0		0	85.7	14.3	0		
PHF	.000	.000	.000	.000	.000	.879	.958	.000	.000	.969	.780	.000	.690	.000	.731	.000	.883	.861	.000	.905	

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : KH-FarWestBlvdMesaDr-AM-Site 5
Site Code : 00000013
Start Date : 3/9/2016
Page No : 1

Groups Printed- Autos

	Mesa Dr Southbound					Far West Blvd Westbound					Mesa Dr Northbound					Far West Blvd Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
16:00	23	37	8	0	68	24	42	41	0	107	11	66	27	0	104	8	16	8	0	32	311
16:15	22	54	11	0	87	32	35	46	0	113	2	82	17	0	101	13	33	2	0	48	349
16:30	21	66	13	0	100	16	36	40	0	92	14	87	19	0	120	5	40	3	0	48	360
16:45	24	53	14	0	91	26	62	37	0	125	7	81	24	0	112	11	26	4	0	41	369
Total	90	210	46	0	346	98	175	164	0	437	34	316	87	0	437	37	115	17	0	169	1389
17:00	14	56	18	0	88	29	46	38	0	113	7	95	30	0	132	11	28	2	0	41	374
17:15	31	65	10	0	106	22	42	34	0	98	9	91	35	0	135	13	40	3	0	56	395
17:30	19	45	16	0	80	24	48	44	0	116	11	100	20	0	131	20	24	4	0	48	375
17:45	35	44	7	0	86	19	46	32	0	97	9	107	12	0	128	13	37	6	0	56	367
Total	99	210	51	0	360	94	182	148	0	424	36	393	97	0	526	57	129	15	0	201	1511
Grand Total	189	420	97	0	706	192	357	312	0	861	70	709	184	0	963	94	244	32	0	370	2900
Apprch %	26.8	59.5	13.7	0		22.3	41.5	36.2	0		7.3	73.6	19.1	0		25.4	65.9	8.6	0		
Total %	6.5	14.5	3.3	0	24.3	6.6	12.3	10.8	0	29.7	2.4	24.4	6.3	0	33.2	3.2	8.4	1.1	0	12.8	

	Mesa Dr Southbound					Far West Blvd Westbound					Mesa Dr Northbound					Far West Blvd Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:45																					
16:45	24	53	14	0	91	26	**62**	37	0	**125**	7	81	24	0	112	11	26	**4**	0	41	369
17:00	14	56	**18**	0	88	**29**	46	38	0	113	7	95	30	0	132	11	28	2	0	41	374
17:15	**31**	**65**	10	0	**106**	22	42	34	0	98	9	91	**35**	0	**135**	13	**40**	3	0	**56**	**395**
17:30	19	45	16	0	80	24	48	**44**	0	116	**11**	**100**	20	0	131	**20**	24	4	0	48	375
Total Volume	88	219	58	0	365	101	198	153	0	452	34	367	109	0	510	55	118	13	0	186	1513
% App. Total	24.1	60	15.9	0		22.3	43.8	33.8	0		6.7	72	21.4	0		29.6	63.4	7	0		
PHF	.710	.842	.806	.000	.861	.871	.798	.869	.000	.904	.773	.918	.779	.000	.944	.688	.738	.813	.000	.830	.958

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : KH-FarWestBlvdMesaDr-AM-Site 5
Site Code : 00000013
Start Date : 3/9/2016
Page No : 2

	Mesa Dr Southbound					Far West Blvd Westbound					Mesa Dr Northbound					Far West Blvd Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	16:30					16:45					17:00					17:00					
+0 mins.	21	**66**	13	0	100	26	**62**	37	0	**125**	7	95	30	0	132	11	28	2	0	41	
+15 mins.	24	53	14	0	91	**29**	46	38	0	113	9	91	**35**	0	**135**	13	**40**	3	0	**56**	
+30 mins.	14	56	**18**	0	88	22	42	34	0	98	**11**	100	20	0	131	**20**	24	4	0	48	
+45 mins.	**31**	65	10	0	**106**	24	48	**44**	0	116	9	**107**	12	0	128	13	37	**6**	0	56	
Total Volume	90	240	55	0	385	101	198	153	0	452	36	393	97	0	526	57	129	15	0	201	
% App. Total	23.4	62.3	14.3	0		22.3	43.8	33.8	0		6.8	74.7	18.4	0		28.4	64.2	7.5	0		
PHF	.726	.909	.764	.000	.908	.871	.798	.869	.000	.904	.818	.918	.693	.000	.974	.713	.806	.625	.000	.897	

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : KH-FarWestBlvdMesaDr-PM-Site 5
Site Code : 00000013
Start Date : 3/9/2016
Page No : 1

Groups Printed- Autos

	Mesa Dr Southbound					Far West Blvd Westbound					Mesa Dr Northbound					Far West Blvd Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00	19	24	2	0	45	10	11	9	0	30	2	11	20	0	33	4	31	5	0	40	148
07:15	26	52	4	0	82	12	22	6	0	40	5	21	17	0	43	2	51	11	0	64	229
07:30	13	89	5	0	107	24	22	3	0	49	4	32	19	0	55	7	58	67	0	132	343
07:45	13	98	14	0	125	25	49	16	0	90	7	53	10	0	70	10	67	38	0	115	400
Total	71	263	25	0	359	71	104	34	0	209	18	117	66	0	201	23	207	121	0	351	1120
08:00	20	100	5	0	125	19	32	11	0	62	13	48	15	0	76	8	42	29	0	79	342
08:15	20	75	10	0	105	21	27	12	0	60	5	49	24	0	78	6	45	4	0	55	298
08:30	15	54	11	0	80	16	35	18	0	69	4	49	20	0	73	13	36	7	0	56	278
08:45	28	75	9	0	112	16	31	15	0	62	3	46	19	0	68	13	39	7	0	59	301
Total	83	304	35	0	422	72	125	56	0	253	25	192	78	0	295	40	162	47	0	249	1219
Grand Total	154	567	60	0	781	143	229	90	0	462	43	309	144	0	496	63	369	168	0	600	2339
Apprch %	19.7	72.6	7.7	0		31	49.6	19.5	0		8.7	62.3	29	0		10.5	61.5	28	0		
Total %	6.6	24.2	2.6	0	33.4	6.1	9.8	3.8	0	19.8	1.8	13.2	6.2	0	21.2	2.7	15.8	7.2	0	25.7	

	Mesa Dr Southbound					Far West Blvd Westbound					Mesa Dr Northbound					Far West Blvd Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30																					
07:30	13	89	5	0	107	24	22	3	0	49	4	32	19	0	55	7	58	**67**	0	**132**	343
07:45	13	98	**14**	0	**125**	**25**	**49**	**16**	0	**90**	7	**53**	10	0	70	**10**	**67**	38	0	115	**400**
08:00	**20**	**100**	5	0	125	19	32	11	0	62	**13**	48	15	0	76	8	42	29	0	79	342
08:15	20	75	10	0	105	21	27	12	0	60	5	49	**24**	0	**78**	6	45	4	0	55	298
Total Volume	66	362	34	0	462	89	130	42	0	261	29	182	68	0	279	31	212	138	0	381	1383
% App. Total	14.3	78.4	7.4	0		34.1	49.8	16.1	0		10.4	65.2	24.4	0		8.1	55.6	36.2	0		
PHF	.825	.905	.607	.000	.924	.890	.663	.656	.000	.725	.558	.858	.708	.000	.894	.775	.791	.515	.000	.722	.864

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : KH-FarWestBlvdMesaDr-PM-Site 5
Site Code : 00000013
Start Date : 3/9/2016
Page No : 2

	Mesa Dr Southbound					Far West Blvd Westbound					Mesa Dr Northbound					Far West Blvd Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	07:30					07:45					07:45					07:15					
+0 mins.	13	89	5	0	107	**25**	**49**	16	0	**90**	7	**53**	10	0	70	2	51	11	0	64	
+15 mins.	13	98	**14**	0	**125**	19	32	11	0	62	**13**	48	15	0	76	7	58	**67**	0	**132**	
+30 mins.	**20**	**100**	5	0	125	21	27	12	0	60	5	49	**24**	0	**78**	**10**	**67**	38	0	115	
+45 mins.	20	75	10	0	105	16	35	**18**	0	69	4	49	20	0	73	8	42	29	0	79	
Total Volume	66	362	34	0	462	81	143	57	0	281	29	199	69	0	297	27	218	145	0	390	
% App. Total	14.3	78.4	7.4	0		28.8	50.9	20.3	0		9.8	67	23.2	0		6.9	55.9	37.2	0		
PHF	.825	.905	.607	.000	.924	.810	.730	.792	.000	.781	.558	.939	.719	.000	.952	.675	.813	.541	.000	.739	

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : KH-GreystoneDrChimneyCorners-AM-Site 4
Site Code : 00000041
Start Date : 3/9/2016
Page No : 1

Groups Printed- Autos

	Chimney corners Southbound					Greystone Dr Westbound					Chimney corners Northbound					Greystone Dr Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00	4	3	1	0	8	5	6	0	0	11	2	1	3	0	6	0	18	4	0	22	47
07:15	8	2	1	0	11	14	7	0	0	21	0	2	5	0	7	0	24	3	0	27	66
07:30	10	15	2	0	27	30	17	2	0	49	5	5	20	0	30	1	53	11	0	65	171
07:45	12	19	2	0	33	26	29	1	0	56	10	15	47	0	72	1	63	24	0	88	249
Total	34	39	6	0	79	75	59	3	0	137	17	23	75	0	115	2	158	42	0	202	533
08:00	14	7	1	0	22	33	29	5	0	67	10	13	29	0	52	1	43	1	0	45	186
08:15	5	5	2	0	12	11	12	1	0	24	6	6	8	0	20	0	19	9	0	28	84
08:30	10	3	0	0	13	6	23	3	0	32	6	2	12	0	20	0	28	5	0	33	98
08:45	5	1	1	0	7	6	23	3	0	32	6	2	4	0	12	2	35	4	0	41	92
Total	34	16	4	0	54	56	87	12	0	155	28	23	53	0	104	3	125	19	0	147	460
Grand Total	68	55	10	0	133	131	146	15	0	292	45	46	128	0	219	5	283	61	0	349	993
Apprch %	51.1	41.4	7.5	0		44.9	50	5.1	0		20.5	21	58.4	0		1.4	81.1	17.5	0		
Total %	6.8	5.5	1	0	13.4	13.2	14.7	1.5	0	29.4	4.5	4.6	12.9	0	22.1	0.5	28.5	6.1	0	35.1	

	Chimney corners Southbound					Greystone Dr Westbound					Chimney corners Northbound					Greystone Dr Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30																					
07:30	10	15	**2**	0	27	30	17	2	0	49	5	5	20	0	30	**1**	53	11	0	65	171
07:45	12	**19**	2	0	**33**	26	**29**	1	0	56	**10**	**15**	**47**	0	**72**	1	**63**	**24**	0	**88**	**249**
08:00	**14**	7	1	0	22	**33**	29	**5**	0	**67**	10	13	29	0	52	1	43	1	0	45	186
08:15	5	5	2	0	12	11	12	1	0	24	6	6	8	0	20	0	19	9	0	28	84
Total Volume	41	46	7	0	94	100	87	9	0	196	31	39	104	0	174	3	178	45	0	226	690
% App. Total	43.6	48.9	7.4	0		51	44.4	4.6	0		17.8	22.4	59.8	0		1.3	78.8	19.9	0		
PHF	.732	.605	.875	.000	.712	.758	.750	.450	.000	.731	.775	.650	.553	.000	.604	.750	.706	.469	.000	.642	.693

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : KH-GreystoneDrChimneyCorners-AM-Site 4
Site Code : 00000041
Start Date : 3/9/2016
Page No : 2

	Chimney corners Southbound					Greystone Dr Westbound					Chimney corners Northbound					Greystone Dr Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	07:30					07:30					07:30					07:30					
+0 mins.	10	15	**2**	0	27	30	17	2	0	49	5	5	20	0	30	**1**	53	11	0	65	
+15 mins.	12	**19**	2	0	**33**	26	**29**	1	0	56	**10**	**15**	**47**	0	**72**	1	**63**	**24**	0	**88**	
+30 mins.	**14**	7	1	0	22	**33**	29	**5**	0	**67**	10	13	29	0	52	1	43	1	0	45	
+45 mins.	5	5	2	0	12	11	12	1	0	24	6	6	8	0	20	0	19	9	0	28	
Total Volume	41	46	7	0	94	100	87	9	0	196	31	39	104	0	174	3	178	45	0	226	
% App. Total	43.6	48.9	7.4	0		51	44.4	4.6	0		17.8	22.4	59.8	0		1.3	78.8	19.9	0		
PHF	.732	.605	.875	.000	.712	.758	.750	.450	.000	.731	.775	.650	.553	.000	.604	.750	.706	.469	.000	.642	

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : KH-GreystoneDrChimneyCorners-PM-Site 4
Site Code : 00000041
Start Date : 3/9/2016
Page No : 1

Groups Printed- Autos

	Chimney Corners Southbound					Greystone Dr Westbound					Chimney Corners Northbound					Greystone Dr Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
16:00	8	1	0	0	9	18	28	6	0	52	8	7	4	0	19	0	26	3	0	29	109
16:15	1	3	0	0	4	6	49	3	0	58	4	7	11	0	22	0	22	5	0	27	111
16:30	4	0	1	0	5	12	41	8	0	61	10	8	7	0	25	1	18	2	0	21	112
16:45	4	5	2	0	11	14	63	6	0	83	9	7	5	0	21	1	21	4	0	26	141
Total	17	9	3	0	29	50	181	23	0	254	31	29	27	0	87	2	87	14	0	103	473
17:00	3	2	0	0	5	12	41	2	0	55	8	4	7	0	19	1	19	1	0	21	100
17:15	9	5	0	0	14	12	46	5	0	63	9	7	8	0	24	0	25	2	0	27	128
17:30	4	6	2	0	12	16	46	4	0	66	9	7	11	0	27	3	27	4	0	34	139
17:45	5	3	0	0	8	12	46	7	0	65	7	7	8	0	22	2	33	0	0	35	130
Total	21	16	2	0	39	52	179	18	0	249	33	25	34	0	92	6	104	7	0	117	497
Grand Total	38	25	5	0	68	102	360	41	0	503	64	54	61	0	179	8	191	21	0	220	970
Apprch %	55.9	36.8	7.4	0		20.3	71.6	8.2	0		35.8	30.2	34.1	0		3.6	86.8	9.5	0		
Total %	3.9	2.6	0.5	0	7	10.5	37.1	4.2	0	51.9	6.6	5.6	6.3	0	18.5	0.8	19.7	2.2	0	22.7	

	Chimney Corners Southbound					Greystone Dr Westbound					Chimney Corners Northbound					Greystone Dr Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:45																					
16:45	4	5	**2**	0	11	14	**63**	**6**	0	**83**	**9**	**7**	5	0	21	1	21	**4**	0	26	**141**
17:00	3	2	0	0	5	12	41	2	0	55	8	4	7	0	19	1	19	1	0	21	100
17:15	**9**	5	0	0	**14**	12	46	5	0	63	9	7	8	0	24	0	25	2	0	27	128
17:30	4	**6**	2	0	12	**16**	46	4	0	66	9	7	**11**	0	**27**	**3**	**27**	4	0	**34**	139
Total Volume	20	18	4	0	42	54	196	17	0	267	35	25	31	0	91	5	92	11	0	108	508
% App. Total	47.6	42.9	9.5	0		20.2	73.4	6.4	0		38.5	27.5	34.1	0		4.6	85.2	10.2	0		
PHF	.556	.750	.500	.000	.750	.844	.778	.708	.000	.804	.972	.893	.705	.000	.843	.417	.852	.688	.000	.794	.901

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : KH-GreystoneDrChimneyCorners-PM-Site 4
Site Code : 00000041
Start Date : 3/9/2016
Page No : 2

	Chimney Corners Southbound					Greystone Dr Westbound					Chimney Corners Northbound					Greystone Dr Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	16:45					16:45					17:00					17:00					
+0 mins.	4	5	**2**	0	11	14	**63**	**6**	0	**83**	8	4	7	0	19	1	19	1	0	21	
+15 mins.	3	2	0	0	5	12	41	2	0	55	**9**	**7**	8	0	24	0	25	2	0	27	
+30 mins.	**9**	5	0	0	**14**	12	46	5	0	63	9	7	**11**	0	**27**	**3**	27	**4**	0	34	
+45 mins.	4	**6**	2	0	12	**16**	46	4	0	66	7	7	8	0	22	2	**33**	0	0	**35**	
Total Volume	20	18	4	0	42	54	196	17	0	267	33	25	34	0	92	6	104	7	0	117	
% App. Total	47.6	42.9	9.5	0		20.2	73.4	6.4	0		35.9	27.2	37	0		5.1	88.9	6	0		
PHF	.556	.750	.500	.000	.750	.844	.778	.708	.000	.804	.917	.893	.773	.000	.852	.500	.788	.438	.000	.836	

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : 31-0903-AM
Site Code : 00000031
Start Date : 3/9/2016
Page No : 1

Groups Printed- Autos

	Mesa Dr Southbound					Greystone Dr Westbound					Mesa Dr Northbound					Greystone Dr Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00	2	31	9	0	42	4	1	5	0	10	0	20	4	0	24	11	12	5	0	28	104
07:15	11	62	4	0	77	6	5	3	0	14	2	29	0	0	31	17	18	7	0	42	164
07:30	17	105	7	0	129	9	7	7	0	23	2	46	10	0	58	21	35	9	0	65	275
07:45	35	110	17	0	162	8	20	14	0	42	7	94	9	0	110	23	42	5	0	70	384
Total	65	308	37	0	410	27	33	29	0	89	11	189	23	0	223	72	107	26	0	205	927
08:00	15	121	14	0	150	9	9	26	0	44	9	106	8	0	123	25	18	11	0	54	371
08:15	13	103	13	0	129	4	9	15	0	28	5	76	7	0	88	26	13	13	0	52	297
08:30	13	84	20	0	117	8	9	22	0	39	6	104	6	0	116	46	19	7	0	72	344
08:45	13	97	26	0	136	10	16	17	0	43	4	113	5	0	122	36	19	8	0	63	364
Total	54	405	73	0	532	31	43	80	0	154	24	399	26	0	449	133	69	39	0	241	1376
Grand Total	119	713	110	0	942	58	76	109	0	243	35	588	49	0	672	205	176	65	0	446	2303
Apprch %	12.6	75.7	11.7	0		23.9	31.3	44.9	0		5.2	87.5	7.3	0		46	39.5	14.6	0		
Total %	5.2	31	4.8	0	40.9	2.5	3.3	4.7	0	10.6	1.5	25.5	2.1	0	29.2	8.9	7.6	2.8	0	19.4	

	Mesa Dr Southbound					Greystone Dr Westbound					Mesa Dr Northbound					Greystone Dr Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45																					
07:45	**35**	110	17	0	**162**	8	**20**	14	0	42	7	94	**9**	0	110	23	**42**	5	0	70	**384**
08:00	15	**121**	14	0	150	**9**	9	**26**	0	**44**	**9**	**106**	8	0	**123**	25	18	11	0	54	371
08:15	13	103	13	0	129	4	9	15	0	28	5	76	7	0	88	26	13	**13**	0	52	297
08:30	13	84	**20**	0	117	8	9	22	0	39	6	104	6	0	116	**46**	19	7	0	**72**	344
Total Volume	76	418	64	0	558	29	47	77	0	153	27	380	30	0	437	120	92	36	0	248	1396
% App. Total	13.6	74.9	11.5	0		19	30.7	50.3	0		6.2	87	6.9	0		48.4	37.1	14.5	0		
PHF	.543	.864	.800	.000	.861	.806	.588	.740	.000	.869	.750	.896	.833	.000	.888	.652	.548	.692	.000	.861	.909

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : 31-0903-AM
Site Code : 00000031
Start Date : 3/9/2016
Page No : 2

	Mesa Dr Southbound					Greystone Dr Westbound					Mesa Dr Northbound					Greystone Dr Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	07:30					08:00					08:00					07:45					
+0 mins.	17	105	7	0	129	9	9	**26**	0	**44**	**9**	106	**8**	0	**123**	23	**42**	5	0	70	
+15 mins.	**35**	110	**17**	0	**162**	4	9	15	0	28	5	76	7	0	88	25	18	11	0	54	
+30 mins.	15	**121**	14	0	150	8	9	22	0	39	6	104	6	0	116	26	13	**13**	0	52	
+45 mins.	13	103	13	0	129	**10**	**16**	17	0	43	4	**113**	5	0	122	**46**	19	7	0	**72**	
Total Volume	80	439	51	0	570	31	43	80	0	154	24	399	26	0	449	120	92	36	0	248	
% App. Total	14	77	8.9	0		20.1	27.9	51.9	0		5.3	88.9	5.8	0		48.4	37.1	14.5	0		
PHF	.571	.907	.750	.000	.880	.775	.672	.769	.000	.875	.667	.883	.813	.000	.913	.652	.548	.692	.000	.861	

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : KH-GreystoneDrMesaDr-PM-Site 3
Site Code : 00000031
Start Date : 3/9/2016
Page No : 1

Groups Printed- Autos

	Mesa Dr Southbound					Greystone Dr Westbound					Mesa Dr Northbound					Greystone Dr Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
16:00	13	58	12	0	83	4	22	15	0	41	13	100	4	0	117	25	12	11	0	48	289
16:15	15	78	18	0	111	7	24	27	0	58	6	134	4	0	144	31	8	7	0	46	359
16:30	7	109	41	0	157	6	23	19	0	48	11	117	2	0	130	22	17	1	0	40	375
16:45	13	88	43	0	144	10	22	37	0	69	7	126	3	0	136	20	11	9	0	40	389
Total	48	333	114	0	495	27	91	98	0	216	37	477	13	0	527	98	48	28	0	174	1412
17:00	7	73	24	0	104	5	20	31	0	56	8	136	8	0	152	25	9	3	0	37	349
17:15	10	97	19	0	126	5	21	32	0	58	13	136	5	0	154	17	15	8	0	40	378
17:30	10	71	14	0	95	9	16	28	0	53	14	154	9	0	177	22	12	6	0	40	365
17:45	21	80	27	0	128	8	17	27	0	52	11	130	6	0	147	22	10	7	0	39	366
Total	48	321	84	0	453	27	74	118	0	219	46	556	28	0	630	86	46	24	0	156	1458
Grand Total	96	654	198	0	948	54	165	216	0	435	83	1033	41	0	1157	184	94	52	0	330	2870
Apprch %	10.1	69	20.9	0		12.4	37.9	49.7	0		7.2	89.3	3.5	0		55.8	28.5	15.8	0		
Total %	3.3	22.8	6.9	0	33	1.9	5.7	7.5	0	15.2	2.9	36	1.4	0	40.3	6.4	3.3	1.8	0	11.5	

	Mesa Dr Southbound					Greystone Dr Westbound					Mesa Dr Northbound					Greystone Dr Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:30																					
16:30	7	**109**	41	0	**157**	6	**23**	19	0	48	11	117	2	0	130	22	**17**	1	0	**40**	375
16:45	**13**	88	**43**	0	144	**10**	22	**37**	0	**69**	7	126	3	0	136	20	11	**9**	0	40	**389**
17:00	7	73	24	0	104	5	20	31	0	56	8	**136**	**8**	0	152	**25**	9	3	0	37	349
17:15	10	97	19	0	126	5	21	32	0	58	**13**	136	5	0	**154**	17	15	8	0	40	378
Total Volume	37	367	127	0	531	26	86	119	0	231	39	515	18	0	572	84	52	21	0	157	1491
% App. Total	7	69.1	23.9	0		11.3	37.2	51.5	0		6.8	90	3.1	0		53.5	33.1	13.4	0		
PHF	.712	.842	.738	.000	.846	.650	.935	.804	.000	.837	.750	.947	.563	.000	.929	.840	.765	.583	.000	.981	.958

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : KH-GreystoneDrMesaDr-PM-Site 3
Site Code : 00000031
Start Date : 3/9/2016
Page No : 2

	Mesa Dr Southbound					Greystone Dr Westbound					Mesa Dr Northbound					Greystone Dr Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	16:30					16:45					17:00					16:00					
+0 mins.	7	**109**	41	0	**157**	**10**	**22**	**37**	0	**69**	8	136	8	0	152	25	12	**11**	0	**48**	
+15 mins.	**13**	88	**43**	0	144	5	20	31	0	56	13	136	5	0	154	**31**	8	7	0	46	
+30 mins.	7	73	24	0	104	5	21	32	0	58	**14**	**154**	**9**	0	**177**	22	**17**	1	0	40	
+45 mins.	10	97	19	0	126	9	16	28	0	53	11	130	6	0	147	20	11	9	0	40	
Total Volume	37	367	127	0	531	29	79	128	0	236	46	556	28	0	630	98	48	28	0	174	
% App. Total	7	69.1	23.9	0		12.3	33.5	54.2	0		7.3	88.3	4.4	0		56.3	27.6	16.1	0		
PHF	.712	.842	.738	.000	.846	.725	.898	.865	.000	.855	.821	.903	.778	.000	.890	.790	.706	.636	.000	.906	

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : KH-ShoalCreekBlvdAndersonLn-AM-Site 1
Site Code : 28 & 34
Start Date : 3/9/2016
Page No : 1

Groups Printed- Autos

	Shola Creek Blvd Southbound					W Anderson Lane Westbound					Shola Creek Blvd Northbound					W Anderson Lane Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00	23	36	13	0	72	7	96	11	0	114	30	24	8	0	62	12	124	39	0	175	423
07:15	14	55	16	0	85	13	95	15	0	123	23	16	6	0	45	20	172	52	0	244	497
07:30	38	108	20	0	166	23	168	30	0	221	54	40	11	0	105	28	173	67	0	268	760
07:45	35	90	34	0	159	18	184	31	0	233	60	53	11	0	124	48	195	57	0	300	816
Total	110	289	83	0	482	61	543	87	0	691	167	133	36	0	336	108	664	215	0	987	2496
08:00	49	89	33	0	171	17	173	38	0	228	65	55	10	0	130	54	211	62	0	327	856
08:15	32	80	25	0	137	18	195	31	0	244	64	43	9	0	116	32	182	63	0	277	774
08:30	36	69	26	0	131	13	178	36	0	227	59	35	5	0	99	31	166	61	0	258	715
08:45	28	60	26	0	114	13	169	37	0	219	44	40	8	0	92	26	179	50	0	255	680
Total	145	298	110	0	553	61	715	142	0	918	232	173	32	0	437	143	738	236	0	1117	3025
Grand Total	255	587	193	0	1035	122	1258	229	0	1609	399	306	68	0	773	251	1402	451	0	2104	5521
Apprch %	24.6	56.7	18.6	0		7.6	78.2	14.2	0		51.6	39.6	8.8	0		11.9	66.6	21.4	0		
Total %	4.6	10.6	3.5	0	18.7	2.2	22.8	4.1	0	29.1	7.2	5.5	1.2	0	14	4.5	25.4	8.2	0	38.1	

	Shola Creek Blvd Southbound					W Anderson Lane Westbound					Shola Creek Blvd Northbound					W Anderson Lane Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30																					
07:30	38	**108**	20	0	166	**23**	168	30	0	221	54	40	**11**	0	105	28	173	**67**	0	268	760
07:45	35	90	**34**	0	159	18	184	31	0	233	60	53	11	0	124	48	195	57	0	300	816
08:00	**49**	89	33	0	**171**	17	173	**38**	0	228	**65**	**55**	10	0	**130**	**54**	**211**	62	0	**327**	**856**
08:15	32	80	25	0	137	18	**195**	31	0	**244**	64	43	9	0	116	32	182	63	0	277	774
Total Volume	154	367	112	0	633	76	720	130	0	926	243	191	41	0	475	162	761	249	0	1172	3206
% App. Total	24.3	58	17.7	0		8.2	77.8	14	0		51.2	40.2	8.6	0		13.8	64.9	21.2	0		
PHF	.786	.850	.824	.000	.925	.826	.923	.855	.000	.949	.935	.868	.932	.000	.913	.750	.902	.929	.000	.896	.936

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : KH-ShoalCreekBlvdAndersonLn-AM-Site 1
Site Code : 28 & 34
Start Date : 3/9/2016
Page No : 2

	Shola Creek Blvd Southbound					W Anderson Lane Westbound					Shola Creek Blvd Northbound					W Anderson Lane Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	07:30					07:45					07:30					07:30					
+0 mins.	38	**108**	20	0	166	**18**	184	31	0	233	54	40	**11**	0	105	28	173	**67**	0	268	
+15 mins.	35	90	**34**	0	159	17	173	**38**	0	228	60	53	11	0	124	48	195	57	0	300	
+30 mins.	**49**	89	33	0	**171**	18	**195**	31	0	**244**	**65**	**55**	10	0	**130**	**54**	**211**	62	0	**327**	
+45 mins.	32	80	25	0	137	13	178	36	0	227	64	43	9	0	116	32	182	63	0	277	
Total Volume	154	367	112	0	633	66	730	136	0	932	243	191	41	0	475	162	761	249	0	1172	
% App. Total	24.3	58	17.7	0		7.1	78.3	14.6	0		51.2	40.2	8.6	0		13.8	64.9	21.2	0		
PHF	.786	.850	.824	.000	.925	.917	.936	.895	.000	.955	.935	.868	.932	.000	.913	.750	.902	.929	.000	.896	

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : KH-ShoalCreekBlvdAndersonLn-PM-Site 1
Site Code : 28 & 34
Start Date : 3/9/2016
Page No : 1

Groups Printed- Autos

	Shoal Creek Blvd Southbound					W Anderson Lane Westbound					Shoal Creek Blvd Northbound					W Anderson Lane Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
16:00	45	37	33	0	115	9	208	32	0	249	89	76	14	0	179	26	184	29	0	239	782
16:15	43	42	29	0	114	5	203	34	0	242	60	71	11	0	142	33	180	24	0	237	735
16:30	43	58	28	0	129	11	243	36	0	290	76	78	10	0	164	26	182	33	0	241	824
16:45	43	57	33	0	133	7	199	27	0	233	72	74	12	0	158	25	173	56	0	254	778
Total	174	194	123	0	491	32	853	129	0	1014	297	299	47	0	643	110	719	142	0	971	3119
17:00	51	62	41	0	154	5	230	30	0	265	67	104	19	0	190	33	192	38	0	263	872
17:15	48	83	39	0	170	12	236	36	0	284	62	99	13	0	174	27	220	50	0	297	925
17:30	50	70	24	0	144	14	229	35	0	278	73	93	18	0	184	28	233	52	0	313	919
17:45	46	52	27	0	125	9	240	40	0	289	72	74	17	0	163	24	210	35	0	269	846
Total	195	267	131	0	593	40	935	141	0	1116	274	370	67	0	711	112	855	175	0	1142	3562
Grand Total	369	461	254	0	1084	72	1788	270	0	2130	571	669	114	0	1354	222	1574	317	0	2113	6681
Apprch %	34	42.5	23.4	0		3.4	83.9	12.7	0		42.2	49.4	8.4	0		10.5	74.5	15	0		
Total %	5.5	6.9	3.8	0	16.2	1.1	26.8	4	0	31.9	8.5	10	1.7	0	20.3	3.3	23.6	4.7	0	31.6	

	Shoal Creek Blvd Southbound					W Anderson Lane Westbound					Shoal Creek Blvd Northbound					W Anderson Lane Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 17:00																					
17:00	**51**	62	**41**	0	154	5	230	30	0	265	67	**104**	**19**	0	**190**	**33**	192	38	0	263	872
17:15	48	**83**	39	0	**170**	12	236	36	0	284	62	99	13	0	174	27	220	50	0	297	**925**
17:30	50	70	24	0	144	**14**	229	35	0	278	**73**	93	18	0	184	28	**233**	**52**	0	**313**	919
17:45	46	52	27	0	125	9	**240**	**40**	0	**289**	72	74	17	0	163	24	210	35	0	269	846
Total Volume	195	267	131	0	593	40	935	141	0	1116	274	370	67	0	711	112	855	175	0	1142	3562
% App. Total	32.9	45	22.1	0		3.6	83.8	12.6	0		38.5	52	9.4	0		9.8	74.9	15.3	0		
PHF	.956	.804	.799	.000	.872	.714	.974	.881	.000	.965	.938	.889	.882	.000	.936	.848	.917	.841	.000	.912	.963

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : KH-ShoalCreekBlvdAndersonLn-PM-Site 1
Site Code : 28 & 34
Start Date : 3/9/2016
Page No : 2

	Shoal Creek Blvd Southbound					W Anderson Lane Westbound					Shoal Creek Blvd Northbound					W Anderson Lane Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	16:45					17:00					17:00					17:00					
+0 mins.	43	57	33	0	133	5	230	30	0	265	67	**104**	**19**	0	**190**	**33**	192	38	0	263	
+15 mins.	**51**	62	**41**	0	154	12	236	36	0	284	62	99	13	0	174	27	220	50	0	297	
+30 mins.	48	**83**	39	0	**170**	**14**	229	35	0	278	**73**	93	18	0	184	28	**233**	**52**	0	**313**	
+45 mins.	50	70	24	0	144	9	**240**	**40**	0	**289**	72	74	17	0	163	24	210	35	0	269	
Total Volume	192	272	137	0	601	40	935	141	0	1116	274	370	67	0	711	112	855	175	0	1142	
% App. Total	31.9	45.3	22.8	0		3.6	83.8	12.6	0		38.5	52	9.4	0		9.8	74.9	15.3	0		
PHF	.941	.819	.835	.000	.884	.714	.974	.881	.000	.965	.938	.889	.882	.000	.936	.848	.917	.841	.000	.912	

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : KH-SpicewoodSpringsRdMesaDr-AM-Site 2
Site Code : 00000012
Start Date : 3/9/2016
Page No : 1

Groups Printed- Autos

	Mesa Dr Southbound					Spicewood Springs Rd Westbound					Mesa Dr Northbound					Spicewood Springs Rd Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00	17	34	14	0	65	24	35	10	0	69	9	20	17	0	46	25	128	12	0	165	345
07:15	35	49	25	0	109	23	48	17	0	88	14	44	35	0	93	58	170	30	0	258	548
07:30	48	63	36	0	147	43	68	19	0	130	25	37	42	0	104	64	212	55	0	331	712
07:45	62	110	47	0	219	49	94	31	0	174	39	63	45	0	147	29	220	59	0	308	848
Total	162	256	122	0	540	139	245	77	0	461	87	164	139	0	390	176	730	156	0	1062	2453
08:00	38	95	40	0	173	44	109	39	2	194	68	88	44	0	200	29	169	48	0	246	813
08:15	50	80	36	0	166	45	117	35	1	198	36	87	37	0	160	42	184	46	0	272	796
08:30	50	100	43	0	193	56	106	40	0	202	35	127	38	0	200	44	187	43	0	274	869
08:45	47	121	31	0	199	66	101	53	0	220	48	150	43	0	241	63	157	44	0	264	924
Total	185	396	150	0	731	211	433	167	3	814	187	452	162	0	801	178	697	181	0	1056	3402
Grand Total	347	652	272	0	1271	350	678	244	3	1275	274	616	301	0	1191	354	1427	337	0	2118	5855
Apprch %	27.3	51.3	21.4	0		27.5	53.2	19.1	0.2		23	51.7	25.3	0		16.7	67.4	15.9	0		
Total %	5.9	11.1	4.6	0	21.7	6	11.6	4.2	0.1	21.8	4.7	10.5	5.1	0	20.3	6	24.4	5.8	0	36.2	

	Mesa Dr Southbound					Spicewood Springs Rd Westbound					Mesa Dr Northbound					Spicewood Springs Rd Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00																					
08:00	38	95	40	0	173	44	109	39	**2**	194	**68**	88	**44**	0	200	29	169	**48**	0	246	813
08:15	**50**	80	36	0	166	45	**117**	35	1	198	36	87	37	0	160	42	184	46	0	272	796
08:30	50	100	**43**	0	193	56	106	40	0	202	35	127	38	0	200	44	**187**	43	0	**274**	869
08:45	47	**121**	31	0	**199**	**66**	101	**53**	0	**220**	48	**150**	43	0	**241**	**63**	157	44	0	264	**924**
Total Volume	185	396	150	0	731	211	433	167	3	814	187	452	162	0	801	178	697	181	0	1056	3402
% App. Total	25.3	54.2	20.5	0		25.9	53.2	20.5	0.4		23.3	56.4	20.2	0		16.9	66	17.1	0		
PHF	.925	.818	.872	.000	.918	.799	.925	.788	.375	.925	.688	.753	.920	.000	.831	.706	.932	.943	.000	.964	.920

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : KH-SpicewoodSpringsRdMesaDr-AM-Site 2
Site Code : 00000012
Start Date : 3/9/2016
Page No : 2

	Mesa Dr Southbound					Spicewood Springs Rd Westbound					Mesa Dr Northbound					Spicewood Springs Rd Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	07:45					08:00					08:00					07:30					
+0 mins.	**62**	**110**	**47**	0	**219**	44	109	39	**2**	194	**68**	88	**44**	0	200	**64**	212	55	0	**331**	
+15 mins.	38	95	40	0	173	45	**117**	35	1	198	36	87	37	0	160	29	**220**	**59**	0	308	
+30 mins.	50	80	36	0	166	56	106	40	0	202	35	127	38	0	200	29	169	48	0	246	
+45 mins.	50	100	43	0	193	**66**	101	**53**	0	**220**	48	**150**	43	0	**241**	42	184	46	0	272	
Total Volume	200	385	166	0	751	211	433	167	3	814	187	452	162	0	801	164	785	208	0	1157	
% App. Total	26.6	51.3	22.1	0		25.9	53.2	20.5	0.4		23.3	56.4	20.2	0		14.2	67.8	18	0		
PHF	.806	.875	.883	.000	.857	.799	.925	.788	.375	.925	.688	.753	.920	.000	.831	.641	.892	.881	.000	.874	

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : KH-SpicewoodSpringsRdMesaDr-PM-Site 2
Site Code : 00000012
Start Date : 3/9/2016
Page No : 1

Groups Printed- Autos

	Mesa Dr Southbound					Spicewood Springs Rd Westbound					Mesa Dr Northbound					Spicewood Springs Rd Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
16:00	16	71	41	0	128	51	138	39	0	228	64	70	38	0	172	31	76	20	0	127	655
16:15	26	101	56	0	183	44	158	46	0	248	84	110	29	0	223	34	80	37	0	151	805
16:30	62	130	51	0	243	62	173	45	0	280	109	89	32	0	230	33	79	34	0	146	899
16:45	38	100	34	0	172	62	224	48	0	334	105	62	38	0	205	24	116	39	0	179	890
Total	142	402	182	0	726	219	693	178	0	1090	362	331	137	0	830	122	351	130	0	603	3249
17:00	37	99	62	0	198	64	214	38	0	316	89	102	38	0	229	46	98	28	0	172	915
17:15	44	93	45	0	182	48	273	41	0	362	102	91	39	0	232	46	86	40	0	172	948
17:30	27	97	43	0	167	50	196	64	0	310	91	108	29	0	228	56	81	38	0	175	880
17:45	31	114	40	0	185	37	194	52	0	283	105	78	31	0	214	39	73	22	0	134	816
Total	139	403	190	0	732	199	877	195	0	1271	387	379	137	0	903	187	338	128	0	653	3559
Grand Total	281	805	372	0	1458	418	1570	373	0	2361	749	710	274	0	1733	309	689	258	0	1256	6808
Apprch %	19.3	55.2	25.5	0		17.7	66.5	15.8	0		43.2	41	15.8	0		24.6	54.9	20.5	0		
Total %	4.1	11.8	5.5	0	21.4	6.1	23.1	5.5	0	34.7	11	10.4	4	0	25.5	4.5	10.1	3.8	0	18.4	

	Mesa Dr Southbound					Spicewood Springs Rd Westbound					Mesa Dr Northbound					Spicewood Springs Rd Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:30																					
16:30	**62**	**130**	51	0	**243**	62	173	45	0	280	**109**	89	32	0	230	33	79	34	0	146	899
16:45	38	100	34	0	172	62	224	**48**	0	334	105	62	38	0	205	24	**116**	39	0	**179**	890
17:00	37	99	**62**	0	198	**64**	214	38	0	316	89	**102**	38	0	229	**46**	98	28	0	172	915
17:15	44	93	45	0	182	48	**273**	41	0	**362**	102	91	**39**	0	**232**	46	86	**40**	0	172	**948**
Total Volume	181	422	192	0	795	236	884	172	0	1292	405	344	147	0	896	149	379	141	0	669	3652
% App. Total	22.8	53.1	24.2	0		18.3	68.4	13.3	0		45.2	38.4	16.4	0		22.3	56.7	21.1	0		
PHF	.730	.812	.774	.000	.818	.922	.810	.896	.000	.892	.929	.843	.942	.000	.966	.810	.817	.881	.000	.934	.963

GRAM Traffic, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : KH-SpicewoodSpringsRdMesaDr-PM-Site 2
Site Code : 00000012
Start Date : 3/9/2016
Page No : 2

	Mesa Dr Southbound					Spicewood Springs Rd Westbound					Mesa Dr Northbound					Spicewood Springs Rd Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	16:15					16:45					17:00					16:45					
+0 mins.	26	101	56	0	183	62	224	48	0	334	89	102	38	0	229	24	**116**	39	0	**179**	
+15 mins.	**62**	**130**	51	0	**243**	**64**	214	38	0	316	102	91	**39**	0	**232**	46	98	28	0	172	
+30 mins.	38	100	34	0	172	48	**273**	41	0	**362**	91	**108**	29	0	228	46	86	**40**	0	172	
+45 mins.	37	99	**62**	0	198	50	196	**64**	0	310	**105**	78	31	0	214	**56**	81	38	0	175	
Total Volume	163	430	203	0	796	224	907	191	0	1322	387	379	137	0	903	172	381	145	0	698	
% App. Total	20.5	54	25.5	0		16.9	68.6	14.4	0		42.9	42	15.2	0		24.6	54.6	20.8	0		
PHF	.657	.827	.819	.000	.819	.875	.831	.746	.000	.913	.921	.877	.878	.000	.973	.768	.821	.906	.000	.975	

GRAM Traffic Counting, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : Steck-MopacNB AM
Site Code : 00000028
Start Date : 4/14/2016
Page No : 1

Groups Printed- Autos

	Southbound					Steck Ave Westbound					Mopac Frt Northbound					Steck Ave Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00	0	0	0	0	0	0	30	36	0	66	30	52	21	0	103	114	120	0	0	234	403
07:15	0	0	0	0	0	0	58	44	0	102	30	67	25	0	122	105	140	0	0	245	469
07:30	0	0	0	0	0	0	69	58	0	127	28	95	33	0	156	144	167	0	0	311	594
07:45	0	0	0	0	0	0	85	58	0	143	39	110	41	0	190	171	194	0	0	365	698
Total	0	0	0	0	0	0	242	196	0	438	127	324	120	0	571	534	621	0	0	1155	2164
08:00	0	0	0	0	0	0	99	53	0	152	42	130	46	0	218	148	190	0	0	338	708
08:15	0	0	0	0	0	0	83	56	0	139	52	130	45	0	227	146	155	0	0	301	667
08:30	0	0	0	0	0	0	82	69	0	151	59	130	39	0	228	174	151	0	0	325	704
08:45	0	0	0	0	0	0	74	54	0	128	65	128	56	0	249	159	158	0	0	317	694
Total	0	0	0	0	0	0	338	232	0	570	218	518	186	0	922	627	654	0	0	1281	2773
Grand Total	0	0	0	0	0	0	580	428	0	1008	345	842	306	0	1493	1161	1275	0	0	2436	4937
Apprch %	0	0	0	0		0	57.5	42.5	0		23.1	56.4	20.5	0		47.7	52.3	0	0		
Total %	0	0	0	0	0	0	11.7	8.7	0	20.4	7	17.1	6.2	0	30.2	23.5	25.8	0	0	49.3	

	Southbound					Steck Ave Westbound					Mopac Frt Northbound					Steck Ave Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45																					
07:45	0	0	0	0	0	0	85	58	0	143	39	110	41	0	190	171	**194**	0	0	**365**	698
08:00	0	0	0	0	0	0	**99**	53	0	**152**	42	**130**	**46**	0	218	148	190	0	0	338	**708**
08:15	0	0	0	0	0	0	83	56	0	139	52	130	45	0	227	146	155	0	0	301	667
08:30	0	0	0	0	0	0	82	**69**	0	151	**59**	130	39	0	**228**	**174**	151	0	0	325	704
Total Volume	0	0	0	0	0	0	349	236	0	585	192	500	171	0	863	639	690	0	0	1329	2777
% App. Total	0	0	0	0		0	59.7	40.3	0		22.2	57.9	19.8	0		48.1	51.9	0	0		
PHF	.000	.000	.000	.000	.000	.000	.881	.855	.000	.962	.814	.962	.929	.000	.946	.918	.889	.000	.000	.910	.981

GRAM Traffic Counting, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : Steck-MopacNB AM
Site Code : 00000028
Start Date : 4/14/2016
Page No : 2

	Southbound					Steck Ave Westbound					Mopac Frt Northbound					Steck Ave Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	07:00					07:45					08:00					07:45					
+0 mins.	0	0	0	0	0	0	85	58	0	143	42	**130**	46	0	218	171	**194**	0	0	**365**	
+15 mins.	0	0	0	0	0	0	**99**	53	0	**152**	52	130	45	0	227	148	190	0	0	338	
+30 mins.	0	0	0	0	0	0	83	56	0	139	59	130	39	0	228	146	155	0	0	301	
+45 mins.	0	0	0	0	0	0	82	**69**	0	151	**65**	128	**56**	0	**249**	**174**	151	0	0	325	
Total Volume	0	0	0	0	0	0	349	236	0	585	218	518	186	0	922	639	690	0	0	1329	
% App. Total	0	0	0	0		0	59.7	40.3	0		23.6	56.2	20.2	0		48.1	51.9	0	0		
PHF	.000	.000	.000	.000	.000	.000	.881	.855	.000	.962	.838	.996	.830	.000	.926	.918	.889	.000	.000	.910	

GRAM Traffic Counting, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : Steck-MopacNB PM
Site Code : 00000028
Start Date : 4/14/2016
Page No : 1

Groups Printed- Autos

	Southbound					Steck Ave Westbound					Mopac Frt Northbound					Steck Ave Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
16:00	0	0	0	0	0	0	110	133	0	243	25	190	25	0	240	133	133	0	0	266	749
16:15	0	0	0	0	0	0	108	135	0	243	38	204	23	0	265	123	142	0	0	265	773
16:30	0	0	0	0	0	0	119	105	0	224	29	187	21	0	237	176	131	0	0	307	768
16:45	0	0	0	0	0	0	85	97	0	182	19	162	37	0	218	156	150	0	0	306	706
Total	0	0	0	0	0	0	422	470	0	892	111	743	106	0	960	588	556	0	0	1144	2996
17:00	0	0	0	0	0	0	123	112	0	235	29	200	29	0	258	171	135	0	0	306	799
17:15	0	0	0	0	0	0	97	103	0	200	29	194	29	0	252	152	143	0	0	295	747
17:30	0	0	0	0	0	0	98	134	0	232	42	181	39	0	262	126	123	0	0	249	743
17:45	0	0	0	0	0	0	99	93	0	192	39	162	23	0	224	103	140	0	0	243	659
Total	0	0	0	0	0	0	417	442	0	859	139	737	120	0	996	552	541	0	0	1093	2948
Grand Total	0	0	0	0	0	0	839	912	0	1751	250	1480	226	0	1956	1140	1097	0	0	2237	5944
Apprch %	0	0	0	0		0	47.9	52.1	0		12.8	75.7	11.6	0		51	49	0	0		
Total %	0	0	0	0	0	0	14.1	15.3	0	29.5	4.2	24.9	3.8	0	32.9	19.2	18.5	0	0	37.6	

	Southbound					Steck Ave Westbound					Mopac Frt Northbound					Steck Ave Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:15																					
16:15	0	0	0	0	0	0	108	**135**	0	**243**	**38**	**204**	23	0	**265**	123	142	0	0	265	773
16:30	0	0	0	0	0	0	119	105	0	224	29	187	21	0	237	**176**	131	0	0	**307**	768
16:45	0	0	0	0	0	0	85	97	0	182	19	162	**37**	0	218	156	**150**	0	0	306	706
17:00	0	0	0	0	0	0	**123**	112	0	235	29	200	29	0	258	171	135	0	0	306	**799**
Total Volume	0	0	0	0	0	0	435	449	0	884	115	753	110	0	978	626	558	0	0	1184	3046
% App. Total	0	0	0	0		0	49.2	50.8	0		11.8	77	11.2	0		52.9	47.1	0	0		
PHF	.000	.000	.000	.000	.000	.000	.884	.831	.000	.909	.757	.923	.743	.000	.923	.889	.930	.000	.000	.964	.953

GRAM Traffic Counting, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : Steck-MopacNB PM
Site Code : 00000028
Start Date : 4/14/2016
Page No : 2

	Southbound					Steck Ave Westbound					Mopac Frt Northbound					Steck Ave Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	16:00					16:00					17:00					16:30					
+0 mins.	0	0	0	0	0	0	110	133	0	**243**	29	**200**	29	0	258	**176**	131	0	0	**307**	
+15 mins.	0	0	0	0	0	0	108	**135**	0	243	29	194	29	0	252	156	**150**	0	0	306	
+30 mins.	0	0	0	0	0	0	**119**	105	0	224	**42**	181	**39**	0	**262**	171	135	0	0	306	
+45 mins.	0	0	0	0	0	0	85	97	0	182	39	162	23	0	224	152	143	0	0	295	
Total Volume	0	0	0	0	0	0	422	470	0	892	139	737	120	0	996	655	559	0	0	1214	
% App. Total	0	0	0	0		0	47.3	52.7	0		14	74	12	0		54	46	0	0		
PHF	.000	.000	.000	.000	.000	.000	.887	.870	.000	.918	.827	.921	.769	.000	.950	.930	.932	.000	.000	.989	

GRAM Traffic Counting, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : Steck-MopacSB AM
Site Code : 00000021
Start Date : 4/14/2016
Page No : 1

Groups Printed- Autos

	Mopac Frt Southbound					Steck Ave Westbound					Northbound					Steck Ave Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00	151	315	44	0	510	21	41	0	0	62	0	0	0	0	0	0	78	44	0	122	694
07:15	181	439	52	0	672	32	56	0	0	88	0	0	0	0	0	0	80	24	0	104	864
07:30	209	518	61	0	788	34	54	0	0	88	0	0	0	0	0	0	116	42	0	158	1034
07:45	248	477	50	0	775	37	77	0	0	114	0	0	0	0	0	0	125	32	0	157	1046
Total	789	1749	207	0	2745	124	228	0	0	352	0	0	0	0	0	0	399	142	0	541	3638
08:00	220	377	66	0	663	37	99	0	0	136	0	0	0	0	0	0	138	26	0	164	963
08:15	202	333	95	0	630	30	93	0	0	123	0	0	0	0	0	0	115	26	0	141	894
08:30	196	293	106	0	595	45	99	0	0	144	0	0	0	0	0	0	121	22	0	143	882
08:45	209	264	97	0	570	33	112	0	0	145	0	0	0	0	0	0	135	29	0	164	879
Total	827	1267	364	0	2458	145	403	0	0	548	0	0	0	0	0	0	509	103	0	612	3618
Grand Total	1616	3016	571	0	5203	269	631	0	0	900	0	0	0	0	0	0	908	245	0	1153	7256
Apprch %	31.1	58	11	0		29.9	70.1	0	0		0	0	0	0		0	78.8	21.2	0		
Total %	22.3	41.6	7.9	0	71.7	3.7	8.7	0	0	12.4	0	0	0	0	0	0	12.5	3.4	0	15.9	

	Mopac Frt Southbound					Steck Ave Westbound					Northbound					Steck Ave Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30																					
07:30	209	**518**	61	0	**788**	34	54	0	0	88	0	0	0	0	0	0	116	**42**	0	158	1034
07:45	**248**	477	50	0	775	**37**	77	0	0	114	0	0	0	0	0	0	125	32	0	157	**1046**
08:00	220	377	66	0	663	37	**99**	0	0	**136**	0	0	0	0	0	0	**138**	26	0	**164**	963
08:15	202	333	**95**	0	630	30	93	0	0	123	0	0	0	0	0	0	115	26	0	141	894
Total Volume	879	1705	272	0	2856	138	323	0	0	461	0	0	0	0	0	0	494	126	0	620	3937
% App. Total	30.8	59.7	9.5	0		29.9	70.1	0	0		0	0	0	0		0	79.7	20.3	0		
PHF	.886	.823	.716	.000	.906	.932	.816	.000	.000	.847	.000	.000	.000	.000	.000	.000	.895	.750	.000	.945	.941

GRAM Traffic Counting, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : Steck-MopacSB AM
Site Code : 00000021
Start Date : 4/14/2016
Page No : 2

	Mopac Frt Southbound					Steck Ave Westbound					Northbound					Steck Ave Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total

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

	07:15					08:00					07:00					07:30					
+0 mins.	181	439	52	0	672	37	99	0	0	136	0	0	0	0	0	0	116	**42**	0	158	
+15 mins.	209	**518**	61	0	**788**	30	93	0	0	123	0	0	0	0	0	0	125	32	0	157	
+30 mins.	**248**	477	50	0	775	**45**	99	0	0	144	0	0	0	0	0	0	**138**	26	0	**164**	
+45 mins.	220	377	**66**	0	663	33	**112**	0	0	**145**	0	0	0	0	0	0	115	26	0	141	
Total Volume	858	1811	229	0	2898	145	403	0	0	548	0	0	0	0	0	0	494	126	0	620	
% App. Total	29.6	62.5	7.9	0		26.5	73.5	0	0		0	0	0	0		0	79.7	20.3	0		
PHF	.865	.874	.867	.000	.919	.806	.900	.000	.000	.945	.000	.000	.000	.000	.000	.000	.895	.750	.000	.945	

GRAM Traffic Counting, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : Steck-MopacSB PM
Site Code : 00000021
Start Date : 4/14/2016
Page No : 1

Groups Printed- Autos

	Mopac Frt Southbound					Steck Ave Westbound					Northbound					Steck Ave Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
16:00	159	175	77	0	411	52	83	0	0	135	0	0	0	0	0	0	119	19	0	138	684
16:15	153	155	113	0	421	51	96	0	0	147	0	0	0	0	0	0	105	19	0	124	692
16:30	170	170	75	0	415	60	87	0	0	147	0	0	0	0	0	0	157	32	0	189	751
16:45	194	164	74	0	432	47	66	0	0	113	0	0	0	0	0	0	142	19	0	161	706
Total	676	664	339	0	1679	210	332	0	0	542	0	0	0	0	0	0	523	89	0	612	2833
17:00	188	170	70	0	428	74	88	0	0	162	0	0	0	0	0	0	135	23	0	158	748
17:15	160	189	89	0	438	48	76	0	0	124	0	0	0	0	0	0	145	18	0	163	725
17:30	143	146	59	0	348	55	83	0	0	138	0	0	0	0	0	0	113	24	0	137	623
17:45	165	158	73	0	396	58	77	0	0	135	0	0	0	0	0	0	80	22	0	102	633
Total	656	663	291	0	1610	235	324	0	0	559	0	0	0	0	0	0	473	87	0	560	2729
Grand Total	1332	1327	630	0	3289	445	656	0	0	1101	0	0	0	0	0	0	996	176	0	1172	5562
Apprch %	40.5	40.3	19.2	0		40.4	59.6	0	0		0	0	0	0		0	85	15	0		
Total %	23.9	23.9	11.3	0	59.1	8	11.8	0	0	19.8	0	0	0	0	0	0	17.9	3.2	0	21.1	

	Mopac Frt Southbound					Steck Ave Westbound					Northbound					Steck Ave Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:30																					
16:30	170	170	75	0	415	60	87	0	0	147	0	0	0	0	0	0	**157**	**32**	0	**189**	**751**
16:45	**194**	164	74	0	432	47	66	0	0	113	0	0	0	0	0	0	142	19	0	161	706
17:00	188	170	70	0	428	**74**	**88**	0	0	**162**	0	0	0	0	0	0	135	23	0	158	748
17:15	160	**189**	**89**	0	**438**	48	76	0	0	124	0	0	0	0	0	0	145	18	0	163	725
Total Volume	712	693	308	0	1713	229	317	0	0	546	0	0	0	0	0	0	579	92	0	671	2930
% App. Total	41.6	40.5	18	0		41.9	58.1	0	0		0	0	0	0		0	86.3	13.7	0		
PHF	.918	.917	.865	.000	.978	.774	.901	.000	.000	.843	.000	.000	.000	.000	.000	.000	.922	.719	.000	.888	.975

GRAM Traffic Counting, Inc.

3751 FM 1105 Bldg A
Georgetown, TX 78626
512-832-8650

File Name : Steck-MopacSB PM
Site Code : 00000021
Start Date : 4/14/2016
Page No : 2

	Mopac Frt Southbound					Steck Ave Westbound					Northbound					Steck Ave Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	16:30					16:15					16:00					16:30					
+0 mins.	170	170	75	0	415	51	**96**	0	0	147	0	0	0	0	0	0	**157**	**32**	0	**189**	
+15 mins.	**194**	164	74	0	432	60	87	0	0	147	0	0	0	0	0	0	142	19	0	161	
+30 mins.	188	170	70	0	428	47	66	0	0	113	0	0	0	0	0	0	135	23	0	158	
+45 mins.	160	**189**	**89**	0	**438**	**74**	88	0	0	**162**	0	0	0	0	0	0	145	18	0	163	
Total Volume	712	693	308	0	1713	232	337	0	0	569	0	0	0	0	0	0	579	92	0	671	
% App. Total	41.6	40.5	18	0		40.8	59.2	0	0		0	0	0	0		0	86.3	13.7	0		
PHF	.918	.917	.865	.000	.978	.784	.878	.000	.000	.878	.000	.000	.000	.000	.000	.000	.922	.719	.000	.888	

Appendix F: Traffic Signal Timings

TRAFFIC SIGNAL INTERSECTION:	DATE:	GRP:	LOC:	VRS:	HUB:	ZONE:	SEC:	ENGINEER:	CITY OF AUSTIN TRAFFIC SIGNAL TIMING & PHASING SHEETS
Far West @ Hart	10/21/2012		445G						N

4 + 2 + RINGS		
PHASE 1	RING 1:	1, 2, a, 3, 4, b
	RING 2:	5, 6, a, 7, 8, b
PHASE 2	RING 1:	1, 2, a, 4, b, 3, c
	RING 2:	5, 6, a, 7, b, 8, c

4 + 2 + PHASEMODE	
STARTUP	2, 6
REDSTRT	1, 3, 4, 5, 7 - 20
PED	2, 4, 6, 8
YELFLASH	2, 6
FLASH/ENT	4, 8
FLASH/EXIT	2, 6

4 + 1 + ACT CONFIG	#1	#2	#3	#4	#5
PHASE	1	2			
OVERLAP	1	1			
PREEMPT	1	1			
CABINET	2	2			
DETECTOR	2	2			
COORD	1	1			

1 + ACTIVE CONTROL PARAMETERS				
CONTROL MODE:	SCHEDULE			
MAN PLN:	2	FREE PLN:	1	DFSCHED: 1

4 + 7 + MISC		4 + 2 + COORD CONFIG	
TRANSITION MODE:	3:30	START UP FLASH:	1
SYNCHRO MODE:	BEST	RED REVERT:	2
MAX DWELL TIME:	0	FLASH CLR:	6

2 + 3 + PL # + **PLAN MODE**

PL	PLAN MODE	MAX GRN	PH DATA	PH SEQ	OL DATA	ACT CONF	ENA	OFF	VAR	CYCLE	HOLD / YLD
1											
2											
3											
4	COORD	MAX 1	2	1	1	1	A	42	5	65	2, 6
5											
6	COORD	MAX 1	1	2	1	2	A	20	5	130	2, 6
7	COORD	MAX 1	1	2	1	2	A	100	5	130	2, 6
8	COORD	MAX 1	1	2	1	2	A	113	5	120	2, 6
9											
10											
20	FREE	MAX 1	2	3	1	1					
21											

SCHEDULE

EV	ENA	HR	M	S	M	T	W	T	F	S	PL	1	2	3	4	5	6	7	8	AUXILIARY 1	2	3	4
1	ENA	0	0	X	X	X	X	X	X	X	4												
2	ENA	6	30		X	X	X	X	X		7												
3	ENA	7	0	X						X	8												
4	ENA	9	0		X	X	X	X	X		8												
5	ENA	15	30		X	X	X	X	X		6												
6	ENA	19	0		X	X	X	X	X		8												
7	ENA	23	0	X	X	X	X	X	X	X	4												
8																							
9																							
10																							
11																							
12																							

PRIORITY SEQUENCE

PHASES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
TABLE 1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TABLE 2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TABLE 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TABLE 4																				

NOTE: ZERO DENOTES THE HIGHEST PRIORITY

PED PRAMS & FLAGS

PHASES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
ENABLE	X	X	X	X																
CALLPHAS	2	4	6	8																
OVERLAP																				

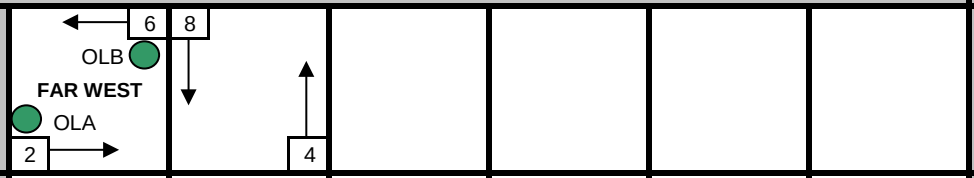
VEH PARAMETERS

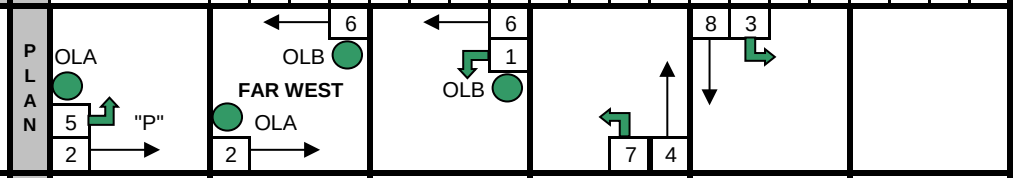
DETECTORS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
ENABLE	X	X	X	X	X	X	X	X	X	X	X	X	X							
CALL	X	X	X	X	X	X	X	X	X	X	X	X	X							
EXTEND	X	X	X	X	X	X	X	X	X	X	X	X	X							
ADD INIT																				
RED LOCK																				
YEL LOCK																				

VEH FLAGS

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
CALL PHASE	1	5	2	6	3	7	4	8	2	6	4	8	3							
SWTCH PHAS																				
OVERLAP																				
DELAY																				

SIGNAL PHASING DIAGRAM - (SECONDS)





PLAN						
1	39 + 4 + 1	16 + 4 + 1				
PLAN						

PLAN						
6	8 + 4 + 1	49 + 4 + 1	10 + 4 + 1	23 + 4 + 1	20 + 4 + 1	
7	8 + 4 + 1	34 + 4 + 1	17 + 4 + 1	21 + 4 + 1	25 + 4 + 1	
8	10 + 4 + 1	36 + 4 + 1	13 + 4 + 1	18 + 4 + 1	18 + 4 + 1	
PLAN						

FLAGS	PHASES
OMITPHAS	9 - 20
OMIT PED	1, 3, 5, 7, 9 - 20
MIN RECAL	2, 6
MAXRECAL	
SOFT RCL	
CDT'L SRVC	
PED RECAL	2, 6
DUAL ETRY	3, 4, 7, 8
SIMGAP	
REDREST	
AUTO PED	
REST WALK	2, 6
PED RECY	
RED LOCK	
YEL LOCK	
NO EXT	
NO ADD INI	
NOGAPRED	
NOMAX LOK	1, 3 - 5, 7, 8

PHASE DATA TABLE # 1	PH 1	PH 2	PH 3	PH 4	PH 5	PH 6	PH 7	PH 8	PH 9	PH 10	PH 11	PH 12	PH 13	PH 14	PH 15	PH 16	PH 17	PH 18
PHASE TIMING	WB "P" L / T	EB FAR WEST	SB "P" L / T	NB HART LANE	EB "P" L / T	WB FAR WEST	NB (ESR) "P" L / T	SB HART LANE										
MIN GREEN	8.0	18.0	12.0	12.0	8.0	18.0	12.0	12.0										
PASSAGE	1.0	2.0	1.0	2.0	1.0	2.0	1.0	2.0										
MAXGRN 1	30.0	81.0	55.0	25.0	20.0	90.0	25.0	55.0										
MAXGRN 2	10.0	65.0	10.0	40.0	10.0	45.0	10.0	40.0										
CONDSERV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0										
YEL CHG	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0										
RED CLR	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0										
WALK		7.0		7.0		7.0		7.0										
PED CLR		12.0		21.0		12.0		21.0										
ADDED INI																		
TIME TO RED																		
TIME BEFOR																		
MAX INIT GRN																		

2+ 3 + PL # +	PHASE		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
MIN SPLIT	PLAN																			
NOM SPLIT	CYCLE																			
MAX SPLIT																				
NOTE: PLAN 20 = FREE MODE PLAN 33 = FLASH MODE	PLAN																			
	CYCLE																			
	PLAN																			
	CYCLE																			
	PLAN	4		22		16		22		16										
	CYCLE	65		44		21		44		21										
				65		30		65		30										

		PHASE		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
MIN	PLAN	6		10	22	16	16	10	22	16	16										
NOM	CYCLE	130		15	62	25	28	13	64	28	25										
MAX				20	81	30	30	15	70	30	30										
MIN	PLAN	7		10	22	16	16	10	22	16	16										
NOM	CYCLE	130		22	52	30	26	13	61	26	30										
MAX				20	81	35	30	20	65	30	35										
MIN	PLAN	8		10	22	16	16	10	22	16	16										
NOM	CYCLE	120		18	56	23	23	15	59	23	23										
MAX				20	81	35	30	20	65	30	35										
MIN	PLAN																				
NOM	CYCLE																				
MAX																					

Change ONLY the following:		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18		27	
INPUT CHANNELS	FUNCTION TYPE																				VEH	VEH
	FUNCTION INDEX																				13	14
	UNIT																				1	1
	CONNECTOR / BUI																				C1S	C1S
	PIN																				42	41
	CHANNEL IN 1																				0	0
	CHANNEL IN 2																				0	0
	LOGIC																				AND	AND

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
OUTPUT CHANNELS	FUNCTION TYPE																					
	FUNCTION INDEX																					
	CONNECTOR / BUI 1																					
	PIN 1																					
	CONNECTOR / BUI 2																					
	PIN 2																					
	CONNECTOR / BUI 3																					
	PIN 3																					

PHASES		TYPE		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
OVERLAP CONFIGURATION	OVL A	~~2~~	P																		
		141	P					X													
			M						X												
			S	X																	
	OVL B	~~2~~	P																		
		141	P	X																	
			M		X																
			S					X													
	OVL C	~~2~~	P																		
		141	P																		
			M																		
			S																		
	OVL D	~~2~~	P																		
		141	P																		
			M																		
			S																		
	OVL E	2	P																		
	OVL F	2	P																		
	OVL G	2	P																		
	OVL H	2	P																		
	OVL I	2	P																		
	OVL J	2	P																		
	OVL K	2	P																		
	OVL L	2	P																		
	OVL M	2	P																		
	OVL N	2	P																		
	OVL O	2	P																		
	OVL P	2	P																		

P = PRIMARY S = SECONDARY M = MODIFIED

OVERLAPS			A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
OVERLAP SETTINGS	FLAGS / PARAM	ENABLE	X	X														
		PED OVERLAP																
		FLASH YELLOW	X	X														
		ALT FLASH HZ																
	FLAGS	RECALL PRIMARY																
		RECALL SEC																
		PED RECALL																
		PED RECYCLE																
		AUTO EXTEND																
	PARAMETERS	MIN GREEN																
		MAX GREEN																
		GREEN CLEAR																
		YEL CLEAR	4	4	3	3	3	3	3	3	3	3	3	3	3	3	0	0
		RED CLEAR	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		WALK																
		PED CLEAR																
		RESERVICE																

PRE - EMPT		1	3	4	5	6
PRE EMPT FLAGS	ENABLE					
	NO MEM LOK					
	MAN ENABLE					
	NO OVER FLSH					
	NO OVER NEXT					
	OMIT IN DELAY					
	RE MAX PRES					
	PED NOT DARK					
TIME	MIN PRESENCE					
	DELAY					

SETTINGS		1	3	4	5	6
TIMING	STRT MIN GRN					
	STRT WALK					
	STRT PED CLR					
PHASE FLAGS	ENT 1 PHASE					
	ENT 2 PHASE					
	DWELL PHASE					
	INITIAL DWELL					
	DWELL PED					
	RECAL PHASE					
	EXIT PHASE					

FLAGS	PHASES
OMITPHAS	1, 3, 5, 7, 9 - 20
OMIT PED	1, 3, 5, 7, 9 - 20
MIN RECAL	2, 6
MAXRECAL	
SOFT RCL	
CDT'L SRVC	
PED RECAL	2, 6
DUAL ETRY	4, 8
SIMGAP	4, 8
REDREST	
AUTO PED	2, 4, 6, 8
REST WALK	2, 6
PED RECY	
RED LOCK	
YEL LOCK	
NO EXT	
NO ADD INI	
NOGAPRED	
NO RANGE	
NOMAX LOK	1, 3 - 5, 7, 8

PHASE DATA TABLE # 2	PH 1	PH 2	PH 3	PH 4	PH 5	PH 6	PH 7	PH 8	PH 9	PH 10	PH 11	PH 12	PH 13	PH 14	PH 15	PH 16	PH 17	PH 18
PHASE TIMING	WB "P" L / T	EB FAR WEST	SB "P" L / T	NB HART LANE	EB "P" L / T	WB FAR WEST	NB (ESR) "P" L / T	SB HART LANE										
MIN GREEN		15.0		6.0		15.0		6.0										
PASSAGE		2.0		2.0		2.0		2.0										
MAXGRN 1		60.0		40.0		60.0		40.0										
MAXGRN 2		60.0		40.0		60.0		40.0										
CONDSERV		0.0		0.0		0.0		0.0										
YEL CHG		4.0		4.0		4.0		4.0										
RED CLR		1.0		1.0		1.0		1.0										
WALK		7.0		7.0		7.0		7.0										
PED CLR		12.0		21.0		12.0		21.0										
ADDED INI																		
TIME TO RED																		
TIME BEFOR																		
MIN GAP																		
MAX INIT GRN																		

FLAGS	PHASES	PHASE DATA TABLE #	PH 1	PH 2	PH 3	PH 4	PH 5	PH 6	PH 7	PH 8	PH 9	PH 10	PH 11	PH 12	PH 13	PH 14	PH 15	PH 16	PH 17	PH 18
OMITPHAS																				
OMIT PED																				
MIN RECAL		PHASE TIMING																		
MAXRECAL																				
SOFT RCL																				
CDT'L SRVC																				
PED RECAL		MIN GREEN																		
DUAL ETRY		PASSAGE																		
SIMGAP		MAXGRN 1																		
REDREST		MAXGRN 2																		
AUTO PED		CONDSERV																		
REST WALK		YEL CHG																		
PED RECY		RED CLR																		
RED LOCK		WALK																		
YEL LOCK		PED CLR																		
NO EXT		ADDED INI																		
NO ADD INI		TIME TO RED																		
NOGAPRED		TIME BEFOR																		
NO RANGE		MIN GAP																		
NOMAX LOK		MAX INIT GRN																		

FLAGS	PHASES	PHASE DATA TABLE #	PH 1	PH 2	PH 3	PH 4	PH 5	PH 6	PH 7	PH 8	PH 9	PH 10	PH 11	PH 12	PH 13	PH 14	PH 15	PH 16	PH 17	PH 18
OMITPHAS																				
OMIT PED																				
MIN RECAL		PHASE TIMING																		
MAXRECAL																				
SOFT RCL																				
CDT'L SRVC																				
PED RECAL		MIN GREEN																		
DUAL ETRY		PASSAGE																		
SIMGAP		MAXGRN 1																		
REDREST		MAXGRN 2																		
AUTO PED		CONDSERV																		
REST WALK		YEL CHG																		
PED RECY		RED CLR																		
RED LOCK		WALK																		
YEL LOCK		PED CLR																		
NO EXT		ADDED INI																		
NO ADD INI		TIME TO RED																		
NOGAPRED		TIME BEFOR																		
NO RANGE		MIN GAP																		
NOMAX LOK		MAX INIT GRN																		

NOTES:

TO QUICKLY FIGURE SECONDS FOR PHASE 8 NORTH AND SOUTH BOUND ONLY: PHASE 8 MINUS PHASE 3 THEN SUBTRACT THE CLEARANCE

TRAFFIC SIGNAL INTERSECTION:	DATE:	GRP:	LOC:	VRS:	HUB:	ZONE:	SEC:	ENGINEER:
Farwest @ Woodhollow	1/26/2012		446E					

CITY OF AUSTIN
TRAFFIC SIGNAL TIMING & PHASING SHEETS

N

4 + 2 + RINGS

PHASE 1	RING 1:	1, 2, a, 3, 4, b
	RING 2:	5, 6, a, 7, 8, b
PHASE 2	RING 1:	1, 2, a, 3, b, 4, c
	RING 2:	5, 6, a, 8, b, 7, c

4 + 2 + PHASEMODE

STARTUP	2, 6
REDSTRT	1, 3, 4, 5, 7 - 20
PED	2, 4, 6, 8
YELFLASH	
FLASH/ENT	
FLASH/EXIT	

4 + 1 + ACT CONFIG

	#1	#2	#3	#4	#5
PHASE	1	2			
OVERLAP	1	1			
PREEMPT	1	1			
CABINET	2	2			
DETECTOR	2	3			
COORD	1	1			

1 + ACTIVE CONTROL PARAMETERS

CONTROL MODE:	SCHEDULE				
MAN PLN:	12	FREE PLN:	1	DFSCHED:	1

4 + 7 + MISC

TRANSITION MODE:	3:30
SYNCHRO MODE:	BEST
MAX DWELL TIME:	0

4 + 2 + COORD CONFIG

START UP FLASH:	1
RED REVERT:	2
FLASH CLR:	6

2 + 3 + PL # + PLAN MODE

PL	PLAN MODE	MAX GRN	PH DATA	PH SEQ	OL DATA	ACT CONF	ENA	OFF		CYCLE	HOLD / YLD
1											
2											
3											
4											
5	COORD	MAX 1	4	1	1	1	A	10	5	65	2, 6
6	COORD	MAX 1	2	1	1	2	A	20	5	130	2, 6
10	COORD	MAX 1	2	1	1	2	A	10	5	130	2, 6
11	COORD	MAX 1	2	1	1	2	A	10	5	120	2, 6
20	FREE	MAX 2	1	1	1	1					
33	FLASH	NONE	1	1	1	1					

SCHEDULE

EV	ENA	HR	M	S	M	T	W	T	F	S	PL	SPECIAL FUNCTIONS 1	2	3	4	5	6	7	8	AUXILIARY 1	2	3	4
1	ENA	0	0	X	X	X	X	X	X	X	5												
2	ENA	6	30		X	X	X	X	X		10												
3	ENA	7	0	X						X	11												
4	ENA	9	0		X	X	X	X	X		11												
5	ENA	15	30		X	X	X	X	X		6												
6	ENA	19	0		X	X	X	X	X		11												
7	ENA	23	0	X	X	X	X	X	X	X	5												
8																							
9																							
10																							
11																							
12																							

PRIORITY SEQUENCE

	PHASES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
TABLE	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TABLE	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TABLE	3																				
TABLE	4																				

NOTE: ZERO DENOTES THE HIGHEST PRIORITY

PED PRAMS & FLAGS

PHASES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
ENABLE	X	X	X	X																
CALLPHAS	2	4	6	8																
OVERLAP																				

VEH PARAMETERS

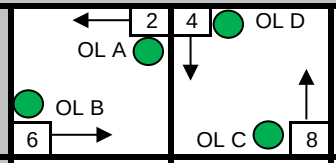
DETECTORS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
ENABLE	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
CALL	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
EXTEND	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
ADD INIT																				
RED LOCK																				
YEL LOCK																				

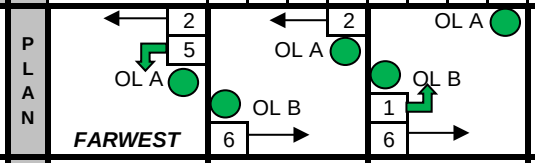
VEH FLAG

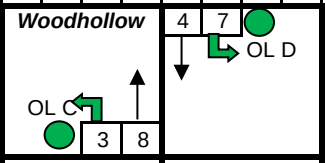
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
CALL PHASE	1	5	2	6	3	7	4	8	2	6	4	8	8	4	CONFIG. 2					
SWTCH PHAS																				
CALL PHASE	1	5	2	6	3	7	4	8	2	6	4	8	8	4	3	7	CONFIG. 3			
SWTCH PHAS																				

SIGNAL PHASING DIAGRAM - (SECONDS)

PLAN

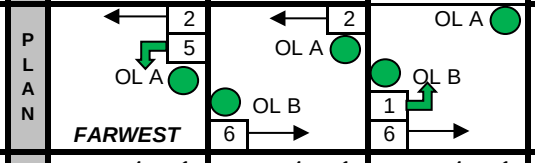


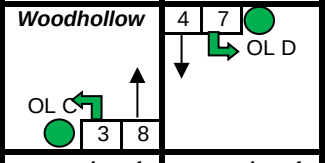




5	39 + 4 + 1	16 + 4 + 1							6	11 + 4 + 1	43 + 4 + 1	15 + 4 + 1	15 + 4 + 1	21 + 4 + 1									
										+ 4 + 1	+ 4 + 1	+ 4 + 1	+ 4 + 1	+ 4 + 1									
									10	11 + 4 + 1	46 + 4 + 1	11 + 4 + 1	14 + 4 + 1	23 + 4 + 1									
									11	15 + 4 + 1	26 + 4 + 1	15 + 4 + 1	16 + 4 + 1	23 + 4 + 1									

PLAN





										+ 4 + 1	+ 4 + 1	+ 4 + 1	+ 4 + 1	+ 4 + 1									

FLAGS	PHASES
OMITPHAS	9 - 20
OMIT PED	1, 3, 5, 7, 9 - 20
MIN RECAL	2, 3, 6, 8
MAXRECAL	4, 5
SOFT RCL	
CDT'L SRVC	
PED RECAL	2, 6
DUAL ETRY	4, 8
SIMGAP	
REDREST	
AUTO PED	2, 4, 6, 8
REST WALK	
PED RECY	
RED LOCK	
YEL LOCK	
NO EXT	
NO ADD INI	
NOGAPRED	
NOMAX LOK	1, 3, 4, 5, 7 - 10

PHASE DATA TABLE # 1	PH 1	PH 2	PH 3	PH 4	PH 5	PH 6	PH 7	PH 8	PH 9	PH 10	PH 11	PH 12	PH 13	PH 14	PH 15	PH 16	PH 17	PH 18
PHASE TIMING	EB "P" LT	WB FAR WEST	NB "P" LT	SB WOOD HOLLOW	WB "P" LT	EB FAR WEST	SB "P" LT	NB WOOD HOLLOW										
MIN GREEN	5.0	10.0	8.0	5.0	5.0	10.0	5.0	12.0										
PASSAGE	1.0	2.0	1.0	2.0	1.0	2.0	1.0	2.0										
MAXGRN 1	20.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0										
MAXGRN 2	20.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0										
CONDSERV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0										
YEL CHG	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0										
RED CLR	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0										
WALK		5.0		5.0		5.0		5.0										
PED CLR		12.0		21.0		12.0		21.0										
ADDED INI																		
TIME TO RED																		
TIME BEFOR																		
MAX INIT GRN																		

2+ 3 + PL # +	PHASE		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
MIN SPLIT	PLAN																			
NOM SPLIT	CYCLE																			
MAX SPLIT																				
NOTE: PLAN 20 = FREE MODE PLAN 33 = FLASH MODE	PLAN																			
	CYCLE																			
	PLAN																			
	CYCLE																			
	PLAN	5		25		15		25		15										
	CYCLE	65		44		21		44		21										
				90		30		90		30										

		PHASE		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
MIN	PLAN	6		11	40	15	15	12	40	15	15										
NOM	CYCLE	130		20	64	20	26	16	68	26	20										
MAX				20	90	25	30	17	90	30	25										
MIN	PLAN																				
NOM	CYCLE																				
MAX																					
MIN	PLAN	10		11	40	15	15	12	40	15	15										
NOM	CYCLE	130		16	67	19	28	16	67	28	19										
MAX				20	75	25	30	20	75	30	25										
MIN	PLAN	11		11	25	15	15	12	25	15	15										
NOM	CYCLE	120		20	51	21	28	20	51	28	21										
MAX				25	70	30	30	25	70	30	30										

Change ONLY the following:		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
INPUT CHANNELS	FUNCTION TYPE													VEH	VEH	VEH	VEH					
	FUNCTION INDEX													13	14	15	16					
	UNIT																					
	CONNECTOR / BUI																					
	PIN													58	57	42	41					
	CHANNEL IN 1																					
	CHANNEL IN 2																					
	LOGIC																					
OUTPUT CHANNELS		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**
	FUNCTION TYPE																					
	FUNCTION INDEX																					
	CONNECTOR / BUI 1																					
	PIN 1																					
	CONNECTOR / BUI 2																					
	PIN 2																					
	CONNECTOR / BUI 3																					
	PIN 3																					

PHASES		TYPE		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
OVERLAP CONFIGURATION (P = PRIMARY, S = SECONDARY, M = MODIFIED)	OVL A	2	P																		
		141	P					X													
			S						X												
			M	X																	
	OVL B	2	P																		
		141	P	X																	
			S		X																
			M					X													
	OVL C	2	P								X										
		141	P																		
			S																		
			M																		
	OVL D	2	P				X														
		141	P																		
			S																		
			M																		
	OVL E	2	P																		
	OVL F	2	P																		
	OVL G	2	P																		
	OVL H	2	P																		
	OVL I	2	P																		
	OVL J	2	P																		
	OVL K	2	P																		
	OVL L	2	P																		
	OVL M	2	P																		
	OVL N	2	P																		
	OVL O	2	P																		
	OVL P	2	P																		

OVERLAPS			A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
OVERLAP SETTINGS	FLAGS / PARAM	ENABLE	X	X	X	X												
		PED OVERLAP																
		FLASH YELLOW	X	X														
		ALT FLASH HZ																
	FLAGS	RECALL PRIMARY																
		RECALL SEC																
		PED RECALL																
		PED RECYCLE																
		AUTO EXTEND																
	PARAMETERS	MIN GREEN																
		MAX GREEN																
		GREEN CLEAR																
		YEL CLEAR	4	4	4	4	3	3	3	3	3	3	3	3	3	3	3	3
		RED CLEAR	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
		WALK																
		PED CLEAR																
		RESERVICE																

PRE - EMPT		1	3	4	5	6
PRE EMPT FLAGS	ENABLE					
	NO MEM LOK					
	MAN ENABLE					
	NO OVER FLSH					
	NO OVER NEXT					
	OMIT IN DELAY					
	RE MAX PRES					
	PED NOT DARK					
TIME	MIN PRESENCE					
	DELAY					

SETTINGS		1	3	4	5	6
TIMING	STRT MIN GRN					
	STRT WALK					
	STRT PED CLR					
PHASE FLAGS	ENT 1 PHASE					
	ENT 2 PHASE					
	DWELL PHASE					
	INITIAL DWELL					
	DWELL PED					
	RECAL PHASE					
	EXIT PHASE					

FLAGS	PHASES
OMITPHAS	9 - 20
OMIT PED	1, 3, 5, 7, 9 - 20
MIN RECAL	2, 3, 6, 8
MAXRECAL	4, 5
SOFT RCL	
CDT'L SRVC	
PED RECAL	2, 6
DUAL ETRY	4, 8
SIMGAP	
REDREST	
AUTO PED	2, 4, 6, 8
REST WALK	
PED RECY	
RED LOCK	
YEL LOCK	
NO EXT	
NO ADD INI	
NOGAPRED	
NO RANGE	
NOMAX LOK	1, 3, 4, 5, 7 - 10

PHASE DATA TABLE # 2	PH 1	PH 2	PH 3	PH 4	PH 5	PH 6	PH 7	PH 8	PH 9	PH 10	PH 11	PH 12	PH 13	PH 14	PH 15	PH 16	PH 17	PH 18
PHASE TIMING	EB "P" LT	WB FAR WEST	NB "P" LT	SB WOOD HOLLOV	WB "P" LT	EB FAR WEST	SB "P" LT	NB WOOD HOLLOV										
MIN GREEN	5.0	10.0	8.0	5.0	5.0	10.0	5.0	12.0										
PASSAGE	1.5	2.0	2.0	2.0	1.5	2.0	1.0	2.0										
MAXGRN 1	20.0	60.0	30.0	23.0	20.0	60.0	23.0	30.0										
MAXGRN 2	20.0	30.0	30.0	30.0	20.0	30.0	30.0	30.0										
CONDSERV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0										
YEL CHG	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0										
RED CLR	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0										
WALK		5.0		5.0		5.0		5.0										
PED CLR		12.0		21.0		12.0		21.0										
ADDED INI																		
TIME TO RED																		
TIME BEFOR																		
MAX INIT GRN																		
MAX INIT GRN																		

FLAGS	PHASES
OMITPHAS	3, 7, 9 - 20
OMIT PED	1, 3, 5, 7, 9 - 20
MIN RECAL	2, 6, 8
MAXRECAL	4, 5
SOFT RCL	
CDT'L SRVC	
PED RECAL	2, 6
DUAL ETRY	4, 8
SIMGAP	
REDREST	
AUTO PED	2, 4, 6, 8
REST WALK	
PED RECY	
RED LOCK	
YEL LOCK	
NO EXT	
NO ADD INI	
NOGAPRED	
NO RANGE	
NOMAX LOK	1, 3, 4, 5, 7 - 10

PHASE DATA TABLE # 3	PH 1	PH 2	PH 3	PH 4	PH 5	PH 6	PH 7	PH 8	PH 9	PH 10	PH 11	PH 12	PH 13	PH 14	PH 15	PH 16	PH 17	PH 18
PHASE TIMING	EB "P" LT	WB FAR WEST	NB "P" LT	SB WOOD HOLLOW	WB "P" LT	EB FAR WEST	SB "P" LT	NB WOOD HOLLOW										
MIN GREEN	5.0	10.0	8.0	5.0	5.0	10.0	5.0	12.0										
PASSAGE	1.0	2.0	1.0	2.0	1.0	2.0	1.0	2.0										
MAXGRN 1	20.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0										
MAXGRN 2	20.0	30.0	20.0	30.0	20.0	30.0	20.0	30.0										
CONDSERV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0										
YEL CHG	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0										
RED CLR	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0										
WALK		5.0		5.0		5.0		5.0										
PED CLR		12.0		21.0		12.0		21.0										
ADDED INI																		
TIME TO RED																		
TIME BEFOR																		
MAX INIT GRN																		
MAX INIT GRN																		

FLAGS	PHASES
OMITPHAS	1, 3, 5, 7, 9 - 20
OMIT PED	1, 3, 5, 7, 9 - 20
MIN RECAL	8
MAXRECAL	2, 4, 6
SOFT RCL	
CDT'L SRVC	
PED RECAL	2, 6
DUAL ETRY	4, 8
SIMGAP	4, 8
REDREST	
AUTO PED	2, 4, 6, 8
REST WALK	
PED RECY	
RED LOCK	
YEL LOCK	
NO EXT	
NO ADD INI	
NOGAPRED	
NO RANGE	
NOMAX LOK	1, 3, 4, 5, 7 - 10

PHASE DATA TABLE # 4	PH 1	PH 2	PH 3	PH 4	PH 5	PH 6	PH 7	PH 8	PH 9	PH 10	PH 11	PH 12	PH 13	PH 14	PH 15	PH 16	PH 17	PH 18
PHASE TIMING	EB "P" LT	WB FAR WEST	NB "P" LT	SB WOOD HOLLOW	WB "P" LT	EB FAR WEST	SB "P" LT	NB WOOD HOLLOW										
MIN GREEN		10.0		5.0		10.0		12.0										
PASSAGE		2.0		2.0		2.0		2.0										
MAXGRN 1		60.0		30.0		60.0		30.0										
MAXGRN 2		30.0		30.0		30.0		30.0										
CONDSERV		0.0		0.0		0.0		0.0										
YEL CHG		4.0		4.0		4.0		4.0										
RED CLR		1.0		1.0		1.0		1.0										
WALK		5.0		5.0		5.0		5.0										
PED CLR		12.0		21.0		12.0		21.0										
ADDED INI																		
TIME TO RED																		
TIME BEFOR																		
MAX INIT GRN																		
MAX INIT GRN																		

NOTES:

TRAFFIC SIGNAL INTERSECTION:	DATE:	GRP:	LOC:	VRS:	HUB:	ZONE:	SEC:	ENGINEER:
Far West @ Loop 1	3/1/2013		447F					

CITY OF AUSTIN
TRAFFIC SIGNAL TIMING & PHASING SHEETS

N

4 + 2 + RINGS

PHASE 4	RING 1:	1, a, 22, 2, b, 4, c, 24, d, 7, e
	RING 2:	
PHASE 9	RING 1:	1, a, 22, 2, b, 4, c, 24, d, 8, e, 7, f
	RING 2:	

4 + 2 + PHASEMODE

STARTUP	
REDSTRT	ALL PHASES
PED	ALL PHASES
YELFLASH	
FLASH/ENT	
FLASH/EXIT	

4 + 1 + ACT CONFIG

	#1	#2	#3	#4	#8
PHASE				4	9
OVERLAP				1	1
PREEMPT				1	1
CABINET				2	2
DETECTOR				2	2
COORD				1	1

1 + ACTIVE CONTROL PARAMETERS

CONTROL MODE:	SCHEDULE				
MAN PLN:	8	FREE PLN:	1	DFSCHED:	1

4 + 7 + MISC

TRANSITION MODE:	3:30
SYNCHRO MODE:	BEST
MAX DWELL TIME:	50

4 + 2 + COORD CONFIG

START UP FLASH:	1
RED REVERT:	2
FLASH CLR:	6

2 + 3 + PL # + PLAN MODE

PL	PLAN MODE	MAX GRN	PH DATA	PH SEQ	OL DATA	ACT CONF	ENA	OFF	VAR	CYCLE	HOLD / YLD
1	COORD	NONE	5	1	1	8	B	0	5	120	2
2	COORD	NONE	5	1	1	8	B	106	5	130	2
3	COORD	NONE	5	1	1	8	B	0	5	130	2
4											
5											
6											
7	COORD	NONE	4	1	1	4	B	0	5	120	2
8	COORD	NONE	4	1	1	4	B	0	5	80	2
9											
10											
20	FREE	MAX I	4	1	1	4					
25	FLASH	NONE									

SCHEDULE

EV	ENA	HR	M	S	M	T	W	T	F	S	PL	. 1	2	3	4	5	6	7	8	AUXILIARY 1	2	3	4
1	ENA	0	0	X	X	X	X	X	X	X	25												
2	ENA	6	0	X	X	X	X	X	X	X	8												
3	ENA	6	30		X	X	X	X	X		2												
4	ENA	7	0	X						X	7												
5	ENA	9	0		X	X	X	X	X		1												
6	ENA	15	30		X	X	X	X	X		3												
7	ENA	19	0		X	X	X	X	X		1												
8	ENA	23	0	X	X	X	X	X	X	X	8												
9																							
10																							
11																							
12																							

PRIORITY SEQUENCE

PHASES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
TABLE 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TABLE 2																				
TABLE 3																				
TABLE 4																				

NOTE: ZERO DENOTES THE HIGHEST PRIORITY

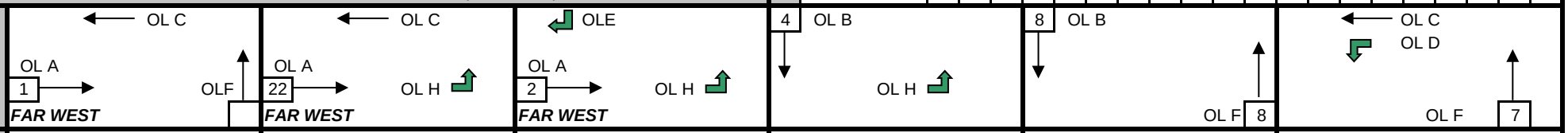
PED PRAMS & FLAGS

PHASES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
ENABLE	X	X	X	X																
CALLPHAS	2	4	6	8																
OVERLAP	13	15	14	16																

VEH PARAMETERS / VEH FLAGS

DETECTORS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
ENABLE	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X
CALL	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X
EXTEND	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X
ADD INIT																				
RED LOCK																				
YEL LOCK																				
CALL PHASE	1	5	2	0	3	7	4	8	2	0	4	8	8	10	12	13	11	12	7	9
SWTCH PHAS																				
OVERLAP																				
DELAY																				

SIGNAL PHASING DIAGRAM - (SECONDS)



| PLAN | | | | | | | | | | | | | | | | | | |

FLAGS	PHASES
OMITPHAS	3, 5, 6, 8 - 21, 23, 25 - 30
OMIT PED	
MIN RECAL	1, 2, 4, 7
MAXRECAL	1, 2, 4, 7
SOFT RCL	
CDT'L SRVC	
PED RECAL	22
DUAL ETRY	
SIMGAP	
REDREST	
AUTO PED	
REST WALK	2
PED RECY	
RED LOCK	
YEL LOCK	
NO EXT	
NO ADD INI	
NOGAPRED	
NOMAX LOK	

PHASE DATA TABLE # 4	PH 1	PH 2	PH 3	PH 4	PH 5	PH 6	PH 7	PH 8	PH 9	PH 10	PH 11	PH 12	PH 13	PH 14	PH 15	PH 16	PH 22	PH 24
PHASE TIMING	EB ADV CLEARANCE	EB FAR WEST		SB LOOP 1			NB LOOP 1										EB FAR WEST	
MIN GREEN	4.0	13.0		10.0			10.0										1.0	1.0
PASSAGE	1.0	2.0		2.0			2.0										0.0	0.0
MAXGRN 1	4.0	30.0		30.0			30.0										14.0	1.0
MAXGRN 2	4.0	30.0		30.0			30.0										14.0	1.0
CONDSERV	0.0	0.0		0.0			0.0										0.0	0.0
YEL CHG	4.0	4.0		4.0			4.0										4.0	4.0
RED CLR	1.0	1.0		1.0			1.0										1.0	1.0
WALK																		
PED CLR																		
ADDED INI																		
TIME TO RED																		
TIME BEFOR																		
MAX INIT GRN																		

2+ 3 + PL # +	PHASE		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	22	23
MIN SPLIT	PLAN	1	9	15		15			15	9									20	
NOM SPLIT	CYCLE	120	9	27		30			25	9									20	
MAX SPLIT			9	45		35			35	9									20	
	PLAN	2	9	15		25			15	9									20	
	CYCLE	130	9	25		46			21	9									20	
			9	45		60			35	9									20	
	PLAN	3	9	15		20			20	9									20	
	CYCLE	130	9	20		31			41	9									20	
			9	40		45			55	9									20	
	PLAN																			
	CYCLE																			

NOTE:
PLAN 20 = FREE MODE
PLAN 33 = FLASH MODE

	PHASE		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	22	23
MIN	PLAN																			
NOM	CYCLE																			
MAX																				
MIN	PLAN																			
NOM	CYCLE																			
MAX																				
MIN	PLAN	7	9	15		15			15										20	20
NOM	CYCLE	120	9	27		34			30										20	20
MAX			9	45		35			35										20	20
MIN	PLAN	8	9	14		10			10										20	
NOM	CYCLE	80	9	15		18			18										20	
MAX			9	25		25			25										20	

Change ONLY the following:		1	2	3	4	5	6	7	8	9		33	34	35	36	37	38	39	40	41	42	43
INPUT CHANNELS	FUNCTION TYPE				VEH							VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH
	FUNCTION INDEX				4							13	14	15	16	17	18	19	20	21	22	23
	UNIT				1							1	1	1	1	1	1	1	1	1	1	1
	CONNECTOR / BUI				C1S							C1S	C1S	C1S	C1S	C1S	C1S	C1S	C1S	C1S	C1S	C1S
	PIN				NONE							41	41	39	39	NONE	NONE	45	45	NONE	39	41
	CHANNEL IN 1																					
	CHANNEL IN 2																					
	LOGIC																					

OUTPUT CHANNELS		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
	FUNCTION TYPE	OVL	OVL	ovlped	OVL	OVL	ovlped	OVL	OVL	ovlped	OVL	OVL	ovlped	OVL	ovlped	OVL	OVL					
	FUNCTION INDEX	1	2	13	5	6	15	3	4	14	7	8	16	9	13	3	4					
	CONNECTOR / BUI 1	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1					
	PIN 1	16	12	10	7	4	2	32	29	27	24	21	19	97	94	88	85					
	CONNECTOR / BUI 2	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1					
	PIN 2	17	13	none	8	5	none	33	30	none	25	22	none	98	none	89	86					
	CONNECTOR / BUI 3	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1					
	PIN 3	18	15	11	9	6	3	34	31	28	26	23	20	99	96	90	87					

PHASES		TYPE		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15		22	24
OVERLAP CONFIGURATION (P = PRIMARY, S = SECONDARY, M = MODIFIED)	OVL A	2	P	X	X										X					X	
		1/1	P																		
			M																		
			S																		
	OVL B	2	P				X	X			X		X								X
		1/1	P																		
			M																		
			S																		
	OVL C	2	P	X		X			X	X		X		X	X	X				X	
		1/1	P																		
			M																		
			S																		
	OVL D	2	P			X			X	X		X		X							
		1/1	P																		
			M																		
			S																		
	OVL E	2	P		X																
	OVL F	2	P	X						X	X	X									
	OVL G	2	P		X	X	X	X					X	X	X	X					
	OVL H	2	P		X	X	X						X			X				X	
	OVL I	2	P																		
	OVL J	2	P																		
	OVL K	2	P																		
	OVL L	2	P																		
	OVL M	2	P																	X	
	OVL N	2	P				X	X			X		X								
	OVL O	2	P						X					X	X						X
	OVL P	2	P	X						X	X	X									

OVERLAPS			A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
OVERLAP SETTINGS	FLAGS / PARAM	ENABLE	X	X	X	X	X	X	X	X					X	X	X	X
		PED OVERLAP													X	X	X	X
		FLASH YELLOW																
		ALT FLASH HZ																
	FLAGS	RECALL PRIMARY																
		RECALL SEC		X														
		PED RECALL													X			
		PED RECYCLE																
		AUTO EXTEND																
	PARAMETERS	MIN GREEN																
		MAX GREEN																
		GREEN CLEAR																
		YEL CLEAR	4	4	4	4	4	4	4	4	4	4	4	4				0
		RED CLEAR	1	1	1	1	1	1	1	1	1	1	1	1				0
		WALK													5	5	5	
		PED CLEAR													10	20	8	
		RESERVICE																

PRE - EMPT		1	3	4	5	6
PRE EMPT FLAGS	ENABLE					
	NO MEM LOK					
	MAN ENABLE					
	NO OVER FLSH					
	NO OVER NEXT					
	OMIT IN DELAY					
	RE MAX PRES					
	PED NOT DARK					
TIME	MIN PRESENCE					
	DELAY					

SETTINGS		1	3	4	5	6
TIMING	STRT MIN GRN					
	STRT WALK					
	STRT PED CLR					
PHASE FLAGS	ENT 1 PHASE					
	ENT 2 PHASE					
	DWELL PHASE					
	INITIAL DWELL					
	DWELL PED					
	RECAL PHASE					
	EXIT PHASE					

FLAGS	PHASES
OMITPHAS	3, 5, 6, 9 - 21, 23, 25 - 30
OMIT PED	
MIN RECAL	1, 2, 4, 7, 8
MAXRECAL	1, 2, 4, 7, 8
SOFT RCL	
CDT'L SRVC	
PED RECAL	22
DUAL ETRY	
SIMGAP	
REDREST	
AUTO PED	
REST WALK	2
PED RECY	
RED LOCK	
YEL LOCK	
NO EXT	1, 8
NO ADD INI	
NOGAPRED	
NO RANGE	
NOMAX LOK	

PHASE DATA TABLE # 5	PH 1	PH 2	PH 3	PH 4	PH 5	PH 6	PH 7	PH 8	PH 9	PH 10	PH 11	PH 12	PH 13	PH 14	PH 15	PH 16	PH 22	PH 24
PHASE TIMING	EB ADV CLEARANCE	EB FAR WEST		SB LOOP 1			NB LOOP 1										EB FAR WEST	
MIN GREEN	4.0	13.0		10.0			10.0	4.0									1.0	1.0
PASSAGE	1.0	2.0		2.0			2.0	1.0									0.0	0.0
MAXGRN 1	4.0	35.0		45.0			30.0	4.0									14.0	1.0
MAXGRN 2	4.0	30.0		30.0			30.0	4.0									14.0	1.0
CONDSERV	0.0	0.0		0.0			0.0	0.0									0.0	0.0
YEL CHG	4.0	4.0		4.0			4.0	4.0									4.0	4.0
RED CLR	1.0	1.0		1.0			1.0	1.0									1.0	1.0
WALK																		
PED CLR																		
ADDED INI																		
TIME TO RED																		
TIME BEFOR																		
MIN GAP																		
MAX INIT GRN																		

FLAGS	PHASES	PHASE DATA TABLE # 3	PH 1	PH 2	PH 3	PH 4	PH 5	PH 6	PH 7	PH 8	PH 9	PH 10	PH 11	PH 12	PH 13	PH 14	PH 15	PH 16	PH 17	PH 18
OMITPHAS																				
OMIT PED																				
MIN RECAL		PHASE TIMING																		
MAXRECAL																				
SOFT RCL																				
CDT'L SRVC																				
PED RECAL		MIN GREEN																		
DUAL ETRY		PASSAGE																		
SIMGAP		MAXGRN 1																		
REDREST		MAXGRN 2																		
AUTO PED		CONDSERV																		
REST WALK		YEL CHG																		
PED RECY		RED CLR																		
RED LOCK		WALK																		
YEL LOCK		PED CLR																		
NO EXT		ADDED INI																		
NO ADD INI		TIME TO RED																		
NOGAPRED		TIME BEFOR																		
NO RANGE		MIN GAP																		
NOMAX LOK		MAX INIT GRN																		

FLAGS	PHASES	PHASE DATA TABLE # 4	PH 1	PH 2	PH 3	PH 4	PH 5	PH 6	PH 7	PH 8	PH 9	PH 10	PH 11	PH 12	PH 13	PH 14	PH 15	PH 16	PH 17	PH 18
OMITPHAS																				
OMIT PED																				
MIN RECAL		PHASE TIMING																		
MAXRECAL																				
SOFT RCL																				
CDT'L SRVC																				
PED RECAL		MIN GREEN																		
DUAL ETRY		PASSAGE																		
SIMGAP		MAXGRN 1																		
REDREST		MAXGRN 2																		
AUTO PED		CONDSERV																		
REST WALK		YEL CHG																		
PED RECY		RED CLR																		
RED LOCK		WALK																		
YEL LOCK		PED CLR																		
NO EXT		ADDED INI																		
NO ADD INI		TIME TO RED																		
NOGAPRED		TIME BEFOR																		
NO RANGE		MIN GAP																		
NOMAX LOK		MAX INIT GRN																		

NOTES:

TO QUICKLY FIGURE SECONDS FOR PHASE 8 NORTH AND SOUTH BOUND ONLY: PHASE 8 MINUS PHASE 3 THEN SUBTRACT THE CLEARANCE

TRAFFIC SIGNAL INTERSECTION:	DATE:	GRP:	LOC:	VRS:	HUB:	ZONE:	SEC:	ENGINEER:
Anderson Ln. @ Loop 1	2/9/2012		98F					

CITY OF AUSTIN
TRAFFIC SIGNAL TIMING & PHASING SHEETS

N

4 + 2 + RINGS

PHASE 4	RING 1:	1, a, 2, b, 4, c, 5, d, 19, e, 6, f, 7, g
	RING 2:	
PHASE 2	RING 1:	
	RING 2:	

4 + 2 + PHASEMODE

STARTUP	2
REDSTRT	1, 3 - 30
PED	1 - 30
YELFLASH	
FLASH/ENT	
FLASH/EXIT	

4 + 1 + ACT CONFIG

	#1	#2	#3	#4	#5
PHASE	1			4	
OVERLAP	1			1	
PREEMPT	1			1	
CABINET	3			5	
DETECTOR	2			3	
COORD	1			1	

1 + ACTIVE CONTROL PARAMETERS

CONTROL MODE:	SCHEDULE			
MAN PLN:	3	FREE PLN:	1	DFSCHED: 1

4 + 7 + MISC

TRANSITION MODE:	3:30
SYNCHRO MODE:	BEST
MAX DWELL TIME:	0

4 + 2 + COORD CONFIG

START UP FLASH:	1
RED REVERT:	2
FLASH CLR:	8

2 + 3 + PL # + PLAN MODE

PL	PLAN MODE	MAX GRN	PH DATA	PH SEQ	OL DATA	ACT CONF	ENA	OFF	VAR	CYCLE	HOLD / YLD
1	COORD	MAX 1	4	1	1	4	F	125	5	130	6
2	COORD	MAX 1	8	1	1	4	F	8	5	130	6
3	COORD	MAX 1	4	1	1	4	B	89	5	150	2
4	COORD	MAX 1	4	1	1	4	B	49	5	90	2
5											
6											
7											
8											
9											
10											
20											
33	FLASH	MAX 1	1	1	1	1					

SCHEDULE

EV	ENA	HR	M	S	M	T	W	T	F	S	PL	SPECIAL FUNCTIONS 1	2	3	4	5	6	7	8	AUXILIARY 1	2	3	4
1	ENA	0	0	X	X	X	X	X	X	X	4												
2	ENA	2	0	X	X	X	X	X	X	X	33												
3	ENA	6	0	X	X	X	X	X	X	X	4												
4	ENA	6	30		X	X	X	X	X		2												
5	ENA	8	0	X						X	1												
6	ENA	9	0		X	X	X	X	X		1												
7	ENA	15	30		X	X	X	X	X		3												
8	ENA	19	30		X	X	X	X	X		1												
9	ENA	21	0	X	X	X	X	X	X	X	4												
10																							
11																							
12																							

PRIORITY SEQUENCE

PHASES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
TABLE 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TABLE 2																				
TABLE 3																				
TABLE 4																				

NOTE: ZERO DENOTES THE HIGHEST PRIORITY

PED PRAMS & FLAGS

PHASES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
ENABLE	X	X	X	X																
CALLPHAS	2	4	6	8																
OVERLAP	13	14	15	16																

VEH PARAMETERS / VEH FLAG

DETECTORS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
ENABLE	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CALL	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
EXTEND	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ADD INIT																				
RED LOCK																				
YEL LOCK																				
CALL PHASE	2	2	6	6	4	4	8	8	2	6	4	8	8	10	12	13	11	12	7	9
SWTCH PHAS																				
OVERLAP																				
DELAY																				

SIGNAL PHASING DIAGRAM - (SECONDS)

PLAN

OL C ← ; OL A → ; OL F ↑

ADV CLEARANCE (PHASE 1)

1	3	+ 4	+ 1			
2	3	+ 4	+ 1			
3	3	+ 4	+ 1			
4	3	+ 4	+ 1			
		+ 4	+ 1			

OL C ← ; OL H ↑ ; 2 → ; OL G →

Anderson

1	21	+ 4	+ 1			
2	19	+ 4	+ 1			
3	30	+ 4	+ 1			
4	13	+ 4	+ 1			
		+ 4	+ 1			

SB US 183

4 ↓ ; OL H ↑ ; OL G →

Loop 1 WSR

1	19	+ 4	+ 1			
2	29	+ 4	+ 1			
3	18	+ 4	+ 1			
4	8	+ 4	+ 1			
		+ 4	+ 1			

OL B ↓ ; OL E ← ; OL G →

ADV CLEARANCE (PHASE 5)

1	3	+ 4	+ 1			
2	3	+ 4	+ 1			
3	3	+ 4	+ 1			
4	3	+ 4	+ 1			
		+ 4	+ 1			

OL E ← 19 ; OL C ← ; OL D ↓ ; OL G →

Anderson

1	6	+ 4	+ 1			
2	6	+ 4	+ 1			
3	6	+ 4	+ 1			
4	6	+ 4	+ 1			
		+ 4	+ 1			

OL E ← 6 ; OL C ← ; OL D ↓ ; ↱

Anderson

1	33	+ 4	+ 1			
2	25	+ 4	+ 1			
3	46	+ 4	+ 1			
4	11	+ 4	+ 1			
		+ 4	+ 1			

PLAN

← ; OL C ↓ ; 7 ↑

Loop 1 ESR

1	10	+ 4	+ 1			
2	10	+ 4	+ 1			
3	9	+ 4	+ 1			
4	11	+ 4	+ 1			
		+ 4	+ 1			

FLAGS	PHASES
OMITPHAS	3, 8 - 18, 20
OMIT PED	
MIN RECAL	
MAXRECAL	1, 2, 4, 5, 6, 7
SOFT RCL	
CDT'L SRVC	
PED RECAL	
DUAL ETRY	
SIMGAP	
REDREST	
AUTO PED	1, 2, 4, 5, 6, 7
REST WALK	
PED RECY	
RED LOCK	
YEL LOCK	
NO EXT	1, 5
NO ADD INI	
NOGAPRED	
NOMAX LOK	

PHASE DATA TABLE # 4	PH 1	PH 2	PH 3	PH 4	PH 5	PH 6	PH 7	PH 8	PH 19	PH 10	PH 11	PH 12	PH 13	PH 14	PH 15	PH 16	PH 17	PH 18
PHASE TIMING	EB ADV CLEAR	EB ANDERSON		SB LOOP 1	WB ADV CLEAR	NB RT, WB ANDERSON	NB LOOP 1		SB LOOP 1 CLEARANCE									
MIN GREEN	3.0	10.0		5.0	3.0	10.0	5.0		6.0									
PASSAGE	0.0	3.5		2.5	0.0	2.5	1.5		0.0									
MAXGRN 1	3.0	30.0		30.0	3.0	30.0	30.0		6.0									
MAXGRN 2	3.0	30.0		30.0	3.0	30.0	30.0		6.0									
CONDSERV	0.0	0.0		0.0	0.0	0.0	0.0		0.0									
YEL CHG	4.0	4.0		4.0	4.0	4.0	4.0		4.0									
RED CLR	1.0	1.0		1.0	1.0	1.0	1.0		1.0									
WALK																		
PED CLR																		
ADDED INI																		
TIME TO RED																		
TIME BEFOR																		
MAX INIT GRN																		

2+ 3 + PL # +	PHASE		1	2	3	4	5	6	7		19	10	11	12	13	14	15	16	17	19		PHASE		1	2	3	4	5	6	7		19	10	11	12	13	14	15	16	17	18
MIN SPLIT	PLAN	1	8	10		10	8	10	10		11										MIN	PLAN																				
NOM SPLIT	CYCLE	130	8	26		24	8	38	15		11										NOM	CYCLE																				
MAX SPLIT			8	40		35	8	60	25		11										MAX																					
NOTE: PLAN 20 = FREE MODE PLAN 33 = FLASH MODE	PLAN	2	8	10		10	8	10	10		11										MIN	PLAN																				
	CYCLE	130	8	24		34	8	30	15		11										NOM	CYCLE																				
			8	40		35	8	60	25		11										MAX																					
	PLAN	3	8	10		10	8	10	10		11										MIN	PLAN																				
	CYCLE	150	8	35		23	8	51	14		11										NOM	CYCLE																				
			8	60		35	8	65	25		11										MAX																					
	PLAN	4	8	10		10	8	10	10		11										MIN	PLAN																				
	CYCLE	90	8	18		13	8	16	16		11										NOM	CYCLE																				
	Late off		8	40		25	8	30	30		11										MAX																					

Change ONLY the following:		33	34	35	36	37	38	39	40	41	42	43	74	75	76	77	78	79	80	81	82	83
INPUT CHANNELS	FUNCTION TYPE	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH
	FUNCTION INDEX	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
	UNIT																					
	CONNECTOR / BUI																					
	PIN	41	41	56	56	39	39	41	41	56	39	58	45	49	47	47	43	43	45	45	47	43
	CHANNEL IN 1																					
	CHANNEL IN 2												ADDED FOR SET BACK LOOPS									

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
OUTPUT CHANNELS	FUNCTION TYPE	OVL	OVL	ovlped	OVL	OVL	ovlped	OVL	OVL	ovlped	OVL	OVL	ovlped	OVL	ovlped							
	FUNCTION INDEX	1	2	13	5	6	15	3	4	14	7	8	16	9	13							
	CONNECTOR / BUI 1	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1							
	PIN 1	16	12	10	7	4	2	32	29	27	24	21	19	97	94							
	CONNECTOR / BUI 2	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1							
	PIN 2	17	13	none	8	5	none	33	30	none	25	22	none	98	none							
	CONNECTOR / BUI 3	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1							
	PIN 3	18	15	11	9	6	3	34	31	28	26	23	20	99	96							

P = PRIMARY S = SECONDARY M = MODIFIED

OVERLAP CONFIGURATION

PHASES	TYPE		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	19
OVL A	2	P	X	X										X	X					
	1+1	P																		
		M																		
		S																		
OVL B	2	P				X	X			X		X								
	1+1	P																		
		M																		
		S																		
OVL C	2	P	X	X	X			X	X		X		X	X	X					X
	1+1	P																		
		M																		
		S																		
OVL D	2	P			X			X	X		X		X							X
OVL E	2	P					X	X					X	X						X
OVL F	2	P	X						X	X	X									
OVL G	2	P		X	X	X	X	X				X	X	X	X					X
OVL H	2	P		X	X	X						X			X					
OVL I	2	P						X												
OVL J	2	P																		
OVL K	2	P																		
OVL L	2	P																		
OVL M	2	P		X										X	X					
OVL N	2	P				X	X			X		X								
OVL O	2	P					X	X					X	X						X
OVL P	2	P	X						X	X	X									
OVL Q	2	P		X										X	X					

OVERLAPS		A	B	C	D	E	F	G	H	I	J	K	M	N	O	P	Q
OVERLAP SETTINGS – FLAGS / PARAM	ENABLE	X	X	X	X	X	X	X	X	X			X	X	X	X	X
	PED OVERLAP												X	X	X	X	X
	FLASH YELLOW																
	ALT FLASH HZ																
FLAGS	RECALL PRIMARY																
	RECALL SEC																
	PED RECALL												X	X	X		
	PED RECYCLE																
	AUTO EXTEND																
PARAMETERS	MIN GREEN																
	MAX GREEN																
	GREEN CLEAR																
	YEL CLEAR	4	4	4	4	4	4	4	4	4	4	4	0	0	0	0	0
	RED CLEAR	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0
	WALK												5	5	5	5	5
	PED CLEAR												12	21	18	17	12
	RESERVICE																

PRE - EMPT		1	3	4	5	6
PRE EMPT FLAGS	ENABLE		X			
	NO MEM LOK		X			
	MAN ENABLE					
	NO OVER FLSH					
	NO OVER NEXT					
	OMIT IN DELAY					
	RE MAX PRES					
	PED NOT DARK					
TIME	MIN PRESENCE					
	DELAY					

SETTINGS		1	3	4	5	6
TIMING	STRT MIN GRN					
	STRT WALK					
	STRT PED CLR					
PHASE FLAGS	ENT 1 PHASE		2			
	ENT 2 PHASE					
	DWELL PHASE		2			
	INITIAL DWELL					
	DWELL PED					
	RECAL PHASE					
	EXIT PHASE		4			

FLAGS	PHASES
OMITPHAS	3, 8 - 18, 20
OMIT PED	
MIN RECAL	
MAXRECAL	1, 2, 4, 5, 6, 7
SOFT RCL	
CDT'L SRVC	
PED RECAL	4
DUAL ETRY	
SIMGAP	
REDREST	
AUTO PED	1, 2, 4, 5, 6, 7
REST WALK	4
PED RECY	
RED LOCK	
YEL LOCK	
NO EXT	1, 5
NO ADD INI	
NOGAPRED	
NO RANGE	
NOMAX LOK	

PHASE DATA TABLE # 8	PH 1	PH 2	PH 3	PH 4	PH 5	PH 6	PH 7	PH 8	PH 19	PH 10	PH 11	PH 12	PH 13	PH 14	PH 15	PH 16	PH 17	PH 18
PHASE TIMING	EB ADV CLEAR	EB ANDERSON		SB LOOP 1	WB ADV CLEAR	NB RT, WB ANDERSON	NB LOOP 1		SB LOOP 1 CLEARANCE									
MIN GREEN	3.0	10.0		5.0	3.0	10.0	5.0		6.0									
PASSAGE	0.0	3.5		2.5	0.0	2.5	1.5		0.0									
MAXGRN 1	3.0	30.0		30.0	3.0	30.0	30.0		6.0									
MAXGRN 2	3.0	30.0		30.0	3.0	30.0	30.0		6.0									
CONDSERV	0.0	0.0		0.0	0.0	0.0	0.0		0.0									
YEL CHG	4.0	4.0		4.0	4.0	4.0	4.0		4.0									
RED CLR	1.0	1.0		1.0	1.0	1.0	1.0		1.0									
WALK																		
PED CLR																		
ADDED INI																		
TIME TO RED																		
TIME BEFOR																		
MIN GAP																		
MAX INIT GRN																		

FLAGS	PHASES	PHASE DATA TABLE # 3	PH 1	PH 2	PH 3	PH 4	PH 5	PH 6	PH 7	PH 8	PH 9	PH 10	PH 11	PH 12	PH 13	PH 14	PH 15	PH 16	PH 17	PH 18
OMITPHAS																				
OMIT PED																				
MIN RECAL		PHASE TIMING																		
MAXRECAL																				
SOFT RCL																				
CDT'L SRVC																				
PED RECAL		MIN GREEN																		
DUAL ETRY		PASSAGE																		
SIMGAP		MAXGRN 1																		
REDREST		MAXGRN 2																		
AUTO PED		CONDSERV																		
REST WALK		YEL CHG																		
PED RECY		RED CLR																		
RED LOCK		WALK																		
YEL LOCK		PED CLR																		
NO EXT		ADDED INI																		
NO ADD INI		TIME TO RED																		
NOGAPRED		TIME BEFOR																		
NO RANGE		MIN GAP																		
NOMAX LOK		MAX INIT GRN																		

FLAGS	PHASES	PHASE DATA TABLE # 4	PH 1	PH 2	PH 3	PH 4	PH 5	PH 6	PH 7	PH 8	PH 9	PH 10	PH 11	PH 12	PH 13	PH 14	PH 15	PH 16	PH 17	PH 18
OMITPHAS																				
OMIT PED																				
MIN RECAL		PHASE TIMING																		
MAXRECAL																				
SOFT RCL																				
CDT'L SRVC																				
PED RECAL		MIN GREEN																		
DUAL ETRY		PASSAGE																		
SIMGAP		MAXGRN 1																		
REDREST		MAXGRN 2																		
AUTO PED		CONDSERV																		
REST WALK		YEL CHG																		
PED RECY		RED CLR																		
RED LOCK		WALK																		
YEL LOCK		PED CLR																		
NO EXT		ADDED INI																		
NO ADD INI		TIME TO RED																		
NOGAPRED		TIME BEFOR																		
NO RANGE		MIN GAP																		
NOMAX LOK		MAX INIT GRN																		

NOTES:

Using Video detection

TRAFFIC SIGNAL INTERSECTION:	DATE:	GRP:	LOC:	VRS:	HUB:	ZONE:	SEC:	ENGINEER:	CITY OF AUSTIN TRAFFIC SIGNAL TIMING & PHASING SHEETS
Spicewood @ Woodhollow	8/10/2012		99B						N

4 + 2 + RINGS		
PHASE 1	RING 1:	1, 2, a, 3, 4, b
	RING 2:	5, 6, a, 7, 8, b
PHASE 2	RING 1:	
	RING 2:	

4 + 2 + PHASEMODE	
STARTUP	2, 6
REDSTRT	1, 3 - 5, 7 - 10
PED	4, 8
YELFLASH	2, 6
FLASH/ENT	
FLASH/EXIT	

4 + 1 + ACT CONFIG	#1	#2	#3	#4	#5
PHASE	1				
OVERLAP	1				
PREEMPT	1				
CABINET	3				
DETECTOR	2				
COORD	1				

1 + ACTIVE CONTROL PARAMETERS					
CONTROL MODE:	SCHEDULE				
MAN PLN:	1	FREE PLN:	1	DFSCHED:	1

4 + 7 + MISC		4 + 2 + COORD CONFIG	
TRANSITION MODE:	3:30	START UP FLASH:	1
SYNCHRO MODE:	BEST	RED REVERT:	2
MAX DWELL TIME:	0	FLASH CLR:	6

2 + 3 + PL # + PLAN MODE

PL	PLAN MODE	MAX GRN	PH DATA	PH SEQ	OL DATA	ACT CONF	ENA	OFF	VAR	CYCLE	HOLD / YLD
1	COORD	MAX 1	3	1	1	1	A	82	5	120	2, 6
2											
3											
4	COORD	MAX 1	1	1	1	1	A	53	5	90	2, 6
5	COORD	MAX 1	3	1	1	1	A	65	5	130	2, 6
6	COORD	MAX 1	3	1	1	1	A	55	5	130	2, 6
7											
8	COORD	MAX 1	3	1	1	1	A	55	5	130	2, 6
9											
10											
20											
33											

SCHEDULE

EV	ENA	HR	M	S	M	T	W	T	F	S	PL	SPECIAL FUNCTIONS 1	2	3	4	5	6	7	8	AUXILIARY 1	2	3	4
1	ENA	0	0	X	X	X	X	X	X	X	20												
2	ENA	6	0	X	X	X	X	X	X	X	4												
3	ENA	6	30		X	X	X	X	X		6												
4		7	30		X	X	X	X	X		6												
5	ENA	8	0	X						X	5												
6	ENA	9	0		X	X	X	X	X		5												
7	ENA	15	30		X	X	X	X	X		8												
8	ENA	19	30		X	X	X	X	X		1												
9	ENA	21	0	X	X	X	X	X	X	X	20												
10																							
11																							
12																							

PRIORITY SEQUENCE

PHASES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
TABLE 1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TABLE 2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TABLE 3																				
TABLE 4																				

NOTE: ZERO DENOTES THE HIGHEST PRIORITY

PED PRAMS & FLAGS

PHASES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
ENABLE	X	X	X	X																
CALLPHAS	2	4	6	8																
OVERLAP																				

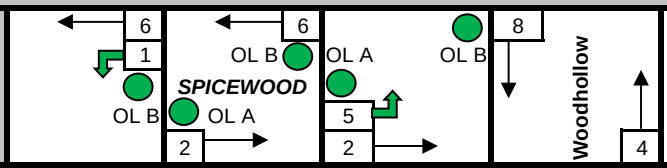
VEH PARAMETERS

DETECTORS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
ENABLE	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
CALL	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
EXTEND	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
ADD INIT																				
RED LOCK																				
YEL LOCK																				

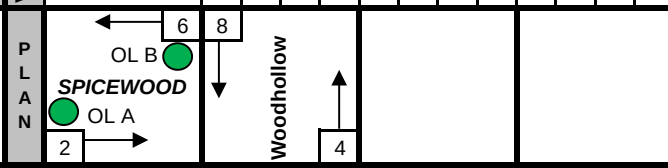
VEH FLAG

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
CALL PHASE	1	5	2	6	3	7	4	8	2	6	4	8								
SWTCH PHAS																				
OVERLAP																				
DELAY																				

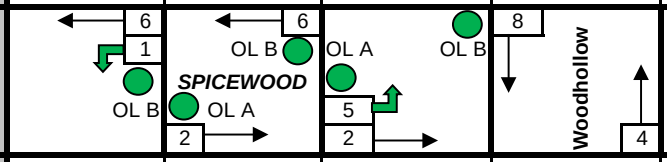
SIGNAL PHASING DIAGRAM - NUMBERS REPRESENT GREEN TIME (SECONDS)



PLAN				
1	18 + 4 + 1	50 + 4 + 1	13 + 4 + 1	19 + 4 + 1
4	5 + 4 + 1	43 + 4 + 1	5 + 4 + 1	17 + 4 + 1
5	24 + 4 + 1	38 + 4 + 1	24 + 4 + 1	24 + 4 + 1
6	24 + 4 + 1	38 + 4 + 1	24 + 4 + 1	24 + 4 + 1



PLAN		
7	47 + 4 + 1	18 + 4 + 1



PLAN				
8	29 + 4 + 1	77 + 4 + 1	24 + 4 + 1	29 + 4 + 1

PLAN

FLAGS	PHASES
OMITPHAS	3, 7
OMIT PED	1 - 7
MIN RECAL	2, 4, 6, 8
MAXRECAL	
SOFT RCL	
CDT'L SRVC	
PED RECAL	
DUAL ETRY	4, 8
SIMGAP	
REDREST	
AUTO PED	
REST WALK	
PED RECY	
RED LOCK	
YEL LOCK	
NO EXT	
NO ADD INI	
NORANGE	
NOMAX LOK	1, 4, 5, 8

PHASE DATA TABLE # 1	PH 1	PH 2	PH 3	PH 4	PH 5	PH 6	PH 7	PH 8	PH 9	PH 10	PH 11	PH 12	PH 13	PH 14	PH 15	PH 16	PH 17	PH 18
PHASE TIMING	WB "P"L/T	EB SPICEWOOD		NB Woodhollow	eb "P"L/T	WB SPICEWOOD		SB Woodhollow										
MIN GREEN	5.0	20.0		8.0	5.0	20.0		8.0										
PASSAGE	1.5	2.0		2.0	1.5	2.0		2.0										
MAXGRN 1	15.0	96.0		35.0	15.0	96.0		35.0										
MAXGRN 2	15.0	75.0		35.0	15.0	75.0		35.0										
CONDSERV	0.0	0.0		0.0	0.0	0.0		0.0										
YEL CHG	4.0	4.0		4.0	4.0	4.0		4.0										
RED CLR	1.0	1.0		1.0	1.0	1.0		1.0										
WALK				6.0				6.0										
PED CLR				24.0				24.0										
ADDED INI																		
TIME TO RED																		
TIME BEFOR																		
MAX INIT GRN																		

2+ 3 + PL # +	PHASE		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18		PHASE		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
MIN SPLIT	PLAN	1	10	25		13	10	25		13											MIN	PLAN	5	10	25		10	10	25		10										
NOM SPLIT	CYCLE	120	23	73		24	18	78		24											NOM	CYCLE	130	29	72		29	29	72		29										
MAX SPLIT			25	100		32	25	100		32											MAX			32	110		30	30	110		30										
NOTE: PLAN 20 = FREE MODE PLAN 33 = FLASH MODE	PLAN																				MIN	PLAN	6	10	25		10	10	25		10										
	CYCLE																				NOM	CYCLE	130	29	72		29	29	72		29										
																					MAX			32	##		30	30	##		30										
	PLAN																				MIN	PLAN																			
	CYCLE																				NOM	CYCLE																			
																					MAX																				
	PLAN	4	10	25		10	10	25		10											MIN	PLAN	8	10	25		10	10	25		10										
	CYCLE	90	10	58		22	10	58		22											NOM	CYCLE	150	34	82		34	29	87		34										
			20	75		30	20	75		30											MAX			32	##		30	30	##		30										

Change ONLY the following:		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
INPUT CHANNELS	FUNCTION TYPE																					
	FUNCTION INDEX																					
	UNIT																					
	CONNECTOR / BUI																					
	PIN																					
	CHANNEL IN 1																					
	CHANNEL IN 2																					
	LOGIC																					
OUTPUT CHANNELS		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
	FUNCTION TYPE																					
	FUNCTION INDEX																					
	CONNECTOR / BUI 1																					
	PIN 1																					
	CONNECTOR / BUI 2																					
	PIN 2																					
	CONNECTOR / BUI 3																					
	PIN 3																					

PHASES	TYPE		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
OVL A	2	P																		
	141	P					X													
		S						X												
		M	X																	
OVL B	2	P																		
	141	P	X																	
		S		X																
		M					X													
OVL C	2	P																		
	141	P																		
		S																		
		M																		
OVL D	2	P																		
	141	P																		
		S																		
		M																		
OVL E	2	P																		
OVL F	2	P																		
OVL G	2	P																		
OVL H	2	P																		
OVL I	2	P																		
OVL J	2	P																		
OVL K	2	P																		
OVL L	2	P																		
OVL M	2	P																		
OVL N	2	P																		
OVL O	2	P																		
OVL P	2	P																		

P = PRIMARY S = SECONDARY M = MODIFIED

OVERLAP CONFIGURATION

OVERLAPS		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
OVERLAP SETTINGS – FLAGS / PARAM	ENABLE	X	X														
	PED OVERLAP																
	FLASH YELLOW																
	ALT FLASH HZ																
FLAGS	RECALL PRIMARY																
	RECALL SEC																
	PED RECALL																
	PED RECYCLE																
	AUTO EXTEND																
PARAMETERS	MIN GREEN																
	MAX GREEN																
	GREEN CLEAR																
	YEL CLEAR	0	0	3	3	3	3	3	3	3	3	3	3	3	0	3	3
	RED CLEAR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WALK																
	PED CLEAR																
	RESERVICE																

PRE - EMPT		1	3	4	5	6
PRE EMPT FLAGS	ENABLE					
	NO MEM LOK					
	MAN ENABLE					
	NO OVER FLSH					
	NO OVER NEXT					
	OMIT IN DELAY					
	RE MAX PRES					
	PED NOT DARK					
TIME	MIN PRESENCE					
	DELAY					

SETTINGS		1	3	4	5	6
TIMING	STRT MIN GRN					
	STRT WALK					
	STRT PED CLR					
PHASE FLAGS	ENT 1 PHASE					
	ENT 2 PHASE					
	DWELL PHASE					
	INITIAL DWELL					
	DWELL PED					
	RECAL PHASE					
	EXIT PHASE					

FLAGS	PHASES
OMITPHAS	3, 5, 7
OMIT PED	1 - 7
MIN RECAL	2, 4, 6, 8
MAXRECAL	
SOFT RCL	
CDT'L SRVC	

PHASE DATA TABLE # 2	PH 1	PH 2	PH 3	PH 4	PH 5	PH 6	PH 7	PH 8	PH 9	PH 10	PH 11	PH 12	PH 13	PH 14	PH 15	PH 16	PH 17	PH 18
PHASE TIMING	WB "P"L/T	EB SPICEWOOD		NB Woodhollow	eb "P"L/T	WB SPICEWOOD		SB Woodhollow										
PED RECAL																		
DUAL ETRY																		
SIMGAP																		
REDREST																		
AUTO PED																		
REST WALK																		
PED RECY																		
RED LOCK																		
YEL LOCK																		
NO EXT																		
NO ADD INI																		
NOGAPRED																		
NORANGE																		
NOMAX LOK																		
MIN GREEN	5.0	20.0		8.0	5.0	20.0		8.0										
PASSAGE	1.5	2.0		2.0	1.5	2.0		2.0										
MAXGRN 1	15.0	96.0		35.0	15.0	96.0		35.0										
MAXGRN 2	15.0	75.0		35.0	15.0	75.0		35.0										
CONDSERV	0.0	0.0		0.0	0.0	0.0		0.0										
YEL CHG	4.0	4.0		4.0	4.0	4.0		4.0										
RED CLR	1.0	1.0		1.0	1.0	1.0		1.0										
WALK				6.0				6.0										
PED CLR				24.0				24.0										
ADDED INI																		
TIME TO RED																		
TIME BEFOR																		
MIN GAP																		
MAX INIT GRN																		

FLAGS	PHASES
OMITPHAS	3, 7
OMIT PED	1 - 7
MIN RECAL	1, 2, 4, 6, 8
MAXRECAL	
SOFT RCL	
CDT'L SRVC	

PHASE DATA TABLE # 3	PH 1	PH 2	PH 3	PH 4	PH 5	PH 6	PH 7	PH 8	PH 9	PH 10	PH 11	PH 12	PH 13	PH 14	PH 15	PH 16	PH 17	PH 18
PHASE TIMING	WB "P"L/T	EB SPICEWOOD		NB Woodhollow	eb "P"L/T	WB SPICEWOOD		SB Woodhollow										
PED RECAL		MIN GREEN	21.0	20.0		15.0	5.0	20.0		11.0										
DUAL ETRY	4, 8	PASSAGE	1.5	2.0		2.0	1.5	2.0		2.0										
SIMGAP		MAXGRN 1	15.0	96.0		35.0	15.0	96.0		35.0										
REDREST		MAXGRN 2	15.0	75.0		35.0	15.0	75.0		35.0										
AUTO PED		CONDSERV	0.0	0.0		0.0	0.0	0.0		0.0										
REST WALK		YEL CHG	4.0	4.0		4.0	4.0	4.0		4.0										
PED RECY		RED CLR	1.0	1.0		1.0	1.0	1.0		1.0										
RED LOCK		WALK				6.0				6.0										
YEL LOCK		PED CLR				24.0				24.0										
NO EXT		ADDED INI																		
NO ADD INI		TIME TO RED																		
NOGAPRED		TIME BEFOR																		
NORANGE		MIN GAP																		
NOMAX LOK	1, 4, 5, 8	MAX INIT GRN																		

FLAGS	PHASES
OMITPHAS	1, 3, 5, 7
OMIT PED	1 - 7
MIN RECAL	2, 4, 6, 8
MAXRECAL	
SOFT RCL	
CDT'L SRVC	

PHASE DATA TABLE # 4	PH 1	PH 2	PH 3	PH 4	PH 5	PH 6	PH 7	PH 8	PH 9	PH 10	PH 11	PH 12	PH 13	PH 14	PH 15	PH 16	PH 17	PH 18
PHASE TIMING	WB "P"L/T	EB SPICEWOOD		NB Woodhollow	eb "P"L/T	WB SPICEWOOD		SB Woodhollow										
PED RECAL		MIN GREEN	5.0	20.0		12.0	5.0	20.0		12.0										
DUAL ETRY	4, 8	PASSAGE	1.5	2.0		2.0	1.5	2.0		2.0										
SIMGAP		MAXGRN 1	15.0	96.0		35.0	15.0	96.0		35.0										
REDREST		MAXGRN 2	15.0	75.0		35.0	15.0	75.0		35.0										
AUTO PED		CONDSERV	0.0	0.0		0.0	0.0	0.0		0.0										
REST WALK		YEL CHG	4.0	4.0		4.0	4.0	4.0		4.0										
PED RECY		RED CLR	1.0	1.0		1.0	1.0	1.0		1.0										
RED LOCK		WALK				6.0				6.0										
YEL LOCK		PED CLR				24.0				24.0										
NO EXT		ADDED INI																		
NO ADD INI		TIME TO RED																		
NOGAPRED		TIME BEFOR																		
NORANGE		MIN GAP																		
NOMAX LOK	1, 4, 5, 8	MAX INIT GRN																		

NOTES:

TRAFFIC SIGNAL INTERSECTION:	DATE:	GRP:	LOC:	VRS:	HUB:	ZONE:	SEC:	ENGINEER:
Loop 1 @ Steck	2/9/2012		450J					

CITY OF AUSTIN
TRAFFIC SIGNAL TIMING & PHASING SHEETS

N

8/16/2005

4 + 2 + RINGS		
PHASE 2	RING 1:	8, a, 12, b
	RING 2:	
PHASE 4	RING 1:	1, a, 2, b, 4, c, 5, d, 6, e, 7, f
	RING 2:	

STARTUP	
REDSTRT	ALL PHASES
PED	ALL PHASES
YELFLASH	
FLASH/ENT	
FLASH/EXIT	

4 + 1 + ACT CONFIG	#1	#2	#3	#4	#5
PHASE		2		4	
OVERLAP		1		1	
PREEMPT		1		1	
CABINET		3		3	
DETECTOR		2		2	
COORD		1		1	

1 + ACTIVE CONTROL PARAMETERS				
CONTROL MODE:	SCHEDULE			
MAN PLN:	1	FREE PLN:	1	DFSCHED: 1

4 + 7 + MISC		4 + 2 + COORD CONFIG	
TRANSITION MODE:	3:30	START UP FLASH:	1
SYNCHRO MODE:	BEST	RED REVERT:	2
MAX DWELL TIME:	50	FLASH CLR:	6

2 + 3 + PL # + PLAN MODE

PL	PLAN MODE	MAX GRN	PH DATA	PH SEQ	OL DATA	ACT CONF	ENA	OFF	VAR	CYCLE	HOLD / YLD
1	COORD	MAX I	4	1	1	4	E	100	5	120	6
2											
3	COORD	MAX I	4	1	1	4	E	97	5	130	6
4	COORD	MAX I	4	1	1	4	E	68	5	90	6
5	COORD	MAX I	2	1	1	2	A	0	5	40	8
6	COORD	MAX I	8	1	2	4	E	90	5	130	6
7											
8											
9	COORD	MAX I	4	1	1	4	E	100	5	130	6
10											
20											
33	FLASH	NONE	1	1	1	1					

SCHEDULE

EV	ENA	HR	M	S	M	T	W	T	F	S	PL	SPECIAL FUNCTIONS 1	2	3	4	5	6	7	8	AUXILIARY 1	2	3	4
1	ENA	0	0	X	X	X	X	X	X	X	5												
2	ENA	6	0	X	X	X	X	X	X	X	5												
3	ENA	6	30	X	X	X	X	X	X	X	6												
4	ENA	6	30	X						X	4												
5	ENA	9	0		X	X	X	X	X		1												
6	ENA	9	30							X	1												
7	ENA	10	30	X							1												
8	ENA	12	0		X	X	X	X	X		9												
9	ENA	14	0		X	X	X	X	X		1												
10	ENA	15	30		X	X	X	X	X		3												
11	ENA	19	0		X	X	X	X	X		1												
12	ENA	21	0	X	X	X	X	X	X	X	4												

PRIORITY SEQUENCE

PHASES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
TABLE 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TABLE 2	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TABLE 3	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TABLE 4	25	25	25	25	25	25	25	25	25	25	6	1	25	2	3	4	25	5	0	0

NOTE: ZERO DENOTES THE HIGHEST PRIORITY

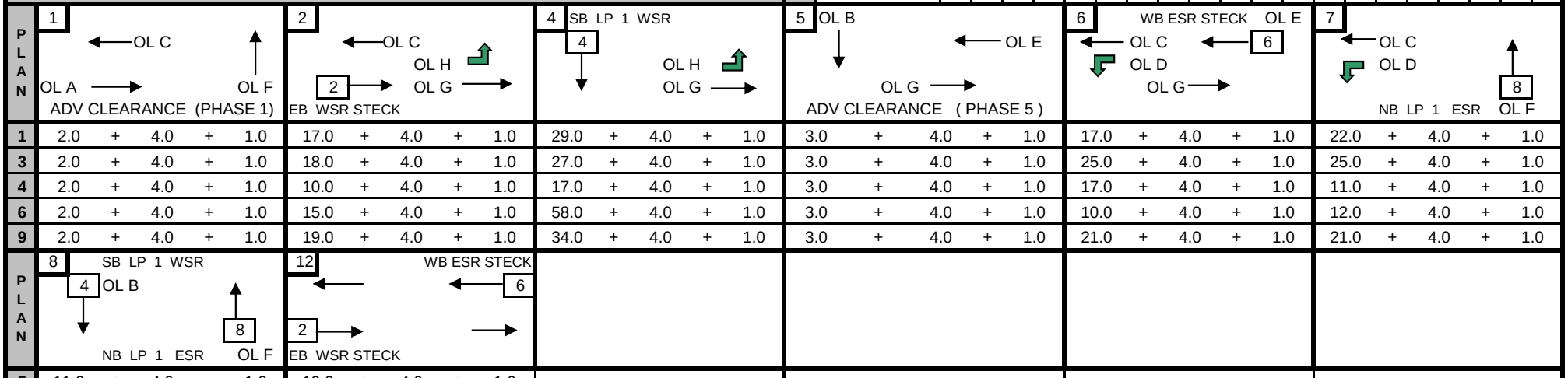
PED PRAMS & FLAGS

PHASES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
ENABLE	X	X	X	X																
CALLPHAS	2	4	6	8																
OVERLAP	13	14	15	16																

VEH PARAMETERS / VEH FLAG

DETECTORS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
ENABLE	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CALL	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
EXTEND	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ADD INIT																				
RED LOCK																				
YEL LOCK																				
CALL PHASE	1	5	2	6	3	7	4	8	2	6	4	8	8	10	12	13	11	12	7	9
SWTCH PHAS																				
OVERLAP																				
DELAY														5						

SIGNAL PHASING DIAGRAM - NUMBERS REPRESENT GREEN TIME (SECONDS)



PLAN	1	2	4	5	6	7
1	2.0 + 4.0 + 1.0	17.0 + 4.0 + 1.0	29.0 + 4.0 + 1.0	3.0 + 4.0 + 1.0	17.0 + 4.0 + 1.0	22.0 + 4.0 + 1.0
3	2.0 + 4.0 + 1.0	18.0 + 4.0 + 1.0	27.0 + 4.0 + 1.0	3.0 + 4.0 + 1.0	25.0 + 4.0 + 1.0	25.0 + 4.0 + 1.0
4	2.0 + 4.0 + 1.0	10.0 + 4.0 + 1.0	17.0 + 4.0 + 1.0	3.0 + 4.0 + 1.0	17.0 + 4.0 + 1.0	11.0 + 4.0 + 1.0
6	2.0 + 4.0 + 1.0	15.0 + 4.0 + 1.0	58.0 + 4.0 + 1.0	3.0 + 4.0 + 1.0	10.0 + 4.0 + 1.0	12.0 + 4.0 + 1.0
9	2.0 + 4.0 + 1.0	19.0 + 4.0 + 1.0	34.0 + 4.0 + 1.0	3.0 + 4.0 + 1.0	21.0 + 4.0 + 1.0	21.0 + 4.0 + 1.0
5	11.0 + 4.0 + 1.0	19.0 + 4.0 + 1.0				

FLAGS	PHASES
OMITPHAS	1 - 7, 9 - 11, 13, 21 - 30
OMIT PED	
MIN RECAL	8, 12
MAXRECAL	8, 12
SOFT RCL	
CDT'L SRVC	
PED RECAL	ALL PHASES
DUAL ETRY	
SIMGAP	
REDREST	
AUTO PED	8, 12
REST WALK	
PED RECY	
RED LOCK	
YEL LOCK	
NO EXT	
NO ADD INI	
NOGAPRED	
NOMAX LOK	

PHASE DATA TABLE # 2	PH 1	PH 2	PH 3	PH 4	PH 5	PH 6	PH 7	PH 8	PH 9	PH 10	PH 11	PH 12	PH 13	PH 14	PH 15	PH 16	PH 17	PH 18
PHASE TIMING								NB - SB LOOP 1				EB - WB STECK						
MIN GREEN								10.0				10.0						
PASSAGE								1.0				1.0						
MAXGRN 1								20.0				20.0						
MAXGRN 2								20.0				20.0						
CONDSERV								0.0				0.0						
YEL CHG								4.0				4.0						
RED CLR								1.0				1.0						
WALK																		
PED CLR																		
ADDED INI																		
TIME TO RED																		
TIME BEFOR																		
MAX INIT GRN																		

2+ 3 + PL # +	PHASE		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
MIN SPLIT	PLAN	1	7	15		15	8	15	15											
NOM SPLIT	CYCLE	120	7	22		34	8	22	27											
MAX SPLIT			7	35		55	8	40	35											
NOTE: PLAN 20 = FREE MODE PLAN 33 = FLASH MODE	PLAN																			
	CYCLE																			
	PLAN	3	7	15		20	8	20	20											
	CYCLE	130	7	23		32	8	30	30											
			7	35		45	8	55	35											
	PLAN	4	7	15		20	8	20	15											
	CYCLE	90	7	15		22	8	22	16											
			7	25		35	8	35	25											

	PHASE		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
MIN	PLAN	5								15				15						
NOM	CYCLE	40								16				24						
MAX										30				35						
MIN	PLAN	6	7	20		25	8	15	15											
NOM	CYCLE	130	7	20		63	8	15	17											
MAX			7	30		80	8	30	30											
MIN	PLAN																			
NOM	CYCLE																			
MAX																				
MIN	PLAN	9	7	15		15	8	15	15											
NOM	CYCLE	130	7	24		39	8	26	26											
MAX			7	35		50	8	35	35											

Change ONLY the following:		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
INPUT CHANNELS	FUNCTION TYPE																					
	FUNCTION INDEX																					
	UNIT																					
	CONNECTOR / BUI																					
	PIN																					
	CHANNEL IN 1																					
	CHANNEL IN 2																					
	LOGIC																					
OUTPUT CHANNELS		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**
	FUNCTION TYPE	OVL	OVL	ovlped	OVL	OVL	ovlped	OVL	OVL	ovlped	OVL	OVL	ovlped	OVL	ovlped							
	FUNCTION INDEX	1	2	13	5	6	15	3	4	14	7	8	16	9	13							
	CONNECTOR / BUI 1	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1							
	PIN 1	16	12	10	7	4	2	32	29	27	24	21	19	97	94							
	CONNECTOR / BUI 2	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1							
	PIN 2	17	13	none	8	5	none	33	30	none	25	22	none	98	none							
	CONNECTOR / BUI 3	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1	cs1							
	PIN 3	18	15	11	9	6	3	34	31	28	26	23	20	99	96							

OVERLAP CONFIGURATION

P = PRIMARY S = SECONDARY M = MODIFIED

PHASES	TYPE		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
OVL A	2	P	X	X										X	X					
	141	P																		
		M																		
		S																		
OVL B	2	P				X	X			X		X								
	141	P																		
		M																		
		S																		
OVL C	2	P	X	X	X			X	X		X		X	X	X					
	141	P																		
		M																		
		S																		
OVL D	2	P			X			X	X		X		X							
	141	P																		
		M																		
		S																		
OVL E	2	P					X	X					X	X						
OVL F	2	P	X						X	X	X									
OVL G	2	P		X	X	X	X	X				X	X	X	X					
OVL H	2	P		X	X	X						X			X					
OVL I	2	P																		
OVL J	2	P																		
OVL K	2	P																		
OVL L	2	P																		
OVL M	2	P	X	X										X	X					
OVL N	2	P				X	X			X		X								
OVL O	2	P					X	X					X	X						
OVL P	2	P	X						X	X	X									

OVERLAPS		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
OVERLAP SETTINGS – FLAGS / PARAM	ENABLE	X	X	X	X	X	X	X	X					X	X	X	X
	PED OVERLAP													X	X	X	X
	FLASH YELLOW																
	ALT FLASH HZ																
FLAGS	RECALL PRIMARY																
	RECALL SEC																
	PED RECALL			OVERLAP PARAMETER TABLE #2											X		
	PED RECYCLE																
	AUTO EXTEND																
PARAMETERS	MIN GREEN																
	MAX GREEN																
	GREEN CLEAR																
	YEL CLEAR	4	4	4	4	4	4	4	4	4	4	4	4	0	0	0	0
	RED CLEAR	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0
	WALK													5	5	5	5
	PED CLEAR													12	17	12	16
	RESERVICE																

PRE - EMPT		1	3	4	5	6
PRE EMPT FLAGS	ENABLE					
	NO MEM LOK					
	MAN ENABLE					
	NO OVER FLSH					
	NO OVER NEXT					
	OMIT IN DELAY					
	RE MAX PRES					
	PED NOT DARK					
TIME	MIN PRESENCE					
	DELAY					

SETTINGS		1	3	4	5	6
TIMING	STRT MIN GRN					
	STRT WALK					
	STRT PED CLR					
PHASE FLAGS	ENT 1 PHASE					
	ENT 2 PHASE					
	DWELL PHASE					
	INITIAL DWELL					
	DWELL PED					
	RECAL PHASE					
	EXIT PHASE					

FLAGS	PHASES
OMITPHAS	3, 8 - 20
OMIT PED	
MIN RECAL	1, 2, 4, 5, 6, 7
MAXRECAL	2, 4, 6, 7
SOFT RCL	
CDT'L SRVC	
PED RECAL	
DUAL ETRY	
SIMGAP	
REDREST	
AUTO PED	1, 2, 4, 5, 6, 7
REST WALK	
PED RECY	
RED LOCK	
YEL LOCK	
NO EXT	1, 5
NO ADD INI	
NOGAPRED	
NO RANGE	
NOMAX LOK	

PHASE DATA TABLE # 4	PH 1		PH 2		PH 3	PH 4		PH 5		PH 6		PH 7		PH 8	PH 9	PH 10	PH 11	PH 12	PH 13	PH 14	PH 15	PH 16	PH 17	PH 18
PHASE TIMING	BRIDGE	CLEAR	WSR EB	STECK		WSR SB	LOOP 1	BRIDGE	CLEAR	ESR WB	STECK	ESR NB	LOOP 1											
MIN GREEN	2.0		10.0			10.0		3.0		10.0		10.0												
PASSAGE	1.0		1.0			1.0		1.0		1.0		1.0												
MAXGRN 1	2.0		50.0			65.0		3.0		65.0		65.0												
MAXGRN 2	2.0		50.0			65.0		3.0		65.0		65.0												
CONDSERV	0.0		0.0			0.0		0.0		0.0		0.0												
YEL CHG	4.0		4.0			4.0		4.0		4.0		4.0												
RED CLR	1.0		1.0			1.0		1.0		1.0		1.0												
WALK																								
PED CLR																								
ADDED INI																								
TIME TO RED																								
TIME BEFOR																								
MIN GAP																								
MAX INIT GRN																								

FLAGS	PHASES	PHASE DATA TABLE # 8	PH 1	PH 2	PH 3	PH 4	PH 5	PH 6	PH 7	PH 8	PH 9	PH 10	PH 11	PH 12	PH 13	PH 14	PH 15	PH 16	PH 17	PH 18
OMITPHAS	3, 8 - 20																			
OMIT PED																				
MIN RECAL	1, 2, 4, 5, 6, 7	PHASE TIMING	BRIDGE CLEAR	WSR EB STECK		WSR SB LOOP 1	BRIDGE CLEAR	ESR WB STECK	ESR NB LOOP 1											
MAXRECAL	2, 4, 6, 7																			
SOFT RCL																				
CDT'L SRVC																				
PED RECAL	4	MIN GREEN	2.0	10.0		10.0	3.0	10.0	10.0											
DUAL ETRY		PASSAGE	1.0	1.0		1.0	1.0	1.0	1.0											
SIMGAP		MAXGRN 1	2.0	15.0		65.0	3.0	65.0	12.0											
REDREST		MAXGRN 2	2.0	50.0		65.0	3.0	65.0	65.0											
AUTO PED	1, 2, 4, 5, 6, 7	CONDSERV	0.0	0.0		0.0	0.0	0.0	0.0											
REST WALK		YEL CHG	4.0	4.0		4.0	4.0	4.0	4.0											
PED RECY		RED CLR	1.0	1.0		1.0	1.0	1.0	1.0											
RED LOCK		WALK																		
YEL LOCK		PED CLR																		
NO EXT	1, 5	ADDED INI																		
NO ADD INI		TIME TO RED																		
NOGAPRED		TIME BEFOR																		
NO RANGE		MIN GAP																		
NOMAX LOK		MAX INIT GRN																		

FLAGS	PHASES	PHASE DATA TABLE #	PH 1	PH 2	PH 3	PH 4	PH 5	PH 6	PH 7	PH 8	PH 9	PH 10	PH 11	PH 12	PH 13	PH 14	PH 15	PH 16	PH 17	PH 18
OMITPHAS																				
OMIT PED																				
MIN RECAL		PHASE TIMING																		
MAXRECAL																				
SOFT RCL																				
CDT'L SRVC																				
PED RECAL		MIN GREEN																		
DUAL ETRY		PASSAGE																		
SIMGAP		MAXGRN 1																		
REDREST		MAXGRN 2																		
AUTO PED		CONDSERV																		
REST WALK		YEL CHG																		
PED RECY		RED CLR																		
RED LOCK		WALK																		
YEL LOCK		PED CLR																		
NO EXT		ADDED INI																		
NO ADD INI		TIME TO RED																		
NOGAPRED		TIME BEFOR																		
NO RANGE		MIN GAP																		
NOMAX LOK		MAX INIT GRN																		

NOTES:

TRAFFIC SIGNAL INTERSECTION:	DATE:	GRP:	LOC:	VRS:	HUB:	ZONE:	SEC:	ENGINEER:	CITY OF AUSTIN TRAFFIC SIGNAL TIMING & PHASING SHEETS
Mesa @ Spicewood Spgs.	8/27/2013		940C						N

4 + 2 + RINGS

PHASE 1	RING 1:	1, 2, a, 3, 4, b
	RING 2:	5, 6, a, 7, 8, b
PHASE 2	RING 1:	
	RING 2:	

4 + 2 + PHASEMODE

STARTUP	
REDSTRT	1 - 20
PED	2, 4, 6, 8
YELFLASH	
FLASH/ENT	
FLASH/EXIT	

4 + 1 + ACT CONFIG

	#1	#2	#3	#4	#5
PHASE	1				
OVERLAP	1				
PREEMPT	1				
CABINET	2				
DETECTOR	2				
COORD	1				

1 + ACTIVE CONTROL PARAMETERS

CONTROL MODE:	SCHEDULE				
MAN PLN:	1	FREE PLN:	20	DFSCHED:	1

4 + 7 + MISC

TRANSITION MODE:	3:30
SYNCHRO MODE:	BEST
MAX DWELL TIME:	0

4 + 2 + COORD CONFIG

START UP FLASH:	1
RED REVERT:	2
FLASH CLR:	6

2 + 3 + PL # + PLAN MODE

PL	PLAN MODE	MAX GRN	PH DATA	PH SEQ	OL DATA	ACT CONF	ENA	OFF	VAR	CYCLE	HOLD / YLD
1	FREE	MAX 1	1	1	1	1					
2	FREE	MAX 2	1	1	1	1					
3											
4											
5											
6											
7											
8											
9											
10											
20	FREE	MAX 1	2	1	1	1					
33											

SCHEDULE

EV	ENA	HR	M	S	M	T	W	T	F	S	PL	SPECIAL FUNCTIONS 1	2	3	4	5	6	7	8	AUXILIARY 1	2	3	4
1	ENA	0	0	X	X	X	X	X	X	X	20												
2	ENA	6	0	X	X	X	X	X	X	X	2												
3	ENA	6	30		X	X	X	X	X		1												
4		7	0		X	X	X	X	X		2												
5	ENA	9	0		X	X	X	X	X		2												
6	ENA	16	0		X	X	X	X	X		1												
7	ENA	19	0	X	X	X	X	X	X	X	2												
8	ENA	22	0	X	X	X	X	X	X	X	20												
9																							
10																							
11																							
12																							

PRIORITY SEQUENCE

PHASES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
TABLE 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TABLE 2																				
TABLE 3																				
TABLE 4																				

NOTE: ZERO DENOTES THE HIGHEST PRIORITY

PED PRAMS & FLAGS

PHASES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
ENABLE	X	X	X	X																
CALLPHAS	2	4	6	8																
OVERLAP																				

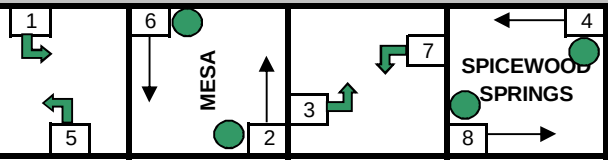
VEH PARAMETERS

DETECTORS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
ENABLE	X	X	X	X	X	X	X	X	X	X	X	X	X							
CALL	X	X	X	X	X	X	X	X	X	X	X	X	X							
EXTEND	X	X	X	X	X	X	X	X	X	X	X	X	X							
ADD INIT																				
RED LOCK																				
YEL LOCK								X												

VEH FLAG

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
CALL PHASE	1	5	2	6	3	7	4	8	2	6	4	8								
SWTCH PHAS	6	2																		
OVERLAP																				
DELAY	3	3			3	3														

SIGNAL PHASING DIAGRAM - (SECONDS)



PLAN				
1	+ 4 + 1	+ 4 + 1	+ 4 + 1	+ 4 + 1
2	+ 4 + 1	+ 4 + 1	+ 4 + 1	+ 4 + 1
20	+ 4 + 1	+ 4 + 1	+ 4 + 1	+ 4 + 1
PLAN				

FLAGS	PHASES
OMITPHAS	
OMIT PED	1, 3, 5, 7
MIN RECAL	2, 6
MAXRECAL	4
SOFT RCL	
CDT'L SRVC	
PED RECAL	
DUAL ETRY	2, 4, 6, 8
SIMGAP	2, 4, 6, 8
REDREST	
AUTO PED	2, 4, 6, 8
REST WALK	
PED RECY	
RED LOCK	
YEL LOCK	
NO EXT	
NO ADD INI	
NOGAPRED	
NOMAX LOK	

PHASE DATA TABLE # 1	PH 1	PH 2	PH 3	PH 4	PH 5	PH 6	PH 7	PH 8	PH 9	PH 10	PH 11	PH 12	PH 13	PH 14	PH 15	PH 16	PH 17	PH 18
PHASE TIMING	SB L/T	NB MESA	EB L/T	WB Spicewood	NB L/T	SB MESA	WB L/T	EB Spicewood										
MIN GREEN	6.0	15.0	5.0	15.0	5.0	15.0	5.0	15.0										
PASSAGE	2.5	2.0	2.0	2.0	2.0	2.5	2.0	2.0										
MAXGRN 1	25.0	40.0	25.0	40.0	20.0	40.0	25.0	60.0										
MAXGRN 2	20.0	30.0	20.0	28.0	25.0	30.0	20.0	40.0										
CONDSERV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0										
YEL CHG	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0										
RED CLR	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0										
WALK		10.0		10.0		10.0		10.0										
PED CLR		16.0		16.0		16.0		16.0										
ADDED INI																		
TIME TO RED																		
TIME BEFOR																		
MAX INIT GRN																		

2+ 3 + PL # +	PHASE		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18		PHASE		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
MIN SPLIT	PLAN																				MIN	PLAN																				
NOM SPLIT	CYCLE																				NOM	CYCLE																				
MAX SPLIT																					MAX																					
NOTE: PLAN 20 = FREE MODE PLAN 33 = FLASH MODE	PLAN																				MIN	PLAN																				
	CYCLE																				NOM	CYCLE																				
																					MAX																					
	PLAN																				MIN	PLAN																				
	CYCLE																				NOM	CYCLE																				
																					MAX																					
	PLAN																				MIN	PLAN																				
	CYCLE																				NOM	CYCLE																				
																					MAX																					

Change ONLY the following:		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19		27
INPUT CHANNELS	FUNCTION TYPE																					VEH
	FUNCTION INDEX																					13
	UNIT																					
	CONNECTOR / BUI																					49
	PIN																					
	CHANNEL IN 1																					
	CHANNEL IN 2																					
	LOGIC																					

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
OUTPUT CHANNELS	FUNCTION TYPE																					
	FUNCTION INDEX																					
	CONNECTOR / BUI 1																					
	PIN 1																					
	CONNECTOR / BUI 2																					
	PIN 2																					
	CONNECTOR / BUI 3																					
	PIN 3																					

PHASES		TYPE		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
OVERLAP CONFIGURATION (P = PRIMARY, S = SECONDARY, M = MODIFIED)	OVL A	2	P																		
		141	P																		
			S																		
			M																		
	OVL B	2	P																		
		141	P																		
			S																		
			M																		
	OVL C	2	P																		
		141	P																		
			S																		
			M																		
	OVL D	2	P																		
		141	P																		
			S																		
			M																		
	OVL E	2	P																		
	OVL F	2	P																		
	OVL G	2	P																		
	OVL H	2	P																		
	OVL I	2	P																		
	OVL J	2	P																		
	OVL K	2	P																		
	OVL L	2	P																		
	OVL M	2	P																		
	OVL N	2	P																		
	OVL O	2	P																		
	OVL P	2	P																		

OVERLAPS			A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
OVERLAP SETTINGS	FLAGS / PARAM	ENABLE																
		PED OVERLAP																
		FLASH YELLOW																
		ALT FLASH HZ																
	FLAGS	RECALL PRIMARY																
		RECALL SEC																
		PED RECALL																
		PED RECYCLE																
		AUTO EXTEND																
	PARAMETERS	MIN GREEN																
		MAX GREEN																
		GREEN CLEAR																
		YEL CLEAR	0	0	0	0	3	3	3	3	3	3	3	3	3	3	3	3
		RED CLEAR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		WALK																
		PED CLEAR																
		RESERVICE																

PRE - EMPT		1	3	4	5	6
PRE EMPT FLAGS	ENABLE					
	NO MEM LOK					
	MAN ENABLE					
	NO OVER FLSH					
	NO OVER NEXT					
	OMIT IN DELAY					
	RE MAX PRES					
	PED NOT DARK					
TIME	MIN PRESENCE					
	DELAY					

SETTINGS		1	3	4	5	6
TIMING	STRT MIN GRN					
	STRT WALK					
	STRT PED CLR					
PHASE FLAGS	ENT 1 PHASE					
	ENT 2 PHASE					
	DWELL PHASE					
	INITIAL DWELL					
	DWELL PED					
	RECAL PHASE					
	EXIT PHASE					

FLAGS	PHASES
OMITPHAS	
OMIT PED	1, 3, 5, 7
MIN RECAL	2, 6
MAXRECAL	4
SOFT RCL	
CDT'L SRVC	
PED RECAL	
DUAL ETRY	2, 4, 6, 8
SIMGAP	2, 4, 6, 8
REDREST	
AUTO PED	2, 4, 6, 8
REST WALK	
PED RECY	
RED LOCK	
YEL LOCK	
NO EXT	
NO ADD INI	
NOGAPRED	
NO RANGE	
NOMAX LOK	

PHASE DATA TABLE # 2	PH 1	PH 2	PH 3	PH 4	PH 5	PH 6	PH 7	PH 8	PH 9	PH 10	PH 11	PH 12	PH 13	PH 14	PH 15	PH 16	PH 17	PH 18
PHASE TIMING	SB L/T	NB MESA	EB L/T	WB Spicewood	NB L/T	SB MESA	WB L/T	EB Spicewood										
MIN GREEN	8.0	15.0	5.0	15.0	5.0	15.0	5.0	15.0										
PASSAGE	2.0	2.0	2.0	2.0	2.0	2.5	2.0	2.0										
MAXGRN 1	25.0	60.0	25.0	18.0	35.0	60.0	25.0	60.0										
MAXGRN 2	20.0	60.0	25.0	18.0	25.0	40.0	20.0	50.0										
CONDSERV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0										
YEL CHG	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0										
RED CLR	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0										
WALK		10.0		10.0		10.0		10.0										
PED CLR		16.0		13.0		16.0		13.0										
ADDED INI																		
TIME TO RED																		
TIME BEFOR																		
MIN GAP																		
MAX INIT GRN																		

FLAGS	PHASES	PHASE DATA TABLE # 3	PH 1	PH 2	PH 3	PH 4	PH 5	PH 6	PH 7	PH 8	PH 9	PH 10	PH 11	PH 12	PH 13	PH 14	PH 15	PH 16	PH 17	PH 18
OMITPHAS																				
OMIT PED																				
MIN RECAL		PHASE TIMING																		
MAXRECAL																				
SOFT RCL																				
CDT'L SRVC																				
PED RECAL		MIN GREEN																		
DUAL ETRY		PASSAGE																		
SIMGAP		MAXGRN 1																		
REDREST		MAXGRN 2																		
AUTO PED		CONDSERV																		
REST WALK		YEL CHG																		
PED RECY		RED CLR																		
RED LOCK		WALK																		
YEL LOCK		PED CLR																		
NO EXT		ADDED INI																		
NO ADD INI		TIME TO RED																		
NOGAPRED		TIME BEFOR																		
NO RANGE		MIN GAP																		
NOMAX LOK		MAX INIT GRN																		

FLAGS	PHASES	PHASE DATA TABLE # 4	PH 1	PH 2	PH 3	PH 4	PH 5	PH 6	PH 7	PH 8	PH 9	PH 10	PH 11	PH 12	PH 13	PH 14	PH 15	PH 16	PH 17	PH 18
OMITPHAS																				
OMIT PED																				
MIN RECAL		PHASE TIMING																		
MAXRECAL																				
SOFT RCL																				
CDT'L SRVC																				
PED RECAL		MIN GREEN																		
DUAL ETRY		PASSAGE																		
SIMGAP		MAXGRN 1																		
REDREST		MAXGRN 2																		
AUTO PED		CONDSERV																		
REST WALK		YEL CHG																		
PED RECY		RED CLR																		
RED LOCK		WALK																		
YEL LOCK		PED CLR																		
NO EXT		ADDED INI																		
NO ADD INI		TIME TO RED																		
NOGAPRED		TIME BEFOR																		
NO RANGE		MIN GAP																		
NOMAX LOK		MAX INIT GRN																		

NOTES:

TRAFFIC SIGNAL INTERSECTION:	DATE:	GRP:	LOC:	VRS:	HUB:	ZONE:	SEC:	ENGINEER:
Anderson Ln. @ Shoal Creek Blvd.	5/8/2015		95F					

CITY OF AUSTIN
TRAFFIC SIGNAL TIMING & PHASING SHEETS

N

4 + 2 + **RINGS**		
PHASE 1	RING 1:	1, 2, a, 3, 4, b
	RING 2:	5, 6, a, 7, 8, b
PHASE 2	RING 1:	
	RING 2:	

4 + 2 + **PHASEMODE**	
STARTUP	2, 6
REDSTRT	1, 3 - 5, 7 - 20
PED	2, 4, 6, 8
YELFLASH	2, 6
FLASH/ENT	4, 8
FLASH/EXIT	2, 6

4 + 1 + **ACT CONFIG**	#1	#2	#3	#4	#5
PHASE	1				
OVERLAP	1				
PREEMPT	1				
CABINET	3				
DETECTOR	2				
COORD	1				

1 + **ACTIVE CONTROL PARAMETERS**				
CONTROL MODE:	SCHEDULE			
MAN PLN:	8	FREE PLN:	1	DFSCHED: 1

4 + 7 + **MISC**		4 + 2 + **COORD CONFIG**	
TRANSITION MODE:	3:30	START UP FLASH:	1
SYNCHRO MODE:	BEST	RED REVERT:	2
MAX DWELL TIME:	0	FLASH CLR:	6

2 + 3 + PL # + **PLAN MODE**

PL	PLAN MODE	MAX GRN	PH DATA	PH SEQ	OL DATA	ACT CONF	ENA	OFF	VAR	CYCLE	HOLD / YLD
1	COORD	NONE	1	1	1	1	A	103	5	130	2, 6
2	COORD	NONE	1	1	1	1	A	126	5	130	2, 6
3	COORD	NONE	1	1	1	1	A	149	5	150	2, 6
4											
5	COORD	NONE	1	1	1	1	A	103	5	130	2, 6
6	COORD	NONE	6	2	1	1	A	8	5	90	2, 6
7											
8											
9											
10											
20	FREE	MAX I	1	1	1	1					
33											

SCHEDULE

EV	ENA	HR	M	S	M	T	W	T	F	S	PL	SPECIAL FUNCTIONS 1	2	3	4	5	6	7	8	AUXILIARY 1	2	3	4
1	ENA	0	0	X	X	X	X	X	X	X	6												
2	ENA	6	0	X	X	X	X	X	X	X	5												
3	ENA	6	30		X	X	X	X	X		2												
4	ENA	9	0		X	X	X	X	X		1												
5	ENA	15	30		X	X	X	X	X		3												
6	ENA	19	30		X	X	X	X	X		5												
7	ENA	21	0	X	X	X	X	X	X	X	6												
8																							
9																							
10																							
11																							
12																							

PRIORITY SEQUENCE

	PHASES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
TABLE	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TABLE	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TABLE	3	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TABLE	4																				

NOTE: ZERO DENOTES THE HIGHEST PRIORITY

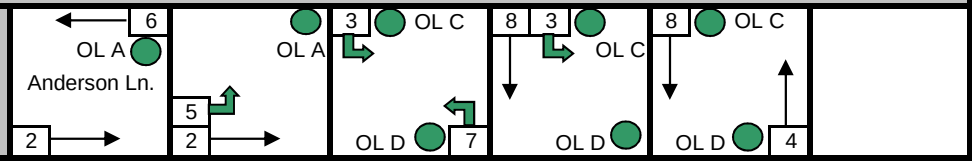
PED PRAMS & FLAGS

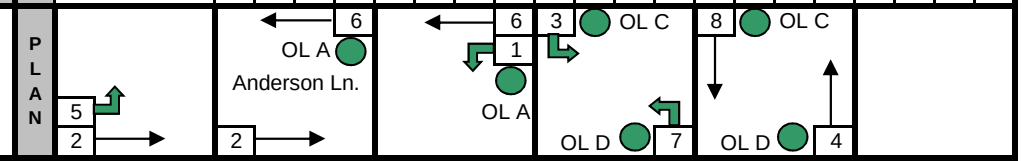
PHASES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
ENABLE	X	X	X	X																
CALLPHAS	2	4	6	8																
OVERLAP																				

VEH PARAMETERS / VEH FLAG

DETECTORS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
ENABLE	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
CALL	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
EXTEND	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
ADD INIT																				
RED LOCK																				
YEL LOCK																				
CALL PHASE	1	5	2	6	3	7	4	8	2	6	4	8	4	8						
SWTCH PHAS																				
OVERLAP																				
DELAY																				

SIGNAL PHASING DIAGRAM - (SECONDS)





PLAN						
6	31 + 4 + 1	12 + 4 + 1	12 + 4 + 1	0 + 4 + 1	10 + 4 + 1	+ 4 + 1
	+ 4 + 1	+ 4 + 1	+ 4 + 1	PHASE 3	+ 4 + 1	+ 4 + 1
	+	+	+	3 + 0 + 0	+	+ 4 + 1
	+	+	+	PHASE 8	+	+ 4 + 1
PLAN						
	+	+	+	+	+	+
	+	+	+	+	+	+

PLAN						
1	19 + 4 + 1	35 + 4 + 1	11 + 4 + 1	18 + 4 + 1	22 + 4 + 1	+ 4 + 1
2	19 + 4 + 1	35 + 4 + 1	11 + 4 + 1	18 + 4 + 1	22 + 4 + 1	+ 4 + 1
3	19 + 4 + 1	45 + 4 + 1	11 + 4 + 1	18 + 4 + 1	32 + 4 + 1	+ 4 + 1
5	19 + 4 + 1	35 + 4 + 1	11 + 4 + 1	18 + 4 + 1	22 + 4 + 1	+ 4 + 1
PLAN						
	19 + 4 + 1	45 + 4 + 1	11 + 4 + 1	18 + 4 + 1	32 + 4 + 1	+ 4 + 1
	+	+	+	+	+	+

FLAGS	PHASES
OMITPHAS	9 - 20
OMIT PED	1, 3, 5, 7, 9 - 20
MIN RECAL	2, 6
MAXRECAL	3
SOFT RCL	
CDT'L SRVC	
PED RECAL	2, 6
DUAL ETRY	4, 8
SIMGAP	
REDREST	
AUTO PED	2, 4, 6, 8
REST WALK	2, 6
PED RECY	
RED LOCK	
YEL LOCK	
NO EXT	
NO ADD INI	
NOGAPRED	
NOMAX LOK	1, 3 - 5, 7, 8

PHASE DATA TABLE # 1	PH 1	PH 2	PH 3	PH 4	PH 5	PH 6	PH 7	PH 8	PH 9	PH 10	PH 11	PH 12	PH 13	PH 14	PH 15	PH 16	PH 17	PH 18
PHASE TIMING	WB L/T "P"	EB Anderson Ln.	SB L/T "P"	NB Shoal Creek	EB L/T "P"	WB Anderson Ln.	NB L/T "P"	SB Shoal Creek										
MIN GREEN	5.0	24.0	5.0	8.0	5.0	24.0	5.0	8.0										
PASSAGE	1.0	2.0	1.0	2.0	1.5	2.0	1.0	2.0										
MAXGRN 1	20.0	80.0	20.0	30.0	20.0	80.0	20.0	30.0										
MAXGRN 2	20.0	30.0	20.0	30.0	20.0	30.0	20.0	30.0										
CONDSERV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0										
YEL CHG	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0										
RED CLR	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0										
WALK		5.0		5.0		5.0		5.0										
PED CLR		18.0		15.0		18.0		15.0										
ADDED INI																		
TIME TO RED																		
TIME BEFOR																		
MAX INIT GRN																		

2+ 3 + PL # +	PHASE		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18		PHASE		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
MIN SPLIT	PLAN	1	10	15	10	10	10	15	10	10											MIN	PLAN	5	10	15	10	10	10	15	10	10										
NOM SPLIT	CYCLE	130	16	64	23	27	24	56	23	27											NOM	CYCLE	130	16	64	23	27	24	56	23	27										
MAX SPLIT			30	85	35	40	35	80	35	40											MAX			30	85	35	40	35	80	35	40										
NOTE: PLAN 20 = FREE MODE PLAN 33 = FLASH MODE	PLAN	2	10	15	10	10	10	15	10	10											MIN	PLAN																			
	CYCLE	130	16	64	23	27	24	56	23	27											NOM	CYCLE																			
			30	85	35	40	35	80	35	40											MAX																				
	PLAN	3	10	15	10	10	10	15	10	10											MIN	PLAN																			
	CYCLE	150	16	74	23	37	24	66	23	37											NOM	CYCLE																			
			30	85	35	47	35	80	35	47											MAX																				
	PLAN	4	10	15	10	10	10	15	10	10											MIN	PLAN																			
	CYCLE	90	11	42	22	15	17	36	17	20											NOM	CYCLE																			
			25	65	35	25	30	60	30	30											MAX																				

Change ONLY the following:		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18		27	28
INPUT CHANNELS	FUNCTION TYPE																				VEH	VEH
	FUNCTION INDEX																				13	14
	UNIT																				1	1
	CONNECTOR / BUI																				C1S	C1S
	PIN																				49	58
	CHANNEL IN 1																					
	CHANNEL IN 2																					
	LOGIC																					

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
OUTPUT CHANNELS	FUNCTION TYPE																					
	FUNCTION INDEX																					
	CONNECTOR / BUI 1																					
	PIN 1																					
	CONNECTOR / BUI 2																					
	PIN 2																					
	CONNECTOR / BUI 3																					
	PIN 3																					

PHASES		TYPE		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
OVERLAP CONFIGURATION	OVL A	2	P																		
		141	P	X																	
			S		X																
			M					X													
	OVL B	2	P																		
		141	P																		
			S																		
			M																		
	OVL C	2	P																		
		141	P			X															
			S				X														
			M							X											
	OVL D	2	P																		
		141	P							X											
			S								X										
			M			X															
	OVL E	2	P																		
	OVL F	2	P																		
	OVL G	2	P																		
	OVL H	2	P																		
	OVL I	2	P																		
	OVL J	2	P																		
	OVL K	2	P																		
	OVL L	2	P																		
	OVL M	2	P																		
	OVL N	2	P																		
	OVL O	2	P																		
	OVL P	2	P																		

M = MODIFIED
S = SECONDARY
P = PRIMARY

OVERLAPS		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
OVERLAP SETTINGS – FLAGS / PARAM	ENABLE	X		X	X												
	PED OVERLAP																
	FLASH YELLOW																
	ALT FLASH HZ																
FLAGS	RECALL PRIMARY																
	RECALL SEC																
	PED RECALL																
	PED RECYCLE																
	AUTO EXTEND																
PARAMETERS	MIN GREEN																
	MAX GREEN																
	GREEN CLEAR																
	YEL CLEAR	4	3	4	4	3	3	3	3	3	3	3	3	3	3	3	3
	RED CLEAR	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
	WALK																
	PED CLEAR																
	RESERVICE																

PRE - EMPT		1	3	4	5	6
PRE EMPT FLAGS	ENABLE					
	NO MEM LOK					
	MAN ENABLE					
	NO OVER FLSH					
	NO OVER NEXT					
	OMIT IN DELAY					
	RE MAX PRES					
	PED NOT DARK					
TIME	MIN PRESENCE					
	DELAY					

SETTINGS		1	3	4	5	6
TIMING	STRT MIN GRN					
	STRT WALK					
	STRT PED CLR					
PHASE FLAGS	ENT 1 PHASE					
	ENT 2 PHASE					
	DWELL PHASE					
	INITIAL DWELL					
	DWELL PED					
	RECAL PHASE					
	EXIT PHASE					

FLAGS	PHASES
OMITPHAS	1, 9 - 20
OMIT PED	1, 3, 5, 7, 9 - 20
MIN RECAL	2, 6
MAXRECAL	3
SOFT RCL	
CDT'L SRVC	
PED RECAL	2, 6
DUAL ETRY	4, 8
SIMGAP	
REDREST	
AUTO PED	2, 4, 6, 8
REST WALK	2, 6
PED RECY	
RED LOCK	
YEL LOCK	
NO EXT	
NO ADD INI	
NOGAPRED	
NO RANGE	
NOMAX LOK	1, 3 - 5, 7, 8

PHASE DATA TABLE # 6	PH 1	PH 2	PH 3	PH 4	PH 5	PH 6	PH 7	PH 8	PH 9	PH 10	PH 11	PH 12	PH 13	PH 14	PH 15	PH 16	PH 17	PH 18
PHASE TIMING	WB L/T "P"	EB Anderson Ln.	SB L/T "P"	NB Shoal Creek	EB L/T "P"	WB Anderson Ln.	NB L/T "P"	SB Shoal Creek										
MIN GREEN	5.0	12.0	5.0	5.0	5.0	12.0	5.0	5.0										
PASSAGE	1.0	2.0	1.0	2.0	1.0	2.0	1.0	2.0										
MAXGRN 1	20.0	45.0	20.0	30.0	20.0	45.0	20.0	30.0										
MAXGRN 2	20.0	30.0	20.0	30.0	20.0	30.0	20.0	30.0										
CONDSERV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0										
YEL CHG	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0										
RED CLR	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0										
WALK		5.0		5.0		5.0		5.0										
PED CLR		18.0		15.0		18.0		15.0										
ADDED INI																		
TIME TO RED																		
TIME BEFOR																		
MIN GAP																		
MAX INIT GRN																		

FLAGS	PHASES	PHASE DATA TABLE # 3	PH 1	PH 2	PH 3	PH 4	PH 5	PH 6	PH 7	PH 8	PH 9	PH 10	PH 11	PH 12	PH 13	PH 14	PH 15	PH 16	PH 17	PH 18
OMITPHAS																				
OMIT PED																				
MIN RECAL		PHASE TIMING																		
MAXRECAL																				
SOFT RCL																				
CDT'L SRVC																				
PED RECAL		MIN GREEN																		
DUAL ETRY		PASSAGE																		
SIMGAP		MAXGRN 1																		
REDREST		MAXGRN 2																		
AUTO PED		CONDSERV																		
REST WALK		YEL CHG																		
PED RECY		RED CLR																		
RED LOCK		WALK																		
YEL LOCK		PED CLR																		
NO EXT		ADDED INI																		
NO ADD INI		TIME TO RED																		
NOGAPRED		TIME BEFOR																		
NO RANGE		MIN GAP																		
NOMAX LOK		MAX INIT GRN																		

FLAGS	PHASES	PHASE DATA TABLE # 4	PH 1	PH 2	PH 3	PH 4	PH 5	PH 6	PH 7	PH 8	PH 9	PH 10	PH 11	PH 12	PH 13	PH 14	PH 15	PH 16	PH 17	PH 18
OMITPHAS																				
OMIT PED																				
MIN RECAL		PHASE TIMING																		
MAXRECAL																				
SOFT RCL																				
CDT'L SRVC																				
PED RECAL		MIN GREEN																		
DUAL ETRY		PASSAGE																		
SIMGAP		MAXGRN 1																		
REDREST		MAXGRN 2																		
AUTO PED		CONDSERV																		
REST WALK		YEL CHG																		
PED RECY		RED CLR																		
RED LOCK		WALK																		
YEL LOCK		PED CLR																		
NO EXT		ADDED INI																		
NO ADD INI		TIME TO RED																		
NOGAPRED		TIME BEFOR																		
NO RANGE		MIN GAP																		
NOMAX LOK		MAX INIT GRN																		

NOTES:

Appendix G: Internal Capture Documentation

Austin Oaks Trip Generation Comparison

City of Austin Methodology

Land Use	Amount	Units	ITE Code	Daily Trips	AM Peak Hour Trips			PM Peak Hour Trips		
					In	Out	Total	In	Out	Total
Existing General Office Building	445.322	1,000 Sq Ft	710	4,086	556	76	632	98	479	577
Existing General Office Building (To Remain)	0	1,000 Sq Ft	710	0	0	0	0	0	0	0
Reduction in Existing Office Trips				4,086	556	76	632	98	479	577
Apartment	250	Dwelling Unit(s)	220	1,640	25	101	126	101	54	155
Hotel	100	Room(s)	310	818	31	22	53	31	29	60
General Office Building	672.995	1,000 Sq Ft	710	5,592	774	106	880	141	691	832
Medical-Dental Office Building	169.000	1,000 Sq Ft	720	6,696	319	85	404	131	336	467
Retail/High-Turnover (Sit-Down) Restaurant	46.700	1,000 Sq Ft	932	5,938	278	227	505	276	184	460
2024 Net New Trips				16,598	871	465	1,336	582	815	1,397
Internal Capture Trip Reduction (5%):				1,034	71	27	98	34	65	99
2024 Net New External Trips				**15,564**	**800**	**438**	**1,238**	**548**	**750**	**1,298**

ITE Methodology

Land Use	Amount	Units	ITE Code	Daily Trips	AM Peak Hour Trips			PM Peak Hour Trips		
					In	Out	Total	In	Out	Total
Existing General Office Building	445.322	1,000 Sq Ft	710	4,086	556	76	632	98	479	577
Existing General Office Building (To Remain)	0	1,000 Sq Ft	710	0	0	0	0	0	0	0
Reduction in Existing Office Trips				4,086	556	76	632	98	479	577
Apartment	250	Dwelling Unit(s)	220	1,640	25	101	126	101	54	155
Hotel	100	Room(s)	310	818	31	22	53	31	29	60
General Office Building	672.995	1,000 Sq Ft	710	5,592	774	106	880	141	691	832
Medical-Dental Office Building	169.000	1,000 Sq Ft	720	6,696	319	85	404	131	336	467
Retail/High-Turnover (Sit-Down) Restaurant	46.700	1,000 Sq Ft	932	5,938	278	227	505	276	184	460
Restaurant Pass-By Trips (43% of PM Peak External Restaurant Trips):				0	0	0	0	84	84	168
2024 Net New Trips				16,598	871	465	1,336	498	732	1,230
Internal Capture Trip Reduction:				3,160	177	177	354	74	74	148
2024 Net New External Trips				**13,438**	**694**	**288**	**982**	**424**	**658**	**1,082**

Year 2024 Internal Capture Reduction Calculations

Methodology for A.M. Peak Hour and P.M. Peak Hour
based on the *Trip Generation Handbook* , 3rd Edition, published by the Institute of Transportation Engineers

Methodology for Daily
based on the average of the Unconstrained Rates for the A.M. Peak Hour and P.M. Peak Hour

SUMMARY

GROSS TRIP GENERATION

INPUT

Land Use	Daily		A.M. Peak Hour		P.M. Peak Hour	
	Enter	Exit	Enter	Exit	Enter	Exit
Office	6,144	6,144	1,093	191	272	1,027
Retail						
Restaurant	2,969	2,969	278	227	276	184
Cinema/Entertainment						
Residential	820	820	25	101	101	54
Hotel	409	409	31	22	31	29
	10,342	10,342	1,427	541	680	1,294

INTERNAL TRIPS

OUTPUT

Land Use	Daily		A.M. Peak Hour		P.M. Peak Hour	
	Enter	Exit	Enter	Exit	Enter	Exit
Office	622	387	89	64	8	10
Retail	0	0	0	0	0	0
Restaurant	696	739	86	72	31	35
Cinema/Entertainment	0	0	0	0	0	0
Residential	102	205	1	22	20	15
Hotel	160	249	1	19	15	14
	1,580	1,580	177	177	74	74
% Reduction	15.3%		18.0%		7.5%	

EXTERNAL TRIPS

OUTPUT

Land Use	Daily		A.M. Peak Hour		P.M. Peak Hour	
	Enter	Exit	Enter	Exit	Enter	Exit
Office	5,522	5,757	1,004	127	264	1,017
Retail	0	0	0	0	0	0
Restaurant	2,273	2,230	192	155	245	149
Cinema/Entertainment	0	0	0	0	0	0
Residential	718	615	24	79	81	39
Hotel	249	160	30	3	16	15
	8,762	8,762	1,250	364	606	1,220

Year 2022 Internal Capture Reduction Calculations

Methodology for A.M. Peak Hour and P.M. Peak Hour
based on the *Trip Generation Handbook* , 3rd Edition, published by the Institute of Transportation Engineers

Methodology for Daily
based on the average of the Unconstrained Rates for the A.M. Peak Hour and P.M. Peak Hour

SUMMARY

GROSS TRIP GENERATION

INPUT

Land Use	Daily		A.M. Peak Hour		P.M. Peak Hour	
	Enter	Exit	Enter	Exit	Enter	Exit
Office	4,103	4,103	741	127	183	686
Retail						
Restaurant	2,969	2,969	278	227	276	184
Cinema/Entertainment						
Residential	820	820	25	101	101	54
Hotel	409	409	31	22	31	29
	8,301	8,301	1,075	477	591	953

INTERNAL TRIPS

OUTPUT

Land Use	Daily		A.M. Peak Hour		P.M. Peak Hour	
	Enter	Exit	Enter	Exit	Enter	Exit
Office	592	387	89	64	8	10
Retail	0	0	0	0	0	0
Restaurant	696	739	86	72	31	35
Cinema/Entertainment	0	0	0	0	0	0
Residential	102	205	1	22	20	15
Hotel	160	219	1	19	15	14
	1,550	1,550	177	177	74	74
% Reduction	18.7%		22.8%		9.6%	

EXTERNAL TRIPS

OUTPUT

Land Use	Daily		A.M. Peak Hour		P.M. Peak Hour	
	Enter	Exit	Enter	Exit	Enter	Exit
Office	3,511	3,716	652	63	175	676
Retail	0	0	0	0	0	0
Restaurant	2,273	2,230	192	155	245	149
Cinema/Entertainment	0	0	0	0	0	0
Residential	718	615	24	79	81	39
Hotel	249	190	30	3	16	15
	6,751	6,751	898	300	517	879

Year 2020 Internal Capture Reduction Calculations

Methodology for A.M. Peak Hour and P.M. Peak Hour
based on the *Trip Generation Handbook* , 3rd Edition, published by the Institute of Transportation Engineers

Methodology for Daily
based on the average of the Unconstrained Rates for the A.M. Peak Hour and P.M. Peak Hour

SUMMARY

GROSS TRIP GENERATION

INPUT

Land Use	Daily		A.M. Peak Hour		P.M. Peak Hour	
	Enter	Exit	Enter	Exit	Enter	Exit
Office	2,192	2,192	414	70	102	387
Retail						
Restaurant	954	954	89	73	89	59
Cinema/Entertainment						
Residential	820	820	25	101	101	54
Hotel						
	3,966	3,966	528	244	292	500

INTERNAL TRIPS

OUTPUT

Land Use	Daily		A.M. Peak Hour		P.M. Peak Hour	
	Enter	Exit	Enter	Exit	Enter	Exit
Office	187	135	25	20	4	6
Retail	0	0	0	0	0	0
Restaurant	281	248	38	24	13	13
Cinema/Entertainment	0	0	0	0	0	0
Residential	102	187	1	20	15	13
Hotel	0	0	0	0	0	0
	570	570	64	64	32	32
% Reduction	14.4%		16.6%		8.1%	

EXTERNAL TRIPS

OUTPUT

Land Use	Daily		A.M. Peak Hour		P.M. Peak Hour	
	Enter	Exit	Enter	Exit	Enter	Exit
Office	2,005	2,057	389	50	98	381
Retail	0	0	0	0	0	0
Restaurant	673	706	51	49	76	46
Cinema/Entertainment	0	0	0	0	0	0
Residential	718	633	24	81	86	41
Hotel	0	0	0	0	0	0
	3,396	3,396	464	180	260	468

Appendix H: 2018 Conceptual Improvements Along Mopac Southbound Frontage Road

DATE: 7/6/2016

MATCHLINE A-A

MATCHLINE A-A

NOTE:

CITY OF AUSTIN AND TRAVIS COUNTY RECORD DATA WAS UTILIZED FOR ALL EXISTING INFORMATION SHOWN WITHIN THIS EXHIBIT. THE LOCATIONS OF ALL ITEMS SHOWN IN THIS EXHIBIT ARE APPROXIMATE. THIS EXHIBIT IS NOT INTENDED FOR ANY CONSTRUCTION USE.

0 30 60

SCALE: 1" = 60'

Kimley»Horn

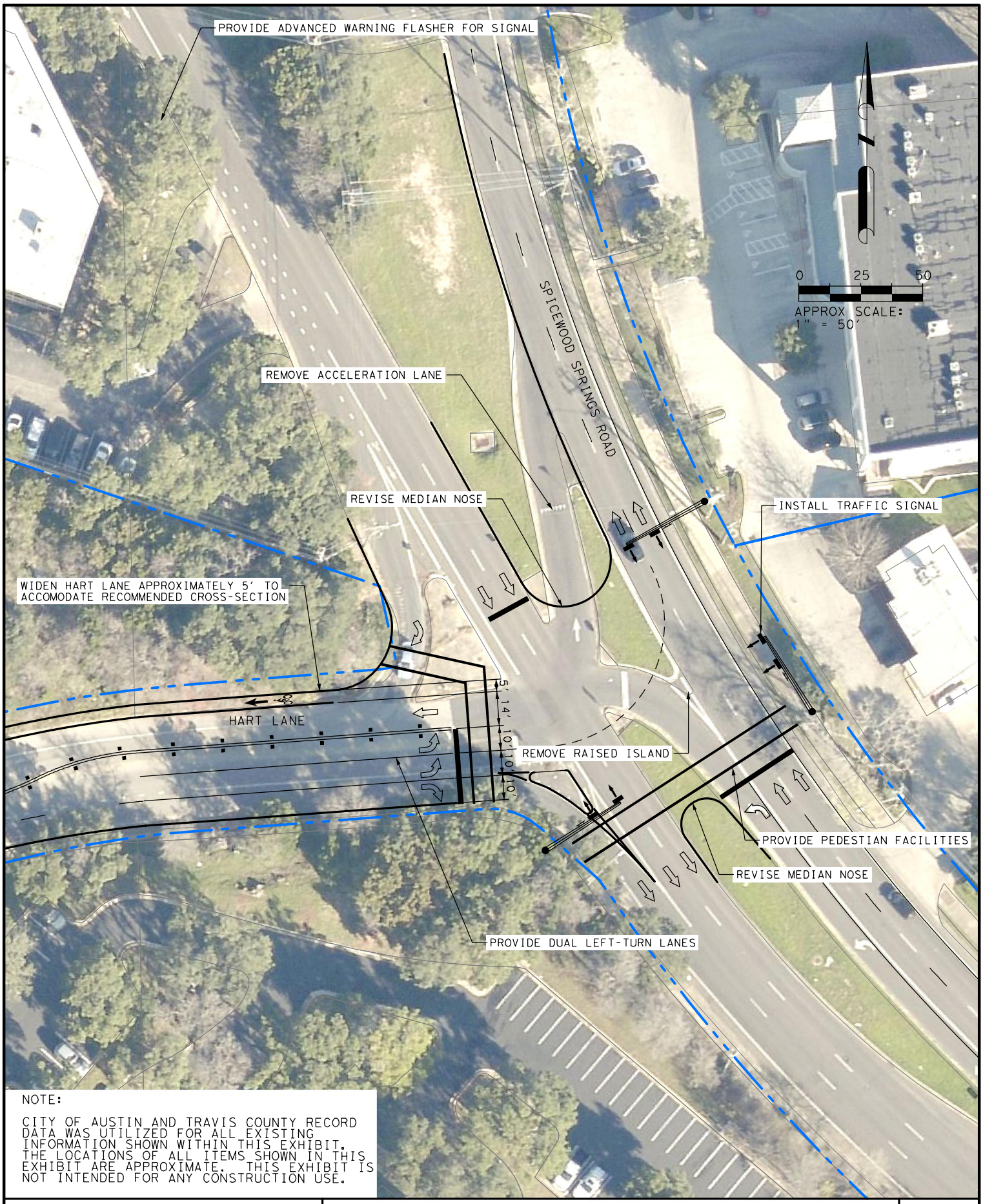
APPENDIX H: 2018 CONCEPTUAL IMPROVEMENTS ALONG MOPAC SOUTHBOUND FRONTAGE ROAD

EXHIBIT

A

Appendix I: Conceptual Improvements - 2018

DATE: 7/25/2016



NOTE:

CITY OF AUSTIN AND TRAVIS COUNTY RECORD DATA WAS UTILIZED FOR ALL EXISTING INFORMATION SHOWN WITHIN THIS EXHIBIT. THE LOCATIONS OF ALL ITEMS SHOWN IN THIS EXHIBIT ARE APPROXIMATE. THIS EXHIBIT IS NOT INTENDED FOR ANY CONSTRUCTION USE.

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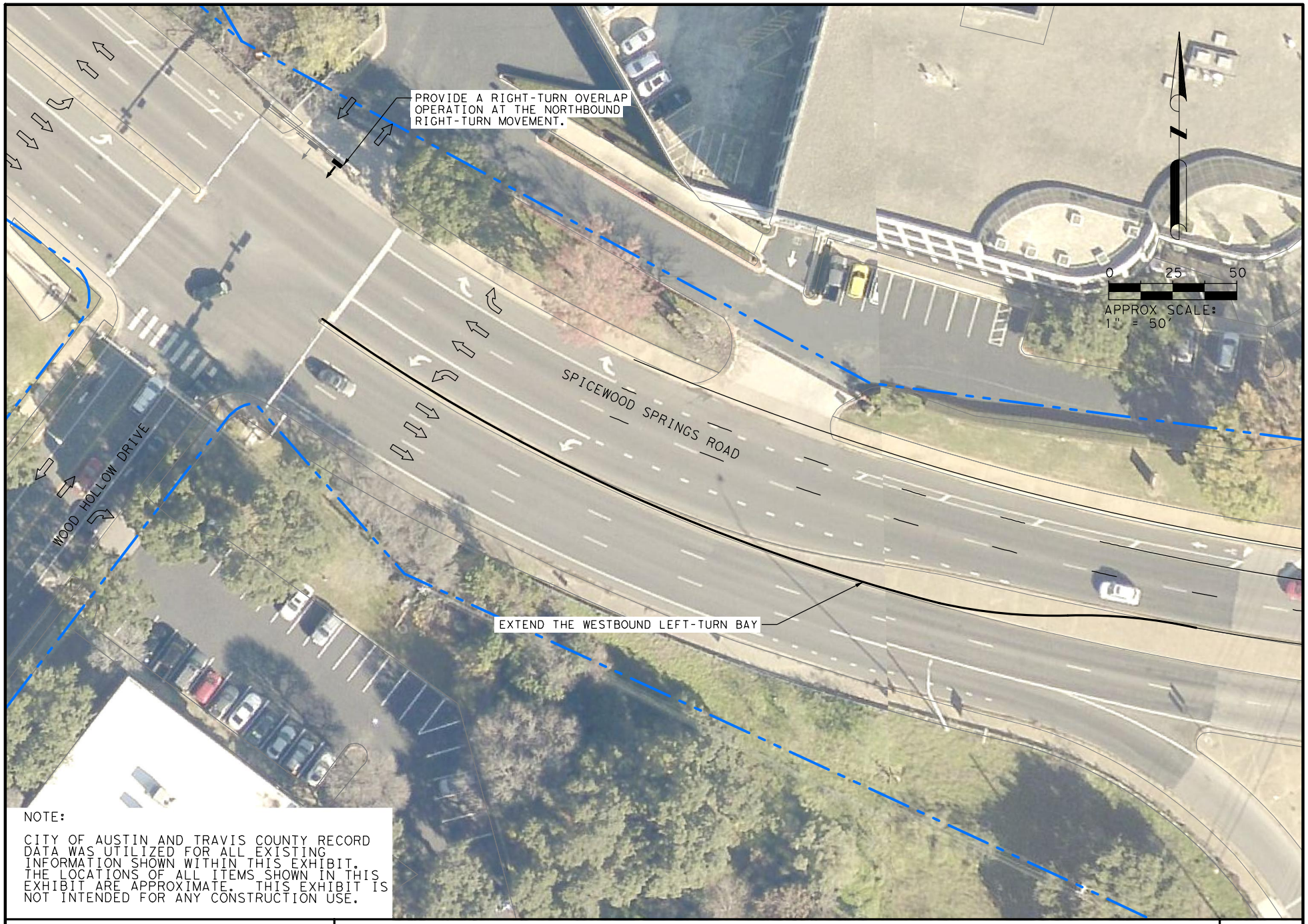
2018 IMPROVEMENTS

EXHIBIT
A

DATE: 7/21/2016



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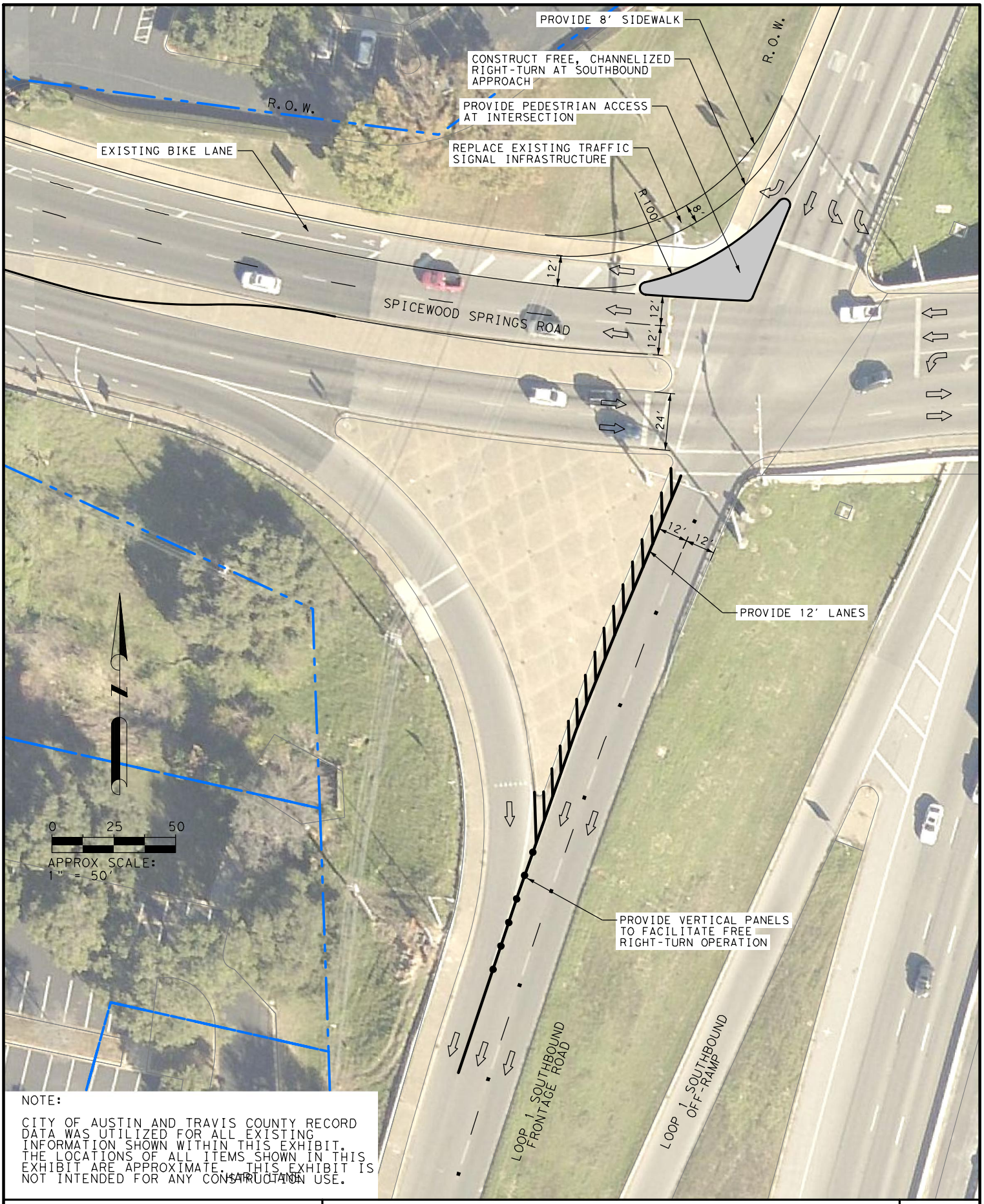
2018 IMPROVEMENTS

EXHIBIT

B

DATE: 7/25/2016



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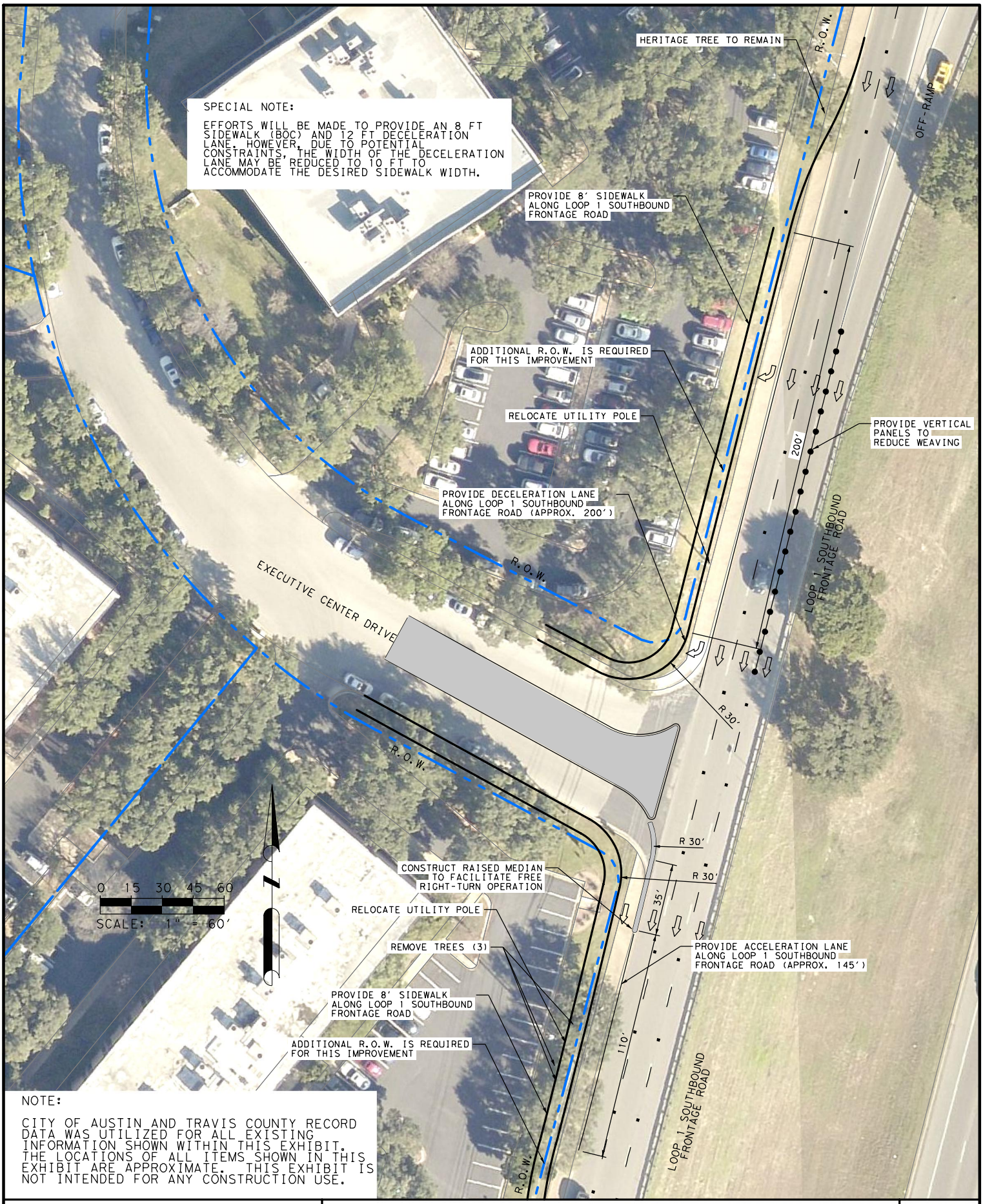
2018 IMPROVEMENTS

EXHIBIT C

DATE: 7/21/2016



Kimley»Horn

2018 IMPROVEMENTS

EXHIBIT
D

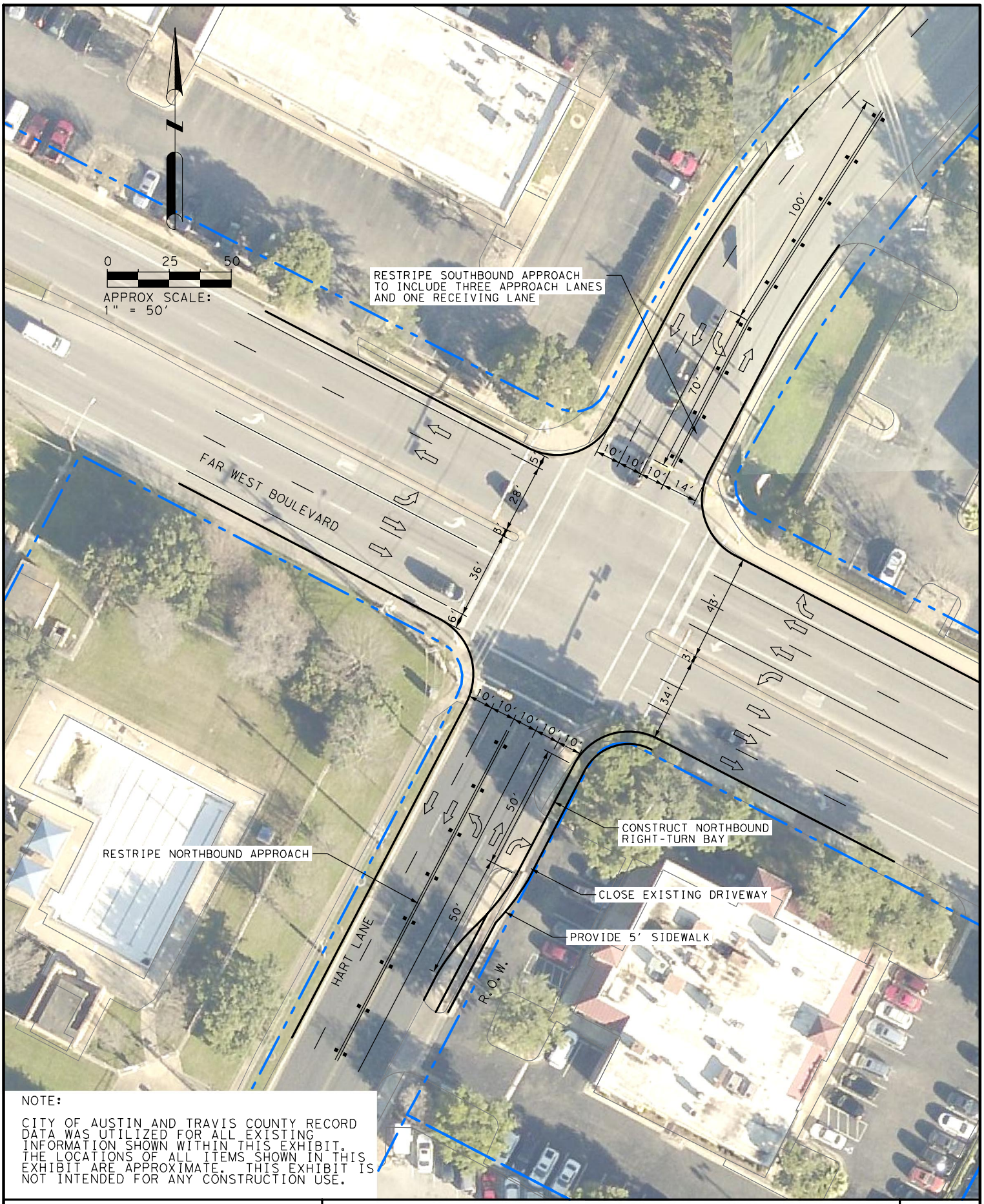
DATE: 7/21/2016

Kimley»Horn

2018 IMPROVEMENTS

EXHIBIT
E

DATE: 7/21/2016



NOTE:

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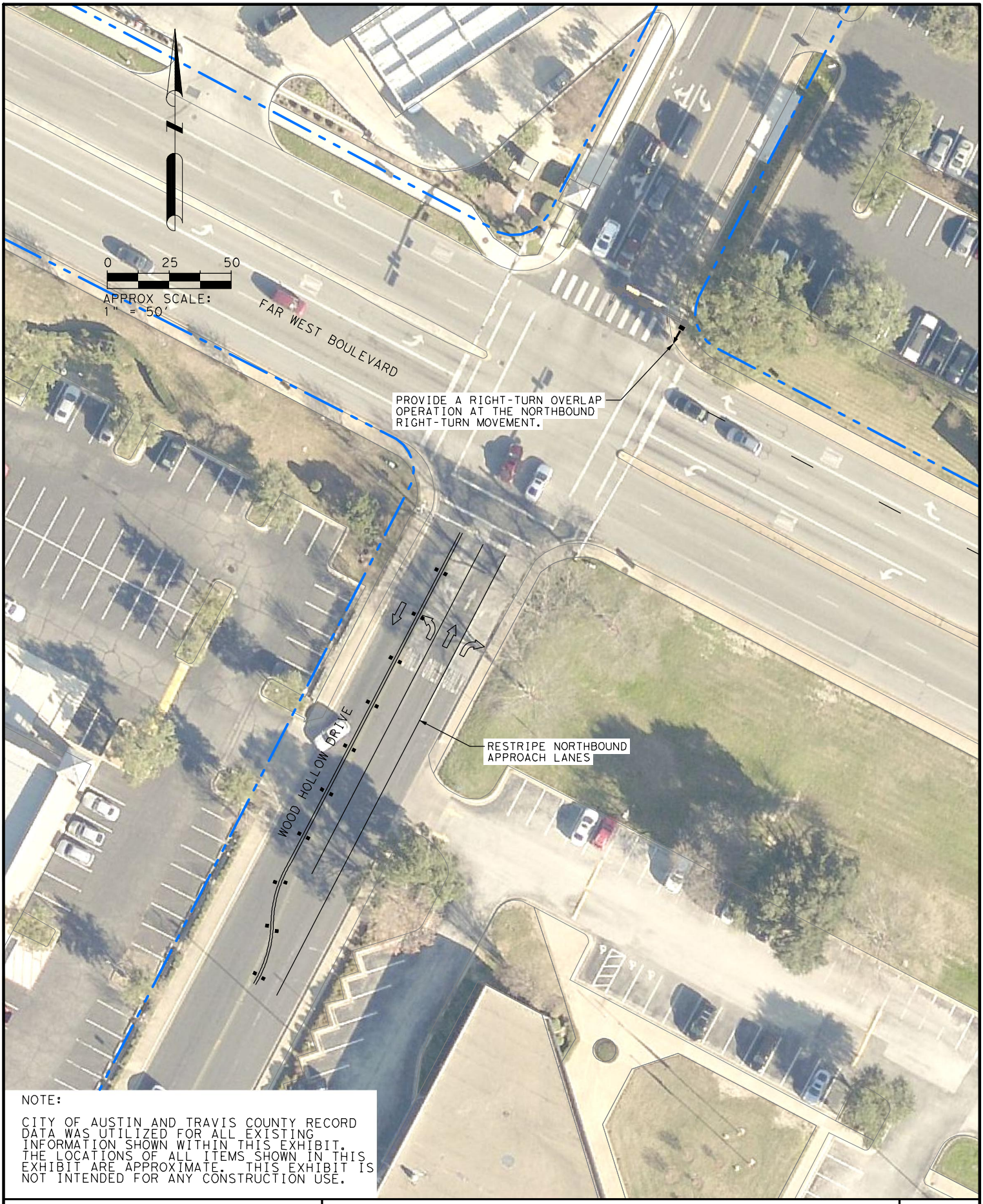
2018 IMPROVEMENTS

EXHIBIT
F

DATE: 7/21/2016



NOTE:

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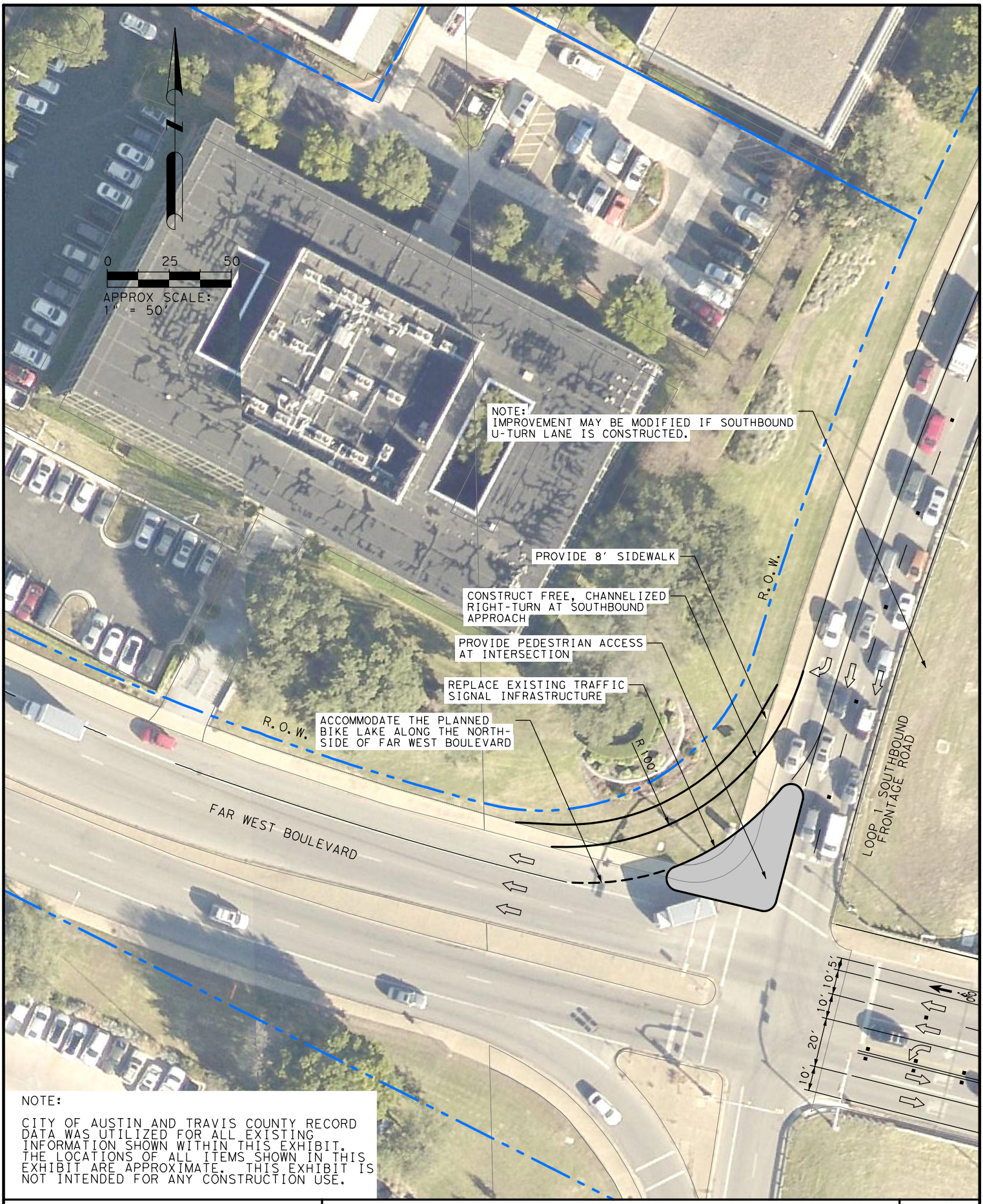
2018 IMPROVEMENTS

EXHIBIT
G

DATE: 7/21/2016



NOTE:

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2018 IMPROVEMENTS

EXHIBIT
H

DATE: 7/21/2016

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2018 IMPROVEMENTS

EXHIBIT
I

Appendix J: Conceptual Improvements - 2020

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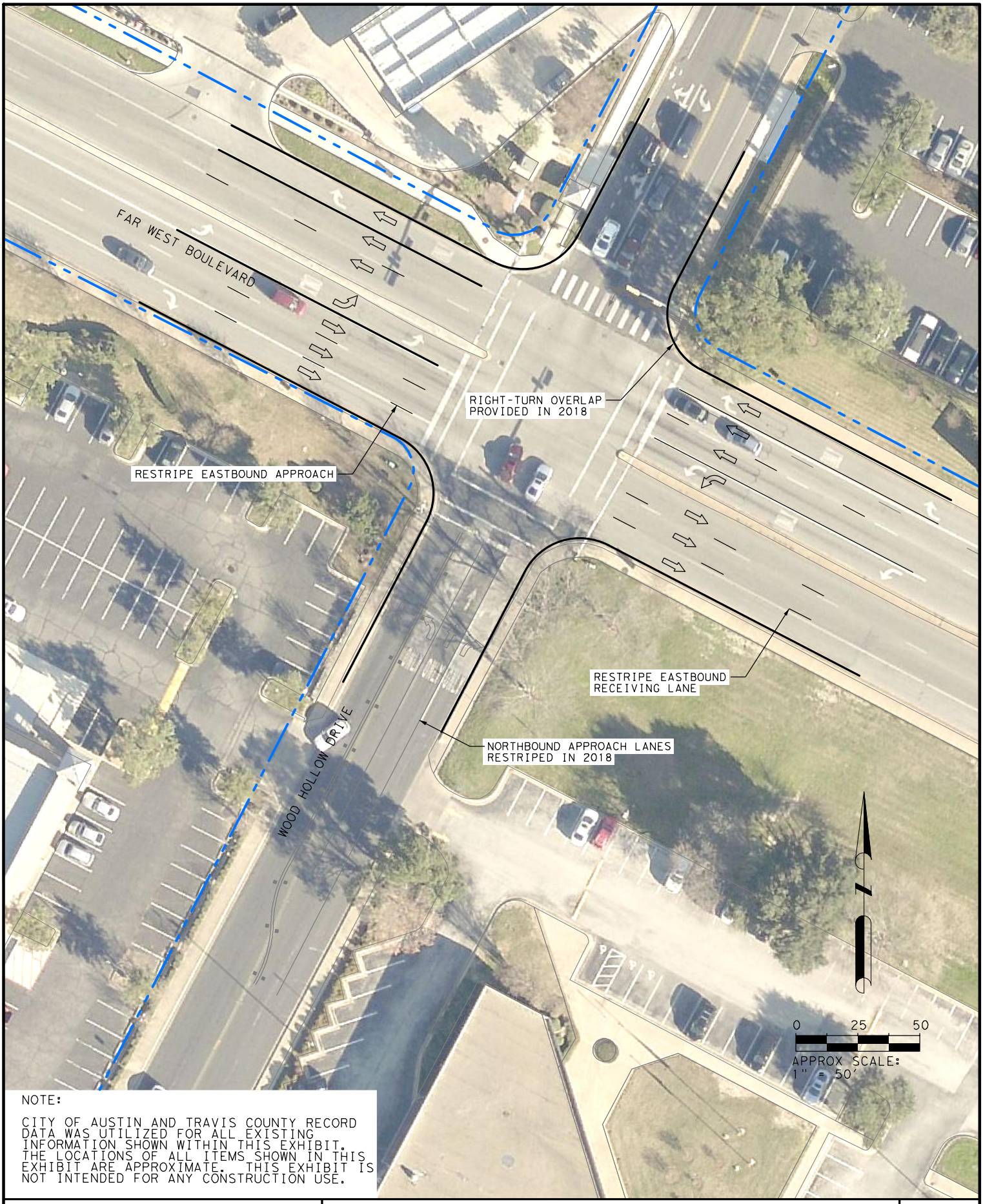
Appendix K: Conceptual Improvements - 2022

DATE: 7/21/2016



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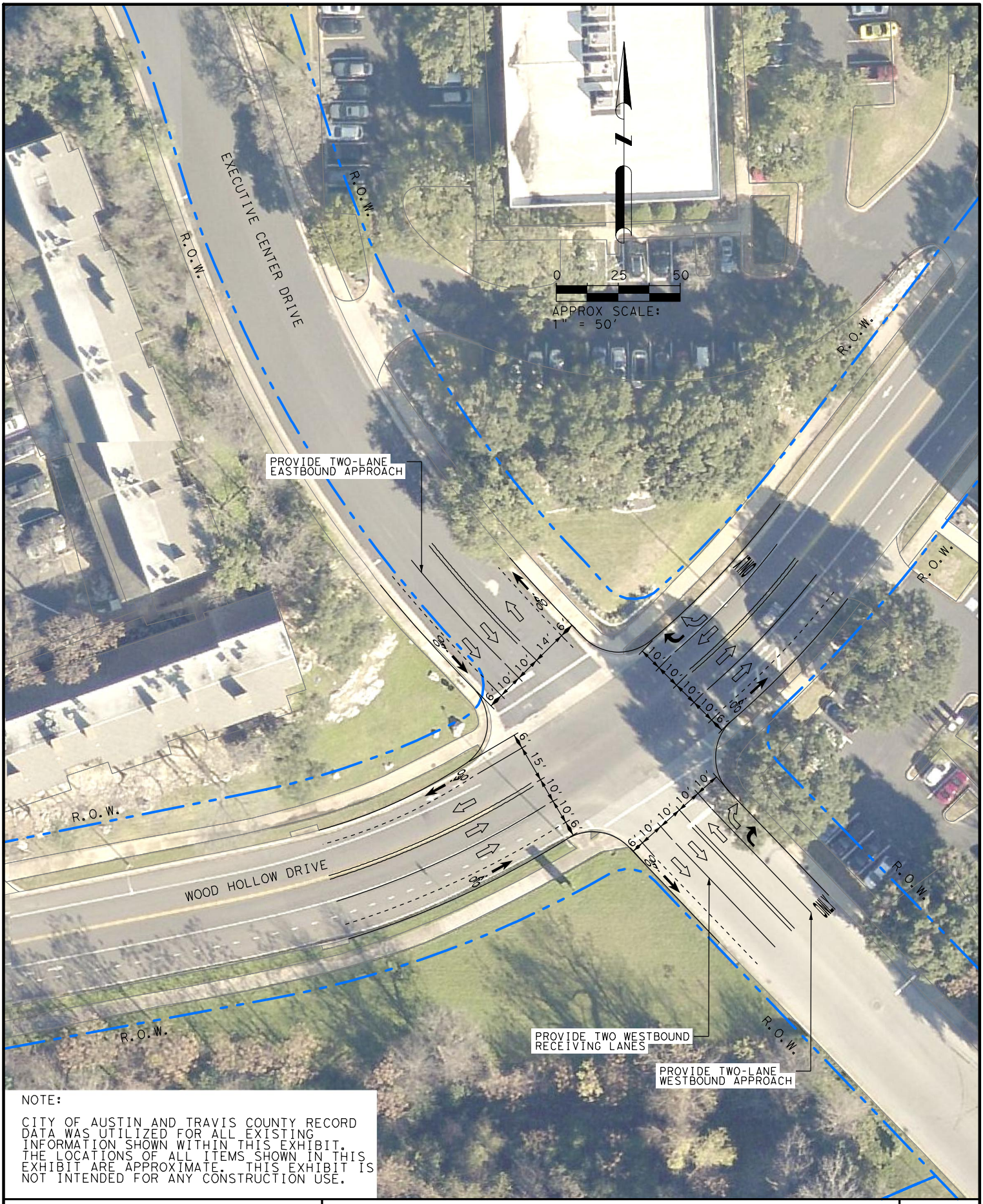
2022 IMPROVEMENTS

EXHIBIT

A

DATE: 7/21/2016



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2022 IMPROVEMENTS

EXHIBIT
B

Appendix L: Conceptual Improvements - 2024

DATE: 7/21/2016

NOTE:

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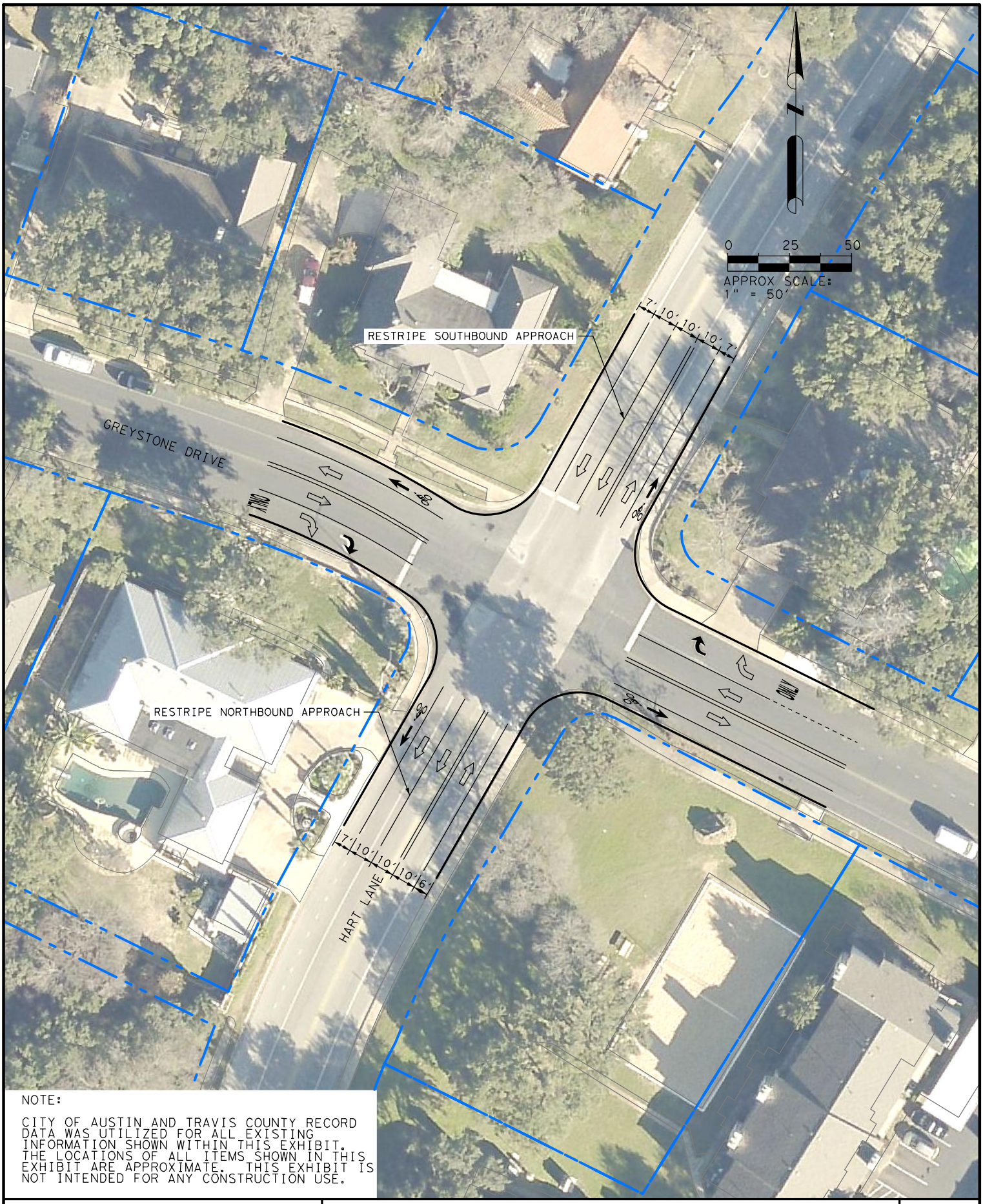
2024 IMPROVEMENTS

EXHIBIT
A

DATE: 7/21/2016



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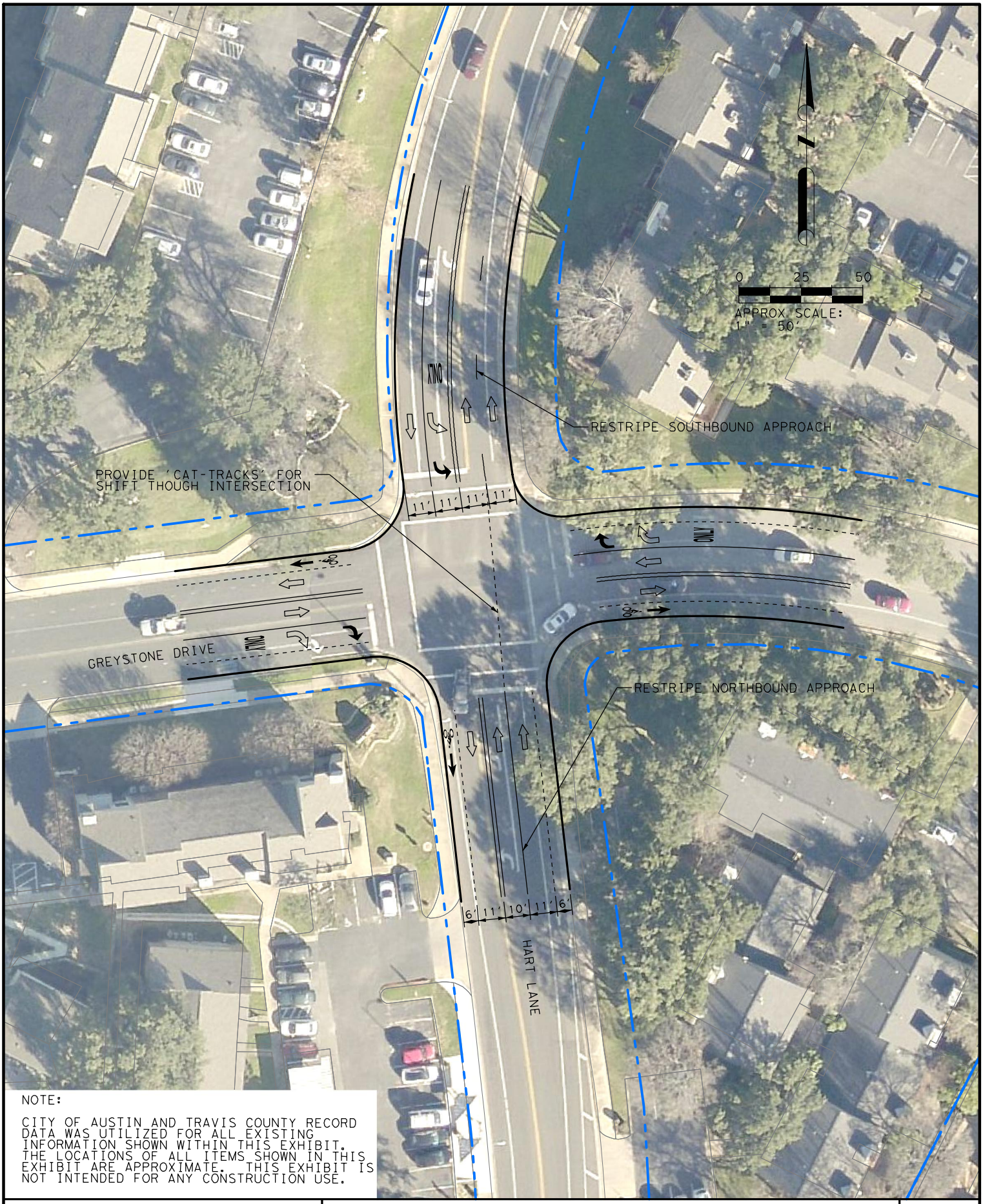
2024 IMPROVEMENTS

EXHIBIT
B

DATE: 7/21/2016



NOTE:

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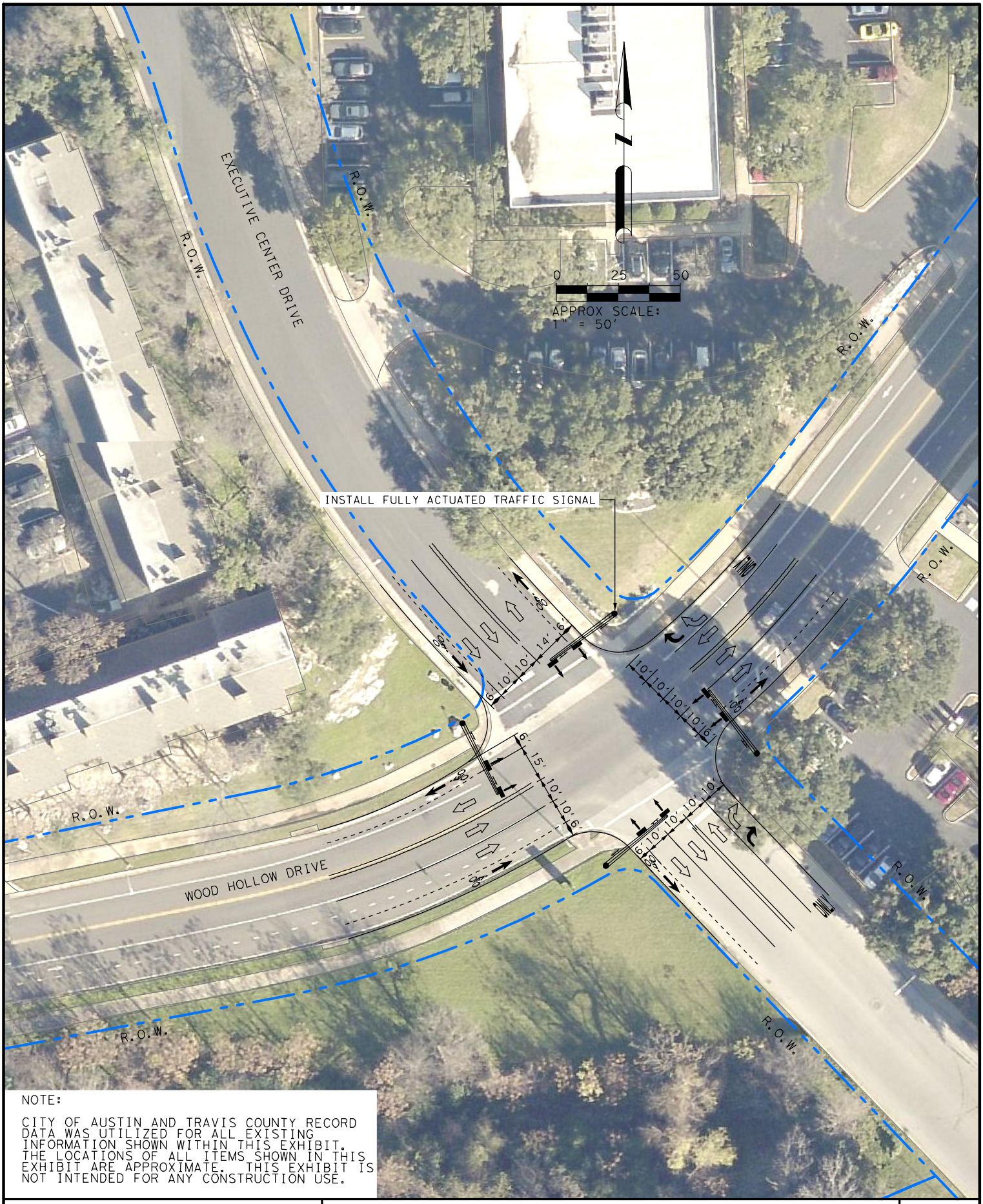
2024 IMPROVEMENTS

EXHIBIT
C

DATE: 7/21/2016



NOTE:

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2024 IMPROVEMENTS

EXHIBIT
D

Appendix M: Synchro Reports – 2016

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1076	218	147	821	92	137
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	1109	225	152	846	95	141
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						6
Median type	Raised			Raised		
Median storage veh)	1			1		
Upstream signal (ft)				1068		
pX, platoon unblocked					0.90	
vC, conflicting volume			1109		1836	555
vC1, stage 1 conf vol					1109	
vC2, stage 2 conf vol					726	
vCu, unblocked vol			1109		1710	555
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			76		46	70
cM capacity (veh/h)			625		174	476

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1
Volume Total	555	555	225	152	423	423	236
Volume Left	0	0	0	152	0	0	95
Volume Right	0	0	225	0	0	0	141
cSH	1700	1700	1700	625	1700	1700	434
Volume to Capacity	0.33	0.33	0.13	0.24	0.25	0.25	0.54
Queue Length 95th (ft)	0	0	0	24	0	0	79
Control Delay (s)	0.0	0.0	0.0	12.6	0.0	0.0	28.7
Lane LOS				B			D
Approach Delay (s)	0.0			1.9			28.7
Approach LOS							D

Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	53.0%	ICU Level of Service	A
Analysis Period (min)	15		

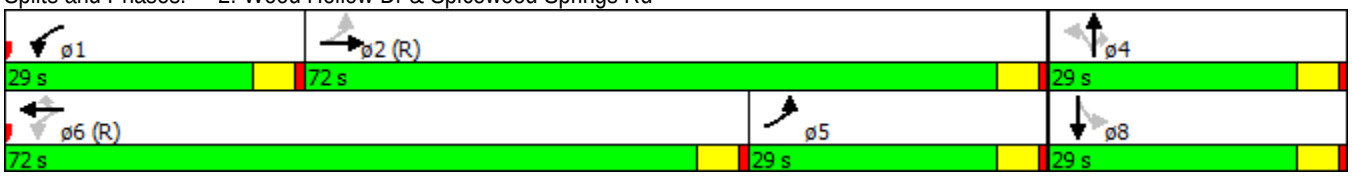
2: Wood Hollow Dr & Spicewood Springs Rd

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	7	1111	336	921	10	45	4	136	6	0
Lane Group Flow (vph)	7	1256	350	959	10	0	51	142	0	8
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA
Protected Phases	5	2	1	6			4			8
Permitted Phases	2		6		6	4		4	8	
Detector Phase	5	2	1	6	6	4	4	4	8	8
Switch Phase										
Minimum Initial (s)	6.0	25.0	6.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	15.0	30.0	15.0	11.0	11.0	35.0	35.0	35.0	35.0	35.0
Total Split (s)	29.0	72.0	29.0	72.0	72.0	29.0	29.0	29.0	29.0	29.0
Total Split (%)	22.3%	55.4%	22.3%	55.4%	55.4%	22.3%	22.3%	22.3%	22.3%	22.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Max	None	C-Max	C-Max	Max	Max	Max	None	None
v/c Ratio	0.02	0.46	0.82	0.39	0.01		0.20	0.35		0.02
Control Delay	15.9	19.3	35.7	11.9	0.0		47.2	9.5		0.1
Queue Delay	0.0	0.0	0.0	0.3	0.0		0.0	0.0		0.0
Total Delay	15.9	19.3	35.7	12.3	0.0		47.2	9.5		0.1
Queue Length 50th (ft)	3	239	144	115	0		37	0		0
Queue Length 95th (ft)	11	279	m#328	m382	m0		76	58		0
Internal Link Dist (ft)		988		494			464			203
Turn Bay Length (ft)	130		110		100			100		
Base Capacity (vph)	524	2711	463	2455	1116		261	408		373
Starvation Cap Reductn	0	0	0	841	0		0	0		0
Spillback Cap Reductn	0	0	0	0	0		0	0		0
Storage Cap Reductn	0	0	0	0	0		0	0		0
Reduced v/c Ratio	0.01	0.46	0.76	0.59	0.01		0.20	0.35		0.02

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 55 (42%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Wood Hollow Dr & Spicewood Springs Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	1111	95	336	921	10	45	4	136	6	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0		5.0	5.0		5.0	
Lane Util. Factor	1.00	0.91		1.00	0.95	1.00		1.00	1.00		1.00	
Frt	1.00	0.99		1.00	1.00	0.85		1.00	0.85		0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.96	1.00		0.96	
Satd. Flow (prot)	1770	5025		1770	3539	1583		1781	1583		1735	
Flt Permitted	0.30	1.00		0.14	1.00	1.00		0.76	1.00		0.88	
Satd. Flow (perm)	556	5025		267	3539	1583		1419	1583		1577	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	7	1157	99	350	959	10	47	4	142	6	0	2
RTOR Reduction (vph)	0	7	0	0	0	3	0	0	116	0	7	0
Lane Group Flow (vph)	7	1249	0	350	959	7	0	51	26	0	1	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases	2			6		6	4		4	8		
Actuated Green, G (s)	70.0	70.0		86.2	86.2	86.2		24.0	24.0		24.0	
Effective Green, g (s)	70.0	70.0		86.2	86.2	86.2		24.0	24.0		24.0	
Actuated g/C Ratio	0.54	0.54		0.66	0.66	0.66		0.18	0.18		0.18	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0		5.0	5.0		5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0		2.0	2.0		2.0	
Lane Grp Cap (vph)	344	2705		419	2346	1049		261	292		291	
v/s Ratio Prot	0.00	c0.25		c0.13	0.27							
v/s Ratio Perm	0.01			c0.42		0.00		c0.04	0.02		0.00	
v/c Ratio	0.02	0.46		0.84	0.41	0.01		0.20	0.09		0.01	
Uniform Delay, d1	14.0	18.4		23.7	10.1	7.4		44.8	43.9		43.3	
Progression Factor	1.00	1.00		1.17	1.14	1.00		1.00	1.00		1.00	
Incremental Delay, d2	0.0	0.6		10.2	0.4	0.0		1.7	0.6		0.0	
Delay (s)	14.0	19.0		37.9	12.0	7.4		46.5	44.6		43.3	
Level of Service	B	B		D	B	A		D	D		D	
Approach Delay (s)		19.0			18.8			45.1			43.3	
Approach LOS		B			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	20.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	60.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

3: Mopac SBFR & Spicewood Springs Rd

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR	ø1	ø2	ø4	ø5	ø6
Lane Configurations												
Volume (vph)	650	603	570	665	333	1081	602					
Lane Group Flow (vph)	670	622	588	686	309	1148	621					
Turn Type	NA	Perm	Prot	NA	Split	NA	Perm					
Protected Phases	2 1		19 6 7 2 1 19 6		4 5	4 5		1	2	4	5	6
Permitted Phases		2 1					4 5					
Detector Phase	2 1	2 1	19 6 7 2 1 19 6		4 5	4 5	4 5					
Switch Phase												
Minimum Initial (s)								3.0	1.0	1.0	3.0	4.0
Minimum Split (s)								8.0	11.0	11.0	8.0	24.0
Total Split (s)								8.0	24.0	34.0	8.0	30.0
Total Split (%)								6%	18%	26%	6%	23%
Yellow Time (s)								4.0	4.0	4.0	4.0	4.0
All-Red Time (s)								1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag								Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?								Yes	Yes	Yes	Yes	Yes
Recall Mode								None	Max	None	None	C-Max
v/c Ratio	0.91	1.31	0.85	0.40	0.67	1.19	0.92					
Control Delay	90.7	198.3	31.3	2.4	20.1	112.0	16.4					
Queue Delay	0.0	0.0	12.2	0.1	0.0	0.0	0.0					
Total Delay	90.7	198.3	43.5	2.4	20.1	112.0	16.4					
Queue Length 50th (ft)	315	~587	483	32	194	~630	353					
Queue Length 95th (ft)	#416	#824	m527	m62	m153	m384	m179					
Internal Link Dist (ft)	494			333		2669						
Turn Bay Length (ft)			50		145							
Base Capacity (vph)	735	475	694	1715	458	963	676					
Starvation Cap Reductn	0	0	95	134	0	0	0					
Spillback Cap Reductn	0	0	0	0	0	0	0					
Storage Cap Reductn	0	0	0	0	0	0	0					
Reduced v/c Ratio	0.91	1.31	0.98	0.43	0.67	1.19	0.92					

Intersection Summary

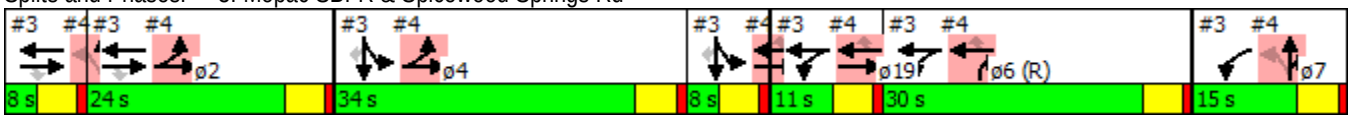
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 8 (6%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 130
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Mopac SBFR & Spicewood Springs Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	650	603	570	665	0	0	0	0	333	1081	602
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0					5.0	5.0	5.0
Lane Util. Factor		0.95	1.00	1.00	0.95					0.91	0.91	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		3539	1583	1770	3539					1610	3385	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (perm)		3539	1583	1770	3539					1610	3385	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	670	622	588	686	0	0	0	0	343	1114	621
RTOR Reduction (vph)	0	0	147	0	0	0	0	0	0	0	0	226
Lane Group Flow (vph)	0	670	475	588	686	0	0	0	0	309	1148	395
Turn Type		NA	Perm	Prot	NA					Split	NA	Perm
Protected Phases		2 1		19 6 7	2 1 19 6					4 5	4 5	
Permitted Phases			2 1									4 5
Actuated Green, G (s)		27.0	27.0	51.0	63.0					37.0	37.0	37.0
Effective Green, g (s)		27.0	27.0	51.0	63.0					37.0	37.0	37.0
Actuated g/C Ratio		0.21	0.21	0.39	0.48					0.28	0.28	0.28
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		735	328	694	1715					458	963	450
v/s Ratio Prot		0.19		c0.33	0.19					0.19	c0.34	
v/s Ratio Perm			c0.30									0.25
v/c Ratio		0.91	1.45	0.85	0.40					0.67	1.19	0.88
Uniform Delay, d1		50.3	51.5	36.0	21.4					41.2	46.5	44.3
Progression Factor		1.49	1.92	0.69	0.17					0.46	0.49	0.58
Incremental Delay, d2		14.2	217.2	4.0	0.0					0.3	87.5	1.9
Delay (s)		89.4	316.2	28.9	3.6					19.3	110.5	27.5
Level of Service		F	F	C	A					B	F	C
Approach Delay (s)		198.6			15.3			0.0			72.1	
Approach LOS		F			B			A			E	

Intersection Summary			
HCM 2000 Control Delay	91.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.33		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	35.0
Intersection Capacity Utilization	107.8%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

4: Mopac NBFR & Anderson Ln

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	ø1	ø2	ø4	ø5	ø6
Lane Configurations												
Volume (vph)	276	707	885	230	350	12	485					
Lane Group Flow (vph)	285	729	912	237	303	290	280					
Turn Type	Prot	NA	NA	Perm	Perm	NA	custom					
Protected Phases	2 4	2 4 5 19	6 5 19			7 1	7 1 6	1	2	4	5	6
Permitted Phases				6 5 19	7 1							
Detector Phase	2 4	2 4 5 19	6 5 19	6 5 19	7 1	7 1	7 1 6					
Switch Phase												
Minimum Initial (s)								3.0	1.0	1.0	3.0	4.0
Minimum Split (s)								8.0	11.0	11.0	8.0	24.0
Total Split (s)								8.0	24.0	34.0	8.0	30.0
Total Split (%)								6%	18%	26%	6%	23%
Yellow Time (s)								4.0	4.0	4.0	4.0	4.0
All-Red Time (s)								1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag								Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?								Yes	Yes	Yes	Yes	Yes
Recall Mode								None	Max	None	None	C-Max
v/c Ratio	0.40	0.37	0.76	0.34	1.31	0.99	0.41					
Control Delay	8.1	0.3	43.3	5.1	194.2	75.4	1.9					
Queue Delay	1.7	0.9	1.8	0.0	0.0	2.6	0.0					
Total Delay	9.8	1.2	45.1	5.1	194.2	78.0	1.9					
Queue Length 50th (ft)	21	0	358	0	~349	219	2					
Queue Length 95th (ft)	m40	m0	440	57	#549	#395	6					
Internal Link Dist (ft)		333	702			1795						
Turn Bay Length (ft)	50			360	280							
Base Capacity (vph)	721	1960	1197	692	232	292	678					
Starvation Cap Reductn	279	889	0	0	0	0	0					
Spillback Cap Reductn	0	0	146	0	0	3	0					
Storage Cap Reductn	0	0	0	0	0	0	0					
Reduced v/c Ratio	0.64	0.68	0.87	0.34	1.31	1.00	0.41					

Intersection Summary

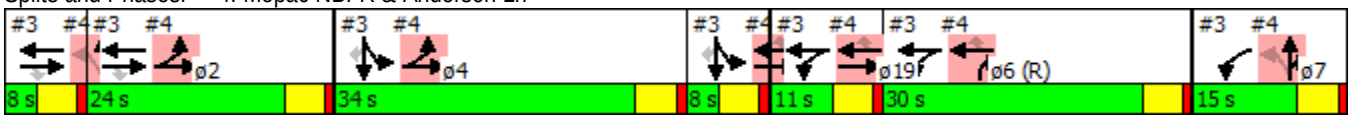
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 8 (6%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 130
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Mopac NBFR & Anderson Ln



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	276	707	0	0	885	230	350	12	485	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0	5.0			
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.91	0.95			
Frt	1.00	1.00			1.00	0.85	1.00	0.89	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.99	1.00			
Satd. Flow (prot)	1770	3539			3539	1583	1681	1487	1504			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.99	1.00			
Satd. Flow (perm)	1770	3539			3539	1583	1681	1487	1504			
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	285	729	0	0	912	237	361	12	500	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	157	0	87	123	0	0	0
Lane Group Flow (vph)	285	729	0	0	912	80	303	203	157	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	custom			
Protected Phases	2 4	2 4 5			6 5	19		7 1	7 1 6			
Permitted Phases						6 5 19	7 1					
Actuated Green, G (s)	53.0	72.0			44.0	44.0	18.0	18.0	48.0			
Effective Green, g (s)	53.0	72.0			44.0	44.0	18.0	18.0	48.0			
Actuated g/C Ratio	0.41	0.55			0.34	0.34	0.14	0.14	0.37			
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	721	1960			1197	535	232	205	555			
v/s Ratio Prot	c0.16	c0.21			c0.26				0.10			
v/s Ratio Perm						0.05	c0.18	0.14				
v/c Ratio	0.40	0.37			0.76	0.15	1.31	0.99	0.28			
Uniform Delay, d1	27.2	16.3			38.3	30.0	56.0	55.9	28.9			
Progression Factor	0.27	0.00			1.00	1.00	0.59	0.66	0.02			
Incremental Delay, d2	0.1	0.0			2.6	0.0	163.7	57.7	0.1			
Delay (s)	7.3	0.0			41.0	30.0	196.6	94.6	0.7			
Level of Service	A	A			D	C	F	F	A			
Approach Delay (s)		2.1			38.7			99.9			0.0	
Approach LOS		A			D			F			A	

Intersection Summary			
HCM 2000 Control Delay	44.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	35.0
Intersection Capacity Utilization	107.8%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	6	14	206	17	73	269
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	7	17	245	20	87	320
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	749	255			265	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	749	255			265	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	98	98			93	
cM capacity (veh/h)	354	783			1298	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	24	265	407
Volume Left	7	0	87
Volume Right	17	20	0
cSH	574	1700	1298
Volume to Capacity	0.04	0.16	0.07
Queue Length 95th (ft)	3	0	5
Control Delay (s)	11.5	0.0	2.2
Lane LOS	B		A
Approach Delay (s)	11.5	0.0	2.2
Approach LOS	B		

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	43.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	8	14	4	1	9	18	25	174	33	94	178	122
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	9	16	5	1	10	20	28	198	38	107	202	139
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											544	
pX, platoon unblocked	0.92	0.92	0.92	0.92	0.92		0.92					
vC, conflicting volume	784	777	272	771	828	216	341			235		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	723	716	167	709	771	216	242			235		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	95	99	100	96	98	98			92		
cM capacity (veh/h)	275	295	808	283	274	823	1220			1332		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	30	32	264	448
Volume Left	9	1	28	107
Volume Right	5	20	38	139
cSH	319	481	1220	1332
Volume to Capacity	0.09	0.07	0.02	0.08
Queue Length 95th (ft)	8	5	2	7
Control Delay (s)	17.4	13.0	1.1	2.5
Lane LOS	C	B	A	A
Approach Delay (s)	17.4	13.0	1.1	2.5
Approach LOS	C	B		

Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	49.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	19	0	0	2662	91
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	20	0	0	2802	96
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					1035	
pX, platoon unblocked	0.78	0.78	0.78			
vC, conflicting volume	2850	982	2898			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2386	0	2447			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	98	100			
cM capacity (veh/h)	22	846	147			

Direction, Lane #	EB 1	SB 1	SB 2	SB 3
Volume Total	20	1121	1121	656
Volume Left	0	0	0	0
Volume Right	20	0	0	96
cSH	846	1700	1700	1700
Volume to Capacity	0.02	0.66	0.66	0.39
Queue Length 95th (ft)	2	0	0	0
Control Delay (s)	9.4	0.0	0.0	0.0
Lane LOS	A			
Approach Delay (s)	9.4	0.0		
Approach LOS	A			

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	63.5%	ICU Level of Service	B
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	15.4
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	36	149	127	0	75	58	7	0	47	118	32
Peak Hour Factor	0.92	0.81	0.81	0.81	0.92	0.81	0.81	0.81	0.92	0.81	0.81	0.81
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	44	184	157	0	93	72	9	0	58	146	40
Number of Lanes	0	0	1	1	0	0	1	1	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	2
HCM Control Delay	13.6	14	14.3
HCM LOS	B	B	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	24%	19%	0%	56%	0%	5%
Vol Thru, %	60%	81%	0%	44%	0%	86%
Vol Right, %	16%	0%	100%	0%	100%	9%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	197	185	127	133	7	293
LT Vol	47	36	0	75	0	15
Through Vol	118	149	0	58	0	252
RT Vol	32	0	127	0	7	26
Lane Flow Rate	243	228	157	164	9	362
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.434	0.442	0.268	0.343	0.016	0.619
Departure Headway (Hd)	6.424	6.973	6.156	7.523	6.513	6.164
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	559	516	583	478	548	586
Service Time	4.472	4.721	3.903	5.277	4.266	4.207
HCM Lane V/C Ratio	0.435	0.442	0.269	0.343	0.016	0.618
HCM Control Delay	14.3	15.2	11.2	14.2	9.4	18.8
HCM Lane LOS	B	C	B	B	A	C
HCM 95th-tile Q	2.2	2.2	1.1	1.5	0	4.2

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	15	252	26
Peak Hour Factor	0.92	0.81	0.81	0.81
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	19	311	32
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	18.8
HCM LOS	C

Lane

Intersection	
Intersection Delay, s/veh	11.8
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	30	123	159	0	53	117	30	0	22	118	43
Peak Hour Factor	0.92	0.90	0.90	0.90	0.92	0.90	0.90	0.90	0.92	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	33	137	177	0	59	130	33	0	24	131	48
Number of Lanes	0	0	1	1	0	0	1	1	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	2
HCM Control Delay	11.1	12.2	11.9
HCM LOS	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	20%	0%	31%	0%	100%	0%
Vol Thru, %	0%	73%	80%	0%	69%	0%	0%	78%
Vol Right, %	0%	27%	0%	100%	0%	100%	0%	22%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	22	161	153	159	170	30	20	186
LT Vol	22	0	30	0	53	0	20	0
Through Vol	0	118	123	0	117	0	0	146
RT Vol	0	43	0	159	0	30	0	40
Lane Flow Rate	24	179	170	177	189	33	22	207
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.048	0.316	0.3	0.272	0.345	0.053	0.043	0.365
Departure Headway (Hd)	7.063	6.364	6.358	5.548	6.573	5.703	7.013	6.352
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	505	562	563	645	544	624	509	564
Service Time	4.832	4.132	4.123	3.313	4.342	3.471	4.78	4.118
HCM Lane V/C Ratio	0.048	0.319	0.302	0.274	0.347	0.053	0.043	0.367
HCM Control Delay	10.2	12.1	11.9	10.4	12.8	8.8	10.1	12.8
HCM Lane LOS	B	B	B	B	B	A	B	B
HCM 95th-tile Q	0.2	1.3	1.3	1.1	1.5	0.2	0.1	1.7

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	20	146	40
Peak Hour Factor	0.92	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	22	162	44
Number of Lanes	0	1	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	12.5
HCM LOS	B

Lane

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	195	0	0	2524	157
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	0	203	0	0	2629	164
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2711	958	2793			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2711	958	2793			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	21	100			
cM capacity (veh/h)	17	258	137			

Direction, Lane #	EB 1	SB 1	SB 2	SB 3
Volume Total	203	1052	1052	689
Volume Left	0	0	0	0
Volume Right	203	0	0	164
cSH	258	1700	1700	1700
Volume to Capacity	0.79	0.62	0.62	0.41
Queue Length 95th (ft)	149	0	0	0
Control Delay (s)	56.4	0.0	0.0	0.0
Lane LOS	F			
Approach Delay (s)	56.4	0.0		
Approach LOS	F			

Intersection Summary			
Average Delay	3.8		
Intersection Capacity Utilization	71.0%	ICU Level of Service	C
Analysis Period (min)	15		

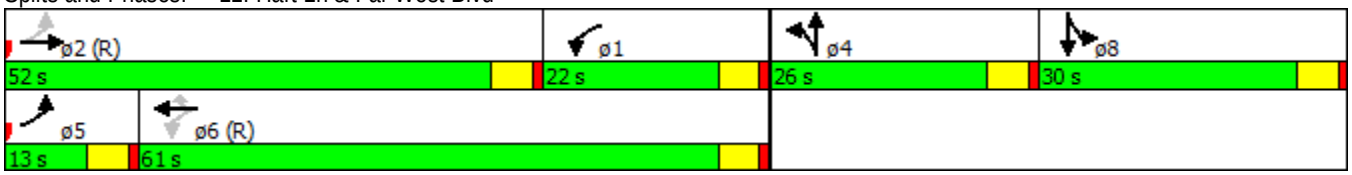
11: Hart Ln & Far West Blvd

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBT
Lane Configurations							
Volume (vph)	52	637	190	255	68	103	237
Lane Group Flow (vph)	63	867	229	307	82	362	560
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	NA
Protected Phases	5	2	1	6		4	8
Permitted Phases	2		6		6		
Detector Phase	5	2	1	6	6	4	8
Switch Phase							
Minimum Initial (s)	4.0	2.0	4.0	2.0	2.0	2.0	2.0
Minimum Split (s)	9.0	24.0	9.0	24.0	24.0	33.0	33.0
Total Split (s)	13.0	52.0	22.0	61.0	61.0	26.0	30.0
Total Split (%)	10.0%	40.0%	16.9%	46.9%	46.9%	20.0%	23.1%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lead	Lag	Lag	Lag		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		
Recall Mode	None	C-Max	None	C-Max	C-Max	None	None
v/c Ratio	0.16	0.64	0.58	0.18	0.11	0.80	0.89
Control Delay	27.8	35.5	53.9	33.4	36.1	67.4	68.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.8	35.5	53.9	33.4	36.1	67.4	68.5
Queue Length 50th (ft)	34	319	142	100	51	156	240
Queue Length 95th (ft)	63	357	206	132	88	190	282
Internal Link Dist (ft)		1703		1174		695	1553
Turn Bay Length (ft)	130		100		490		
Base Capacity (vph)	403	1361	392	1712	765	524	666
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.64	0.58	0.18	0.11	0.69	0.84

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 100 (77%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green
Natural Cycle: 110
Control Type: Actuated-Coordinated

Splits and Phases: 11: Hart Ln & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	52	637	83	190	255	68	47	103	150	198	237	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0		5.0			5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		0.95			0.95	
Frt	1.00	0.98		1.00	1.00	0.85		0.93			0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.99			0.98	
Satd. Flow (prot)	1770	3478		1770	3539	1583		3248			3433	
Flt Permitted	0.48	1.00		0.24	1.00	1.00		0.99			0.98	
Satd. Flow (perm)	891	3478		454	3539	1583		3248			3433	
Peak-hour factor, PHF	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Adj. Flow (vph)	63	767	100	229	307	82	57	124	181	239	286	35
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	63	867	0	229	307	82	0	362	0	0	560	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Split	NA		Split	NA	
Protected Phases	5	2		1	6		4	4		8	8	
Permitted Phases	2			6		6						
Actuated Green, G (s)	49.9	49.9		61.9	61.9	61.9		18.2			23.9	
Effective Green, g (s)	49.9	49.9		61.9	61.9	61.9		18.2			23.9	
Actuated g/C Ratio	0.38	0.38		0.48	0.48	0.48		0.14			0.18	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0		5.0			5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0		2.0			2.0	
Lane Grp Cap (vph)	382	1335		398	1685	753		454			631	
v/s Ratio Prot	0.01	c0.25		c0.08	0.09			c0.11			c0.16	
v/s Ratio Perm	0.06			0.19		0.05						
v/c Ratio	0.16	0.65		0.58	0.18	0.11		0.80			0.89	
Uniform Delay, d1	25.8	32.9		34.6	19.5	18.8		54.1			51.7	
Progression Factor	1.00	1.00		1.33	1.60	1.70		1.00			1.00	
Incremental Delay, d2	0.1	2.5		1.2	0.2	0.3		8.8			13.9	
Delay (s)	25.8	35.3		47.3	31.5	32.2		62.9			65.6	
Level of Service	C	D		D	C	C		E			E	
Approach Delay (s)		34.7			37.5			62.9			65.6	
Approach LOS		C			D			E			E	

Intersection Summary			
HCM 2000 Control Delay	46.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	69.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

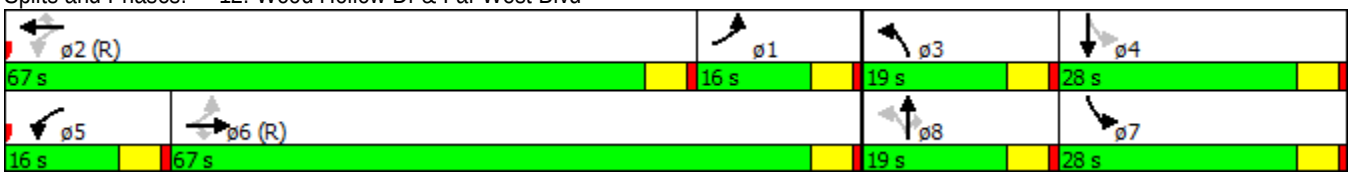
12: Wood Hollow Dr & Far West Blvd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Volume (vph)	71	976	44	108	529	87	23	78	271	247	111
Lane Group Flow (vph)	76	1038	47	115	563	93	24	83	288	263	172
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA
Protected Phases	1	6		5	2		3	8		7	4
Permitted Phases	6		6	2		2	8		8	4	
Detector Phase	1	6	6	5	2	2	3	8	8	7	4
Switch Phase											
Minimum Initial (s)	4.0	2.0	2.0	4.0	2.0	2.0	4.0	2.0	2.0	4.0	2.0
Minimum Split (s)	9.0	11.0	11.0	9.0	11.0	11.0	9.0	11.0	11.0	9.0	11.0
Total Split (s)	16.0	67.0	67.0	16.0	67.0	67.0	19.0	19.0	19.0	28.0	28.0
Total Split (%)	12.3%	51.5%	51.5%	12.3%	51.5%	51.5%	14.6%	14.6%	14.6%	21.5%	21.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None
v/c Ratio	0.15	0.56	0.05	0.47	0.30	0.10	0.19	0.52	0.89	0.69	0.40
Control Delay	23.8	31.6	3.0	29.2	25.7	10.0	56.8	67.9	45.2	56.8	41.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.8	31.6	3.0	29.2	25.7	10.0	56.8	67.9	45.2	56.8	41.8
Queue Length 50th (ft)	52	418	3	59	157	15	19	67	65	200	112
Queue Length 95th (ft)	m73	478	m8	m76	m180	m24	47	121	#208	303	187
Internal Link Dist (ft)		1174			673			686			1879
Turn Bay Length (ft)	245		610	125		700	75		75		
Base Capacity (vph)	512	1863	881	269	1887	891	190	200	356	403	427
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.56	0.05	0.43	0.30	0.10	0.13	0.41	0.81	0.65	0.40

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 10 (8%), Referenced to phase 2:WBTL and 6:EBTL, Start of 1st Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 12: Wood Hollow Dr & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	71	976	44	108	529	87	23	78	271	247	111	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1775	
Flt Permitted	0.44	1.00	1.00	0.14	1.00	1.00	0.60	1.00	1.00	0.70	1.00	
Satd. Flow (perm)	821	3539	1583	268	3539	1583	1112	1863	1583	1310	1775	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	76	1038	47	115	563	93	24	83	288	263	118	54
RTOR Reduction (vph)	0	0	23	0	0	45	0	0	190	0	11	0
Lane Group Flow (vph)	76	1038	24	115	563	48	24	83	98	263	161	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2	8		8	4		
Actuated Green, G (s)	66.5	66.5	66.5	66.4	66.4	66.4	11.1	11.1	11.1	30.4	30.4	
Effective Green, g (s)	66.5	66.5	66.5	66.4	66.4	66.4	11.1	11.1	11.1	30.4	30.4	
Actuated g/C Ratio	0.51	0.51	0.51	0.51	0.51	0.51	0.09	0.09	0.09	0.23	0.23	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	484	1810	809	237	1807	808	117	159	135	390	415	
v/s Ratio Prot	0.01	c0.29		c0.03	0.16		0.01	0.04		c0.12	0.09	
v/s Ratio Perm	0.07		0.02	0.22		0.03	0.01		c0.06	0.03		
v/c Ratio	0.16	0.57	0.03	0.49	0.31	0.06	0.21	0.52	0.72	0.67	0.39	
Uniform Delay, d1	17.1	21.9	15.7	20.4	18.5	16.0	55.1	56.9	58.0	44.3	41.9	
Progression Factor	1.24	1.39	1.00	1.40	1.37	3.28	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.0	1.0	0.0	0.4	0.3	0.1	0.3	1.4	15.0	3.6	0.2	
Delay (s)	21.3	31.5	15.8	29.0	25.6	52.8	55.5	58.3	72.9	47.9	42.2	
Level of Service	C	C	B	C	C	D	E	E	E	D	D	
Approach Delay (s)		30.2			29.4			68.8			45.6	
Approach LOS		C			C			E			D	

Intersection Summary			
HCM 2000 Control Delay	37.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	69.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

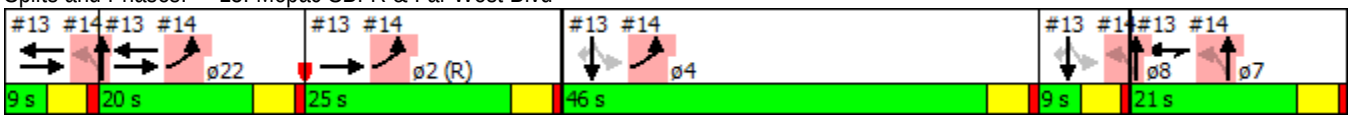
13: Mopac SBFR & Far West Blvd

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR	ø1	ø2	ø4	ø8	ø22
Lane Configurations											
Volume (vph)	743	421	17	487	488	824					
Lane Group Flow (vph)	766	434	18	502	631	849					
Turn Type	NA	Free	Prot	NA	NA	Perm					
Protected Phases	1 22 2		7	1 22 7	4 8		1	2	4	8	22
Permitted Phases		Free				4 8					
Detector Phase	1 22 2		7	1 22 7	4 8	4 8					
Switch Phase											
Minimum Initial (s)			4.0				4.0	4.0	4.0	4.0	4.0
Minimum Split (s)			20.0				9.0	24.0	24.0	9.0	20.0
Total Split (s)			21.0				9.0	25.0	46.0	9.0	20.0
Total Split (%)			16.2%				7%	19%	35%	7%	15%
Yellow Time (s)			4.0				4.0	4.0	4.0	4.0	4.0
All-Red Time (s)			1.0				1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)			0.0								
Total Lost Time (s)			5.0								
Lead/Lag							Lead		Lead	Lag	Lag
Lead-Lag Optimize?							Yes		Yes	Yes	Yes
Recall Mode			None				None	C-Max	None	None	None
v/c Ratio	0.57	0.27	0.08	0.41	0.47	0.93					
Control Delay	32.8	0.3	34.6	2.4	24.6	19.5					
Queue Delay	0.1	0.0	0.0	0.6	0.0	0.0					
Total Delay	32.9	0.3	34.6	3.0	24.6	19.5					
Queue Length 50th (ft)	302	0	3	0	162	116					
Queue Length 95th (ft)	373	m0	m12	0	m158	m104					
Internal Link Dist (ft)	432			324	532						
Turn Bay Length (ft)		490									
Base Capacity (vph)	1340	1583	217	1204	1347	916					
Starvation Cap Reductn	0	0	0	356	0	0					
Spillback Cap Reductn	77	0	0	0	0	0					
Storage Cap Reductn	0	0	0	0	0	0					
Reduced v/c Ratio	0.61	0.27	0.08	0.59	0.47	0.93					

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 106 (82%), Referenced to phase 2:EBT, Start of 1st Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Mopac SBFR & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	743	421	17	487	0	0	0	0	124	488	824
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	4.0	5.0	5.0						5.0	5.0
Lane Util. Factor		0.95	1.00	1.00	0.95						0.95	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (prot)		3539	1583	1770	3539						3504	1583
Flt Permitted		1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (perm)		3539	1583	1770	3539						3504	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	766	434	18	502	0	0	0	0	128	503	849
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	308
Lane Group Flow (vph)	0	766	434	18	502	0	0	0	0	0	631	541
Turn Type		NA	Free	Prot	NA					Perm	NA	Perm
Protected Phases		1 22 2		7	1 22 7						4 8	
Permitted Phases			Free							4 8		4 8
Actuated Green, G (s)		49.2	130.0	15.8	45.0						50.0	50.0
Effective Green, g (s)		49.2	130.0	15.8	45.0						50.0	50.0
Actuated g/C Ratio		0.38	1.00	0.12	0.35						0.38	0.38
Clearance Time (s)				5.0								
Vehicle Extension (s)				2.0								
Lane Grp Cap (vph)		1339	1583	215	1225						1347	608
v/s Ratio Prot		c0.22		0.01	c0.14							
v/s Ratio Perm			0.27								0.18	c0.34
v/c Ratio		0.57	0.27	0.08	0.41						0.47	0.89
Uniform Delay, d1		32.0	0.0	50.7	32.4						30.0	37.4
Progression Factor		0.97	1.00	0.67	0.05						0.79	0.55
Incremental Delay, d2		0.3	0.3	0.1	0.1						0.0	8.5
Delay (s)		31.4	0.3	33.8	1.7						23.9	29.0
Level of Service		C	A	C	A						C	C
Approach Delay (s)		20.2			2.8			0.0			26.8	
Approach LOS		C			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	20.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	84.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

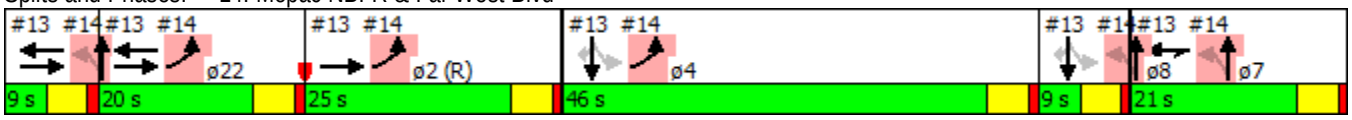
14: Mopac NBFR & Far West Blvd

Lane Group	EBL	NBL	NBT	ø1	ø2	ø4	ø7	ø8	ø22
Lane Configurations									
Volume (vph)	882	504	2						
Lane Group Flow (vph)	919	262	265						
Turn Type	Prot	Perm	NA						
Protected Phases	22 2 4		7 1 8	1	2	4	7	8	22
Permitted Phases		7 1 8							
Detector Phase	22 2 4	7 1 8	7 1 8						
Switch Phase									
Minimum Initial (s)				4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)				9.0	24.0	24.0	20.0	9.0	20.0
Total Split (s)				9.0	25.0	46.0	21.0	9.0	20.0
Total Split (%)				7%	19%	35%	16%	7%	15%
Yellow Time (s)				4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)				1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)									
Total Lost Time (s)									
Lead/Lag				Lead		Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes		Yes	Yes
Recall Mode				None	C-Max	None	None	None	None
v/c Ratio	0.42	0.56	0.57						
Control Delay	3.7	46.6	46.7						
Queue Delay	0.5	0.0	0.0						
Total Delay	4.2	46.6	46.7						
Queue Length 50th (ft)	11	204	207						
Queue Length 95th (ft)	13	303	306						
Internal Link Dist (ft)	324		322						
Turn Bay Length (ft)									
Base Capacity (vph)	2271	457	458						
Starvation Cap Reductn	830	0	0						
Spillback Cap Reductn	0	0	0						
Storage Cap Reductn	0	0	0						
Reduced v/c Ratio	0.64	0.57	0.58						

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 106 (82%), Referenced to phase 2:EBT, Start of 1st Green
Natural Cycle: 110
Control Type: Actuated-Coordinated

Splits and Phases: 14: Mopac NBFR & Far West Blvd



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	882	0	504	2	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0		
Lane Util. Factor	0.97		0.95	0.95		
Frt	1.00		1.00	1.00		
Flt Protected	0.95		0.95	0.95		
Satd. Flow (prot)	3433		1681	1686		
Flt Permitted	0.95		0.95	0.95		
Satd. Flow (perm)	3433		1681	1686		
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	919	0	525	2	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	919	0	262	265	0	0
Turn Type	Prot		Perm	NA		
Protected Phases	22 2 4			7 1 8		
Permitted Phases			7 1 8			
Actuated Green, G (s)	83.8		36.2	36.2		
Effective Green, g (s)	83.8		36.2	36.2		
Actuated g/C Ratio	0.64		0.28	0.28		
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)	2212		468	469		
v/s Ratio Prot	c0.27					
v/s Ratio Perm			0.16	0.16		
v/c Ratio	0.42		0.56	0.57		
Uniform Delay, d1	11.2		40.1	40.2		
Progression Factor	0.29		1.00	1.00		
Incremental Delay, d2	0.0		0.8	0.9		
Delay (s)	3.3		40.9	41.1		
Level of Service	A		D	D		
Approach Delay (s)	3.3			41.0	0.0	
Approach LOS	A			D	A	

Intersection Summary			
HCM 2000 Control Delay	17.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	98.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

20: Loop 1 SBFR & Steck Avenue

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	ø1	ø2	ø4	ø5	ø6	ø7
Lane Configurations												
Volume (vph)	494	126	138	323	879	1705						
Lane Group Flow (vph)	526	134	147	344	841	2197						
Turn Type	NA	Perm	Prot	NA	Split	NA						
Protected Phases	2 1		6 7	2 1 6 7	4 5	4 5	1	2	4	5	6	7
Permitted Phases		2 1										
Detector Phase	2 1	2 1	6 7	2 1 6 7	4 5	4 5						
Switch Phase												
Minimum Initial (s)							2.0	1.0	1.0	3.0	4.0	4.0
Minimum Split (s)							7.0	11.0	11.0	8.0	15.0	9.0
Total Split (s)							7.0	20.0	63.0	8.0	15.0	17.0
Total Split (%)							5%	15%	48%	6%	12%	13%
Yellow Time (s)							4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)							1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag							Lead	Lag	Lead	Lag		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode							None	Max	None	None	C-Max	None
v/c Ratio	0.88	0.35	0.40	0.23	1.03	1.30						
Control Delay	69.7	8.9	19.9	0.3	71.3	168.2						
Queue Delay	2.1	0.0	0.0	0.0	0.0	0.0						
Total Delay	71.8	8.9	19.9	0.3	71.3	168.2						
Queue Length 50th (ft)	230	0	21	0	~831	~1302						
Queue Length 95th (ft)	#325	50	m42	0	#1104	#1445						
Internal Link Dist (ft)	737			327		333						
Turn Bay Length (ft)		100	80									
Base Capacity (vph)	598	386	367	1470	817	1692						
Starvation Cap Reductn	0	0	0	0	0	0						
Spillback Cap Reductn	21	0	0	0	0	0						
Storage Cap Reductn	0	0	0	0	0	0						
Reduced v/c Ratio	0.91	0.35	0.40	0.23	1.03	1.30						

Intersection Summary

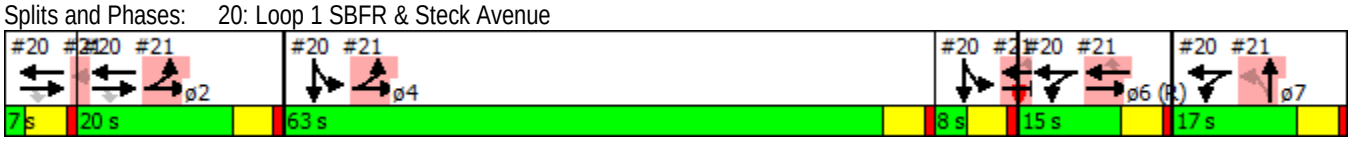
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 90 (69%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 20: Loop 1 SBFR & Steck Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	494	126	138	323	0	0	0	0	879	1705	272
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0					5.0	5.0	
Lane Util. Factor		0.95	1.00	1.00	0.95					0.91	0.91	
Frt		1.00	0.85	1.00	1.00					1.00	0.98	
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	3539					1610	3316	
Flt Permitted		1.00	1.00	0.95	1.00					0.95	1.00	
Satd. Flow (perm)		3539	1583	1770	3539					1610	3316	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	526	134	147	344	0	0	0	0	935	1814	289
RTOR Reduction (vph)	0	0	111	0	0	0	0	0	0	0	9	0
Lane Group Flow (vph)	0	526	23	147	344	0	0	0	0	841	2188	0
Turn Type		NA	Perm	Prot	NA					Split	NA	
Protected Phases		2 1		6 7	2 1 6 7					4 5	4 5	
Permitted Phases			2 1									
Actuated Green, G (s)		22.0	22.0	27.0	54.0					66.0	66.0	
Effective Green, g (s)		22.0	22.0	27.0	54.0					66.0	66.0	
Actuated g/C Ratio		0.17	0.17	0.21	0.42					0.51	0.51	
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		598	267	367	1470					817	1683	
v/s Ratio Prot		c0.15		c0.08	0.10					0.52	c0.66	
v/s Ratio Perm			0.01									
v/c Ratio		0.88	0.08	0.40	0.23					1.03	1.30	
Uniform Delay, d1		52.7	45.5	44.5	24.6					32.0	32.0	
Progression Factor		1.00	1.00	0.38	0.00					1.00	1.00	
Incremental Delay, d2		13.5	0.1	0.2	0.0					39.2	139.5	
Delay (s)		66.2	45.6	17.3	0.0					71.2	171.5	
Level of Service		E	D	B	A					E	F	
Approach Delay (s)		62.0			5.2			0.0			143.8	
Approach LOS		E			A			A			F	

Intersection Summary			
HCM 2000 Control Delay	114.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	122.7%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

21: Loop 1 NBFR & Steck Avenue

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	ø1	ø2	ø4	ø5	ø6	ø7
Lane Configurations												
Volume (vph)	639	690	349	236	192	500						
Lane Group Flow (vph)	652	704	356	241	196	684						
Turn Type	Prot	NA	NA	Perm	Perm	NA						
Protected Phases	2 4	2 4 5 6	6 5			7 1	1	2	4	5	6	7
Permitted Phases				6 5	7 1							
Detector Phase	2 4	2 4 5 6	6 5	6 5	7 1	7 1						
Switch Phase												
Minimum Initial (s)							2.0	1.0	1.0	3.0	4.0	4.0
Minimum Split (s)							7.0	11.0	11.0	8.0	15.0	9.0
Total Split (s)							7.0	20.0	63.0	8.0	15.0	17.0
Total Split (%)							5%	15%	48%	6%	12%	13%
Yellow Time (s)							4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)							1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag							Lead	Lag	Lead	Lag		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode							None	Max	None	None	C-Max	None
v/c Ratio	0.61	0.26	0.73	0.58	0.39	2.52						
Control Delay	9.2	0.1	63.1	14.5	45.9	718.1						
Queue Delay	14.5	0.7	0.0	0.0	0.0	0.0						
Total Delay	23.8	0.7	63.1	14.5	45.9	718.1						
Queue Length 50th (ft)	147	0	153	13	70	~969						
Queue Length 95th (ft)	m122	m0	208	95	m106	m#1195						
Internal Link Dist (ft)		327	978			2452						
Turn Bay Length (ft)	80			170	110							
Base Capacity (vph)	1062	2749	490	412	501	271						
Starvation Cap Reductn	398	1598	0	0	0	0						
Spillback Cap Reductn	0	0	0	0	0	0						
Storage Cap Reductn	0	0	0	0	0	0						
Reduced v/c Ratio	0.98	0.61	0.73	0.58	0.39	2.52						

Intersection Summary

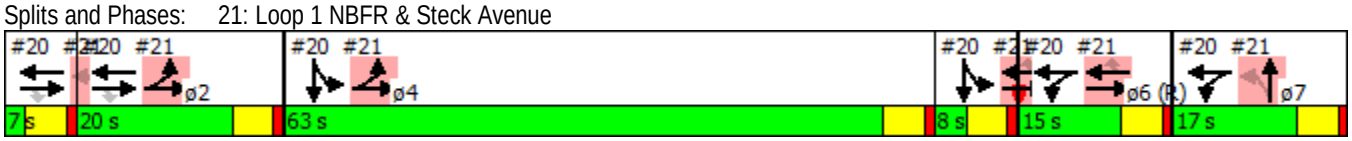
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 90 (69%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 21: Loop 1 NBFR & Steck Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	639	690	0	0	349	236	192	500	171	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0				
Lane Util. Factor	1.00	0.95			0.95	1.00	0.97	1.00				
Frt	1.00	1.00			1.00	0.85	1.00	0.96				
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (prot)	1770	3539			3539	1583	3433	1792				
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (perm)	1770	3539			3539	1583	3433	1792				
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	652	704	0	0	356	241	196	510	174	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	193	0	9	0	0	0	0
Lane Group Flow (vph)	652	704	0	0	356	48	196	675	0	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA				
Protected Phases	2 4	2 4 5 6			6 5			7 1				
Permitted Phases						6 5	7 1					
Actuated Green, G (s)	78.0	101.0			18.0	18.0	19.0	19.0				
Effective Green, g (s)	78.0	101.0			18.0	18.0	19.0	19.0				
Actuated g/C Ratio	0.60	0.78			0.14	0.14	0.15	0.15				
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	1062	2749			490	219	501	261				
v/s Ratio Prot	c0.37	0.20			c0.10			c0.38				
v/s Ratio Perm						0.03	0.06					
v/c Ratio	0.61	0.26			0.73	0.22	0.39	2.58				
Uniform Delay, d1	16.5	4.0			53.6	49.8	50.3	55.5				
Progression Factor	0.51	0.00			1.00	1.00	0.86	0.87				
Incremental Delay, d2	0.2	0.0			4.5	0.2	0.2	724.0				
Delay (s)	8.5	0.0			58.2	49.9	43.5	772.3				
Level of Service	A	A			E	D	D	F				
Approach Delay (s)		4.1			54.8			610.0			0.0	
Approach LOS		A			D			F			A	

Intersection Summary			
HCM 2000 Control Delay	203.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	122.7%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	776	108	113	1037	191	204
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	862	120	126	1152	212	227
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						6
Median type	Raised			Raised		
Median storage veh)	1			1		
Upstream signal (ft)				1068		
pX, platoon unblocked					0.87	
vC, conflicting volume			862		1689	431
vC1, stage 1 conf vol					862	
vC2, stage 2 conf vol					827	
vCu, unblocked vol			862		1486	431
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			84		3	60
cM capacity (veh/h)			776		219	572

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1
Volume Total	431	431	120	126	576	576	439
Volume Left	0	0	0	126	0	0	212
Volume Right	0	0	120	0	0	0	227
cSH	1700	1700	1700	776	1700	1700	434
Volume to Capacity	0.25	0.25	0.07	0.16	0.34	0.34	1.01
Queue Length 95th (ft)	0	0	0	14	0	0	329
Control Delay (s)	0.0	0.0	0.0	10.5	0.0	0.0	77.4
Lane LOS				B			F
Approach Delay (s)	0.0			1.0			77.4
Approach LOS							F

Intersection Summary			
Average Delay	13.1		
Intersection Capacity Utilization	48.3%	ICU Level of Service	A
Analysis Period (min)	15		

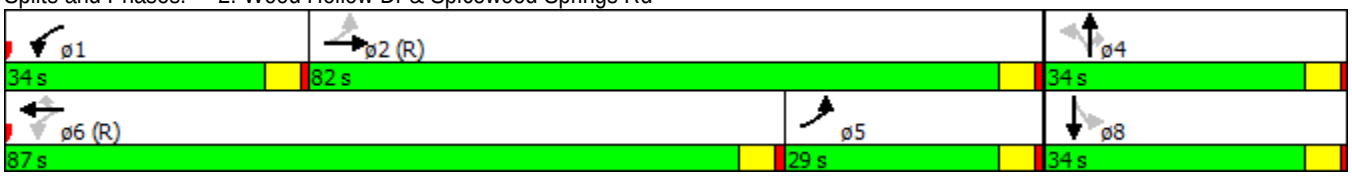
2: Wood Hollow Dr & Spicewood Springs Rd

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	5	952	95	970	1	166	7	252	1	4
Lane Group Flow (vph)	6	1108	108	1102	1	0	197	286	0	22
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA
Protected Phases	5	2	1	6			4			8
Permitted Phases	2		6		6	4		4	8	
Detector Phase	5	2	1	6	6	4	4	4	8	8
Switch Phase										
Minimum Initial (s)	6.0	25.0	6.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	15.0	30.0	15.0	11.0	11.0	35.0	35.0	35.0	35.0	35.0
Total Split (s)	29.0	82.0	34.0	87.0	87.0	34.0	34.0	34.0	34.0	34.0
Total Split (%)	19.3%	54.7%	22.7%	58.0%	58.0%	22.7%	22.7%	22.7%	22.7%	22.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Max	None	C-Max	C-Max	Max	Max	Max	None	None
v/c Ratio	0.02	0.33	0.32	0.44	0.00		0.76	0.60		0.07
Control Delay	10.2	11.9	10.6	10.0	0.0		76.9	19.9		25.4
Queue Delay	0.0	0.0	0.0	0.2	0.0		0.0	2.4		0.0
Total Delay	10.2	11.9	10.6	10.2	0.0		76.9	22.3		25.4
Queue Length 50th (ft)	2	161	23	143	0		185	59		5
Queue Length 95th (ft)	8	201	m51	253	m0		#291	150		30
Internal Link Dist (ft)		988		494			464			203
Turn Bay Length (ft)	130		110		100			100		
Base Capacity (vph)	508	3318	537	2481	1125		258	480		334
Starvation Cap Reductn	0	0	0	615	0		0	0		0
Spillback Cap Reductn	0	240	0	0	0		0	97		0
Storage Cap Reductn	0	0	0	0	0		0	0		0
Reduced v/c Ratio	0.01	0.36	0.20	0.59	0.00		0.76	0.75		0.07

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 55 (37%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Wood Hollow Dr & Spicewood Springs Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	952	23	95	970	1	166	7	252	1	4	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0		5.0	5.0		5.0	
Lane Util. Factor	1.00	0.91		1.00	0.95	1.00		1.00	1.00		1.00	
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85		0.90	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.95	1.00		1.00	
Satd. Flow (prot)	1770	5067		1770	3539	1583		1777	1583		1676	
Flt Permitted	0.24	1.00		0.21	1.00	1.00		0.72	1.00		0.99	
Satd. Flow (perm)	454	5067		383	3539	1583		1339	1583		1665	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	6	1082	26	108	1102	1	189	8	286	1	5	16
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	174	0	13	0
Lane Group Flow (vph)	6	1107	0	108	1102	1	0	197	112	0	9	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases	2			6		6	4		4	8		
Actuated Green, G (s)	98.2	98.2		101.2	101.2	101.2		29.0	29.0		29.0	
Effective Green, g (s)	98.2	98.2		101.2	101.2	101.2		29.0	29.0		29.0	
Actuated g/C Ratio	0.65	0.65		0.67	0.67	0.67		0.19	0.19		0.19	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0		5.0	5.0		5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0		2.0	2.0		2.0	
Lane Grp Cap (vph)	339	3317		330	2387	1067		258	306		321	
v/s Ratio Prot	0.00	c0.22		0.02	c0.31							
v/s Ratio Perm	0.01			0.20		0.00		c0.15	0.07		0.01	
v/c Ratio	0.02	0.33		0.33	0.46	0.00		0.76	0.37		0.03	
Uniform Delay, d1	11.0	11.4		9.4	11.5	7.9		57.3	52.5		49.1	
Progression Factor	1.00	1.00		0.91	0.83	1.00		1.00	1.00		1.00	
Incremental Delay, d2	0.0	0.3		0.2	0.6	0.0		19.1	3.3		0.0	
Delay (s)	11.1	11.7		8.8	10.2	7.9		76.4	55.9		49.1	
Level of Service	B	B		A	B	A		E	E		D	
Approach Delay (s)		11.7			10.0			64.2			49.1	
Approach LOS		B			B			E			D	

Intersection Summary			
HCM 2000 Control Delay	20.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	60.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

3: Mopac SBFR & Spicewood Springs Rd

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR	ø1	ø2	ø4	ø5	ø6
Lane Configurations												
Volume (vph)	924	281	583	709	572	187	357					
Lane Group Flow (vph)	983	299	620	754	304	504	380					
Turn Type	NA	Perm	Prot	NA	Split	NA	Perm					
Protected Phases	2 1		19 6 7	2 1 19 6	4 5	4 5		1	2	4	5	6
Permitted Phases		2 1					4 5					
Detector Phase	2 1	2 1	19 6 7	2 1 19 6	4 5	4 5	4 5					
Switch Phase												
Minimum Initial (s)								3.0	1.0	1.0	3.0	4.0
Minimum Split (s)								8.0	11.0	11.0	8.0	24.0
Total Split (s)								8.0	35.0	23.0	8.0	51.0
Total Split (%)								5%	23%	15%	5%	34%
Yellow Time (s)								4.0	4.0	4.0	4.0	4.0
All-Red Time (s)								1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag								Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?								Yes	Yes	Yes	Yes	Yes
Recall Mode								None	Max	None	None	C-Max
v/c Ratio	1.10	0.54	0.74	0.34	1.09	1.05dl	0.71					
Control Delay	111.4	30.1	22.5	1.5	135.9	78.4	19.7					
Queue Delay	1.4	0.0	1.9	0.2	0.0	0.0	0.0					
Total Delay	112.9	30.1	24.4	1.7	135.9	78.4	19.7					
Queue Length 50th (ft)	~582	139	542	28	~367	268	57					
Queue Length 95th (ft)	#714	232	m482	m32	#582	#369	182					
Internal Link Dist (ft)	494			333		2669						
Turn Bay Length (ft)			50		145							
Base Capacity (vph)	896	553	837	2241	279	570	533					
Starvation Cap Reductn	0	0	100	591	0	0	0					
Spillback Cap Reductn	41	0	0	0	0	0	0					
Storage Cap Reductn	0	0	0	0	0	0	0					
Reduced v/c Ratio	1.15	0.54	0.84	0.46	1.09	0.88	0.71					

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 89 (59%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

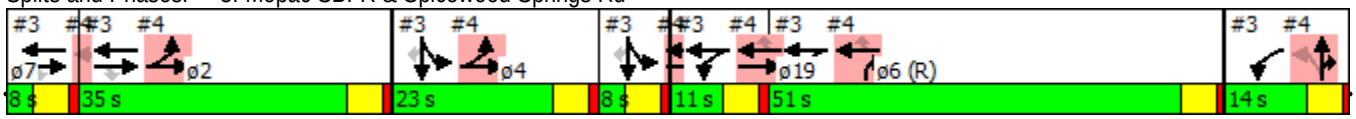
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 3: Mopac SBFR & Spicewood Springs Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	924	281	583	709	0	0	0	0	572	187	357
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0					5.0	5.0	5.0
Lane Util. Factor		0.95	1.00	1.00	0.95					0.91	0.91	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.97	1.00
Satd. Flow (prot)		3539	1583	1770	3539					1610	3291	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.97	1.00
Satd. Flow (perm)		3539	1583	1770	3539					1610	3291	1583
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	983	299	620	754	0	0	0	0	609	199	380
RTOR Reduction (vph)	0	0	152	0	0	0	0	0	0	0	0	259
Lane Group Flow (vph)	0	983	147	620	754	0	0	0	0	304	504	121
Turn Type		NA	Perm	Prot	NA					Split	NA	Perm
Protected Phases		2 1		19 6 7	2 1 19 6					4 5	4 5	
Permitted Phases			2 1									4 5
Actuated Green, G (s)		38.0	38.0	71.0	95.0					26.0	26.0	26.0
Effective Green, g (s)		38.0	38.0	71.0	95.0					26.0	26.0	26.0
Actuated g/C Ratio		0.25	0.25	0.47	0.63					0.17	0.17	0.17
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		896	401	837	2241					279	570	274
v/s Ratio Prot		c0.28		c0.35	0.21					c0.19	0.15	
v/s Ratio Perm			0.09									0.08
v/c Ratio		1.10	0.37	0.74	0.34					1.09	1.05dl	0.44
Uniform Delay, d1		56.0	46.1	32.0	12.8					62.0	60.5	55.5
Progression Factor		1.02	1.73	0.58	0.18					1.00	1.00	1.00
Incremental Delay, d2		59.4	0.2	1.8	0.0					79.9	14.7	0.4
Delay (s)		116.6	80.0	20.5	2.3					141.9	75.3	55.9
Level of Service		F	E	C	A					F	E	E
Approach Delay (s)		108.0			10.5			0.0			86.1	
Approach LOS		F			B			A			F	

Intersection Summary			
HCM 2000 Control Delay	66.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	35.0
Intersection Capacity Utilization	84.9%	ICU Level of Service	E
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group

4: Mopac NBFR & Anderson Ln

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	ø1	ø2	ø4	ø5	ø6
Lane Configurations												
Volume (vph)	457	1039	1046	402	246	40	515					
Lane Group Flow (vph)	481	1094	1101	423	233	312	298					
Turn Type	Prot	NA	NA	Perm	Perm	NA	custom					
Protected Phases	2 4	2 4 5 19	6 5 19			7 1	7 1 6	1	2	4	5	6
Permitted Phases				6 5 19	7 1							
Detector Phase	2 4	2 4 5 19	6 5 19	6 5 19	7 1	7 1	7 1 6					
Switch Phase												
Minimum Initial (s)								3.0	1.0	1.0	3.0	4.0
Minimum Split (s)								8.0	11.0	11.0	8.0	24.0
Total Split (s)								8.0	35.0	23.0	8.0	51.0
Total Split (%)								5%	23%	15%	5%	34%
Yellow Time (s)								4.0	4.0	4.0	4.0	4.0
All-Red Time (s)								1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag								Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?								Yes	Yes	Yes	Yes	Yes
Recall Mode								None	Max	None	None	C-Max
v/c Ratio	0.77	0.64	0.72	0.50	1.23	1.23	0.40					
Control Delay	24.5	0.2	38.2	11.6	192.1	168.3	17.0					
Queue Delay	26.7	2.8	0.4	0.0	0.0	0.1	0.0					
Total Delay	51.2	3.0	38.6	11.6	192.1	168.4	17.0					
Queue Length 50th (ft)	192	0	461	90	~293	~314	113					
Queue Length 95th (ft)	m180	m0	545	187	#480	#534	194					
Internal Link Dist (ft)		333	702			1795						
Turn Bay Length (ft)	50			360	280							
Base Capacity (vph)	625	1698	1533	845	190	254	749					
Starvation Cap Reductn	156	472	0	0	0	0	0					
Spillback Cap Reductn	0	0	104	0	0	2	0					
Storage Cap Reductn	0	0	0	0	0	0	0					
Reduced v/c Ratio	1.03	0.89	0.77	0.50	1.23	1.24	0.40					

Intersection Summary

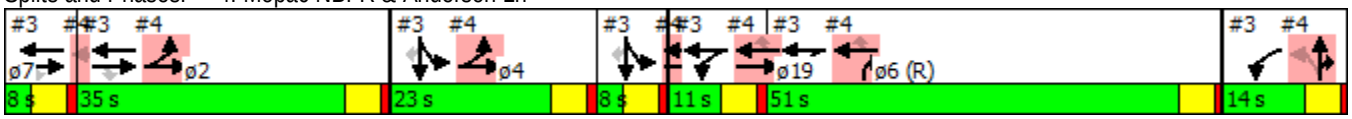
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 89 (59%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Mopac NBFR & Anderson Ln



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	457	1039	0	0	1046	402	246	40	515	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0	5.0			
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.91	0.95			
Frt	1.00	1.00			1.00	0.85	1.00	0.88	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	1770	3539			3539	1583	1681	1490	1504			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	1770	3539			3539	1583	1681	1490	1504			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	481	1094	0	0	1101	423	259	42	542	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	160	0	86	68	0	0	0
Lane Group Flow (vph)	481	1094	0	0	1101	263	233	226	230	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	custom			
Protected Phases	2 4	2 4 5			6 5	19		7 1	7 1 6			
Permitted Phases						6 5 19	7 1					
Actuated Green, G (s)	53.0	72.0			65.0	65.0	17.0	17.0	68.0			
Effective Green, g (s)	53.0	72.0			65.0	65.0	17.0	17.0	68.0			
Actuated g/C Ratio	0.35	0.48			0.43	0.43	0.11	0.11	0.45			
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	625	1698			1533	685	190	168	681			
v/s Ratio Prot	c0.27	c0.31			c0.31				0.15			
v/s Ratio Perm						0.17	0.14	0.15				
v/c Ratio	0.77	0.64			0.72	0.38	1.23	1.35	0.34			
Uniform Delay, d1	43.1	29.4			35.0	28.9	66.5	66.5	26.5			
Progression Factor	0.54	0.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	0.5	0.1			1.4	0.1	139.4	189.6	0.1			
Delay (s)	23.7	0.1			36.3	29.0	205.9	256.1	26.6			
Level of Service	C	A			D	C	F	F	C			
Approach Delay (s)		7.3			34.3			161.1			0.0	
Approach LOS		A			C			F			A	

Intersection Summary			
HCM 2000 Control Delay	50.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	35.0
Intersection Capacity Utilization	84.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	17	92	260	7	15	173
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	23	123	347	9	20	231
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	622	351			356	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	622	351			356	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	82			98	
cM capacity (veh/h)	443	692			1203	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	145	356	251
Volume Left	23	0	20
Volume Right	123	9	0
cSH	636	1700	1203
Volume to Capacity	0.23	0.21	0.02
Queue Length 95th (ft)	22	0	1
Control Delay (s)	12.3	0.0	0.8
Lane LOS	B		A
Approach Delay (s)	12.3	0.0	0.8
Approach LOS	B		

Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	34.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	57	55	24	19	12	101	7	259	6	14	114	16
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Hourly flow rate (vph)	75	72	32	25	16	133	9	341	8	18	150	21
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											544	
pX, platoon unblocked												
vC, conflicting volume	701	564	161	628	571	345	171			349		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	701	564	161	628	571	345	171			349		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	73	83	96	92	96	81	99			98		
cM capacity (veh/h)	273	425	885	326	421	698	1406			1210		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	179	174	358	189
Volume Left	75	25	9	18
Volume Right	32	133	8	21
cSH	372	570	1406	1210
Volume to Capacity	0.48	0.30	0.01	0.02
Queue Length 95th (ft)	63	32	0	1
Control Delay (s)	23.3	14.1	0.3	0.9
Lane LOS	C	B	A	A
Approach Delay (s)	23.3	14.1	0.3	0.9
Approach LOS	C	B		

Intersection Summary			
Average Delay	7.6		
Intersection Capacity Utilization	36.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	171	0	0	1863	27
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	0	188	0	0	2047	30
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					1035	
pX, platoon unblocked						
vC, conflicting volume	2062	697	2077			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2062	697	2077			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	51	100			
cM capacity (veh/h)	47	383	264			

Direction, Lane #	EB 1	SB 1	SB 2	SB 3
Volume Total	188	819	819	439
Volume Left	0	0	0	0
Volume Right	188	0	0	30
cSH	383	1700	1700	1700
Volume to Capacity	0.49	0.48	0.48	0.26
Queue Length 95th (ft)	65	0	0	0
Control Delay (s)	23.1	0.0	0.0	0.0
Lane LOS	C			
Approach Delay (s)	23.1	0.0		
Approach LOS	C			

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	53.9%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	12.8
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	34	70	44	0	84	126	47	0	89	183	49
Peak Hour Factor	0.92	0.94	0.94	0.94	0.92	0.94	0.94	0.94	0.92	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	36	74	47	0	89	134	50	0	95	195	52
Number of Lanes	0	0	1	1	0	0	1	1	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	2
HCM Control Delay	10.6	12.8	14.6
HCM LOS	B	B	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	28%	33%	0%	40%	0%	8%
Vol Thru, %	57%	67%	0%	60%	0%	62%
Vol Right, %	15%	0%	100%	0%	100%	30%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	321	104	44	210	47	183
LT Vol	89	34	0	84	0	14
Through Vol	183	70	0	126	0	114
RT Vol	49	0	44	0	47	55
Lane Flow Rate	341	111	47	223	50	195
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.525	0.206	0.076	0.406	0.078	0.307
Departure Headway (Hd)	5.531	6.716	5.834	6.536	5.619	5.669
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	649	532	610	550	635	631
Service Time	3.591	4.49	3.607	4.299	3.382	3.739
HCM Lane V/C Ratio	0.525	0.209	0.077	0.405	0.079	0.309
HCM Control Delay	14.6	11.2	9.1	13.7	8.9	11.3
HCM Lane LOS	B	B	A	B	A	B
HCM 95th-tile Q	3.1	0.8	0.2	2	0.3	1.3

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	14	114	55
Peak Hour Factor	0.92	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	15	121	59
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	11.3
HCM LOS	B

Lane

Intersection	
Intersection Delay, s/veh	13.9
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	33	69	49	0	86	221	58	0	77	206	70
Peak Hour Factor	0.92	0.99	0.99	0.99	0.92	0.99	0.99	0.99	0.92	0.99	0.99	0.99
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	33	70	49	0	87	223	59	0	78	208	71
Number of Lanes	0	0	1	1	0	0	1	1	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	2
HCM Control Delay	10.8	16.1	13.9
HCM LOS	B	C	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	32%	0%	28%	0%	100%	0%
Vol Thru, %	0%	75%	68%	0%	72%	0%	0%	82%
Vol Right, %	0%	25%	0%	100%	0%	100%	0%	18%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	77	276	102	49	307	58	22	140
LT Vol	77	0	33	0	86	0	22	0
Through Vol	0	206	69	0	221	0	0	115
RT Vol	0	70	0	49	0	58	0	25
Lane Flow Rate	78	279	103	49	310	59	22	141
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.15	0.484	0.199	0.083	0.562	0.092	0.045	0.261
Departure Headway (Hd)	6.939	6.251	6.941	6.062	6.523	5.671	7.276	6.639
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	515	574	514	587	552	628	489	537
Service Time	4.71	4.022	4.728	3.848	4.293	3.439	5.061	4.423
HCM Lane V/C Ratio	0.151	0.486	0.2	0.083	0.562	0.094	0.045	0.263
HCM Control Delay	10.9	14.8	11.5	9.4	17.4	9	10.4	11.8
HCM Lane LOS	B	B	B	A	C	A	B	B
HCM 95th-tile Q	0.5	2.6	0.7	0.3	3.5	0.3	0.1	1

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	22	115	25
Peak Hour Factor	0.92	0.99	0.99	0.99
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	22	116	25
Number of Lanes	0	1	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	11.6
HCM LOS	B

Lane

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	168	0	0	1700	334
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	0	193	0	0	1954	384
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2146	843	2338			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2146	843	2338			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	37	100			
cM capacity (veh/h)	41	307	208			

Direction, Lane #	EB 1	SB 1	SB 2	SB 3
Volume Total	193	782	782	775
Volume Left	0	0	0	0
Volume Right	193	0	0	384
cSH	307	1700	1700	1700
Volume to Capacity	0.63	0.46	0.46	0.46
Queue Length 95th (ft)	99	0	0	0
Control Delay (s)	34.7	0.0	0.0	0.0
Lane LOS	D			
Approach Delay (s)	34.7	0.0		
Approach LOS	D			

Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	57.4%	ICU Level of Service	B
Analysis Period (min)	15		

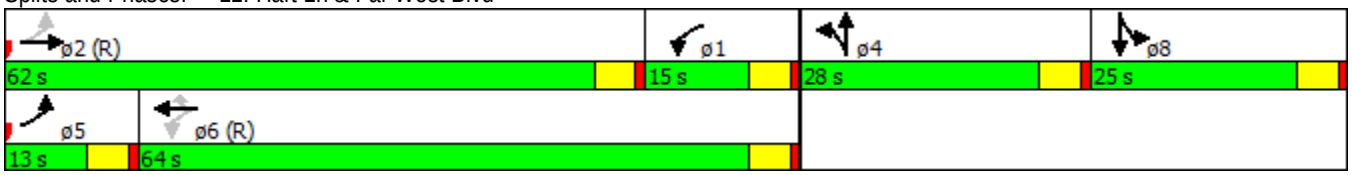
11: Hart Ln & Far West Blvd

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBT
Lane Configurations							
Volume (vph)	41	512	165	480	144	122	80
Lane Group Flow (vph)	42	565	170	495	148	316	294
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	NA
Protected Phases	5	2	1	6		4	8
Permitted Phases	2		6		6		
Detector Phase	5	2	1	6	6	4	8
Switch Phase							
Minimum Initial (s)	4.0	2.0	4.0	2.0	2.0	2.0	2.0
Minimum Split (s)	9.0	24.0	9.0	24.0	24.0	33.0	33.0
Total Split (s)	13.0	62.0	15.0	64.0	64.0	28.0	25.0
Total Split (%)	10.0%	47.7%	11.5%	49.2%	49.2%	21.5%	19.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lead	Lag	Lag	Lag		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		
Recall Mode	None	C-Max	None	C-Max	C-Max	None	None
v/c Ratio	0.10	0.31	0.32	0.25	0.17	0.74	0.73
Control Delay	18.4	19.5	8.8	6.9	7.2	65.3	65.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.4	19.5	8.8	6.9	7.2	65.3	65.4
Queue Length 50th (ft)	17	139	22	33	19	136	127
Queue Length 95th (ft)	42	207	48	63	42	182	171
Internal Link Dist (ft)		1703		1174		695	1553
Turn Bay Length (ft)	130		100		490		
Base Capacity (vph)	446	1819	535	1994	892	582	517
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.31	0.32	0.25	0.17	0.54	0.57

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 20 (15%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 11: Hart Ln & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	41	512	36	165	480	144	57	122	127	160	80	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0		5.0			5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		0.95			0.95	
Frt	1.00	0.99		1.00	1.00	0.85		0.94			0.98	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.99			0.97	
Satd. Flow (prot)	1770	3504		1770	3539	1583		3288			3360	
Flt Permitted	0.40	1.00		0.44	1.00	1.00		0.99			0.97	
Satd. Flow (perm)	737	3504		819	3539	1583		3288			3360	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	42	528	37	170	495	148	59	126	131	165	82	47
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	42	565	0	170	495	148	0	316	0	0	294	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Split	NA		Split	NA	
Protected Phases	5	2		1	6		4	4		8	8	
Permitted Phases	2			6		6						
Actuated Green, G (s)	66.5	66.5		72.3	72.3	72.3		16.8			15.7	
Effective Green, g (s)	66.5	66.5		72.3	72.3	72.3		16.8			15.7	
Actuated g/C Ratio	0.51	0.51		0.56	0.56	0.56		0.13			0.12	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0		5.0			5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0		2.0			2.0	
Lane Grp Cap (vph)	418	1792		535	1968	880		424			405	
v/s Ratio Prot	0.00	c0.16		c0.03	0.14			c0.10			c0.09	
v/s Ratio Perm	0.05			c0.15		0.09						
v/c Ratio	0.10	0.32		0.32	0.25	0.17		0.75			0.73	
Uniform Delay, d1	16.3	18.5		16.2	14.9	14.1		54.5			55.1	
Progression Factor	1.00	1.00		0.38	0.41	0.42		1.00			1.00	
Incremental Delay, d2	0.0	0.5		0.1	0.3	0.4		6.1			5.4	
Delay (s)	16.3	19.0		6.3	6.3	6.3		60.7			60.5	
Level of Service	B	B		A	A	A		E			E	
Approach Delay (s)		18.8			6.3			60.7			60.5	
Approach LOS		B			A			E			E	

Intersection Summary			
HCM 2000 Control Delay	26.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	59.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

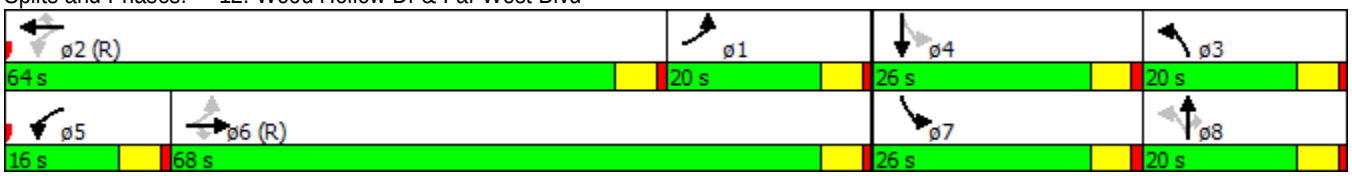
12: Wood Hollow Dr & Far West Blvd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Volume (vph)	94	707	58	208	625	119	93	171	294	145	93
Lane Group Flow (vph)	107	803	66	236	710	135	106	194	334	165	145
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA
Protected Phases	1	6		5	2		3	8		7	4
Permitted Phases	6		6	2		2	8		8	4	
Detector Phase	1	6	6	5	2	2	3	8	8	7	4
Switch Phase											
Minimum Initial (s)	4.0	2.0	2.0	4.0	2.0	2.0	4.0	2.0	2.0	4.0	2.0
Minimum Split (s)	9.0	11.0	11.0	9.0	11.0	11.0	9.0	11.0	11.0	9.0	11.0
Total Split (s)	20.0	68.0	68.0	16.0	64.0	64.0	20.0	20.0	20.0	26.0	26.0
Total Split (%)	15.4%	52.3%	52.3%	12.3%	49.2%	49.2%	15.4%	15.4%	15.4%	20.0%	20.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None
v/c Ratio	0.22	0.45	0.08	0.76	0.42	0.16	0.42	0.82	0.85	0.76	0.71
Control Delay	15.1	16.8	1.1	34.9	28.0	8.4	56.5	80.9	40.4	75.9	69.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.1	16.8	1.1	34.9	28.0	8.4	56.5	80.9	40.4	75.9	69.5
Queue Length 50th (ft)	38	286	1	121	198	10	80	157	97	136	110
Queue Length 95th (ft)	61	199	m6	m122	m184	m15	143	#297	#260	202	170
Internal Link Dist (ft)		1174			673			686			1879
Turn Bay Length (ft)	245		610	125		700	75		75		
Base Capacity (vph)	482	1792	851	312	1696	829	253	241	393	285	298
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.45	0.08	0.76	0.42	0.16	0.42	0.80	0.85	0.58	0.49

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 20 (15%), Referenced to phase 2:WBTL and 6:EBTL, Start of 1st Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 12: Wood Hollow Dr & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	94	707	58	208	625	119	93	171	294	145	93	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1788	
Flt Permitted	0.38	1.00	1.00	0.21	1.00	1.00	0.00	1.00	1.00	0.00	1.00	
Satd. Flow (perm)	711	3539	1583	397	3539	1583	0	1863	1583	0	1788	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	107	803	66	236	710	135	106	194	334	165	106	39
RTOR Reduction (vph)	0	0	33	0	0	70	0	0	188	0	11	0
Lane Group Flow (vph)	107	803	33	236	710	65	106	194	146	165	134	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2	8		8	4		
Actuated Green, G (s)	65.8	65.8	65.8	62.3	62.3	62.3	18.6	16.6	16.6	16.1	14.1	
Effective Green, g (s)	65.8	65.8	65.8	62.3	62.3	62.3	18.6	16.6	16.6	16.1	14.1	
Actuated g/C Ratio	0.51	0.51	0.51	0.48	0.48	0.48	0.14	0.13	0.13	0.12	0.11	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	482	1791	801	311	1695	758	253	237	202	219	193	
v/s Ratio Prot	0.03	c0.23		c0.07	0.20		0.06	c0.10		c0.09	0.08	
v/s Ratio Perm	0.09		0.02	c0.30		0.04			0.09			
v/c Ratio	0.22	0.45	0.04	0.76	0.42	0.09	0.42	0.82	0.72	0.75	0.70	
Uniform Delay, d1	18.7	20.5	16.2	22.7	22.1	18.4	50.8	55.2	54.5	55.0	55.9	
Progression Factor	0.68	0.75	0.85	1.20	1.21	2.50	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.1	0.8	0.1	3.8	0.3	0.1	0.4	18.4	10.2	12.2	8.5	
Delay (s)	12.8	16.2	13.8	31.0	27.0	46.1	51.2	73.6	64.7	67.2	64.4	
Level of Service	B	B	B	C	C	D	D	E	E	E	E	
Approach Delay (s)		15.7			30.3			65.2			65.9	
Approach LOS		B			C			E			E	

Intersection Summary			
HCM 2000 Control Delay	36.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	64.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

13: Mopac SBFR & Far West Blvd

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR	ø1	ø2	ø4	ø8	ø22
Lane Configurations											
Volume (vph)	1066	357	9	387	381	857					
Lane Group Flow (vph)	1198	401	10	435	818	963					
Turn Type	NA	Free	Prot	NA	NA	Perm					
Protected Phases	1 22 2		7	1 22 7	4 8		1	2	4	8	22
Permitted Phases		Free				4 8					
Detector Phase	1 22 2		7	1 22 7	4 8	4 8					
Switch Phase											
Minimum Initial (s)			4.0				4.0	4.0	4.0	4.0	4.0
Minimum Split (s)			20.0				9.0	24.0	24.0	9.0	20.0
Total Split (s)			41.0				9.0	20.0	31.0	9.0	20.0
Total Split (%)			31.5%				7%	15%	24%	7%	15%
Yellow Time (s)			4.0				4.0	4.0	4.0	4.0	4.0
All-Red Time (s)			1.0				1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)			0.0								
Total Lost Time (s)			5.0								
Lead/Lag							Lead		Lead	Lag	Lag
Lead-Lag Optimize?							Yes		Yes	Yes	Yes
Recall Mode			None				None	C-Max	None	None	None
v/c Ratio	0.68	0.25	0.05	0.25	0.88	1.20					
Control Delay	26.7	0.3	29.8	3.4	57.3	123.7					
Queue Delay	49.7	0.0	0.0	0.0	0.0	0.0					
Total Delay	76.4	0.3	29.8	3.4	57.3	123.7					
Queue Length 50th (ft)	431	0	3	13	348	~652					
Queue Length 95th (ft)	538	m0	9	16	#445	#889					
Internal Link Dist (ft)	432			324	532						
Turn Bay Length (ft)		490									
Base Capacity (vph)	1762	1583	490	1769	931	800					
Starvation Cap Reductn	0	0	0	0	0	0					
Spillback Cap Reductn	765	0	0	0	0	0					
Storage Cap Reductn	0	0	0	0	0	0					
Reduced v/c Ratio	1.20	0.25	0.02	0.25	0.88	1.20					

Intersection Summary

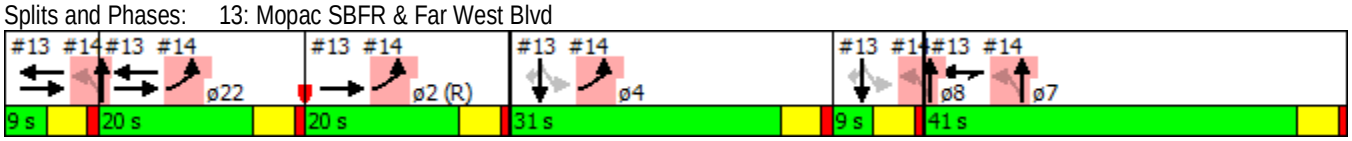
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBT, Start of 1st Green
Natural Cycle: 110
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Mopac SBFR & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1066	357	9	387	0	0	0	0	347	381	857
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	4.0	5.0	5.0						5.0	5.0
Lane Util. Factor		0.95	1.00	1.00	0.95						0.95	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.98	1.00
Satd. Flow (prot)		3539	1583	1770	3539						3457	1583
Flt Permitted		1.00	1.00	0.95	1.00						0.98	1.00
Satd. Flow (perm)		3539	1583	1770	3539						3457	1583
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	1198	401	10	435	0	0	0	0	390	428	963
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	374
Lane Group Flow (vph)	0	1198	401	10	435	0	0	0	0	0	818	589
Turn Type		NA	Free	Prot	NA					Perm	NA	Perm
Protected Phases		1 22 2		7	1 22 7						4 8	
Permitted Phases			Free							4 8		4 8
Actuated Green, G (s)		64.7	130.0	15.3	65.0						35.0	35.0
Effective Green, g (s)		64.7	130.0	15.3	65.0						35.0	35.0
Actuated g/C Ratio		0.50	1.00	0.12	0.50						0.27	0.27
Clearance Time (s)				5.0								
Vehicle Extension (s)				2.0								
Lane Grp Cap (vph)		1761	1583	208	1769						930	426
v/s Ratio Prot		c0.34		0.01	0.12							
v/s Ratio Perm			c0.25								0.24	c0.37
v/c Ratio		0.68	0.25	0.05	0.25						0.88	1.38
Uniform Delay, d1		24.8	0.0	50.9	18.5						45.5	47.5
Progression Factor		0.96	1.00	0.61	0.17						1.00	1.00
Incremental Delay, d2		0.8	0.3	0.0	0.0						9.2	186.1
Delay (s)		24.6	0.3	31.0	3.1						54.7	233.6
Level of Service		C	A	C	A						D	F
Approach Delay (s)		18.6			3.7			0.0			151.5	
Approach LOS		B			A			A			F	

Intersection Summary			
HCM 2000 Control Delay	78.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	91.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

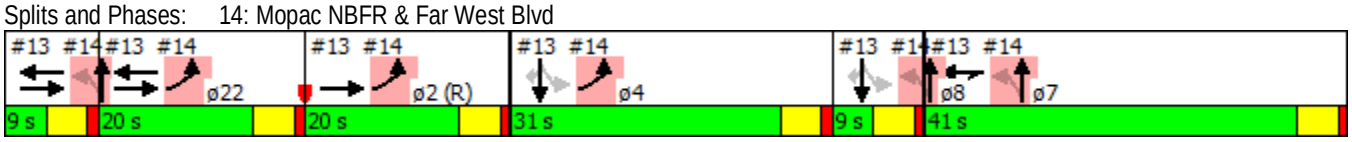
14: Mopac NBFR & Far West Blvd

Lane Group	EBL	NBL	NBT	ø1	ø2	ø4	ø7	ø8	ø22
Lane Configurations									
Volume (vph)	1423	339	23						
Lane Group Flow (vph)	1617	204	207						
Turn Type	Prot	Perm	NA						
Protected Phases	22 2 4		7 1 8	1	2	4	7	8	22
Permitted Phases		7 1 8							
Detector Phase	22 2 4	7 1 8	7 1 8						
Switch Phase									
Minimum Initial (s)				4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)				9.0	24.0	24.0	20.0	9.0	20.0
Total Split (s)				9.0	20.0	31.0	41.0	9.0	20.0
Total Split (%)				7%	15%	24%	32%	7%	15%
Yellow Time (s)				4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)				1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)									
Total Lost Time (s)									
Lead/Lag				Lead		Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes		Yes	Yes
Recall Mode				None	C-Max	None	None	None	None
v/c Ratio	0.93	0.29	0.29						
Control Delay	33.6	26.7	26.8						
Queue Delay	45.4	0.0	0.0						
Total Delay	79.0	26.7	26.8						
Queue Length 50th (ft)	643	118	121						
Queue Length 95th (ft)	736	178	181						
Internal Link Dist (ft)	324		322						
Turn Bay Length (ft)									
Base Capacity (vph)	1742	698	704						
Starvation Cap Reductn	379	0	0						
Spillback Cap Reductn	0	0	0						
Storage Cap Reductn	0	0	0						
Reduced v/c Ratio	1.19	0.29	0.29						

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBT, Start of 1st Green
Natural Cycle: 110
Control Type: Actuated-Coordinated

Splits and Phases: 14: Mopac NBFR & Far West Blvd



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	1423	0	339	23	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0		
Lane Util. Factor	0.97		0.95	0.95		
Frt	1.00		1.00	1.00		
Flt Protected	0.95		0.95	0.96		
Satd. Flow (prot)	3433		1681	1695		
Flt Permitted	0.95		0.95	0.96		
Satd. Flow (perm)	3433		1681	1695		
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	1617	0	385	26	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1617	0	204	207	0	0
Turn Type	Prot		Perm	NA		
Protected Phases	22 2 4			7 1 8		
Permitted Phases			7 1 8			
Actuated Green, G (s)	66.0		54.0	54.0		
Effective Green, g (s)	66.0		54.0	54.0		
Actuated g/C Ratio	0.51		0.42	0.42		
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)	1742		698	704		
v/s Ratio Prot	c0.47					
v/s Ratio Perm			0.12	0.12		
v/c Ratio	0.93		0.29	0.29		
Uniform Delay, d1	29.8		25.3	25.3		
Progression Factor	0.86		1.00	1.00		
Incremental Delay, d2	6.5		0.1	0.1		
Delay (s)	32.2		25.4	25.4		
Level of Service	C		C	C		
Approach Delay (s)	32.2			25.4	0.0	
Approach LOS	C			C	A	

Intersection Summary			
HCM 2000 Control Delay	30.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	105.0%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

20: Loop 1 SBFR & Steck Avenue

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	ø1	ø2	ø4	ø5	ø6	ø7
Lane Configurations												
Volume (vph)	579	92	229	317	712	693						
Lane Group Flow (vph)	591	94	234	323	582	1166						
Turn Type	NA	Perm	Prot	NA	Split	NA						
Protected Phases	2 1		6 7	2 1 6 7	4 5	4 5	1	2	4	5	6	7
Permitted Phases		2 1										
Detector Phase	2 1	2 1	6 7	2 1 6 7	4 5	4 5						
Switch Phase												
Minimum Initial (s)							2.0	1.0	1.0	3.0	4.0	4.0
Minimum Split (s)							7.0	11.0	11.0	8.0	24.0	9.0
Total Split (s)							7.0	23.0	32.0	8.0	30.0	30.0
Total Split (%)							5%	18%	25%	6%	23%	23%
Yellow Time (s)							4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)							1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag							Lead	Lag	Lead	Lag		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode							None	Max	None	None	C-Max	None
v/c Ratio	0.87	0.22	0.31	0.14	1.34	1.30						
Control Delay	65.3	2.7	2.7	0.1	207.4	180.8						
Queue Delay	49.6	0.0	0.7	0.0	0.0	0.0						
Total Delay	115.0	2.7	3.4	0.1	207.4	180.8						
Queue Length 50th (ft)	256	0	5	0	~703	~681						
Queue Length 95th (ft)	#351	12	7	0	#952	#827						
Internal Link Dist (ft)	737			327		333						
Turn Bay Length (ft)		100	80									
Base Capacity (vph)	680	419	748	2313	433	897						
Starvation Cap Reductn	0	0	265	0	0	0						
Spillback Cap Reductn	165	0	0	0	0	1						
Storage Cap Reductn	0	0	0	0	0	0						
Reduced v/c Ratio	1.15	0.22	0.48	0.14	1.34	1.30						

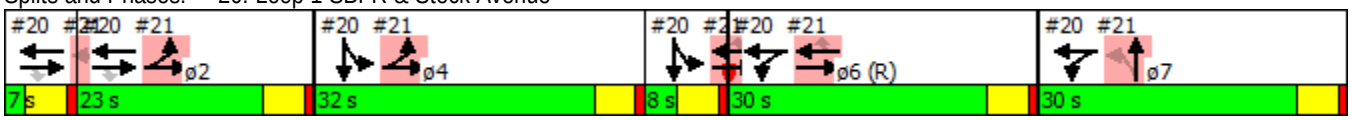
Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 97 (75%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 20: Loop 1 SBFR & Steck Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	579	92	229	317	0	0	0	0	712	693	308
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0					5.0	5.0	
Lane Util. Factor		0.95	1.00	1.00	0.95					0.91	0.91	
Frt		1.00	0.85	1.00	1.00					1.00	0.96	
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.99	
Satd. Flow (prot)		3539	1583	1770	3539					1610	3233	
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.99	
Satd. Flow (perm)		3539	1583	1770	3539					1610	3233	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	591	94	234	323	0	0	0	0	727	707	314
RTOR Reduction (vph)	0	0	76	0	0	0	0	0	0	0	26	0
Lane Group Flow (vph)	0	591	18	234	323	0	0	0	0	582	1140	0
Turn Type		NA	Perm	Prot	NA					Split	NA	
Protected Phases		2 1		6 7	2 1 6 7					4 5	4 5	
Permitted Phases			2 1									
Actuated Green, G (s)		25.0	25.0	55.0	85.0					35.0	35.0	
Effective Green, g (s)		25.0	25.0	55.0	85.0					35.0	35.0	
Actuated g/C Ratio		0.19	0.19	0.42	0.65					0.27	0.27	
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		680	304	748	2313					433	870	
v/s Ratio Prot		c0.17		c0.13	0.09					c0.36	0.35	
v/s Ratio Perm			0.01									
v/c Ratio		0.87	0.06	0.31	0.14					1.34	1.31	
Uniform Delay, d1		50.9	42.9	24.9	8.6					47.5	47.5	
Progression Factor		1.00	1.00	0.07	0.00					1.00	1.00	
Incremental Delay, d2		11.1	0.0	0.1	0.0					169.7	147.8	
Delay (s)		62.0	42.9	1.8	0.0					217.2	195.3	
Level of Service		E	D	A	A					F	F	
Approach Delay (s)		59.4			0.7			0.0			202.5	
Approach LOS		E			A			A			F	

Intersection Summary			
HCM 2000 Control Delay	132.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	126.7%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

21: Loop 1 NBFR & Steck Avenue

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	ø1	ø2	ø4	ø5	ø6	ø7
Lane Configurations												
Volume (vph)	626	558	435	449	115	753						
Lane Group Flow (vph)	659	587	458	473	121	909						
Turn Type	Prot	NA	NA	Perm	Perm	NA						
Protected Phases	2 4	2 4 5 6	6 5			7 1	1	2	4	5	6	7
Permitted Phases				6 5	7 1							
Detector Phase	2 4	2 4 5 6	6 5	6 5	7 1	7 1						
Switch Phase												
Minimum Initial (s)							2.0	1.0	1.0	3.0	4.0	4.0
Minimum Split (s)							7.0	11.0	11.0	8.0	24.0	9.0
Total Split (s)							7.0	23.0	32.0	8.0	30.0	30.0
Total Split (%)							5%	18%	25%	6%	23%	23%
Yellow Time (s)							4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)							1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag							Lead	Lag	Lead	Lag		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode							None	Max	None	None	C-Max	None
v/c Ratio	0.97	0.25	0.51	0.93	0.14	2.01						
Control Delay	31.8	0.1	43.9	59.3	38.9	487.8						
Queue Delay	41.7	0.8	0.0	0.0	0.0	0.0						
Total Delay	73.6	0.9	43.9	59.3	38.9	487.8						
Queue Length 50th (ft)	417	0	175	289	41	~1204						
Queue Length 95th (ft)	m376	m0	230	#503	67	#1460						
Internal Link Dist (ft)		327	978			2452						
Turn Bay Length (ft)	80			170	110							
Base Capacity (vph)	680	2395	898	508	845	453						
Starvation Cap Reductn	174	1434	0	0	0	0						
Spillback Cap Reductn	0	0	0	0	0	0						
Storage Cap Reductn	0	0	0	0	0	0						
Reduced v/c Ratio	1.30	0.61	0.51	0.93	0.14	2.01						

Intersection Summary

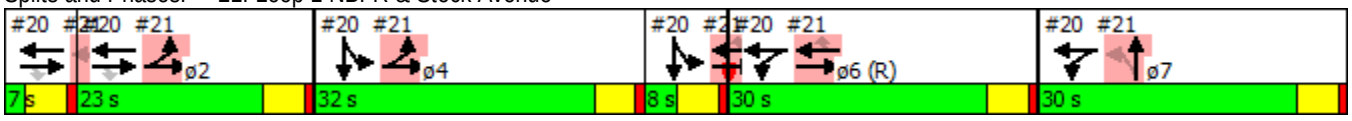
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 97 (75%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 21: Loop 1 NBFR & Steck Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	626	558	0	0	435	449	115	753	110	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0				
Lane Util. Factor	1.00	0.95			0.95	1.00	0.97	1.00				
Frt	1.00	1.00			1.00	0.85	1.00	0.98				
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (prot)	1770	3539			3539	1583	3433	1827				
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (perm)	1770	3539			3539	1583	3433	1827				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	659	587	0	0	458	473	121	793	116	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	107	0	4	0	0	0	0
Lane Group Flow (vph)	659	587	0	0	458	366	121	905	0	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA				
Protected Phases	2 4	2 4 5 6			6 5			7 1				
Permitted Phases						6 5	7 1					
Actuated Green, G (s)	50.0	88.0			33.0	33.0	32.0	32.0				
Effective Green, g (s)	50.0	88.0			33.0	33.0	32.0	32.0				
Actuated g/C Ratio	0.38	0.68			0.25	0.25	0.25	0.25				
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	680	2395			898	401	845	449				
v/s Ratio Prot	c0.37	0.17			0.13			c0.50				
v/s Ratio Perm						c0.23	0.04					
v/c Ratio	0.97	0.25			0.51	0.91	0.14	2.02				
Uniform Delay, d1	39.2	8.1			41.6	47.1	38.3	49.0				
Progression Factor	0.63	0.00			1.00	1.00	1.00	1.00				
Incremental Delay, d2	5.1	0.0			0.2	24.4	0.0	465.1				
Delay (s)	29.9	0.0			41.8	71.5	38.3	514.1				
Level of Service	C	A			D	E	D	F				
Approach Delay (s)		15.9			56.9			458.2			0.0	
Approach LOS		B			E			F			A	

Intersection Summary			
HCM 2000 Control Delay	169.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.43		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	126.7%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Appendix N: Synchro Reports – 2018

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1119	227	153	854	96	143
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	1154	234	158	880	99	147
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						6
Median type	Raised			Raised		
Median storage veh)	1			1		
Upstream signal (ft)				1068		
pX, platoon unblocked					0.89	
vC, conflicting volume			1154		1909	577
vC1, stage 1 conf vol					1154	
vC2, stage 2 conf vol					756	
vCu, unblocked vol			1154		1781	577
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			74		39	68
cM capacity (veh/h)			601		163	460

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1
Volume Total	577	577	234	158	440	440	246
Volume Left	0	0	0	158	0	0	99
Volume Right	0	0	234	0	0	0	147
cSH	1700	1700	1700	601	1700	1700	407
Volume to Capacity	0.34	0.34	0.14	0.26	0.26	0.26	0.61
Queue Length 95th (ft)	0	0	0	26	0	0	97
Control Delay (s)	0.0	0.0	0.0	13.1	0.0	0.0	32.4
Lane LOS				B			D
Approach Delay (s)	0.0			2.0			32.4
Approach LOS							D

Intersection Summary			
Average Delay	3.8		
Intersection Capacity Utilization	54.7%	ICU Level of Service	A
Analysis Period (min)	15		

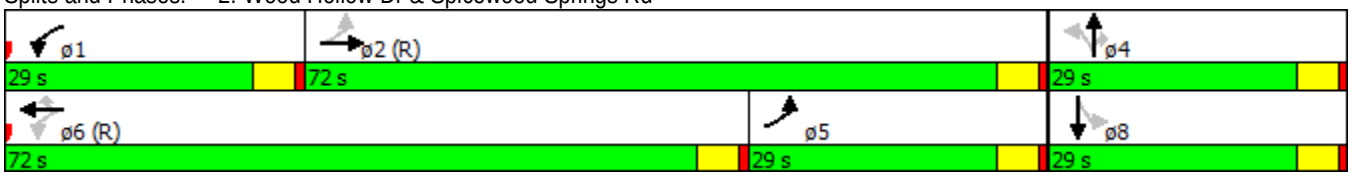
2: Wood Hollow Dr & Spicewood Springs Rd

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	7	1156	350	958	10	47	4	141	6	0
Lane Group Flow (vph)	7	1307	365	998	10	0	53	147	0	8
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA
Protected Phases	5	2	1	6			4			8
Permitted Phases	2		6		6	4		4	8	
Detector Phase	5	2	1	6	6	4	4	4	8	8
Switch Phase										
Minimum Initial (s)	6.0	25.0	6.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	15.0	30.0	15.0	11.0	11.0	35.0	35.0	35.0	35.0	35.0
Total Split (s)	29.0	72.0	29.0	72.0	72.0	29.0	29.0	29.0	29.0	29.0
Total Split (%)	22.3%	55.4%	22.3%	55.4%	55.4%	22.3%	22.3%	22.3%	22.3%	22.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Max	None	C-Max	C-Max	Max	Max	Max	None	None
v/c Ratio	0.02	0.49	0.84	0.41	0.01		0.20	0.36		0.02
Control Delay	15.9	20.6	39.9	12.1	0.0		47.4	9.5		0.1
Queue Delay	0.0	0.0	0.0	0.4	0.0		0.0	0.0		0.0
Total Delay	15.9	20.6	39.9	12.4	0.0		47.4	9.5		0.1
Queue Length 50th (ft)	3	252	167	131	0		38	0		0
Queue Length 95th (ft)	11	294	m#330	m387	m0		78	59		0
Internal Link Dist (ft)		988		494			464			203
Turn Bay Length (ft)	130		110		100			100		
Base Capacity (vph)	508	2641	447	2455	1116		261	412		373
Starvation Cap Reductn	0	0	0	836	0		0	0		0
Spillback Cap Reductn	0	0	0	0	0		0	0		0
Storage Cap Reductn	0	0	0	0	0		0	0		0
Reduced v/c Ratio	0.01	0.49	0.82	0.62	0.01		0.20	0.36		0.02

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 55 (42%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Wood Hollow Dr & Spicewood Springs Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	1156	99	350	958	10	47	4	141	6	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0		5.0	5.0		5.0	
Lane Util. Factor	1.00	0.91		1.00	0.95	1.00		1.00	1.00		1.00	
Frt	1.00	0.99		1.00	1.00	0.85		1.00	0.85		0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.96	1.00		0.96	
Satd. Flow (prot)	1770	5025		1770	3539	1583		1780	1583		1735	
Flt Permitted	0.29	1.00		0.13	1.00	1.00		0.76	1.00		0.88	
Satd. Flow (perm)	535	5025		239	3539	1583		1413	1583		1576	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	7	1204	103	365	998	10	49	4	147	6	0	2
RTOR Reduction (vph)	0	8	0	0	0	3	0	0	120	0	7	0
Lane Group Flow (vph)	7	1299	0	365	998	7	0	53	27	0	1	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases	2			6		6	4		4	8		
Actuated Green, G (s)	68.1	68.1		86.2	86.2	86.2		24.0	24.0		24.0	
Effective Green, g (s)	68.1	68.1		86.2	86.2	86.2		24.0	24.0		24.0	
Actuated g/C Ratio	0.52	0.52		0.66	0.66	0.66		0.18	0.18		0.18	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0		5.0	5.0		5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0		2.0	2.0		2.0	
Lane Grp Cap (vph)	325	2632		428	2346	1049		260	292		290	
v/s Ratio Prot	0.00	c0.26		c0.15	0.28							
v/s Ratio Perm	0.01			c0.41		0.00		c0.04	0.02		0.00	
v/c Ratio	0.02	0.49		0.85	0.43	0.01		0.20	0.09		0.01	
Uniform Delay, d1	14.9	19.9		27.9	10.3	7.4		44.9	44.0		43.3	
Progression Factor	1.00	1.00		1.10	1.14	1.00		1.00	1.00		1.00	
Incremental Delay, d2	0.0	0.7		11.2	0.4	0.0		1.8	0.6		0.0	
Delay (s)	14.9	20.5		42.0	12.1	7.4		46.7	44.6		43.3	
Level of Service	B	C		D	B	A		D	D		D	
Approach Delay (s)		20.5			20.1			45.1			43.3	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	22.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	62.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

3: Mopac SBFR & Spicewood Springs Rd

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR	ø1	ø2	ø4	ø5	ø6
Lane Configurations												
Volume (vph)	676	627	593	692	346	1125	626					
Lane Group Flow (vph)	697	646	611	713	321	1196	645					
Turn Type	NA	Perm	Prot	NA	Split	NA	Perm					
Protected Phases	2 1		19 6 7 2 1 19 6		4 5	4 5		1	2	4	5	6
Permitted Phases		2 1					4 5					
Detector Phase	2 1	2 1	19 6 7 2 1 19 6		4 5	4 5	4 5					
Switch Phase												
Minimum Initial (s)								3.0	1.0	1.0	3.0	4.0
Minimum Split (s)								8.0	11.0	11.0	8.0	24.0
Total Split (s)								8.0	24.0	34.0	8.0	30.0
Total Split (%)								6%	18%	26%	6%	23%
Yellow Time (s)								4.0	4.0	4.0	4.0	4.0
All-Red Time (s)								1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag								Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?								Yes	Yes	Yes	Yes	Yes
Recall Mode								None	Max	None	None	C-Max
v/c Ratio	0.95	1.36	0.88	0.42	0.70	1.24	0.96					
Control Delay	94.6	217.7	32.2	2.5	20.5	134.7	20.4					
Queue Delay	0.0	0.0	20.1	0.1	0.0	0.0	0.0					
Total Delay	94.6	217.7	52.3	2.6	20.5	134.7	20.4					
Queue Length 50th (ft)	328	~631	509	34	204	~677	416					
Queue Length 95th (ft)	#442	#868	m534	m80	m154	m390	m188					
Internal Link Dist (ft)	494			333		2669						
Turn Bay Length (ft)			50		145							
Base Capacity (vph)	735	475	694	1715	458	962	669					
Starvation Cap Reductn	0	0	95	134	0	0	0					
Spillback Cap Reductn	0	0	0	0	0	0	0					
Storage Cap Reductn	0	0	0	0	0	0	0					
Reduced v/c Ratio	0.95	1.36	1.02	0.45	0.70	1.24	0.96					

Intersection Summary

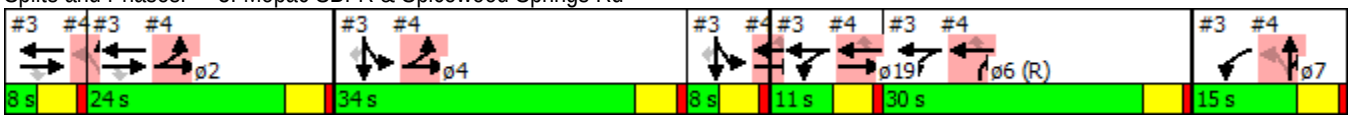
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 8 (6%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 120
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Mopac SBFR & Spicewood Springs Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	676	627	593	692	0	0	0	0	346	1125	626
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0					5.0	5.0	5.0
Lane Util. Factor		0.95	1.00	1.00	0.95					0.91	0.91	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		3539	1583	1770	3539					1610	3385	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (perm)		3539	1583	1770	3539					1610	3385	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	697	646	611	713	0	0	0	0	357	1160	645
RTOR Reduction (vph)	0	0	147	0	0	0	0	0	0	0	0	219
Lane Group Flow (vph)	0	697	499	611	713	0	0	0	0	321	1196	426
Turn Type		NA	Perm	Prot	NA					Split	NA	Perm
Protected Phases		2 1		19 6 7	2 1 19 6					4 5	4 5	
Permitted Phases			2 1									4 5
Actuated Green, G (s)		27.0	27.0	51.0	63.0					37.0	37.0	37.0
Effective Green, g (s)		27.0	27.0	51.0	63.0					37.0	37.0	37.0
Actuated g/C Ratio		0.21	0.21	0.39	0.48					0.28	0.28	0.28
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		735	328	694	1715					458	963	450
v/s Ratio Prot		0.20		c0.35	0.20					0.20	c0.35	
v/s Ratio Perm			c0.32									0.27
v/c Ratio		0.95	1.52	0.88	0.42					0.70	1.24	0.95
Uniform Delay, d1		50.8	51.5	36.7	21.6					41.6	46.5	45.5
Progression Factor		1.47	1.89	0.69	0.18					0.46	0.50	0.57
Incremental Delay, d2		19.5	248.7	4.8	0.0					0.4	109.7	4.8
Delay (s)		94.4	346.2	30.0	3.9					19.7	132.8	30.7
Level of Service		F	F	C	A					B	F	C
Approach Delay (s)		215.5			15.9			0.0			85.6	
Approach LOS		F			B			A			F	

Intersection Summary			
HCM 2000 Control Delay	102.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.39		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	35.0
Intersection Capacity Utilization	111.6%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

4: Mopac NBFR & Anderson Ln

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	ø1	ø2	ø4	ø5	ø6
Lane Configurations												
Volume (vph)	287	736	921	239	364	12	505					
Lane Group Flow (vph)	296	759	949	246	315	301	292					
Turn Type	Prot	NA	NA	Perm	Perm	NA	custom					
Protected Phases	2 4	2 4 5 19	6 5 19			7 1	7 1 6	1	2	4	5	6
Permitted Phases				6 5 19	7 1							
Detector Phase	2 4	2 4 5 19	6 5 19	6 5 19	7 1	7 1	7 1 6					
Switch Phase												
Minimum Initial (s)								3.0	1.0	1.0	3.0	4.0
Minimum Split (s)								8.0	11.0	11.0	8.0	24.0
Total Split (s)								8.0	24.0	34.0	8.0	30.0
Total Split (%)								6%	18%	26%	6%	23%
Yellow Time (s)								4.0	4.0	4.0	4.0	4.0
All-Red Time (s)								1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag								Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?								Yes	Yes	Yes	Yes	Yes
Recall Mode								None	Max	None	None	C-Max
v/c Ratio	0.41	0.39	0.79	0.35	1.36	1.03	0.44					
Control Delay	8.4	0.3	44.7	5.1	214.5	83.7	2.2					
Queue Delay	1.9	1.0	2.9	0.0	0.0	3.3	0.0					
Total Delay	10.3	1.3	47.6	5.1	214.5	87.0	2.2					
Queue Length 50th (ft)	22	0	379	0	~371	~239	3					
Queue Length 95th (ft)	m42	m0	462	58	#573	#419	8					
Internal Link Dist (ft)		333	702			1795						
Turn Bay Length (ft)	50			360	280							
Base Capacity (vph)	721	1960	1197	698	232	293	669					
Starvation Cap Reductn	279	889	0	0	0	0	0					
Spillback Cap Reductn	0	0	151	0	0	3	0					
Storage Cap Reductn	0	0	0	0	0	0	0					
Reduced v/c Ratio	0.67	0.71	0.91	0.35	1.36	1.04	0.44					

Intersection Summary

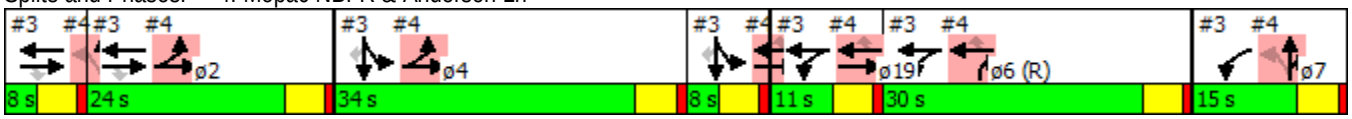
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 8 (6%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 120
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Mopac NBFR & Anderson Ln



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	287	736	0	0	921	239	364	12	505	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0	5.0			
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.91	0.95			
Frt	1.00	1.00			1.00	0.85	1.00	0.89	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.99	1.00			
Satd. Flow (prot)	1770	3539			3539	1583	1681	1487	1504			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.99	1.00			
Satd. Flow (perm)	1770	3539			3539	1583	1681	1487	1504			
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	296	759	0	0	949	246	375	12	521	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	163	0	88	114	0	0	0
Lane Group Flow (vph)	296	759	0	0	949	83	315	213	178	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	custom			
Protected Phases	2 4	2 4 5			6 5 19			7 1	7 1 6			
Permitted Phases						6 5 19	7 1					
Actuated Green, G (s)	53.0	72.0			44.0	44.0	18.0	18.0	48.0			
Effective Green, g (s)	53.0	72.0			44.0	44.0	18.0	18.0	48.0			
Actuated g/C Ratio	0.41	0.55			0.34	0.34	0.14	0.14	0.37			
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	721	1960			1197	535	232	205	555			
v/s Ratio Prot	c0.17	c0.21			c0.27				0.12			
v/s Ratio Perm						0.05	c0.19	0.14				
v/c Ratio	0.41	0.39			0.79	0.16	1.36	1.04	0.32			
Uniform Delay, d1	27.4	16.5			38.9	30.0	56.0	56.0	29.3			
Progression Factor	0.27	0.00			1.00	1.00	0.58	0.65	0.03			
Incremental Delay, d2	0.1	0.0			3.4	0.0	184.7	71.2	0.1			
Delay (s)	7.6	0.0			42.3	30.1	217.4	107.5	0.9			
Level of Service	A	A			D	C	F	F	A			
Approach Delay (s)		2.2			39.8			111.3			0.0	
Approach LOS		A			D			F			A	

Intersection Summary			
HCM 2000 Control Delay	47.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	35.0
Intersection Capacity Utilization	111.6%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	6	15	214	18	76	280
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	7	18	255	21	90	333
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	780	265			276	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	780	265			276	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	98	98			93	
cM capacity (veh/h)	338	773			1287	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	25	276	424
Volume Left	7	0	90
Volume Right	18	21	0
cSH	566	1700	1287
Volume to Capacity	0.04	0.16	0.07
Queue Length 95th (ft)	3	0	6
Control Delay (s)	11.7	0.0	2.3
Lane LOS	B		A
Approach Delay (s)	11.7	0.0	2.3
Approach LOS	B		

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	44.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	8	15	4	1	9	19	26	181	34	98	185	127
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	9	17	5	1	10	22	30	206	39	111	210	144
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											544	
pX, platoon unblocked	0.92	0.92	0.92	0.92	0.92		0.92					
vC, conflicting volume	816	809	282	802	861	225	355			244		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	754	746	172	739	803	225	250			244		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	96	94	99	100	96	97	98			92		
cM capacity (veh/h)	259	280	799	266	259	814	1205			1322		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	31	33	274	466
Volume Left	9	1	30	111
Volume Right	5	22	39	144
cSH	302	469	1205	1322
Volume to Capacity	0.10	0.07	0.02	0.08
Queue Length 95th (ft)	8	6	2	7
Control Delay (s)	18.3	13.2	1.1	2.6
Lane LOS	C	B	A	A
Approach Delay (s)	18.3	13.2	1.1	2.6
Approach LOS	C	B		

Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	51.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	20	0	0	2770	95
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	21	0	0	2916	100
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					1035	
pX, platoon unblocked	0.78	0.78	0.78			
vC, conflicting volume	2966	1022	3016			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2535	46	2599			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	97	100			
cM capacity (veh/h)	17	792	128			

Direction, Lane #	EB 1	SB 1	SB 2	SB 3
Volume Total	21	1166	1166	683
Volume Left	0	0	0	0
Volume Right	21	0	0	100
cSH	792	1700	1700	1700
Volume to Capacity	0.03	0.69	0.69	0.40
Queue Length 95th (ft)	2	0	0	0
Control Delay (s)	9.7	0.0	0.0	0.0
Lane LOS	A			
Approach Delay (s)	9.7	0.0		
Approach LOS	A			

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	65.6%	ICU Level of Service	C
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	16.6
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	37	155	132	0	78	60	7	0	49	123	33
Peak Hour Factor	0.92	0.81	0.81	0.81	0.92	0.81	0.81	0.81	0.92	0.81	0.81	0.81
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	46	191	163	0	96	74	9	0	60	152	41
Number of Lanes	0	0	1	1	0	0	1	1	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	2
HCM Control Delay	14.3	14.6	15.2
HCM LOS	B	B	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	24%	19%	0%	57%	0%	5%
Vol Thru, %	60%	81%	0%	43%	0%	86%
Vol Right, %	16%	0%	100%	0%	100%	9%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	205	192	132	138	7	305
LT Vol	49	37	0	78	0	16
Through Vol	123	155	0	60	0	262
RT Vol	33	0	132	0	7	27
Lane Flow Rate	253	237	163	170	9	377
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.463	0.469	0.286	0.365	0.016	0.659
Departure Headway (Hd)	6.586	7.127	6.31	7.703	6.691	6.303
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	547	505	569	467	533	572
Service Time	4.644	4.883	4.065	5.466	4.453	4.354
HCM Lane V/C Ratio	0.463	0.469	0.286	0.364	0.017	0.659
HCM Control Delay	15.2	16.1	11.6	14.9	9.6	20.8
HCM Lane LOS	C	C	B	B	A	C
HCM 95th-tile Q	2.4	2.5	1.2	1.7	0	4.8

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	16	262	27
Peak Hour Factor	0.92	0.81	0.81	0.81
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	20	323	33
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	20.8
HCM LOS	C

Lane

Intersection	
Intersection Delay, s/veh	12.2
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	31	128	165	0	55	122	31	0	23	123	45
Peak Hour Factor	0.92	0.90	0.90	0.90	0.92	0.90	0.90	0.90	0.92	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	34	142	183	0	61	136	34	0	26	137	50
Number of Lanes	0	0	1	1	0	0	1	1	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	2
HCM Control Delay	11.4	12.6	12.2
HCM LOS	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	19%	0%	31%	0%	100%	0%
Vol Thru, %	0%	73%	81%	0%	69%	0%	0%	78%
Vol Right, %	0%	27%	0%	100%	0%	100%	0%	22%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	23	168	159	165	177	31	21	194
LT Vol	23	0	31	0	55	0	21	0
Through Vol	0	123	128	0	122	0	0	152
RT Vol	0	45	0	165	0	31	0	42
Lane Flow Rate	26	187	177	183	197	34	23	216
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.051	0.336	0.317	0.288	0.365	0.056	0.046	0.387
Departure Headway (Hd)	7.171	6.471	6.462	5.652	6.684	5.814	7.118	6.455
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	497	553	553	631	535	611	501	554
Service Time	4.952	4.251	4.237	3.426	4.465	3.594	4.896	4.233
HCM Lane V/C Ratio	0.052	0.338	0.32	0.29	0.368	0.056	0.046	0.39
HCM Control Delay	10.3	12.5	12.2	10.7	13.3	8.9	10.2	13.3
HCM Lane LOS	B	B	B	B	B	A	B	B
HCM 95th-tile Q	0.2	1.5	1.4	1.2	1.7	0.2	0.1	1.8

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	21	152	42
Peak Hour Factor	0.92	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	23	169	47
Number of Lanes	0	1	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	13
HCM LOS	B

Lane

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	203	0	0	2626	163
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	0	211	0	0	2735	170
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2820	997	2905			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2820	997	2905			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	13	100			
cM capacity (veh/h)	14	243	123			

Direction, Lane #	EB 1	SB 1	SB 2	SB 3
Volume Total	211	1094	1094	717
Volume Left	0	0	0	0
Volume Right	211	0	0	170
cSH	243	1700	1700	1700
Volume to Capacity	0.87	0.64	0.64	0.42
Queue Length 95th (ft)	179	0	0	0
Control Delay (s)	72.4	0.0	0.0	0.0
Lane LOS	F			
Approach Delay (s)	72.4	0.0		
Approach LOS	F			

Intersection Summary			
Average Delay	4.9		
Intersection Capacity Utilization	73.6%	ICU Level of Service	D
Analysis Period (min)	15		

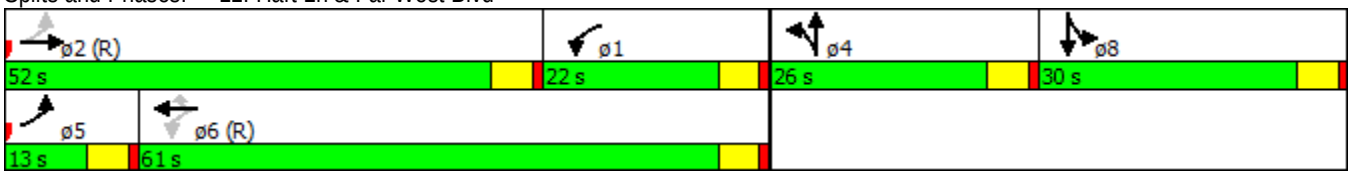
11: Hart Ln & Far West Blvd

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBT
Lane Configurations							
Volume (vph)	54	663	198	265	71	107	247
Lane Group Flow (vph)	65	903	239	319	86	376	582
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	NA
Protected Phases	5	2	1	6		4	8
Permitted Phases	2		6		6		
Detector Phase	5	2	1	6	6	4	8
Switch Phase							
Minimum Initial (s)	4.0	2.0	4.0	2.0	2.0	2.0	2.0
Minimum Split (s)	9.0	24.0	9.0	24.0	24.0	33.0	33.0
Total Split (s)	13.0	52.0	22.0	61.0	61.0	26.0	30.0
Total Split (%)	10.0%	40.0%	16.9%	46.9%	46.9%	20.0%	23.1%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lead	Lag	Lag	Lag		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		
Recall Mode	None	C-Max	None	C-Max	C-Max	None	None
v/c Ratio	0.17	0.68	0.64	0.19	0.11	0.81	0.90
Control Delay	28.2	37.1	60.8	36.0	38.2	68.3	69.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.2	37.1	60.8	36.0	38.2	68.3	69.6
Queue Length 50th (ft)	36	343	158	105	54	162	248
Queue Length 95th (ft)	64	375	215	137	91	197	294
Internal Link Dist (ft)		1703		1174		695	1553
Turn Bay Length (ft)	130		100		490		
Base Capacity (vph)	389	1337	373	1687	754	524	669
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.68	0.64	0.19	0.11	0.72	0.87

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 100 (77%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green
Natural Cycle: 110
Control Type: Actuated-Coordinated

Splits and Phases: 11: Hart Ln & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	54	663	86	198	265	71	49	107	156	206	247	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0		5.0			5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		0.95			0.95	
Frt	1.00	0.98		1.00	1.00	0.85		0.93			0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.99			0.98	
Satd. Flow (prot)	1770	3478		1770	3539	1583		3248			3433	
Flt Permitted	0.47	1.00		0.22	1.00	1.00		0.99			0.98	
Satd. Flow (perm)	869	3478		409	3539	1583		3248			3433	
Peak-hour factor, PHF	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Adj. Flow (vph)	65	799	104	239	319	86	59	129	188	248	298	36
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	65	903	0	239	319	86	0	376	0	0	582	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Split	NA		Split	NA	
Protected Phases	5	2		1	6		4	4		8	8	
Permitted Phases	2			6		6						
Actuated Green, G (s)	49.0	49.0		61.0	61.0	61.0		18.5			24.5	
Effective Green, g (s)	49.0	49.0		61.0	61.0	61.0		18.5			24.5	
Actuated g/C Ratio	0.38	0.38		0.47	0.47	0.47		0.14			0.19	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0		5.0			5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0		2.0			2.0	
Lane Grp Cap (vph)	369	1310		380	1660	742		462			646	
v/s Ratio Prot	0.01	c0.26		c0.09	0.09			c0.12			c0.17	
v/s Ratio Perm	0.06			0.21		0.05						
v/c Ratio	0.18	0.69		0.63	0.19	0.12		0.81			0.90	
Uniform Delay, d1	26.4	34.1		36.3	20.1	19.4		54.1			51.6	
Progression Factor	1.00	1.00		1.37	1.69	1.77		1.00			1.00	
Incremental Delay, d2	0.1	3.0		2.3	0.2	0.3		10.0			15.4	
Delay (s)	26.5	37.1		52.2	34.2	34.5		64.1			67.0	
Level of Service	C	D		D	C	C		E			E	
Approach Delay (s)		36.4			40.9			64.1			67.0	
Approach LOS		D			D			E			E	

Intersection Summary			
HCM 2000 Control Delay	48.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	71.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

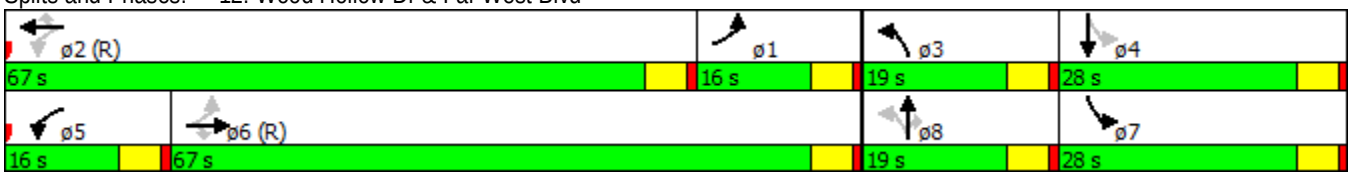
12: Wood Hollow Dr & Far West Blvd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Volume (vph)	74	1015	46	112	550	91	24	81	282	257	115
Lane Group Flow (vph)	79	1080	49	119	585	97	26	86	300	273	178
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA
Protected Phases	1	6		5	2		3	8		7	4
Permitted Phases	6		6	2		2	8		8	4	
Detector Phase	1	6	6	5	2	2	3	8	8	7	4
Switch Phase											
Minimum Initial (s)	4.0	2.0	2.0	4.0	2.0	2.0	4.0	2.0	2.0	4.0	2.0
Minimum Split (s)	9.0	11.0	11.0	9.0	11.0	11.0	9.0	11.0	11.0	9.0	11.0
Total Split (s)	16.0	67.0	67.0	16.0	67.0	67.0	19.0	19.0	19.0	28.0	28.0
Total Split (%)	12.3%	51.5%	51.5%	12.3%	51.5%	51.5%	14.6%	14.6%	14.6%	21.5%	21.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None
v/c Ratio	0.16	0.59	0.06	0.53	0.32	0.11	0.20	0.50	0.91	0.69	0.40
Control Delay	24.1	32.5	2.9	30.4	26.1	10.1	56.8	65.9	52.0	56.5	41.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.1	32.5	2.9	30.4	26.1	10.1	56.8	65.9	52.0	56.5	41.6
Queue Length 50th (ft)	53	435	3	60	160	16	20	69	83	209	117
Queue Length 95th (ft)	m70	497	m7	m76	m181	m25	50	124	#242	#325	194
Internal Link Dist (ft)		1174			673			686			1879
Turn Bay Length (ft)	245		610	125		700	75		75		
Base Capacity (vph)	496	1828	866	251	1857	878	190	200	349	408	440
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.59	0.06	0.47	0.32	0.11	0.14	0.43	0.86	0.67	0.40

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 10 (8%), Referenced to phase 2:WBTL and 6:EBTL, Start of 1st Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 12: Wood Hollow Dr & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	74	1015	46	112	550	91	24	81	282	257	115	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1775	
Flt Permitted	0.43	1.00	1.00	0.12	1.00	1.00	0.53	1.00	1.00	0.70	1.00	
Satd. Flow (perm)	804	3539	1583	231	3539	1583	993	1863	1583	1306	1775	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	79	1080	49	119	585	97	26	86	300	273	122	56
RTOR Reduction (vph)	0	0	24	0	0	48	0	0	182	0	11	0
Lane Group Flow (vph)	79	1080	25	119	585	49	26	86	118	273	167	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2	8		8	4		
Actuated Green, G (s)	65.1	65.1	65.1	65.2	65.2	65.2	12.0	12.0	12.0	31.5	31.5	
Effective Green, g (s)	65.1	65.1	65.1	65.2	65.2	65.2	12.0	12.0	12.0	31.5	31.5	
Actuated g/C Ratio	0.50	0.50	0.50	0.50	0.50	0.50	0.09	0.09	0.09	0.24	0.24	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	468	1772	792	221	1774	793	118	171	146	402	430	
v/s Ratio Prot	0.01	c0.31		c0.04	0.17		0.01	0.05		c0.13	0.09	
v/s Ratio Perm	0.07		0.02	0.23		0.03	0.01		c0.07	0.04		
v/c Ratio	0.17	0.61	0.03	0.54	0.33	0.06	0.22	0.50	0.81	0.68	0.39	
Uniform Delay, d1	18.0	23.3	16.5	21.9	19.4	16.7	54.4	56.2	57.9	43.6	41.2	
Progression Factor	1.23	1.36	1.00	1.38	1.34	3.10	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.0	1.1	0.0	0.8	0.3	0.1	0.3	0.8	25.3	3.6	0.2	
Delay (s)	22.1	32.8	16.5	31.0	26.2	51.7	54.7	57.0	83.2	47.2	41.4	
Level of Service	C	C	B	C	C	D	D	E	F	D	D	
Approach Delay (s)		31.5			30.0			75.9			44.9	
Approach LOS		C			C			E			D	

Intersection Summary			
HCM 2000 Control Delay	39.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	72.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

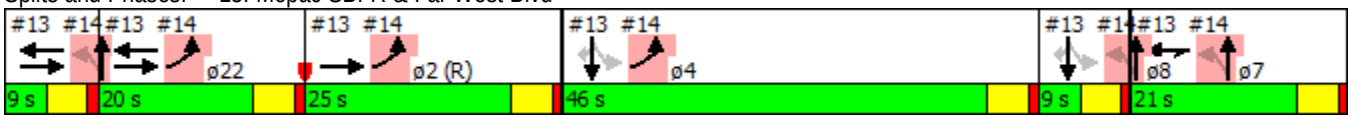
13: Mopac SBFR & Far West Blvd

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR	ø1	ø2	ø4	ø8	ø22
Lane Configurations											
Volume (vph)	773	438	18	507	508	857					
Lane Group Flow (vph)	797	452	19	523	657	884					
Turn Type	NA	Free	Prot	NA	NA	Perm					
Protected Phases	1 22 2		7	1 22 7	4 8		1	2	4	8	22
Permitted Phases		Free				4 8					
Detector Phase	1 22 2		7	1 22 7	4 8	4 8					
Switch Phase											
Minimum Initial (s)			4.0				4.0	4.0	4.0	4.0	4.0
Minimum Split (s)			20.0				9.0	24.0	24.0	9.0	20.0
Total Split (s)			21.0				9.0	25.0	46.0	9.0	20.0
Total Split (%)			16.2%				7%	19%	35%	7%	15%
Yellow Time (s)			4.0				4.0	4.0	4.0	4.0	4.0
All-Red Time (s)			1.0				1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)			0.0								
Total Lost Time (s)			5.0								
Lead/Lag							Lead		Lead	Lag	Lag
Lead-Lag Optimize?							Yes		Yes	Yes	Yes
Recall Mode			None				None	C-Max	None	None	None
v/c Ratio	0.60	0.29	0.09	0.43	0.49	0.97					
Control Delay	32.6	0.3	36.7	1.3	24.7	25.7					
Queue Delay	0.1	0.0	0.0	0.7	0.0	0.0					
Total Delay	32.7	0.3	36.7	2.0	24.7	25.7					
Queue Length 50th (ft)	316	0	3	0	171	271					
Queue Length 95th (ft)	m390	m0	m12	0	m161	m115					
Internal Link Dist (ft)	432			324	532						
Turn Bay Length (ft)		490									
Base Capacity (vph)	1337	1583	217	1201	1347	911					
Starvation Cap Reductn	0	0	0	355	0	0					
Spillback Cap Reductn	80	0	0	0	0	0					
Storage Cap Reductn	0	0	0	0	0	0					
Reduced v/c Ratio	0.63	0.29	0.09	0.62	0.49	0.97					

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 106 (82%), Referenced to phase 2:EBT, Start of 1st Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Mopac SBFR & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	773	438	18	507	0	0	0	0	129	508	857
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	4.0	5.0	5.0						5.0	5.0
Lane Util. Factor		0.95	1.00	1.00	0.95						0.95	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (prot)		3539	1583	1770	3539						3504	1583
Flt Permitted		1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (perm)		3539	1583	1770	3539						3504	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	797	452	19	523	0	0	0	0	133	524	884
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	303
Lane Group Flow (vph)	0	797	452	19	523	0	0	0	0	0	657	581
Turn Type		NA	Free	Prot	NA					Perm	NA	Perm
Protected Phases		1 22 2		7	1 22 7						4 8	
Permitted Phases			Free							4 8		4 8
Actuated Green, G (s)		49.1	130.0	15.9	45.0						50.0	50.0
Effective Green, g (s)		49.1	130.0	15.9	45.0						50.0	50.0
Actuated g/C Ratio		0.38	1.00	0.12	0.35						0.38	0.38
Clearance Time (s)				5.0								
Vehicle Extension (s)				2.0								
Lane Grp Cap (vph)		1336	1583	216	1225						1347	608
v/s Ratio Prot		c0.23		0.01	c0.15							
v/s Ratio Perm			0.29								0.19	c0.37
v/c Ratio		0.60	0.29	0.09	0.43						0.49	0.96
Uniform Delay, d1		32.5	0.0	50.6	32.6						30.3	38.9
Progression Factor		0.95	1.00	0.71	0.01						0.79	0.57
Incremental Delay, d2		0.4	0.3	0.0	0.1						0.0	15.2
Delay (s)		31.2	0.3	35.8	0.5						24.0	37.3
Level of Service		C	A	D	A						C	D
Approach Delay (s)		20.0			1.7			0.0			31.6	
Approach LOS		C			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	22.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	88.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

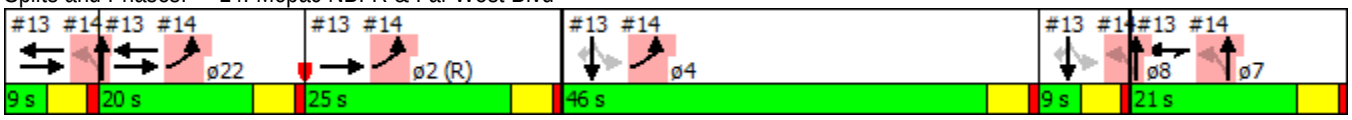
14: Mopac NBFR & Far West Blvd

Lane Group	EBL	NBL	NBT	ø1	ø2	ø4	ø7	ø8	ø22
Lane Configurations									
Volume (vph)	918	524	2						
Lane Group Flow (vph)	956	273	275						
Turn Type	Prot	Perm	NA						
Protected Phases	22 2 4		7 1 8	1	2	4	7	8	22
Permitted Phases		7 1 8							
Detector Phase	22 2 4	7 1 8	7 1 8						
Switch Phase									
Minimum Initial (s)				4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)				9.0	24.0	24.0	20.0	9.0	20.0
Total Split (s)				9.0	25.0	46.0	21.0	9.0	20.0
Total Split (%)				7%	19%	35%	16%	7%	15%
Yellow Time (s)				4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)				1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)									
Total Lost Time (s)									
Lead/Lag				Lead		Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes		Yes	Yes
Recall Mode				None	C-Max	None	None	None	None
v/c Ratio	0.42	0.62	0.62						
Control Delay	3.5	49.6	49.7						
Queue Delay	0.5	0.0	0.0						
Total Delay	4.0	49.6	49.7						
Queue Length 50th (ft)	12	214	215						
Queue Length 95th (ft)	13	316	320						
Internal Link Dist (ft)	324		322						
Turn Bay Length (ft)									
Base Capacity (vph)	2271	428	429						
Starvation Cap Reductn	823	0	0						
Spillback Cap Reductn	0	0	0						
Storage Cap Reductn	0	0	0						
Reduced v/c Ratio	0.66	0.64	0.64						

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 106 (82%), Referenced to phase 2:EBT, Start of 1st Green
Natural Cycle: 110
Control Type: Actuated-Coordinated

Splits and Phases: 14: Mopac NBFR & Far West Blvd



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	918	0	524	2	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0		
Lane Util. Factor	0.97		0.95	0.95		
Frt	1.00		1.00	1.00		
Flt Protected	0.95		0.95	0.95		
Satd. Flow (prot)	3433		1681	1686		
Flt Permitted	0.95		0.95	0.95		
Satd. Flow (perm)	3433		1681	1686		
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	956	0	546	2	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	956	0	273	275	0	0
Turn Type	Prot		Perm	NA		
Protected Phases	22 2 4			7 1 8		
Permitted Phases			7 1 8			
Actuated Green, G (s)	86.0		34.0	34.0		
Effective Green, g (s)	86.0		34.0	34.0		
Actuated g/C Ratio	0.66		0.26	0.26		
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)	2271		439	440		
v/s Ratio Prot	c0.28					
v/s Ratio Perm			0.16	0.16		
v/c Ratio	0.42		0.62	0.62		
Uniform Delay, d1	10.3		42.3	42.4		
Progression Factor	0.29		1.00	1.00		
Incremental Delay, d2	0.0		2.0	2.0		
Delay (s)	3.0		44.3	44.4		
Level of Service	A		D	D		
Approach Delay (s)	3.0			44.3	0.0	
Approach LOS	A			D	A	

Intersection Summary			
HCM 2000 Control Delay	18.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	101.5%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

20: Loop 1 SBFR & Steck Avenue

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	ø1	ø2	ø4	ø5	ø6	ø7
Lane Configurations												
Volume (vph)	514	131	144	336	915	1774						
Lane Group Flow (vph)	547	139	153	357	876	2285						
Turn Type	NA	Perm	Prot	NA	Split	NA						
Protected Phases	2 1		6 7	2 1 6 7	4 5	4 5	1	2	4	5	6	7
Permitted Phases		2 1										
Detector Phase	2 1	2 1	6 7	2 1 6 7	4 5	4 5						
Switch Phase												
Minimum Initial (s)							2.0	1.0	1.0	3.0	4.0	4.0
Minimum Split (s)							7.0	11.0	11.0	8.0	15.0	9.0
Total Split (s)							7.0	20.0	63.0	8.0	15.0	17.0
Total Split (%)							5%	15%	48%	6%	12%	13%
Yellow Time (s)							4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)							1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag							Lead	Lag	Lead	Lag		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode							None	Max	None	None	C-Max	None
v/c Ratio	0.91	0.36	0.42	0.24	1.07	1.35						
Control Delay	74.1	9.7	20.6	0.3	84.4	190.6						
Queue Delay	4.3	0.0	0.0	0.0	0.0	0.0						
Total Delay	78.4	9.7	20.6	0.3	84.4	190.6						
Queue Length 50th (ft)	241	0	23	0	~898	~1388						
Queue Length 95th (ft)	#345	55	m44	0	#1173	#1529						
Internal Link Dist (ft)	737			327		333						
Turn Bay Length (ft)		100	80									
Base Capacity (vph)	598	386	367	1470	817	1692						
Starvation Cap Reductn	0	0	0	0	0	0						
Spillback Cap Reductn	25	0	0	0	0	0						
Storage Cap Reductn	0	0	0	0	0	0						
Reduced v/c Ratio	0.95	0.36	0.42	0.24	1.07	1.35						

Intersection Summary

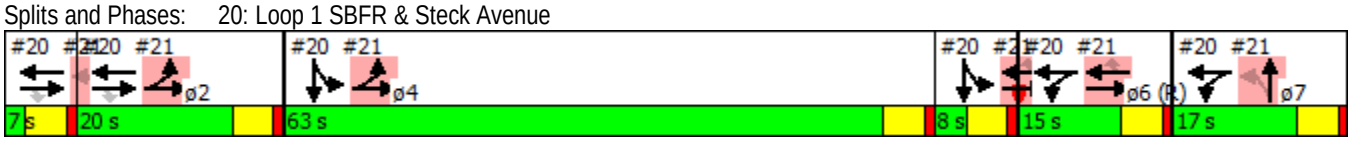
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 90 (69%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 20: Loop 1 SBFR & Steck Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	514	131	144	336	0	0	0	0	915	1774	283
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0					5.0	5.0	
Lane Util. Factor		0.95	1.00	1.00	0.95					0.91	0.91	
Frt		1.00	0.85	1.00	1.00					1.00	0.98	
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	3539					1610	3316	
Flt Permitted		1.00	1.00	0.95	1.00					0.95	1.00	
Satd. Flow (perm)		3539	1583	1770	3539					1610	3316	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	547	139	153	357	0	0	0	0	973	1887	301
RTOR Reduction (vph)	0	0	115	0	0	0	0	0	0	0	9	0
Lane Group Flow (vph)	0	547	24	153	357	0	0	0	0	876	2276	0
Turn Type		NA	Perm	Prot	NA					Split	NA	
Protected Phases		2 1		6 7	2 1 6 7					4 5	4 5	
Permitted Phases			2 1									
Actuated Green, G (s)		22.0	22.0	27.0	54.0					66.0	66.0	
Effective Green, g (s)		22.0	22.0	27.0	54.0					66.0	66.0	
Actuated g/C Ratio		0.17	0.17	0.21	0.42					0.51	0.51	
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		598	267	367	1470					817	1683	
v/s Ratio Prot		c0.15		c0.09	0.10					0.54	c0.69	
v/s Ratio Perm			0.01									
v/c Ratio		0.91	0.09	0.42	0.24					1.07	1.35	
Uniform Delay, d1		53.1	45.5	44.7	24.7					32.0	32.0	
Progression Factor		1.00	1.00	0.40	0.00					1.00	1.00	
Incremental Delay, d2		18.3	0.1	0.2	0.0					52.7	162.6	
Delay (s)		71.4	45.6	17.9	0.0					84.7	194.6	
Level of Service		E	D	B	A					F	F	
Approach Delay (s)		66.2			5.4			0.0			164.1	
Approach LOS		E			A			A			F	

Intersection Summary			
HCM 2000 Control Delay	130.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.21		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	127.6%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

21: Loop 1 NBFR & Steck Avenue

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	ø1	ø2	ø4	ø5	ø6	ø7
Lane Configurations												
Volume (vph)	665	718	363	246	200	520						
Lane Group Flow (vph)	679	733	370	251	204	713						
Turn Type	Prot	NA	NA	Perm	Perm	NA						
Protected Phases	2 4	2 4 5 6	6 5			7 1	1	2	4	5	6	7
Permitted Phases				6 5	7 1							
Detector Phase	2 4	2 4 5 6	6 5	6 5	7 1	7 1						
Switch Phase												
Minimum Initial (s)							2.0	1.0	1.0	3.0	4.0	4.0
Minimum Split (s)							7.0	11.0	11.0	8.0	15.0	9.0
Total Split (s)							7.0	20.0	63.0	8.0	15.0	17.0
Total Split (%)							5%	15%	48%	6%	12%	13%
Yellow Time (s)							4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)							1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag							Lead	Lag	Lead	Lag		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode							None	Max	None	None	C-Max	None
v/c Ratio	0.64	0.27	0.76	0.63	0.41	2.63						
Control Delay	9.3	0.0	64.6	18.6	46.0	765.1						
Queue Delay	24.2	0.7	0.0	0.0	0.0	0.0						
Total Delay	33.5	0.8	64.6	18.6	46.0	765.1						
Queue Length 50th (ft)	181	0	160	30	73	~1015						
Queue Length 95th (ft)	m123	m0	216	119	m109	m#1252						
Internal Link Dist (ft)		327	978			2452						
Turn Bay Length (ft)	80			170	110							
Base Capacity (vph)	1062	2749	490	400	501	271						
Starvation Cap Reductn	398	1598	0	0	0	0						
Spillback Cap Reductn	0	0	0	0	0	0						
Storage Cap Reductn	0	0	0	0	0	0						
Reduced v/c Ratio	1.02	0.64	0.76	0.63	0.41	2.63						

Intersection Summary

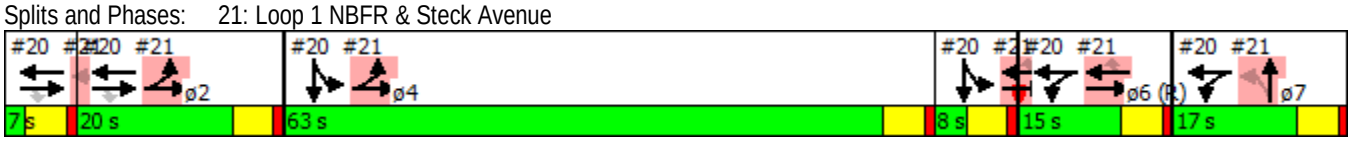
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 90 (69%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 21: Loop 1 NBFR & Steck Avenue



21: Loop 1 NBFR & Steck Avenue

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	665	718	0	0	363	246	200	520	178	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0				
Lane Util. Factor	1.00	0.95			0.95	1.00	0.97	1.00				
Frt	1.00	1.00			1.00	0.85	1.00	0.96				
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (prot)	1770	3539			3539	1583	3433	1791				
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (perm)	1770	3539			3539	1583	3433	1791				
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	679	733	0	0	370	251	204	531	182	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	182	0	9	0	0	0	0
Lane Group Flow (vph)	679	733	0	0	370	69	204	704	0	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA				
Protected Phases	2 4	2 4 5 6			6 5			7 1				
Permitted Phases						6 5	7 1					
Actuated Green, G (s)	78.0	101.0			18.0	18.0	19.0	19.0				
Effective Green, g (s)	78.0	101.0			18.0	18.0	19.0	19.0				
Actuated g/C Ratio	0.60	0.78			0.14	0.14	0.15	0.15				
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	1062	2749			490	219	501	261				
v/s Ratio Prot	c0.38	0.21			c0.10			c0.39				
v/s Ratio Perm						0.04	0.06					
v/c Ratio	0.64	0.27			0.76	0.32	0.41	2.70				
Uniform Delay, d1	16.9	4.1			53.9	50.5	50.4	55.5				
Progression Factor	0.52	0.00			1.00	1.00	0.86	0.87				
Incremental Delay, d2	0.1	0.0			5.8	0.3	0.2	773.7				
Delay (s)	8.8	0.0			59.7	50.8	43.5	821.8				
Level of Service	A	A			E	D	D	F				
Approach Delay (s)		4.2			56.1			648.7			0.0	
Approach LOS		A			E			F			A	

Intersection Summary			
HCM 2000 Control Delay	215.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	127.6%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	807	112	118	1079	199	212
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	897	124	131	1199	221	236
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						6
Median type	Raised			Raised		
Median storage veh)	1			1		
Upstream signal (ft)				1068		
pX, platoon unblocked					0.86	
vC, conflicting volume			897		1758	448
vC1, stage 1 conf vol					897	
vC2, stage 2 conf vol					862	
vCu, unblocked vol			897		1549	448
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			83		0	58
cM capacity (veh/h)			753		207	558

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1
Volume Total	448	448	124	131	599	599	457
Volume Left	0	0	0	131	0	0	221
Volume Right	0	0	124	0	0	0	236
cSH	1700	1700	1700	753	1700	1700	388
Volume to Capacity	0.26	0.26	0.07	0.17	0.35	0.35	1.18
Queue Length 95th (ft)	0	0	0	16	0	0	452
Control Delay (s)	0.0	0.0	0.0	10.8	0.0	0.0	135.1
Lane LOS				B			F
Approach Delay (s)	0.0			1.1			135.1
Approach LOS							F

Intersection Summary			
Average Delay	22.5		
Intersection Capacity Utilization	49.9%	ICU Level of Service	A
Analysis Period (min)	15		

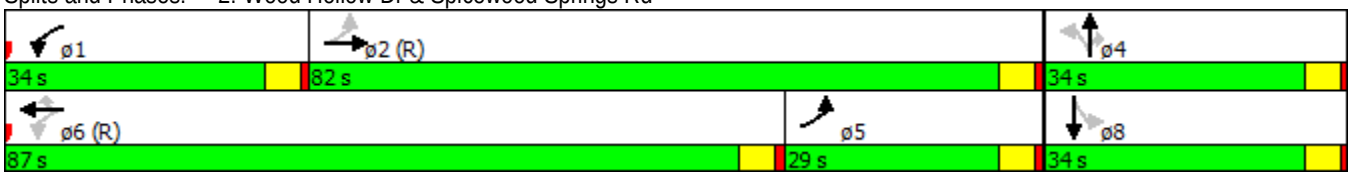
2: Wood Hollow Dr & Spicewood Springs Rd

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	5	990	99	1009	1	173	7	262	1	4
Lane Group Flow (vph)	6	1152	112	1147	1	0	205	298	0	23
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA
Protected Phases	5	2	1	6			4			8
Permitted Phases	2		6		6	4		4	8	
Detector Phase	5	2	1	6	6	4	4	4	8	8
Switch Phase										
Minimum Initial (s)	6.0	25.0	6.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	15.0	30.0	15.0	11.0	11.0	35.0	35.0	35.0	35.0	35.0
Total Split (s)	29.0	82.0	34.0	87.0	87.0	34.0	34.0	34.0	34.0	34.0
Total Split (%)	19.3%	54.7%	22.7%	58.0%	58.0%	22.7%	22.7%	22.7%	22.7%	22.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Max	None	C-Max	C-Max	Max	Max	Max	None	None
v/c Ratio	0.02	0.35	0.34	0.46	0.00		0.79	0.62		0.07
Control Delay	10.2	12.1	11.1	10.2	0.0		79.9	21.8		24.8
Queue Delay	0.0	0.0	0.0	0.3	0.0		0.0	3.2		0.0
Total Delay	10.2	12.1	11.1	10.5	0.0		79.9	25.1		24.8
Queue Length 50th (ft)	2	171	23	146	0		193	70		5
Queue Length 95th (ft)	8	212	m53	274	m0		#310	166		31
Internal Link Dist (ft)		988		494			464			203
Turn Bay Length (ft)	130		110		100			100		
Base Capacity (vph)	494	3314	525	2481	1125		258	480		335
Starvation Cap Reductn	0	0	0	589	0		0	0		0
Spillback Cap Reductn	0	351	0	0	0		0	102		0
Storage Cap Reductn	0	0	0	0	0		0	0		0
Reduced v/c Ratio	0.01	0.39	0.21	0.61	0.00		0.79	0.79		0.07

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 55 (37%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Wood Hollow Dr & Spicewood Springs Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	990	24	99	1009	1	173	7	262	1	4	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0		5.0	5.0		5.0	
Lane Util. Factor	1.00	0.91		1.00	0.95	1.00		1.00	1.00		1.00	
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85		0.90	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.95	1.00		1.00	
Satd. Flow (prot)	1770	5067		1770	3539	1583		1777	1583		1673	
Flt Permitted	0.23	1.00		0.19	1.00	1.00		0.72	1.00		0.99	
Satd. Flow (perm)	428	5067		362	3539	1583		1337	1583		1663	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	6	1125	27	112	1147	1	197	8	298	1	5	17
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	174	0	14	0
Lane Group Flow (vph)	6	1151	0	112	1147	1	0	205	124	0	9	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases	2			6		6	4		4	8		
Actuated Green, G (s)	98.1	98.1		101.2	101.2	101.2		29.0	29.0		29.0	
Effective Green, g (s)	98.1	98.1		101.2	101.2	101.2		29.0	29.0		29.0	
Actuated g/C Ratio	0.65	0.65		0.67	0.67	0.67		0.19	0.19		0.19	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0		5.0	5.0		5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0		2.0	2.0		2.0	
Lane Grp Cap (vph)	322	3313		318	2387	1067		258	306		321	
v/s Ratio Prot	0.00	c0.23		0.02	c0.32							
v/s Ratio Perm	0.01			0.22		0.00		c0.15	0.08		0.01	
v/c Ratio	0.02	0.35		0.35	0.48	0.00		0.79	0.40		0.03	
Uniform Delay, d1	11.6	11.6		9.6	11.7	7.9		57.7	52.9		49.1	
Progression Factor	1.00	1.00		0.93	0.84	1.00		1.00	1.00		1.00	
Incremental Delay, d2	0.0	0.3		0.2	0.6	0.0		21.8	3.9		0.0	
Delay (s)	11.6	11.9		9.2	10.4	7.9		79.5	56.9		49.1	
Level of Service	B	B		A	B	A		E	E		D	
Approach Delay (s)		11.9			10.3			66.1			49.1	
Approach LOS		B			B			E			D	

Intersection Summary			
HCM 2000 Control Delay	20.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	62.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

3: Mopac SBFR & Spicewood Springs Rd

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR	ø1	ø2	ø4	ø5	ø6
Lane Configurations												
Volume (vph)	961	292	607	738	595	195	371					
Lane Group Flow (vph)	1022	311	646	785	316	524	395					
Turn Type	NA	Perm	Prot	NA	Split	NA	Perm					
Protected Phases	2 1		19 6 7	2 1 19 6	4 5	4 5		1	2	4	5	6
Permitted Phases		2 1					4 5					
Detector Phase	2 1	2 1	19 6 7	2 1 19 6	4 5	4 5	4 5					
Switch Phase												
Minimum Initial (s)								3.0	1.0	1.0	3.0	4.0
Minimum Split (s)								8.0	11.0	11.0	8.0	24.0
Total Split (s)								8.0	35.0	23.0	8.0	51.0
Total Split (%)								5%	23%	15%	5%	34%
Yellow Time (s)								4.0	4.0	4.0	4.0	4.0
All-Red Time (s)								1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag								Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?								Yes	Yes	Yes	Yes	Yes
Recall Mode								None	Max	None	None	C-Max
v/c Ratio	1.14	0.57	0.77	0.35	1.13	1.09dl	0.76					
Control Delay	126.1	32.0	23.2	1.5	148.5	83.0	24.8					
Queue Delay	0.4	0.0	2.6	0.2	0.0	0.0	0.0					
Total Delay	126.5	32.0	25.8	1.7	148.5	83.0	24.8					
Queue Length 50th (ft)	~621	156	578	30	~393	280	87					
Queue Length 95th (ft)	#759	253	m498	m34	#609	#391	221					
Internal Link Dist (ft)	494			333		2669						
Turn Bay Length (ft)			50		145							
Base Capacity (vph)	896	545	837	2241	279	570	522					
Starvation Cap Reductn	0	0	99	591	0	0	0					
Spillback Cap Reductn	58	0	0	0	0	0	0					
Storage Cap Reductn	0	0	0	0	0	0	0					
Reduced v/c Ratio	1.22	0.57	0.88	0.48	1.13	0.92	0.76					

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 89 (59%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 110
Control Type: Actuated-Coordinated

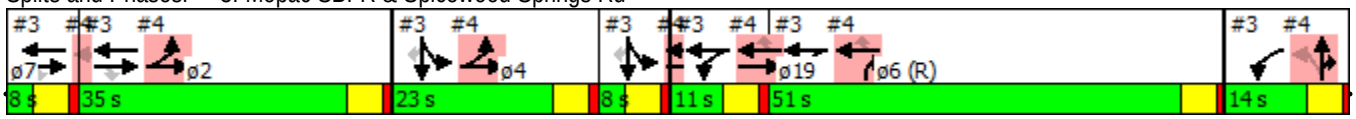
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 3: Mopac SBFR & Spicewood Springs Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	961	292	607	738	0	0	0	0	595	195	371
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0					5.0	5.0	5.0
Lane Util. Factor		0.95	1.00	1.00	0.95					0.91	0.91	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.97	1.00
Satd. Flow (prot)		3539	1583	1770	3539					1610	3291	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.97	1.00
Satd. Flow (perm)		3539	1583	1770	3539					1610	3291	1583
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	1022	311	646	785	0	0	0	0	633	207	395
RTOR Reduction (vph)	0	0	145	0	0	0	0	0	0	0	0	248
Lane Group Flow (vph)	0	1022	166	646	785	0	0	0	0	316	524	147
Turn Type		NA	Perm	Prot	NA					Split	NA	Perm
Protected Phases		2 1		19 6 7	2 1 19 6					4 5	4 5	
Permitted Phases			2 1									4 5
Actuated Green, G (s)		38.0	38.0	71.0	95.0					26.0	26.0	26.0
Effective Green, g (s)		38.0	38.0	71.0	95.0					26.0	26.0	26.0
Actuated g/C Ratio		0.25	0.25	0.47	0.63					0.17	0.17	0.17
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		896	401	837	2241					279	570	274
v/s Ratio Prot		c0.29		c0.37	0.22					c0.20	0.16	
v/s Ratio Perm			0.10									0.09
v/c Ratio		1.14	0.41	0.77	0.35					1.13	1.09dl	0.54
Uniform Delay, d1		56.0	46.7	32.8	13.0					62.0	61.0	56.5
Progression Factor		1.02	1.57	0.58	0.18					1.00	1.00	1.00
Incremental Delay, d2		75.9	0.2	2.1	0.0					94.5	19.6	1.0
Delay (s)		133.1	73.4	21.2	2.4					156.5	80.6	57.5
Level of Service		F	E	C	A					F	F	E
Approach Delay (s)		119.2			10.9			0.0			92.6	
Approach LOS		F			B			A			F	

Intersection Summary			
HCM 2000 Control Delay	72.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	35.0
Intersection Capacity Utilization	87.8%	ICU Level of Service	E
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group

4: Mopac NBFR & Anderson Ln

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	ø1	ø2	ø4	ø5	ø6
Lane Configurations												
Volume (vph)	475	1081	1088	418	256	42	536					
Lane Group Flow (vph)	500	1138	1145	440	242	325	310					
Turn Type	Prot	NA	NA	Perm	Perm	NA	custom					
Protected Phases	2 4	2 4 5 19	6 5 19			7 1	7 1 6	1	2	4	5	6
Permitted Phases				6 5 19	7 1							
Detector Phase	2 4	2 4 5 19	6 5 19	6 5 19	7 1	7 1	7 1 6					
Switch Phase												
Minimum Initial (s)								3.0	1.0	1.0	3.0	4.0
Minimum Split (s)								8.0	11.0	11.0	8.0	24.0
Total Split (s)								8.0	35.0	23.0	8.0	51.0
Total Split (%)								5%	23%	15%	5%	34%
Yellow Time (s)								4.0	4.0	4.0	4.0	4.0
All-Red Time (s)								1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag								Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?								Yes	Yes	Yes	Yes	Yes
Recall Mode								None	Max	None	None	C-Max
v/c Ratio	0.80	0.67	0.75	0.53	1.27	1.28	0.41					
Control Delay	25.5	0.2	39.4	13.7	208.3	187.6	17.7					
Queue Delay	39.4	4.3	0.5	0.0	0.0	0.1	0.0					
Total Delay	64.9	4.5	39.9	13.7	208.3	187.7	17.7					
Queue Length 50th (ft)	221	0	488	115	~313	~343	123					
Queue Length 95th (ft)	m180	m0	576	218	#501	#564	208					
Internal Link Dist (ft)		333	702			1795						
Turn Bay Length (ft)	50			360	280							
Base Capacity (vph)	625	1698	1533	837	190	254	749					
Starvation Cap Reductn	156	472	0	0	0	0	0					
Spillback Cap Reductn	0	0	110	0	0	2	0					
Storage Cap Reductn	0	0	0	0	0	0	0					
Reduced v/c Ratio	1.07	0.93	0.80	0.53	1.27	1.29	0.41					

Intersection Summary

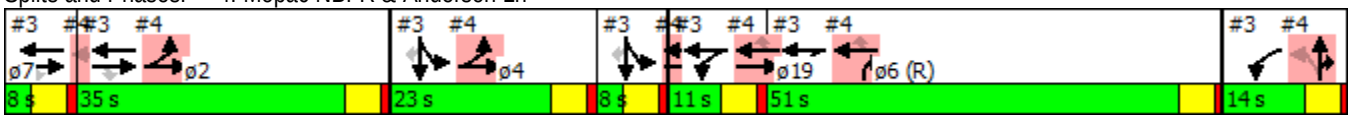
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 89 (59%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 110
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Mopac NBFR & Anderson Ln



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	475	1081	0	0	1088	418	256	42	536	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0	5.0			
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.91	0.95			
Frt	1.00	1.00			1.00	0.85	1.00	0.88	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	1770	3539			3539	1583	1681	1490	1504			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	1770	3539			3539	1583	1681	1490	1504			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	500	1138	0	0	1145	440	269	44	564	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	152	0	86	68	0	0	0
Lane Group Flow (vph)	500	1138	0	0	1145	288	242	239	242	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	custom			
Protected Phases	2 4	2 4 5			6 5 19			7 1	7 1 6			
Permitted Phases						6 5 19	7 1					
Actuated Green, G (s)	53.0	72.0			65.0	65.0	17.0	17.0	68.0			
Effective Green, g (s)	53.0	72.0			65.0	65.0	17.0	17.0	68.0			
Actuated g/C Ratio	0.35	0.48			0.43	0.43	0.11	0.11	0.45			
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	625	1698			1533	685	190	168	681			
v/s Ratio Prot	c0.28	c0.32			c0.32				0.16			
v/s Ratio Perm						0.18	0.14	0.16				
v/c Ratio	0.80	0.67			0.75	0.42	1.27	1.42	0.36			
Uniform Delay, d1	43.7	29.9			35.6	29.5	66.5	66.5	26.7			
Progression Factor	0.55	0.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	0.7	0.1			1.8	0.2	157.6	221.2	0.1			
Delay (s)	24.6	0.1			37.4	29.6	224.1	287.7	26.8			
Level of Service	C	A			D	C	F	F	C			
Approach Delay (s)		7.5			35.2			177.9			0.0	
Approach LOS		A			D			F			A	

Intersection Summary			
HCM 2000 Control Delay	54.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	35.0
Intersection Capacity Utilization	87.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	18	96	271	7	16	180
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	24	128	361	9	21	240
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	649	366			371	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	649	366			371	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	94	81			98	
cM capacity (veh/h)	427	679			1188	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	152	371	261
Volume Left	24	0	21
Volume Right	128	9	0
cSH	621	1700	1188
Volume to Capacity	0.24	0.22	0.02
Queue Length 95th (ft)	24	0	1
Control Delay (s)	12.7	0.0	0.8
Lane LOS	B		A
Approach Delay (s)	12.7	0.0	0.8
Approach LOS	B		

Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	36.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	59	57	25	20	12	105	7	269	6	15	119	17
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Hourly flow rate (vph)	78	75	33	26	16	138	9	354	8	20	157	22
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											544	
pX, platoon unblocked												
vC, conflicting volume	730	588	168	654	595	358	179			362		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	730	588	168	654	595	358	179			362		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	70	82	96	91	96	80	99			98		
cM capacity (veh/h)	257	412	876	309	408	686	1397			1197		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	186	180	371	199
Volume Left	78	26	9	20
Volume Right	33	138	8	22
cSH	356	554	1397	1197
Volume to Capacity	0.52	0.33	0.01	0.02
Queue Length 95th (ft)	72	35	0	1
Control Delay (s)	25.6	14.6	0.3	0.9
Lane LOS	D	B	A	A
Approach Delay (s)	25.6	14.6	0.3	0.9
Approach LOS	D	B		

Intersection Summary			
Average Delay	8.2		
Intersection Capacity Utilization	37.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	178	0	0	1938	28
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	0	196	0	0	2130	31
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					1035	
pX, platoon unblocked						
vC, conflicting volume	2145	725	2160			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2145	725	2160			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	47	100			
cM capacity (veh/h)	42	367	245			

Direction, Lane #	EB 1	SB 1	SB 2	SB 3
Volume Total	196	852	852	457
Volume Left	0	0	0	0
Volume Right	196	0	0	31
cSH	367	1700	1700	1700
Volume to Capacity	0.53	0.50	0.50	0.27
Queue Length 95th (ft)	75	0	0	0
Control Delay (s)	25.4	0.0	0.0	0.0
Lane LOS	D			
Approach Delay (s)	25.4	0.0		
Approach LOS	D			

Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	55.8%	ICU Level of Service	B
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	13.4
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	35	73	46	0	87	131	49	0	93	190	51
Peak Hour Factor	0.92	0.94	0.94	0.94	0.92	0.94	0.94	0.94	0.92	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	37	78	49	0	93	139	52	0	99	202	54
Number of Lanes	0	0	1	1	0	0	1	1	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	2
HCM Control Delay	10.8	13.3	15.6
HCM LOS	B	B	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	28%	32%	0%	40%	0%	8%
Vol Thru, %	57%	68%	0%	60%	0%	62%
Vol Right, %	15%	0%	100%	0%	100%	30%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	334	108	46	218	49	191
LT Vol	93	35	0	87	0	15
Through Vol	190	73	0	131	0	119
RT Vol	51	0	46	0	49	57
Lane Flow Rate	355	115	49	232	52	203
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.555	0.218	0.081	0.428	0.083	0.326
Departure Headway (Hd)	5.622	6.836	5.955	6.641	5.723	5.781
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	640	522	597	540	622	618
Service Time	3.69	4.619	3.737	4.412	3.494	3.861
HCM Lane V/C Ratio	0.555	0.22	0.082	0.43	0.084	0.328
HCM Control Delay	15.6	11.5	9.3	14.3	9	11.7
HCM Lane LOS	C	B	A	B	A	B
HCM 95th-tile Q	3.4	0.8	0.3	2.1	0.3	1.4

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	15	119	57
Peak Hour Factor	0.92	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	16	127	61
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	11.7
HCM LOS	B

Lane

Intersection	
Intersection Delay, s/veh	14.6
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	34	72	51	0	89	230	60	0	80	214	73
Peak Hour Factor	0.92	0.99	0.99	0.99	0.92	0.99	0.99	0.99	0.92	0.99	0.99	0.99
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	34	73	52	0	90	232	61	0	81	216	74
Number of Lanes	0	0	1	1	0	0	1	1	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	2
HCM Control Delay	11.1	17.2	14.7
HCM LOS	B	C	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	32%	0%	28%	0%	100%	0%
Vol Thru, %	0%	75%	68%	0%	72%	0%	0%	82%
Vol Right, %	0%	25%	0%	100%	0%	100%	0%	18%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	80	287	106	51	319	60	23	146
LT Vol	80	0	34	0	89	0	23	0
Through Vol	0	214	72	0	230	0	0	120
RT Vol	0	73	0	51	0	60	0	26
Lane Flow Rate	81	290	107	52	322	61	23	147
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.158	0.511	0.21	0.089	0.593	0.097	0.048	0.277
Departure Headway (Hd)	7.039	6.35	7.067	6.188	6.621	5.768	7.397	6.759
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	507	565	504	574	541	617	481	528
Service Time	4.823	4.133	4.864	3.984	4.398	3.545	5.195	4.557
HCM Lane V/C Ratio	0.16	0.513	0.212	0.091	0.595	0.099	0.048	0.278
HCM Control Delay	11.2	15.7	11.8	9.6	18.7	9.2	10.6	12.2
HCM Lane LOS	B	C	B	A	C	A	B	B
HCM 95th-tile Q	0.6	2.9	0.8	0.3	3.8	0.3	0.2	1.1

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	23	120	26
Peak Hour Factor	0.92	0.99	0.99	0.99
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	23	121	26
Number of Lanes	0	1	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	12
HCM LOS	B

Lane

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	175	0	0	1769	347
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	0	201	0	0	2033	399
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2233	877	2432			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2233	877	2432			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	31	100			
cM capacity (veh/h)	36	291	191			

Direction, Lane #	EB 1	SB 1	SB 2	SB 3
Volume Total	201	813	813	806
Volume Left	0	0	0	0
Volume Right	201	0	0	399
cSH	291	1700	1700	1700
Volume to Capacity	0.69	0.48	0.48	0.47
Queue Length 95th (ft)	118	0	0	0
Control Delay (s)	40.9	0.0	0.0	0.0
Lane LOS	E			
Approach Delay (s)	40.9	0.0		
Approach LOS	E			

Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	59.4%	ICU Level of Service	B
Analysis Period (min)	15		

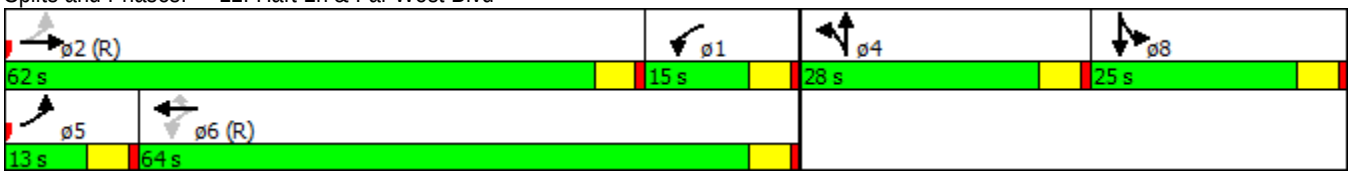
11: Hart Ln & Far West Blvd

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBT
Lane Configurations							
Volume (vph)	43	533	172	499	150	127	83
Lane Group Flow (vph)	44	587	177	514	155	328	306
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	NA
Protected Phases	5	2	1	6		4	8
Permitted Phases	2		6		6		
Detector Phase	5	2	1	6	6	4	8
Switch Phase							
Minimum Initial (s)	4.0	2.0	4.0	2.0	2.0	2.0	2.0
Minimum Split (s)	9.0	24.0	9.0	24.0	24.0	33.0	33.0
Total Split (s)	13.0	62.0	15.0	64.0	64.0	28.0	25.0
Total Split (%)	10.0%	47.7%	11.5%	49.2%	49.2%	21.5%	19.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lead	Lag	Lag	Lag		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		
Recall Mode	None	C-Max	None	C-Max	C-Max	None	None
v/c Ratio	0.11	0.33	0.34	0.26	0.18	0.75	0.74
Control Delay	18.9	20.2	9.4	7.3	7.5	65.2	65.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.9	20.2	9.4	7.3	7.5	65.2	65.4
Queue Length 50th (ft)	18	147	23	36	20	142	132
Queue Length 95th (ft)	44	219	51	67	46	187	176
Internal Link Dist (ft)		1703		1174		695	1553
Turn Bay Length (ft)	130		100		490		
Base Capacity (vph)	431	1795	520	1968	880	582	520
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.33	0.34	0.26	0.18	0.56	0.59

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 20 (15%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 11: Hart Ln & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	43	533	37	172	499	150	59	127	132	166	83	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0		5.0			5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		0.95			0.95	
Frt	1.00	0.99		1.00	1.00	0.85		0.94			0.98	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.99			0.97	
Satd. Flow (prot)	1770	3505		1770	3539	1583		3289			3360	
Flt Permitted	0.38	1.00		0.43	1.00	1.00		0.99			0.97	
Satd. Flow (perm)	713	3505		802	3539	1583		3289			3360	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	44	549	38	177	514	155	61	131	136	171	86	49
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	44	587	0	177	514	155	0	328	0	0	306	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Split	NA		Split	NA	
Protected Phases	5	2		1	6		4	4		8	8	
Permitted Phases	2			6		6						
Actuated Green, G (s)	65.6	65.6		71.3	71.3	71.3		17.3			16.1	
Effective Green, g (s)	65.6	65.6		71.3	71.3	71.3		17.3			16.1	
Actuated g/C Ratio	0.50	0.50		0.55	0.55	0.55		0.13			0.12	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0		5.0			5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0		2.0			2.0	
Lane Grp Cap (vph)	402	1768		521	1941	868		437			416	
v/s Ratio Prot	0.00	c0.17		c0.03	0.15			c0.10			c0.09	
v/s Ratio Perm	0.05			c0.16		0.10						
v/c Ratio	0.11	0.33		0.34	0.26	0.18		0.75			0.74	
Uniform Delay, d1	16.8	19.2		17.0	15.5	14.7		54.3			54.9	
Progression Factor	1.00	1.00		0.38	0.41	0.42		1.00			1.00	
Incremental Delay, d2	0.0	0.5		0.1	0.3	0.4		6.3			5.7	
Delay (s)	16.8	19.7		6.7	6.7	6.6		60.6			60.6	
Level of Service	B	B		A	A	A		E			E	
Approach Delay (s)		19.5			6.7			60.6			60.6	
Approach LOS		B			A			E			E	

Intersection Summary			
HCM 2000 Control Delay	26.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	60.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

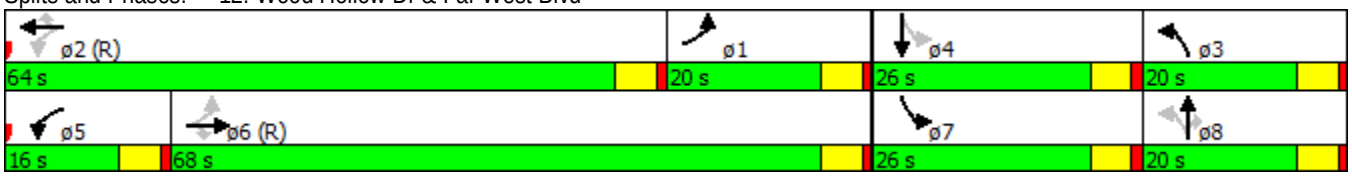
12: Wood Hollow Dr & Far West Blvd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Volume (vph)	98	736	60	216	650	124	97	178	306	151	97
Lane Group Flow (vph)	111	836	68	245	739	141	110	202	348	172	150
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA
Protected Phases	1	6		5	2		3	8		7	4
Permitted Phases	6		6	2		2	8		8	4	
Detector Phase	1	6	6	5	2	2	3	8	8	7	4
Switch Phase											
Minimum Initial (s)	4.0	2.0	2.0	4.0	2.0	2.0	4.0	2.0	2.0	4.0	2.0
Minimum Split (s)	9.0	11.0	11.0	9.0	11.0	11.0	9.0	11.0	11.0	9.0	11.0
Total Split (s)	20.0	68.0	68.0	16.0	64.0	64.0	20.0	20.0	20.0	26.0	26.0
Total Split (%)	15.4%	52.3%	52.3%	12.3%	49.2%	49.2%	15.4%	15.4%	15.4%	20.0%	20.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None
v/c Ratio	0.24	0.47	0.08	0.82	0.44	0.17	0.43	0.83	0.88	0.77	0.72
Control Delay	15.4	17.3	1.1	38.1	28.3	8.2	56.7	82.5	45.0	76.5	69.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.4	17.3	1.1	38.1	28.3	8.2	56.7	82.5	45.0	76.5	69.6
Queue Length 50th (ft)	39	300	1	126	206	11	84	165	112	142	114
Queue Length 95th (ft)	62	190	m6	m121	m185	m15	148	#313	#287	210	175
Internal Link Dist (ft)		1174			673			686			1879
Turn Bay Length (ft)	245		610	125		700	75		75		
Base Capacity (vph)	469	1766	840	298	1675	823	258	243	394	285	298
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.47	0.08	0.82	0.44	0.17	0.43	0.83	0.88	0.60	0.50

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 20 (15%), Referenced to phase 2:WBTL and 6:EBTL, Start of 1st Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 12: Wood Hollow Dr & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	98	736	60	216	650	124	97	178	306	151	97	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1788	
Flt Permitted	0.37	1.00	1.00	0.19	1.00	1.00	0.00	1.00	1.00	0.00	1.00	
Satd. Flow (perm)	691	3539	1583	362	3539	1583	0	1863	1583	0	1788	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	111	836	68	245	739	141	110	202	348	172	110	40
RTOR Reduction (vph)	0	0	34	0	0	74	0	0	188	0	11	0
Lane Group Flow (vph)	111	836	34	245	739	67	110	202	160	172	139	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2	8		8	4		
Actuated Green, G (s)	64.8	64.8	64.8	61.5	61.5	61.5	19.1	17.0	17.0	16.5	14.4	
Effective Green, g (s)	64.8	64.8	64.8	61.5	61.5	61.5	19.1	17.0	17.0	16.5	14.4	
Actuated g/C Ratio	0.50	0.50	0.50	0.47	0.47	0.47	0.15	0.13	0.13	0.13	0.11	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	468	1764	789	297	1674	748	260	243	207	224	198	
v/s Ratio Prot	0.03	c0.24		c0.07	0.21		0.06	c0.11		c0.10	0.08	
v/s Ratio Perm	0.09		0.02	c0.31		0.04			0.10			
v/c Ratio	0.24	0.47	0.04	0.82	0.44	0.09	0.42	0.83	0.77	0.77	0.70	
Uniform Delay, d1	19.5	21.4	16.7	23.8	22.8	18.8	50.4	55.1	54.6	54.9	55.7	
Progression Factor	0.67	0.75	0.74	1.24	1.19	2.48	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.1	0.9	0.1	5.7	0.3	0.1	0.4	20.0	15.1	13.2	8.9	
Delay (s)	13.2	16.9	12.5	35.2	27.5	46.8	50.8	75.1	69.7	68.1	64.6	
Level of Service	B	B	B	D	C	D	D	E	E	E	E	
Approach Delay (s)		16.2			31.6			68.2			66.5	
Approach LOS		B			C			E			E	

Intersection Summary			
HCM 2000 Control Delay	37.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	66.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

13: Mopac SBFR & Far West Blvd

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR	ø1	ø2	ø4	ø8	ø22
Lane Configurations											
Volume (vph)	1109	371	9	403	396	892					
Lane Group Flow (vph)	1246	417	10	453	851	1002					
Turn Type	NA	Free	Prot	NA	NA	Perm					
Protected Phases	1 22 2		7	1 22 7	4 8		1	2	4	8	22
Permitted Phases		Free				4 8					
Detector Phase	1 22 2		7	1 22 7	4 8	4 8					
Switch Phase											
Minimum Initial (s)			4.0				4.0	4.0	4.0	4.0	4.0
Minimum Split (s)			20.0				9.0	24.0	24.0	9.0	20.0
Total Split (s)			41.0				9.0	20.0	31.0	9.0	20.0
Total Split (%)			31.5%				7%	15%	24%	7%	15%
Yellow Time (s)			4.0				4.0	4.0	4.0	4.0	4.0
All-Red Time (s)			1.0				1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)			0.0								
Total Lost Time (s)			5.0								
Lead/Lag							Lead		Lead	Lag	Lag
Lead-Lag Optimize?							Yes		Yes	Yes	Yes
Recall Mode			None				None	C-Max	None	None	None
v/c Ratio	0.72	0.26	0.05	0.26	0.91	1.27					
Control Delay	28.1	0.4	28.7	3.5	61.2	151.6					
Queue Delay	49.5	0.0	0.0	0.0	0.0	0.0					
Total Delay	77.7	0.4	28.7	3.5	61.2	151.6					
Queue Length 50th (ft)	461	0	3	13	367	~739					
Queue Length 95th (ft)	568	m0	m9	16	#476	#977					
Internal Link Dist (ft)	432			324	532						
Turn Bay Length (ft)		490									
Base Capacity (vph)	1739	1583	490	1769	931	790					
Starvation Cap Reductn	0	0	0	0	0	0					
Spillback Cap Reductn	739	0	0	0	0	0					
Storage Cap Reductn	0	0	0	0	0	0					
Reduced v/c Ratio	1.25	0.26	0.02	0.26	0.91	1.27					

Intersection Summary

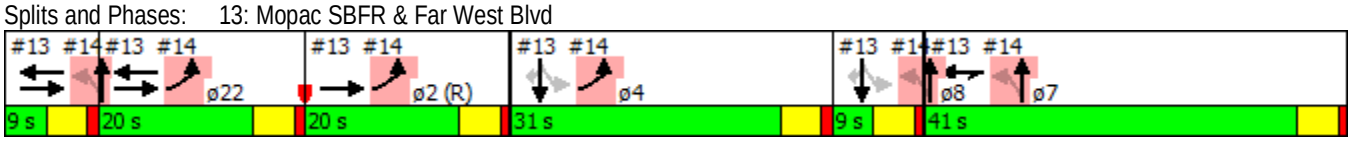
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBT, Start of 1st Green
Natural Cycle: 120
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Mopac SBFR & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1109	371	9	403	0	0	0	0	361	396	892
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	4.0	5.0	5.0						5.0	5.0
Lane Util. Factor		0.95	1.00	1.00	0.95						0.95	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.98	1.00
Satd. Flow (prot)		3539	1583	1770	3539						3457	1583
Flt Permitted		1.00	1.00	0.95	1.00						0.98	1.00
Satd. Flow (perm)		3539	1583	1770	3539						3457	1583
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	1246	417	10	453	0	0	0	0	406	445	1002
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	365
Lane Group Flow (vph)	0	1246	417	10	453	0	0	0	0	0	851	637
Turn Type		NA	Free	Prot	NA					Perm	NA	Perm
Protected Phases		1 22 2		7	1 22 7						4 8	
Permitted Phases			Free							4 8		4 8
Actuated Green, G (s)		63.9	130.0	16.1	65.0						35.0	35.0
Effective Green, g (s)		63.9	130.0	16.1	65.0						35.0	35.0
Actuated g/C Ratio		0.49	1.00	0.12	0.50						0.27	0.27
Clearance Time (s)				5.0								
Vehicle Extension (s)				2.0								
Lane Grp Cap (vph)		1739	1583	219	1769						930	426
v/s Ratio Prot		c0.35		0.01	0.13							
v/s Ratio Perm			c0.26								0.25	c0.40
v/c Ratio		0.72	0.26	0.05	0.26						0.92	1.50
Uniform Delay, d1		25.9	0.0	50.2	18.6						46.1	47.5
Progression Factor		0.95	1.00	0.60	0.17						1.00	1.00
Incremental Delay, d2		1.1	0.4	0.0	0.0						13.0	235.3
Delay (s)		25.8	0.4	30.1	3.1						59.1	282.8
Level of Service		C	A	C	A						E	F
Approach Delay (s)		19.4			3.7			0.0			180.1	
Approach LOS		B			A			A			F	

Intersection Summary			
HCM 2000 Control Delay	92.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	95.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

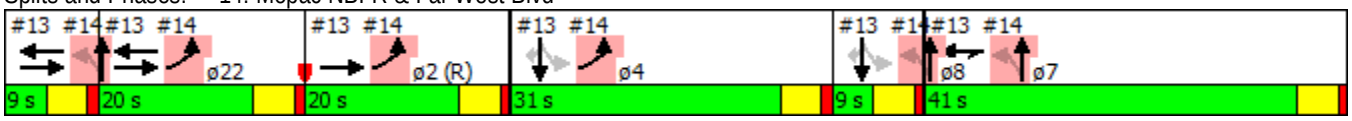
14: Mopac NBFR & Far West Blvd

Lane Group	EBL	NBL	NBT	ø1	ø2	ø4	ø7	ø8	ø22
Lane Configurations									
Volume (vph)	1480	353	24						
Lane Group Flow (vph)	1682	213	215						
Turn Type	Prot	Perm	NA						
Protected Phases	22 2 4		7 1 8	1	2	4	7	8	22
Permitted Phases		7 1 8							
Detector Phase	22 2 4	7 1 8	7 1 8						
Switch Phase									
Minimum Initial (s)				4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)				9.0	24.0	24.0	20.0	9.0	20.0
Total Split (s)				9.0	20.0	31.0	41.0	9.0	20.0
Total Split (%)				7%	15%	24%	32%	7%	15%
Yellow Time (s)				4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)				1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)									
Total Lost Time (s)									
Lead/Lag				Lead		Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes		Yes	Yes
Recall Mode				None	C-Max	None	None	None	None
v/c Ratio	0.97	0.31	0.31						
Control Delay	37.6	27.0	27.0						
Queue Delay	42.8	0.0	0.0						
Total Delay	80.4	27.0	27.0						
Queue Length 50th (ft)	686	125	126						
Queue Length 95th (ft)	#835	185	187						
Internal Link Dist (ft)	324		322						
Turn Bay Length (ft)									
Base Capacity (vph)	1742	698	704						
Starvation Cap Reductn	379	0	0						
Spillback Cap Reductn	0	0	0						
Storage Cap Reductn	0	0	0						
Reduced v/c Ratio	1.23	0.31	0.31						

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBT, Start of 1st Green
Natural Cycle: 120
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 14: Mopac NBFR & Far West Blvd



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	1480	0	353	24	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0		
Lane Util. Factor	0.97		0.95	0.95		
Frt	1.00		1.00	1.00		
Flt Protected	0.95		0.95	0.96		
Satd. Flow (prot)	3433		1681	1695		
Flt Permitted	0.95		0.95	0.96		
Satd. Flow (perm)	3433		1681	1695		
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	1682	0	401	27	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1682	0	213	215	0	0
Turn Type	Prot		Perm	NA		
Protected Phases	22 2 4			7 1 8		
Permitted Phases			7 1 8			
Actuated Green, G (s)	66.0		54.0	54.0		
Effective Green, g (s)	66.0		54.0	54.0		
Actuated g/C Ratio	0.51		0.42	0.42		
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)	1742		698	704		
v/s Ratio Prot	c0.49					
v/s Ratio Perm			0.13	0.13		
v/c Ratio	0.97		0.31	0.31		
Uniform Delay, d1	30.9		25.4	25.4		
Progression Factor	0.85		1.00	1.00		
Incremental Delay, d2	10.3		0.1	0.1		
Delay (s)	36.5		25.5	25.5		
Level of Service	D		C	C		
Approach Delay (s)	36.5			25.5	0.0	
Approach LOS	D			C	A	

Intersection Summary			
HCM 2000 Control Delay	34.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	108.8%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

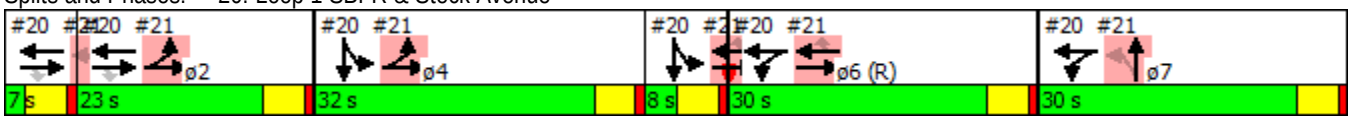
20: Loop 1 SBFR & Steck Avenue

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	ø1	ø2	ø4	ø5	ø6	ø7
Lane Configurations												
Volume (vph)	602	96	238	330	741	721						
Lane Group Flow (vph)	614	98	243	337	605	1214						
Turn Type	NA	Perm	Prot	NA	Split	NA						
Protected Phases	2 1		6 7	2 1 6 7	4 5	4 5	1	2	4	5	6	7
Permitted Phases		2 1										
Detector Phase	2 1	2 1	6 7	2 1 6 7	4 5	4 5						
Switch Phase												
Minimum Initial (s)							2.0	1.0	1.0	3.0	4.0	4.0
Minimum Split (s)							7.0	11.0	11.0	8.0	24.0	9.0
Total Split (s)							7.0	23.0	32.0	8.0	30.0	30.0
Total Split (%)							5%	18%	25%	6%	23%	23%
Yellow Time (s)							4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)							1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag							Lead	Lag	Lead	Lag		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode							None	Max	None	None	C-Max	None
v/c Ratio	0.90	0.23	0.32	0.15	1.40	1.35						
Control Delay	69.0	3.2	2.7	0.1	228.9	202.8						
Queue Delay	48.2	0.0	0.8	0.0	0.0	0.0						
Total Delay	117.2	3.2	3.5	0.1	228.9	202.8						
Queue Length 50th (ft)	268	0	5	0	~747	~728						
Queue Length 95th (ft)	#373	16	7	0	#998	#874						
Internal Link Dist (ft)	737			327		333						
Turn Bay Length (ft)		100	80									
Base Capacity (vph)	680	419	748	2313	433	897						
Starvation Cap Reductn	0	0	263	0	0	0						
Spillback Cap Reductn	172	0	0	0	0	1						
Storage Cap Reductn	0	0	0	0	0	0						
Reduced v/c Ratio	1.21	0.23	0.50	0.15	1.40	1.35						

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 97 (75%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 20: Loop 1 SBFR & Steck Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	602	96	238	330	0	0	0	0	741	721	320
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0					5.0	5.0	
Lane Util. Factor		0.95	1.00	1.00	0.95					0.91	0.91	
Frt		1.00	0.85	1.00	1.00					1.00	0.96	
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.99	
Satd. Flow (prot)		3539	1583	1770	3539					1610	3233	
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.99	
Satd. Flow (perm)		3539	1583	1770	3539					1610	3233	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	614	98	243	337	0	0	0	0	756	736	327
RTOR Reduction (vph)	0	0	79	0	0	0	0	0	0	0	26	0
Lane Group Flow (vph)	0	614	19	243	337	0	0	0	0	605	1188	0
Turn Type		NA	Perm	Prot	NA					Split	NA	
Protected Phases		2 1		6 7	2 1 6 7					4 5	4 5	
Permitted Phases			2 1									
Actuated Green, G (s)		25.0	25.0	55.0	85.0					35.0	35.0	
Effective Green, g (s)		25.0	25.0	55.0	85.0					35.0	35.0	
Actuated g/C Ratio		0.19	0.19	0.42	0.65					0.27	0.27	
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		680	304	748	2313					433	870	
v/s Ratio Prot		c0.17		c0.14	0.10					c0.38	0.37	
v/s Ratio Perm			0.01									
v/c Ratio		0.90	0.06	0.32	0.15					1.40	1.37	
Uniform Delay, d1		51.3	42.9	25.1	8.6					47.5	47.5	
Progression Factor		1.00	1.00	0.07	0.00					1.00	1.00	
Incremental Delay, d2		15.0	0.0	0.1	0.0					192.3	171.7	
Delay (s)		66.3	42.9	1.8	0.0					239.8	219.2	
Level of Service		E	D	A	A					F	F	
Approach Delay (s)		63.1			0.7			0.0			226.1	
Approach LOS		E			A			A			F	

Intersection Summary			
HCM 2000 Control Delay	146.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	131.7%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

21: Loop 1 NBFR & Steck Avenue

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	ø1	ø2	ø4	ø5	ø6	ø7
Lane Configurations												
Volume (vph)	651	581	453	467	120	783						
Lane Group Flow (vph)	685	612	477	492	126	944						
Turn Type	Prot	NA	NA	Perm	Perm	NA						
Protected Phases	2 4	2 4 5 6	6 5			7 1	1	2	4	5	6	7
Permitted Phases				6 5	7 1							
Detector Phase	2 4	2 4 5 6	6 5	6 5	7 1	7 1						
Switch Phase												
Minimum Initial (s)							2.0	1.0	1.0	3.0	4.0	4.0
Minimum Split (s)							7.0	11.0	11.0	8.0	24.0	9.0
Total Split (s)							7.0	23.0	32.0	8.0	30.0	30.0
Total Split (%)							5%	18%	25%	6%	23%	23%
Yellow Time (s)							4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)							1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag							Lead	Lag	Lead	Lag		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode							None	Max	None	None	C-Max	None
v/c Ratio	1.01	0.26	0.53	0.97	0.15	2.08						
Control Delay	39.2	0.1	44.4	67.1	39.0	521.4						
Queue Delay	33.9	0.9	0.0	0.0	0.0	0.0						
Total Delay	73.2	1.0	44.4	67.1	39.0	521.4						
Queue Length 50th (ft)	~437	0	183	311	43	~1266						
Queue Length 95th (ft)	m373	m0	240	#540	70	#1524						
Internal Link Dist (ft)		327	978			2452						
Turn Bay Length (ft)	80			170	110							
Base Capacity (vph)	680	2395	898	508	845	453						
Starvation Cap Reductn	173	1433	0	0	0	0						
Spillback Cap Reductn	0	0	0	0	0	0						
Storage Cap Reductn	0	0	0	0	0	0						
Reduced v/c Ratio	1.35	0.64	0.53	0.97	0.15	2.08						

Intersection Summary

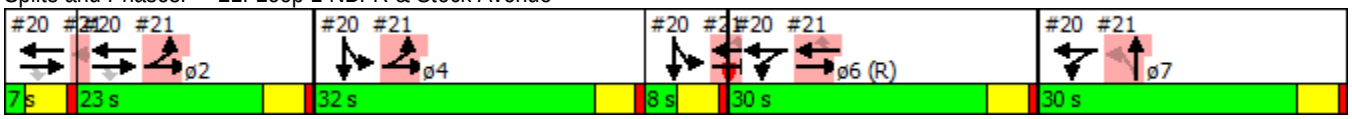
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 97 (75%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 21: Loop 1 NBFR & Steck Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	651	581	0	0	453	467	120	783	114	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0				
Lane Util. Factor	1.00	0.95			0.95	1.00	0.97	1.00				
Frt	1.00	1.00			1.00	0.85	1.00	0.98				
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (prot)	1770	3539			3539	1583	3433	1827				
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (perm)	1770	3539			3539	1583	3433	1827				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	685	612	0	0	477	492	126	824	120	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	107	0	4	0	0	0	0
Lane Group Flow (vph)	685	612	0	0	477	385	126	940	0	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA				
Protected Phases	2 4	2 4 5 6			6 5			7 1				
Permitted Phases						6 5	7 1					
Actuated Green, G (s)	50.0	88.0			33.0	33.0	32.0	32.0				
Effective Green, g (s)	50.0	88.0			33.0	33.0	32.0	32.0				
Actuated g/C Ratio	0.38	0.68			0.25	0.25	0.25	0.25				
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	680	2395			898	401	845	449				
v/s Ratio Prot	c0.39	0.17			0.13			c0.51				
v/s Ratio Perm						c0.24	0.04					
v/c Ratio	1.01	0.26			0.53	0.96	0.15	2.09				
Uniform Delay, d1	40.0	8.2			41.8	47.9	38.3	49.0				
Progression Factor	0.63	0.00			1.00	1.00	1.00	1.00				
Incremental Delay, d2	12.2	0.0			0.3	34.5	0.0	499.9				
Delay (s)	37.5	0.0			42.1	82.4	38.4	548.9				
Level of Service	D	A			D	F	D	F				
Approach Delay (s)		19.8			62.6			488.8			0.0	
Approach LOS		B			E			F			A	

Intersection Summary			
HCM 2000 Control Delay	182.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.49		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	131.7%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1152	260	176	860	102	147
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	1188	268	181	887	105	152
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						6
Median type	Raised			Raised		
Median storage veh)	1			1		
Upstream signal (ft)				1068		
pX, platoon unblocked					0.89	
vC, conflicting volume			1188		1994	594
vC1, stage 1 conf vol					1188	
vC2, stage 2 conf vol					806	
vCu, unblocked vol			1188		1873	594
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			69		29	66
cM capacity (veh/h)			584		149	448

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1
Volume Total	594	594	268	181	443	443	257
Volume Left	0	0	0	181	0	0	105
Volume Right	0	0	268	0	0	0	152
cSH	1700	1700	1700	584	1700	1700	363
Volume to Capacity	0.35	0.35	0.16	0.31	0.26	0.26	0.71
Queue Length 95th (ft)	0	0	0	33	0	0	130
Control Delay (s)	0.0	0.0	0.0	13.9	0.0	0.0	40.0
Lane LOS				B			E
Approach Delay (s)	0.0			2.4			40.0
Approach LOS							E

Intersection Summary			
Average Delay	4.6		
Intersection Capacity Utilization	57.2%	ICU Level of Service	B
Analysis Period (min)	15		

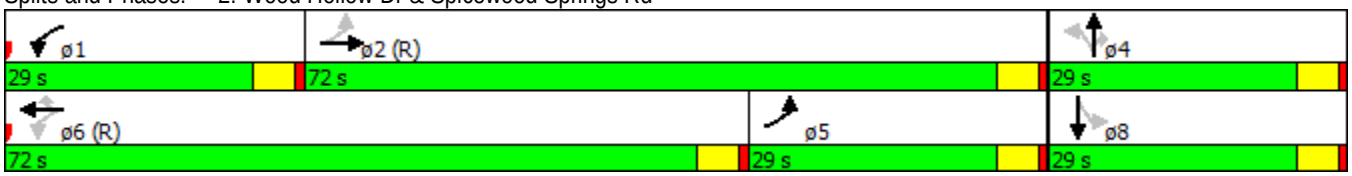
2: Wood Hollow Dr & Spicewood Springs Rd

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	7	1160	399	981	10	53	4	150	6	0
Lane Group Flow (vph)	7	1346	416	1022	10	0	59	156	0	8
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA
Protected Phases	5	2	1	6			4			8
Permitted Phases	2		6		6	4		4	8	
Detector Phase	5	2	1	6	6	4	4	4	8	8
Switch Phase										
Minimum Initial (s)	6.0	25.0	6.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	15.0	30.0	15.0	11.0	11.0	35.0	35.0	35.0	35.0	35.0
Total Split (s)	29.0	72.0	29.0	72.0	72.0	29.0	29.0	29.0	29.0	29.0
Total Split (%)	22.3%	55.4%	22.3%	55.4%	55.4%	22.3%	22.3%	22.3%	22.3%	22.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Max	None	C-Max	C-Max	Max	Max	Max	None	None
v/c Ratio	0.02	0.52	0.95	0.42	0.01		0.23	0.37		0.02
Control Delay	15.9	21.3	55.7	12.1	0.0		47.9	9.5		0.1
Queue Delay	0.0	0.0	0.0	0.4	0.0		0.0	0.0		0.0
Total Delay	15.9	21.3	55.7	12.5	0.0		47.9	9.5		0.1
Queue Length 50th (ft)	3	261	245	140	0		43	0		0
Queue Length 95th (ft)	11	305	m#412	m391	m0		85	60		0
Internal Link Dist (ft)		988		494			464			203
Turn Bay Length (ft)	130		110		100			100		
Base Capacity (vph)	499	2592	438	2455	1116		257	419		372
Starvation Cap Reductn	0	0	0	839	0		0	0		0
Spillback Cap Reductn	0	0	0	0	0		0	0		0
Storage Cap Reductn	0	0	0	0	0		0	0		0
Reduced v/c Ratio	0.01	0.52	0.95	0.63	0.01		0.23	0.37		0.02

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 55 (42%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Wood Hollow Dr & Spicewood Springs Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	1160	132	399	981	10	53	4	150	6	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0		5.0	5.0		5.0	
Lane Util. Factor	1.00	0.91		1.00	0.95	1.00		1.00	1.00		1.00	
Frt	1.00	0.98		1.00	1.00	0.85		1.00	0.85		0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.96	1.00		0.96	
Satd. Flow (prot)	1770	5007		1770	3539	1583		1780	1583		1735	
Flt Permitted	0.28	1.00		0.12	1.00	1.00		0.75	1.00		0.87	
Satd. Flow (perm)	522	5007		220	3539	1583		1397	1583		1573	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	7	1208	138	416	1022	10	55	4	156	6	0	2
RTOR Reduction (vph)	0	11	0	0	0	3	0	0	127	0	7	0
Lane Group Flow (vph)	7	1335	0	416	1022	7	0	59	29	0	1	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases	2			6		6	4		4	8		
Actuated Green, G (s)	67.0	67.0		86.2	86.2	86.2		24.0	24.0		24.0	
Effective Green, g (s)	67.0	67.0		86.2	86.2	86.2		24.0	24.0		24.0	
Actuated g/C Ratio	0.52	0.52		0.66	0.66	0.66		0.18	0.18		0.18	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0		5.0	5.0		5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0		2.0	2.0		2.0	
Lane Grp Cap (vph)	315	2580		432	2346	1049		257	292		290	
v/s Ratio Prot	0.00	c0.27		c0.18	0.29							
v/s Ratio Perm	0.01			c0.46		0.00		c0.04	0.02		0.00	
v/c Ratio	0.02	0.52		0.96	0.44	0.01		0.23	0.10		0.01	
Uniform Delay, d1	15.5	20.8		33.6	10.4	7.4		45.1	44.0		43.3	
Progression Factor	1.00	1.00		1.00	1.13	1.00		1.00	1.00		1.00	
Incremental Delay, d2	0.0	0.7		26.9	0.4	0.0		2.1	0.7		0.0	
Delay (s)	15.5	21.6		60.7	12.1	7.4		47.2	44.7		43.3	
Level of Service	B	C		E	B	A		D	D		D	
Approach Delay (s)		21.5			26.0			45.4			43.3	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	25.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	65.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

3: Mopac SBFR & Spicewood Springs Rd

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR	ø1	ø2	ø4	ø5	ø6
Lane Configurations												
Volume (vph)	689	627	642	747	346	1141	642					
Lane Group Flow (vph)	710	646	662	770	321	1212	662					
Turn Type	NA	Perm	Prot	NA	Split	NA	Perm					
Protected Phases	2 1		19 6 7 2 1 19 6		4 5	4 5		1	2	4	5	6
Permitted Phases		2 1					4 5					
Detector Phase	2 1	2 1	19 6 7 2 1 19 6		4 5	4 5	4 5					
Switch Phase												
Minimum Initial (s)								3.0	1.0	1.0	3.0	4.0
Minimum Split (s)								8.0	11.0	11.0	8.0	24.0
Total Split (s)								8.0	24.0	34.0	8.0	30.0
Total Split (%)								6%	18%	26%	6%	23%
Yellow Time (s)								4.0	4.0	4.0	4.0	4.0
All-Red Time (s)								1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag								Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?								Yes	Yes	Yes	Yes	Yes
Recall Mode								None	Max	None	None	C-Max
v/c Ratio	0.97	1.36	0.95	0.45	0.70	1.26	1.01					
Control Delay	96.6	217.1	36.4	2.9	20.4	141.5	30.1					
Queue Delay	0.0	0.0	42.7	0.1	0.0	0.0	0.0					
Total Delay	96.6	217.1	79.1	3.0	20.4	141.5	30.1					
Queue Length 50th (ft)	335	~631	566	40	205	~692	~486					
Queue Length 95th (ft)	#455	#870	m#597	m103	m152	m388	m205					
Internal Link Dist (ft)	494			333		2669						
Turn Bay Length (ft)			50		145							
Base Capacity (vph)	735	475	694	1715	458	963	655					
Starvation Cap Reductn	0	0	94	134	0	0	0					
Spillback Cap Reductn	0	0	0	0	0	0	0					
Storage Cap Reductn	0	0	0	0	0	0	0					
Reduced v/c Ratio	0.97	1.36	1.10	0.49	0.70	1.26	1.01					

Intersection Summary

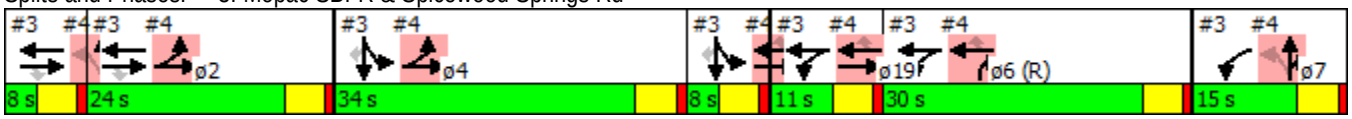
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 8 (6%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 140
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Mopac SBFR & Spicewood Springs Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	689	627	642	747	0	0	0	0	346	1141	642
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0					5.0	5.0	5.0
Lane Util. Factor		0.95	1.00	1.00	0.95					0.91	0.91	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		3539	1583	1770	3539					1610	3385	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (perm)		3539	1583	1770	3539					1610	3385	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	710	646	662	770	0	0	0	0	357	1176	662
RTOR Reduction (vph)	0	0	147	0	0	0	0	0	0	0	0	205
Lane Group Flow (vph)	0	710	499	662	770	0	0	0	0	321	1212	457
Turn Type		NA	Perm	Prot	NA					Split	NA	Perm
Protected Phases		2 1		19 6 7	2 1 19 6					4 5	4 5	
Permitted Phases			2 1									4 5
Actuated Green, G (s)		27.0	27.0	51.0	63.0					37.0	37.0	37.0
Effective Green, g (s)		27.0	27.0	51.0	63.0					37.0	37.0	37.0
Actuated g/C Ratio		0.21	0.21	0.39	0.48					0.28	0.28	0.28
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		735	328	694	1715					458	963	450
v/s Ratio Prot		0.20		c0.37	0.22					0.20	c0.36	
v/s Ratio Perm			c0.32									0.29
v/c Ratio		0.97	1.52	0.95	0.45					0.70	1.26	1.02
Uniform Delay, d1		51.0	51.5	38.4	22.1					41.6	46.5	46.5
Progression Factor		1.46	1.87	0.69	0.21					0.46	0.49	0.56
Incremental Delay, d2		22.8	248.5	7.9	0.0					0.4	117.2	17.1
Delay (s)		97.1	344.6	34.4	4.7					19.6	140.1	43.0
Level of Service		F	F	C	A					B	F	D
Approach Delay (s)		215.0			18.4			0.0			93.2	
Approach LOS		F			B			A			F	

Intersection Summary			
HCM 2000 Control Delay	104.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.43		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	35.0
Intersection Capacity Utilization	114.6%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

4: Mopac NBFR & Anderson Ln

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	ø1	ø2	ø4	ø5	ø6
Lane Configurations												
Volume (vph)	293	743	986	239	403	12	510					
Lane Group Flow (vph)	302	766	1016	246	332	316	305					
Turn Type	Prot	NA	NA	Perm	Perm	NA	custom					
Protected Phases	2 4	2 4 5 19	6 5 19			7 1	7 1 6	1	2	4	5	6
Permitted Phases				6 5 19	7 1							
Detector Phase	2 4	2 4 5 19	6 5 19	6 5 19	7 1	7 1	7 1 6					
Switch Phase												
Minimum Initial (s)								3.0	1.0	1.0	3.0	4.0
Minimum Split (s)								8.0	11.0	11.0	8.0	24.0
Total Split (s)								8.0	24.0	34.0	8.0	30.0
Total Split (%)								6%	18%	26%	6%	23%
Yellow Time (s)								4.0	4.0	4.0	4.0	4.0
All-Red Time (s)								1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag								Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?								Yes	Yes	Yes	Yes	Yes
Recall Mode								None	Max	None	None	C-Max
v/c Ratio	0.42	0.39	0.85	0.35	1.43	1.17	0.46					
Control Delay	8.3	0.3	47.9	5.1	244.5	129.8	2.6					
Queue Delay	2.1	1.1	11.0	0.0	0.0	0.1	0.0					
Total Delay	10.4	1.3	58.9	5.1	244.5	130.0	2.6					
Queue Length 50th (ft)	22	0	416	0	~403	~286	5					
Queue Length 95th (ft)	m42	m0	506	58	#608	#497	11					
Internal Link Dist (ft)		333	702			1795						
Turn Bay Length (ft)	50			360	280							
Base Capacity (vph)	721	1960	1197	698	232	271	667					
Starvation Cap Reductn	279	890	0	0	0	0	0					
Spillback Cap Reductn	0	0	172	0	0	3	0					
Storage Cap Reductn	0	0	0	0	0	0	0					
Reduced v/c Ratio	0.68	0.72	0.99	0.35	1.43	1.18	0.46					

Intersection Summary

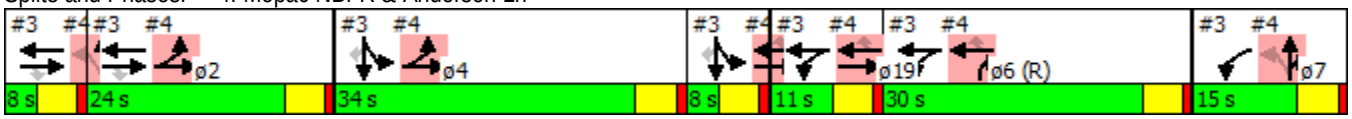
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 8 (6%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 140
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Mopac NBFR & Anderson Ln



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	293	743	0	0	986	239	403	12	510	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0	5.0			
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.91	0.95			
Frt	1.00	1.00			1.00	0.85	1.00	0.90	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.99	1.00			
Satd. Flow (prot)	1770	3539			3539	1583	1681	1498	1504			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.99	1.00			
Satd. Flow (perm)	1770	3539			3539	1583	1681	1498	1504			
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	302	766	0	0	1016	246	415	12	526	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	163	0	65	112	0	0	0
Lane Group Flow (vph)	302	766	0	0	1016	83	332	251	193	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	custom			
Protected Phases	2 4	2 4 5			6 5	19		7 1	7 1 6			
Permitted Phases						6 5 19	7 1					
Actuated Green, G (s)	53.0	72.0			44.0	44.0	18.0	18.0	48.0			
Effective Green, g (s)	53.0	72.0			44.0	44.0	18.0	18.0	48.0			
Actuated g/C Ratio	0.41	0.55			0.34	0.34	0.14	0.14	0.37			
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	721	1960			1197	535	232	207	555			
v/s Ratio Prot	c0.17	c0.22			c0.29				0.13			
v/s Ratio Perm						0.05	c0.20	0.17				
v/c Ratio	0.42	0.39			0.85	0.16	1.43	1.21	0.35			
Uniform Delay, d1	27.5	16.5			39.9	30.0	56.0	56.0	29.7			
Progression Factor	0.27	0.00			1.00	1.00	0.60	0.54	0.04			
Incremental Delay, d2	0.1	0.0			5.6	0.0	215.3	130.1	0.1			
Delay (s)	7.5	0.0			45.5	30.1	248.7	160.4	1.4			
Level of Service	A	A			D	C	F	F	A			
Approach Delay (s)		2.1			42.5			140.3			0.0	
Approach LOS		A			D			F			A	

Intersection Summary			
HCM 2000 Control Delay	57.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	35.0
Intersection Capacity Utilization	114.6%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	8	25	214	28	131	280
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	10	30	255	33	156	333
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	917	271			288	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	917	271			288	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	96	96			88	
cM capacity (veh/h)	265	767			1274	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	39	288	489
Volume Left	10	0	156
Volume Right	30	33	0
cSH	526	1700	1274
Volume to Capacity	0.07	0.17	0.12
Queue Length 95th (ft)	6	0	10
Control Delay (s)	12.4	0.0	3.5
Lane LOS	B		A
Approach Delay (s)	12.4	0.0	3.5
Approach LOS	B		

Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	48.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	8	80	4	15	20	33	26	181	148	179	185	127
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	9	91	5	17	23	38	30	206	168	203	210	144
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											544	
pX, platoon unblocked	0.90	0.90	0.90	0.90	0.90		0.90					
vC, conflicting volume	1087	1122	282	1088	1110	290	355			374		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1040	1079	144	1041	1066	290	224			374		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	93	43	99	81	86	95	98			83		
cM capacity (veh/h)	136	158	811	88	161	749	1207			1185		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	105	77	403	558
Volume Left	9	17	30	203
Volume Right	5	38	168	144
cSH	162	201	1207	1185
Volume to Capacity	0.65	0.39	0.02	0.17
Queue Length 95th (ft)	91	42	2	15
Control Delay (s)	60.9	33.8	0.8	4.4
Lane LOS	F	D	A	A
Approach Delay (s)	60.9	33.8	0.8	4.4
Approach LOS	F	D		

Intersection Summary			
Average Delay	10.3		
Intersection Capacity Utilization	64.9%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	37	0	0	2819	160
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	39	0	0	2967	168
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					1035	
pX, platoon unblocked	0.78	0.78	0.78			
vC, conflicting volume	3052	1073	3136			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2644	110	2752			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	95	100			
cM capacity (veh/h)	15	720	111			

Direction, Lane #	EB 1	SB 1	SB 2	SB 3
Volume Total	39	1187	1187	762
Volume Left	0	0	0	0
Volume Right	39	0	0	168
cSH	720	1700	1700	1700
Volume to Capacity	0.05	0.70	0.70	0.45
Queue Length 95th (ft)	4	0	0	0
Control Delay (s)	10.3	0.0	0.0	0.0
Lane LOS	B			
Approach Delay (s)	10.3	0.0		
Approach LOS	B			

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	68.0%	ICU Level of Service	C
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	17.2
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	37	155	132	0	79	60	7	0	49	133	40
Peak Hour Factor	0.92	0.81	0.81	0.81	0.92	0.81	0.81	0.81	0.92	0.81	0.81	0.81
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	46	191	163	0	98	74	9	0	60	164	49
Number of Lanes	0	0	1	1	0	0	1	1	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	2
HCM Control Delay	14.5	14.9	16.3
HCM LOS	B	B	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	22%	19%	0%	57%	0%	5%
Vol Thru, %	60%	81%	0%	43%	0%	86%
Vol Right, %	18%	0%	100%	0%	100%	9%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	222	192	132	139	7	307
LT Vol	49	37	0	79	0	16
Through Vol	133	155	0	60	0	264
RT Vol	40	0	132	0	7	27
Lane Flow Rate	274	237	163	172	9	379
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.504	0.476	0.29	0.373	0.016	0.673
Departure Headway (Hd)	6.622	7.234	6.416	7.819	6.804	6.393
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	543	498	559	458	524	565
Service Time	4.684	4.997	4.178	5.59	4.574	4.447
HCM Lane V/C Ratio	0.505	0.476	0.292	0.376	0.017	0.671
HCM Control Delay	16.3	16.4	11.8	15.2	9.7	21.7
HCM Lane LOS	C	C	B	C	A	C
HCM 95th-tile Q	2.8	2.5	1.2	1.7	0	5.1

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	16	264	27
Peak Hour Factor	0.92	0.81	0.81	0.81
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	20	326	33
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	21.7
HCM LOS	C

Lane

Intersection	
Intersection Delay, s/veh	13.9
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	38	128	165	0	55	122	80	0	23	182	45
Peak Hour Factor	0.92	0.90	0.90	0.90	0.92	0.90	0.90	0.90	0.92	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	42	142	183	0	61	136	89	0	26	202	50
Number of Lanes	0	0	1	1	0	0	1	1	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	2
HCM Control Delay	12.8	13.2	15.5
HCM LOS	B	B	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	23%	0%	31%	0%	100%	0%
Vol Thru, %	0%	80%	77%	0%	69%	0%	0%	79%
Vol Right, %	0%	20%	0%	100%	0%	100%	0%	21%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	23	227	166	165	177	80	30	200
LT Vol	23	0	38	0	55	0	30	0
Through Vol	0	182	128	0	122	0	0	157
RT Vol	0	45	0	165	0	80	0	43
Lane Flow Rate	26	252	184	183	197	89	33	222
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.054	0.485	0.361	0.316	0.393	0.156	0.071	0.43
Departure Headway (Hd)	7.578	6.924	7.043	6.211	7.203	6.328	7.629	6.964
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	473	520	511	579	500	566	470	518
Service Time	5.319	4.665	4.783	3.951	4.947	4.071	5.372	4.706
HCM Lane V/C Ratio	0.055	0.485	0.36	0.316	0.394	0.157	0.07	0.429
HCM Control Delay	10.8	16	13.7	11.8	14.6	10.2	11	14.9
HCM Lane LOS	B	C	B	B	B	B	B	B
HCM 95th-tile Q	0.2	2.6	1.6	1.3	1.9	0.5	0.2	2.1

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	30	157	43
Peak Hour Factor	0.92	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	33	174	48
Number of Lanes	0	1	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	14.4
HCM LOS	B

Lane

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	212	0	0	2643	212
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	0	221	0	0	2753	221
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2864	1028	2974			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2864	1028	2974			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	5	100			
cM capacity (veh/h)	13	231	116			

Direction, Lane #	EB 1	SB 1	SB 2	SB 3
Volume Total	221	1101	1101	771
Volume Left	0	0	0	0
Volume Right	221	0	0	221
cSH	231	1700	1700	1700
Volume to Capacity	0.95	0.65	0.65	0.45
Queue Length 95th (ft)	212	0	0	0
Control Delay (s)	92.8	0.0	0.0	0.0
Lane LOS	F			
Approach Delay (s)	92.8	0.0		
Approach LOS	F			

Intersection Summary			
Average Delay	6.4		
Intersection Capacity Utilization	75.6%	ICU Level of Service	D
Analysis Period (min)	15		

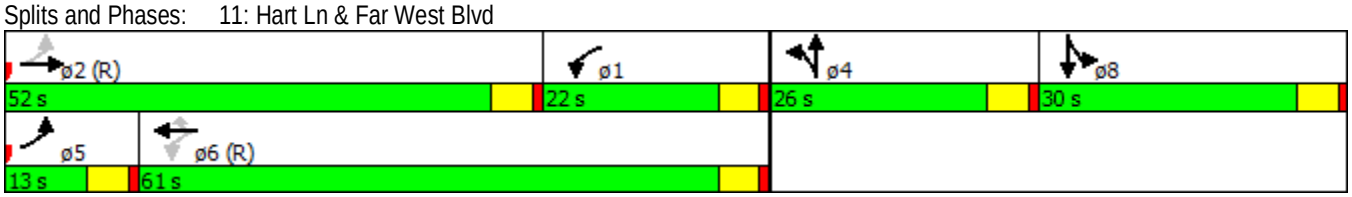
11: Hart Ln & Far West Blvd

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBT
Lane Configurations							
Volume (vph)	61	673	199	267	71	117	249
Lane Group Flow (vph)	73	915	240	322	86	396	585
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	NA
Protected Phases	5	2	1	6		4	8
Permitted Phases	2		6		6		
Detector Phase	5	2	1	6	6	4	8
Switch Phase							
Minimum Initial (s)	4.0	2.0	4.0	2.0	2.0	2.0	2.0
Minimum Split (s)	9.0	24.0	9.0	24.0	24.0	33.0	33.0
Total Split (s)	13.0	52.0	22.0	61.0	61.0	26.0	30.0
Total Split (%)	10.0%	40.0%	16.9%	46.9%	46.9%	20.0%	23.1%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lead	Lag	Lag	Lag		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		
Recall Mode	None	C-Max	None	C-Max	C-Max	None	None
v/c Ratio	0.19	0.69	0.66	0.19	0.11	0.83	0.91
Control Delay	28.6	37.7	62.3	36.4	38.5	69.6	70.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.6	37.7	62.3	36.4	38.5	69.6	70.6
Queue Length 50th (ft)	41	349	158	105	54	171	252
Queue Length 95th (ft)	70	382	215	137	90	207	295
Internal Link Dist (ft)		1703		1174		695	1553
Turn Bay Length (ft)	130		100		490		
Base Capacity (vph)	384	1327	366	1673	748	525	665
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.69	0.66	0.19	0.11	0.75	0.88

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 100 (77%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green
Natural Cycle: 110
Control Type: Actuated-Coordinated

Splits and Phases: 11: Hart Ln & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	61	673	86	199	267	71	49	117	163	206	249	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0		5.0			5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		0.95			0.95	
Frt	1.00	0.98		1.00	1.00	0.85		0.93			0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.99			0.98	
Satd. Flow (prot)	1770	3479		1770	3539	1583		3252			3433	
Flt Permitted	0.46	1.00		0.21	1.00	1.00		0.99			0.98	
Satd. Flow (perm)	861	3479		395	3539	1583		3252			3433	
Peak-hour factor, PHF	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Adj. Flow (vph)	73	811	104	240	322	86	59	141	196	248	300	37
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	73	915	0	240	322	86	0	396	0	0	585	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Split	NA		Split	NA	
Protected Phases	5	2		1	6		4	4		8	8	
Permitted Phases	2			6		6						
Actuated Green, G (s)	48.6	48.6		60.5	60.5	60.5		19.0			24.4	
Effective Green, g (s)	48.6	48.6		60.5	60.5	60.5		19.0			24.4	
Actuated g/C Ratio	0.37	0.37		0.47	0.47	0.47		0.15			0.19	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0		5.0			5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0		2.0			2.0	
Lane Grp Cap (vph)	364	1300		374	1646	736		475			644	
v/s Ratio Prot	0.01	c0.26		c0.09	0.09			c0.12			c0.17	
v/s Ratio Perm	0.07			0.21		0.05						
v/c Ratio	0.20	0.70		0.64	0.20	0.12		0.83			0.91	
Uniform Delay, d1	26.8	34.6		37.0	20.4	19.6		54.0			51.7	
Progression Factor	1.00	1.00		1.37	1.69	1.76		1.00			1.00	
Incremental Delay, d2	0.1	3.2		2.7	0.3	0.3		11.4			16.3	
Delay (s)	26.9	37.8		53.2	34.8	35.0		65.4			68.0	
Level of Service	C	D		D	C	C		E			E	
Approach Delay (s)		37.0			41.6			65.4			68.0	
Approach LOS		D			D			E			E	

Intersection Summary			
HCM 2000 Control Delay	49.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	72.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

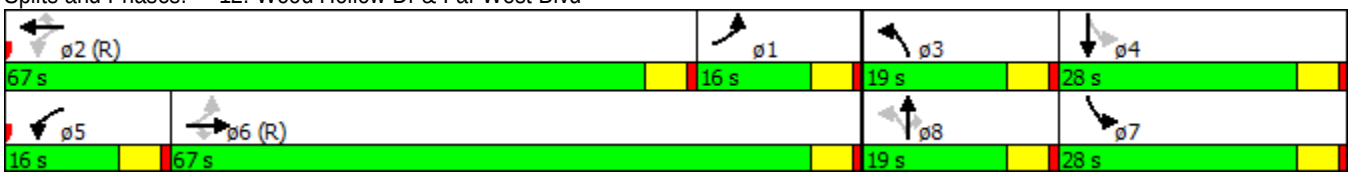
12: Wood Hollow Dr & Far West Blvd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Volume (vph)	90	1015	46	112	550	133	24	81	282	259	115
Lane Group Flow (vph)	96	1080	49	119	585	141	26	86	300	276	182
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA
Protected Phases	1	6		5	2		3	8		7	4
Permitted Phases	6		6	2		2	8		8	4	
Detector Phase	1	6	6	5	2	2	3	8	8	7	4
Switch Phase											
Minimum Initial (s)	4.0	2.0	2.0	4.0	2.0	2.0	4.0	2.0	2.0	4.0	2.0
Minimum Split (s)	9.0	11.0	11.0	9.0	11.0	11.0	9.0	11.0	11.0	9.0	11.0
Total Split (s)	16.0	67.0	67.0	16.0	67.0	67.0	19.0	19.0	19.0	28.0	28.0
Total Split (%)	12.3%	51.5%	51.5%	12.3%	51.5%	51.5%	14.6%	14.6%	14.6%	21.5%	21.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None
v/c Ratio	0.19	0.59	0.06	0.55	0.33	0.16	0.20	0.50	0.92	0.70	0.41
Control Delay	24.8	32.2	2.8	32.5	28.5	10.6	56.7	65.8	52.4	56.6	41.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.8	32.2	2.8	32.5	28.5	10.6	56.7	65.8	52.4	56.6	41.3
Queue Length 50th (ft)	65	433	3	61	163	26	20	69	84	212	118
Queue Length 95th (ft)	m85	498	m6	m78	m183	m39	50	124	#244	#334	197
Internal Link Dist (ft)		1174			673			686			1879
Turn Bay Length (ft)	245		610	125		700	75		75		
Base Capacity (vph)	495	1821	863	240	1766	860	190	200	348	409	443
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.59	0.06	0.50	0.33	0.16	0.14	0.43	0.86	0.67	0.41

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 10 (8%), Referenced to phase 2:WBTL and 6:EBTL, Start of 1st Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 12: Wood Hollow Dr & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	90	1015	46	112	550	133	24	81	282	259	115	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1771	
Flt Permitted	0.43	1.00	1.00	0.12	1.00	1.00	0.53	1.00	1.00	0.70	1.00	
Satd. Flow (perm)	804	3539	1583	218	3539	1583	993	1863	1583	1306	1771	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	96	1080	49	119	585	141	26	86	300	276	122	60
RTOR Reduction (vph)	0	0	25	0	0	73	0	0	182	0	13	0
Lane Group Flow (vph)	96	1080	24	119	585	68	26	86	118	276	169	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2	8		8	4		
Actuated Green, G (s)	64.9	64.9	64.9	62.9	62.9	62.9	12.0	12.0	12.0	31.6	31.6	
Effective Green, g (s)	64.9	64.9	64.9	62.9	62.9	62.9	12.0	12.0	12.0	31.6	31.6	
Actuated g/C Ratio	0.50	0.50	0.50	0.48	0.48	0.48	0.09	0.09	0.09	0.24	0.24	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	483	1766	790	212	1712	765	118	171	146	403	430	
v/s Ratio Prot	0.02	c0.31		c0.04	0.17		0.01	0.05		c0.13	0.10	
v/s Ratio Perm	0.08		0.02	0.23		0.04	0.01		c0.07	0.04		
v/c Ratio	0.20	0.61	0.03	0.56	0.34	0.09	0.22	0.50	0.81	0.68	0.39	
Uniform Delay, d1	18.5	23.5	16.6	23.1	20.7	18.1	54.4	56.2	57.9	43.6	41.2	
Progression Factor	1.23	1.34	1.00	1.41	1.39	3.47	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.0	1.0	0.0	1.2	0.3	0.1	0.3	0.8	26.6	3.8	0.2	
Delay (s)	22.8	32.6	16.6	34.0	29.2	63.0	54.7	57.0	84.5	47.4	41.4	
Level of Service	C	C	B	C	C	E	D	E	F	D	D	
Approach Delay (s)		31.2			35.5			76.9			45.0	
Approach LOS		C			D			E			D	

Intersection Summary			
HCM 2000 Control Delay	41.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	72.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

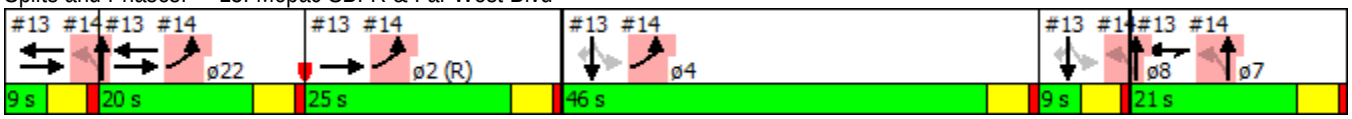
13: Mopac SBFR & Far West Blvd

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR	ø1	ø2	ø4	ø8	ø22
Lane Configurations											
Volume (vph)	775	438	18	549	508	857					
Lane Group Flow (vph)	799	452	19	566	668	884					
Turn Type	NA	Free	Prot	NA	NA	Perm					
Protected Phases	1 22 2		7	1 22 7	4 8		1	2	4	8	22
Permitted Phases		Free				4 8					
Detector Phase	1 22 2		7	1 22 7	4 8	4 8					
Switch Phase											
Minimum Initial (s)			4.0				4.0	4.0	4.0	4.0	4.0
Minimum Split (s)			20.0				9.0	24.0	24.0	9.0	20.0
Total Split (s)			21.0				9.0	25.0	46.0	9.0	20.0
Total Split (%)			16.2%				7%	19%	35%	7%	15%
Yellow Time (s)			4.0				4.0	4.0	4.0	4.0	4.0
All-Red Time (s)			1.0				1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)			0.0								
Total Lost Time (s)			5.0								
Lead/Lag							Lead		Lead	Lag	Lag
Lead-Lag Optimize?							Yes		Yes	Yes	Yes
Recall Mode			None				None	C-Max	None	None	None
v/c Ratio	0.60	0.29	0.09	0.46	0.50	0.98					
Control Delay	32.7	0.3	41.2	1.4	25.4	29.0					
Queue Delay	0.2	0.0	0.0	0.8	0.0	0.0					
Total Delay	32.8	0.3	41.2	2.1	25.4	29.0					
Queue Length 50th (ft)	316	0	4	0	178	369					
Queue Length 95th (ft)	m392	m0	m12	0	m165	m149					
Internal Link Dist (ft)	432			324	532						
Turn Bay Length (ft)		490									
Base Capacity (vph)	1333	1583	217	1225	1346	902					
Starvation Cap Reductn	0	0	0	355	0	0					
Spillback Cap Reductn	82	0	0	0	0	0					
Storage Cap Reductn	0	0	0	0	0	0					
Reduced v/c Ratio	0.64	0.29	0.09	0.65	0.50	0.98					

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 106 (82%), Referenced to phase 2:EBT, Start of 1st Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Mopac SBFR & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	775	438	18	549	0	0	0	0	140	508	857
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	4.0	5.0	5.0						5.0	5.0
Lane Util. Factor		0.95	1.00	1.00	0.95						0.95	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (prot)		3539	1583	1770	3539						3501	1583
Flt Permitted		1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (perm)		3539	1583	1770	3539						3501	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	799	452	19	566	0	0	0	0	144	524	884
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	294
Lane Group Flow (vph)	0	799	452	19	566	0	0	0	0	0	668	590
Turn Type		NA	Free	Prot	NA					Perm	NA	Perm
Protected Phases		1 22 2		7	1 22 7						4 8	
Permitted Phases			Free							4 8		4 8
Actuated Green, G (s)		49.0	130.0	16.0	45.0						50.0	50.0
Effective Green, g (s)		49.0	130.0	16.0	45.0						50.0	50.0
Actuated g/C Ratio		0.38	1.00	0.12	0.35						0.38	0.38
Clearance Time (s)				5.0								
Vehicle Extension (s)				2.0								
Lane Grp Cap (vph)		1333	1583	217	1225						1346	608
v/s Ratio Prot		c0.23		0.01	c0.16							
v/s Ratio Perm			0.29								0.19	c0.37
v/c Ratio		0.60	0.29	0.09	0.46						0.50	0.97
Uniform Delay, d1		32.6	0.0	50.5	33.1						30.4	39.3
Progression Factor		0.95	1.00	0.80	0.01						0.81	0.62
Incremental Delay, d2		0.4	0.3	0.0	0.1						0.0	18.2
Delay (s)		31.2	0.3	40.3	0.5						24.6	42.4
Level of Service		C	A	D	A						C	D
Approach Delay (s)		20.1			1.8			0.0			34.8	
Approach LOS		C			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	23.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	89.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

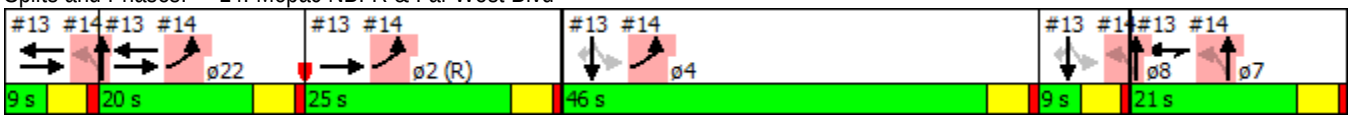
14: Mopac NBFR & Far West Blvd

Lane Group	EBL	NBL	NBT	ø1	ø2	ø4	ø7	ø8	ø22
Lane Configurations									
Volume (vph)	931	566	2						
Lane Group Flow (vph)	970	295	297						
Turn Type	Prot	Perm	NA						
Protected Phases	22 2 4		7 1 8	1	2	4	7	8	22
Permitted Phases		7 1 8							
Detector Phase	22 2 4	7 1 8	7 1 8						
Switch Phase									
Minimum Initial (s)				4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)				9.0	24.0	24.0	20.0	9.0	20.0
Total Split (s)				9.0	25.0	46.0	21.0	9.0	20.0
Total Split (%)				7%	19%	35%	16%	7%	15%
Yellow Time (s)				4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)				1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)									
Total Lost Time (s)									
Lead/Lag				Lead		Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes		Yes	Yes
Recall Mode				None	C-Max	None	None	None	None
v/c Ratio	0.43	0.67	0.68						
Control Delay	3.5	51.7	51.9						
Queue Delay	0.5	0.0	0.0						
Total Delay	4.0	51.7	51.9						
Queue Length 50th (ft)	12	235	236						
Queue Length 95th (ft)	14	345	346						
Internal Link Dist (ft)	324		322						
Turn Bay Length (ft)									
Base Capacity (vph)	2271	439	440						
Starvation Cap Reductn	808	0	0						
Spillback Cap Reductn	0	0	0						
Storage Cap Reductn	0	0	0						
Reduced v/c Ratio	0.66	0.67	0.68						

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 106 (82%), Referenced to phase 2:EBT, Start of 1st Green
Natural Cycle: 110
Control Type: Actuated-Coordinated

Splits and Phases: 14: Mopac NBFR & Far West Blvd



14: Mopac NBFR & Far West Blvd

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	931	0	566	2	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0		
Lane Util. Factor	0.97		0.95	0.95		
Frt	1.00		1.00	1.00		
Flt Protected	0.95		0.95	0.95		
Satd. Flow (prot)	3433		1681	1686		
Flt Permitted	0.95		0.95	0.95		
Satd. Flow (perm)	3433		1681	1686		
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	970	0	590	2	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	970	0	295	297	0	0
Turn Type	Prot		Perm	NA		
Protected Phases	22 2 4			7 1 8		
Permitted Phases			7 1 8			
Actuated Green, G (s)	86.0		34.0	34.0		
Effective Green, g (s)	86.0		34.0	34.0		
Actuated g/C Ratio	0.66		0.26	0.26		
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)	2271		439	440		
v/s Ratio Prot	c0.28					
v/s Ratio Perm			0.18	0.18		
v/c Ratio	0.43		0.67	0.68		
Uniform Delay, d1	10.4		43.0	43.0		
Progression Factor	0.28		1.00	1.00		
Incremental Delay, d2	0.0		3.2	3.2		
Delay (s)	3.0		46.2	46.3		
Level of Service	A		D	D		
Approach Delay (s)	3.0			46.2	0.0	
Approach LOS	A			D	A	

Intersection Summary			
HCM 2000 Control Delay	19.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	102.7%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

20: Loop 1 SBFR & Steck Avenue

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	ø1	ø2	ø4	ø5	ø6	ø7
Lane Configurations												
Volume (vph)	514	131	144	336	915	1807						
Lane Group Flow (vph)	547	139	153	357	876	2320						
Turn Type	NA	Perm	Prot	NA	Split	NA						
Protected Phases	2 1		6 7	2 1 6 7	4 5	4 5	1	2	4	5	6	7
Permitted Phases		2 1										
Detector Phase	2 1	2 1	6 7	2 1 6 7	4 5	4 5						
Switch Phase												
Minimum Initial (s)							2.0	1.0	1.0	3.0	4.0	4.0
Minimum Split (s)							7.0	11.0	11.0	8.0	15.0	9.0
Total Split (s)							7.0	20.0	63.0	8.0	15.0	17.0
Total Split (%)							5%	15%	48%	6%	12%	13%
Yellow Time (s)							4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)							1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag							Lead	Lag	Lead	Lag		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode							None	Max	None	None	C-Max	None
v/c Ratio	0.91	0.36	0.42	0.24	1.07	1.37						
Control Delay	74.1	9.7	20.7	0.3	84.4	199.2						
Queue Delay	4.3	0.0	0.0	0.0	0.0	0.0						
Total Delay	78.4	9.7	20.7	0.3	84.4	199.2						
Queue Length 50th (ft)	241	0	23	0	~898	~1422						
Queue Length 95th (ft)	#345	55	m44	0	#1173	#1562						
Internal Link Dist (ft)	737			327		333						
Turn Bay Length (ft)		100	80									
Base Capacity (vph)	598	386	367	1470	817	1693						
Starvation Cap Reductn	0	0	0	0	0	0						
Spillback Cap Reductn	25	0	0	0	0	0						
Storage Cap Reductn	0	0	0	0	0	0						
Reduced v/c Ratio	0.95	0.36	0.42	0.24	1.07	1.37						

Intersection Summary

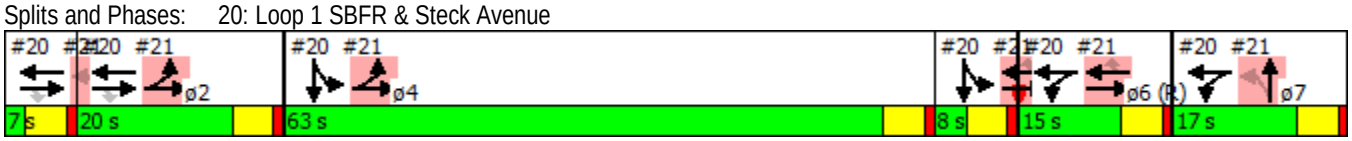
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 90 (69%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 20: Loop 1 SBFR & Steck Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	514	131	144	336	0	0	0	0	915	1807	283
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0					5.0	5.0	
Lane Util. Factor		0.95	1.00	1.00	0.95					0.91	0.91	
Frt		1.00	0.85	1.00	1.00					1.00	0.98	
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	3539					1610	3317	
Flt Permitted		1.00	1.00	0.95	1.00					0.95	1.00	
Satd. Flow (perm)		3539	1583	1770	3539					1610	3317	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	547	139	153	357	0	0	0	0	973	1922	301
RTOR Reduction (vph)	0	0	115	0	0	0	0	0	0	0	8	0
Lane Group Flow (vph)	0	547	24	153	357	0	0	0	0	876	2312	0
Turn Type		NA	Perm	Prot	NA					Split	NA	
Protected Phases		2 1		6 7	2 1 6 7					4 5	4 5	
Permitted Phases			2 1									
Actuated Green, G (s)		22.0	22.0	27.0	54.0					66.0	66.0	
Effective Green, g (s)		22.0	22.0	27.0	54.0					66.0	66.0	
Actuated g/C Ratio		0.17	0.17	0.21	0.42					0.51	0.51	
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		598	267	367	1470					817	1684	
v/s Ratio Prot		c0.15		c0.09	0.10					0.54	c0.70	
v/s Ratio Perm			0.01									
v/c Ratio		0.91	0.09	0.42	0.24					1.07	1.37	
Uniform Delay, d1		53.1	45.5	44.7	24.7					32.0	32.0	
Progression Factor		1.00	1.00	0.40	0.00					1.00	1.00	
Incremental Delay, d2		18.3	0.1	0.2	0.0					52.7	171.6	
Delay (s)		71.4	45.6	18.0	0.0					84.7	203.6	
Level of Service		E	D	B	A					F	F	
Approach Delay (s)		66.2			5.4			0.0			171.0	
Approach LOS		E			A			A			F	

Intersection Summary			
HCM 2000 Control Delay	135.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.22		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	128.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

21: Loop 1 NBFR & Steck Avenue

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	ø1	ø2	ø4	ø5	ø6	ø7
Lane Configurations												
Volume (vph)	665	718	363	246	200	520						
Lane Group Flow (vph)	679	733	370	251	204	713						
Turn Type	Prot	NA	NA	Perm	Perm	NA						
Protected Phases	2 4	2 4 5 6	6 5			7 1	1	2	4	5	6	7
Permitted Phases				6 5	7 1							
Detector Phase	2 4	2 4 5 6	6 5	6 5	7 1	7 1						
Switch Phase												
Minimum Initial (s)							2.0	1.0	1.0	3.0	4.0	4.0
Minimum Split (s)							7.0	11.0	11.0	8.0	15.0	9.0
Total Split (s)							7.0	20.0	63.0	8.0	15.0	17.0
Total Split (%)							5%	15%	48%	6%	12%	13%
Yellow Time (s)							4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)							1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag							Lead	Lag	Lead	Lag		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode							None	Max	None	None	C-Max	None
v/c Ratio	0.64	0.27	0.76	0.63	0.41	2.63						
Control Delay	9.3	0.0	64.6	18.6	45.8	765.1						
Queue Delay	24.2	0.7	0.0	0.0	0.0	0.0						
Total Delay	33.5	0.8	64.6	18.6	45.8	765.1						
Queue Length 50th (ft)	181	0	160	30	72	~1015						
Queue Length 95th (ft)	m123	m0	216	119	m108	m#1250						
Internal Link Dist (ft)		327	978			2452						
Turn Bay Length (ft)	80			170	110							
Base Capacity (vph)	1062	2749	490	400	501	271						
Starvation Cap Reductn	398	1599	0	0	0	0						
Spillback Cap Reductn	0	0	0	0	0	0						
Storage Cap Reductn	0	0	0	0	0	0						
Reduced v/c Ratio	1.02	0.64	0.76	0.63	0.41	2.63						

Intersection Summary

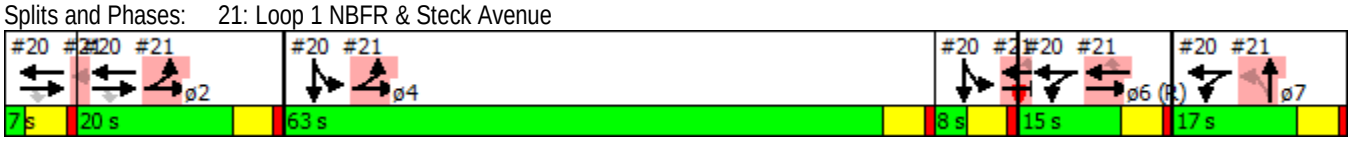
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 90 (69%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 21: Loop 1 NBFR & Steck Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	665	718	0	0	363	246	200	520	178	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0				
Lane Util. Factor	1.00	0.95			0.95	1.00	0.97	1.00				
Frt	1.00	1.00			1.00	0.85	1.00	0.96				
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (prot)	1770	3539			3539	1583	3433	1791				
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (perm)	1770	3539			3539	1583	3433	1791				
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	679	733	0	0	370	251	204	531	182	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	182	0	9	0	0	0	0
Lane Group Flow (vph)	679	733	0	0	370	69	204	704	0	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA				
Protected Phases	2 4	2 4 5 6			6 5			7 1				
Permitted Phases						6 5	7 1					
Actuated Green, G (s)	78.0	101.0			18.0	18.0	19.0	19.0				
Effective Green, g (s)	78.0	101.0			18.0	18.0	19.0	19.0				
Actuated g/C Ratio	0.60	0.78			0.14	0.14	0.15	0.15				
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	1062	2749			490	219	501	261				
v/s Ratio Prot	c0.38	0.21			c0.10			c0.39				
v/s Ratio Perm						0.04	0.06					
v/c Ratio	0.64	0.27			0.76	0.32	0.41	2.70				
Uniform Delay, d1	16.9	4.1			53.9	50.5	50.4	55.5				
Progression Factor	0.52	0.00			1.00	1.00	0.86	0.86				
Incremental Delay, d2	0.1	0.0			5.8	0.3	0.2	773.7				
Delay (s)	8.8	0.0			59.7	50.8	43.3	821.5				
Level of Service	A	A			E	D	D	F				
Approach Delay (s)		4.2			56.1			648.3			0.0	
Approach LOS		A			E			F			A	

Intersection Summary			
HCM 2000 Control Delay	215.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	128.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	76	331	83	19	49	21
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	81	352	88	20	52	22
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			433		454	257
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			433		454	257
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			92		90	97
cM capacity (veh/h)			1127		520	782

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	433	109	74
Volume Left	0	88	52
Volume Right	352	0	22
cSH	1700	1127	578
Volume to Capacity	0.25	0.08	0.13
Queue Length 95th (ft)	0	6	11
Control Delay (s)	0.0	7.0	12.1
Lane LOS		A	B
Approach Delay (s)	0.0	7.0	12.1
Approach LOS			B

Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	44.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	816	121	124	1110	230	233
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	907	134	138	1233	256	259
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						6
Median type	Raised			Raised		
Median storage veh)	1			1		
Upstream signal (ft)				1068		
pX, platoon unblocked					0.85	
vC, conflicting volume			907		1799	453
vC1, stage 1 conf vol					907	
vC2, stage 2 conf vol					892	
vCu, unblocked vol			907		1594	453
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			82		0	53
cM capacity (veh/h)			746		199	554

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1
Volume Total	453	453	134	138	617	617	514
Volume Left	0	0	0	138	0	0	256
Volume Right	0	0	134	0	0	0	259
cSH	1700	1700	1700	746	1700	1700	334
Volume to Capacity	0.27	0.27	0.08	0.18	0.36	0.36	1.54
Queue Length 95th (ft)	0	0	0	17	0	0	728
Control Delay (s)	0.0	0.0	0.0	10.9	0.0	0.0	285.9
Lane LOS				B			F
Approach Delay (s)	0.0			1.1			285.9
Approach LOS							F

Intersection Summary			
Average Delay	50.8		
Intersection Capacity Utilization	52.2%	ICU Level of Service	A
Analysis Period (min)	15		

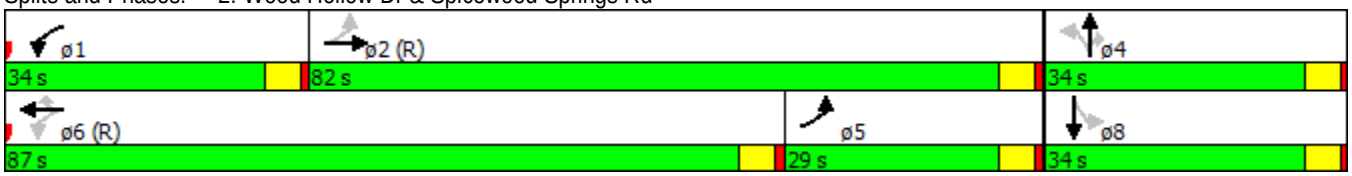
2: Wood Hollow Dr & Spicewood Springs Rd

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	5	1011	112	1015	1	204	7	308	1	4
Lane Group Flow (vph)	6	1187	127	1153	1	0	240	350	0	23
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA
Protected Phases	5	2	1	6			4			8
Permitted Phases	2		6		6	4		4	8	
Detector Phase	5	2	1	6	6	4	4	4	8	8
Switch Phase										
Minimum Initial (s)	6.0	25.0	6.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	15.0	30.0	15.0	11.0	11.0	35.0	35.0	35.0	35.0	35.0
Total Split (s)	29.0	82.0	34.0	87.0	87.0	34.0	34.0	34.0	34.0	34.0
Total Split (%)	19.3%	54.7%	22.7%	58.0%	58.0%	22.7%	22.7%	22.7%	22.7%	22.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Max	None	C-Max	C-Max	Max	Max	Max	None	None
v/c Ratio	0.02	0.36	0.40	0.46	0.00		0.93	0.73		0.07
Control Delay	10.4	12.4	12.0	10.4	0.0		100.4	30.7		24.8
Queue Delay	0.0	0.1	0.0	0.3	0.0		0.0	12.3		0.0
Total Delay	10.4	12.5	12.0	10.7	0.0		100.4	43.0		24.8
Queue Length 50th (ft)	2	178	27	147	0		234	125		5
Queue Length 95th (ft)	8	223	m60	283	m0		#390	236		31
Internal Link Dist (ft)		988		494			464			203
Turn Bay Length (ft)	130		110		100			100		
Base Capacity (vph)	493	3298	517	2481	1125		257	481		334
Starvation Cap Reductn	0	0	0	586	0		0	0		0
Spillback Cap Reductn	0	542	0	0	0		0	110		0
Storage Cap Reductn	0	0	0	0	0		0	0		0
Reduced v/c Ratio	0.01	0.43	0.25	0.61	0.00		0.93	0.94		0.07

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 55 (37%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Wood Hollow Dr & Spicewood Springs Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	1011	33	112	1015	1	204	7	308	1	4	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0		5.0	5.0		5.0	
Lane Util. Factor	1.00	0.91		1.00	0.95	1.00		1.00	1.00		1.00	
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85		0.90	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.95	1.00		1.00	
Satd. Flow (prot)	1770	5061		1770	3539	1583		1777	1583		1673	
Flt Permitted	0.23	1.00		0.19	1.00	1.00		0.72	1.00		0.99	
Satd. Flow (perm)	426	5061		345	3539	1583		1335	1583		1662	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	6	1149	38	127	1153	1	232	8	350	1	5	17
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	175	0	14	0
Lane Group Flow (vph)	6	1185	0	127	1153	1	0	240	175	0	9	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases	2			6		6	4		4	8		
Actuated Green, G (s)	97.7	97.7		101.2	101.2	101.2		29.0	29.0		29.0	
Effective Green, g (s)	97.7	97.7		101.2	101.2	101.2		29.0	29.0		29.0	
Actuated g/C Ratio	0.65	0.65		0.67	0.67	0.67		0.19	0.19		0.19	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0		5.0	5.0		5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0		2.0	2.0		2.0	
Lane Grp Cap (vph)	320	3296		311	2387	1067		258	306		321	
v/s Ratio Prot	0.00	c0.23		0.02	c0.33							
v/s Ratio Perm	0.01			0.25		0.00		c0.18	0.11		0.01	
v/c Ratio	0.02	0.36		0.41	0.48	0.00		0.93	0.57		0.03	
Uniform Delay, d1	11.7	11.9		9.9	11.8	7.9		59.5	54.9		49.1	
Progression Factor	1.00	1.00		0.95	0.85	1.00		1.00	1.00		1.00	
Incremental Delay, d2	0.0	0.3		0.3	0.6	0.0		40.6	7.6		0.0	
Delay (s)	11.7	12.2		9.7	10.6	7.9		100.1	62.4		49.1	
Level of Service	B	B		A	B	A		F	E		D	
Approach Delay (s)		12.2			10.5			77.7			49.1	
Approach LOS		B			B			E			D	

Intersection Summary			
HCM 2000 Control Delay	24.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	63.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

3: Mopac SBFR & Spicewood Springs Rd

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR	ø1	ø2	ø4	ø5	ø6
Lane Configurations												
Volume (vph)	1028	292	620	752	595	199	375					
Lane Group Flow (vph)	1094	311	660	800	316	529	399					
Turn Type	NA	Perm	Prot	NA	Split	NA	Perm					
Protected Phases	2 1		19 6 7 2 1	19 6	4 5	4 5		1	2	4	5	6
Permitted Phases		2 1					4 5					
Detector Phase	2 1	2 1	19 6 7 2 1	19 6	4 5	4 5	4 5					
Switch Phase												
Minimum Initial (s)								3.0	1.0	1.0	3.0	4.0
Minimum Split (s)								8.0	11.0	11.0	8.0	24.0
Total Split (s)								8.0	35.0	23.0	8.0	51.0
Total Split (%)								5%	23%	15%	5%	34%
Yellow Time (s)								4.0	4.0	4.0	4.0	4.0
All-Red Time (s)								1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag								Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?								Yes	Yes	Yes	Yes	Yes
Recall Mode								None	Max	None	None	C-Max
v/c Ratio	1.22	0.58	0.79	0.36	1.13	1.09dl	0.77					
Control Delay	156.0	31.3	23.9	1.5	148.5	84.3	26.7					
Queue Delay	0.5	0.0	3.2	0.2	0.0	0.0	0.0					
Total Delay	156.6	31.3	27.1	1.7	148.5	84.3	26.7					
Queue Length 50th (ft)	~693	151	597	31	~393	284	99					
Queue Length 95th (ft)	#838	247	m504	m35	#609	#398	235					
Internal Link Dist (ft)	494			333		2669						
Turn Bay Length (ft)			50		145							
Base Capacity (vph)	896	539	837	2241	279	570	517					
Starvation Cap Reductn	0	0	99	591	0	0	0					
Spillback Cap Reductn	84	0	0	0	0	0	0					
Storage Cap Reductn	0	0	0	0	0	0	0					
Reduced v/c Ratio	1.35	0.58	0.89	0.48	1.13	0.93	0.77					

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 89 (59%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 110
Control Type: Actuated-Coordinated

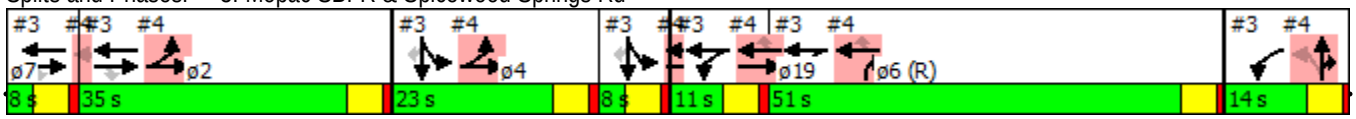
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 3: Mopac SBFR & Spicewood Springs Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1028	292	620	752	0	0	0	0	595	199	375
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0					5.0	5.0	5.0
Lane Util. Factor		0.95	1.00	1.00	0.95					0.91	0.91	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.97	1.00
Satd. Flow (prot)		3539	1583	1770	3539					1610	3292	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.97	1.00
Satd. Flow (perm)		3539	1583	1770	3539					1610	3292	1583
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	1094	311	660	800	0	0	0	0	633	212	399
RTOR Reduction (vph)	0	0	139	0	0	0	0	0	0	0	0	243
Lane Group Flow (vph)	0	1094	172	660	800	0	0	0	0	316	529	156
Turn Type		NA	Perm	Prot	NA					Split	NA	Perm
Protected Phases		2 1		19 6 7	2 1 19 6					4 5	4 5	
Permitted Phases			2 1									4 5
Actuated Green, G (s)		38.0	38.0	71.0	95.0					26.0	26.0	26.0
Effective Green, g (s)		38.0	38.0	71.0	95.0					26.0	26.0	26.0
Actuated g/C Ratio		0.25	0.25	0.47	0.63					0.17	0.17	0.17
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		896	401	837	2241					279	570	274
v/s Ratio Prot		c0.31		c0.37	0.23					c0.20	0.16	
v/s Ratio Perm			0.11									0.10
v/c Ratio		1.22	0.43	0.79	0.36					1.13	1.09dl	0.57
Uniform Delay, d1		56.0	46.9	33.2	13.0					62.0	61.1	56.9
Progression Factor		1.02	1.42	0.59	0.18					1.00	1.00	1.00
Incremental Delay, d2		108.7	0.2	2.3	0.0					94.5	21.1	1.6
Delay (s)		166.1	66.7	21.9	2.4					156.5	82.2	58.5
Level of Service		F	E	C	A					F	F	E
Approach Delay (s)		144.1			11.2			0.0			93.5	
Approach LOS		F			B			A			F	

Intersection Summary			
HCM 2000 Control Delay	81.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	35.0
Intersection Capacity Utilization	90.5%	ICU Level of Service	E
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group

4: Mopac NBFR & Anderson Ln

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	ø1	ø2	ø4	ø5	ø6
Lane Configurations												
Volume (vph)	506	1118	1105	418	266	42	560					
Lane Group Flow (vph)	533	1177	1163	440	252	337	324					
Turn Type	Prot	NA	NA	Perm	Perm	NA	custom					
Protected Phases	2 4	2 4 5 19	6 5 19			7 1	7 1 6	1	2	4	5	6
Permitted Phases				6 5 19	7 1							
Detector Phase	2 4	2 4 5 19	6 5 19	6 5 19	7 1	7 1	7 1 6					
Switch Phase												
Minimum Initial (s)								3.0	1.0	1.0	3.0	4.0
Minimum Split (s)								8.0	11.0	11.0	8.0	24.0
Total Split (s)								8.0	35.0	23.0	8.0	51.0
Total Split (%)								5%	23%	15%	5%	34%
Yellow Time (s)								4.0	4.0	4.0	4.0	4.0
All-Red Time (s)								1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag								Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?								Yes	Yes	Yes	Yes	Yes
Recall Mode								None	Max	None	None	C-Max
v/c Ratio	0.85	0.69	0.76	0.53	1.33	1.31	0.43					
Control Delay	26.1	0.2	39.8	14.9	227.1	199.4	18.5					
Queue Delay	50.6	7.5	0.6	0.0	0.0	0.1	0.0					
Total Delay	76.7	7.7	40.5	14.9	227.1	199.5	18.5					
Queue Length 50th (ft)	271	0	500	128	~334	~364	134					
Queue Length 95th (ft)	m183	m0	588	232	#527	#591	222					
Internal Link Dist (ft)		333	702			1795						
Turn Bay Length (ft)	50			360	280							
Base Capacity (vph)	625	1698	1533	828	190	257	749					
Starvation Cap Reductn	154	480	0	0	0	0	0					
Spillback Cap Reductn	0	0	115	0	0	2	0					
Storage Cap Reductn	0	0	0	0	0	0	0					
Reduced v/c Ratio	1.13	0.97	0.82	0.53	1.33	1.32	0.43					

Intersection Summary

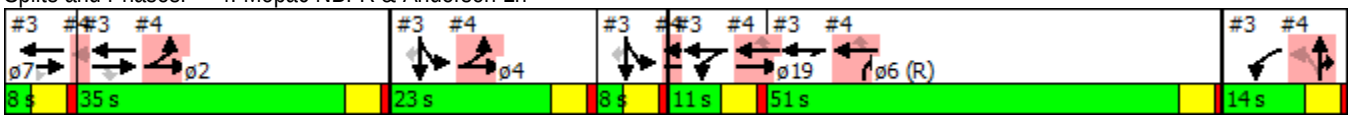
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 89 (59%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 110
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Mopac NBFR & Anderson Ln



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	506	1118	0	0	1105	418	266	42	560	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0	5.0			
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.91	0.95			
Frt	1.00	1.00			1.00	0.85	1.00	0.88	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	1770	3539			3539	1583	1681	1489	1504			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	1770	3539			3539	1583	1681	1489	1504			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	533	1177	0	0	1163	440	280	44	589	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	143	0	89	68	0	0	0
Lane Group Flow (vph)	533	1177	0	0	1163	297	252	248	256	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	custom			
Protected Phases	2 4	2 4 5 19			6 5 19			7 1	7 1 6			
Permitted Phases						6 5 19	7 1					
Actuated Green, G (s)	53.0	72.0			65.0	65.0	17.0	17.0	68.0			
Effective Green, g (s)	53.0	72.0			65.0	65.0	17.0	17.0	68.0			
Actuated g/C Ratio	0.35	0.48			0.43	0.43	0.11	0.11	0.45			
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	625	1698			1533	685	190	168	681			
v/s Ratio Prot	c0.30	c0.33			c0.33				0.17			
v/s Ratio Perm						0.19	0.15	0.17				
v/c Ratio	0.85	0.69			0.76	0.43	1.33	1.48	0.38			
Uniform Delay, d1	44.9	30.4			35.9	29.7	66.5	66.5	27.0			
Progression Factor	0.53	0.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	1.1	0.1			2.0	0.2	178.5	244.3	0.1			
Delay (s)	24.8	0.1			37.8	29.8	245.0	310.8	27.1			
Level of Service	C	A			D	C	F	F	C			
Approach Delay (s)		7.8			35.6			192.0			0.0	
Approach LOS		A			D			F			A	

Intersection Summary			
HCM 2000 Control Delay	58.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	35.0
Intersection Capacity Utilization	90.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	27	148	271	10	30	180
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	36	197	361	13	40	240
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	688	368			375	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	688	368			375	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	91	71			97	
cM capacity (veh/h)	398	677			1184	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	233	375	280
Volume Left	36	0	40
Volume Right	197	13	0
cSH	611	1700	1184
Volume to Capacity	0.38	0.22	0.03
Queue Length 95th (ft)	45	0	3
Control Delay (s)	14.5	0.0	1.4
Lane LOS	B		A
Approach Delay (s)	14.5	0.0	1.4
Approach LOS	B		

Intersection Summary			
Average Delay	4.3		
Intersection Capacity Utilization	46.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	59	74	25	97	73	182	7	269	36	36	119	17
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Hourly flow rate (vph)	78	97	33	128	96	239	9	354	47	47	157	22
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											544	
pX, platoon unblocked	0.99	0.99	0.99	0.99	0.99		0.99					
vC, conflicting volume	946	682	168	740	670	378	179			401		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	943	678	161	736	665	378	172			401		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	35	73	96	48	73	64	99			96		
cM capacity (veh/h)	119	355	880	244	361	669	1398			1157		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	208	463	411	226
Volume Left	78	128	9	47
Volume Right	33	239	47	22
cSH	215	403	1398	1157
Volume to Capacity	0.97	1.15	0.01	0.04
Queue Length 95th (ft)	209	436	0	3
Control Delay (s)	99.5	122.8	0.2	2.0
Lane LOS	F	F	A	A
Approach Delay (s)	99.5	122.8	0.2	2.0
Approach LOS	F	F		

Intersection Summary			
Average Delay	59.7		
Intersection Capacity Utilization	58.4%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	270	0	0	1951	45
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	0	297	0	0	2144	49
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					1035	
pX, platoon unblocked						
vC, conflicting volume	2169	739	2193			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2169	739	2193			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	17	100			
cM capacity (veh/h)	40	360	237			

Direction, Lane #	EB 1	SB 1	SB 2	SB 3
Volume Total	297	858	858	478
Volume Left	0	0	0	0
Volume Right	297	0	0	49
cSH	360	1700	1700	1700
Volume to Capacity	0.83	0.50	0.50	0.28
Queue Length 95th (ft)	183	0	0	0
Control Delay (s)	48.2	0.0	0.0	0.0
Lane LOS	E			
Approach Delay (s)	48.2	0.0		
Approach LOS	E			

Intersection Summary			
Average Delay	5.7		
Intersection Capacity Utilization	62.1%	ICU Level of Service	B
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	13.8
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	35	73	46	0	93	131	49	0	93	193	53
Peak Hour Factor	0.92	0.94	0.94	0.94	0.92	0.94	0.94	0.94	0.92	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	37	78	49	0	99	139	52	0	99	205	56
Number of Lanes	0	0	1	1	0	0	1	1	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	2
HCM Control Delay	11	13.8	16
HCM LOS	B	B	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	27%	32%	0%	42%	0%	7%
Vol Thru, %	57%	68%	0%	58%	0%	64%
Vol Right, %	16%	0%	100%	0%	100%	28%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	339	108	46	224	49	200
LT Vol	93	35	0	93	0	15
Through Vol	193	73	0	131	0	128
RT Vol	53	0	46	0	49	57
Lane Flow Rate	361	115	49	238	52	213
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.568	0.221	0.082	0.444	0.084	0.345
Departure Headway (Hd)	5.673	6.91	6.028	6.705	5.779	5.837
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	631	516	589	534	615	611
Service Time	3.749	4.704	3.821	4.485	3.558	3.925
HCM Lane V/C Ratio	0.572	0.223	0.083	0.446	0.085	0.349
HCM Control Delay	16	11.7	9.4	14.8	9.1	12
HCM Lane LOS	C	B	A	B	A	B
HCM 95th-tile Q	3.6	0.8	0.3	2.3	0.3	1.5

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	15	128	57
Peak Hour Factor	0.92	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	16	136	61
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	12
HCM LOS	B

Lane

Intersection	
Intersection Delay, s/veh	16
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	36	72	51	0	89	230	73	0	80	229	73
Peak Hour Factor	0.92	0.99	0.99	0.99	0.92	0.99	0.99	0.99	0.92	0.99	0.99	0.99
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	36	73	52	0	90	232	74	0	81	231	74
Number of Lanes	0	0	1	1	0	0	1	1	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	2
HCM Control Delay	11.8	19	16.7
HCM LOS	B	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	33%	0%	28%	0%	100%	0%
Vol Thru, %	0%	76%	67%	0%	72%	0%	0%	82%
Vol Right, %	0%	24%	0%	100%	0%	100%	0%	18%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	80	302	108	51	319	73	69	176
LT Vol	80	0	36	0	89	0	69	0
Through Vol	0	229	72	0	230	0	0	144
RT Vol	0	73	0	51	0	73	0	32
Lane Flow Rate	81	305	109	52	322	74	70	178
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.166	0.571	0.23	0.096	0.631	0.127	0.149	0.348
Departure Headway (Hd)	7.416	6.733	7.597	6.707	7.049	6.193	7.682	7.04
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	484	537	472	534	512	579	467	510
Service Time	5.155	4.471	5.346	4.455	4.788	3.931	5.426	4.783
HCM Lane V/C Ratio	0.167	0.568	0.231	0.097	0.629	0.128	0.15	0.349
HCM Control Delay	11.6	18.1	12.6	10.2	21.1	9.8	11.8	13.5
HCM Lane LOS	B	C	B	B	C	A	B	B
HCM 95th-tile Q	0.6	3.6	0.9	0.3	4.3	0.4	0.5	1.5

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	69	144	32
Peak Hour Factor	0.92	0.99	0.99	0.99
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	70	145	32
Number of Lanes	0	1	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	13
HCM LOS	B

Lane

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	221	0	0	1861	360
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	0	254	0	0	2139	414
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2346	920	2553			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2346	920	2553			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	7	100			
cM capacity (veh/h)	30	273	171			

Direction, Lane #	EB 1	SB 1	SB 2	SB 3
Volume Total	254	856	856	842
Volume Left	0	0	0	0
Volume Right	254	0	0	414
cSH	273	1700	1700	1700
Volume to Capacity	0.93	0.50	0.50	0.50
Queue Length 95th (ft)	216	0	0	0
Control Delay (s)	78.4	0.0	0.0	0.0
Lane LOS	F			
Approach Delay (s)	78.4	0.0		
Approach LOS	F			

Intersection Summary			
Average Delay	7.1		
Intersection Capacity Utilization	64.3%	ICU Level of Service	C
Analysis Period (min)	15		

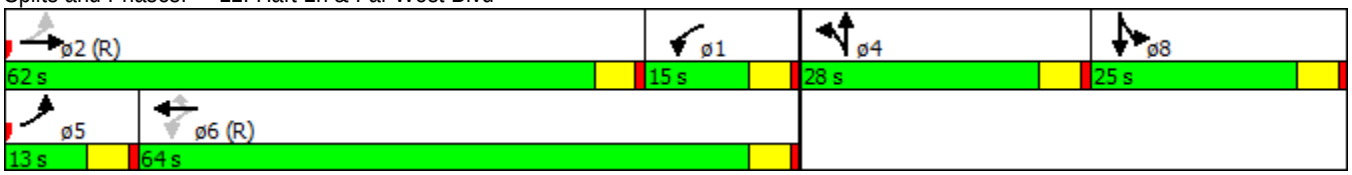
11: Hart Ln & Far West Blvd

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBT
Lane Configurations							
Volume (vph)	45	536	178	508	150	130	92
Lane Group Flow (vph)	46	591	184	524	155	333	322
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	NA
Protected Phases	5	2	1	6		4	8
Permitted Phases	2		6		6		
Detector Phase	5	2	1	6	6	4	8
Switch Phase							
Minimum Initial (s)	4.0	2.0	4.0	2.0	2.0	2.0	2.0
Minimum Split (s)	9.0	24.0	9.0	24.0	24.0	33.0	33.0
Total Split (s)	13.0	62.0	15.0	64.0	64.0	28.0	25.0
Total Split (%)	10.0%	47.7%	11.5%	49.2%	49.2%	21.5%	19.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lead	Lag	Lag	Lag		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		
Recall Mode	None	C-Max	None	C-Max	C-Max	None	None
v/c Ratio	0.11	0.33	0.36	0.27	0.18	0.76	0.75
Control Delay	19.4	20.7	10.1	7.6	7.8	65.2	65.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.4	20.7	10.1	7.6	7.8	65.2	65.6
Queue Length 50th (ft)	19	151	26	43	22	144	139
Queue Length 95th (ft)	47	222	55	73	48	190	185
Internal Link Dist (ft)		1703		1174		695	1553
Turn Bay Length (ft)	130		100		490		
Base Capacity (vph)	420	1775	514	1948	871	582	520
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.33	0.36	0.27	0.18	0.57	0.62

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 20 (15%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 11: Hart Ln & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	45	536	37	178	508	150	59	130	134	166	92	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0		5.0			5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		0.95			0.95	
Frt	1.00	0.99		1.00	1.00	0.85		0.94			0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.99			0.97	
Satd. Flow (prot)	1770	3505		1770	3539	1583		3289			3358	
Flt Permitted	0.37	1.00		0.43	1.00	1.00		0.99			0.97	
Satd. Flow (perm)	699	3505		799	3539	1583		3289			3358	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	46	553	38	184	524	155	61	134	138	171	95	56
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	46	591	0	184	524	155	0	333	0	0	322	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Split	NA		Split	NA	
Protected Phases	5	2		1	6		4	4		8	8	
Permitted Phases	2			6		6						
Actuated Green, G (s)	64.8	64.8		70.5	70.5	70.5		17.5			16.7	
Effective Green, g (s)	64.8	64.8		70.5	70.5	70.5		17.5			16.7	
Actuated g/C Ratio	0.50	0.50		0.54	0.54	0.54		0.13			0.13	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0		5.0			5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0		2.0			2.0	
Lane Grp Cap (vph)	392	1747		515	1919	858		442			431	
v/s Ratio Prot	0.00	c0.17		c0.03	0.15			c0.10			c0.10	
v/s Ratio Perm	0.05			c0.16		0.10						
v/c Ratio	0.12	0.34		0.36	0.27	0.18		0.75			0.75	
Uniform Delay, d1	17.3	19.7		17.7	16.0	15.1		54.2			54.6	
Progression Factor	1.00	1.00		0.40	0.42	0.43		1.00			1.00	
Incremental Delay, d2	0.0	0.5		0.1	0.3	0.4		6.4			6.1	
Delay (s)	17.3	20.2		7.2	7.1	6.9		60.5			60.7	
Level of Service	B	C		A	A	A		E			E	
Approach Delay (s)		20.0			7.1			60.5			60.7	
Approach LOS		B			A			E			E	

Intersection Summary			
HCM 2000 Control Delay	27.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

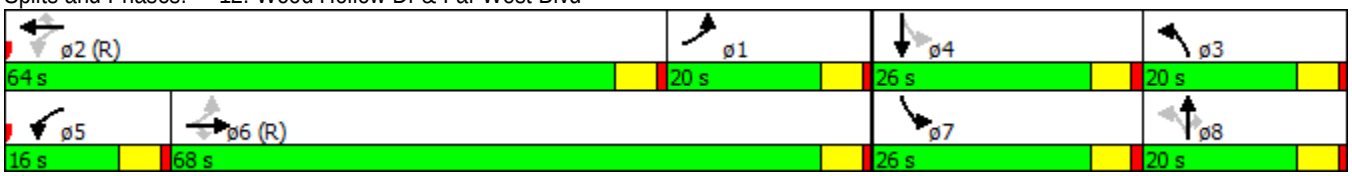
12: Wood Hollow Dr & Far West Blvd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Volume (vph)	102	736	60	216	650	135	97	178	306	160	97
Lane Group Flow (vph)	116	836	68	245	739	153	110	202	348	182	167
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA
Protected Phases	1	6		5	2		3	8		7	4
Permitted Phases	6		6	2		2	8		8	4	
Detector Phase	1	6	6	5	2	2	3	8	8	7	4
Switch Phase											
Minimum Initial (s)	4.0	2.0	2.0	4.0	2.0	2.0	4.0	2.0	2.0	4.0	2.0
Minimum Split (s)	9.0	11.0	11.0	9.0	11.0	11.0	9.0	11.0	11.0	9.0	11.0
Total Split (s)	20.0	68.0	68.0	16.0	64.0	64.0	20.0	20.0	20.0	26.0	26.0
Total Split (%)	15.4%	52.3%	52.3%	12.3%	49.2%	49.2%	15.4%	15.4%	15.4%	20.0%	20.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None
v/c Ratio	0.25	0.47	0.08	0.83	0.44	0.19	0.44	0.85	0.89	0.79	0.75
Control Delay	15.4	17.0	1.0	38.6	28.6	8.2	57.8	85.2	46.2	77.5	69.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.4	17.0	1.0	38.6	28.6	8.2	57.8	85.2	46.2	77.5	69.6
Queue Length 50th (ft)	41	300	1	126	206	13	84	166	113	150	124
Queue Length 95th (ft)	65	182	m5	m121	m184	m17	149	#313	#287	221	190
Internal Link Dist (ft)		1174			673			686			1879
Turn Bay Length (ft)	245		610	125		700	75		75		
Base Capacity (vph)	468	1763	839	295	1669	827	250	238	391	285	299
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.47	0.08	0.83	0.44	0.19	0.44	0.85	0.89	0.64	0.56

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 20 (15%), Referenced to phase 2:WBTL and 6:EBTL, Start of 1st Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 12: Wood Hollow Dr & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	102	736	60	216	650	135	97	178	306	160	97	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1767	
Flt Permitted	0.37	1.00	1.00	0.19	1.00	1.00	0.00	1.00	1.00	0.00	1.00	
Satd. Flow (perm)	691	3539	1583	361	3539	1583	0	1863	1583	0	1767	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	116	836	68	245	739	153	110	202	348	182	110	57
RTOR Reduction (vph)	0	0	34	0	0	81	0	0	188	0	15	0
Lane Group Flow (vph)	116	836	34	245	739	72	110	202	160	182	152	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2	8		8	4		
Actuated Green, G (s)	64.7	64.7	64.7	61.2	61.2	61.2	18.4	16.7	16.7	17.0	15.3	
Effective Green, g (s)	64.7	64.7	64.7	61.2	61.2	61.2	18.4	16.7	16.7	17.0	15.3	
Actuated g/C Ratio	0.50	0.50	0.50	0.47	0.47	0.47	0.14	0.13	0.13	0.13	0.12	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	469	1761	787	295	1666	745	250	239	203	231	207	
v/s Ratio Prot	0.03	c0.24		c0.07	0.21		0.06	c0.11		c0.10	0.09	
v/s Ratio Perm	0.09		0.02	c0.32		0.05			0.10			
v/c Ratio	0.25	0.47	0.04	0.83	0.44	0.10	0.44	0.85	0.79	0.79	0.73	
Uniform Delay, d1	19.7	21.5	16.8	23.9	23.0	19.1	51.1	55.4	54.9	54.8	55.4	
Progression Factor	0.66	0.73	0.68	1.25	1.20	2.60	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.1	0.9	0.1	6.0	0.3	0.1	0.5	22.2	16.7	15.0	11.0	
Delay (s)	13.2	16.6	11.5	35.8	27.8	49.6	51.5	77.6	71.7	69.8	66.4	
Level of Service	B	B	B	D	C	D	D	E	E	E	E	
Approach Delay (s)		15.9			32.5			70.1			68.1	
Approach LOS		B			C			E			E	

Intersection Summary			
HCM 2000 Control Delay	38.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	67.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

13: Mopac SBFR & Far West Blvd

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR	ø1	ø2	ø4	ø8	ø22
Lane Configurations											
Volume (vph)	1118	371	9	414	396	892					
Lane Group Flow (vph)	1256	417	10	465	919	1002					
Turn Type	NA	Free	Prot	NA	NA	Perm					
Protected Phases	1 22 2		7	1 22 7	4 8		1	2	4	8	22
Permitted Phases		Free				4 8					
Detector Phase	1 22 2		7	1 22 7	4 8	4 8					
Switch Phase											
Minimum Initial (s)			4.0				4.0	4.0	4.0	4.0	4.0
Minimum Split (s)			20.0				9.0	24.0	24.0	9.0	20.0
Total Split (s)			41.0				9.0	20.0	31.0	9.0	20.0
Total Split (%)			31.5%				7%	15%	24%	7%	15%
Yellow Time (s)			4.0				4.0	4.0	4.0	4.0	4.0
All-Red Time (s)			1.0				1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)			0.0								
Total Lost Time (s)			5.0								
Lead/Lag							Lead		Lead	Lag	Lag
Lead-Lag Optimize?							Yes		Yes	Yes	Yes
Recall Mode			None				None	C-Max	None	None	None
v/c Ratio	0.73	0.26	0.04	0.26	0.99	1.28					
Control Delay	28.6	0.4	27.3	3.4	74.3	155.3					
Queue Delay	49.7	0.0	0.0	0.3	0.0	0.0					
Total Delay	78.3	0.4	27.3	3.6	74.3	155.3					
Queue Length 50th (ft)	464	0	3	13	407	~749					
Queue Length 95th (ft)	574	m0	m9	16	#540	#987					
Internal Link Dist (ft)	432			324	532						
Turn Bay Length (ft)		490									
Base Capacity (vph)	1730	1583	490	1769	929	785					
Starvation Cap Reductn	0	0	0	671	0	0					
Spillback Cap Reductn	772	0	0	0	0	0					
Storage Cap Reductn	0	0	0	0	0	0					
Reduced v/c Ratio	1.31	0.26	0.02	0.42	0.99	1.28					

Intersection Summary

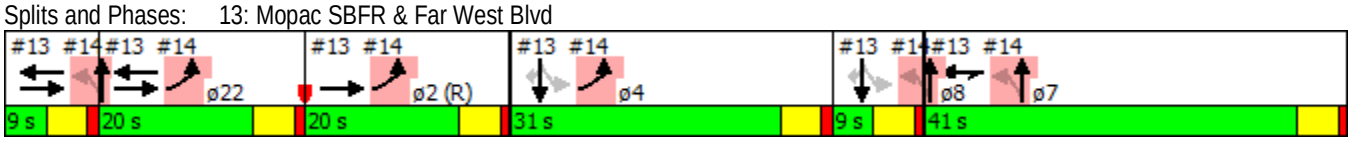
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBT, Start of 1st Green
Natural Cycle: 120
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Mopac SBFR & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1118	371	9	414	0	0	0	0	422	396	892
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	4.0	5.0	5.0						5.0	5.0
Lane Util. Factor		0.95	1.00	1.00	0.95						0.95	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.97	1.00
Satd. Flow (prot)		3539	1583	1770	3539						3450	1583
Flt Permitted		1.00	1.00	0.95	1.00						0.97	1.00
Satd. Flow (perm)		3539	1583	1770	3539						3450	1583
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	1256	417	10	465	0	0	0	0	474	445	1002
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	359
Lane Group Flow (vph)	0	1256	417	10	465	0	0	0	0	0	919	643
Turn Type		NA	Free	Prot	NA					Perm	NA	Perm
Protected Phases		1 22 2		7	1 22 7						4 8	
Permitted Phases			Free							4 8		4 8
Actuated Green, G (s)		63.5	130.0	16.5	65.0						35.0	35.0
Effective Green, g (s)		63.5	130.0	16.5	65.0						35.0	35.0
Actuated g/C Ratio		0.49	1.00	0.13	0.50						0.27	0.27
Clearance Time (s)				5.0								
Vehicle Extension (s)				2.0								
Lane Grp Cap (vph)		1728	1583	224	1769						928	426
v/s Ratio Prot		c0.35		0.01	0.13							
v/s Ratio Perm			c0.26								0.27	c0.41
v/c Ratio		0.73	0.26	0.04	0.26						0.99	1.51
Uniform Delay, d1		26.4	0.0	49.8	18.7						47.3	47.5
Progression Factor		0.95	1.00	0.58	0.16						1.00	1.00
Incremental Delay, d2		1.2	0.4	0.0	0.0						27.0	241.3
Delay (s)		26.3	0.4	28.8	3.0						74.4	288.8
Level of Service		C	A	C	A						E	F
Approach Delay (s)		19.8			3.6			0.0			186.2	
Approach LOS		B			A			A			F	

Intersection Summary			
HCM 2000 Control Delay	96.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	96.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

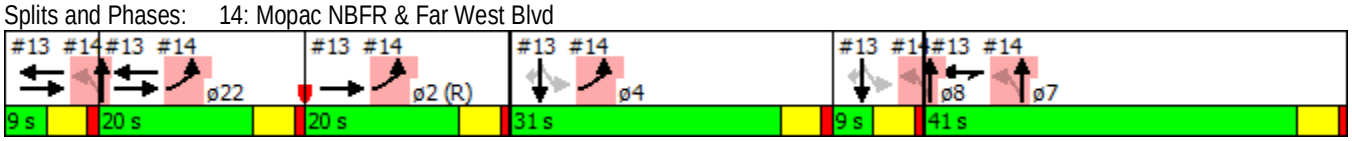
14: Mopac NBFR & Far West Blvd

Lane Group	EBL	NBL	NBT	ø1	ø2	ø4	ø7	ø8	ø22
Lane Configurations									
Volume (vph)	1550	364	24						
Lane Group Flow (vph)	1761	219	222						
Turn Type	Prot	Perm	NA						
Protected Phases	22 2 4		7 1 8	1	2	4	7	8	22
Permitted Phases		7 1 8							
Detector Phase	22 2 4	7 1 8	7 1 8						
Switch Phase									
Minimum Initial (s)				4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)				9.0	24.0	24.0	20.0	9.0	20.0
Total Split (s)				9.0	20.0	31.0	41.0	9.0	20.0
Total Split (%)				7%	15%	24%	32%	7%	15%
Yellow Time (s)				4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)				1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)									
Total Lost Time (s)									
Lead/Lag				Lead		Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes		Yes	Yes
Recall Mode				None	C-Max	None	None	None	None
v/c Ratio	1.01	0.31	0.32						
Control Delay	47.4	27.1	27.1						
Queue Delay	34.4	0.0	0.0						
Total Delay	81.8	27.1	27.1						
Queue Length 50th (ft)	~765	128	130						
Queue Length 95th (ft)	m#879	190	193						
Internal Link Dist (ft)	324		322						
Turn Bay Length (ft)									
Base Capacity (vph)	1742	698	704						
Starvation Cap Reductn	361	0	0						
Spillback Cap Reductn	0	0	0						
Storage Cap Reductn	0	0	0						
Reduced v/c Ratio	1.28	0.31	0.32						

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBT, Start of 1st Green
Natural Cycle: 120
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 14: Mopac NBFR & Far West Blvd



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	1550	0	364	24	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0		
Lane Util. Factor	0.97		0.95	0.95		
Frt	1.00		1.00	1.00		
Flt Protected	0.95		0.95	0.96		
Satd. Flow (prot)	3433		1681	1695		
Flt Permitted	0.95		0.95	0.96		
Satd. Flow (perm)	3433		1681	1695		
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	1761	0	414	27	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1761	0	219	222	0	0
Turn Type	Prot		Perm	NA		
Protected Phases	22 2 4			7 1 8		
Permitted Phases			7 1 8			
Actuated Green, G (s)	66.0		54.0	54.0		
Effective Green, g (s)	66.0		54.0	54.0		
Actuated g/C Ratio	0.51		0.42	0.42		
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)	1742		698	704		
v/s Ratio Prot	c0.51					
v/s Ratio Perm			0.13	0.13		
v/c Ratio	1.01		0.31	0.32		
Uniform Delay, d1	32.0		25.5	25.6		
Progression Factor	0.86		1.00	1.00		
Incremental Delay, d2	19.4		0.1	0.1		
Delay (s)	47.0		25.6	25.7		
Level of Service	D		C	C		
Approach Delay (s)	47.0			25.6	0.0	
Approach LOS	D			C	A	

Intersection Summary			
HCM 2000 Control Delay	42.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	109.3%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

20: Loop 1 SBFR & Steck Avenue

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	ø1	ø2	ø4	ø5	ø6	ø7
Lane Configurations												
Volume (vph)	602	96	238	330	741	730						
Lane Group Flow (vph)	614	98	243	337	612	1216						
Turn Type	NA	Perm	Prot	NA	Split	NA						
Protected Phases	2 1		6 7	2 1 6 7	4 5	4 5	1	2	4	5	6	7
Permitted Phases		2 1										
Detector Phase	2 1	2 1	6 7	2 1 6 7	4 5	4 5						
Switch Phase												
Minimum Initial (s)							2.0	1.0	1.0	3.0	4.0	4.0
Minimum Split (s)							7.0	11.0	11.0	8.0	24.0	9.0
Total Split (s)							7.0	23.0	32.0	8.0	30.0	30.0
Total Split (%)							5%	18%	25%	6%	23%	23%
Yellow Time (s)							4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)							1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag							Lead	Lag	Lead	Lag		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode							None	Max	None	None	C-Max	None
v/c Ratio	0.90	0.23	0.32	0.15	1.41	1.36						
Control Delay	69.0	3.2	2.7	0.1	235.5	203.8						
Queue Delay	48.2	0.0	0.8	0.0	0.0	0.0						
Total Delay	117.2	3.2	3.5	0.1	235.5	203.8						
Queue Length 50th (ft)	268	0	5	0	~760	~729						
Queue Length 95th (ft)	#373	16	7	0	#1012	#876						
Internal Link Dist (ft)	737			327		333						
Turn Bay Length (ft)		100	80									
Base Capacity (vph)	680	419	748	2313	433	897						
Starvation Cap Reductn	0	0	263	0	0	0						
Spillback Cap Reductn	172	0	0	0	0	1						
Storage Cap Reductn	0	0	0	0	0	0						
Reduced v/c Ratio	1.21	0.23	0.50	0.15	1.41	1.36						

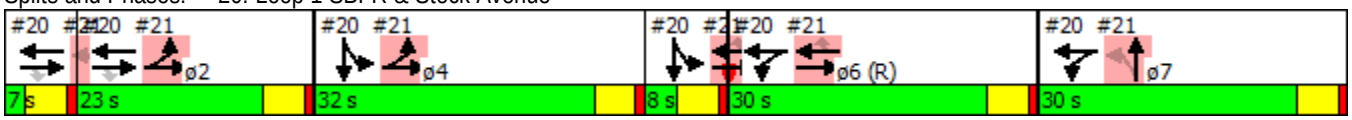
Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 97 (75%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 140
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 20: Loop 1 SBFR & Steck Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	602	96	238	330	0	0	0	0	741	730	320
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0					5.0	5.0	
Lane Util. Factor		0.95	1.00	1.00	0.95					0.91	0.91	
Frt		1.00	0.85	1.00	1.00					1.00	0.96	
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.99	
Satd. Flow (prot)		3539	1583	1770	3539					1610	3234	
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.99	
Satd. Flow (perm)		3539	1583	1770	3539					1610	3234	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	614	98	243	337	0	0	0	0	756	745	327
RTOR Reduction (vph)	0	0	79	0	0	0	0	0	0	0	26	0
Lane Group Flow (vph)	0	614	19	243	337	0	0	0	0	612	1190	0
Turn Type		NA	Perm	Prot	NA					Split	NA	
Protected Phases		2 1		6 7	2 1 6 7					4 5	4 5	
Permitted Phases			2 1									
Actuated Green, G (s)		25.0	25.0	55.0	85.0					35.0	35.0	
Effective Green, g (s)		25.0	25.0	55.0	85.0					35.0	35.0	
Actuated g/C Ratio		0.19	0.19	0.42	0.65					0.27	0.27	
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		680	304	748	2313					433	870	
v/s Ratio Prot		c0.17		c0.14	0.10					c0.38	0.37	
v/s Ratio Perm			0.01									
v/c Ratio		0.90	0.06	0.32	0.15					1.41	1.37	
Uniform Delay, d1		51.3	42.9	25.1	8.6					47.5	47.5	
Progression Factor		1.00	1.00	0.07	0.00					1.00	1.00	
Incremental Delay, d2		15.0	0.0	0.1	0.0					199.3	172.7	
Delay (s)		66.3	42.9	1.8	0.0					246.8	220.2	
Level of Service		E	D	A	A					F	F	
Approach Delay (s)		63.1			0.7			0.0			229.1	
Approach LOS		E			A			A			F	

Intersection Summary			
HCM 2000 Control Delay	148.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	131.8%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

21: Loop 1 NBFR & Steck Avenue

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	ø1	ø2	ø4	ø5	ø6	ø7
Lane Configurations												
Volume (vph)	651	581	453	467	120	783						
Lane Group Flow (vph)	685	612	477	492	126	944						
Turn Type	Prot	NA	NA	Perm	Perm	NA						
Protected Phases	2 4	2 4 5 6	6 5			7 1	1	2	4	5	6	7
Permitted Phases				6 5	7 1							
Detector Phase	2 4	2 4 5 6	6 5	6 5	7 1	7 1						
Switch Phase												
Minimum Initial (s)							2.0	1.0	1.0	3.0	4.0	4.0
Minimum Split (s)							7.0	11.0	11.0	8.0	24.0	9.0
Total Split (s)							7.0	23.0	32.0	8.0	30.0	30.0
Total Split (%)							5%	18%	25%	6%	23%	23%
Yellow Time (s)							4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)							1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag							Lead	Lag	Lead	Lag		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode							None	Max	None	None	C-Max	None
v/c Ratio	1.01	0.26	0.53	0.97	0.15	2.08						
Control Delay	39.2	0.1	44.4	67.1	39.0	521.4						
Queue Delay	34.0	0.9	0.0	0.0	0.0	0.0						
Total Delay	73.2	1.0	44.4	67.1	39.0	521.4						
Queue Length 50th (ft)	~437	0	183	311	43	~1266						
Queue Length 95th (ft)	m361	m0	240	#540	70	#1524						
Internal Link Dist (ft)		327	978			2452						
Turn Bay Length (ft)	80			170	110							
Base Capacity (vph)	680	2395	898	508	845	453						
Starvation Cap Reductn	175	1435	0	0	0	0						
Spillback Cap Reductn	0	0	0	0	0	0						
Storage Cap Reductn	0	0	0	0	0	0						
Reduced v/c Ratio	1.36	0.64	0.53	0.97	0.15	2.08						

Intersection Summary

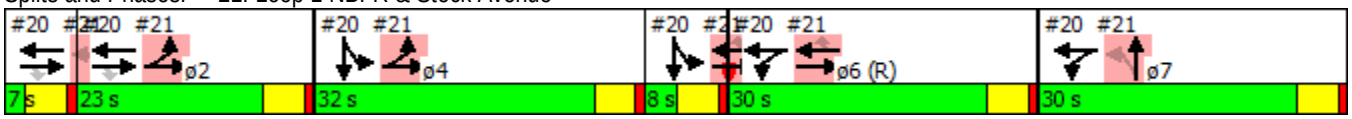
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 97 (75%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 140
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 21: Loop 1 NBFR & Steck Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	651	581	0	0	453	467	120	783	114	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0				
Lane Util. Factor	1.00	0.95			0.95	1.00	0.97	1.00				
Frt	1.00	1.00			1.00	0.85	1.00	0.98				
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (prot)	1770	3539			3539	1583	3433	1827				
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (perm)	1770	3539			3539	1583	3433	1827				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	685	612	0	0	477	492	126	824	120	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	107	0	4	0	0	0	0
Lane Group Flow (vph)	685	612	0	0	477	385	126	940	0	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA				
Protected Phases	2 4	2 4 5 6			6 5			7 1				
Permitted Phases						6 5	7 1					
Actuated Green, G (s)	50.0	88.0			33.0	33.0	32.0	32.0				
Effective Green, g (s)	50.0	88.0			33.0	33.0	32.0	32.0				
Actuated g/C Ratio	0.38	0.68			0.25	0.25	0.25	0.25				
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	680	2395			898	401	845	449				
v/s Ratio Prot	c0.39	0.17			0.13			c0.51				
v/s Ratio Perm						c0.24	0.04					
v/c Ratio	1.01	0.26			0.53	0.96	0.15	2.09				
Uniform Delay, d1	40.0	8.2			41.8	47.9	38.3	49.0				
Progression Factor	0.63	0.00			1.00	1.00	1.00	1.00				
Incremental Delay, d2	12.2	0.0			0.3	34.5	0.0	499.9				
Delay (s)	37.5	0.0			42.1	82.4	38.4	548.9				
Level of Service	D	A			D	F	D	F				
Approach Delay (s)		19.8			62.6			488.8			0.0	
Approach LOS		B			E			F			A	

Intersection Summary			
HCM 2000 Control Delay	182.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.49		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	131.8%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	64	82	20	81	271	116
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	70	89	22	88	295	126
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			159		246	114
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			159		246	114
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		60	87
cM capacity (veh/h)			1421		731	938

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	159	110	421
Volume Left	0	22	295
Volume Right	89	0	126
cSH	1700	1421	783
Volume to Capacity	0.09	0.02	0.54
Queue Length 95th (ft)	0	1	81
Control Delay (s)	0.0	1.6	14.8
Lane LOS		A	B
Approach Delay (s)	0.0	1.6	14.8
Approach LOS			B

Intersection Summary			
Average Delay	9.3		
Intersection Capacity Utilization	45.9%	ICU Level of Service	A
Analysis Period (min)	15		

1: Hart Ln & Spicewood Springs Rd

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1152	260	176	860	102	147
Lane Group Flow (vph)	1188	268	181	887	105	152
Turn Type	NA	Perm	Prot	NA	Prot	Free
Protected Phases	2		1	6	4	
Permitted Phases		2				Free
Detector Phase	2	2	1	6	4	
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	
Total Split (s)	73.0	73.0	33.0	106.0	24.0	
Total Split (%)	56.2%	56.2%	25.4%	81.5%	18.5%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Max	C-Max	Max	C-Max	None	
v/c Ratio	0.64	0.30	0.36	0.30	0.40	0.10
Control Delay	24.3	9.3	38.0	3.1	60.3	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.3	9.3	38.0	3.1	60.3	0.1
Queue Length 50th (ft)	366	57	134	38	44	0
Queue Length 95th (ft)	440	112	231	167	69	0
Internal Link Dist (ft)	211			988	285	
Turn Bay Length (ft)		110	220		160	
Base Capacity (vph)	1851	891	503	2995	501	1583
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.30	0.36	0.30	0.21	0.10

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of 1st Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 1: Hart Ln & Spicewood Springs Rd

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1152	260	176	860	102	147
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	4.0
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	3433	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	3433	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	1188	268	181	887	105	152
RTOR Reduction (vph)	0	64	0	0	0	0
Lane Group Flow (vph)	1188	204	181	887	105	152
Turn Type	NA	Perm	Prot	NA	Prot	Free
Protected Phases	2		1	6	4	
Permitted Phases		2				Free
Actuated Green, G (s)	68.0	68.0	37.0	110.0	10.0	130.0
Effective Green, g (s)	68.0	68.0	37.0	110.0	10.0	130.0
Actuated g/C Ratio	0.52	0.52	0.28	0.85	0.08	1.00
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	1851	828	503	2994	264	1583
v/s Ratio Prot	c0.34		c0.10	0.25	c0.03	
v/s Ratio Perm		0.13				0.10
v/c Ratio	0.64	0.25	0.36	0.30	0.40	0.10
Uniform Delay, d1	22.3	17.0	37.1	2.1	57.1	0.0
Progression Factor	1.00	1.00	0.93	1.20	1.00	1.00
Incremental Delay, d2	1.7	0.7	1.8	0.2	0.4	0.1
Delay (s)	24.0	17.7	36.2	2.7	57.5	0.1
Level of Service	C	B	D	A	E	A
Approach Delay (s)	22.8			8.4	23.6	
Approach LOS	C			A	C	

Intersection Summary			
HCM 2000 Control Delay	17.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	57.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

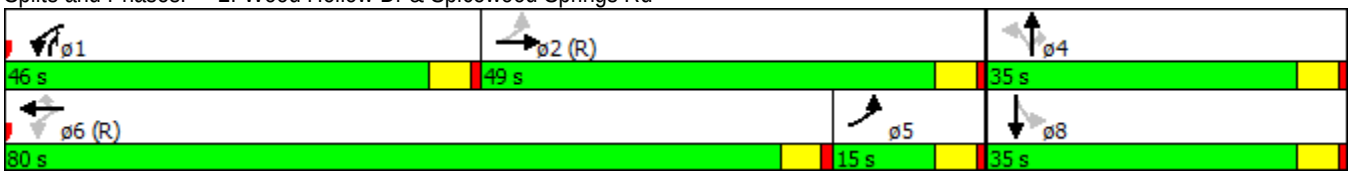
2: Wood Hollow Dr & Spicewood Springs Rd

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	7	1160	399	981	10	53	4	150	6	0
Lane Group Flow (vph)	7	1346	416	1022	10	0	59	156	0	8
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Perm	NA	pm+ov	Perm	NA
Protected Phases	5	2	1	6			4	1		8
Permitted Phases	2		6		6	4		4	8	
Detector Phase	5	2	1	6	6	4	4	1	8	8
Switch Phase										
Minimum Initial (s)	6.0	25.0	6.0	5.0	5.0	5.0	5.0	6.0	5.0	5.0
Minimum Split (s)	15.0	30.0	15.0	11.0	11.0	35.0	35.0	15.0	35.0	35.0
Total Split (s)	15.0	49.0	46.0	80.0	80.0	35.0	35.0	46.0	35.0	35.0
Total Split (%)	11.5%	37.7%	35.4%	61.5%	61.5%	26.9%	26.9%	35.4%	26.9%	26.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead			Lead		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes			Yes		
Recall Mode	None	C-Max	None	C-Max	C-Max	Max	Max	None	None	None
v/c Ratio	0.02	0.60	0.93	0.43	0.01		0.18	0.20		0.02
Control Delay	20.0	27.2	53.5	12.6	0.0		42.0	11.1		0.1
Queue Delay	0.0	0.0	0.0	0.6	0.0		0.0	0.0		0.0
Total Delay	20.0	27.2	53.5	13.2	0.0		42.0	11.1		0.1
Queue Length 50th (ft)	4	397	214	155	0		40	45		0
Queue Length 95th (ft)	m8	485	397	336	m0		80	69		0
Internal Link Dist (ft)		988		494			464			203
Turn Bay Length (ft)	300		110		100					
Base Capacity (vph)	330	2254	623	2368	1079		327	949		445
Starvation Cap Reductn	0	0	4	848	0		0	0		0
Spillback Cap Reductn	0	0	0	0	0		0	0		0
Storage Cap Reductn	0	0	0	0	0		0	0		0
Reduced v/c Ratio	0.02	0.60	0.67	0.67	0.01		0.18	0.16		0.02

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 55 (42%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Wood Hollow Dr & Spicewood Springs Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	1160	132	399	981	10	53	4	150	6	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0		5.0	5.0		5.0	
Lane Util. Factor	1.00	0.91		1.00	0.95	1.00		1.00	1.00		1.00	
Frt	1.00	0.98		1.00	1.00	0.85		1.00	0.85		0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.96	1.00		0.96	
Satd. Flow (prot)	1770	5007		1770	3539	1583		1780	1583		1735	
Flt Permitted	0.28	1.00		0.10	1.00	1.00		0.76	1.00		0.88	
Satd. Flow (perm)	522	5007		185	3539	1583		1418	1583		1592	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	7	1208	138	416	1022	10	55	4	156	6	0	2
RTOR Reduction (vph)	0	9	0	0	0	4	0	0	33	0	6	0
Lane Group Flow (vph)	7	1337	0	416	1022	6	0	59	123	0	2	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	pm+ov	Perm	NA	
Protected Phases	5	2		1	6			4	1		8	
Permitted Phases	2			6		6	4		4	8		
Actuated Green, G (s)	58.3	58.3		83.0	83.0	83.0		30.0	56.7		30.0	
Effective Green, g (s)	58.3	58.3		83.0	83.0	83.0		30.0	56.7		30.0	
Actuated g/C Ratio	0.45	0.45		0.64	0.64	0.64		0.23	0.44		0.23	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0		5.0	5.0		5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0		2.0	2.0		2.0	
Lane Grp Cap (vph)	253	2245		443	2259	1010		327	751		367	
v/s Ratio Prot	0.00	c0.27		c0.19	0.29				0.03			
v/s Ratio Perm	0.01			c0.41		0.00		c0.04	0.04		0.00	
v/c Ratio	0.03	0.60		0.94	0.45	0.01		0.18	0.16		0.01	
Uniform Delay, d1	20.0	27.0		36.4	11.9	8.5		40.1	22.3		38.5	
Progression Factor	0.77	0.93		0.85	1.12	1.00		1.00	1.00		1.00	
Incremental Delay, d2	0.0	1.0		25.9	0.6	0.0		1.2	0.0		0.0	
Delay (s)	15.5	26.0		57.0	14.0	8.5		41.3	22.3		38.5	
Level of Service	B	C		E	B	A		D	C		D	
Approach Delay (s)		25.9			26.3			27.5			38.5	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	26.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	65.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

3: Mopac SBFR & Spicewood Springs Rd

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR	ø1	ø2	ø4	ø5	ø6
Lane Configurations												
Volume (vph)	689	627	642	747	346	1141	642					
Lane Group Flow (vph)	710	646	662	770	321	1212	662					
Turn Type	NA	Free	Prot	NA	Split	NA	Free					
Protected Phases	2 1		19 6 7	2 1 19 6	4 5	4 5		1	2	4	5	6
Permitted Phases		Free					Free					
Detector Phase	2 1		19 6 7	2 1 19 6	4 5	4 5						
Switch Phase												
Minimum Initial (s)								3.0	1.0	1.0	3.0	4.0
Minimum Split (s)								8.0	11.0	11.0	8.0	24.0
Total Split (s)								8.0	24.0	34.0	8.0	30.0
Total Split (%)								6%	18%	26%	6%	23%
Yellow Time (s)								4.0	4.0	4.0	4.0	4.0
All-Red Time (s)								1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag								Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?								Yes	Yes	Yes	Yes	Yes
Recall Mode								None	Max	None	None	C-Max
v/c Ratio	0.97	0.41	0.95	0.45	0.70	1.26	0.42					
Control Delay	96.3	6.3	36.4	2.9	20.4	141.5	0.1					
Queue Delay	0.0	0.0	42.7	0.1	0.0	0.0	0.0					
Total Delay	96.3	6.3	79.1	3.0	20.4	141.5	0.1					
Queue Length 50th (ft)	335	182	566	39	205	~692	0					
Queue Length 95th (ft)	#455	451	m#597	m103	m152	m388	m0					
Internal Link Dist (ft)	494			333		2669						
Turn Bay Length (ft)			50		145							
Base Capacity (vph)	735	1583	694	1715	458	963	1583					
Starvation Cap Reductn	0	0	94	134	0	0	0					
Spillback Cap Reductn	0	0	0	0	0	0	0					
Storage Cap Reductn	0	0	0	0	0	0	0					
Reduced v/c Ratio	0.97	0.41	1.10	0.49	0.70	1.26	0.42					

Intersection Summary

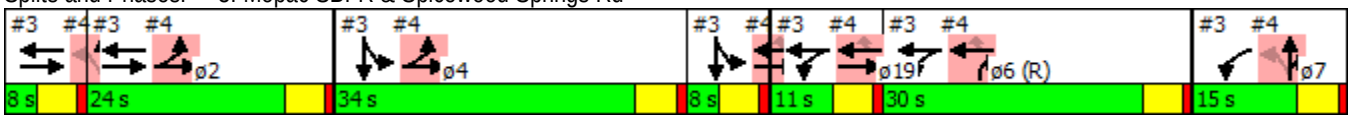
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 8 (6%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 140
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Mopac SBFR & Spicewood Springs Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	689	627	642	747	0	0	0	0	346	1141	642
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	4.0	5.0	5.0					5.0	5.0	4.0
Lane Util. Factor		0.95	1.00	1.00	0.95					0.91	0.91	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		3539	1583	1770	3539					1610	3385	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (perm)		3539	1583	1770	3539					1610	3385	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	710	646	662	770	0	0	0	0	357	1176	662
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	710	646	662	770	0	0	0	0	321	1212	662
Turn Type		NA	Free	Prot	NA					Split	NA	Free
Protected Phases		2 1		19 6 7 2 1 19 6						4 5	4 5	
Permitted Phases			Free									Free
Actuated Green, G (s)		27.0	130.0	51.0	63.0					37.0	37.0	130.0
Effective Green, g (s)		27.0	130.0	51.0	63.0					37.0	37.0	130.0
Actuated g/C Ratio		0.21	1.00	0.39	0.48					0.28	0.28	1.00
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		735	1583	694	1715					458	963	1583
v/s Ratio Prot		c0.20		c0.37	0.22					0.20	c0.36	
v/s Ratio Perm			0.41									0.42
v/c Ratio		0.97	0.41	0.95	0.45					0.70	1.26	0.42
Uniform Delay, d1		51.0	0.0	38.4	22.1					41.6	46.5	0.0
Progression Factor		1.46	1.00	0.69	0.21					0.46	0.49	1.00
Incremental Delay, d2		22.3	0.7	7.9	0.0					0.4	117.2	0.1
Delay (s)		96.9	0.7	34.4	4.7					19.6	140.1	0.1
Level of Service		F	A	C	A					B	F	A
Approach Delay (s)		51.0			18.4			0.0			80.3	
Approach LOS		D			B			A			F	

Intersection Summary			
HCM 2000 Control Delay	54.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.28		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	35.0
Intersection Capacity Utilization	94.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

4: Mopac NBFR & Anderson Ln

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	ø1	ø2	ø4	ø5	ø6
Lane Configurations												
Volume (vph)	293	743	986	239	403	12	510					
Lane Group Flow (vph)	302	766	1016	246	332	316	305					
Turn Type	Prot	NA	NA	Perm	Perm	NA	custom					
Protected Phases	2 4	2 4 5 19	6 5 19			7 1	7 1 6	1	2	4	5	6
Permitted Phases				6 5 19	7 1							
Detector Phase	2 4	2 4 5 19	6 5 19	6 5 19	7 1	7 1	7 1 6					
Switch Phase												
Minimum Initial (s)								3.0	1.0	1.0	3.0	4.0
Minimum Split (s)								8.0	11.0	11.0	8.0	24.0
Total Split (s)								8.0	24.0	34.0	8.0	30.0
Total Split (%)								6%	18%	26%	6%	23%
Yellow Time (s)								4.0	4.0	4.0	4.0	4.0
All-Red Time (s)								1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag								Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?								Yes	Yes	Yes	Yes	Yes
Recall Mode								None	Max	None	None	C-Max
v/c Ratio	0.42	0.39	0.85	0.35	1.43	1.17	0.46					
Control Delay	8.3	0.3	47.9	5.1	243.0	130.5	2.5					
Queue Delay	2.1	1.1	11.0	0.0	0.0	0.1	0.0					
Total Delay	10.4	1.3	58.9	5.1	243.0	130.6	2.5					
Queue Length 50th (ft)	22	0	416	0	~403	~286	4					
Queue Length 95th (ft)	m42	m0	506	58	#609	#498	10					
Internal Link Dist (ft)		333	702			1795						
Turn Bay Length (ft)	50			360	280							
Base Capacity (vph)	721	1960	1197	698	232	271	667					
Starvation Cap Reductn	279	890	0	0	0	0	0					
Spillback Cap Reductn	0	0	172	0	0	3	0					
Storage Cap Reductn	0	0	0	0	0	0	0					
Reduced v/c Ratio	0.68	0.72	0.99	0.35	1.43	1.18	0.46					

Intersection Summary

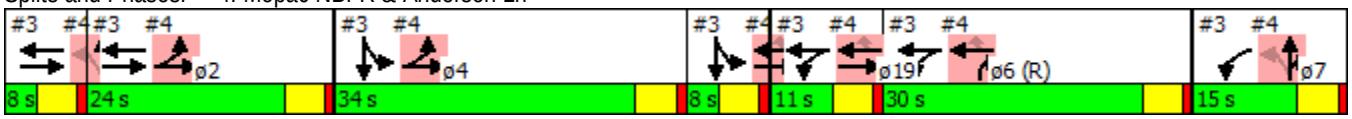
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 8 (6%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 140
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Mopac NBFR & Anderson Ln



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	293	743	0	0	986	239	403	12	510	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0	5.0			
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.91	0.95			
Frt	1.00	1.00			1.00	0.85	1.00	0.90	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.99	1.00			
Satd. Flow (prot)	1770	3539			3539	1583	1681	1498	1504			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.99	1.00			
Satd. Flow (perm)	1770	3539			3539	1583	1681	1498	1504			
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	302	766	0	0	1016	246	415	12	526	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	163	0	65	112	0	0	0
Lane Group Flow (vph)	302	766	0	0	1016	83	332	251	193	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	custom			
Protected Phases	2 4	2 4 5			6 5	19		7 1	7 1 6			
Permitted Phases						6 5 19	7 1					
Actuated Green, G (s)	53.0	72.0			44.0	44.0	18.0	18.0	48.0			
Effective Green, g (s)	53.0	72.0			44.0	44.0	18.0	18.0	48.0			
Actuated g/C Ratio	0.41	0.55			0.34	0.34	0.14	0.14	0.37			
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	721	1960			1197	535	232	207	555			
v/s Ratio Prot	c0.17	c0.22			c0.29				0.13			
v/s Ratio Perm						0.05	c0.20	0.17				
v/c Ratio	0.42	0.39			0.85	0.16	1.43	1.21	0.35			
Uniform Delay, d1	27.5	16.5			39.9	30.0	56.0	56.0	29.7			
Progression Factor	0.27	0.00			1.00	1.00	0.54	0.57	0.03			
Incremental Delay, d2	0.1	0.0			5.6	0.0	215.3	130.1	0.1			
Delay (s)	7.5	0.0			45.5	30.1	245.7	161.8	1.1			
Level of Service	A	A			D	C	F	F	A			
Approach Delay (s)		2.1			42.5			139.6			0.0	
Approach LOS		A			D			F			A	

Intersection Summary			
HCM 2000 Control Delay	57.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	35.0
Intersection Capacity Utilization	94.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	8	25	214	28	131	280
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	10	30	255	33	156	333
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						365
pX, platoon unblocked						
vC, conflicting volume	917	271			288	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	917	271			288	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	96	96			88	
cM capacity (veh/h)	265	767			1274	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	39	288	489
Volume Left	10	0	156
Volume Right	30	33	0
cSH	526	1700	1274
Volume to Capacity	0.07	0.17	0.12
Queue Length 95th (ft)	6	0	10
Control Delay (s)	12.4	0.0	3.5
Lane LOS	B		A
Approach Delay (s)	12.4	0.0	3.5
Approach LOS	B		

Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	48.3%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	12
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	8	80	4	0	15	20	33	0	26	181	148
Peak Hour Factor	0.92	0.88	0.88	0.88	0.92	0.88	0.88	0.88	0.92	0.88	0.88	0.88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	9	91	5	0	17	23	37	0	30	206	168
Number of Lanes	0	0	1	0	0	0	1	0	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	1
HCM Control Delay	10.6	10	11.2
HCM LOS	B	A	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	22%	0%	9%	22%	100%	0%
Vol Thru, %	78%	38%	87%	29%	0%	59%
Vol Right, %	0%	62%	4%	49%	0%	41%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	117	239	92	68	179	312
LT Vol	26	0	8	15	179	0
Through Vol	91	91	80	20	0	185
RT Vol	0	148	4	33	0	127
Lane Flow Rate	132	271	105	77	203	355
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.217	0.403	0.181	0.13	0.344	0.522
Departure Headway (Hd)	5.902	5.35	6.218	6.06	6.096	5.303
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	609	672	577	591	590	681
Service Time	3.635	3.082	4.259	4.105	3.826	3.033
HCM Lane V/C Ratio	0.217	0.403	0.182	0.13	0.344	0.521
HCM Control Delay	10.3	11.7	10.6	10	12	13.7
HCM Lane LOS	B	B	B	A	B	B
HCM 95th-tile Q	0.8	1.9	0.7	0.4	1.5	3

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	179	185	127
Peak Hour Factor	0.92	0.88	0.88	0.88
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	203	210	144
Number of Lanes	0	1	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	13.1
HCM LOS	B

Lane

Intersection	
Intersection Delay, s/veh	17.2
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	37	155	132	0	79	60	7	0	49	133	40
Peak Hour Factor	0.92	0.81	0.81	0.81	0.92	0.81	0.81	0.81	0.92	0.81	0.81	0.81
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	46	191	163	0	98	74	9	0	60	164	49
Number of Lanes	0	0	1	1	0	0	1	1	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	2
HCM Control Delay	14.5	14.9	16.3
HCM LOS	B	B	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	22%	19%	0%	57%	0%	5%
Vol Thru, %	60%	81%	0%	43%	0%	86%
Vol Right, %	18%	0%	100%	0%	100%	9%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	222	192	132	139	7	307
LT Vol	49	37	0	79	0	16
Through Vol	133	155	0	60	0	264
RT Vol	40	0	132	0	7	27
Lane Flow Rate	274	237	163	172	9	379
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.504	0.476	0.29	0.373	0.016	0.673
Departure Headway (Hd)	6.622	7.234	6.416	7.819	6.804	6.393
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	543	498	559	458	524	565
Service Time	4.684	4.997	4.178	5.59	4.574	4.447
HCM Lane V/C Ratio	0.505	0.476	0.292	0.376	0.017	0.671
HCM Control Delay	16.3	16.4	11.8	15.2	9.7	21.7
HCM Lane LOS	C	C	B	C	A	C
HCM 95th-tile Q	2.8	2.5	1.2	1.7	0	5.1

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	16	264	27
Peak Hour Factor	0.92	0.81	0.81	0.81
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	20	326	33
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	21.7
HCM LOS	C

Lane

Intersection	
Intersection Delay, s/veh	13.9
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	38	128	165	0	55	122	80	0	23	182	45
Peak Hour Factor	0.92	0.90	0.90	0.90	0.92	0.90	0.90	0.90	0.92	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	42	142	183	0	61	136	89	0	26	202	50
Number of Lanes	0	0	1	1	0	0	1	1	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	2
HCM Control Delay	12.8	13.2	15.5
HCM LOS	B	B	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	23%	0%	31%	0%	100%	0%
Vol Thru, %	0%	80%	77%	0%	69%	0%	0%	79%
Vol Right, %	0%	20%	0%	100%	0%	100%	0%	21%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	23	227	166	165	177	80	30	200
LT Vol	23	0	38	0	55	0	30	0
Through Vol	0	182	128	0	122	0	0	157
RT Vol	0	45	0	165	0	80	0	43
Lane Flow Rate	26	252	184	183	197	89	33	222
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.054	0.485	0.361	0.316	0.393	0.156	0.071	0.43
Departure Headway (Hd)	7.578	6.924	7.043	6.211	7.203	6.328	7.629	6.964
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	473	520	511	579	500	566	470	518
Service Time	5.319	4.665	4.783	3.951	4.947	4.071	5.372	4.706
HCM Lane V/C Ratio	0.055	0.485	0.36	0.316	0.394	0.157	0.07	0.429
HCM Control Delay	10.8	16	13.7	11.8	14.6	10.2	11	14.9
HCM Lane LOS	B	C	B	B	B	B	B	B
HCM 95th-tile Q	0.2	2.6	1.6	1.3	1.9	0.5	0.2	2.1

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	30	157	43
Peak Hour Factor	0.92	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	33	174	48
Number of Lanes	0	1	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	14.4
HCM LOS	B

Lane

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	212	0	0	2643	212
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	0	221	0	0	2753	221
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2753	918	2974			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2753	918	2974			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	19	100			
cM capacity (veh/h)	16	274	116			

Direction, Lane #	EB 1	SB 1	SB 2	SB 3	SB 4
Volume Total	221	918	918	918	221
Volume Left	0	0	0	0	0
Volume Right	221	0	0	0	221
cSH	274	1700	1700	1700	1700
Volume to Capacity	0.81	0.54	0.54	0.54	0.13
Queue Length 95th (ft)	159	0	0	0	0
Control Delay (s)	56.2	0.0	0.0	0.0	0.0
Lane LOS	F				
Approach Delay (s)	56.2	0.0			
Approach LOS	F				

Intersection Summary			
Average Delay	3.9		
Intersection Capacity Utilization	70.9%	ICU Level of Service	C
Analysis Period (min)	15		

11: Hart Ln & Far West Blvd

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	61	673	199	267	71	49	117	163	206	249
Lane Group Flow (vph)	73	915	240	322	86	59	141	196	248	337
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA
Protected Phases	5	2	1	6		7	4	1	3	8
Permitted Phases	2		6		6	4		4	8	
Detector Phase	5	2	1	6	6	7	4	1	3	8
Switch Phase										
Minimum Initial (s)	4.0	2.0	4.0	2.0	2.0	4.0	2.0	4.0	2.0	2.0
Minimum Split (s)	9.0	24.0	9.0	24.0	24.0	9.0	33.0	9.0	33.0	33.0
Total Split (s)	13.0	52.0	22.0	61.0	61.0	16.0	30.0	22.0	26.0	40.0
Total Split (%)	10.0%	40.0%	16.9%	46.9%	46.9%	12.3%	23.1%	16.9%	20.0%	30.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lead	Lag	Lag	Lag	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	C-Max	None	None	None	None	None
v/c Ratio	0.15	0.55	0.54	0.16	0.10	0.37	0.69	0.45	0.83	0.52
Control Delay	22.6	27.3	39.0	23.0	26.1	58.3	72.9	41.4	74.0	49.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.6	27.3	39.0	23.0	26.1	58.3	72.9	41.4	74.0	49.7
Queue Length 50th (ft)	33	286	88	60	30	47	116	136	201	136
Queue Length 95th (ft)	68	369	215	137	90	80	165	180	248	156
Internal Link Dist (ft)		1703		1174			695			1553
Turn Bay Length (ft)	130		100		490			100	100	
Base Capacity (vph)	498	1671	443	2010	899	179	358	440	369	937
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.55	0.54	0.16	0.10	0.33	0.39	0.45	0.67	0.36

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 100 (77%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green
Natural Cycle: 110
Control Type: Actuated-Coordinated

Splits and Phases: 11: Hart Ln & Far West Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	61	673	86	199	267	71	49	117	163	206	249	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95	
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3479		1770	3539	1583	1770	1863	1583	1770	3481	
Flt Permitted	0.49	1.00		0.26	1.00	1.00	0.57	1.00	1.00	0.67	1.00	
Satd. Flow (perm)	921	3479		486	3539	1583	1064	1863	1583	1243	3481	
Peak-hour factor, PHF	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Adj. Flow (vph)	73	811	104	240	322	86	59	141	196	248	300	37
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	73	915	0	240	322	86	59	141	196	248	337	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases	5	2		1	6		7	4	1	3	8	
Permitted Phases	2			6		6	4		4	8		
Actuated Green, G (s)	60.5	60.5		71.9	71.9	71.9	14.2	14.2	32.2	24.3	24.3	
Effective Green, g (s)	60.5	60.5		71.9	71.9	71.9	14.2	14.2	32.2	24.3	24.3	
Actuated g/C Ratio	0.47	0.47		0.55	0.55	0.55	0.11	0.11	0.25	0.19	0.19	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	471	1619		446	1957	875	155	203	452	302	650	
v/s Ratio Prot	0.01	c0.26		c0.07	0.09		0.02	c0.08	0.06	c0.11	0.10	
v/s Ratio Perm	0.06			0.22		0.05	0.02		0.06	c0.04		
v/c Ratio	0.15	0.57		0.54	0.16	0.10	0.38	0.69	0.43	0.82	0.52	
Uniform Delay, d1	19.5	25.2		29.0	14.3	13.7	53.4	55.8	41.2	49.6	47.6	
Progression Factor	1.00	1.00		1.16	1.40	1.50	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.1	1.4		0.6	0.2	0.2	0.6	8.0	0.2	15.5	0.3	
Delay (s)	19.6	26.6		34.2	20.2	20.8	54.0	63.8	41.5	65.1	47.9	
Level of Service	B	C		C	C	C	D	E	D	E	D	
Approach Delay (s)		26.1			25.5			51.3			55.2	
Approach LOS		C			C			D			E	

Intersection Summary			
HCM 2000 Control Delay	36.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	66.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

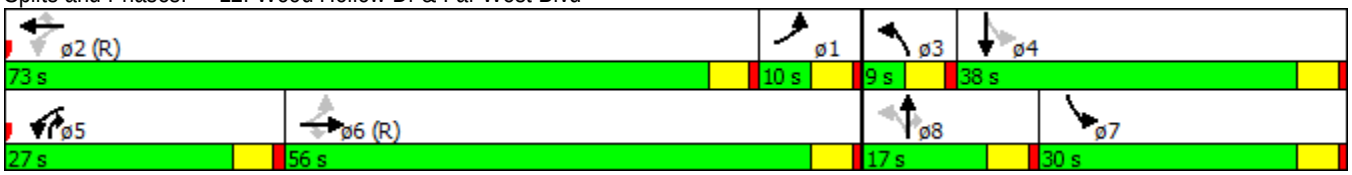
12: Wood Hollow Dr & Far West Blvd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Volume (vph)	90	1015	46	112	550	133	24	81	282	259	115
Lane Group Flow (vph)	96	1080	49	119	585	141	26	86	300	276	182
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA
Protected Phases	1	6		5	2		3	8	5	7	4
Permitted Phases	6		6	2		2	8		8	4	
Detector Phase	1	6	6	5	2	2	3	8	5	7	4
Switch Phase											
Minimum Initial (s)	4.0	2.0	2.0	4.0	2.0	2.0	4.0	2.0	4.0	4.0	2.0
Minimum Split (s)	9.0	11.0	11.0	9.0	11.0	11.0	9.0	11.0	9.0	9.0	11.0
Total Split (s)	10.0	56.0	56.0	27.0	73.0	73.0	9.0	17.0	27.0	30.0	38.0
Total Split (%)	7.7%	43.1%	43.1%	20.8%	56.2%	56.2%	6.9%	13.1%	20.8%	23.1%	29.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None
v/c Ratio	0.20	0.56	0.05	0.39	0.28	0.14	0.26	0.61	0.86	0.83	0.48
Control Delay	28.4	33.1	1.7	28.8	26.4	13.4	61.8	76.5	45.6	70.6	44.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.4	33.1	1.7	28.8	26.4	13.4	61.8	76.5	45.6	70.6	44.2
Queue Length 50th (ft)	59	408	0	64	170	31	21	71	118	222	123
Queue Length 95th (ft)	m116	562	m7	113	225	81	51	126	156	304	186
Internal Link Dist (ft)		1174			673			686			1879
Turn Bay Length (ft)	245		610	125			75		75		
Base Capacity (vph)	473	1922	925	416	2114	1003	99	171	463	434	462
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.56	0.05	0.29	0.28	0.14	0.26	0.50	0.65	0.64	0.39

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 10 (8%), Referenced to phase 2:WBTL and 6:EBTL, Start of 1st Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 12: Wood Hollow Dr & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	90	1015	46	112	550	133	24	81	282	259	115	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1771	
Flt Permitted	0.43	1.00	1.00	0.15	1.00	1.00	0.54	1.00	1.00	0.70	1.00	
Satd. Flow (perm)	804	3539	1583	273	3539	1583	1007	1863	1583	1306	1771	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	96	1080	49	119	585	141	26	86	300	276	122	60
RTOR Reduction (vph)	0	0	23	0	0	59	0	0	84	0	14	0
Lane Group Flow (vph)	96	1080	26	119	585	82	26	86	216	276	168	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases	1	6		5	2		3	8	5	7	4	
Permitted Phases	6		6	2		2	8		8	4		
Actuated Green, G (s)	68.6	68.6	68.6	75.7	75.7	75.7	9.8	9.8	21.9	26.9	26.9	
Effective Green, g (s)	68.6	68.6	68.6	75.7	75.7	75.7	9.8	9.8	21.9	26.9	26.9	
Actuated g/C Ratio	0.53	0.53	0.53	0.58	0.58	0.58	0.08	0.08	0.17	0.21	0.21	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	461	1867	835	298	2060	921	89	140	266	339	366	
v/s Ratio Prot	0.01	c0.31		0.04	0.17		0.01	0.05	c0.08	c0.12	0.09	
v/s Ratio Perm	0.10		0.02	0.19		0.05	0.02		0.06	c0.05		
v/c Ratio	0.21	0.58	0.03	0.40	0.28	0.09	0.29	0.61	0.81	0.81	0.46	
Uniform Delay, d1	16.5	20.9	14.7	16.2	13.6	12.0	56.4	58.3	52.1	47.9	45.2	
Progression Factor	1.36	1.43	1.00	1.92	1.88	5.64	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.1	1.1	0.1	0.3	0.3	0.2	0.7	5.5	16.2	13.2	0.3	
Delay (s)	22.5	31.0	14.8	31.4	25.8	67.7	57.1	63.8	68.2	61.1	45.5	
Level of Service	C	C	B	C	C	E	E	E	E	E	D	
Approach Delay (s)		29.7			33.6			66.6			54.9	
Approach LOS		C			C			E			D	

Intersection Summary			
HCM 2000 Control Delay	39.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	72.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

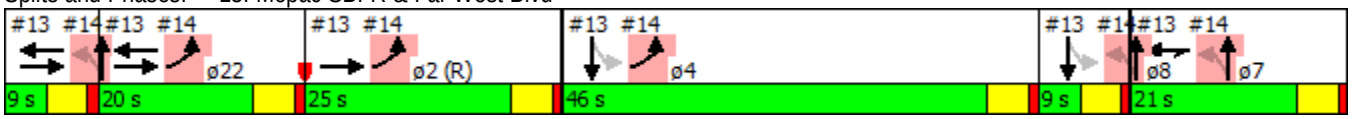
13: Mopac SBFR & Far West Blvd

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR	ø1	ø2	ø4	ø8	ø22
Lane Configurations											
Volume (vph)	775	438	18	549	508	857					
Lane Group Flow (vph)	799	452	19	566	668	884					
Turn Type	NA	Free	Prot	NA	NA	Free					
Protected Phases	1 22 2		7	1 22 7	4 8		1	2	4	8	22
Permitted Phases		Free				Free					
Detector Phase	1 22 2		7	1 22 7	4 8						
Switch Phase											
Minimum Initial (s)			4.0				4.0	4.0	4.0	4.0	4.0
Minimum Split (s)			20.0				9.0	24.0	24.0	9.0	20.0
Total Split (s)			21.0				9.0	25.0	46.0	9.0	20.0
Total Split (%)			16.2%				7%	19%	35%	7%	15%
Yellow Time (s)			4.0				4.0	4.0	4.0	4.0	4.0
All-Red Time (s)			1.0				1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)			0.0								
Total Lost Time (s)			5.0								
Lead/Lag							Lead		Lead	Lag	Lag
Lead-Lag Optimize?							Yes		Yes	Yes	Yes
Recall Mode			None				None	C-Max	None	None	None
v/c Ratio	0.58	0.29	0.09	0.45	0.51	0.56					
Control Delay	33.4	0.4	29.0	9.0	26.3	1.4					
Queue Delay	0.2	0.0	0.0	0.7	0.0	0.0					
Total Delay	33.6	0.4	29.0	9.7	26.3	1.4					
Queue Length 50th (ft)	337	0	9	225	136	19					
Queue Length 95th (ft)	383	0	m12	0	m171	m3					
Internal Link Dist (ft)	432			324	532						
Turn Bay Length (ft)		490									
Base Capacity (vph)	1380	1583	217	1245	1293	1583					
Starvation Cap Reductn	0	0	0	358	0	0					
Spillback Cap Reductn	108	0	0	0	0	0					
Storage Cap Reductn	0	0	0	0	0	0					
Reduced v/c Ratio	0.63	0.29	0.09	0.64	0.52	0.56					

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 106 (82%), Referenced to phase 2:EBT, Start of 1st Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Mopac SBFR & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	775	438	18	549	0	0	0	0	140	508	857
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	4.0	5.0	5.0						5.0	4.0
Lane Util. Factor		0.95	1.00	1.00	0.95						0.95	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (prot)		3539	1583	1770	3539						3501	1583
Flt Permitted		1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (perm)		3539	1583	1770	3539						3501	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	799	452	19	566	0	0	0	0	144	524	884
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	799	452	19	566	0	0	0	0	0	668	884
Turn Type		NA	Free	Prot	NA					Perm	NA	Free
Protected Phases		1 22 2		7	1 22 7						4 8	
Permitted Phases			Free							4 8		Free
Actuated Green, G (s)		50.7	130.0	15.9	46.6						48.4	130.0
Effective Green, g (s)		50.7	130.0	15.9	46.6						48.4	130.0
Actuated g/C Ratio		0.39	1.00	0.12	0.36						0.37	1.00
Clearance Time (s)				5.0								
Vehicle Extension (s)				2.0								
Lane Grp Cap (vph)		1380	1583	216	1268						1303	1583
v/s Ratio Prot		c0.23		0.01	0.16							
v/s Ratio Perm			0.29								0.19	c0.56
v/c Ratio		0.58	0.29	0.09	0.45						0.51	0.56
Uniform Delay, d1		31.2	0.0	50.6	31.8						31.7	0.0
Progression Factor		1.00	1.00	0.55	0.25						0.80	1.00
Incremental Delay, d2		0.3	0.4	0.1	0.1						0.1	1.0
Delay (s)		31.5	0.4	28.1	7.9						25.4	1.0
Level of Service		C	A	C	A						C	A
Approach Delay (s)		20.3			8.5			0.0			11.5	
Approach LOS		C			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	14.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	54.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

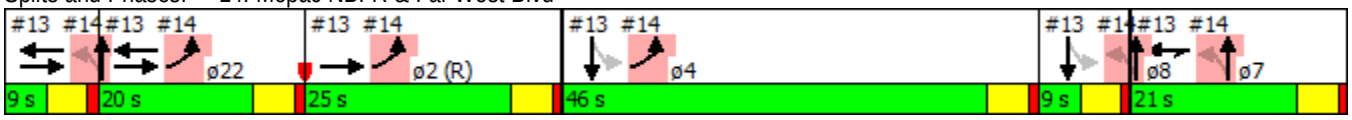
14: Mopac NBFR & Far West Blvd

Lane Group	EBL	NBL	NBT	ø1	ø2	ø4	ø7	ø8	ø22
Lane Configurations									
Volume (vph)	931	566	2						
Lane Group Flow (vph)	970	295	297						
Turn Type	Prot	Perm	NA						
Protected Phases	22 2 4		7 1 8	1	2	4	7	8	22
Permitted Phases		7 1 8							
Detector Phase	22 2 4	7 1 8	7 1 8						
Switch Phase									
Minimum Initial (s)				4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)				9.0	24.0	24.0	20.0	9.0	20.0
Total Split (s)				9.0	25.0	46.0	21.0	9.0	20.0
Total Split (%)				7%	19%	35%	16%	7%	15%
Yellow Time (s)				4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)				1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)									
Total Lost Time (s)									
Lead/Lag				Lead		Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes		Yes	Yes
Recall Mode				None	C-Max	None	None	None	None
v/c Ratio	0.50	0.50	0.50						
Control Delay	7.0	38.0	38.1						
Queue Delay	0.3	0.0	0.0						
Total Delay	7.3	38.0	38.1						
Queue Length 50th (ft)	30	202	204						
Queue Length 95th (ft)	21	333	333						
Internal Link Dist (ft)	324		322						
Turn Bay Length (ft)									
Base Capacity (vph)	2271	583	584						
Starvation Cap Reductn	614	0	0						
Spillback Cap Reductn	0	0	0						
Storage Cap Reductn	0	0	0						
Reduced v/c Ratio	0.59	0.51	0.51						

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 106 (82%), Referenced to phase 2:EBT, Start of 1st Green
Natural Cycle: 110
Control Type: Actuated-Coordinated

Splits and Phases: 14: Mopac NBFR & Far West Blvd



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	931	0	566	2	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0		
Lane Util. Factor	0.97		0.95	0.95		
Frt	1.00		1.00	1.00		
Flt Protected	0.95		0.95	0.95		
Satd. Flow (prot)	3433		1681	1686		
Flt Permitted	0.95		0.95	0.95		
Satd. Flow (perm)	3433		1681	1686		
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	970	0	590	2	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	970	0	295	297	0	0
Turn Type	Prot		Perm	NA		
Protected Phases	22 2 4			7 1 8		
Permitted Phases			7 1 8			
Actuated Green, G (s)	74.0		46.0	46.0		
Effective Green, g (s)	74.0		46.0	46.0		
Actuated g/C Ratio	0.57		0.35	0.35		
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)	1954		594	596		
v/s Ratio Prot	c0.28					
v/s Ratio Perm			0.18	0.18		
v/c Ratio	0.50		0.50	0.50		
Uniform Delay, d1	16.8		32.9	32.9		
Progression Factor	0.38		1.00	1.00		
Incremental Delay, d2	0.1		0.2	0.2		
Delay (s)	6.4		33.2	33.2		
Level of Service	A		C	C		
Approach Delay (s)	6.4			33.2	0.0	
Approach LOS	A			C	A	

Intersection Summary			
HCM 2000 Control Delay	16.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	67.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

20: Loop 1 SBFR & Steck Avenue

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	ø1	ø2	ø4	ø5	ø6	ø7
Lane Configurations												
Volume (vph)	514	131	144	336	915	1807						
Lane Group Flow (vph)	547	139	153	357	876	2320						
Turn Type	NA	Perm	Prot	NA	Split	NA						
Protected Phases	2 1		6 7	2 1 6 7	4 5	4 5	1	2	4	5	6	7
Permitted Phases		2 1										
Detector Phase	2 1	2 1	6 7	2 1 6 7	4 5	4 5						
Switch Phase												
Minimum Initial (s)							2.0	1.0	1.0	3.0	4.0	4.0
Minimum Split (s)							7.0	11.0	11.0	8.0	15.0	9.0
Total Split (s)							7.0	20.0	63.0	8.0	15.0	17.0
Total Split (%)							5%	15%	48%	6%	12%	13%
Yellow Time (s)							4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)							1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag							Lead	Lag	Lead	Lag		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode							None	Max	None	None	C-Max	None
v/c Ratio	0.91	0.36	0.42	0.24	1.07	1.37						
Control Delay	74.1	9.7	20.7	0.3	84.4	199.2						
Queue Delay	4.3	0.0	0.0	0.0	0.0	0.0						
Total Delay	78.4	9.7	20.7	0.3	84.4	199.2						
Queue Length 50th (ft)	241	0	23	0	~898	~1422						
Queue Length 95th (ft)	#345	55	m44	0	#1173	#1562						
Internal Link Dist (ft)	737			327		333						
Turn Bay Length (ft)		100	80									
Base Capacity (vph)	598	386	367	1470	817	1693						
Starvation Cap Reductn	0	0	0	0	0	0						
Spillback Cap Reductn	25	0	0	0	0	0						
Storage Cap Reductn	0	0	0	0	0	0						
Reduced v/c Ratio	0.95	0.36	0.42	0.24	1.07	1.37						

Intersection Summary

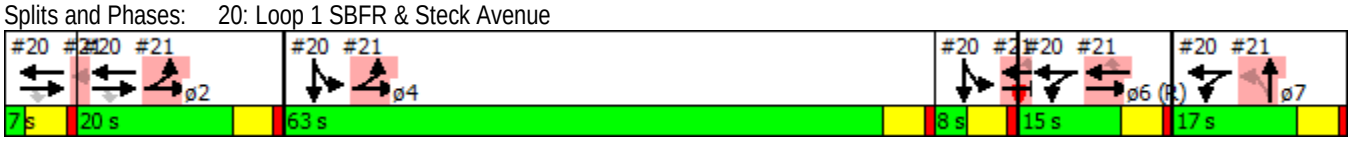
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 90 (69%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 20: Loop 1 SBFR & Steck Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	514	131	144	336	0	0	0	0	915	1807	283
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0					5.0	5.0	
Lane Util. Factor		0.95	1.00	1.00	0.95					0.91	0.91	
Frt		1.00	0.85	1.00	1.00					1.00	0.98	
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	3539					1610	3317	
Flt Permitted		1.00	1.00	0.95	1.00					0.95	1.00	
Satd. Flow (perm)		3539	1583	1770	3539					1610	3317	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	547	139	153	357	0	0	0	0	973	1922	301
RTOR Reduction (vph)	0	0	115	0	0	0	0	0	0	0	8	0
Lane Group Flow (vph)	0	547	24	153	357	0	0	0	0	876	2312	0
Turn Type		NA	Perm	Prot	NA					Split	NA	
Protected Phases		2 1		6 7	2 1 6 7					4 5	4 5	
Permitted Phases			2 1									
Actuated Green, G (s)		22.0	22.0	27.0	54.0					66.0	66.0	
Effective Green, g (s)		22.0	22.0	27.0	54.0					66.0	66.0	
Actuated g/C Ratio		0.17	0.17	0.21	0.42					0.51	0.51	
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		598	267	367	1470					817	1684	
v/s Ratio Prot		c0.15		c0.09	0.10					0.54	c0.70	
v/s Ratio Perm			0.01									
v/c Ratio		0.91	0.09	0.42	0.24					1.07	1.37	
Uniform Delay, d1		53.1	45.5	44.7	24.7					32.0	32.0	
Progression Factor		1.00	1.00	0.40	0.00					1.00	1.00	
Incremental Delay, d2		18.3	0.1	0.2	0.0					52.7	171.6	
Delay (s)		71.4	45.6	18.0	0.0					84.7	203.6	
Level of Service		E	D	B	A					F	F	
Approach Delay (s)		66.2			5.4			0.0			171.0	
Approach LOS		E			A			A			F	

Intersection Summary			
HCM 2000 Control Delay	135.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.22		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	128.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

21: Loop 1 NBFR & Steck Avenue

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	ø1	ø2	ø4	ø5	ø6	ø7
Lane Configurations												
Volume (vph)	665	718	363	246	200	520						
Lane Group Flow (vph)	679	733	370	251	204	713						
Turn Type	Prot	NA	NA	Perm	Perm	NA						
Protected Phases	2 4	2 4 5 6	6 5			7 1	1	2	4	5	6	7
Permitted Phases				6 5	7 1							
Detector Phase	2 4	2 4 5 6	6 5	6 5	7 1	7 1						
Switch Phase												
Minimum Initial (s)							2.0	1.0	1.0	3.0	4.0	4.0
Minimum Split (s)							7.0	11.0	11.0	8.0	15.0	9.0
Total Split (s)							7.0	20.0	63.0	8.0	15.0	17.0
Total Split (%)							5%	15%	48%	6%	12%	13%
Yellow Time (s)							4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)							1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag							Lead	Lag	Lead	Lag		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode							None	Max	None	None	C-Max	None
v/c Ratio	0.64	0.27	0.76	0.63	0.41	2.63						
Control Delay	9.3	0.0	64.6	18.6	45.8	765.1						
Queue Delay	24.2	0.7	0.0	0.0	0.0	0.0						
Total Delay	33.5	0.8	64.6	18.6	45.8	765.1						
Queue Length 50th (ft)	181	0	160	30	72	~1015						
Queue Length 95th (ft)	m123	m0	216	119	m108	m#1249						
Internal Link Dist (ft)		327	978			2452						
Turn Bay Length (ft)	80			170	110							
Base Capacity (vph)	1062	2749	490	400	501	271						
Starvation Cap Reductn	398	1599	0	0	0	0						
Spillback Cap Reductn	0	0	0	0	0	0						
Storage Cap Reductn	0	0	0	0	0	0						
Reduced v/c Ratio	1.02	0.64	0.76	0.63	0.41	2.63						

Intersection Summary

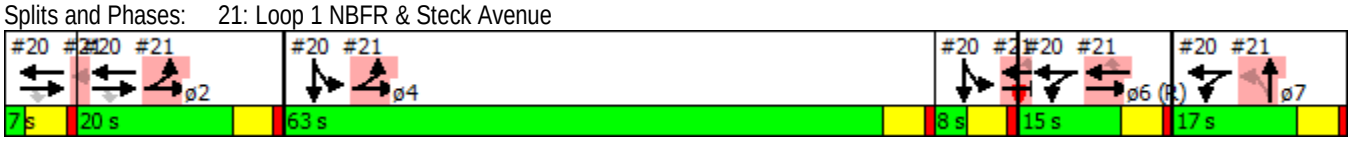
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 90 (69%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 21: Loop 1 NBFR & Steck Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	665	718	0	0	363	246	200	520	178	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0				
Lane Util. Factor	1.00	0.95			0.95	1.00	0.97	1.00				
Frt	1.00	1.00			1.00	0.85	1.00	0.96				
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (prot)	1770	3539			3539	1583	3433	1791				
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (perm)	1770	3539			3539	1583	3433	1791				
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	679	733	0	0	370	251	204	531	182	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	182	0	9	0	0	0	0
Lane Group Flow (vph)	679	733	0	0	370	69	204	704	0	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA				
Protected Phases	2 4	2 4 5 6			6 5			7 1				
Permitted Phases						6 5	7 1					
Actuated Green, G (s)	78.0	101.0			18.0	18.0	19.0	19.0				
Effective Green, g (s)	78.0	101.0			18.0	18.0	19.0	19.0				
Actuated g/C Ratio	0.60	0.78			0.14	0.14	0.15	0.15				
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	1062	2749			490	219	501	261				
v/s Ratio Prot	c0.38	0.21			c0.10			c0.39				
v/s Ratio Perm						0.04	0.06					
v/c Ratio	0.64	0.27			0.76	0.32	0.41	2.70				
Uniform Delay, d1	16.9	4.1			53.9	50.5	50.4	55.5				
Progression Factor	0.52	0.00			1.00	1.00	0.85	0.86				
Incremental Delay, d2	0.1	0.0			5.8	0.3	0.2	773.7				
Delay (s)	8.8	0.0			59.7	50.8	43.3	821.4				
Level of Service	A	A			E	D	D	F				
Approach Delay (s)		4.2			56.1			648.3			0.0	
Approach LOS		A			E			F			A	

Intersection Summary			
HCM 2000 Control Delay	215.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	128.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	76	331	83	19	49	21
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	83	360	90	21	53	23
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			442		464	262
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			442		464	262
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			92		90	97
cM capacity (veh/h)			1118		512	776

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	442	111	76
Volume Left	0	90	53
Volume Right	360	0	23
cSH	1700	1118	570
Volume to Capacity	0.26	0.08	0.13
Queue Length 95th (ft)	0	7	11
Control Delay (s)	0.0	7.0	12.3
Lane LOS		A	B
Approach Delay (s)	0.0	7.0	12.3
Approach LOS			B

Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	44.0%	ICU Level of Service	A
Analysis Period (min)	15		

1: Hart Ln & Spicewood Springs Rd

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	816	121	124	1110	230	233
Lane Group Flow (vph)	907	134	138	1233	256	259
Turn Type	NA	Perm	Prot	NA	Prot	Free
Protected Phases	2		1	6	4	
Permitted Phases		2				Free
Detector Phase	2	2	1	6	4	
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	
Total Split (s)	79.0	79.0	39.0	118.0	32.0	
Total Split (%)	52.7%	52.7%	26.0%	78.7%	21.3%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Max	C-Max	Max	C-Max	None	
v/c Ratio	0.52	0.16	0.26	0.42	0.72	0.16
Control Delay	27.2	10.3	37.9	7.3	76.6	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.2	10.3	37.9	7.3	76.6	0.2
Queue Length 50th (ft)	312	31	107	284	127	0
Queue Length 95th (ft)	374	70	208	273	171	0
Internal Link Dist (ft)	211			988	285	
Turn Bay Length (ft)		110	220		160	
Base Capacity (vph)	1745	817	535	2935	617	1583
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.52	0.16	0.26	0.42	0.41	0.16

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of 1st Green
Natural Cycle: 75
Control Type: Actuated-Coordinated

Splits and Phases: 1: Hart Ln & Spicewood Springs Rd

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	816	121	124	1110	230	233
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	4.0
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	3433	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	3433	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	907	134	138	1233	256	259
RTOR Reduction (vph)	0	36	0	0	0	0
Lane Group Flow (vph)	907	98	138	1233	256	259
Turn Type	NA	Perm	Prot	NA	Prot	Free
Protected Phases	2		1	6	4	
Permitted Phases		2				Free
Actuated Green, G (s)	74.0	74.0	45.4	124.4	15.6	150.0
Effective Green, g (s)	74.0	74.0	45.4	124.4	15.6	150.0
Actuated g/C Ratio	0.49	0.49	0.30	0.83	0.10	1.00
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	1745	780	535	2935	357	1583
v/s Ratio Prot	c0.26		0.08	c0.35	c0.07	
v/s Ratio Perm		0.06				0.16
v/c Ratio	0.52	0.13	0.26	0.42	0.72	0.16
Uniform Delay, d1	25.9	20.5	39.6	3.4	65.1	0.0
Progression Factor	1.00	1.00	0.90	1.95	1.00	1.00
Incremental Delay, d2	1.1	0.3	1.0	0.4	5.6	0.2
Delay (s)	27.0	20.8	36.7	6.9	70.7	0.2
Level of Service	C	C	D	A	E	A
Approach Delay (s)	26.2			9.9	35.3	
Approach LOS	C			A	D	

Intersection Summary			
HCM 2000 Control Delay	20.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	48.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

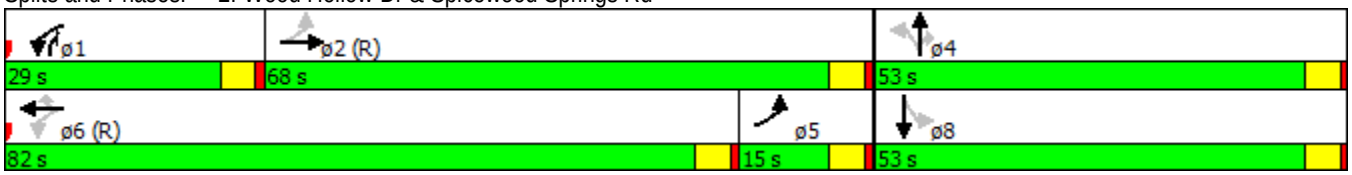
2: Wood Hollow Dr & Spicewood Springs Rd

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	5	1011	112	1015	1	204	7	308	1	4
Lane Group Flow (vph)	6	1187	127	1153	1	0	240	350	0	23
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Perm	NA	pm+ov	Perm	NA
Protected Phases	5	2	1	6			4	1		8
Permitted Phases	2		6		6	4		4	8	
Detector Phase	5	2	1	6	6	4	4	1	8	8
Switch Phase										
Minimum Initial (s)	6.0	25.0	6.0	5.0	5.0	5.0	5.0	6.0	5.0	5.0
Minimum Split (s)	15.0	30.0	15.0	11.0	11.0	35.0	35.0	15.0	35.0	35.0
Total Split (s)	15.0	68.0	29.0	82.0	82.0	53.0	53.0	29.0	53.0	53.0
Total Split (%)	10.0%	45.3%	19.3%	54.7%	54.7%	35.3%	35.3%	19.3%	35.3%	35.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead			Lead		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes			Yes		
Recall Mode	None	C-Max	None	C-Max	C-Max	Max	Max	None	None	None
v/c Ratio	0.02	0.45	0.48	0.55	0.00		0.56	0.51		0.04
Control Delay	6.4	10.7	21.0	15.9	0.0		48.4	30.0		17.5
Queue Delay	0.0	0.1	0.0	0.1	0.0		0.0	0.7		0.0
Total Delay	6.4	10.8	21.0	16.0	0.0		48.4	30.6		17.5
Queue Length 50th (ft)	1	298	38	198	0		195	216		4
Queue Length 95th (ft)	m4	353	97	334	m0		282	288		26
Internal Link Dist (ft)		988		494			464			203
Turn Bay Length (ft)	300		110		100					
Base Capacity (vph)	286	2621	409	2099	959		426	837		544
Starvation Cap Reductn	0	0	0	171	0		0	0		0
Spillback Cap Reductn	0	313	0	0	0		0	220		0
Storage Cap Reductn	0	0	0	0	0		0	0		0
Reduced v/c Ratio	0.02	0.51	0.31	0.60	0.00		0.56	0.57		0.04

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 55 (37%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Wood Hollow Dr & Spicewood Springs Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	1011	33	112	1015	1	204	7	308	1	4	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0		5.0	5.0		5.0	
Lane Util. Factor	1.00	0.91		1.00	0.95	1.00		1.00	1.00		1.00	
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85		0.90	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.95	1.00		1.00	
Satd. Flow (prot)	1770	5061		1770	3539	1583		1777	1583		1673	
Flt Permitted	0.20	1.00		0.16	1.00	1.00		0.72	1.00		0.99	
Satd. Flow (perm)	375	5061		292	3539	1583		1335	1583		1665	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	6	1149	38	127	1153	1	232	8	350	1	5	17
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	32	0	12	0
Lane Group Flow (vph)	6	1185	0	127	1153	1	0	240	318	0	11	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	pm+ov	Perm	NA	
Protected Phases	5	2		1	6			4	1		8	
Permitted Phases	2			6		6	4		4	8		
Actuated Green, G (s)	77.7	77.7		85.0	85.0	85.0		48.0	57.3		48.0	
Effective Green, g (s)	77.7	77.7		85.0	85.0	85.0		48.0	57.3		48.0	
Actuated g/C Ratio	0.52	0.52		0.57	0.57	0.57		0.32	0.38		0.32	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0		5.0	5.0		5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0		2.0	2.0		2.0	
Lane Grp Cap (vph)	212	2621		257	2005	897		427	657		532	
v/s Ratio Prot	0.00	c0.23		0.03	c0.33				0.03			
v/s Ratio Perm	0.01			0.25		0.00		c0.18	0.17		0.01	
v/c Ratio	0.03	0.45		0.49	0.58	0.00		0.56	0.48		0.02	
Uniform Delay, d1	25.0	22.8		17.7	20.9	14.1		42.3	35.2		34.9	
Progression Factor	0.32	0.44		1.04	0.77	1.00		1.00	1.00		1.00	
Incremental Delay, d2	0.0	0.5		0.5	1.2	0.0		5.3	0.2		0.0	
Delay (s)	7.9	10.6		18.9	17.3	14.1		47.6	35.4		34.9	
Level of Service	A	B		B	B	B		D	D		C	
Approach Delay (s)		10.6			17.4			40.3			34.9	
Approach LOS		B			B			D			C	

Intersection Summary			
HCM 2000 Control Delay	19.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	63.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

3: Mopac SBFR & Spicewood Springs Rd

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR	ø1	ø2	ø4	ø5	ø6
Lane Configurations												
Volume (vph)	1028	292	620	752	595	199	375					
Lane Group Flow (vph)	1094	311	660	800	316	529	399					
Turn Type	NA	Free	Prot	NA	Split	NA	Free					
Protected Phases	2 1		19 6 7	2 1 19 6	4 5	4 5		1	2	4	5	6
Permitted Phases		Free					Free					
Detector Phase	2 1		19 6 7	2 1 19 6	4 5	4 5						
Switch Phase												
Minimum Initial (s)								3.0	1.0	1.0	3.0	4.0
Minimum Split (s)								8.0	11.0	11.0	8.0	24.0
Total Split (s)								8.0	35.0	23.0	8.0	51.0
Total Split (%)								5%	23%	15%	5%	34%
Yellow Time (s)								4.0	4.0	4.0	4.0	4.0
All-Red Time (s)								1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag								Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?								Yes	Yes	Yes	Yes	Yes
Recall Mode								None	Max	None	None	C-Max
v/c Ratio	1.22	0.20	0.79	0.36	1.13	1.09dl	0.25					
Control Delay	158.3	0.3	23.9	1.5	148.5	84.3	0.4					
Queue Delay	0.5	0.0	3.2	0.2	0.0	0.0	0.0					
Total Delay	158.8	0.3	27.1	1.7	148.5	84.3	0.4					
Queue Length 50th (ft)	~705	0	597	31	~393	284	0					
Queue Length 95th (ft)	#838	0	m504	m35	#609	#398	0					
Internal Link Dist (ft)	494			333		2669						
Turn Bay Length (ft)			50		145							
Base Capacity (vph)	896	1583	837	2241	279	570	1583					
Starvation Cap Reductn	0	0	99	591	0	0	0					
Spillback Cap Reductn	84	0	0	0	0	0	0					
Storage Cap Reductn	0	0	0	0	0	0	0					
Reduced v/c Ratio	1.35	0.20	0.89	0.48	1.13	0.93	0.25					

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 89 (59%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 120
Control Type: Actuated-Coordinated

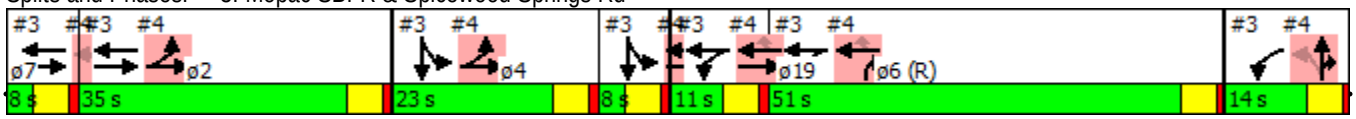
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 3: Mopac SBFR & Spicewood Springs Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1028	292	620	752	0	0	0	0	595	199	375
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	4.0	5.0	5.0					5.0	5.0	4.0
Lane Util. Factor		0.95	1.00	1.00	0.95					0.91	0.91	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.97	1.00
Satd. Flow (prot)		3539	1583	1770	3539					1610	3292	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.97	1.00
Satd. Flow (perm)		3539	1583	1770	3539					1610	3292	1583
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	1094	311	660	800	0	0	0	0	633	212	399
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1094	311	660	800	0	0	0	0	316	529	399
Turn Type		NA	Free	Prot	NA					Split	NA	Free
Protected Phases		2 1		19 6 7	2 1 19 6					4 5	4 5	
Permitted Phases			Free									Free
Actuated Green, G (s)		38.0	150.0	71.0	95.0					26.0	26.0	150.0
Effective Green, g (s)		38.0	150.0	71.0	95.0					26.0	26.0	150.0
Actuated g/C Ratio		0.25	1.00	0.47	0.63					0.17	0.17	1.00
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		896	1583	837	2241					279	570	1583
v/s Ratio Prot		c0.31		c0.37	0.23					c0.20	0.16	
v/s Ratio Perm			0.20									0.25
v/c Ratio		1.22	0.20	0.79	0.36					1.13	1.09dl	0.25
Uniform Delay, d1		56.0	0.0	33.2	13.0					62.0	61.1	0.0
Progression Factor		1.08	1.00	0.59	0.18					1.00	1.00	1.00
Incremental Delay, d2		108.7	0.3	2.3	0.0					94.5	21.1	0.4
Delay (s)		169.4	0.3	21.9	2.4					156.5	82.2	0.4
Level of Service		F	A	C	A					F	F	A
Approach Delay (s)		132.0			11.2			0.0			74.8	
Approach LOS		F			B			A			E	

Intersection Summary			
HCM 2000 Control Delay	71.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	35.0
Intersection Capacity Utilization	90.5%	ICU Level of Service	E
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group

4: Mopac NBFR & Anderson Ln

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	ø1	ø2	ø4	ø5	ø6
Lane Configurations												
Volume (vph)	506	1118	1105	418	266	42	560					
Lane Group Flow (vph)	533	1177	1163	440	252	337	324					
Turn Type	Prot	NA	NA	Perm	Perm	NA	custom					
Protected Phases	2 4	2 4 5 19	6 5 19			7 1	7 1 6	1	2	4	5	6
Permitted Phases				6 5 19	7 1							
Detector Phase	2 4	2 4 5 19	6 5 19	6 5 19	7 1	7 1	7 1 6					
Switch Phase												
Minimum Initial (s)								3.0	1.0	1.0	3.0	4.0
Minimum Split (s)								8.0	11.0	11.0	8.0	24.0
Total Split (s)								8.0	35.0	23.0	8.0	51.0
Total Split (%)								5%	23%	15%	5%	34%
Yellow Time (s)								4.0	4.0	4.0	4.0	4.0
All-Red Time (s)								1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag								Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?								Yes	Yes	Yes	Yes	Yes
Recall Mode								None	Max	None	None	C-Max
v/c Ratio	0.85	0.69	0.76	0.53	1.33	1.31	0.43					
Control Delay	26.1	0.2	39.8	14.9	227.1	199.4	18.5					
Queue Delay	50.6	7.5	0.6	0.0	0.0	0.1	0.0					
Total Delay	76.7	7.7	40.5	14.9	227.1	199.5	18.5					
Queue Length 50th (ft)	270	0	500	128	~334	~364	134					
Queue Length 95th (ft)	m183	m0	588	232	#527	#591	222					
Internal Link Dist (ft)		333	702			1795						
Turn Bay Length (ft)	50			360	280							
Base Capacity (vph)	625	1698	1533	828	190	257	749					
Starvation Cap Reductn	154	480	0	0	0	0	0					
Spillback Cap Reductn	0	0	115	0	0	2	0					
Storage Cap Reductn	0	0	0	0	0	0	0					
Reduced v/c Ratio	1.13	0.97	0.82	0.53	1.33	1.32	0.43					

Intersection Summary

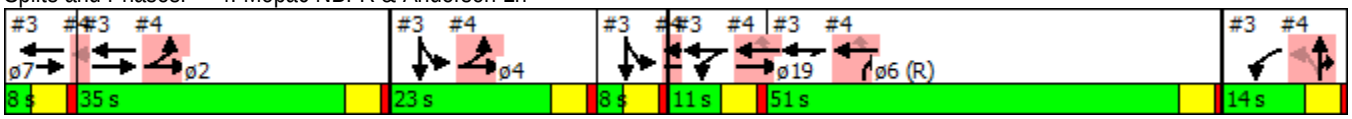
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 89 (59%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 120
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Mopac NBFR & Anderson Ln



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	506	1118	0	0	1105	418	266	42	560	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0	5.0			
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.91	0.95			
Frt	1.00	1.00			1.00	0.85	1.00	0.88	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	1770	3539			3539	1583	1681	1489	1504			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	1770	3539			3539	1583	1681	1489	1504			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	533	1177	0	0	1163	440	280	44	589	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	143	0	89	68	0	0	0
Lane Group Flow (vph)	533	1177	0	0	1163	297	252	248	256	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	custom			
Protected Phases	2 4	2 4 5 19			6 5 19			7 1	7 1 6			
Permitted Phases						6 5 19	7 1					
Actuated Green, G (s)	53.0	72.0			65.0	65.0	17.0	17.0	68.0			
Effective Green, g (s)	53.0	72.0			65.0	65.0	17.0	17.0	68.0			
Actuated g/C Ratio	0.35	0.48			0.43	0.43	0.11	0.11	0.45			
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	625	1698			1533	685	190	168	681			
v/s Ratio Prot	c0.30	c0.33			c0.33				0.17			
v/s Ratio Perm						0.19	0.15	0.17				
v/c Ratio	0.85	0.69			0.76	0.43	1.33	1.48	0.38			
Uniform Delay, d1	44.9	30.4			35.9	29.7	66.5	66.5	27.0			
Progression Factor	0.53	0.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	1.1	0.1			2.0	0.2	178.5	244.3	0.1			
Delay (s)	24.8	0.1			37.8	29.8	245.0	310.8	27.1			
Level of Service	C	A			D	C	F	F	C			
Approach Delay (s)		7.8			35.6			192.0			0.0	
Approach LOS		A			D			F			A	

Intersection Summary			
HCM 2000 Control Delay	58.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	35.0
Intersection Capacity Utilization	90.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	27	148	271	10	30	180
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	36	197	361	13	40	240
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						365
pX, platoon unblocked						
vC, conflicting volume	688	368			375	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	688	368			375	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	91	71			97	
cM capacity (veh/h)	398	677			1184	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	233	375	280
Volume Left	36	0	40
Volume Right	197	13	0
cSH	611	1700	1184
Volume to Capacity	0.38	0.22	0.03
Queue Length 95th (ft)	45	0	3
Control Delay (s)	14.5	0.0	1.4
Lane LOS	B		A
Approach Delay (s)	14.5	0.0	1.4
Approach LOS	B		

Intersection Summary			
Average Delay	4.3		
Intersection Capacity Utilization	46.6%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	20
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	59	74	25	0	97	73	182	0	7	269	36
Peak Hour Factor	0.92	0.76	0.76	0.76	0.92	0.76	0.76	0.76	0.92	0.76	0.76	0.76
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	78	97	33	0	128	96	239	0	9	354	47
Number of Lanes	0	0	1	0	0	0	1	0	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	1
HCM Control Delay	14.9	29.4	15.1
HCM LOS	B	D	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	5%	0%	37%	28%	100%	0%
Vol Thru, %	95%	79%	47%	21%	0%	88%
Vol Right, %	0%	21%	16%	52%	0%	12%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	142	171	158	352	36	136
LT Vol	7	0	59	97	36	0
Through Vol	135	135	74	73	0	119
RT Vol	0	36	25	182	0	17
Lane Flow Rate	186	224	208	463	47	179
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.378	0.445	0.407	0.797	0.107	0.375
Departure Headway (Hd)	7.318	7.14	7.043	6.193	8.151	7.545
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	490	503	509	584	438	474
Service Time	5.091	4.913	5.12	4.25	5.931	5.324
HCM Lane V/C Ratio	0.38	0.445	0.409	0.793	0.107	0.378
HCM Control Delay	14.5	15.6	14.9	29.4	11.9	14.8
HCM Lane LOS	B	C	B	D	B	B
HCM 95th-tile Q	1.7	2.3	2	7.7	0.4	1.7

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	36	119	17
Peak Hour Factor	0.92	0.76	0.76	0.76
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	47	157	22
Number of Lanes	0	1	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	14.2
HCM LOS	B

Lane

Intersection	
Intersection Delay, s/veh	13.8
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	35	73	46	0	93	131	49	0	93	193	53
Peak Hour Factor	0.92	0.94	0.94	0.94	0.92	0.94	0.94	0.94	0.92	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	37	78	49	0	99	139	52	0	99	205	56
Number of Lanes	0	0	1	1	0	0	1	1	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	2
HCM Control Delay	11	13.8	16
HCM LOS	B	B	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	27%	32%	0%	42%	0%	7%
Vol Thru, %	57%	68%	0%	58%	0%	64%
Vol Right, %	16%	0%	100%	0%	100%	28%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	339	108	46	224	49	200
LT Vol	93	35	0	93	0	15
Through Vol	193	73	0	131	0	128
RT Vol	53	0	46	0	49	57
Lane Flow Rate	361	115	49	238	52	213
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.568	0.221	0.082	0.444	0.084	0.345
Departure Headway (Hd)	5.673	6.91	6.028	6.705	5.779	5.837
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	631	516	589	534	615	611
Service Time	3.749	4.704	3.821	4.485	3.558	3.925
HCM Lane V/C Ratio	0.572	0.223	0.083	0.446	0.085	0.349
HCM Control Delay	16	11.7	9.4	14.8	9.1	12
HCM Lane LOS	C	B	A	B	A	B
HCM 95th-tile Q	3.6	0.8	0.3	2.3	0.3	1.5

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	15	128	57
Peak Hour Factor	0.92	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	16	136	61
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	12
HCM LOS	B

Lane

Intersection	
Intersection Delay, s/veh	16
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	36	72	51	0	89	230	73	0	80	229	73
Peak Hour Factor	0.92	0.99	0.99	0.99	0.92	0.99	0.99	0.99	0.92	0.99	0.99	0.99
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	36	73	52	0	90	232	74	0	81	231	74
Number of Lanes	0	0	1	1	0	0	1	1	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	2
HCM Control Delay	11.8	19	16.7
HCM LOS	B	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	33%	0%	28%	0%	100%	0%
Vol Thru, %	0%	76%	67%	0%	72%	0%	0%	82%
Vol Right, %	0%	24%	0%	100%	0%	100%	0%	18%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	80	302	108	51	319	73	69	176
LT Vol	80	0	36	0	89	0	69	0
Through Vol	0	229	72	0	230	0	0	144
RT Vol	0	73	0	51	0	73	0	32
Lane Flow Rate	81	305	109	52	322	74	70	178
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.166	0.571	0.23	0.096	0.631	0.127	0.149	0.348
Departure Headway (Hd)	7.416	6.733	7.597	6.707	7.049	6.193	7.682	7.04
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	484	537	472	534	512	579	467	510
Service Time	5.155	4.471	5.346	4.455	4.788	3.931	5.426	4.783
HCM Lane V/C Ratio	0.167	0.568	0.231	0.097	0.629	0.128	0.15	0.349
HCM Control Delay	11.6	18.1	12.6	10.2	21.1	9.8	11.8	13.5
HCM Lane LOS	B	C	B	B	C	A	B	B
HCM 95th-tile Q	0.6	3.6	0.9	0.3	4.3	0.4	0.5	1.5

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	69	144	32
Peak Hour Factor	0.92	0.99	0.99	0.99
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	70	145	32
Number of Lanes	0	1	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	13
HCM LOS	B

Lane

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	221	0	0	1861	360
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	0	254	0	0	2139	414
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2139	713	2553			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2139	713	2553			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	32	100			
cM capacity (veh/h)	42	374	171			

Direction, Lane #	EB 1	SB 1	SB 2	SB 3	SB 4
Volume Total	254	713	713	713	414
Volume Left	0	0	0	0	0
Volume Right	254	0	0	0	414
cSH	374	1700	1700	1700	1700
Volume to Capacity	0.68	0.42	0.42	0.42	0.24
Queue Length 95th (ft)	120	0	0	0	0
Control Delay (s)	32.7	0.0	0.0	0.0	0.0
Lane LOS	D				
Approach Delay (s)	32.7	0.0			
Approach LOS	D				

Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	56.3%	ICU Level of Service	B
Analysis Period (min)	15		

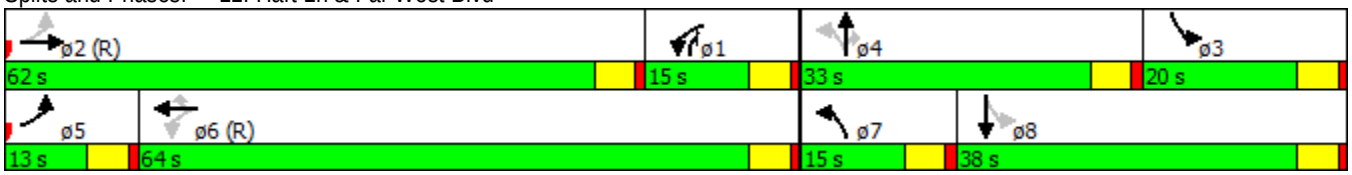
11: Hart Ln & Far West Blvd

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	45	536	178	508	150	59	130	134	166	92
Lane Group Flow (vph)	46	591	184	524	155	61	134	138	171	151
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA
Protected Phases	5	2	1	6		7	4	1	3	8
Permitted Phases	2		6		6	4		4	8	
Detector Phase	5	2	1	6	6	7	4	1	3	8
Switch Phase										
Minimum Initial (s)	4.0	2.0	4.0	2.0	2.0	4.0	2.0	4.0	2.0	2.0
Minimum Split (s)	9.0	24.0	9.0	24.0	24.0	9.0	33.0	9.0	33.0	33.0
Total Split (s)	13.0	62.0	15.0	64.0	64.0	15.0	33.0	15.0	20.0	38.0
Total Split (%)	10.0%	47.7%	11.5%	49.2%	49.2%	11.5%	25.4%	11.5%	15.4%	29.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lead	Lag	Lag	Lag	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	C-Max	None	None	None	None	None
v/c Ratio	0.10	0.29	0.32	0.24	0.16	0.39	0.68	0.39	0.73	0.30
Control Delay	15.4	16.0	35.2	28.0	29.3	59.4	72.7	45.9	71.4	50.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.4	16.0	35.2	28.0	29.3	59.4	72.7	45.9	71.4	50.1
Queue Length 50th (ft)	17	131	100	154	84	48	111	100	140	61
Queue Length 95th (ft)	42	198	200	253	175	90	173	156	204	88
Internal Link Dist (ft)		1703		1174			695			1553
Turn Bay Length (ft)	130		100		490			100	100	
Base Capacity (vph)	484	2005	567	2182	976	171	401	350	281	848
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.29	0.32	0.24	0.16	0.36	0.33	0.39	0.61	0.18

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 100 (77%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 11: Hart Ln & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	45	536	37	178	508	150	59	130	134	166	92	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3505		1770	3539	1583	1770	1863	1583	1770	3342	
Flt Permitted	0.39	1.00		0.43	1.00	1.00	0.60	1.00	1.00	0.67	1.00	
Satd. Flow (perm)	734	3505		799	3539	1583	1112	1863	1583	1250	3342	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	46	553	38	184	524	155	61	134	138	171	95	56
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	46	591	0	184	524	155	61	134	138	171	151	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases	5	2		1	6		7	4	1	3	8	
Permitted Phases	2			6		6	4		4	8		
Actuated Green, G (s)	72.5	72.5		78.3	78.3	78.3	13.8	13.8	24.8	19.4	19.4	
Effective Green, g (s)	72.5	72.5		78.3	78.3	78.3	13.8	13.8	24.8	19.4	19.4	
Actuated g/C Ratio	0.56	0.56		0.60	0.60	0.60	0.11	0.11	0.19	0.15	0.15	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	450	1954		563	2131	953	153	197	362	237	498	
v/s Ratio Prot	0.00	c0.17		0.03	0.15		0.02	c0.07	c0.03	c0.07	0.05	
v/s Ratio Perm	0.05			c0.17		0.10	0.02		0.05	c0.04		
v/c Ratio	0.10	0.30		0.33	0.25	0.16	0.40	0.68	0.38	0.72	0.30	
Uniform Delay, d1	13.4	15.3		13.4	12.1	11.4	53.8	56.0	45.9	51.8	49.3	
Progression Factor	1.00	1.00		2.09	2.11	2.18	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.0	0.4		0.1	0.3	0.3	0.6	7.5	0.2	8.8	0.1	
Delay (s)	13.4	15.7		28.0	25.7	25.2	54.4	63.4	46.1	60.7	49.4	
Level of Service	B	B		C	C	C	D	E	D	E	D	
Approach Delay (s)		15.5			26.1			54.6			55.4	
Approach LOS		B			C			D			E	

Intersection Summary			
HCM 2000 Control Delay	31.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	58.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

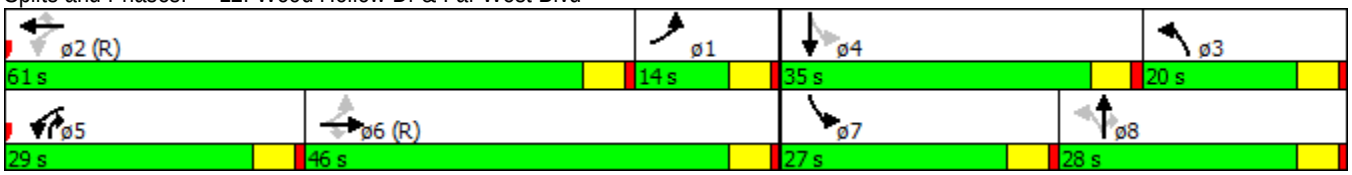
12: Wood Hollow Dr & Far West Blvd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Volume (vph)	102	736	60	216	650	135	97	178	306	160	97
Lane Group Flow (vph)	116	836	68	245	739	153	110	202	348	182	167
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA
Protected Phases	1	6		5	2		3	8	5	7	4
Permitted Phases	6		6	2		2	8		8	4	
Detector Phase	1	6	6	5	2	2	3	8	5	7	4
Switch Phase											
Minimum Initial (s)	4.0	2.0	2.0	4.0	2.0	2.0	4.0	2.0	4.0	4.0	2.0
Minimum Split (s)	9.0	11.0	11.0	9.0	11.0	11.0	9.0	11.0	9.0	9.0	11.0
Total Split (s)	14.0	46.0	46.0	29.0	61.0	61.0	20.0	28.0	29.0	27.0	35.0
Total Split (%)	10.8%	35.4%	35.4%	22.3%	46.9%	46.9%	15.4%	21.5%	22.3%	20.8%	26.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None
v/c Ratio	0.30	0.52	0.09	0.71	0.41	0.17	0.41	0.79	0.62	0.78	0.74
Control Delay	41.5	39.2	4.2	40.5	32.7	12.0	53.7	74.5	28.5	76.5	67.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.5	39.2	4.2	40.5	32.7	12.0	53.7	74.5	28.5	76.5	67.7
Queue Length 50th (ft)	69	300	4	153	256	25	84	166	166	150	122
Queue Length 95th (ft)	134	430	m17	233	328	67	138	237	221	219	186
Internal Link Dist (ft)		1174			673			686			1879
Turn Bay Length (ft)	245		610	125			75		75		
Base Capacity (vph)	387	1601	794	435	1792	877	272	329	649	299	422
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.52	0.09	0.56	0.41	0.17	0.40	0.61	0.54	0.61	0.40

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 20 (15%), Referenced to phase 2:WBTL and 6:EBTL, Start of 1st Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 12: Wood Hollow Dr & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	102	736	60	216	650	135	97	178	306	160	97	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1767	
Flt Permitted	0.37	1.00	1.00	0.18	1.00	1.00	0.00	1.00	1.00	0.00	1.00	
Satd. Flow (perm)	691	3539	1583	338	3539	1583	0	1863	1583	0	1767	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	116	836	68	245	739	153	110	202	348	182	110	57
RTOR Reduction (vph)	0	0	37	0	0	76	0	0	89	0	17	0
Lane Group Flow (vph)	116	836	31	245	739	77	110	202	259	182	150	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases	1	6		5	2		3	8	5	7	4	
Permitted Phases	6		6	2		2	8		8	4		
Actuated Green, G (s)	58.8	58.8	58.8	65.8	65.8	65.8	19.8	18.0	34.0	17.2	15.4	
Effective Green, g (s)	58.8	58.8	58.8	65.8	65.8	65.8	19.8	18.0	34.0	17.2	15.4	
Actuated g/C Ratio	0.45	0.45	0.45	0.51	0.51	0.51	0.15	0.14	0.26	0.13	0.12	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	387	1600	716	347	1791	801	269	257	474	234	209	
v/s Ratio Prot	0.02	c0.24		c0.09	0.21		0.06	c0.11	0.07	c0.10	0.09	
v/s Ratio Perm	0.11		0.02	c0.27		0.05			0.10			
v/c Ratio	0.30	0.52	0.04	0.71	0.41	0.10	0.41	0.79	0.55	0.78	0.72	
Uniform Delay, d1	23.4	25.5	19.9	21.7	20.0	16.7	49.8	54.1	41.3	54.6	55.2	
Progression Factor	1.33	1.33	1.00	1.46	1.49	3.52	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.2	1.2	0.1	4.6	0.6	0.2	0.4	13.5	0.7	13.7	9.4	
Delay (s)	31.2	35.2	20.0	36.4	30.5	58.9	50.2	67.7	42.0	68.3	64.6	
Level of Service	C	D	B	D	C	E	D	E	D	E	E	
Approach Delay (s)		33.7			35.6			51.2			66.5	
Approach LOS		C			D			D			E	

Intersection Summary			
HCM 2000 Control Delay	41.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	67.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

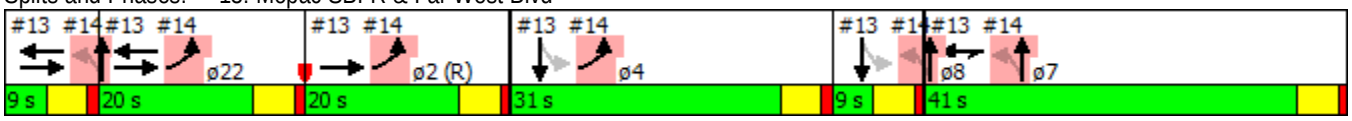
13: Mopac SBFR & Far West Blvd

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR	ø1	ø2	ø4	ø8	ø22
Lane Configurations											
Volume (vph)	1118	371	9	414	396	892					
Lane Group Flow (vph)	1256	417	10	465	919	1002					
Turn Type	NA	Free	Prot	NA	NA	Free					
Protected Phases	1 22 2		7	1 22 7	4 8		1	2	4	8	22
Permitted Phases		Free				Free					
Detector Phase	1 22 2		7	1 22 7	4 8						
Switch Phase											
Minimum Initial (s)			4.0				4.0	4.0	4.0	4.0	4.0
Minimum Split (s)			20.0				9.0	24.0	24.0	9.0	20.0
Total Split (s)			41.0				9.0	20.0	31.0	9.0	20.0
Total Split (%)			31.5%				7%	15%	24%	7%	15%
Yellow Time (s)			4.0				4.0	4.0	4.0	4.0	4.0
All-Red Time (s)			1.0				1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)			0.0								
Total Lost Time (s)			5.0								
Lead/Lag							Lead		Lead	Lag	Lag
Lead-Lag Optimize?							Yes		Yes	Yes	Yes
Recall Mode			None				None	C-Max	None	None	None
v/c Ratio	0.73	0.26	0.04	0.26	0.99	0.63					
Control Delay	29.8	0.4	27.3	3.4	74.3	1.9					
Queue Delay	49.7	0.0	0.0	0.3	0.0	0.0					
Total Delay	79.5	0.4	27.3	3.6	74.3	1.9					
Queue Length 50th (ft)	473	0	3	13	407	0					
Queue Length 95th (ft)	604	0	m9	16	#540	0					
Internal Link Dist (ft)	432			324	532						
Turn Bay Length (ft)		490									
Base Capacity (vph)	1730	1583	490	1769	929	1583					
Starvation Cap Reductn	0	0	0	671	0	0					
Spillback Cap Reductn	772	0	0	0	0	0					
Storage Cap Reductn	0	0	0	0	0	0					
Reduced v/c Ratio	1.31	0.26	0.02	0.42	0.99	0.63					

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBT, Start of 1st Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Mopac SBFR & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1118	371	9	414	0	0	0	0	422	396	892
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	4.0	5.0	5.0						5.0	4.0
Lane Util. Factor		0.95	1.00	1.00	0.95						0.95	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.97	1.00
Satd. Flow (prot)		3539	1583	1770	3539						3450	1583
Flt Permitted		1.00	1.00	0.95	1.00						0.97	1.00
Satd. Flow (perm)		3539	1583	1770	3539						3450	1583
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	1256	417	10	465	0	0	0	0	474	445	1002
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1256	417	10	465	0	0	0	0	0	919	1002
Turn Type		NA	Free	Prot	NA					Perm	NA	Free
Protected Phases		1 22 2		7	1 22 7						4 8	
Permitted Phases			Free							4 8		Free
Actuated Green, G (s)		63.5	130.0	16.5	65.0						35.0	130.0
Effective Green, g (s)		63.5	130.0	16.5	65.0						35.0	130.0
Actuated g/C Ratio		0.49	1.00	0.13	0.50						0.27	1.00
Clearance Time (s)				5.0								
Vehicle Extension (s)				2.0								
Lane Grp Cap (vph)		1728	1583	224	1769						928	1583
v/s Ratio Prot		c0.35		0.01	0.13							
v/s Ratio Perm			0.26								0.27	c0.63
v/c Ratio		0.73	0.26	0.04	0.26						0.99	0.63
Uniform Delay, d1		26.4	0.0	49.8	18.7						47.3	0.0
Progression Factor		0.99	1.00	0.58	0.16						1.00	1.00
Incremental Delay, d2		1.2	0.4	0.0	0.0						27.0	1.9
Delay (s)		27.4	0.4	28.8	3.0						74.4	1.9
Level of Service		C	A	C	A						E	A
Approach Delay (s)		20.7			3.6			0.0			36.6	
Approach LOS		C			A			A			D	

Intersection Summary			
HCM 2000 Control Delay	26.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	64.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

14: Mopac NBFR & Far West Blvd

Lane Group	EBL	NBL	NBT	ø1	ø2	ø4	ø7	ø8	ø22
Lane Configurations									
Volume (vph)	1550	364	24						
Lane Group Flow (vph)	1761	219	222						
Turn Type	Prot	Perm	NA						
Protected Phases	22 2 4		7 1 8	1	2	4	7	8	22
Permitted Phases		7 1 8							
Detector Phase	22 2 4	7 1 8	7 1 8						
Switch Phase									
Minimum Initial (s)				4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)				9.0	24.0	24.0	20.0	9.0	20.0
Total Split (s)				9.0	20.0	31.0	41.0	9.0	20.0
Total Split (%)				7%	15%	24%	32%	7%	15%
Yellow Time (s)				4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)				1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)									
Total Lost Time (s)									
Lead/Lag				Lead		Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes		Yes	Yes
Recall Mode				None	C-Max	None	None	None	None
v/c Ratio	1.01	0.31	0.32						
Control Delay	47.5	27.1	27.1						
Queue Delay	34.4	0.0	0.0						
Total Delay	81.9	27.1	27.1						
Queue Length 50th (ft)	~767	128	130						
Queue Length 95th (ft)	m#879	190	193						
Internal Link Dist (ft)	324		322						
Turn Bay Length (ft)									
Base Capacity (vph)	1742	698	704						
Starvation Cap Reductn	361	0	0						
Spillback Cap Reductn	0	0	0						
Storage Cap Reductn	0	0	0						
Reduced v/c Ratio	1.28	0.31	0.32						

Intersection Summary

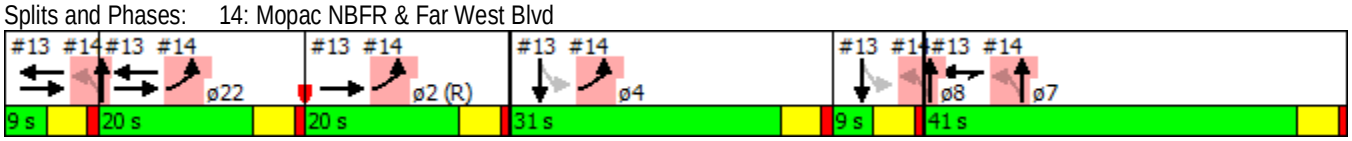
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBT, Start of 1st Green
Natural Cycle: 110
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 14: Mopac NBFR & Far West Blvd



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	1550	0	364	24	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0		
Lane Util. Factor	0.97		0.95	0.95		
Frt	1.00		1.00	1.00		
Flt Protected	0.95		0.95	0.96		
Satd. Flow (prot)	3433		1681	1695		
Flt Permitted	0.95		0.95	0.96		
Satd. Flow (perm)	3433		1681	1695		
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	1761	0	414	27	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1761	0	219	222	0	0
Turn Type	Prot		Perm	NA		
Protected Phases	22 2 4			7 1 8		
Permitted Phases			7 1 8			
Actuated Green, G (s)	66.0		54.0	54.0		
Effective Green, g (s)	66.0		54.0	54.0		
Actuated g/C Ratio	0.51		0.42	0.42		
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)	1742		698	704		
v/s Ratio Prot	c0.51					
v/s Ratio Perm			0.13	0.13		
v/c Ratio	1.01		0.31	0.32		
Uniform Delay, d1	32.0		25.5	25.6		
Progression Factor	0.87		1.00	1.00		
Incremental Delay, d2	19.4		0.1	0.1		
Delay (s)	47.1		25.6	25.7		
Level of Service	D		C	C		
Approach Delay (s)	47.1			25.6	0.0	
Approach LOS	D			C	A	

Intersection Summary			
HCM 2000 Control Delay	42.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	77.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

20: Loop 1 SBFR & Steck Avenue

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	ø1	ø2	ø4	ø5	ø6	ø7
Lane Configurations												
Volume (vph)	602	96	238	330	741	730						
Lane Group Flow (vph)	614	98	243	337	612	1216						
Turn Type	NA	Perm	Prot	NA	Split	NA						
Protected Phases	2 1		6 7	2 1 6 7	4 5	4 5	1	2	4	5	6	7
Permitted Phases		2 1										
Detector Phase	2 1	2 1	6 7	2 1 6 7	4 5	4 5						
Switch Phase												
Minimum Initial (s)							2.0	1.0	1.0	3.0	4.0	4.0
Minimum Split (s)							7.0	11.0	11.0	8.0	24.0	9.0
Total Split (s)							7.0	23.0	32.0	8.0	30.0	30.0
Total Split (%)							5%	18%	25%	6%	23%	23%
Yellow Time (s)							4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)							1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag							Lead	Lag	Lead	Lag		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode							None	Max	None	None	C-Max	None
v/c Ratio	0.90	0.23	0.32	0.15	1.41	1.36						
Control Delay	69.0	3.2	2.7	0.1	235.5	203.8						
Queue Delay	48.2	0.0	0.8	0.0	0.0	0.0						
Total Delay	117.2	3.2	3.5	0.1	235.5	203.8						
Queue Length 50th (ft)	268	0	5	0	~760	~729						
Queue Length 95th (ft)	#373	16	7	0	#1012	#876						
Internal Link Dist (ft)	737			327		333						
Turn Bay Length (ft)		100	80									
Base Capacity (vph)	680	419	748	2313	433	897						
Starvation Cap Reductn	0	0	263	0	0	0						
Spillback Cap Reductn	172	0	0	0	0	1						
Storage Cap Reductn	0	0	0	0	0	0						
Reduced v/c Ratio	1.21	0.23	0.50	0.15	1.41	1.36						

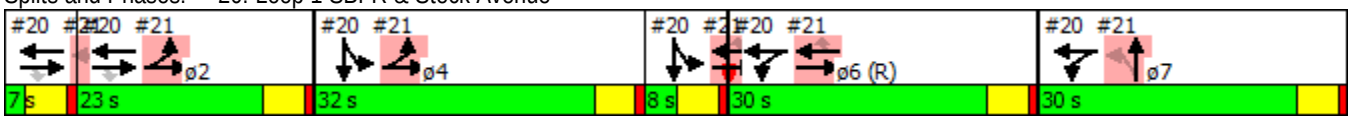
Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 97 (75%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 140
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 20: Loop 1 SBFR & Steck Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	602	96	238	330	0	0	0	0	741	730	320
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0					5.0	5.0	
Lane Util. Factor		0.95	1.00	1.00	0.95					0.91	0.91	
Frt		1.00	0.85	1.00	1.00					1.00	0.96	
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.99	
Satd. Flow (prot)		3539	1583	1770	3539					1610	3234	
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.99	
Satd. Flow (perm)		3539	1583	1770	3539					1610	3234	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	614	98	243	337	0	0	0	0	756	745	327
RTOR Reduction (vph)	0	0	79	0	0	0	0	0	0	0	26	0
Lane Group Flow (vph)	0	614	19	243	337	0	0	0	0	612	1190	0
Turn Type		NA	Perm	Prot	NA					Split	NA	
Protected Phases		2 1		6 7	2 1 6 7					4 5	4 5	
Permitted Phases			2 1									
Actuated Green, G (s)		25.0	25.0	55.0	85.0					35.0	35.0	
Effective Green, g (s)		25.0	25.0	55.0	85.0					35.0	35.0	
Actuated g/C Ratio		0.19	0.19	0.42	0.65					0.27	0.27	
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		680	304	748	2313					433	870	
v/s Ratio Prot		c0.17		c0.14	0.10					c0.38	0.37	
v/s Ratio Perm			0.01									
v/c Ratio		0.90	0.06	0.32	0.15					1.41	1.37	
Uniform Delay, d1		51.3	42.9	25.1	8.6					47.5	47.5	
Progression Factor		1.00	1.00	0.07	0.00					1.00	1.00	
Incremental Delay, d2		15.0	0.0	0.1	0.0					199.3	172.7	
Delay (s)		66.3	42.9	1.8	0.0					246.8	220.2	
Level of Service		E	D	A	A					F	F	
Approach Delay (s)		63.1			0.7			0.0			229.1	
Approach LOS		E			A			A			F	

Intersection Summary			
HCM 2000 Control Delay	148.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	131.8%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

21: Loop 1 NBFR & Steck Avenue

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	ø1	ø2	ø4	ø5	ø6	ø7
Lane Configurations												
Volume (vph)	651	581	453	467	120	783						
Lane Group Flow (vph)	685	612	477	492	126	944						
Turn Type	Prot	NA	NA	Perm	Perm	NA						
Protected Phases	2 4	2 4 5 6	6 5			7 1	1	2	4	5	6	7
Permitted Phases				6 5	7 1							
Detector Phase	2 4	2 4 5 6	6 5	6 5	7 1	7 1						
Switch Phase												
Minimum Initial (s)							2.0	1.0	1.0	3.0	4.0	4.0
Minimum Split (s)							7.0	11.0	11.0	8.0	24.0	9.0
Total Split (s)							7.0	23.0	32.0	8.0	30.0	30.0
Total Split (%)							5%	18%	25%	6%	23%	23%
Yellow Time (s)							4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)							1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag							Lead	Lag	Lead	Lag		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode							None	Max	None	None	C-Max	None
v/c Ratio	1.01	0.26	0.53	0.97	0.15	2.08						
Control Delay	39.2	0.1	44.4	67.1	39.0	521.4						
Queue Delay	34.0	0.9	0.0	0.0	0.0	0.0						
Total Delay	73.2	1.0	44.4	67.1	39.0	521.4						
Queue Length 50th (ft)	~437	0	183	311	43	~1266						
Queue Length 95th (ft)	m361	m0	240	#540	70	#1524						
Internal Link Dist (ft)		327	978			2452						
Turn Bay Length (ft)	80			170	110							
Base Capacity (vph)	680	2395	898	508	845	453						
Starvation Cap Reductn	175	1435	0	0	0	0						
Spillback Cap Reductn	0	0	0	0	0	0						
Storage Cap Reductn	0	0	0	0	0	0						
Reduced v/c Ratio	1.36	0.64	0.53	0.97	0.15	2.08						

Intersection Summary

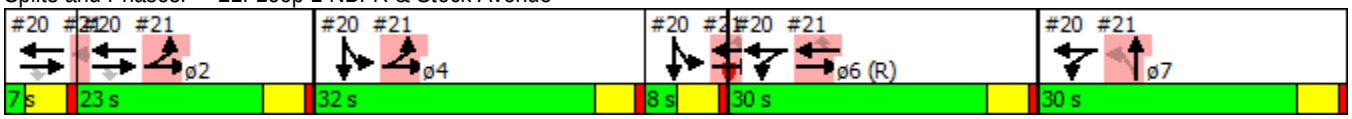
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 97 (75%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 140
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 21: Loop 1 NBFR & Steck Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	651	581	0	0	453	467	120	783	114	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0				
Lane Util. Factor	1.00	0.95			0.95	1.00	0.97	1.00				
Frt	1.00	1.00			1.00	0.85	1.00	0.98				
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (prot)	1770	3539			3539	1583	3433	1827				
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (perm)	1770	3539			3539	1583	3433	1827				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	685	612	0	0	477	492	126	824	120	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	107	0	4	0	0	0	0
Lane Group Flow (vph)	685	612	0	0	477	385	126	940	0	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA				
Protected Phases	2 4	2 4 5 6			6 5			7 1				
Permitted Phases						6 5	7 1					
Actuated Green, G (s)	50.0	88.0			33.0	33.0	32.0	32.0				
Effective Green, g (s)	50.0	88.0			33.0	33.0	32.0	32.0				
Actuated g/C Ratio	0.38	0.68			0.25	0.25	0.25	0.25				
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	680	2395			898	401	845	449				
v/s Ratio Prot	c0.39	0.17			0.13			c0.51				
v/s Ratio Perm						c0.24	0.04					
v/c Ratio	1.01	0.26			0.53	0.96	0.15	2.09				
Uniform Delay, d1	40.0	8.2			41.8	47.9	38.3	49.0				
Progression Factor	0.63	0.00			1.00	1.00	1.00	1.00				
Incremental Delay, d2	12.2	0.0			0.3	34.5	0.0	499.9				
Delay (s)	37.5	0.0			42.1	82.4	38.4	548.9				
Level of Service	D	A			D	F	D	F				
Approach Delay (s)		19.8			62.6			488.8			0.0	
Approach LOS		B			E			F			A	

Intersection Summary			
HCM 2000 Control Delay	182.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.49		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	131.8%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	64	82	20	81	271	116
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	70	89	22	88	295	126
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			159		246	114
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			159		246	114
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		60	87
cM capacity (veh/h)			1421		731	938

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	159	110	421
Volume Left	0	22	295
Volume Right	89	0	126
cSH	1700	1421	783
Volume to Capacity	0.09	0.02	0.54
Queue Length 95th (ft)	0	1	81
Control Delay (s)	0.0	1.6	14.8
Lane LOS		A	B
Approach Delay (s)	0.0	1.6	14.8
Approach LOS			B

Intersection Summary			
Average Delay	9.3		
Intersection Capacity Utilization	45.9%	ICU Level of Service	A
Analysis Period (min)	15		

Appendix O: Synchro Reports – 2020

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1165	236	159	889	100	148
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	1201	243	164	916	103	153
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						6
Median type	Raised			Raised		
Median storage veh)	1			1		
Upstream signal (ft)				1068		
pX, platoon unblocked					0.89	
vC, conflicting volume			1201		1987	601
vC1, stage 1 conf vol					1201	
vC2, stage 2 conf vol					786	
vCu, unblocked vol			1201		1856	601
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			72		32	66
cM capacity (veh/h)			577		153	444

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1
Volume Total	601	601	243	164	458	458	256
Volume Left	0	0	0	164	0	0	103
Volume Right	0	0	243	0	0	0	153
cSH	1700	1700	1700	577	1700	1700	379
Volume to Capacity	0.35	0.35	0.14	0.28	0.27	0.27	0.68
Queue Length 95th (ft)	0	0	0	29	0	0	119
Control Delay (s)	0.0	0.0	0.0	13.7	0.0	0.0	37.5
Lane LOS				B			E
Approach Delay (s)	0.0			2.1			37.5
Approach LOS							E

Intersection Summary			
Average Delay	4.3		
Intersection Capacity Utilization	56.6%	ICU Level of Service	B
Analysis Period (min)	15		

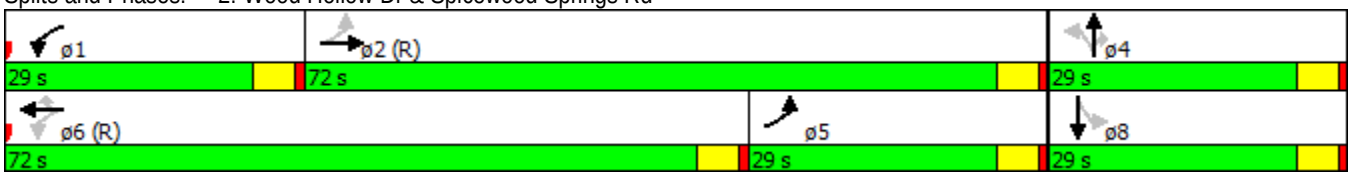
2: Wood Hollow Dr & Spicewood Springs Rd

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	8	1203	364	997	11	49	4	147	6	0
Lane Group Flow (vph)	8	1360	379	1039	11	0	55	153	0	8
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA
Protected Phases	5	2	1	6			4			8
Permitted Phases	2		6		6	4		4	8	
Detector Phase	5	2	1	6	6	4	4	4	8	8
Switch Phase										
Minimum Initial (s)	6.0	25.0	6.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	15.0	30.0	15.0	11.0	11.0	35.0	35.0	35.0	35.0	35.0
Total Split (s)	29.0	72.0	29.0	72.0	72.0	29.0	29.0	29.0	29.0	29.0
Total Split (%)	22.3%	55.4%	22.3%	55.4%	55.4%	22.3%	22.3%	22.3%	22.3%	22.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Max	None	C-Max	C-Max	Max	Max	Max	None	None
v/c Ratio	0.02	0.52	0.87	0.42	0.01		0.21	0.37		0.02
Control Delay	16.0	21.5	44.5	12.1	0.0		47.5	9.4		0.1
Queue Delay	0.0	0.0	0.0	0.4	0.0		0.0	0.0		0.0
Total Delay	16.0	21.5	44.5	12.6	0.0		47.5	9.4		0.1
Queue Length 50th (ft)	3	267	186	141	0		40	0		0
Queue Length 95th (ft)	12	310	m#348	m393	m0		80	59		0
Internal Link Dist (ft)		988		494			464			203
Turn Bay Length (ft)	130		110		100			100		
Base Capacity (vph)	496	2601	435	2455	1116		259	417		372
Starvation Cap Reductn	0	0	0	831	0		0	0		0
Spillback Cap Reductn	0	0	0	0	0		0	0		0
Storage Cap Reductn	0	0	0	0	0		0	0		0
Reduced v/c Ratio	0.02	0.52	0.87	0.64	0.01		0.21	0.37		0.02

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 55 (42%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Wood Hollow Dr & Spicewood Springs Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	1203	103	364	997	11	49	4	147	6	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0		5.0	5.0		5.0	
Lane Util. Factor	1.00	0.91		1.00	0.95	1.00		1.00	1.00		1.00	
Frt	1.00	0.99		1.00	1.00	0.85		1.00	0.85		0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.96	1.00		0.96	
Satd. Flow (prot)	1770	5025		1770	3539	1583		1780	1583		1735	
Flt Permitted	0.28	1.00		0.12	1.00	1.00		0.76	1.00		0.88	
Satd. Flow (perm)	514	5025		215	3539	1583		1408	1583		1575	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	8	1253	107	379	1039	11	51	4	153	6	0	2
RTOR Reduction (vph)	0	8	0	0	0	4	0	0	125	0	7	0
Lane Group Flow (vph)	8	1352	0	379	1039	7	0	55	28	0	1	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases	2			6		6	4		4	8		
Actuated Green, G (s)	67.1	67.1		86.2	86.2	86.2		24.0	24.0		24.0	
Effective Green, g (s)	67.1	67.1		86.2	86.2	86.2		24.0	24.0		24.0	
Actuated g/C Ratio	0.52	0.52		0.66	0.66	0.66		0.18	0.18		0.18	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0		5.0	5.0		5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0		2.0	2.0		2.0	
Lane Grp Cap (vph)	311	2593		428	2346	1049		259	292		290	
v/s Ratio Prot	0.00	c0.27		c0.16	0.29							
v/s Ratio Perm	0.01			c0.42		0.00		c0.04	0.02		0.00	
v/c Ratio	0.03	0.52		0.89	0.44	0.01		0.21	0.10		0.01	
Uniform Delay, d1	15.5	20.8		31.4	10.4	7.4		45.0	44.0		43.3	
Progression Factor	1.00	1.00		1.03	1.13	1.00		1.00	1.00		1.00	
Incremental Delay, d2	0.0	0.8		14.0	0.4	0.0		1.9	0.7		0.0	
Delay (s)	15.5	21.6		46.4	12.2	7.4		46.8	44.7		43.3	
Level of Service	B	C		D	B	A		D	D		D	
Approach Delay (s)		21.5			21.3			45.2			43.3	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	23.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	63.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

3: Mopac SBFR & Spicewood Springs Rd

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR	ø1	ø2	ø4	ø5	ø6
Lane Configurations												
Volume (vph)	704	653	617	720	360	1170	652					
Lane Group Flow (vph)	726	673	636	742	334	1243	672					
Turn Type	NA	Perm	Prot	NA	Split	NA	Perm					
Protected Phases	2 1		19 6 7	2 1 19 6	4 5	4 5		1	2	4	5	6
Permitted Phases		2 1					4 5					
Detector Phase	2 1	2 1	19 6 7	2 1 19 6	4 5	4 5	4 5					
Switch Phase												
Minimum Initial (s)								3.0	1.0	1.0	3.0	4.0
Minimum Split (s)								8.0	11.0	11.0	8.0	24.0
Total Split (s)								8.0	24.0	34.0	8.0	30.0
Total Split (%)								6%	18%	26%	6%	23%
Yellow Time (s)								4.0	4.0	4.0	4.0	4.0
All-Red Time (s)								1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag								Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?								Yes	Yes	Yes	Yes	Yes
Recall Mode								None	Max	None	None	C-Max
v/c Ratio	0.99	1.42	0.92	0.43	0.73	1.29	1.02					
Control Delay	101.3	240.1	33.3	2.8	21.0	155.9	31.9					
Queue Delay	0.0	0.0	31.7	0.1	0.0	0.0	0.0					
Total Delay	101.3	240.1	65.0	2.8	21.0	155.9	31.9					
Queue Length 50th (ft)	343	~679	537	36	217	~722	~494					
Queue Length 95th (ft)	#471	#922	m534	m97	m156	m394	m197					
Internal Link Dist (ft)	494			333		2669						
Turn Bay Length (ft)			50		145							
Base Capacity (vph)	735	475	694	1715	458	963	661					
Starvation Cap Reductn	0	0	95	134	0	0	0					
Spillback Cap Reductn	0	0	0	0	0	0	0					
Storage Cap Reductn	0	0	0	0	0	0	0					
Reduced v/c Ratio	0.99	1.42	1.06	0.47	0.73	1.29	1.02					

Intersection Summary

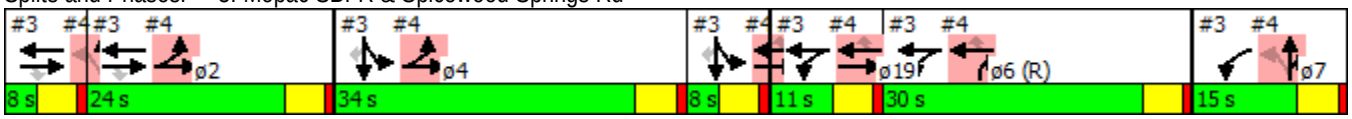
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 8 (6%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 130
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Mopac SBFR & Spicewood Springs Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	704	653	617	720	0	0	0	0	360	1170	652
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0					5.0	5.0	5.0
Lane Util. Factor		0.95	1.00	1.00	0.95					0.91	0.91	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		3539	1583	1770	3539					1610	3385	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (perm)		3539	1583	1770	3539					1610	3385	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	726	673	636	742	0	0	0	0	371	1206	672
RTOR Reduction (vph)	0	0	147	0	0	0	0	0	0	0	0	211
Lane Group Flow (vph)	0	726	526	636	742	0	0	0	0	334	1243	461
Turn Type		NA	Perm	Prot	NA					Split	NA	Perm
Protected Phases		2 1		19 6 7	2 1 19 6					4 5	4 5	
Permitted Phases			2 1									4 5
Actuated Green, G (s)		27.0	27.0	51.0	63.0					37.0	37.0	37.0
Effective Green, g (s)		27.0	27.0	51.0	63.0					37.0	37.0	37.0
Actuated g/C Ratio		0.21	0.21	0.39	0.48					0.28	0.28	0.28
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		735	328	694	1715					458	963	450
v/s Ratio Prot		0.21		c0.36	0.21					0.21	c0.37	
v/s Ratio Perm			c0.33									0.29
v/c Ratio		0.99	1.60	0.92	0.43					0.73	1.29	1.02
Uniform Delay, d1		51.3	51.5	37.5	21.8					42.0	46.5	46.5
Progression Factor		1.46	1.88	0.68	0.20					0.47	0.50	0.57
Incremental Delay, d2		27.7	284.4	5.7	0.0					0.5	131.6	19.5
Delay (s)		102.6	381.3	31.2	4.4					20.1	154.7	45.8
Level of Service		F	F	C	A					C	F	D
Approach Delay (s)		236.7			16.8			0.0			102.2	
Approach LOS		F			B			A			F	

Intersection Summary			
HCM 2000 Control Delay	116.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.45		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	35.0
Intersection Capacity Utilization	115.6%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

4: Mopac NBFR & Anderson Ln

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	ø1	ø2	ø4	ø5	ø6
Lane Configurations												
Volume (vph)	299	765	958	249	379	13	525					
Lane Group Flow (vph)	308	789	988	257	328	314	303					
Turn Type	Prot	NA	NA	Perm	Perm	NA	custom					
Protected Phases	2 4	2 4 5 19	6 5 19			7 1	7 1 6	1	2	4	5	6
Permitted Phases				6 5 19	7 1							
Detector Phase	2 4	2 4 5 19	6 5 19	6 5 19	7 1	7 1	7 1 6					
Switch Phase												
Minimum Initial (s)								3.0	1.0	1.0	3.0	4.0
Minimum Split (s)								8.0	11.0	11.0	8.0	24.0
Total Split (s)								8.0	24.0	34.0	8.0	30.0
Total Split (%)								6%	18%	26%	6%	23%
Yellow Time (s)								4.0	4.0	4.0	4.0	4.0
All-Red Time (s)								1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag								Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?								Yes	Yes	Yes	Yes	Yes
Recall Mode								None	Max	None	None	C-Max
v/c Ratio	0.43	0.40	0.83	0.36	1.41	1.08	0.46					
Control Delay	8.7	0.2	46.5	5.1	236.7	97.2	2.5					
Queue Delay	2.2	1.2	5.4	0.0	0.0	5.5	0.0					
Total Delay	10.9	1.4	51.9	5.1	236.7	102.6	2.5					
Queue Length 50th (ft)	23	0	401	0	~396	~246	4					
Queue Length 95th (ft)	m45	m0	487	59	#601	#448	10					
Internal Link Dist (ft)		333	702			1795						
Turn Bay Length (ft)	50			360	280							
Base Capacity (vph)	721	1960	1197	705	232	292	661					
Starvation Cap Reductn	279	890	0	0	0	0	0					
Spillback Cap Reductn	0	0	158	0	0	4	0					
Storage Cap Reductn	0	0	0	0	0	0	0					
Reduced v/c Ratio	0.70	0.74	0.95	0.36	1.41	1.09	0.46					

Intersection Summary

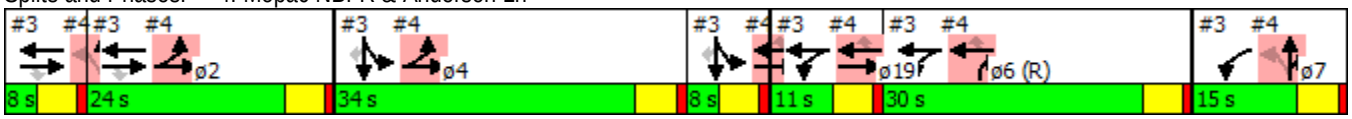
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 8 (6%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 130
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Mopac NBFR & Anderson Ln



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	299	765	0	0	958	249	379	13	525	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0	5.0			
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.91	0.95			
Frt	1.00	1.00			1.00	0.85	1.00	0.89	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.99	1.00			
Satd. Flow (prot)	1770	3539			3539	1583	1681	1487	1504			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.99	1.00			
Satd. Flow (perm)	1770	3539			3539	1583	1681	1487	1504			
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	308	789	0	0	988	257	391	13	541	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	170	0	87	106	0	0	0
Lane Group Flow (vph)	308	789	0	0	988	87	328	227	197	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	custom			
Protected Phases	2 4	2 4 5			6 5	19		7 1	7 1 6			
Permitted Phases						6 5 19	7 1					
Actuated Green, G (s)	53.0	72.0			44.0	44.0	18.0	18.0	48.0			
Effective Green, g (s)	53.0	72.0			44.0	44.0	18.0	18.0	48.0			
Actuated g/C Ratio	0.41	0.55			0.34	0.34	0.14	0.14	0.37			
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	721	1960			1197	535	232	205	555			
v/s Ratio Prot	c0.17	c0.22			c0.28				0.13			
v/s Ratio Perm						0.05	c0.20	0.15				
v/c Ratio	0.43	0.40			0.83	0.16	1.41	1.11	0.36			
Uniform Delay, d1	27.6	16.7			39.5	30.1	56.0	56.0	29.8			
Progression Factor	0.28	0.00			1.00	1.00	0.58	0.62	0.03			
Incremental Delay, d2	0.1	0.0			4.5	0.1	207.9	91.9	0.1			
Delay (s)	7.9	0.0			44.0	30.2	240.2	126.8	1.1			
Level of Service	A	A			D	C	F	F	A			
Approach Delay (s)		2.2			41.2			125.8			0.0	
Approach LOS		A			D			F			A	

Intersection Summary			
HCM 2000 Control Delay	52.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	35.0
Intersection Capacity Utilization	115.6%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	6	15	223	18	79	291
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	7	18	265	21	94	346
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	811	276			287	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	811	276			287	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	98	98			93	
cM capacity (veh/h)	323	763			1275	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	25	287	440
Volume Left	7	0	94
Volume Right	18	21	0
cSH	549	1700	1275
Volume to Capacity	0.05	0.17	0.07
Queue Length 95th (ft)	4	0	6
Control Delay (s)	11.9	0.0	2.3
Lane LOS	B		A
Approach Delay (s)	11.9	0.0	2.3
Approach LOS	B		

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	45.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	9	15	4	1	10	19	27	188	36	102	193	132
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	10	17	5	1	11	22	31	214	41	116	219	150
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											544	
pX, platoon unblocked	0.91	0.91	0.91	0.91	0.91		0.91					
vC, conflicting volume	849	842	294	835	897	234	369			255		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	785	778	177	770	838	234	259			255		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	96	94	99	100	95	97	97			91		
cM capacity (veh/h)	243	265	789	250	245	805	1190			1310		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	32	34	285	485
Volume Left	10	1	31	116
Volume Right	5	22	41	150
cSH	284	438	1190	1310
Volume to Capacity	0.11	0.08	0.03	0.09
Queue Length 95th (ft)	9	6	2	7
Control Delay (s)	19.3	13.9	1.1	2.6
Lane LOS	C	B	A	A
Approach Delay (s)	19.3	13.9	1.1	2.6
Approach LOS	C	B		

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	53.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	21	0	0	2881	99
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	22	0	0	3033	104
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					1035	
pX, platoon unblocked	0.78	0.78	0.78			
vC, conflicting volume	3085	1063	3137			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2687	97	2754			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	97	100			
cM capacity (veh/h)	14	734	111			

Direction, Lane #	EB 1	SB 1	SB 2	SB 3
Volume Total	22	1213	1213	711
Volume Left	0	0	0	0
Volume Right	22	0	0	104
cSH	734	1700	1700	1700
Volume to Capacity	0.03	0.71	0.71	0.42
Queue Length 95th (ft)	2	0	0	0
Control Delay (s)	10.1	0.0	0.0	0.0
Lane LOS	B			
Approach Delay (s)	10.1	0.0		
Approach LOS	B			

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	67.9%	ICU Level of Service	C
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	18
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	39	161	137	0	81	63	8	0	51	128	35
Peak Hour Factor	0.92	0.81	0.81	0.81	0.92	0.81	0.81	0.81	0.92	0.81	0.81	0.81
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	48	199	169	0	100	78	10	0	63	158	43
Number of Lanes	0	0	1	1	0	0	1	1	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	2
HCM Control Delay	15.1	15.4	16.4
HCM LOS	C	C	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	24%	20%	0%	56%	0%	5%
Vol Thru, %	60%	80%	0%	44%	0%	86%
Vol Right, %	16%	0%	100%	0%	100%	9%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	214	200	137	144	8	317
LT Vol	51	39	0	81	0	16
Through Vol	128	161	0	63	0	273
RT Vol	35	0	137	0	8	28
Lane Flow Rate	264	247	169	178	10	391
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.497	0.501	0.304	0.39	0.019	0.703
Departure Headway (Hd)	6.768	7.301	6.48	7.896	6.883	6.463
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	531	491	551	453	517	556
Service Time	4.841	5.072	4.251	5.677	4.663	4.526
HCM Lane V/C Ratio	0.497	0.503	0.307	0.393	0.019	0.703
HCM Control Delay	16.4	17.2	12.1	15.7	9.8	23.5
HCM Lane LOS	C	C	B	C	A	C
HCM 95th-tile Q	2.7	2.8	1.3	1.8	0.1	5.6

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	16	273	28
Peak Hour Factor	0.92	0.81	0.81	0.81
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	20	337	35
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	23.5
HCM LOS	C

Lane

Intersection	
Intersection Delay, s/veh	12.7
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	32	133	172	0	57	127	32	0	24	128	47
Peak Hour Factor	0.92	0.90	0.90	0.90	0.92	0.90	0.90	0.90	0.92	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	36	148	191	0	63	141	36	0	27	142	52
Number of Lanes	0	0	1	1	0	0	1	1	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	2
HCM Control Delay	11.8	13.1	12.7
HCM LOS	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	19%	0%	31%	0%	100%	0%
Vol Thru, %	0%	73%	81%	0%	69%	0%	0%	79%
Vol Right, %	0%	27%	0%	100%	0%	100%	0%	21%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	24	175	165	172	184	32	22	201
LT Vol	24	0	32	0	57	0	22	0
Through Vol	0	128	133	0	127	0	0	158
RT Vol	0	47	0	172	0	32	0	43
Lane Flow Rate	27	194	183	191	204	36	24	223
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.054	0.355	0.334	0.305	0.386	0.058	0.049	0.407
Departure Headway (Hd)	7.282	6.581	6.563	5.753	6.793	5.923	7.227	6.565
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	489	543	545	619	525	599	493	545
Service Time	5.071	4.369	4.345	3.534	4.582	3.71	5.013	4.35
HCM Lane V/C Ratio	0.055	0.357	0.336	0.309	0.389	0.06	0.049	0.409
HCM Control Delay	10.5	13	12.6	11.1	13.8	9.1	10.4	13.8
HCM Lane LOS	B	B	B	B	B	A	B	B
HCM 95th-tile Q	0.2	1.6	1.5	1.3	1.8	0.2	0.2	2

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	22	158	43
Peak Hour Factor	0.92	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	24	176	48
Number of Lanes	0	1	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	13.5
HCM LOS	B

Lane

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	211	0	0	2732	170
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	0	220	0	0	2846	177
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2934	1037	3023			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2934	1037	3023			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	4	100			
cM capacity (veh/h)	12	228	111			

Direction, Lane #	EB 1	SB 1	SB 2	SB 3
Volume Total	220	1138	1138	746
Volume Left	0	0	0	0
Volume Right	220	0	0	177
cSH	228	1700	1700	1700
Volume to Capacity	0.96	0.67	0.67	0.44
Queue Length 95th (ft)	214	0	0	0
Control Delay (s)	95.7	0.0	0.0	0.0
Lane LOS	F			
Approach Delay (s)	95.7	0.0		
Approach LOS	F			

Intersection Summary			
Average Delay	6.5		
Intersection Capacity Utilization	76.3%	ICU Level of Service	D
Analysis Period (min)	15		

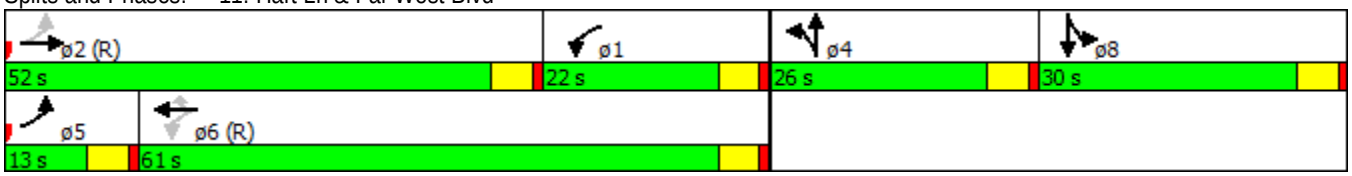
11: Hart Ln & Far West Blvd

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBT
Lane Configurations							
Volume (vph)	56	690	206	276	74	111	257
Lane Group Flow (vph)	67	939	248	333	89	390	605
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	NA
Protected Phases	5	2	1	6		4	8
Permitted Phases	2		6		6		
Detector Phase	5	2	1	6	6	4	8
Switch Phase							
Minimum Initial (s)	4.0	2.0	4.0	2.0	2.0	2.0	2.0
Minimum Split (s)	9.0	24.0	9.0	24.0	24.0	33.0	33.0
Total Split (s)	13.0	52.0	22.0	61.0	61.0	26.0	30.0
Total Split (%)	10.0%	40.0%	16.9%	46.9%	46.9%	20.0%	23.1%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lead	Lag	Lag	Lag		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		
Recall Mode	None	C-Max	None	C-Max	C-Max	None	None
v/c Ratio	0.18	0.71	0.69	0.20	0.12	0.83	0.92
Control Delay	28.6	38.6	67.5	38.3	40.0	69.5	71.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.6	38.6	67.5	38.3	40.0	69.5	71.7
Queue Length 50th (ft)	37	362	165	111	57	168	262
Queue Length 95th (ft)	66	394	224	144	95	204	#321
Internal Link Dist (ft)		1703		1174		695	1553
Turn Bay Length (ft)	130		100		490		
Base Capacity (vph)	377	1318	357	1666	745	524	672
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.71	0.69	0.20	0.12	0.74	0.90

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 100 (77%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green
Natural Cycle: 120
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 11: Hart Ln & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	56	690	90	206	276	74	51	111	162	214	257	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0		5.0			5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		0.95			0.95	
Frt	1.00	0.98		1.00	1.00	0.85		0.93			0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.99			0.98	
Satd. Flow (prot)	1770	3478		1770	3539	1583		3248			3434	
Flt Permitted	0.45	1.00		0.20	1.00	1.00		0.99			0.98	
Satd. Flow (perm)	844	3478		368	3539	1583		3248			3434	
Peak-hour factor, PHF	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Adj. Flow (vph)	67	831	108	248	333	89	61	134	195	258	310	37
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	67	939	0	248	333	89	0	390	0	0	605	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Split	NA		Split	NA	
Protected Phases	5	2		1	6		4	4		8	8	
Permitted Phases	2			6		6						
Actuated Green, G (s)	48.4	48.4		60.3	60.3	60.3		18.8			24.9	
Effective Green, g (s)	48.4	48.4		60.3	60.3	60.3		18.8			24.9	
Actuated g/C Ratio	0.37	0.37		0.46	0.46	0.46		0.14			0.19	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0		5.0			5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0		2.0			2.0	
Lane Grp Cap (vph)	356	1294		363	1641	734		469			657	
v/s Ratio Prot	0.01	c0.27		c0.09	0.09			c0.12			c0.18	
v/s Ratio Perm	0.06			0.22		0.06						
v/c Ratio	0.19	0.73		0.68	0.20	0.12		0.83			0.92	
Uniform Delay, d1	26.9	35.1		38.1	20.6	19.8		54.1			51.6	
Progression Factor	1.00	1.00		1.42	1.76	1.83		1.00			1.00	
Incremental Delay, d2	0.1	3.6		4.0	0.3	0.3		11.4			18.1	
Delay (s)	26.9	38.7		57.9	36.7	36.5		65.5			69.7	
Level of Service	C	D		E	D	D		E			E	
Approach Delay (s)		37.9			44.5			65.5			69.7	
Approach LOS		D			D			E			E	

Intersection Summary			
HCM 2000 Control Delay	50.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	74.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

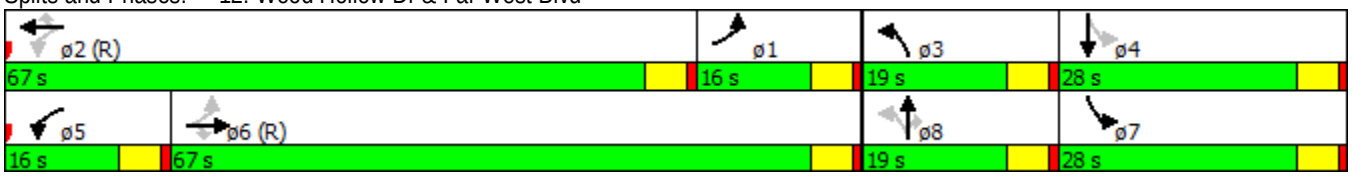
12: Wood Hollow Dr & Far West Blvd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Volume (vph)	77	1056	48	117	573	94	25	84	293	267	120
Lane Group Flow (vph)	82	1123	51	124	610	100	27	89	312	284	187
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA
Protected Phases	1	6		5	2		3	8		7	4
Permitted Phases	6		6	2		2	8		8	4	
Detector Phase	1	6	6	5	2	2	3	8	8	7	4
Switch Phase											
Minimum Initial (s)	4.0	2.0	2.0	4.0	2.0	2.0	4.0	2.0	2.0	4.0	2.0
Minimum Split (s)	9.0	11.0	11.0	9.0	11.0	11.0	9.0	11.0	11.0	9.0	11.0
Total Split (s)	16.0	67.0	67.0	16.0	67.0	67.0	19.0	19.0	19.0	28.0	28.0
Total Split (%)	12.3%	51.5%	51.5%	12.3%	51.5%	51.5%	14.6%	14.6%	14.6%	21.5%	21.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None
v/c Ratio	0.17	0.63	0.06	0.61	0.35	0.12	0.20	0.49	0.95	0.70	0.41
Control Delay	24.5	33.7	2.8	36.1	28.6	10.3	56.6	64.3	59.1	56.2	41.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.5	33.7	2.8	36.1	28.6	10.3	56.6	64.3	59.1	56.2	41.3
Queue Length 50th (ft)	54	453	4	64	170	17	21	71	102	219	123
Queue Length 95th (ft)	m67	m516	m6	m77	m182	m25	52	128	#279	#359	203
Internal Link Dist (ft)		1174			673			686			1879
Turn Bay Length (ft)	245		610	125		700	75		75		
Base Capacity (vph)	479	1788	849	224	1739	829	190	200	343	416	456
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.63	0.06	0.55	0.35	0.12	0.14	0.45	0.91	0.68	0.41

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 10 (8%), Referenced to phase 2:WBTL and 6:EBTL, Start of 1st Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 12: Wood Hollow Dr & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	77	1056	48	117	573	94	25	84	293	267	120	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1775	
Flt Permitted	0.42	1.00	1.00	0.10	1.00	1.00	0.48	1.00	1.00	0.70	1.00	
Satd. Flow (perm)	784	3539	1583	182	3539	1583	898	1863	1583	1303	1775	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	82	1123	51	124	610	100	27	89	312	284	128	59
RTOR Reduction (vph)	0	0	26	0	0	52	0	0	175	0	12	0
Lane Group Flow (vph)	82	1123	25	124	610	48	27	89	137	284	175	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2	8		8	4		
Actuated Green, G (s)	63.7	63.7	63.7	61.9	61.9	61.9	12.8	12.8	12.8	32.6	32.6	
Effective Green, g (s)	63.7	63.7	63.7	61.9	61.9	61.9	12.8	12.8	12.8	32.6	32.6	
Actuated g/C Ratio	0.49	0.49	0.49	0.48	0.48	0.48	0.10	0.10	0.10	0.25	0.25	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	467	1734	775	199	1685	753	118	183	155	414	445	
v/s Ratio Prot	0.01	c0.32		c0.04	0.17		0.01	0.05		c0.13	0.10	
v/s Ratio Perm	0.07		0.02	0.25		0.03	0.01		c0.09	0.04		
v/c Ratio	0.18	0.65	0.03	0.62	0.36	0.06	0.23	0.49	0.88	0.69	0.39	
Uniform Delay, d1	18.9	24.8	17.2	24.7	21.6	18.4	53.7	55.5	57.9	43.0	40.5	
Progression Factor	1.21	1.34	1.00	1.41	1.35	2.95	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.0	1.2	0.0	2.5	0.3	0.1	0.4	0.7	39.6	3.7	0.2	
Delay (s)	22.9	34.4	17.2	37.3	29.5	54.4	54.1	56.2	97.5	46.7	40.7	
Level of Service	C	C	B	D	C	D	D	E	F	D	D	
Approach Delay (s)		32.9			33.7			86.1			44.3	
Approach LOS		C			C			F			D	

Intersection Summary			
HCM 2000 Control Delay	42.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	74.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

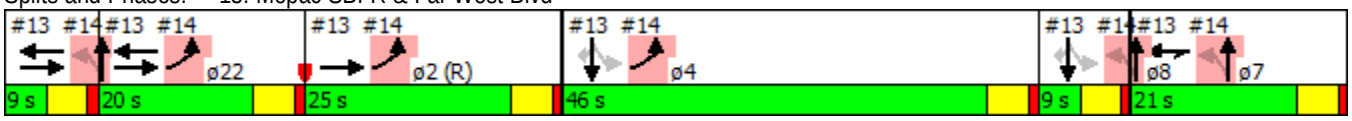
13: Mopac SBFR & Far West Blvd

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR	ø1	ø2	ø4	ø8	ø22
Lane Configurations											
Volume (vph)	804	456	18	527	528	892					
Lane Group Flow (vph)	829	470	19	543	682	920					
Turn Type	NA	Free	Prot	NA	NA	Perm					
Protected Phases	1 22 2		7	1 22 7	4 8		1	2	4	8	22
Permitted Phases		Free				4 8					
Detector Phase	1 22 2		7	1 22 7	4 8	4 8					
Switch Phase											
Minimum Initial (s)			4.0				4.0	4.0	4.0	4.0	4.0
Minimum Split (s)			20.0				9.0	24.0	24.0	9.0	20.0
Total Split (s)			21.0				9.0	25.0	46.0	9.0	20.0
Total Split (%)			16.2%				7%	19%	35%	7%	15%
Yellow Time (s)			4.0				4.0	4.0	4.0	4.0	4.0
All-Red Time (s)			1.0				1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)			0.0								
Total Lost Time (s)			5.0								
Lead/Lag							Lead		Lead	Lag	Lag
Lead-Lag Optimize?							Yes		Yes	Yes	Yes
Recall Mode			None				None	C-Max	None	None	None
v/c Ratio	0.62	0.30	0.09	0.44	0.51	1.02					
Control Delay	32.3	0.3	39.3	1.3	24.8	35.9					
Queue Delay	0.2	0.0	0.0	0.8	0.0	0.0					
Total Delay	32.5	0.3	39.3	2.1	24.8	35.9					
Queue Length 50th (ft)	334	0	4	0	181	~550					
Queue Length 95th (ft)	m404	m0	m11	0	m164	m158					
Internal Link Dist (ft)	432			324	532						
Turn Bay Length (ft)		490									
Base Capacity (vph)	1334	1583	217	1198	1347	906					
Starvation Cap Reductn	0	0	0	356	0	0					
Spillback Cap Reductn	80	0	0	0	0	0					
Storage Cap Reductn	0	0	0	0	0	0					
Reduced v/c Ratio	0.66	0.30	0.09	0.64	0.51	1.02					

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 106 (82%), Referenced to phase 2:EBT, Start of 1st Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Mopac SBFR & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	804	456	18	527	0	0	0	0	134	528	892
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	4.0	5.0	5.0						5.0	5.0
Lane Util. Factor		0.95	1.00	1.00	0.95						0.95	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (prot)		3539	1583	1770	3539						3504	1583
Flt Permitted		1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (perm)		3539	1583	1770	3539						3504	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	829	470	19	543	0	0	0	0	138	544	920
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	298
Lane Group Flow (vph)	0	829	470	19	543	0	0	0	0	0	682	622
Turn Type		NA	Free	Prot	NA					Perm	NA	Perm
Protected Phases		1 22 2		7	1 22 7						4 8	
Permitted Phases			Free							4 8		4 8
Actuated Green, G (s)		49.0	130.0	16.0	45.0						50.0	50.0
Effective Green, g (s)		49.0	130.0	16.0	45.0						50.0	50.0
Actuated g/C Ratio		0.38	1.00	0.12	0.35						0.38	0.38
Clearance Time (s)				5.0								
Vehicle Extension (s)				2.0								
Lane Grp Cap (vph)		1333	1583	217	1225						1347	608
v/s Ratio Prot		c0.23		0.01	c0.15							
v/s Ratio Perm			0.30								0.19	c0.39
v/c Ratio		0.62	0.30	0.09	0.44						0.51	1.02
Uniform Delay, d1		33.0	0.0	50.5	32.8						30.6	40.0
Progression Factor		0.92	1.00	0.76	0.01						0.79	0.59
Incremental Delay, d2		0.5	0.3	0.0	0.1						0.0	29.2
Delay (s)		30.9	0.3	38.4	0.5						24.1	52.6
Level of Service		C	A	D	A						C	D
Approach Delay (s)		19.9			1.8			0.0			40.5	
Approach LOS		B			A			A			D	

Intersection Summary			
HCM 2000 Control Delay	26.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	92.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

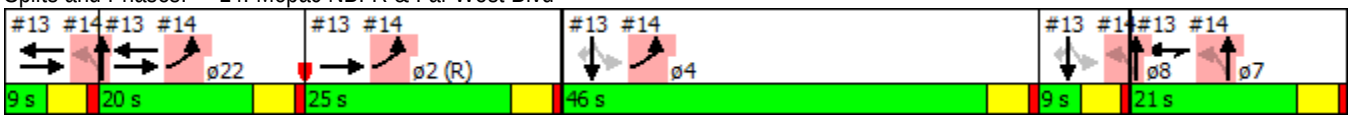
14: Mopac NBFR & Far West Blvd

Lane Group	EBL	NBL	NBT	ø1	ø2	ø4	ø7	ø8	ø22
Lane Configurations									
Volume (vph)	955	546	2						
Lane Group Flow (vph)	995	284	287						
Turn Type	Prot	Perm	NA						
Protected Phases	22 2 4		7 1 8	1	2	4	7	8	22
Permitted Phases		7 1 8							
Detector Phase	22 2 4	7 1 8	7 1 8						
Switch Phase									
Minimum Initial (s)				4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)				9.0	24.0	24.0	20.0	9.0	20.0
Total Split (s)				9.0	25.0	46.0	21.0	9.0	20.0
Total Split (%)				7%	19%	35%	16%	7%	15%
Yellow Time (s)				4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)				1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)									
Total Lost Time (s)									
Lead/Lag				Lead		Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes		Yes	Yes
Recall Mode				None	C-Max	None	None	None	None
v/c Ratio	0.44	0.65	0.65						
Control Delay	3.5	50.6	50.8						
Queue Delay	0.6	0.0	0.0						
Total Delay	4.1	50.6	50.8						
Queue Length 50th (ft)	12	225	227						
Queue Length 95th (ft)	14	330	334						
Internal Link Dist (ft)	324		322						
Turn Bay Length (ft)									
Base Capacity (vph)	2271	426	427						
Starvation Cap Reductn	818	0	0						
Spillback Cap Reductn	0	0	0						
Storage Cap Reductn	0	0	0						
Reduced v/c Ratio	0.68	0.67	0.67						

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 106 (82%), Referenced to phase 2:EBT, Start of 1st Green
Natural Cycle: 110
Control Type: Actuated-Coordinated

Splits and Phases: 14: Mopac NBFR & Far West Blvd



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	955	0	546	2	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0		
Lane Util. Factor	0.97		0.95	0.95		
Frt	1.00		1.00	1.00		
Flt Protected	0.95		0.95	0.95		
Satd. Flow (prot)	3433		1681	1686		
Flt Permitted	0.95		0.95	0.95		
Satd. Flow (perm)	3433		1681	1686		
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	995	0	569	2	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	995	0	284	287	0	0
Turn Type	Prot		Perm	NA		
Protected Phases	22 2 4			7 1 8		
Permitted Phases			7 1 8			
Actuated Green, G (s)	86.0		34.0	34.0		
Effective Green, g (s)	86.0		34.0	34.0		
Actuated g/C Ratio	0.66		0.26	0.26		
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)	2271		439	440		
v/s Ratio Prot	c0.29					
v/s Ratio Perm			0.17	0.17		
v/c Ratio	0.44		0.65	0.65		
Uniform Delay, d1	10.5		42.7	42.7		
Progression Factor	0.28		1.00	1.00		
Incremental Delay, d2	0.0		2.5	2.6		
Delay (s)	3.0		45.1	45.4		
Level of Service	A		D	D		
Approach Delay (s)	3.0			45.3	0.0	
Approach LOS	A			D	A	

Intersection Summary			
HCM 2000 Control Delay	18.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	105.1%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

20: Loop 1 SBFR & Steck Avenue

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	ø1	ø2	ø4	ø5	ø6	ø7
Lane Configurations												
Volume (vph)	535	136	149	350	951	1846						
Lane Group Flow (vph)	569	145	159	372	911	2378						
Turn Type	NA	Perm	Prot	NA	Split	NA						
Protected Phases	2 1		6 7	2 1 6 7	4 5	4 5	1	2	4	5	6	7
Permitted Phases		2 1										
Detector Phase	2 1	2 1	6 7	2 1 6 7	4 5	4 5						
Switch Phase												
Minimum Initial (s)							2.0	1.0	1.0	3.0	4.0	4.0
Minimum Split (s)							7.0	11.0	11.0	8.0	15.0	9.0
Total Split (s)							7.0	20.0	63.0	8.0	15.0	17.0
Total Split (%)							5%	15%	48%	6%	12%	13%
Yellow Time (s)							4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)							1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag							Lead	Lag	Lead	Lag		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode							None	Max	None	None	C-Max	None
v/c Ratio	0.95	0.38	0.43	0.25	1.12	1.41						
Control Delay	80.0	10.6	21.3	0.3	99.4	214.4						
Queue Delay	15.5	0.0	0.0	0.0	0.0	0.0						
Total Delay	95.5	10.6	21.3	0.3	99.4	214.4						
Queue Length 50th (ft)	252	1	25	0	~965	~1479						
Queue Length 95th (ft)	#367	61	m45	m0	#1243	#1618						
Internal Link Dist (ft)	737			327		333						
Turn Bay Length (ft)		100	80									
Base Capacity (vph)	598	386	367	1470	817	1692						
Starvation Cap Reductn	0	0	0	0	0	0						
Spillback Cap Reductn	42	0	0	0	0	0						
Storage Cap Reductn	0	0	0	0	0	0						
Reduced v/c Ratio	1.02	0.38	0.43	0.25	1.12	1.41						

Intersection Summary

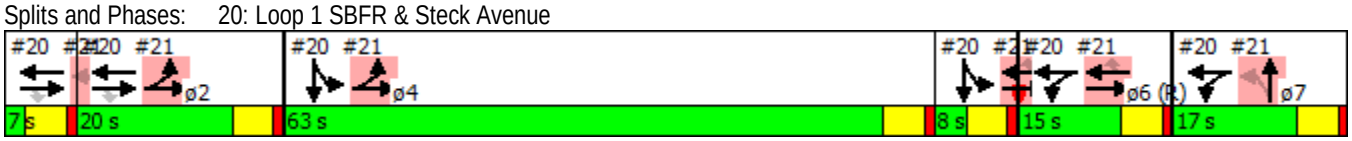
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 90 (69%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 20: Loop 1 SBFR & Steck Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	535	136	149	350	0	0	0	0	951	1846	294
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0					5.0	5.0	
Lane Util. Factor		0.95	1.00	1.00	0.95					0.91	0.91	
Frt		1.00	0.85	1.00	1.00					1.00	0.98	
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	3539					1610	3316	
Flt Permitted		1.00	1.00	0.95	1.00					0.95	1.00	
Satd. Flow (perm)		3539	1583	1770	3539					1610	3316	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	569	145	159	372	0	0	0	0	1012	1964	313
RTOR Reduction (vph)	0	0	119	0	0	0	0	0	0	0	9	0
Lane Group Flow (vph)	0	569	26	159	372	0	0	0	0	911	2369	0
Turn Type		NA	Perm	Prot	NA					Split	NA	
Protected Phases		2 1		6 7	2 1 6 7					4 5	4 5	
Permitted Phases			2 1									
Actuated Green, G (s)		22.0	22.0	27.0	54.0					66.0	66.0	
Effective Green, g (s)		22.0	22.0	27.0	54.0					66.0	66.0	
Actuated g/C Ratio		0.17	0.17	0.21	0.42					0.51	0.51	
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		598	267	367	1470					817	1683	
v/s Ratio Prot		c0.16		c0.09	0.11					0.57	c0.71	
v/s Ratio Perm			0.02									
v/c Ratio		0.95	0.10	0.43	0.25					1.12	1.41	
Uniform Delay, d1		53.5	45.6	44.8	24.8					32.0	32.0	
Progression Factor		1.00	1.00	0.41	0.00					1.00	1.00	
Incremental Delay, d2		25.0	0.1	0.2	0.0					68.0	187.1	
Delay (s)		78.5	45.7	18.5	0.0					100.0	219.1	
Level of Service		E	D	B	A					F	F	
Approach Delay (s)		71.8			5.6			0.0			186.1	
Approach LOS		E			A			A			F	

Intersection Summary			
HCM 2000 Control Delay	147.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.25		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	132.5%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

21: Loop 1 NBFR & Steck Avenue

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	ø1	ø2	ø4	ø5	ø6	ø7
Lane Configurations												
Volume (vph)	692	747	378	255	208	541						
Lane Group Flow (vph)	706	762	386	260	212	741						
Turn Type	Prot	NA	NA	Perm	Perm	NA						
Protected Phases	2 4	2 4 5 6	6 5			7 1	1	2	4	5	6	7
Permitted Phases				6 5	7 1							
Detector Phase	2 4	2 4 5 6	6 5	6 5	7 1	7 1						
Switch Phase												
Minimum Initial (s)							2.0	1.0	1.0	3.0	4.0	4.0
Minimum Split (s)							7.0	11.0	11.0	8.0	15.0	9.0
Total Split (s)							7.0	20.0	63.0	8.0	15.0	17.0
Total Split (%)							5%	15%	48%	6%	12%	13%
Yellow Time (s)							4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)							1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag							Lead	Lag	Lead	Lag		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode							None	Max	None	None	C-Max	None
v/c Ratio	0.66	0.28	0.79	0.67	0.42	2.73						
Control Delay	9.7	0.0	66.6	23.4	46.1	810.6						
Queue Delay	37.6	0.8	0.0	0.0	0.0	0.0						
Total Delay	47.2	0.9	66.6	23.4	46.1	810.6						
Queue Length 50th (ft)	217	0	167	48	75	~1060						
Queue Length 95th (ft)	m123	m0	#234	144	m112	m#1301						
Internal Link Dist (ft)		327	978			2452						
Turn Bay Length (ft)	80			170	110							
Base Capacity (vph)	1062	2749	490	389	501	271						
Starvation Cap Reductn	398	1598	0	0	0	0						
Spillback Cap Reductn	0	0	0	0	0	0						
Storage Cap Reductn	0	0	0	0	0	0						
Reduced v/c Ratio	1.06	0.66	0.79	0.67	0.42	2.73						

Intersection Summary

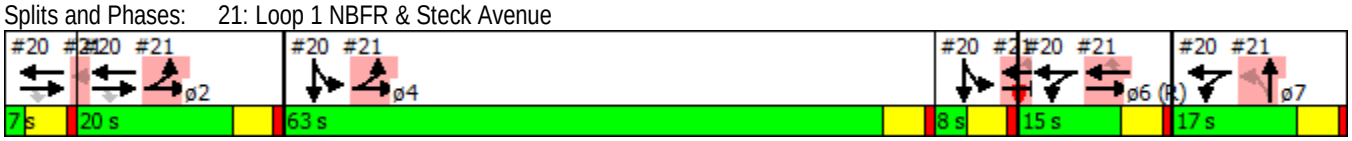
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 90 (69%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 21: Loop 1 NBFR & Steck Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	692	747	0	0	378	255	208	541	185	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0				
Lane Util. Factor	1.00	0.95			0.95	1.00	0.97	1.00				
Frt	1.00	1.00			1.00	0.85	1.00	0.96				
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (prot)	1770	3539			3539	1583	3433	1791				
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (perm)	1770	3539			3539	1583	3433	1791				
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	706	762	0	0	386	260	212	552	189	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	171	0	9	0	0	0	0
Lane Group Flow (vph)	706	762	0	0	386	89	212	732	0	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA				
Protected Phases	2 4	2 4 5 6			6 5			7 1				
Permitted Phases						6 5	7 1					
Actuated Green, G (s)	78.0	101.0			18.0	18.0	19.0	19.0				
Effective Green, g (s)	78.0	101.0			18.0	18.0	19.0	19.0				
Actuated g/C Ratio	0.60	0.78			0.14	0.14	0.15	0.15				
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	1062	2749			490	219	501	261				
v/s Ratio Prot	c0.40	0.22			c0.11			c0.41				
v/s Ratio Perm						0.06	0.06					
v/c Ratio	0.66	0.28			0.79	0.41	0.42	2.80				
Uniform Delay, d1	17.3	4.1			54.2	51.1	50.5	55.5				
Progression Factor	0.52	0.00			1.00	1.00	0.86	0.86				
Incremental Delay, d2	0.1	0.0			7.6	0.5	0.2	821.8				
Delay (s)	9.2	0.0			61.7	51.6	43.5	869.6				
Level of Service	A	A			E	D	D	F				
Approach Delay (s)		4.4			57.7			685.8			0.0	
Approach LOS		A			E			F			A	

Intersection Summary			
HCM 2000 Control Delay	227.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.19		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	132.5%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	840	117	122	1122	207	221
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	933	130	136	1247	230	246
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						6
Median type	Raised			Raised		
Median storage veh)	1			1		
Upstream signal (ft)				1068		
pX, platoon unblocked					0.85	
vC, conflicting volume			933		1828	467
vC1, stage 1 conf vol					933	
vC2, stage 2 conf vol					894	
vCu, unblocked vol			933		1613	467
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			81		0	55
cM capacity (veh/h)			729		197	543

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1
Volume Total	467	467	130	136	623	623	476
Volume Left	0	0	0	136	0	0	230
Volume Right	0	0	130	0	0	0	246
cSH	1700	1700	1700	729	1700	1700	350
Volume to Capacity	0.27	0.27	0.08	0.19	0.37	0.37	1.36
Queue Length 95th (ft)	0	0	0	17	0	0	584
Control Delay (s)	0.0	0.0	0.0	11.1	0.0	0.0	209.7
Lane LOS				B			F
Approach Delay (s)	0.0			1.1			209.7
Approach LOS							F

Intersection Summary			
Average Delay	34.7		
Intersection Capacity Utilization	51.4%	ICU Level of Service	A
Analysis Period (min)	15		

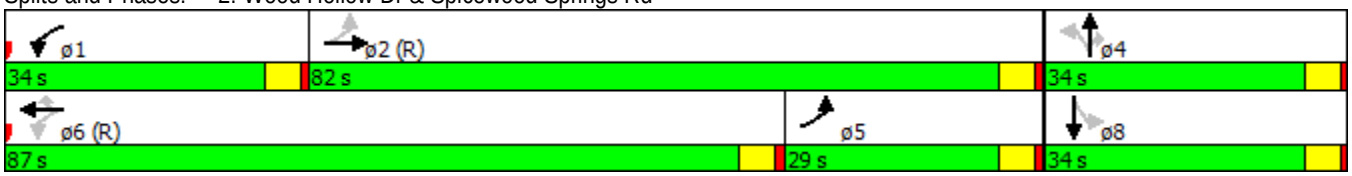
2: Wood Hollow Dr & Spicewood Springs Rd

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	5	1030	103	1050	1	180	8	273	1	4
Lane Group Flow (vph)	6	1198	117	1193	1	0	214	310	0	23
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA
Protected Phases	5	2	1	6			4			8
Permitted Phases	2		6		6	4		4	8	
Detector Phase	5	2	1	6	6	4	4	4	8	8
Switch Phase										
Minimum Initial (s)	6.0	25.0	6.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	15.0	30.0	15.0	11.0	11.0	35.0	35.0	35.0	35.0	35.0
Total Split (s)	29.0	82.0	34.0	87.0	87.0	34.0	34.0	34.0	34.0	34.0
Total Split (%)	19.3%	54.7%	22.7%	58.0%	58.0%	22.7%	22.7%	22.7%	22.7%	22.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Max	None	C-Max	C-Max	Max	Max	Max	None	None
v/c Ratio	0.02	0.36	0.37	0.48	0.00		0.83	0.65		0.07
Control Delay	10.4	12.3	11.8	10.6	0.0		83.9	24.0		24.8
Queue Delay	0.0	0.0	0.0	0.3	0.0		0.0	4.5		0.0
Total Delay	10.4	12.4	11.8	10.9	0.0		83.9	28.5		24.8
Queue Length 50th (ft)	2	179	24	150	0		204	83		5
Queue Length 95th (ft)	8	223	m57	305	m0		#330	183		31
Internal Link Dist (ft)		988		494			464			203
Turn Bay Length (ft)	130		110		100			100		
Base Capacity (vph)	481	3310	515	2481	1125		258	479		334
Starvation Cap Reductn	0	0	0	563	0		0	0		0
Spillback Cap Reductn	0	459	0	0	0		0	106		0
Storage Cap Reductn	0	0	0	0	0		0	0		0
Reduced v/c Ratio	0.01	0.42	0.23	0.62	0.00		0.83	0.83		0.07

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 55 (37%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Wood Hollow Dr & Spicewood Springs Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	1030	25	103	1050	1	180	8	273	1	4	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0		5.0	5.0		5.0	
Lane Util. Factor	1.00	0.91		1.00	0.95	1.00		1.00	1.00		1.00	
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85		0.90	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.95	1.00		1.00	
Satd. Flow (prot)	1770	5067		1770	3539	1583		1778	1583		1673	
Flt Permitted	0.22	1.00		0.18	1.00	1.00		0.72	1.00		0.99	
Satd. Flow (perm)	402	5067		341	3539	1583		1338	1583		1662	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	6	1170	28	117	1193	1	205	9	310	1	5	17
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	173	0	14	0
Lane Group Flow (vph)	6	1197	0	117	1193	1	0	214	137	0	9	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases	2			6		6	4		4	8		
Actuated Green, G (s)	98.0	98.0		101.2	101.2	101.2		29.0	29.0		29.0	
Effective Green, g (s)	98.0	98.0		101.2	101.2	101.2		29.0	29.0		29.0	
Actuated g/C Ratio	0.65	0.65		0.67	0.67	0.67		0.19	0.19		0.19	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0		5.0	5.0		5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0		2.0	2.0		2.0	
Lane Grp Cap (vph)	306	3310		306	2387	1067		258	306		321	
v/s Ratio Prot	0.00	c0.24		0.02	c0.34							
v/s Ratio Perm	0.01			0.24		0.00		c0.16	0.09		0.01	
v/c Ratio	0.02	0.36		0.38	0.50	0.00		0.83	0.45		0.03	
Uniform Delay, d1	12.2	11.8		9.8	12.0	7.9		58.1	53.4		49.1	
Progression Factor	1.00	1.00		0.96	0.85	1.00		1.00	1.00		1.00	
Incremental Delay, d2	0.0	0.3		0.3	0.7	0.0		25.5	4.7		0.0	
Delay (s)	12.2	12.1		9.7	10.8	7.9		83.6	58.1		49.1	
Level of Service	B	B		A	B	A		F	E		D	
Approach Delay (s)		12.1			10.7			68.5			49.1	
Approach LOS		B			B			E			D	

Intersection Summary			
HCM 2000 Control Delay	21.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

3: Mopac SBFR & Spicewood Springs Rd

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR	ø1	ø2	ø4	ø5	ø6
Lane Configurations												
Volume (vph)	1000	304	631	767	619	202	386					
Lane Group Flow (vph)	1064	323	671	816	329	545	411					
Turn Type	NA	Perm	Prot	NA	Split	NA	Perm					
Protected Phases	2 1		19 6 7 2 1	19 6	4 5	4 5		1	2	4	5	6
Permitted Phases		2 1					4 5					
Detector Phase	2 1	2 1	19 6 7 2 1	19 6	4 5	4 5	4 5					
Switch Phase												
Minimum Initial (s)								3.0	1.0	1.0	3.0	4.0
Minimum Split (s)								8.0	11.0	11.0	8.0	24.0
Total Split (s)								8.0	35.0	23.0	8.0	51.0
Total Split (%)								5%	23%	15%	5%	34%
Yellow Time (s)								4.0	4.0	4.0	4.0	4.0
All-Red Time (s)								1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag								Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?								Yes	Yes	Yes	Yes	Yes
Recall Mode								None	Max	None	None	C-Max
v/c Ratio	1.19	0.60	0.80	0.36	1.18	1.13dl	0.80					
Control Delay	143.2	34.3	23.6	1.5	163.3	89.2	30.6					
Queue Delay	0.5	0.2	3.9	0.2	0.0	0.0	0.0					
Total Delay	143.7	34.5	27.5	1.7	163.3	89.2	30.6					
Queue Length 50th (ft)	~662	175	611	31	~421	293	121					
Queue Length 95th (ft)	#805	277	m499	m36	#642	#417	#271					
Internal Link Dist (ft)	494			333		2669						
Turn Bay Length (ft)			50		145							
Base Capacity (vph)	896	536	837	2241	279	570	511					
Starvation Cap Reductn	0	16	100	591	0	0	0					
Spillback Cap Reductn	77	0	0	0	0	0	0					
Storage Cap Reductn	0	0	0	0	0	0	0					
Reduced v/c Ratio	1.30	0.62	0.91	0.49	1.18	0.96	0.80					

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 89 (59%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 120
Control Type: Actuated-Coordinated

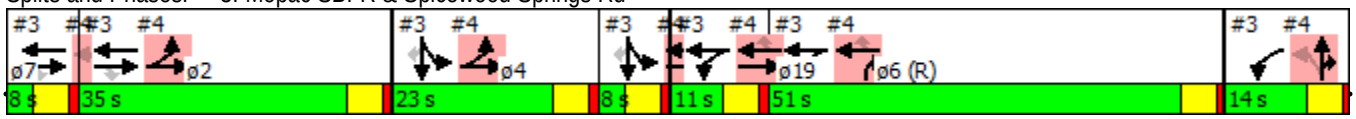
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 3: Mopac SBFR & Spicewood Springs Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1000	304	631	767	0	0	0	0	619	202	386
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0					5.0	5.0	5.0
Lane Util. Factor		0.95	1.00	1.00	0.95					0.91	0.91	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.97	1.00
Satd. Flow (prot)		3539	1583	1770	3539					1610	3291	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.97	1.00
Satd. Flow (perm)		3539	1583	1770	3539					1610	3291	1583
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	1064	323	671	816	0	0	0	0	659	215	411
RTOR Reduction (vph)	0	0	135	0	0	0	0	0	0	0	0	237
Lane Group Flow (vph)	0	1064	188	671	816	0	0	0	0	329	545	174
Turn Type		NA	Perm	Prot	NA					Split	NA	Perm
Protected Phases		2 1		19 6 7	2 1 19 6					4 5	4 5	
Permitted Phases			2 1									4 5
Actuated Green, G (s)		38.0	38.0	71.0	95.0					26.0	26.0	26.0
Effective Green, g (s)		38.0	38.0	71.0	95.0					26.0	26.0	26.0
Actuated g/C Ratio		0.25	0.25	0.47	0.63					0.17	0.17	0.17
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		896	401	837	2241					279	570	274
v/s Ratio Prot		c0.30		c0.38	0.23					c0.20	0.17	
v/s Ratio Perm			0.12									0.11
v/c Ratio		1.19	0.47	0.80	0.36					1.18	1.13dl	0.63
Uniform Delay, d1		56.0	47.4	33.5	13.1					62.0	61.4	57.6
Progression Factor		1.02	1.40	0.57	0.18					1.00	1.00	1.00
Incremental Delay, d2		94.8	0.3	2.5	0.0					111.4	26.7	3.5
Delay (s)		151.9	66.7	21.8	2.4					173.4	88.1	61.1
Level of Service		F	E	C	A					F	F	E
Approach Delay (s)		132.1			11.1			0.0			101.3	
Approach LOS		F			B			A			F	

Intersection Summary			
HCM 2000 Control Delay	79.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	35.0
Intersection Capacity Utilization	90.8%	ICU Level of Service	E
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group

4: Mopac NBFR & Anderson Ln

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	ø1	ø2	ø4	ø5	ø6
Lane Configurations												
Volume (vph)	495	1125	1132	435	266	43	557					
Lane Group Flow (vph)	521	1184	1192	458	252	337	322					
Turn Type	Prot	NA	NA	Perm	Perm	NA	custom					
Protected Phases	2 4	2 4 5 19	6 5 19			7 1	7 1 6	1	2	4	5	6
Permitted Phases				6 5 19	7 1							
Detector Phase	2 4	2 4 5 19	6 5 19	6 5 19	7 1	7 1	7 1 6					
Switch Phase												
Minimum Initial (s)								3.0	1.0	1.0	3.0	4.0
Minimum Split (s)								8.0	11.0	11.0	8.0	24.0
Total Split (s)								8.0	35.0	23.0	8.0	51.0
Total Split (%)								5%	23%	15%	5%	34%
Yellow Time (s)								4.0	4.0	4.0	4.0	4.0
All-Red Time (s)								1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag								Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?								Yes	Yes	Yes	Yes	Yes
Recall Mode								None	Max	None	None	C-Max
v/c Ratio	0.83	0.70	0.78	0.55	1.33	1.32	0.43					
Control Delay	26.7	0.2	40.7	15.6	227.1	203.8	18.4					
Queue Delay	51.2	7.4	0.7	0.0	0.0	0.1	0.0					
Total Delay	77.9	7.6	41.4	15.6	227.1	203.9	18.4					
Queue Length 50th (ft)	262	0	518	140	~334	~369	133					
Queue Length 95th (ft)	m182	m0	610	249	#527	#595	221					
Internal Link Dist (ft)		333	702			1795						
Turn Bay Length (ft)	50			360	280							
Base Capacity (vph)	625	1698	1533	831	190	255	749					
Starvation Cap Reductn	156	472	0	0	0	0	0					
Spillback Cap Reductn	0	0	114	0	0	2	0					
Storage Cap Reductn	0	0	0	0	0	0	0					
Reduced v/c Ratio	1.11	0.97	0.84	0.55	1.33	1.33	0.43					

Intersection Summary

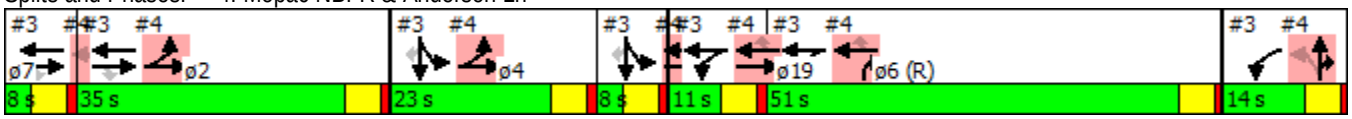
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 89 (59%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 120
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Mopac NBFR & Anderson Ln



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	495	1125	0	0	1132	435	266	43	557	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0	5.0			
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.91	0.95			
Frt	1.00	1.00			1.00	0.85	1.00	0.88	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	1770	3539			3539	1583	1681	1490	1504			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	1770	3539			3539	1583	1681	1490	1504			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	521	1184	0	0	1192	458	280	45	586	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	146	0	87	68	0	0	0
Lane Group Flow (vph)	521	1184	0	0	1192	312	252	250	254	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	custom			
Protected Phases	2 4	2 4 5			6 5	19		7 1	7 1 6			
Permitted Phases						6 5 19	7 1					
Actuated Green, G (s)	53.0	72.0			65.0	65.0	17.0	17.0	68.0			
Effective Green, g (s)	53.0	72.0			65.0	65.0	17.0	17.0	68.0			
Actuated g/C Ratio	0.35	0.48			0.43	0.43	0.11	0.11	0.45			
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	625	1698			1533	685	190	168	681			
v/s Ratio Prot	c0.29	c0.33			c0.34				0.17			
v/s Ratio Perm						0.20	0.15	0.17				
v/c Ratio	0.83	0.70			0.78	0.46	1.33	1.49	0.37			
Uniform Delay, d1	44.5	30.5			36.3	30.0	66.5	66.5	27.0			
Progression Factor	0.55	0.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	0.9	0.1			2.3	0.2	178.5	248.8	0.1			
Delay (s)	25.5	0.1			38.6	30.2	245.0	315.3	27.1			
Level of Service	C	A			D	C	F	F	C			
Approach Delay (s)		7.9			36.3			194.0			0.0	
Approach LOS		A			D			F			A	

Intersection Summary			
HCM 2000 Control Delay	58.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	35.0
Intersection Capacity Utilization	90.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	18	100	281	8	16	187
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	24	133	375	11	21	249
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	672	380			385	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	672	380			385	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	94	80			98	
cM capacity (veh/h)	413	667			1173	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	157	385	271
Volume Left	24	0	21
Volume Right	133	11	0
cSH	610	1700	1173
Volume to Capacity	0.26	0.23	0.02
Queue Length 95th (ft)	26	0	1
Control Delay (s)	12.9	0.0	0.8
Lane LOS	B		A
Approach Delay (s)	12.9	0.0	0.8
Approach LOS	B		

Intersection Summary			
Average Delay	2.8		
Intersection Capacity Utilization	36.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	62	60	26	21	13	109	8	280	6	15	123	17
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Hourly flow rate (vph)	82	79	34	28	17	143	11	368	8	20	162	22
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											544	
pX, platoon unblocked	1.00	1.00	1.00	1.00	1.00		1.00					
vC, conflicting volume	758	610	173	680	617	372	184			376		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	757	609	171	679	616	372	182			376		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	66	80	96	91	96	79	99			98		
cM capacity (veh/h)	242	400	871	292	396	674	1391			1182		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	195	188	387	204
Volume Left	82	28	11	20
Volume Right	34	143	8	22
cSH	339	537	1391	1182
Volume to Capacity	0.57	0.35	0.01	0.02
Queue Length 95th (ft)	85	39	1	1
Control Delay (s)	29.0	15.3	0.3	0.9
Lane LOS	D	C	A	A
Approach Delay (s)	29.0	15.3	0.3	0.9
Approach LOS	D	C		

Intersection Summary			
Average Delay	9.1		
Intersection Capacity Utilization	42.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	185	0	0	2017	29
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	0	203	0	0	2216	32
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					1035	
pX, platoon unblocked						
vC, conflicting volume	2232	755	2248			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2232	755	2248			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	42	100			
cM capacity (veh/h)	36	351	226			

Direction, Lane #	EB 1	SB 1	SB 2	SB 3
Volume Total	203	887	887	475
Volume Left	0	0	0	0
Volume Right	203	0	0	32
cSH	351	1700	1700	1700
Volume to Capacity	0.58	0.52	0.52	0.28
Queue Length 95th (ft)	87	0	0	0
Control Delay (s)	28.4	0.0	0.0	0.0
Lane LOS	D			
Approach Delay (s)	28.4	0.0		
Approach LOS	D			

Intersection Summary			
Average Delay	2.4		
Intersection Capacity Utilization	57.7%	ICU Level of Service	B
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	14.1
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	37	76	48	0	91	136	51	0	96	198	53
Peak Hour Factor	0.92	0.94	0.94	0.94	0.92	0.94	0.94	0.94	0.92	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	39	81	51	0	97	145	54	0	102	211	56
Number of Lanes	0	0	1	1	0	0	1	1	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	2
HCM Control Delay	11.2	14	16.7
HCM LOS	B	B	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	28%	33%	0%	40%	0%	8%
Vol Thru, %	57%	67%	0%	60%	0%	62%
Vol Right, %	15%	0%	100%	0%	100%	30%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	347	113	48	227	51	198
LT Vol	96	37	0	91	0	15
Through Vol	198	76	0	136	0	123
RT Vol	53	0	48	0	51	60
Lane Flow Rate	369	120	51	241	54	211
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.587	0.232	0.086	0.453	0.088	0.345
Departure Headway (Hd)	5.72	6.961	6.077	6.749	5.829	5.897
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	628	512	584	531	610	605
Service Time	3.798	4.76	3.875	4.533	3.612	3.991
HCM Lane V/C Ratio	0.588	0.234	0.087	0.454	0.089	0.349
HCM Control Delay	16.7	11.9	9.5	15.1	9.2	12.1
HCM Lane LOS	C	B	A	C	A	B
HCM 95th-tile Q	3.8	0.9	0.3	2.3	0.3	1.5

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	15	123	60
Peak Hour Factor	0.92	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	16	131	64
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	12.1
HCM LOS	B

Lane

Intersection	
Intersection Delay, s/veh	15.5
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	36	75	53	0	93	239	63	0	83	223	76
Peak Hour Factor	0.92	0.99	0.99	0.99	0.92	0.99	0.99	0.99	0.92	0.99	0.99	0.99
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	36	76	54	0	94	241	64	0	84	225	77
Number of Lanes	0	0	1	1	0	0	1	1	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	2
HCM Control Delay	11.4	18.6	15.6
HCM LOS	B	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	32%	0%	28%	0%	100%	0%
Vol Thru, %	0%	75%	68%	0%	72%	0%	0%	82%
Vol Right, %	0%	25%	0%	100%	0%	100%	0%	18%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	83	299	111	53	332	63	24	151
LT Vol	83	0	36	0	93	0	24	0
Through Vol	0	223	75	0	239	0	0	124
RT Vol	0	76	0	53	0	63	0	27
Lane Flow Rate	84	302	112	54	335	64	24	153
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.167	0.542	0.228	0.096	0.627	0.104	0.051	0.297
Departure Headway (Hd)	7.26	6.569	7.315	6.432	6.829	5.973	7.647	7.007
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	497	553	493	559	533	604	471	516
Service Time	4.96	4.269	5.025	4.142	4.529	3.673	5.358	4.718
HCM Lane V/C Ratio	0.169	0.546	0.227	0.097	0.629	0.106	0.051	0.297
HCM Control Delay	11.4	16.8	12.2	9.8	20.3	9.4	10.8	12.7
HCM Lane LOS	B	C	B	A	C	A	B	B
HCM 95th-tile Q	0.6	3.2	0.9	0.3	4.3	0.3	0.2	1.2

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	24	124	27
Peak Hour Factor	0.92	0.99	0.99	0.99
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	24	125	27
Number of Lanes	0	1	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	12.4
HCM LOS	B

Lane

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	182	0	0	1840	362
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	0	209	0	0	2115	416
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2323	913	2531			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2323	913	2531			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	24	100			
cM capacity (veh/h)	31	276	174			

Direction, Lane #	EB 1	SB 1	SB 2	SB 3
Volume Total	209	846	846	839
Volume Left	0	0	0	0
Volume Right	209	0	0	416
cSH	276	1700	1700	1700
Volume to Capacity	0.76	0.50	0.50	0.49
Queue Length 95th (ft)	140	0	0	0
Control Delay (s)	49.7	0.0	0.0	0.0
Lane LOS	E			
Approach Delay (s)	49.7	0.0		
Approach LOS	E			

Intersection Summary			
Average Delay	3.8		
Intersection Capacity Utilization	61.6%	ICU Level of Service	B
Analysis Period (min)	15		

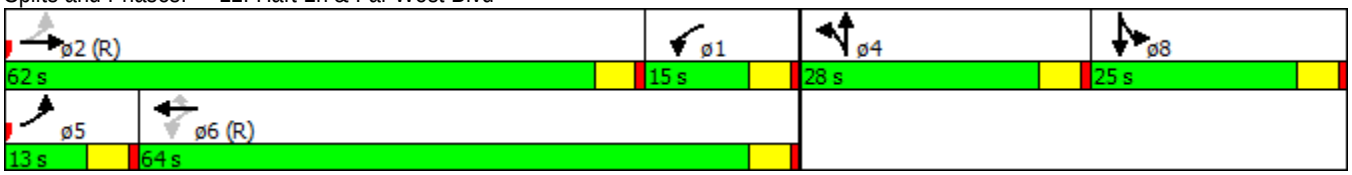
11: Hart Ln & Far West Blvd

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBT
Lane Configurations							
Volume (vph)	44	554	179	520	156	132	87
Lane Group Flow (vph)	45	611	185	536	161	341	320
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	NA
Protected Phases	5	2	1	6		4	8
Permitted Phases	2		6		6		
Detector Phase	5	2	1	6	6	4	8
Switch Phase							
Minimum Initial (s)	4.0	2.0	4.0	2.0	2.0	2.0	2.0
Minimum Split (s)	9.0	24.0	9.0	24.0	24.0	33.0	33.0
Total Split (s)	13.0	62.0	15.0	64.0	64.0	28.0	25.0
Total Split (%)	10.0%	47.7%	11.5%	49.2%	49.2%	21.5%	19.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lead	Lag	Lag	Lag		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		
Recall Mode	None	C-Max	None	C-Max	C-Max	None	None
v/c Ratio	0.11	0.35	0.37	0.28	0.19	0.76	0.75
Control Delay	19.4	21.0	10.1	7.5	7.7	65.0	66.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.4	21.0	10.1	7.5	7.7	65.0	66.0
Queue Length 50th (ft)	19	158	26	43	22	147	138
Queue Length 95th (ft)	46	231	52	68	46	193	185
Internal Link Dist (ft)		1703		1174		695	1553
Turn Bay Length (ft)	130		100		490		
Base Capacity (vph)	412	1771	506	1944	869	582	519
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.35	0.37	0.28	0.19	0.59	0.62

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 20 (15%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 11: Hart Ln & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	44	554	39	179	520	156	62	132	137	173	87	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0		5.0			5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		0.95			0.95	
Frt	1.00	0.99		1.00	1.00	0.85		0.94			0.98	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.99			0.97	
Satd. Flow (prot)	1770	3504		1770	3539	1583		3289			3360	
Flt Permitted	0.37	1.00		0.42	1.00	1.00		0.99			0.97	
Satd. Flow (perm)	686	3504		783	3539	1583		3289			3360	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	45	571	40	185	536	161	64	136	141	178	90	52
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	45	611	0	185	536	161	0	341	0	0	320	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Split	NA		Split	NA	
Protected Phases	5	2		1	6		4	4		8	8	
Permitted Phases	2			6		6						
Actuated Green, G (s)	64.7	64.7		70.4	70.4	70.4		17.8			16.5	
Effective Green, g (s)	64.7	64.7		70.4	70.4	70.4		17.8			16.5	
Actuated g/C Ratio	0.50	0.50		0.54	0.54	0.54		0.14			0.13	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0		5.0			5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0		2.0			2.0	
Lane Grp Cap (vph)	385	1743		507	1916	857		450			426	
v/s Ratio Prot	0.00	c0.17		c0.03	0.15			c0.10			c0.10	
v/s Ratio Perm	0.05			c0.17		0.10						
v/c Ratio	0.12	0.35		0.36	0.28	0.19		0.76			0.75	
Uniform Delay, d1	17.3	19.9		17.9	16.1	15.2		54.0			54.8	
Progression Factor	1.00	1.00		0.39	0.41	0.42		1.00			1.00	
Incremental Delay, d2	0.0	0.6		0.1	0.3	0.4		6.4			6.5	
Delay (s)	17.4	20.4		7.1	7.0	6.8		60.4			61.3	
Level of Service	B	C		A	A	A		E			E	
Approach Delay (s)		20.2			7.0			60.4			61.3	
Approach LOS		C			A			E			E	

Intersection Summary			
HCM 2000 Control Delay	27.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	62.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

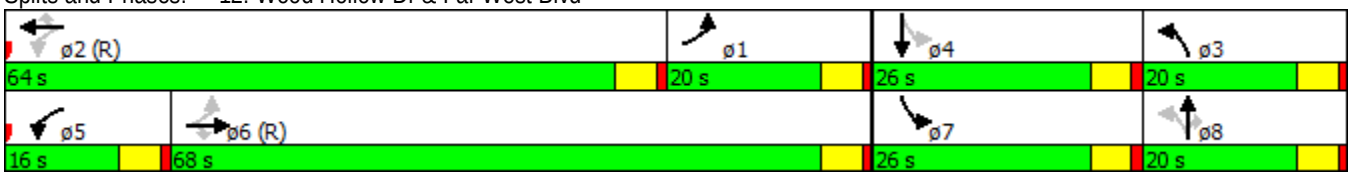
12: Wood Hollow Dr & Far West Blvd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Volume (vph)	102	765	63	225	677	129	101	185	318	157	101
Lane Group Flow (vph)	116	869	72	256	769	147	115	210	361	178	157
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA
Protected Phases	1	6		5	2		3	8		7	4
Permitted Phases	6		6	2		2	8		8	4	
Detector Phase	1	6	6	5	2	2	3	8	8	7	4
Switch Phase											
Minimum Initial (s)	4.0	2.0	2.0	4.0	2.0	2.0	4.0	2.0	2.0	4.0	2.0
Minimum Split (s)	9.0	11.0	11.0	9.0	11.0	11.0	9.0	11.0	11.0	9.0	11.0
Total Split (s)	20.0	68.0	68.0	16.0	64.0	64.0	20.0	20.0	20.0	26.0	26.0
Total Split (%)	15.4%	52.3%	52.3%	12.3%	49.2%	49.2%	15.4%	15.4%	15.4%	20.0%	20.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None
v/c Ratio	0.26	0.50	0.09	0.90	0.47	0.18	0.44	0.83	0.90	0.78	0.73
Control Delay	15.8	18.0	1.1	37.5	28.5	7.9	56.9	81.8	48.8	77.1	69.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.8	18.0	1.1	37.5	28.5	7.9	56.9	81.8	48.8	77.1	69.8
Queue Length 50th (ft)	41	314	2	140	213	12	88	173	127	146	120
Queue Length 95th (ft)	64	199	m6	m125	m184	m15	155	#328	#313	216	181
Internal Link Dist (ft)		1174			673			686			1879
Turn Bay Length (ft)	245		610	125		700	75		75		
Base Capacity (vph)	454	1731	826	285	1650	816	264	252	400	285	298
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.50	0.09	0.90	0.47	0.18	0.44	0.83	0.90	0.62	0.53

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 20 (15%), Referenced to phase 2:WBTL and 6:EBTL, Start of 1st Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 12: Wood Hollow Dr & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	102	765	63	225	677	129	101	185	318	157	101	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1788	
Flt Permitted	0.36	1.00	1.00	0.17	1.00	1.00	0.00	1.00	1.00	0.00	1.00	
Satd. Flow (perm)	671	3539	1583	325	3539	1583	0	1863	1583	0	1788	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	116	869	72	256	769	147	115	210	361	178	115	42
RTOR Reduction (vph)	0	0	37	0	0	78	0	0	186	0	11	0
Lane Group Flow (vph)	116	869	35	256	769	69	115	210	175	178	146	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2	8		8	4		
Actuated Green, G (s)	63.6	63.6	63.6	60.6	60.6	60.6	19.5	17.6	17.6	16.8	14.9	
Effective Green, g (s)	63.6	63.6	63.6	60.6	60.6	60.6	19.5	17.6	17.6	16.8	14.9	
Actuated g/C Ratio	0.49	0.49	0.49	0.47	0.47	0.47	0.15	0.14	0.14	0.13	0.11	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	455	1731	774	284	1649	737	265	252	214	228	204	
v/s Ratio Prot	0.03	c0.25		c0.08	0.22		0.06	c0.11		c0.10	0.08	
v/s Ratio Perm	0.10		0.02	c0.34		0.04			0.11			
v/c Ratio	0.25	0.50	0.05	0.90	0.47	0.09	0.43	0.83	0.82	0.78	0.72	
Uniform Delay, d1	20.5	22.5	17.3	25.1	23.7	19.4	50.2	54.8	54.6	54.8	55.5	
Progression Factor	0.67	0.74	0.65	1.32	1.17	2.47	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.1	1.0	0.1	3.9	0.1	0.0	0.4	19.6	20.0	14.7	9.6	
Delay (s)	13.8	17.7	11.3	37.0	27.9	47.9	50.6	74.4	74.7	69.5	65.1	
Level of Service	B	B	B	D	C	D	D	E	E	E	E	
Approach Delay (s)		16.9			32.4			70.6			67.4	
Approach LOS		B			C			E			E	

Intersection Summary			
HCM 2000 Control Delay	39.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	68.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

13: Mopac SBFR & Far West Blvd

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR	ø1	ø2	ø4	ø8	ø22
Lane Configurations											
Volume (vph)	1154	386	10	419	412	928					
Lane Group Flow (vph)	1297	434	11	471	885	1043					
Turn Type	NA	Free	Prot	NA	NA	Perm					
Protected Phases	1 22 2		7	1 22 7	4 8		1	2	4	8	22
Permitted Phases		Free				4 8					
Detector Phase	1 22 2		7	1 22 7	4 8	4 8					
Switch Phase											
Minimum Initial (s)			4.0				4.0	4.0	4.0	4.0	4.0
Minimum Split (s)			20.0				9.0	24.0	24.0	9.0	20.0
Total Split (s)			41.0				9.0	20.0	31.0	9.0	20.0
Total Split (%)			31.5%				7%	15%	24%	7%	15%
Yellow Time (s)			4.0				4.0	4.0	4.0	4.0	4.0
All-Red Time (s)			1.0				1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)			0.0								
Total Lost Time (s)			5.0								
Lead/Lag							Lead		Lead	Lag	Lag
Lead-Lag Optimize?							Yes		Yes	Yes	Yes
Recall Mode			None				None	C-Max	None	None	None
v/c Ratio	0.75	0.27	0.05	0.27	0.95	1.34					
Control Delay	29.6	0.4	26.9	3.5	66.5	181.0					
Queue Delay	49.5	0.0	0.0	0.3	0.0	0.0					
Total Delay	79.0	0.4	26.9	3.8	66.5	181.0					
Queue Length 50th (ft)	490	0	3	14	386	~829					
Queue Length 95th (ft)	597	m0	m10	17	#508	#1067					
Internal Link Dist (ft)	432			324	532						
Turn Bay Length (ft)		490									
Base Capacity (vph)	1720	1583	490	1769	931	781					
Starvation Cap Reductn	0	0	0	667	0	0					
Spillback Cap Reductn	739	0	0	0	0	0					
Storage Cap Reductn	0	0	0	0	0	0					
Reduced v/c Ratio	1.32	0.27	0.02	0.43	0.95	1.34					

Intersection Summary

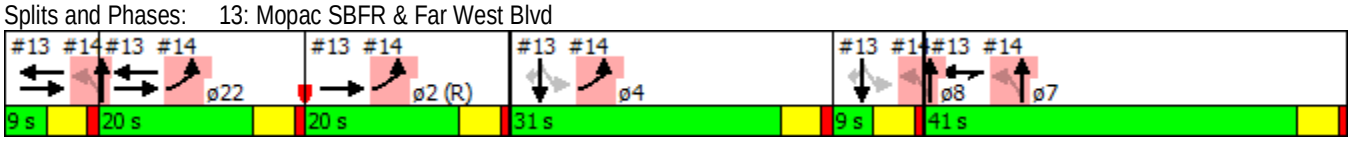
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBT, Start of 1st Green
Natural Cycle: 120
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Mopac SBFR & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1154	386	10	419	0	0	0	0	376	412	928
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	4.0	5.0	5.0						5.0	5.0
Lane Util. Factor		0.95	1.00	1.00	0.95						0.95	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.98	1.00
Satd. Flow (prot)		3539	1583	1770	3539						3457	1583
Flt Permitted		1.00	1.00	0.95	1.00						0.98	1.00
Satd. Flow (perm)		3539	1583	1770	3539						3457	1583
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	1297	434	11	471	0	0	0	0	422	463	1043
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	355
Lane Group Flow (vph)	0	1297	434	11	471	0	0	0	0	0	885	688
Turn Type		NA	Free	Prot	NA					Perm	NA	Perm
Protected Phases		1 22 2		7	1 22 7						4 8	
Permitted Phases			Free							4 8		4 8
Actuated Green, G (s)		63.2	130.0	16.8	65.0						35.0	35.0
Effective Green, g (s)		63.2	130.0	16.8	65.0						35.0	35.0
Actuated g/C Ratio		0.49	1.00	0.13	0.50						0.27	0.27
Clearance Time (s)				5.0								
Vehicle Extension (s)				2.0								
Lane Grp Cap (vph)		1720	1583	228	1769						930	426
v/s Ratio Prot		c0.37		0.01	0.13							
v/s Ratio Perm			c0.27								0.26	c0.43
v/c Ratio		0.75	0.27	0.05	0.27						0.95	1.61
Uniform Delay, d1		27.1	0.0	49.6	18.7						46.7	47.5
Progression Factor		0.95	1.00	0.57	0.17						1.00	1.00
Incremental Delay, d2		1.5	0.4	0.0	0.0						18.7	287.3
Delay (s)		27.2	0.4	28.3	3.2						65.3	334.8
Level of Service		C	A	C	A						E	F
Approach Delay (s)		20.4			3.7			0.0			211.1	
Approach LOS		C			A			A			F	

Intersection Summary			
HCM 2000 Control Delay	107.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	99.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

14: Mopac NBFR & Far West Blvd

Lane Group	EBL	NBL	NBT	ø1	ø2	ø4	ø7	ø8	ø22
Lane Configurations									
Volume (vph)	1540	367	25						
Lane Group Flow (vph)	1750	221	224						
Turn Type	Prot	Perm	NA						
Protected Phases	22 2 4		7 1 8	1	2	4	7	8	22
Permitted Phases		7 1 8							
Detector Phase	22 2 4	7 1 8	7 1 8						
Switch Phase									
Minimum Initial (s)				4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)				9.0	24.0	24.0	20.0	9.0	20.0
Total Split (s)				9.0	20.0	31.0	41.0	9.0	20.0
Total Split (%)				7%	15%	24%	32%	7%	15%
Yellow Time (s)				4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)				1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)									
Total Lost Time (s)									
Lead/Lag				Lead		Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes		Yes	Yes
Recall Mode				None	C-Max	None	None	None	None
v/c Ratio	1.00	0.32	0.32						
Control Delay	44.9	27.2	27.2						
Queue Delay	36.1	0.0	0.0						
Total Delay	81.0	27.2	27.2						
Queue Length 50th (ft)	~754	130	131						
Queue Length 95th (ft)	m#891	192	195						
Internal Link Dist (ft)	324		322						
Turn Bay Length (ft)									
Base Capacity (vph)	1742	698	704						
Starvation Cap Reductn	378	0	0						
Spillback Cap Reductn	0	0	0						
Storage Cap Reductn	0	0	0						
Reduced v/c Ratio	1.28	0.32	0.32						

Intersection Summary

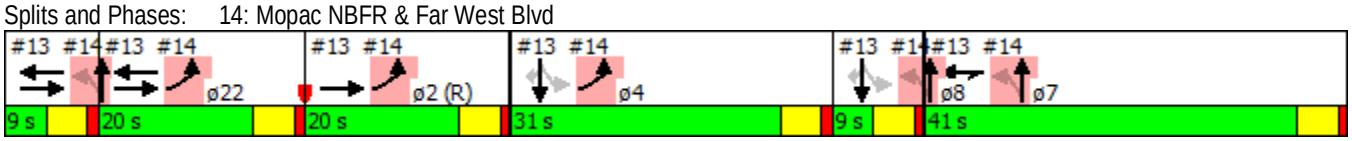
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBT, Start of 1st Green
Natural Cycle: 120
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 14: Mopac NBFR & Far West Blvd



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	1540	0	367	25	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0		
Lane Util. Factor	0.97		0.95	0.95		
Frt	1.00		1.00	1.00		
Flt Protected	0.95		0.95	0.96		
Satd. Flow (prot)	3433		1681	1695		
Flt Permitted	0.95		0.95	0.96		
Satd. Flow (perm)	3433		1681	1695		
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	1750	0	417	28	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1750	0	221	224	0	0
Turn Type	Prot		Perm	NA		
Protected Phases	22 2 4			7 1 8		
Permitted Phases			7 1 8			
Actuated Green, G (s)	66.0		54.0	54.0		
Effective Green, g (s)	66.0		54.0	54.0		
Actuated g/C Ratio	0.51		0.42	0.42		
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)	1742		698	704		
v/s Ratio Prot	c0.51					
v/s Ratio Perm			0.13	0.13		
v/c Ratio	1.00		0.32	0.32		
Uniform Delay, d1	32.0		25.6	25.6		
Progression Factor	0.83		1.00	1.00		
Incremental Delay, d2	17.7		0.1	0.1		
Delay (s)	44.3		25.7	25.7		
Level of Service	D		C	C		
Approach Delay (s)	44.3			25.7	0.0	
Approach LOS	D			C	A	

Intersection Summary			
HCM 2000 Control Delay	40.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	112.7%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

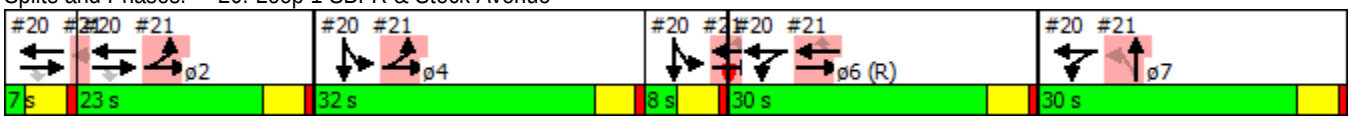
20: Loop 1 SBFR & Steck Avenue

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	ø1	ø2	ø4	ø5	ø6	ø7
Lane Configurations												
Volume (vph)	627	100	248	343	771	750						
Lane Group Flow (vph)	640	102	253	350	630	1262						
Turn Type	NA	Perm	Prot	NA	Split	NA						
Protected Phases	2 1		6 7	2 1 6 7	4 5	4 5	1	2	4	5	6	7
Permitted Phases		2 1										
Detector Phase	2 1	2 1	6 7	2 1 6 7	4 5	4 5						
Switch Phase												
Minimum Initial (s)							2.0	1.0	1.0	3.0	4.0	4.0
Minimum Split (s)							7.0	11.0	11.0	8.0	24.0	9.0
Total Split (s)							7.0	23.0	32.0	8.0	30.0	30.0
Total Split (%)							5%	18%	25%	6%	23%	23%
Yellow Time (s)							4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)							1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag							Lead	Lag	Lead	Lag		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode							None	Max	None	None	C-Max	None
v/c Ratio	0.94	0.24	0.34	0.15	1.45	1.41						
Control Delay	74.6	3.7	2.8	0.1	252.6	225.2						
Queue Delay	45.4	0.0	0.8	0.0	0.0	0.0						
Total Delay	120.0	3.7	3.6	0.1	252.6	225.2						
Queue Length 50th (ft)	282	0	6	0	~795	~774						
Queue Length 95th (ft)	#398	19	8	0	#1049	#922						
Internal Link Dist (ft)	737			327		333						
Turn Bay Length (ft)		100	80									
Base Capacity (vph)	680	419	748	2313	433	897						
Starvation Cap Reductn	0	0	261	0	0	0						
Spillback Cap Reductn	182	0	0	0	0	1						
Storage Cap Reductn	0	0	0	0	0	0						
Reduced v/c Ratio	1.29	0.24	0.52	0.15	1.45	1.41						

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 97 (75%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 140
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 20: Loop 1 SBFR & Steck Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	627	100	248	343	0	0	0	0	771	750	333
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0					5.0	5.0	
Lane Util. Factor		0.95	1.00	1.00	0.95					0.91	0.91	
Frt		1.00	0.85	1.00	1.00					1.00	0.96	
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.99	
Satd. Flow (prot)		3539	1583	1770	3539					1610	3233	
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.99	
Satd. Flow (perm)		3539	1583	1770	3539					1610	3233	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	640	102	253	350	0	0	0	0	787	765	340
RTOR Reduction (vph)	0	0	82	0	0	0	0	0	0	0	26	0
Lane Group Flow (vph)	0	640	20	253	350	0	0	0	0	630	1236	0
Turn Type		NA	Perm	Prot	NA					Split	NA	
Protected Phases		2 1		6 7	2 1 6 7					4 5	4 5	
Permitted Phases			2 1									
Actuated Green, G (s)		25.0	25.0	55.0	85.0					35.0	35.0	
Effective Green, g (s)		25.0	25.0	55.0	85.0					35.0	35.0	
Actuated g/C Ratio		0.19	0.19	0.42	0.65					0.27	0.27	
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		680	304	748	2313					433	870	
v/s Ratio Prot		c0.18		c0.14	0.10					c0.39	0.38	
v/s Ratio Perm			0.01									
v/c Ratio		0.94	0.06	0.34	0.15					1.45	1.42	
Uniform Delay, d1		51.8	42.9	25.2	8.6					47.5	47.5	
Progression Factor		1.00	1.00	0.07	0.00					1.00	1.00	
Incremental Delay, d2		21.0	0.0	0.1	0.0					217.3	195.9	
Delay (s)		72.8	43.0	1.8	0.0					264.8	243.4	
Level of Service		E	D	A	A					F	F	
Approach Delay (s)		68.7			0.7			0.0			250.5	
Approach LOS		E			A			A			F	

Intersection Summary			
HCM 2000 Control Delay	162.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	136.9%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

21: Loop 1 NBFR & Steck Avenue

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	ø1	ø2	ø4	ø5	ø6	ø7
Lane Configurations												
Volume (vph)	678	604	471	486	124	815						
Lane Group Flow (vph)	714	636	496	512	131	983						
Turn Type	Prot	NA	NA	Perm	Perm	NA						
Protected Phases	2 4	2 4 5 6	6 5			7 1	1	2	4	5	6	7
Permitted Phases				6 5	7 1							
Detector Phase	2 4	2 4 5 6	6 5	6 5	7 1	7 1						
Switch Phase												
Minimum Initial (s)							2.0	1.0	1.0	3.0	4.0	4.0
Minimum Split (s)							7.0	11.0	11.0	8.0	24.0	9.0
Total Split (s)							7.0	23.0	32.0	8.0	30.0	30.0
Total Split (%)							5%	18%	25%	6%	23%	23%
Yellow Time (s)							4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)							1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag							Lead	Lag	Lead	Lag		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode							None	Max	None	None	C-Max	None
v/c Ratio	1.05	0.27	0.55	1.01	0.16	2.17						
Control Delay	53.5	0.1	44.9	76.8	39.0	559.0						
Queue Delay	21.0	1.0	0.0	0.0	0.0	0.0						
Total Delay	74.5	1.1	44.9	76.8	39.0	559.0						
Queue Length 50th (ft)	~635	0	192	~341	44	~1335						
Queue Length 95th (ft)	m376	m0	250	#577	72	#1595						
Internal Link Dist (ft)		327	978			2452						
Turn Bay Length (ft)	80			170	110							
Base Capacity (vph)	680	2395	898	508	845	453						
Starvation Cap Reductn	173	1434	0	0	0	0						
Spillback Cap Reductn	0	0	0	0	0	0						
Storage Cap Reductn	0	0	0	0	0	0						
Reduced v/c Ratio	1.41	0.66	0.55	1.01	0.16	2.17						

Intersection Summary

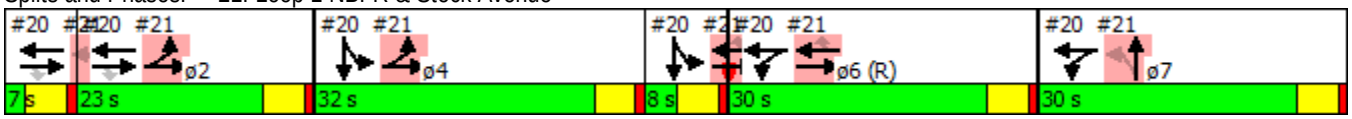
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 97 (75%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 140
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 21: Loop 1 NBFR & Steck Avenue



21: Loop 1 NBFR & Steck Avenue

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	678	604	0	0	471	486	124	815	119	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0				
Lane Util. Factor	1.00	0.95			0.95	1.00	0.97	1.00				
Frt	1.00	1.00			1.00	0.85	1.00	0.98				
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (prot)	1770	3539			3539	1583	3433	1827				
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (perm)	1770	3539			3539	1583	3433	1827				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	714	636	0	0	496	512	131	858	125	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	107	0	4	0	0	0	0
Lane Group Flow (vph)	714	636	0	0	496	405	131	979	0	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA				
Protected Phases	2 4	2 4 5 6			6 5			7 1				
Permitted Phases						6 5	7 1					
Actuated Green, G (s)	50.0	88.0			33.0	33.0	32.0	32.0				
Effective Green, g (s)	50.0	88.0			33.0	33.0	32.0	32.0				
Actuated g/C Ratio	0.38	0.68			0.25	0.25	0.25	0.25				
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	680	2395			898	401	845	449				
v/s Ratio Prot	c0.40	0.18			0.14			c0.54				
v/s Ratio Perm						c0.26	0.04					
v/c Ratio	1.05	0.27			0.55	1.01	0.16	2.18				
Uniform Delay, d1	40.0	8.3			42.1	48.5	38.4	49.0				
Progression Factor	0.63	0.00			1.00	1.00	1.00	1.00				
Incremental Delay, d2	26.7	0.0			0.4	47.7	0.0	538.7				
Delay (s)	52.0	0.0			42.5	96.2	38.4	587.7				
Level of Service	D	A			D	F	D	F				
Approach Delay (s)		27.5			69.8			523.1			0.0	
Approach LOS		C			E			F			A	

Intersection Summary			
HCM 2000 Control Delay	198.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.55		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	136.9%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

1: Hart Ln & Spicewood Springs Rd

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1194	265	179	909	120	162
Lane Group Flow (vph)	1231	273	185	937	124	167
Turn Type	NA	Perm	Prot	NA	Prot	Free
Protected Phases	2		1	6	4	
Permitted Phases		2				Free
Detector Phase	2	2	1	6	4	
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	
Total Split (s)	73.0	73.0	33.0	106.0	24.0	
Total Split (%)	56.2%	56.2%	25.4%	81.5%	18.5%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Max	C-Max	Max	C-Max	None	
v/c Ratio	0.67	0.31	0.37	0.31	0.45	0.11
Control Delay	24.9	9.6	38.9	3.3	60.9	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.9	9.6	38.9	3.3	60.9	0.1
Queue Length 50th (ft)	386	60	138	43	53	0
Queue Length 95th (ft)	464	116	234	185	78	0
Internal Link Dist (ft)	211			988	285	
Turn Bay Length (ft)		110	220		160	
Base Capacity (vph)	1851	890	496	2980	501	1583
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.31	0.37	0.31	0.25	0.11

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of 1st Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 1: Hart Ln & Spicewood Springs Rd

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1194	265	179	909	120	162
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	4.0
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	3433	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	3433	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	1231	273	185	937	124	167
RTOR Reduction (vph)	0	63	0	0	0	0
Lane Group Flow (vph)	1231	210	185	937	124	167
Turn Type	NA	Perm	Prot	NA	Prot	Free
Protected Phases	2		1	6	4	
Permitted Phases		2				Free
Actuated Green, G (s)	68.0	68.0	36.5	109.5	10.5	130.0
Effective Green, g (s)	68.0	68.0	36.5	109.5	10.5	130.0
Actuated g/C Ratio	0.52	0.52	0.28	0.84	0.08	1.00
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	1851	828	496	2980	277	1583
v/s Ratio Prot	c0.35		c0.10	0.26	c0.04	
v/s Ratio Perm		0.13				0.11
v/c Ratio	0.67	0.25	0.37	0.31	0.45	0.11
Uniform Delay, d1	22.7	17.0	37.6	2.2	57.0	0.0
Progression Factor	1.00	1.00	0.93	1.21	1.00	1.00
Incremental Delay, d2	1.9	0.7	2.0	0.3	0.4	0.1
Delay (s)	24.6	17.8	37.1	2.9	57.4	0.1
Level of Service	C	B	D	A	E	A
Approach Delay (s)	23.3			8.6	24.5	
Approach LOS	C			A	C	

Intersection Summary			
HCM 2000 Control Delay	17.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	58.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

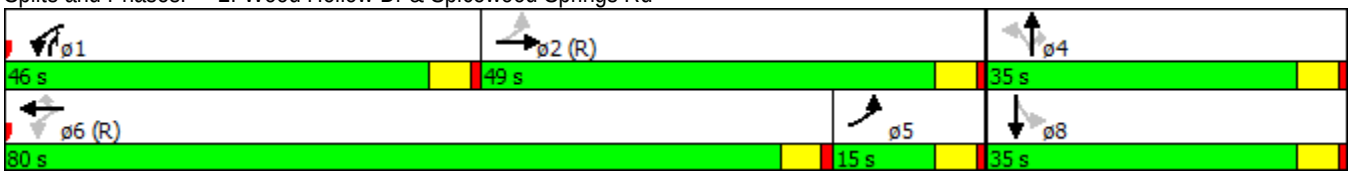
2: Wood Hollow Dr & Spicewood Springs Rd

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	8	1217	407	1017	11	69	4	177	6	0
Lane Group Flow (vph)	8	1406	424	1059	11	0	76	184	0	8
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Perm	NA	pm+ov	Perm	NA
Protected Phases	5	2	1	6			4	1		8
Permitted Phases	2		6		6	4		4	8	
Detector Phase	5	2	1	6	6	4	4	1	8	8
Switch Phase										
Minimum Initial (s)	6.0	25.0	6.0	5.0	5.0	5.0	5.0	6.0	5.0	5.0
Minimum Split (s)	15.0	30.0	15.0	11.0	11.0	35.0	35.0	15.0	35.0	35.0
Total Split (s)	15.0	49.0	46.0	80.0	80.0	35.0	35.0	46.0	35.0	35.0
Total Split (%)	11.5%	37.7%	35.4%	61.5%	61.5%	26.9%	26.9%	35.4%	26.9%	26.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead			Lead		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes			Yes		
Recall Mode	None	C-Max	None	C-Max	C-Max	Max	Max	None	None	None
v/c Ratio	0.03	0.63	0.95	0.45	0.01		0.24	0.23		0.02
Control Delay	21.0	28.3	60.7	12.8	0.0		43.2	12.5		0.1
Queue Delay	0.0	0.0	0.1	0.6	0.0		0.0	0.0		0.0
Total Delay	21.0	28.3	60.7	13.4	0.0		43.2	12.5		0.1
Queue Length 50th (ft)	4	424	264	162	0		53	59		0
Queue Length 95th (ft)	m9	506	411	392	m0		98	83		0
Internal Link Dist (ft)		988		494			464			203
Turn Bay Length (ft)	300		110		100					
Base Capacity (vph)	320	2230	614	2368	1079		319	949		443
Starvation Cap Reductn	0	0	7	832	0		0	0		0
Spillback Cap Reductn	0	0	0	0	0		0	0		0
Storage Cap Reductn	0	0	0	0	0		0	0		0
Reduced v/c Ratio	0.03	0.63	0.70	0.69	0.01		0.24	0.19		0.02

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 55 (42%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Wood Hollow Dr & Spicewood Springs Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	1217	132	407	1017	11	69	4	177	6	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0		5.0	5.0		5.0	
Lane Util. Factor	1.00	0.91		1.00	0.95	1.00		1.00	1.00		1.00	
Frt	1.00	0.99		1.00	1.00	0.85		1.00	0.85		0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.95	1.00		0.96	
Satd. Flow (prot)	1770	5010		1770	3539	1583		1779	1583		1735	
Flt Permitted	0.27	1.00		0.09	1.00	1.00		0.74	1.00		0.88	
Satd. Flow (perm)	503	5010		160	3539	1583		1384	1583		1583	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	8	1268	138	424	1059	11	72	4	184	6	0	2
RTOR Reduction (vph)	0	8	0	0	0	4	0	0	33	0	6	0
Lane Group Flow (vph)	8	1398	0	424	1059	7	0	76	151	0	2	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	pm+ov	Perm	NA	
Protected Phases	5	2		1	6			4	1		8	
Permitted Phases	2			6		6	4		4	8		
Actuated Green, G (s)	57.7	57.7		83.0	83.0	83.0		30.0	57.3		30.0	
Effective Green, g (s)	57.7	57.7		83.0	83.0	83.0		30.0	57.3		30.0	
Actuated g/C Ratio	0.44	0.44		0.64	0.64	0.64		0.23	0.44		0.23	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0		5.0	5.0		5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0		2.0	2.0		2.0	
Lane Grp Cap (vph)	242	2223		440	2259	1010		319	758		365	
v/s Ratio Prot	0.00	c0.28		c0.20	0.30				0.04			
v/s Ratio Perm	0.01			c0.41		0.00		c0.05	0.05		0.00	
v/c Ratio	0.03	0.63		0.96	0.47	0.01		0.24	0.20		0.01	
Uniform Delay, d1	20.4	27.9		38.9	12.1	8.5		40.7	22.3		38.5	
Progression Factor	0.80	0.93		0.86	1.12	1.00		1.00	1.00		1.00	
Incremental Delay, d2	0.0	1.1		31.4	0.6	0.0		1.8	0.0		0.0	
Delay (s)	16.3	27.0		64.9	14.2	8.5		42.5	22.3		38.5	
Level of Service	B	C		E	B	A		D	C		D	
Approach Delay (s)		26.9			28.5			28.2			38.5	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	27.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	67.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

3: Mopac SBFR & Spicewood Springs Rd

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR	ø1	ø2	ø4	ø5	ø6
Lane Configurations												
Volume (vph)	748	653	660	769	360	1184	666					
Lane Group Flow (vph)	771	673	680	793	334	1258	687					
Turn Type	NA	Free	Prot	NA	Split	NA	Free					
Protected Phases	2 1		19 6 7	2 1 19 6	4 5	4 5		1	2	4	5	6
Permitted Phases		Free					Free					
Detector Phase	2 1		19 6 7	2 1 19 6	4 5	4 5						
Switch Phase												
Minimum Initial (s)								3.0	1.0	1.0	3.0	4.0
Minimum Split (s)								8.0	11.0	11.0	8.0	24.0
Total Split (s)								8.0	24.0	34.0	8.0	30.0
Total Split (%)								6%	18%	26%	6%	23%
Yellow Time (s)								4.0	4.0	4.0	4.0	4.0
All-Red Time (s)								1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag								Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?								Yes	Yes	Yes	Yes	Yes
Recall Mode								None	Max	None	None	C-Max
v/c Ratio	1.05	0.43	0.98	0.46	0.73	1.31	0.43					
Control Delay	112.0	6.3	34.8	3.0	20.9	162.8	0.1					
Queue Delay	0.0	0.0	38.8	0.1	0.0	0.0	0.0					
Total Delay	112.0	6.3	73.6	3.0	20.9	162.8	0.1					
Queue Length 50th (ft)	~381	202	587	41	218	~737	0					
Queue Length 95th (ft)	#514	486	m568	m103	m154	m394	m0					
Internal Link Dist (ft)	494			333		2669						
Turn Bay Length (ft)			50		145							
Base Capacity (vph)	735	1583	694	1715	458	963	1583					
Starvation Cap Reductn	0	0	94	134	0	0	0					
Spillback Cap Reductn	0	0	0	0	0	0	0					
Storage Cap Reductn	0	0	0	0	0	0	0					
Reduced v/c Ratio	1.05	0.43	1.13	0.50	0.73	1.31	0.43					

Intersection Summary

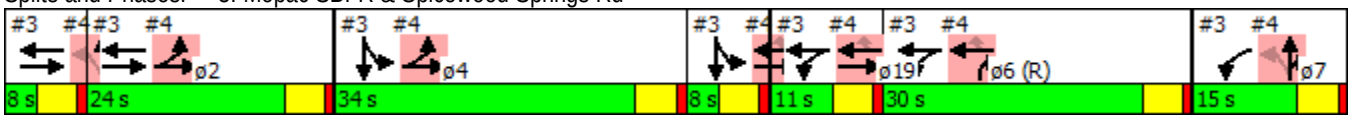
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 8 (6%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 140
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Mopac SBFR & Spicewood Springs Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	748	653	660	769	0	0	0	0	360	1184	666
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	4.0	5.0	5.0					5.0	5.0	4.0
Lane Util. Factor		0.95	1.00	1.00	0.95					0.91	0.91	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		3539	1583	1770	3539					1610	3385	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (perm)		3539	1583	1770	3539					1610	3385	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	771	673	680	793	0	0	0	0	371	1221	687
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	771	673	680	793	0	0	0	0	334	1258	687
Turn Type		NA	Free	Prot	NA					Split	NA	Free
Protected Phases		2 1		19 6 7	2 1 19 6					4 5	4 5	
Permitted Phases			Free									Free
Actuated Green, G (s)		27.0	130.0	51.0	63.0					37.0	37.0	130.0
Effective Green, g (s)		27.0	130.0	51.0	63.0					37.0	37.0	130.0
Actuated g/C Ratio		0.21	1.00	0.39	0.48					0.28	0.28	1.00
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		735	1583	694	1715					458	963	1583
v/s Ratio Prot		c0.22		c0.38	0.22					0.21	c0.37	
v/s Ratio Perm			0.43									0.43
v/c Ratio		1.05	0.43	0.98	0.46					0.73	1.31	0.43
Uniform Delay, d1		51.5	0.0	39.0	22.3					42.0	46.5	0.0
Progression Factor		1.43	1.00	0.69	0.22					0.47	0.49	1.00
Incremental Delay, d2		43.8	0.7	6.3	0.0					0.5	138.6	0.1
Delay (s)		117.5	0.7	33.1	4.9					20.0	161.6	0.1
Level of Service		F	A	C	A					C	F	A
Approach Delay (s)		63.0			17.9			0.0			92.1	
Approach LOS		E			B			A			F	

Intersection Summary			
HCM 2000 Control Delay	63.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.33		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	35.0
Intersection Capacity Utilization	98.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

4: Mopac NBFR & Anderson Ln

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	ø1	ø2	ø4	ø5	ø6
Lane Configurations												
Volume (vph)	319	789	1015	249	413	13	541					
Lane Group Flow (vph)	329	813	1046	257	345	334	318					
Turn Type	Prot	NA	NA	Perm	Perm	NA	custom					
Protected Phases	2 4	2 4 5 19	6 5 19			7 1	7 1 6	1	2	4	5	6
Permitted Phases				6 5 19	7 1							
Detector Phase	2 4	2 4 5 19	6 5 19	6 5 19	7 1	7 1	7 1 6					
Switch Phase												
Minimum Initial (s)								3.0	1.0	1.0	3.0	4.0
Minimum Split (s)								8.0	11.0	11.0	8.0	24.0
Total Split (s)								8.0	24.0	34.0	8.0	30.0
Total Split (%)								6%	18%	26%	6%	23%
Yellow Time (s)								4.0	4.0	4.0	4.0	4.0
All-Red Time (s)								1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag								Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?								Yes	Yes	Yes	Yes	Yes
Recall Mode								None	Max	None	None	C-Max
v/c Ratio	0.46	0.41	0.87	0.36	1.49	1.21	0.49					
Control Delay	8.4	0.2	49.8	5.1	266.4	143.8	3.4					
Queue Delay	2.8	1.4	19.4	0.0	0.0	0.1	0.0					
Total Delay	11.2	1.6	69.2	5.1	266.4	144.0	3.4					
Queue Length 50th (ft)	23	0	434	0	~428	~310	8					
Queue Length 95th (ft)	m44	m0	526	59	#636	#527	20					
Internal Link Dist (ft)		333	702			1795						
Turn Bay Length (ft)	50			360	280							
Base Capacity (vph)	721	1960	1197	705	232	277	654					
Starvation Cap Reductn	277	893	0	0	0	0	0					
Spillback Cap Reductn	0	0	177	0	0	3	0					
Storage Cap Reductn	0	0	0	0	0	0	0					
Reduced v/c Ratio	0.74	0.76	1.03	0.36	1.49	1.22	0.49					

Intersection Summary

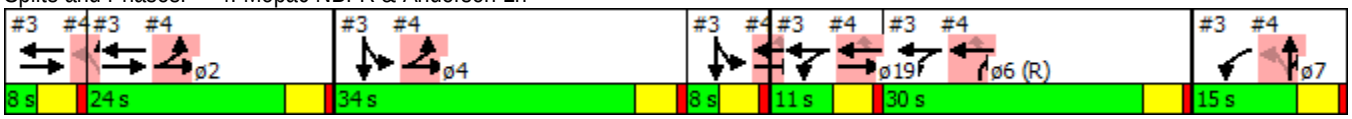
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 8 (6%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 140
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Mopac NBFR & Anderson Ln



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	319	789	0	0	1015	249	413	13	541	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0	5.0			
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.91	0.95			
Frt	1.00	1.00			1.00	0.85	1.00	0.89	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.99	1.00			
Satd. Flow (prot)	1770	3539			3539	1583	1681	1494	1504			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.99	1.00			
Satd. Flow (perm)	1770	3539			3539	1583	1681	1494	1504			
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	329	813	0	0	1046	257	426	13	558	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	170	0	71	100	0	0	0
Lane Group Flow (vph)	329	813	0	0	1046	87	345	263	218	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	custom			
Protected Phases	2 4	2 4 5 19			6 5 19			7 1	7 1 6			
Permitted Phases						6 5 19	7 1					
Actuated Green, G (s)	53.0	72.0			44.0	44.0	18.0	18.0	48.0			
Effective Green, g (s)	53.0	72.0			44.0	44.0	18.0	18.0	48.0			
Actuated g/C Ratio	0.41	0.55			0.34	0.34	0.14	0.14	0.37			
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	721	1960			1197	535	232	206	555			
v/s Ratio Prot	c0.19	0.23			c0.30				0.15			
v/s Ratio Perm						0.05	c0.21	0.18				
v/c Ratio	0.46	0.41			0.87	0.16	1.49	1.28	0.39			
Uniform Delay, d1	28.0	16.8			40.4	30.1	56.0	56.0	30.3			
Progression Factor	0.27	0.00			1.00	1.00	0.56	0.56	0.07			
Incremental Delay, d2	0.0	0.0			7.1	0.1	238.8	154.7	0.2			
Delay (s)	7.7	0.0			47.5	30.2	270.4	186.1	2.2			
Level of Service	A	A			D	C	F	F	A			
Approach Delay (s)		2.2			44.1			156.6			0.0	
Approach LOS		A			D			F			A	

Intersection Summary			
HCM 2000 Control Delay	62.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	35.0
Intersection Capacity Utilization	98.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	12	49	223	27	128	291
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	14	58	265	32	152	346
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						365
pX, platoon unblocked						
vC, conflicting volume	933	282			298	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	933	282			298	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	92			88	
cM capacity (veh/h)	260	757			1264	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	73	298	499
Volume Left	14	0	152
Volume Right	58	32	0
cSH	550	1700	1264
Volume to Capacity	0.13	0.18	0.12
Queue Length 95th (ft)	11	0	10
Control Delay (s)	12.5	0.0	3.4
Lane LOS	B		A
Approach Delay (s)	12.5	0.0	3.4
Approach LOS	B		

Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	49.5%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	14.1
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	29	64	24	0	31	59	49	0	56	188	108
Peak Hour Factor	0.92	0.88	0.88	0.88	0.92	0.88	0.88	0.88	0.92	0.88	0.88	0.88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	33	73	27	0	35	67	56	0	64	214	123
Number of Lanes	0	0	1	0	0	0	1	0	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	1
HCM Control Delay	11.7	12	12.2
HCM LOS	B	B	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	37%	0%	25%	22%	100%	0%
Vol Thru, %	63%	47%	55%	42%	0%	55%
Vol Right, %	0%	53%	21%	35%	0%	45%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	150	202	117	139	145	354
LT Vol	56	0	29	31	145	0
Through Vol	94	94	64	59	0	193
RT Vol	0	108	24	49	0	161
Lane Flow Rate	170	230	133	158	165	402
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.307	0.377	0.242	0.28	0.301	0.642
Departure Headway (Hd)	6.48	5.909	6.55	6.386	6.578	5.747
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	552	606	545	559	544	624
Service Time	4.252	3.681	4.635	4.469	4.345	3.513
HCM Lane V/C Ratio	0.308	0.38	0.244	0.283	0.303	0.644
HCM Control Delay	12.1	12.3	11.7	12	12.2	18.3
HCM Lane LOS	B	B	B	B	B	C
HCM 95th-tile Q	1.3	1.8	0.9	1.1	1.3	4.6

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	145	193	161
Peak Hour Factor	0.92	0.88	0.88	0.88
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	165	219	183
Number of Lanes	0	1	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	16.5
HCM LOS	C

Lane

Intersection	
Intersection Delay, s/veh	19.2
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	39	161	137	0	85	63	8	0	51	137	41
Peak Hour Factor	0.92	0.81	0.81	0.81	0.92	0.81	0.81	0.81	0.92	0.81	0.81	0.81
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	48	199	169	0	105	78	10	0	63	169	51
Number of Lanes	0	0	1	1	0	0	1	1	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	2
HCM Control Delay	15.6	16	17.7
HCM LOS	C	C	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	22%	20%	0%	57%	0%	5%
Vol Thru, %	60%	80%	0%	43%	0%	86%
Vol Right, %	18%	0%	100%	0%	100%	9%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	229	200	137	148	8	323
LT Vol	51	39	0	85	0	16
Through Vol	137	161	0	63	0	279
RT Vol	41	0	137	0	8	28
Lane Flow Rate	283	247	169	183	10	399
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.538	0.511	0.311	0.408	0.019	0.729
Departure Headway (Hd)	6.851	7.446	6.624	8.045	7.024	6.578
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	523	481	540	446	506	546
Service Time	4.933	5.225	4.403	5.836	4.815	4.65
HCM Lane V/C Ratio	0.541	0.514	0.313	0.41	0.02	0.731
HCM Control Delay	17.7	17.8	12.4	16.3	10	25.5
HCM Lane LOS	C	C	B	C	A	D
HCM 95th-tile Q	3.2	2.9	1.3	2	0.1	6.1

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	16	279	28
Peak Hour Factor	0.92	0.81	0.81	0.81
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	20	344	35
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	25.5
HCM LOS	D

Lane

Intersection	
Intersection Delay, s/veh	14.7
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	38	133	172	0	57	127	75	0	24	180	47
Peak Hour Factor	0.92	0.90	0.90	0.90	0.92	0.90	0.90	0.90	0.92	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	42	148	191	0	63	141	83	0	27	200	52
Number of Lanes	0	0	1	1	0	0	1	1	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	2
HCM Control Delay	13.5	14.1	16.3
HCM LOS	B	B	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	22%	0%	31%	0%	100%	0%
Vol Thru, %	0%	79%	78%	0%	69%	0%	0%	79%
Vol Right, %	0%	21%	0%	100%	0%	100%	0%	21%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	24	227	171	172	184	75	52	221
LT Vol	24	0	38	0	57	0	52	0
Through Vol	0	180	133	0	127	0	0	174
RT Vol	0	47	0	172	0	75	0	47
Lane Flow Rate	27	252	190	191	204	83	58	246
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.058	0.5	0.383	0.341	0.422	0.152	0.124	0.484
Departure Headway (Hd)	7.795	7.134	7.255	6.424	7.439	6.562	7.756	7.091
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	459	504	496	558	482	545	462	508
Service Time	5.547	4.886	5.007	4.177	5.194	4.317	5.507	4.842
HCM Lane V/C Ratio	0.059	0.5	0.383	0.342	0.423	0.152	0.126	0.484
HCM Control Delay	11	16.9	14.5	12.5	15.6	10.5	11.6	16.4
HCM Lane LOS	B	C	B	B	C	B	B	C
HCM 95th-tile Q	0.2	2.8	1.8	1.5	2.1	0.5	0.4	2.6

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	52	174	47
Peak Hour Factor	0.92	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	58	193	52
Number of Lanes	0	1	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	15.5
HCM LOS	C

Lane

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	241	0	0	2793	213
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	0	251	0	0	2909	222
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2909	970	3131			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2909	970	3131			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	1	100			
cM capacity (veh/h)	12	253	100			

Direction, Lane #	EB 1	SB 1	SB 2	SB 3	SB 4
Volume Total	251	970	970	970	222
Volume Left	0	0	0	0	0
Volume Right	251	0	0	0	222
cSH	253	1700	1700	1700	1700
Volume to Capacity	0.99	0.57	0.57	0.57	0.13
Queue Length 95th (ft)	240	0	0	0	0
Control Delay (s)	97.3	0.0	0.0	0.0	0.0
Lane LOS	F				
Approach Delay (s)	97.3	0.0			
Approach LOS	F				

Intersection Summary			
Average Delay	7.2		
Intersection Capacity Utilization	75.6%	ICU Level of Service	D
Analysis Period (min)	15		

11: Hart Ln & Far West Blvd

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	62	699	210	282	74	51	120	168	214	263
Lane Group Flow (vph)	75	950	253	340	89	61	145	202	258	359
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA
Protected Phases	5	2	1	6		7	4	1	3	8
Permitted Phases	2		6		6	4		4	8	
Detector Phase	5	2	1	6	6	7	4	1	3	8
Switch Phase										
Minimum Initial (s)	4.0	2.0	4.0	2.0	2.0	4.0	2.0	4.0	2.0	2.0
Minimum Split (s)	9.0	24.0	9.0	24.0	24.0	9.0	33.0	9.0	33.0	33.0
Total Split (s)	13.0	52.0	22.0	61.0	61.0	16.0	30.0	22.0	26.0	40.0
Total Split (%)	10.0%	40.0%	16.9%	46.9%	46.9%	12.3%	23.1%	16.9%	20.0%	30.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lead	Lag	Lag	Lag	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	C-Max	None	None	None	None	None
v/c Ratio	0.16	0.58	0.59	0.17	0.10	0.38	0.70	0.45	0.84	0.54
Control Delay	23.1	28.5	43.8	24.6	27.6	58.2	72.8	41.4	74.4	49.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.1	28.5	43.8	24.6	27.6	58.2	72.8	41.4	74.4	49.6
Queue Length 50th (ft)	35	305	110	74	36	48	120	141	209	145
Queue Length 95th (ft)	70	392	225	145	93	82	168	185	255	164
Internal Link Dist (ft)		1703		1174			695			1553
Turn Bay Length (ft)	130		100		490			100	100	
Base Capacity (vph)	481	1650	426	1992	890	180	358	444	372	935
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.58	0.59	0.17	0.10	0.34	0.41	0.45	0.69	0.38

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 100 (77%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green
Natural Cycle: 120
Control Type: Actuated-Coordinated

Splits and Phases: 11: Hart Ln & Far West Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	62	699	90	210	282	74	51	120	168	214	263	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95	
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3479		1770	3539	1583	1770	1863	1583	1770	3477	
Flt Permitted	0.48	1.00		0.24	1.00	1.00	0.56	1.00	1.00	0.66	1.00	
Satd. Flow (perm)	895	3479		450	3539	1583	1035	1863	1583	1238	3477	
Peak-hour factor, PHF	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Adj. Flow (vph)	75	842	108	253	340	89	61	145	202	258	317	42
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	75	950	0	253	340	89	61	145	202	258	359	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases	5	2		1	6		7	4	1	3	8	
Permitted Phases	2			6		6	4		4	8		
Actuated Green, G (s)	59.7	59.7		71.2	71.2	71.2	14.5	14.5	32.5	25.0	25.0	
Effective Green, g (s)	59.7	59.7		71.2	71.2	71.2	14.5	14.5	32.5	25.0	25.0	
Actuated g/C Ratio	0.46	0.46		0.55	0.55	0.55	0.11	0.11	0.25	0.19	0.19	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	454	1597		429	1938	866	156	207	456	310	668	
v/s Ratio Prot	0.01	c0.27		c0.08	0.10		0.02	c0.08	0.06	c0.11	0.10	
v/s Ratio Perm	0.07			0.24		0.06	0.02		0.07	c0.05		
v/c Ratio	0.17	0.59		0.59	0.18	0.10	0.39	0.70	0.44	0.83	0.54	
Uniform Delay, d1	20.0	26.2		30.2	14.7	14.1	53.2	55.7	41.1	49.3	47.3	
Progression Factor	1.00	1.00		1.18	1.47	1.56	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.1	1.6		1.3	0.2	0.2	0.6	8.4	0.3	16.4	0.4	
Delay (s)	20.1	27.8		37.1	21.8	22.2	53.8	64.1	41.4	65.7	47.7	
Level of Service	C	C		D	C	C	D	E	D	E	D	
Approach Delay (s)		27.2			27.5			51.3			55.2	
Approach LOS		C			C			D			E	

Intersection Summary			
HCM 2000 Control Delay	37.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	68.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

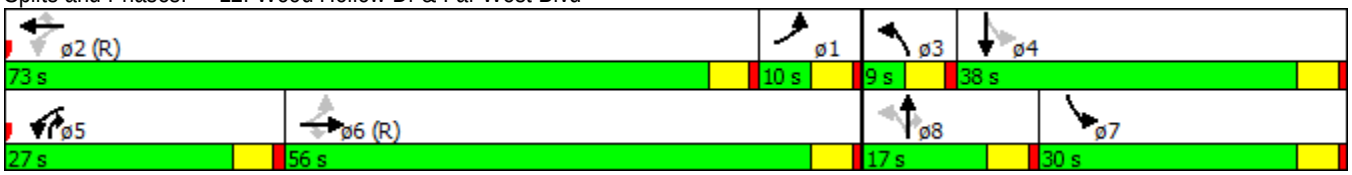
12: Wood Hollow Dr & Far West Blvd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Volume (vph)	91	1056	48	117	573	131	25	84	293	273	120
Lane Group Flow (vph)	97	1123	51	124	610	139	27	89	312	290	197
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA
Protected Phases	1	6		5	2		3	8	5	7	4
Permitted Phases	6		6	2		2	8		8	4	
Detector Phase	1	6	6	5	2	2	3	8	5	7	4
Switch Phase											
Minimum Initial (s)	4.0	2.0	2.0	4.0	2.0	2.0	4.0	2.0	4.0	4.0	2.0
Minimum Split (s)	9.0	11.0	11.0	9.0	11.0	11.0	9.0	11.0	9.0	9.0	11.0
Total Split (s)	10.0	56.0	56.0	27.0	73.0	73.0	9.0	17.0	27.0	30.0	38.0
Total Split (%)	7.7%	43.1%	43.1%	20.8%	56.2%	56.2%	6.9%	13.1%	20.8%	23.1%	29.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None
v/c Ratio	0.21	0.60	0.06	0.42	0.29	0.14	0.27	0.63	0.86	0.85	0.51
Control Delay	29.4	34.7	1.7	29.5	27.1	13.3	62.1	77.3	46.0	72.3	44.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.4	34.7	1.7	29.5	27.1	13.3	62.1	77.3	46.0	72.3	44.4
Queue Length 50th (ft)	61	450	0	68	178	31	22	74	122	232	133
Queue Length 95th (ft)	m117	584	m7	118	236	79	53	131	163	319	200
Internal Link Dist (ft)		1174			673			686			1879
Turn Bay Length (ft)	245		610	125			75		75		
Base Capacity (vph)	454	1880	907	399	2097	996	99	171	464	435	462
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.60	0.06	0.31	0.29	0.14	0.27	0.52	0.67	0.67	0.43

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 10 (8%), Referenced to phase 2:WBTL and 6:EBTL, Start of 1st Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 12: Wood Hollow Dr & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	91	1056	48	117	573	131	25	84	293	273	120	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1765	
Flt Permitted	0.42	1.00	1.00	0.13	1.00	1.00	0.53	1.00	1.00	0.70	1.00	
Satd. Flow (perm)	784	3539	1583	237	3539	1583	993	1863	1583	1303	1765	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	97	1123	51	124	610	139	27	89	312	290	128	69
RTOR Reduction (vph)	0	0	25	0	0	59	0	0	83	0	16	0
Lane Group Flow (vph)	97	1123	26	124	610	80	27	89	229	290	181	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases	1	6		5	2		3	8	5	7	4	
Permitted Phases	6		6	2		2	8		8	4		
Actuated Green, G (s)	67.0	67.0	67.0	74.9	74.9	74.9	9.9	9.9	22.9	27.6	27.6	
Effective Green, g (s)	67.0	67.0	67.0	74.9	74.9	74.9	9.9	9.9	22.9	27.6	27.6	
Actuated g/C Ratio	0.52	0.52	0.52	0.58	0.58	0.58	0.08	0.08	0.18	0.21	0.21	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	442	1823	815	289	2039	912	89	141	278	348	374	
v/s Ratio Prot	0.01	c0.32		0.04	0.17		0.01	0.05	c0.08	c0.13	0.10	
v/s Ratio Perm	0.10		0.02	0.20		0.05	0.02		0.06	c0.05		
v/c Ratio	0.22	0.62	0.03	0.43	0.30	0.09	0.30	0.63	0.82	0.83	0.48	
Uniform Delay, d1	17.4	22.4	15.5	17.5	14.1	12.3	56.4	58.3	51.6	47.7	45.0	
Progression Factor	1.34	1.40	1.00	1.89	1.87	5.67	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.1	1.3	0.1	0.3	0.3	0.2	0.7	6.6	16.8	15.0	0.4	
Delay (s)	23.4	32.7	15.6	33.5	26.7	69.9	57.1	64.9	68.4	62.7	45.3	
Level of Service	C	C	B	C	C	E	E	E	E	E	D	
Approach Delay (s)		31.3			34.5			67.0			55.6	
Approach LOS		C			C			E			E	

Intersection Summary			
HCM 2000 Control Delay	41.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	75.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

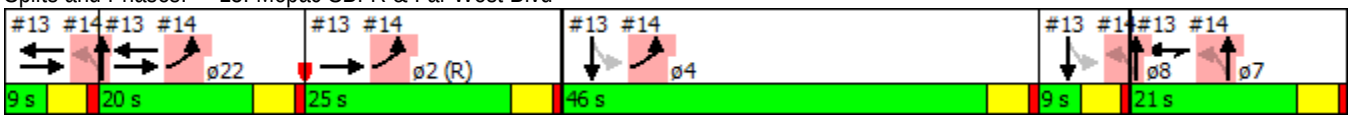
13: Mopac SBFR & Far West Blvd

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR	ø1	ø2	ø4	ø8	ø22
Lane Configurations											
Volume (vph)	810	456	18	564	528	892					
Lane Group Flow (vph)	835	470	19	581	723	920					
Turn Type	NA	Free	Prot	NA	NA	Free					
Protected Phases	1 22 2		7	1 22 7	4 8		1	2	4	8	22
Permitted Phases		Free				Free					
Detector Phase	1 22 2		7	1 22 7	4 8						
Switch Phase											
Minimum Initial (s)			4.0				4.0	4.0	4.0	4.0	4.0
Minimum Split (s)			20.0				9.0	24.0	24.0	9.0	20.0
Total Split (s)			21.0				9.0	25.0	46.0	9.0	20.0
Total Split (%)			16.2%				7%	19%	35%	7%	15%
Yellow Time (s)			4.0				4.0	4.0	4.0	4.0	4.0
All-Red Time (s)			1.0				1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)			0.0								
Total Lost Time (s)			5.0								
Lead/Lag							Lead		Lead	Lag	Lag
Lead-Lag Optimize?							Yes		Yes	Yes	Yes
Recall Mode			None				None	C-Max	None	None	None
v/c Ratio	0.61	0.30	0.09	0.46	0.55	0.58					
Control Delay	33.3	0.4	33.9	7.5	27.0	1.6					
Queue Delay	0.2	0.0	0.0	0.7	0.0	0.0					
Total Delay	33.5	0.4	33.9	8.2	27.0	1.6					
Queue Length 50th (ft)	356	0	7	232	157	25					
Queue Length 95th (ft)	384	0	m15	0	m190	m3					
Internal Link Dist (ft)	432			324	532						
Turn Bay Length (ft)		490									
Base Capacity (vph)	1366	1583	217	1258	1312	1583					
Starvation Cap Reductn	0	0	0	355	0	0					
Spillback Cap Reductn	101	0	0	0	0	0					
Storage Cap Reductn	0	0	0	0	0	0					
Reduced v/c Ratio	0.66	0.30	0.09	0.64	0.55	0.58					

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 106 (82%), Referenced to phase 2:EBT, Start of 1st Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Mopac SBFR & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	810	456	18	564	0	0	0	0	174	528	892
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	4.0	5.0	5.0						5.0	4.0
Lane Util. Factor		0.95	1.00	1.00	0.95						0.95	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (prot)		3539	1583	1770	3539						3496	1583
Flt Permitted		1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (perm)		3539	1583	1770	3539						3496	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	835	470	19	581	0	0	0	0	179	544	920
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	835	470	19	581	0	0	0	0	0	723	920
Turn Type		NA	Free	Prot	NA					Perm	NA	Free
Protected Phases		1 22 2		7	1 22 7						4 8	
Permitted Phases			Free							4 8		Free
Actuated Green, G (s)		50.3	130.0	16.0	46.2						48.7	130.0
Effective Green, g (s)		50.3	130.0	16.0	46.2						48.7	130.0
Actuated g/C Ratio		0.39	1.00	0.12	0.36						0.37	1.00
Clearance Time (s)				5.0								
Vehicle Extension (s)				2.0								
Lane Grp Cap (vph)		1369	1583	217	1257						1309	1583
v/s Ratio Prot		c0.24		0.01	0.16							
v/s Ratio Perm			0.30								0.21	c0.58
v/c Ratio		0.61	0.30	0.09	0.46						0.55	0.58
Uniform Delay, d1		32.0	0.0	50.5	32.3						32.1	0.0
Progression Factor		0.97	1.00	0.65	0.20						0.81	1.00
Incremental Delay, d2		0.4	0.4	0.1	0.1						0.2	1.1
Delay (s)		31.5	0.4	33.0	6.4						26.0	1.1
Level of Service		C	A	C	A						C	A
Approach Delay (s)		20.3			7.3			0.0			12.1	
Approach LOS		C			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	14.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	57.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

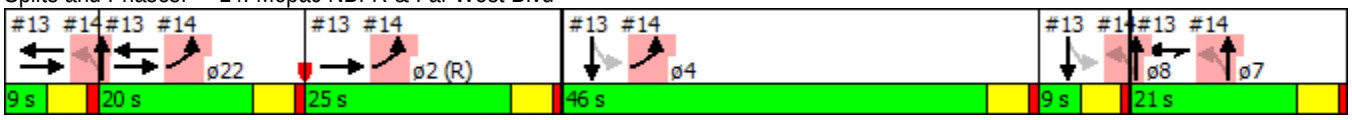
14: Mopac NBFR & Far West Blvd

Lane Group	EBL	NBL	NBT	ø1	ø2	ø4	ø7	ø8	ø22
Lane Configurations									
Volume (vph)	1001	583	2						
Lane Group Flow (vph)	1043	303	306						
Turn Type	Prot	Perm	NA						
Protected Phases	22 2 4		7 1 8	1	2	4	7	8	22
Permitted Phases		7 1 8							
Detector Phase	22 2 4	7 1 8	7 1 8						
Switch Phase									
Minimum Initial (s)				4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)				9.0	24.0	24.0	20.0	9.0	20.0
Total Split (s)				9.0	25.0	46.0	21.0	9.0	20.0
Total Split (%)				7%	19%	35%	16%	7%	15%
Yellow Time (s)				4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)				1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)									
Total Lost Time (s)									
Lead/Lag				Lead		Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes		Yes	Yes
Recall Mode				None	C-Max	None	None	None	None
v/c Ratio	0.52	0.54	0.54						
Control Delay	6.9	41.1	41.2						
Queue Delay	0.4	0.0	0.0						
Total Delay	7.2	41.1	41.2						
Queue Length 50th (ft)	34	214	216						
Queue Length 95th (ft)	21	355	357						
Internal Link Dist (ft)	324		322						
Turn Bay Length (ft)									
Base Capacity (vph)	2271	564	566						
Starvation Cap Reductn	640	0	0						
Spillback Cap Reductn	0	0	0						
Storage Cap Reductn	0	0	0						
Reduced v/c Ratio	0.64	0.54	0.54						

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 106 (82%), Referenced to phase 2:EBT, Start of 1st Green
Natural Cycle: 110
Control Type: Actuated-Coordinated

Splits and Phases: 14: Mopac NBFR & Far West Blvd



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	1001	0	583	2	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0		
Lane Util. Factor	0.97		0.95	0.95		
Frt	1.00		1.00	1.00		
Flt Protected	0.95		0.95	0.95		
Satd. Flow (prot)	3433		1681	1686		
Flt Permitted	0.95		0.95	0.95		
Satd. Flow (perm)	3433		1681	1686		
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	1043	0	607	2	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1043	0	303	306	0	0
Turn Type	Prot		Perm	NA		
Protected Phases	22 2 4			7 1 8		
Permitted Phases			7 1 8			
Actuated Green, G (s)	76.4		43.6	43.6		
Effective Green, g (s)	76.4		43.6	43.6		
Actuated g/C Ratio	0.59		0.34	0.34		
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)	2017		563	565		
v/s Ratio Prot	c0.30					
v/s Ratio Perm			0.18	0.18		
v/c Ratio	0.52		0.54	0.54		
Uniform Delay, d1	15.9		35.0	35.1		
Progression Factor	0.39		1.00	1.00		
Incremental Delay, d2	0.1		0.5	0.6		
Delay (s)	6.3		35.5	35.7		
Level of Service	A		D	D		
Approach Delay (s)	6.3			35.6	0.0	
Approach LOS	A			D	A	

Intersection Summary			
HCM 2000 Control Delay	17.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	70.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

20: Loop 1 SBFR & Steck Avenue

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	ø1	ø2	ø4	ø5	ø6	ø7
Lane Configurations												
Volume (vph)	535	136	149	350	951	1875						
Lane Group Flow (vph)	569	145	159	372	911	2409						
Turn Type	NA	Perm	Prot	NA	Split	NA						
Protected Phases	2 1		6 7	2 1 6 7	4 5	4 5	1	2	4	5	6	7
Permitted Phases		2 1										
Detector Phase	2 1	2 1	6 7	2 1 6 7	4 5	4 5						
Switch Phase												
Minimum Initial (s)							2.0	1.0	1.0	3.0	4.0	4.0
Minimum Split (s)							7.0	11.0	11.0	8.0	15.0	9.0
Total Split (s)							7.0	20.0	63.0	8.0	15.0	17.0
Total Split (%)							5%	15%	48%	6%	12%	13%
Yellow Time (s)							4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)							1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag							Lead	Lag	Lead	Lag		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode							None	Max	None	None	C-Max	None
v/c Ratio	0.95	0.38	0.43	0.25	1.12	1.42						
Control Delay	80.0	10.6	21.4	0.3	99.4	222.0						
Queue Delay	15.5	0.0	0.0	0.0	0.0	0.0						
Total Delay	95.5	10.6	21.4	0.3	99.4	222.0						
Queue Length 50th (ft)	252	1	25	0	~965	~1509						
Queue Length 95th (ft)	#367	61	m45	m0	#1243	#1648						
Internal Link Dist (ft)	737			327		333						
Turn Bay Length (ft)		100	80									
Base Capacity (vph)	598	386	367	1470	817	1693						
Starvation Cap Reductn	0	0	0	0	0	0						
Spillback Cap Reductn	42	0	0	0	0	0						
Storage Cap Reductn	0	0	0	0	0	0						
Reduced v/c Ratio	1.02	0.38	0.43	0.25	1.12	1.42						

Intersection Summary

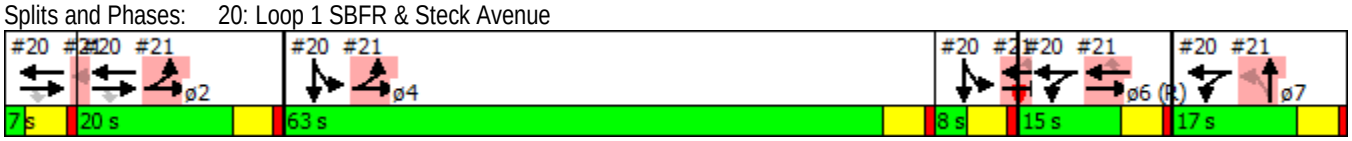
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 90 (69%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 20: Loop 1 SBFR & Steck Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	535	136	149	350	0	0	0	0	951	1875	294
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0					5.0	5.0	
Lane Util. Factor		0.95	1.00	1.00	0.95					0.91	0.91	
Frt		1.00	0.85	1.00	1.00					1.00	0.98	
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	3539					1610	3317	
Flt Permitted		1.00	1.00	0.95	1.00					0.95	1.00	
Satd. Flow (perm)		3539	1583	1770	3539					1610	3317	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	569	145	159	372	0	0	0	0	1012	1995	313
RTOR Reduction (vph)	0	0	119	0	0	0	0	0	0	0	8	0
Lane Group Flow (vph)	0	569	26	159	372	0	0	0	0	911	2401	0
Turn Type		NA	Perm	Prot	NA					Split	NA	
Protected Phases		2 1		6 7	2 1 6 7					4 5	4 5	
Permitted Phases			2 1									
Actuated Green, G (s)		22.0	22.0	27.0	54.0					66.0	66.0	
Effective Green, g (s)		22.0	22.0	27.0	54.0					66.0	66.0	
Actuated g/C Ratio		0.17	0.17	0.21	0.42					0.51	0.51	
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		598	267	367	1470					817	1684	
v/s Ratio Prot		c0.16		c0.09	0.11					0.57	c0.72	
v/s Ratio Perm			0.02									
v/c Ratio		0.95	0.10	0.43	0.25					1.12	1.43	
Uniform Delay, d1		53.5	45.6	44.8	24.8					32.0	32.0	
Progression Factor		1.00	1.00	0.41	0.00					1.00	1.00	
Incremental Delay, d2		25.0	0.1	0.2	0.0					68.0	195.0	
Delay (s)		78.5	45.7	18.6	0.0					100.0	227.0	
Level of Service		E	D	B	A					F	F	
Approach Delay (s)		71.8			5.6			0.0			192.2	
Approach LOS		E			A			A			F	

Intersection Summary			
HCM 2000 Control Delay	151.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.27		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	133.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

21: Loop 1 NBFR & Steck Avenue

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	ø1	ø2	ø4	ø5	ø6	ø7
Lane Configurations												
Volume (vph)	692	747	378	255	208	541						
Lane Group Flow (vph)	706	762	386	260	212	741						
Turn Type	Prot	NA	NA	Perm	Perm	NA						
Protected Phases	2 4	2 4 5 6	6 5			7 1	1	2	4	5	6	7
Permitted Phases				6 5	7 1							
Detector Phase	2 4	2 4 5 6	6 5	6 5	7 1	7 1						
Switch Phase												
Minimum Initial (s)							2.0	1.0	1.0	3.0	4.0	4.0
Minimum Split (s)							7.0	11.0	11.0	8.0	15.0	9.0
Total Split (s)							7.0	20.0	63.0	8.0	15.0	17.0
Total Split (%)							5%	15%	48%	6%	12%	13%
Yellow Time (s)							4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)							1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag							Lead	Lag	Lead	Lag		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode							None	Max	None	None	C-Max	None
v/c Ratio	0.66	0.28	0.79	0.67	0.42	2.73						
Control Delay	9.7	0.0	66.6	23.4	45.1	810.5						
Queue Delay	37.6	0.8	0.0	0.0	0.0	0.0						
Total Delay	47.2	0.9	66.6	23.4	45.1	810.5						
Queue Length 50th (ft)	217	0	167	48	74	~1059						
Queue Length 95th (ft)	m123	m0	#234	144	m109	m#1295						
Internal Link Dist (ft)		327	978			2452						
Turn Bay Length (ft)	80			170	110							
Base Capacity (vph)	1062	2749	490	389	501	271						
Starvation Cap Reductn	398	1599	0	0	0	0						
Spillback Cap Reductn	0	0	0	0	0	0						
Storage Cap Reductn	0	0	0	0	0	0						
Reduced v/c Ratio	1.06	0.66	0.79	0.67	0.42	2.73						

Intersection Summary

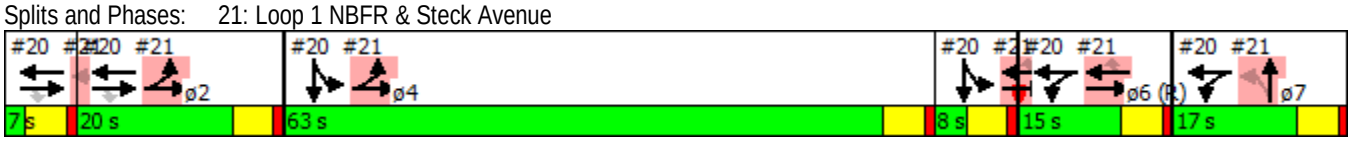
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 90 (69%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 21: Loop 1 NBFR & Steck Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	692	747	0	0	378	255	208	541	185	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0				
Lane Util. Factor	1.00	0.95			0.95	1.00	0.97	1.00				
Frt	1.00	1.00			1.00	0.85	1.00	0.96				
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (prot)	1770	3539			3539	1583	3433	1791				
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (perm)	1770	3539			3539	1583	3433	1791				
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	706	762	0	0	386	260	212	552	189	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	171	0	9	0	0	0	0
Lane Group Flow (vph)	706	762	0	0	386	89	212	732	0	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA				
Protected Phases	2 4	2 4 5 6			6 5			7 1				
Permitted Phases						6 5	7 1					
Actuated Green, G (s)	78.0	101.0			18.0	18.0	19.0	19.0				
Effective Green, g (s)	78.0	101.0			18.0	18.0	19.0	19.0				
Actuated g/C Ratio	0.60	0.78			0.14	0.14	0.15	0.15				
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	1062	2749			490	219	501	261				
v/s Ratio Prot	c0.40	0.22			c0.11			c0.41				
v/s Ratio Perm						0.06	0.06					
v/c Ratio	0.66	0.28			0.79	0.41	0.42	2.80				
Uniform Delay, d1	17.3	4.1			54.2	51.1	50.5	55.5				
Progression Factor	0.52	0.00			1.00	1.00	0.84	0.84				
Incremental Delay, d2	0.1	0.0			7.6	0.5	0.2	821.7				
Delay (s)	9.2	0.0			61.7	51.6	42.5	868.5				
Level of Service	A	A			E	D	D	F				
Approach Delay (s)		4.4			57.7			684.8			0.0	
Approach LOS		A			E			F			A	

Intersection Summary			
HCM 2000 Control Delay	227.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.19		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	133.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	71	246	49	47	92	46
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	77	267	53	51	100	50
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			345		368	211
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			345		368	211
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			96		83	94
cM capacity (veh/h)			1214		604	829

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	345	104	150
Volume Left	0	53	100
Volume Right	267	0	50
cSH	1700	1214	664
Volume to Capacity	0.20	0.04	0.23
Queue Length 95th (ft)	0	3	22
Control Delay (s)	0.0	4.3	12.0
Lane LOS		A	B
Approach Delay (s)	0.0	4.3	12.0
Approach LOS			B

Intersection Summary			
Average Delay	3.8		
Intersection Capacity Utilization	42.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	71	10	98	178	5	46
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	77	11	107	193	5	50
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			88		489	83
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			88		489	83
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			93		99	95
cM capacity (veh/h)			1508		500	977

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	88	300	55
Volume Left	0	107	5
Volume Right	11	0	50
cSH	1700	1508	893
Volume to Capacity	0.05	0.07	0.06
Queue Length 95th (ft)	0	6	5
Control Delay (s)	0.0	3.1	9.3
Lane LOS		A	A
Approach Delay (s)	0.0	3.1	9.3
Approach LOS			A

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	31.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	70	10	24	159	5	11
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	76	11	26	173	5	12
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			87		307	82
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			87		307	82
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		99	99
cM capacity (veh/h)			1509		674	978

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	87	199	17
Volume Left	0	26	5
Volume Right	11	0	12
cSH	1700	1509	857
Volume to Capacity	0.05	0.02	0.02
Queue Length 95th (ft)	0	1	2
Control Delay (s)	0.0	1.1	9.3
Lane LOS		A	A
Approach Delay (s)	0.0	1.1	9.3
Approach LOS			A

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	26.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	69	29	24	140	14	11
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	75	32	26	152	15	12
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			107		295	91
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			107		295	91
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		98	99
cM capacity (veh/h)			1484		684	967

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	107	178	27
Volume Left	0	26	15
Volume Right	32	0	12
cSH	1700	1484	785
Volume to Capacity	0.06	0.02	0.03
Queue Length 95th (ft)	0	1	3
Control Delay (s)	0.0	1.2	9.8
Lane LOS		A	A
Approach Delay (s)	0.0	1.2	9.8
Approach LOS			A

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	25.4%	ICU Level of Service	A
Analysis Period (min)	15		

1: Hart Ln & Spicewood Springs Rd

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	864	141	139	1151	236	241
Lane Group Flow (vph)	960	157	154	1279	262	268
Turn Type	NA	Perm	Prot	NA	Prot	Free
Protected Phases	2		1	6	4	
Permitted Phases		2				Free
Detector Phase	2	2	1	6	4	
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	
Total Split (s)	79.0	79.0	39.0	118.0	32.0	
Total Split (%)	52.7%	52.7%	26.0%	78.7%	21.3%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Max	C-Max	Max	C-Max	None	
v/c Ratio	0.55	0.19	0.29	0.44	0.72	0.17
Control Delay	27.9	10.8	38.5	7.2	76.5	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.9	10.8	38.5	7.2	76.5	0.2
Queue Length 50th (ft)	336	39	119	301	130	0
Queue Length 95th (ft)	402	83	226	270	174	0
Internal Link Dist (ft)	211			988	285	
Turn Bay Length (ft)		110	220		160	
Base Capacity (vph)	1745	821	533	2929	617	1583
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.19	0.29	0.44	0.42	0.17

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of 1st Green
Natural Cycle: 75
Control Type: Actuated-Coordinated

Splits and Phases: 1: Hart Ln & Spicewood Springs Rd

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	864	141	139	1151	236	241
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	4.0
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	3433	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	3433	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	960	157	154	1279	262	268
RTOR Reduction (vph)	0	41	0	0	0	0
Lane Group Flow (vph)	960	116	154	1279	262	268
Turn Type	NA	Perm	Prot	NA	Prot	Free
Protected Phases	2		1	6	4	
Permitted Phases		2				Free
Actuated Green, G (s)	74.0	74.0	45.2	124.2	15.8	150.0
Effective Green, g (s)	74.0	74.0	45.2	124.2	15.8	150.0
Actuated g/C Ratio	0.49	0.49	0.30	0.83	0.11	1.00
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	1745	780	533	2930	361	1583
v/s Ratio Prot	c0.27		0.09	c0.36	c0.08	
v/s Ratio Perm		0.07				0.17
v/c Ratio	0.55	0.15	0.29	0.44	0.73	0.17
Uniform Delay, d1	26.4	20.8	40.1	3.5	65.0	0.0
Progression Factor	1.00	1.00	0.90	1.84	1.00	1.00
Incremental Delay, d2	1.3	0.4	1.1	0.4	6.0	0.2
Delay (s)	27.7	21.2	37.2	6.8	71.0	0.2
Level of Service	C	C	D	A	E	A
Approach Delay (s)	26.8			10.0	35.2	
Approach LOS	C			B	D	

Intersection Summary			
HCM 2000 Control Delay	20.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	50.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

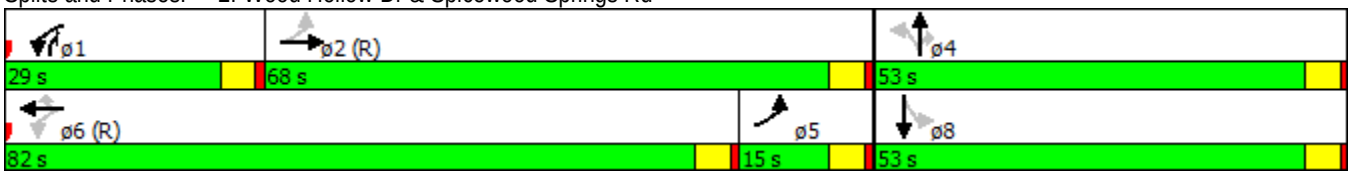
2: Wood Hollow Dr & Spicewood Springs Rd

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	5	1050	139	1067	1	209	8	316	1	4
Lane Group Flow (vph)	6	1249	158	1212	1	0	247	359	0	23
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Perm	NA	pm+ov	Perm	NA
Protected Phases	5	2	1	6			4	1		8
Permitted Phases	2		6		6	4		4	8	
Detector Phase	5	2	1	6	6	4	4	1	8	8
Switch Phase										
Minimum Initial (s)	6.0	25.0	6.0	5.0	5.0	5.0	5.0	6.0	5.0	5.0
Minimum Split (s)	15.0	30.0	15.0	11.0	11.0	35.0	35.0	15.0	35.0	35.0
Total Split (s)	15.0	68.0	29.0	82.0	82.0	53.0	53.0	29.0	53.0	53.0
Total Split (%)	10.0%	45.3%	19.3%	54.7%	54.7%	35.3%	35.3%	19.3%	35.3%	35.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead			Lead		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes			Yes		
Recall Mode	None	C-Max	None	C-Max	C-Max	Max	Max	None	None	None
v/c Ratio	0.03	0.49	0.59	0.58	0.00		0.58	0.51		0.04
Control Delay	7.4	12.5	29.8	16.7	0.0		49.0	28.7		17.5
Queue Delay	0.0	0.2	0.0	0.1	0.0		0.0	0.7		0.0
Total Delay	7.4	12.7	29.8	16.7	0.0		49.0	29.5		17.5
Queue Length 50th (ft)	1	324	48	213	0		202	221		4
Queue Length 95th (ft)	m4	398	144	372	m0		291	280		26
Internal Link Dist (ft)		988		494			464			203
Turn Bay Length (ft)	300		110		100					
Base Capacity (vph)	270	2549	395	2099	959		427	837		544
Starvation Cap Reductn	0	0	0	119	0		0	0		0
Spillback Cap Reductn	0	497	0	0	0		0	222		0
Storage Cap Reductn	0	0	0	0	0		0	0		0
Reduced v/c Ratio	0.02	0.61	0.40	0.61	0.00		0.58	0.58		0.04

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 55 (37%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Wood Hollow Dr & Spicewood Springs Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	1050	49	139	1067	1	209	8	316	1	4	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0		5.0	5.0		5.0	
Lane Util. Factor	1.00	0.91		1.00	0.95	1.00		1.00	1.00		1.00	
Frt	1.00	0.99		1.00	1.00	0.85		1.00	0.85		0.90	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.95	1.00		1.00	
Satd. Flow (prot)	1770	5051		1770	3539	1583		1777	1583		1673	
Flt Permitted	0.19	1.00		0.14	1.00	1.00		0.72	1.00		0.99	
Satd. Flow (perm)	348	5051		258	3539	1583		1336	1583		1665	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	6	1193	56	158	1212	1	238	9	359	1	5	17
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	31	0	12	0
Lane Group Flow (vph)	6	1246	0	158	1212	1	0	247	328	0	11	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	pm+ov	Perm	NA	
Protected Phases	5	2		1	6			4	1		8	
Permitted Phases	2			6		6	4		4	8		
Actuated Green, G (s)	75.6	75.6		85.0	85.0	85.0		48.0	59.4		48.0	
Effective Green, g (s)	75.6	75.6		85.0	85.0	85.0		48.0	59.4		48.0	
Actuated g/C Ratio	0.50	0.50		0.57	0.57	0.57		0.32	0.40		0.32	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0		5.0	5.0		5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0		2.0	2.0		2.0	
Lane Grp Cap (vph)	194	2545		261	2005	897		427	679		532	
v/s Ratio Prot	0.00	c0.25		0.05	c0.34				0.04			
v/s Ratio Perm	0.02			c0.30		0.00		c0.18	0.17		0.01	
v/c Ratio	0.03	0.49		0.61	0.60	0.00		0.58	0.48		0.02	
Uniform Delay, d1	26.6	24.5		19.0	21.4	14.1		42.6	33.8		34.9	
Progression Factor	0.34	0.48		1.42	0.78	1.00		1.00	1.00		1.00	
Incremental Delay, d2	0.0	0.6		2.6	1.3	0.0		5.6	0.2		0.0	
Delay (s)	9.0	12.3		29.7	18.1	14.1		48.2	34.0		34.9	
Level of Service	A	B		C	B	B		D	C		C	
Approach Delay (s)		12.3			19.4			39.8			34.9	
Approach LOS		B			B			D			C	

Intersection Summary			
HCM 2000 Control Delay	20.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	65.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

3: Mopac SBFR & Spicewood Springs Rd

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR	ø1	ø2	ø4	ø5	ø6
Lane Configurations												
Volume (vph)	1063	304	667	808	619	214	398					
Lane Group Flow (vph)	1131	323	710	860	329	558	423					
Turn Type	NA	Free	Prot	NA	Split	NA	Free					
Protected Phases	2 1		19 6 7 2 1 19 6		4 5	4 5		1	2	4	5	6
Permitted Phases		Free					Free					
Detector Phase	2 1		19 6 7 2 1 19 6		4 5	4 5						
Switch Phase												
Minimum Initial (s)								3.0	1.0	1.0	3.0	4.0
Minimum Split (s)								8.0	11.0	11.0	8.0	24.0
Total Split (s)								8.0	35.0	23.0	8.0	51.0
Total Split (%)								5%	23%	15%	5%	34%
Yellow Time (s)								4.0	4.0	4.0	4.0	4.0
All-Red Time (s)								1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag								Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?								Yes	Yes	Yes	Yes	Yes
Recall Mode								None	Max	None	None	C-Max
v/c Ratio	1.26	0.20	0.85	0.38	1.18	1.13dl	0.27					
Control Delay	173.2	0.3	25.6	1.7	163.3	93.8	0.4					
Queue Delay	0.6	0.0	7.8	0.2	0.0	0.0	0.0					
Total Delay	173.9	0.3	33.4	1.9	163.3	93.8	0.4					
Queue Length 50th (ft)	~745	0	663	35	~421	302	0					
Queue Length 95th (ft)	#878	0	m543	m58	#642	#431	0					
Internal Link Dist (ft)	494			333		2669						
Turn Bay Length (ft)			50		145							
Base Capacity (vph)	896	1583	837	2241	279	570	1583					
Starvation Cap Reductn	0	0	99	592	0	0	0					
Spillback Cap Reductn	98	0	0	0	0	0	0					
Storage Cap Reductn	0	0	0	0	0	0	0					
Reduced v/c Ratio	1.42	0.20	0.96	0.52	1.18	0.98	0.27					

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 89 (59%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 120
Control Type: Actuated-Coordinated

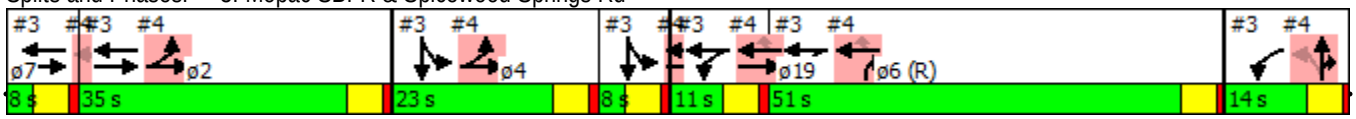
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 3: Mopac SBFR & Spicewood Springs Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1063	304	667	808	0	0	0	0	619	214	398
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	4.0	5.0	5.0					5.0	5.0	4.0
Lane Util. Factor		0.95	1.00	1.00	0.95					0.91	0.91	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.97	1.00
Satd. Flow (prot)		3539	1583	1770	3539					1610	3293	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.97	1.00
Satd. Flow (perm)		3539	1583	1770	3539					1610	3293	1583
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	1131	323	710	860	0	0	0	0	659	228	423
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1131	323	710	860	0	0	0	0	329	558	423
Turn Type		NA	Free	Prot	NA					Split	NA	Free
Protected Phases		2 1		19 6 7	2 1 19 6					4 5	4 5	
Permitted Phases			Free									Free
Actuated Green, G (s)		38.0	150.0	71.0	95.0					26.0	26.0	150.0
Effective Green, g (s)		38.0	150.0	71.0	95.0					26.0	26.0	150.0
Actuated g/C Ratio		0.25	1.00	0.47	0.63					0.17	0.17	1.00
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		896	1583	837	2241					279	570	1583
v/s Ratio Prot		c0.32		c0.40	0.24					c0.20	0.17	
v/s Ratio Perm			0.20									0.27
v/c Ratio		1.26	0.20	0.85	0.38					1.18	1.13dl	0.27
Uniform Delay, d1		56.0	0.0	34.8	13.3					62.0	61.7	0.0
Progression Factor		1.06	1.00	0.60	0.21					1.00	1.00	1.00
Incremental Delay, d2		126.1	0.3	3.0	0.0					111.4	31.8	0.4
Delay (s)		185.5	0.3	23.7	2.7					173.4	93.6	0.4
Level of Service		F	A	C	A					F	F	A
Approach Delay (s)		144.3			12.2			0.0			83.5	
Approach LOS		F			B			A			F	

Intersection Summary			
HCM 2000 Control Delay	78.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.21		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	35.0
Intersection Capacity Utilization	94.8%	ICU Level of Service	F
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group

4: Mopac NBFR & Anderson Ln

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	ø1	ø2	ø4	ø5	ø6
Lane Configurations												
Volume (vph)	524	1159	1180	435	295	43	580					
Lane Group Flow (vph)	552	1220	1242	458	280	351	336					
Turn Type	Prot	NA	NA	Perm	Perm	NA	custom					
Protected Phases	2 4	2 4 5 19	6 5 19			7 1	7 1 6	1	2	4	5	6
Permitted Phases				6 5 19	7 1							
Detector Phase	2 4	2 4 5 19	6 5 19	6 5 19	7 1	7 1	7 1 6					
Switch Phase												
Minimum Initial (s)								3.0	1.0	1.0	3.0	4.0
Minimum Split (s)								8.0	11.0	11.0	8.0	24.0
Total Split (s)								8.0	35.0	23.0	8.0	51.0
Total Split (%)								5%	23%	15%	5%	34%
Yellow Time (s)								4.0	4.0	4.0	4.0	4.0
All-Red Time (s)								1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag								Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?								Yes	Yes	Yes	Yes	Yes
Recall Mode								None	Max	None	None	C-Max
v/c Ratio	0.88	0.72	0.81	0.56	1.47	1.38	0.45					
Control Delay	27.6	0.3	42.3	16.8	283.0	225.6	19.1					
Queue Delay	49.4	14.1	1.3	0.0	0.0	0.2	0.0					
Total Delay	76.9	14.4	43.6	16.8	283.0	225.7	19.1					
Queue Length 50th (ft)	330	0	552	153	~394	~401	144					
Queue Length 95th (ft)	m182	m0	647	262	#594	#628	236					
Internal Link Dist (ft)		333	702			1795						
Turn Bay Length (ft)	50			360	280							
Base Capacity (vph)	625	1698	1533	823	190	255	749					
Starvation Cap Reductn	154	482	0	0	0	0	0					
Spillback Cap Reductn	0	0	130	0	0	3	0					
Storage Cap Reductn	0	0	0	0	0	0	0					
Reduced v/c Ratio	1.17	1.00	0.89	0.56	1.47	1.39	0.45					

Intersection Summary

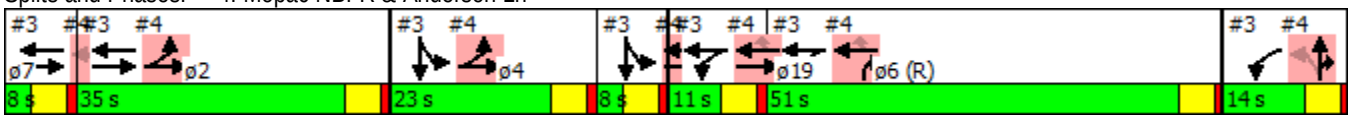
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 89 (59%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 120
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Mopac NBFR & Anderson Ln



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	524	1159	0	0	1180	435	295	43	580	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0	5.0			
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.91	0.95			
Frt	1.00	1.00			1.00	0.85	1.00	0.88	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	1770	3539			3539	1583	1681	1489	1504			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	1770	3539			3539	1583	1681	1489	1504			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	552	1220	0	0	1242	458	311	45	611	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	137	0	87	68	0	0	0
Lane Group Flow (vph)	552	1220	0	0	1242	321	280	264	268	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	custom			
Protected Phases	2 4	2 4 5 19			6 5 19			7 1	7 1 6			
Permitted Phases						6 5 19	7 1					
Actuated Green, G (s)	53.0	72.0			65.0	65.0	17.0	17.0	68.0			
Effective Green, g (s)	53.0	72.0			65.0	65.0	17.0	17.0	68.0			
Actuated g/C Ratio	0.35	0.48			0.43	0.43	0.11	0.11	0.45			
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	625	1698			1533	685	190	168	681			
v/s Ratio Prot	c0.31	c0.34			c0.35				0.18			
v/s Ratio Perm						0.20	0.17	0.18				
v/c Ratio	0.88	0.72			0.81	0.47	1.47	1.57	0.39			
Uniform Delay, d1	45.6	31.0			37.1	30.2	66.5	66.5	27.3			
Progression Factor	0.54	0.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	1.5	0.1			3.2	0.2	239.4	284.1	0.1			
Delay (s)	26.2	0.2			40.3	30.4	305.9	350.6	27.4			
Level of Service	C	A			D	C	F	F	C			
Approach Delay (s)		8.3			37.6			225.4			0.0	
Approach LOS		A			D			F			A	

Intersection Summary			
HCM 2000 Control Delay	66.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	35.0
Intersection Capacity Utilization	94.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	27	149	281	15	57	187
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	36	199	375	20	76	249
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						365
pX, platoon unblocked						
vC, conflicting volume	786	385			395	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	786	385			395	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	89	70			93	
cM capacity (veh/h)	337	663			1164	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	235	395	325
Volume Left	36	0	76
Volume Right	199	20	0
cSH	577	1700	1164
Volume to Capacity	0.41	0.23	0.07
Queue Length 95th (ft)	49	0	5
Control Delay (s)	15.4	0.0	2.4
Lane LOS	C		A
Approach Delay (s)	15.4	0.0	2.4
Approach LOS	C		

Intersection Summary			
Average Delay	4.6		
Intersection Capacity Utilization	49.4%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	23.8
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	91	113	55	0	64	66	152	0	32	280	66
Peak Hour Factor	0.92	0.76	0.76	0.76	0.92	0.76	0.76	0.76	0.92	0.76	0.76	0.76
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	120	149	72	0	84	87	200	0	42	368	87
Number of Lanes	0	0	1	0	0	0	1	0	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	1
HCM Control Delay	27.9	29.5	20.2
HCM LOS	D	D	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	19%	0%	35%	23%	100%	0%
Vol Thru, %	81%	68%	44%	23%	0%	75%
Vol Right, %	0%	32%	21%	54%	0%	25%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	172	206	259	282	51	164
LT Vol	32	0	91	64	51	0
Through Vol	140	140	113	66	0	123
RT Vol	0	66	55	152	0	41
Lane Flow Rate	226	271	341	371	67	216
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.51	0.587	0.719	0.753	0.167	0.494
Departure Headway (Hd)	8.12	7.791	7.595	7.303	8.951	8.249
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	444	464	474	494	400	436
Service Time	5.885	5.555	5.659	5.366	6.721	6.019
HCM Lane V/C Ratio	0.509	0.584	0.719	0.751	0.168	0.495
HCM Control Delay	19.1	21.1	27.9	29.5	13.5	18.9
HCM Lane LOS	C	C	D	D	B	C
HCM 95th-tile Q	2.8	3.7	5.7	6.4	0.6	2.7

6: Wood Hollow Dr & Executive Center Dr

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	51	123	41
Peak Hour Factor	0.92	0.76	0.76	0.76
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	67	162	54
Number of Lanes	0	1	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	17.6
HCM LOS	C

Lane

Intersection	
Intersection Delay, s/veh	14.8
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	37	76	48	0	97	136	51	0	96	205	58
Peak Hour Factor	0.92	0.94	0.94	0.94	0.92	0.94	0.94	0.94	0.92	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	39	81	51	0	103	145	54	0	102	218	62
Number of Lanes	0	0	1	1	0	0	1	1	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	2
HCM Control Delay	11.4	14.6	17.7
HCM LOS	B	B	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	27%	33%	0%	42%	0%	7%
Vol Thru, %	57%	67%	0%	58%	0%	64%
Vol Right, %	16%	0%	100%	0%	100%	29%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	359	113	48	233	51	207
LT Vol	96	37	0	97	0	15
Through Vol	205	76	0	136	0	132
RT Vol	58	0	48	0	51	60
Lane Flow Rate	382	120	51	248	54	220
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.613	0.24	0.089	0.471	0.089	0.372
Departure Headway (Hd)	5.879	7.18	6.293	6.954	6.024	6.081
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	619	502	572	521	598	595
Service Time	3.879	4.892	4.005	4.654	3.724	4.091
HCM Lane V/C Ratio	0.617	0.239	0.089	0.476	0.09	0.37
HCM Control Delay	17.7	12.1	9.6	15.7	9.3	12.7
HCM Lane LOS	C	B	A	C	A	B
HCM 95th-tile Q	4.2	0.9	0.3	2.5	0.3	1.7

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	15	132	60
Peak Hour Factor	0.92	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	16	140	64
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	12.7
HCM LOS	B

Lane

9: Greystone Dr & Wood Hollow Dr

Intersection	
Intersection Delay, s/veh	18.4
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	41	75	53	0	93	239	99	0	83	266	76
Peak Hour Factor	0.92	0.99	0.99	0.99	0.92	0.99	0.99	0.99	0.92	0.99	0.99	0.99
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	41	76	54	0	94	241	100	0	84	269	77
Number of Lanes	0	0	1	1	0	0	1	1	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	2
HCM Control Delay	12.5	21.1	20.6
HCM LOS	B	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	35%	0%	28%	0%	100%	0%
Vol Thru, %	0%	78%	65%	0%	72%	0%	0%	82%
Vol Right, %	0%	22%	0%	100%	0%	100%	0%	18%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	83	342	116	53	332	99	67	180
LT Vol	83	0	41	0	93	0	67	0
Through Vol	0	266	75	0	239	0	0	147
RT Vol	0	76	0	53	0	99	0	33
Lane Flow Rate	84	345	117	54	335	100	68	182
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.178	0.668	0.258	0.104	0.679	0.179	0.15	0.372
Departure Headway (Hd)	7.633	6.963	7.928	7.025	7.294	6.435	8.001	7.356
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	469	518	452	509	496	557	448	489
Service Time	5.382	4.711	5.689	4.785	5.041	4.182	5.757	5.111
HCM Lane V/C Ratio	0.179	0.666	0.259	0.106	0.675	0.18	0.152	0.372
HCM Control Delay	12	22.7	13.4	10.6	24.2	10.6	12.2	14.4
HCM Lane LOS	B	C	B	B	C	B	B	B
HCM 95th-tile Q	0.6	4.9	1	0.3	5	0.6	0.5	1.7

9: Greystone Dr & Wood Hollow Dr

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	67	147	33
Peak Hour Factor	0.92	0.99	0.99	0.99
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	68	148	33
Number of Lanes	0	1	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	13.8
HCM LOS	B

Lane

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	225	0	0	1926	398
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	0	259	0	0	2214	457
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2214	738	2671			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2214	738	2671			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	28	100			
cM capacity (veh/h)	37	360	153			

Direction, Lane #	EB 1	SB 1	SB 2	SB 3	SB 4
Volume Total	259	738	738	738	457
Volume Left	0	0	0	0	0
Volume Right	259	0	0	0	457
cSH	360	1700	1700	1700	1700
Volume to Capacity	0.72	0.43	0.43	0.43	0.27
Queue Length 95th (ft)	134	0	0	0	0
Control Delay (s)	36.7	0.0	0.0	0.0	0.0
Lane LOS	E				
Approach Delay (s)	36.7	0.0			
Approach LOS	E				

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	57.8%	ICU Level of Service	B
Analysis Period (min)	15		

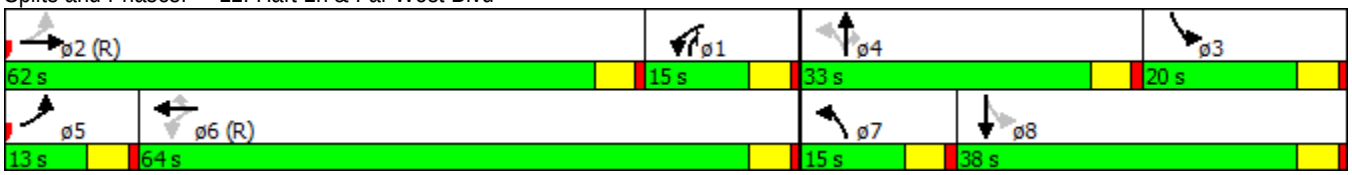
11: Hart Ln & Far West Blvd

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	49	561	185	529	156	62	139	142	173	96
Lane Group Flow (vph)	51	618	191	545	161	64	143	146	178	157
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA
Protected Phases	5	2	1	6		7	4	1	3	8
Permitted Phases	2		6		6	4		4	8	
Detector Phase	5	2	1	6	6	7	4	1	3	8
Switch Phase										
Minimum Initial (s)	4.0	2.0	4.0	2.0	2.0	4.0	2.0	4.0	2.0	2.0
Minimum Split (s)	9.0	24.0	9.0	24.0	24.0	9.0	33.0	9.0	33.0	33.0
Total Split (s)	13.0	62.0	15.0	64.0	64.0	15.0	33.0	15.0	20.0	38.0
Total Split (%)	10.0%	47.7%	11.5%	49.2%	49.2%	11.5%	25.4%	11.5%	15.4%	29.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lead	Lag	Lag	Lag	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	C-Max	None	None	None	None	None
v/c Ratio	0.11	0.31	0.35	0.25	0.17	0.40	0.69	0.41	0.74	0.30
Control Delay	15.8	16.6	37.7	29.7	30.9	59.2	72.6	45.7	71.3	49.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.8	16.6	37.7	29.7	30.9	59.2	72.6	45.7	71.3	49.5
Queue Length 50th (ft)	19	140	112	170	94	51	118	106	145	63
Queue Length 95th (ft)	46	211	207	263	180	93	182	163	210	91
Internal Link Dist (ft)		1703		1174			695			1553
Turn Bay Length (ft)	130		100		490			100	100	
Base Capacity (vph)	468	1984	551	2157	964	173	401	357	286	849
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.31	0.35	0.25	0.17	0.37	0.36	0.41	0.62	0.18

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 100 (77%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 11: Hart Ln & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	49	561	39	185	529	156	62	139	142	173	96	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3505		1770	3539	1583	1770	1863	1583	1770	3343	
Flt Permitted	0.38	1.00		0.42	1.00	1.00	0.56	1.00	1.00	0.67	1.00	
Satd. Flow (perm)	710	3505		778	3539	1583	1035	1863	1583	1240	3343	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	51	578	40	191	545	161	64	143	146	178	99	58
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	51	618	0	191	545	161	64	143	146	178	157	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases	5	2		1	6		7	4	1	3	8	
Permitted Phases	2			6		6	4		4	8		
Actuated Green, G (s)	71.7	71.7		77.3	77.3	77.3	14.4	14.4	25.4	20.1	20.1	
Effective Green, g (s)	71.7	71.7		77.3	77.3	77.3	14.4	14.4	25.4	20.1	20.1	
Actuated g/C Ratio	0.55	0.55		0.59	0.59	0.59	0.11	0.11	0.20	0.15	0.15	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	435	1933		546	2104	941	155	206	370	244	516	
v/s Ratio Prot	0.00	c0.18		0.03	0.15		0.02	c0.08	c0.03	c0.07	0.05	
v/s Ratio Perm	0.06			c0.18		0.10	0.02		0.06	c0.04		
v/c Ratio	0.12	0.32		0.35	0.26	0.17	0.41	0.69	0.39	0.73	0.30	
Uniform Delay, d1	13.9	15.9		14.2	12.6	11.9	53.4	55.7	45.6	51.5	48.7	
Progression Factor	1.00	1.00		2.10	2.15	2.20	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.0	0.4		0.1	0.3	0.4	0.7	7.9	0.3	8.9	0.1	
Delay (s)	13.9	16.3		29.9	27.4	26.6	54.0	63.6	45.9	60.4	48.9	
Level of Service	B	B		C	C	C	D	E	D	E	D	
Approach Delay (s)		16.1			27.8			54.5			55.0	
Approach LOS		B			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	32.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	60.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

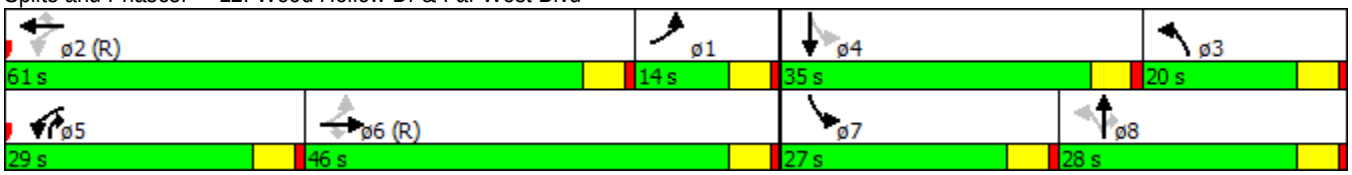
12: Wood Hollow Dr & Far West Blvd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Volume (vph)	114	765	63	225	677	160	101	185	318	166	101
Lane Group Flow (vph)	130	869	72	256	769	182	115	210	361	189	173
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA
Protected Phases	1	6		5	2		3	8	5	7	4
Permitted Phases	6		6	2		2	8		8	4	
Detector Phase	1	6	6	5	2	2	3	8	5	7	4
Switch Phase											
Minimum Initial (s)	4.0	2.0	2.0	4.0	2.0	2.0	4.0	2.0	4.0	4.0	2.0
Minimum Split (s)	9.0	11.0	11.0	9.0	11.0	11.0	9.0	11.0	9.0	9.0	11.0
Total Split (s)	14.0	46.0	46.0	29.0	61.0	61.0	20.0	28.0	29.0	27.0	35.0
Total Split (%)	10.8%	35.4%	35.4%	22.3%	46.9%	46.9%	15.4%	21.5%	22.3%	20.8%	26.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None
v/c Ratio	0.35	0.56	0.09	0.76	0.43	0.21	0.42	0.80	0.64	0.79	0.75
Control Delay	43.8	40.7	4.5	44.1	33.8	12.1	53.9	75.3	30.1	77.2	67.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.8	40.7	4.5	44.1	33.8	12.1	53.9	75.3	30.1	77.2	67.9
Queue Length 50th (ft)	80	320	4	163	273	32	88	173	182	156	128
Queue Length 95th (ft)	147	446	m18	246	344	77	144	246	240	227	192
Internal Link Dist (ft)		1174			673			686			1879
Turn Bay Length (ft)	245		610	125			75		75		
Base Capacity (vph)	372	1563	779	421	1771	883	274	329	648	299	422
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.56	0.09	0.61	0.43	0.21	0.42	0.64	0.56	0.63	0.41

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 20 (15%), Referenced to phase 2:WBTL and 6:EBTL, Start of 1st Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 12: Wood Hollow Dr & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	114	765	63	225	677	160	101	185	318	166	101	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1769	
Flt Permitted	0.36	1.00	1.00	0.16	1.00	1.00	0.00	1.00	1.00	0.00	1.00	
Satd. Flow (perm)	671	3539	1583	298	3539	1583	0	1863	1583	0	1769	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	130	869	72	256	769	182	115	210	361	189	115	58
RTOR Reduction (vph)	0	0	40	0	0	91	0	0	82	0	16	0
Lane Group Flow (vph)	130	869	32	256	769	91	115	210	279	189	157	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases	1	6		5	2		3	8	5	7	4	
Permitted Phases	6		6	2		2	8		8	4		
Actuated Green, G (s)	57.5	57.5	57.5	65.1	65.1	65.1	20.0	18.4	35.0	17.5	15.9	
Effective Green, g (s)	57.5	57.5	57.5	65.1	65.1	65.1	20.0	18.4	35.0	17.5	15.9	
Actuated g/C Ratio	0.44	0.44	0.44	0.50	0.50	0.50	0.15	0.14	0.27	0.13	0.12	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	372	1565	700	337	1772	792	272	263	487	238	216	
v/s Ratio Prot	0.02	c0.25		c0.10	0.22		0.06	c0.11	0.07	c0.11	0.09	
v/s Ratio Perm	0.13		0.02	c0.28		0.06			0.10			
v/c Ratio	0.35	0.56	0.05	0.76	0.43	0.12	0.42	0.80	0.57	0.79	0.73	
Uniform Delay, d1	25.1	26.8	20.6	23.0	20.7	17.2	49.8	54.0	41.0	54.5	55.0	
Progression Factor	1.31	1.31	1.00	1.39	1.49	3.80	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.2	1.4	0.1	7.3	0.7	0.3	0.4	14.5	1.0	15.5	9.9	
Delay (s)	33.1	36.5	20.7	39.3	31.6	65.6	50.2	68.5	42.1	70.0	64.9	
Level of Service	C	D	C	D	C	E	D	E	D	E	E	
Approach Delay (s)		35.1			38.3			51.5			67.5	
Approach LOS		D			D			D			E	

Intersection Summary			
HCM 2000 Control Delay	43.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	69.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

13: Mopac SBFR & Far West Blvd

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR	ø1	ø2	ø4	ø8	ø22
Lane Configurations											
Volume (vph)	1163	386	10	450	412	928					
Lane Group Flow (vph)	1307	434	11	506	950	1043					
Turn Type	NA	Free	Prot	NA	NA	Free					
Protected Phases	1 22 2		7	1 22 7	4 8		1	2	4	8	22
Permitted Phases		Free				Free					
Detector Phase	1 22 2		7	1 22 7	4 8						
Switch Phase											
Minimum Initial (s)			4.0				4.0	4.0	4.0	4.0	4.0
Minimum Split (s)			20.0				9.0	24.0	24.0	9.0	20.0
Total Split (s)			41.0				9.0	20.0	31.0	9.0	20.0
Total Split (%)			31.5%				7%	15%	24%	7%	15%
Yellow Time (s)			4.0				4.0	4.0	4.0	4.0	4.0
All-Red Time (s)			1.0				1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)			0.0								
Total Lost Time (s)			5.0								
Lead/Lag							Lead		Lead	Lag	Lag
Lead-Lag Optimize?							Yes		Yes	Yes	Yes
Recall Mode			None				None	C-Max	None	None	None
v/c Ratio	0.77	0.27	0.05	0.29	1.02	0.66					
Control Delay	32.1	0.4	26.0	3.4	82.0	2.2					
Queue Delay	49.5	0.0	0.0	0.3	0.0	0.0					
Total Delay	81.6	0.4	26.0	3.7	82.0	2.2					
Queue Length 50th (ft)	510	0	3	14	~447	0					
Queue Length 95th (ft)	654	0	m8	17	#570	0					
Internal Link Dist (ft)	432			324	532						
Turn Bay Length (ft)		490									
Base Capacity (vph)	1692	1583	490	1769	929	1583					
Starvation Cap Reductn	0	0	0	631	0	0					
Spillback Cap Reductn	751	0	0	0	0	0					
Storage Cap Reductn	0	0	0	0	0	0					
Reduced v/c Ratio	1.39	0.27	0.02	0.44	1.02	0.66					

Intersection Summary

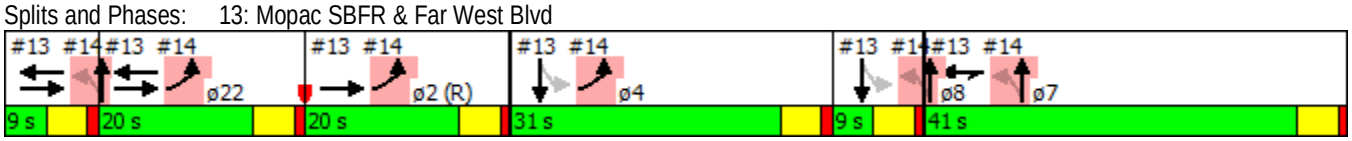
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBT, Start of 1st Green
Natural Cycle: 110
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Mopac SBFR & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1163	386	10	450	0	0	0	0	433	412	928
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	4.0	5.0	5.0						5.0	4.0
Lane Util. Factor		0.95	1.00	1.00	0.95						0.95	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.98	1.00
Satd. Flow (prot)		3539	1583	1770	3539						3451	1583
Flt Permitted		1.00	1.00	0.95	1.00						0.98	1.00
Satd. Flow (perm)		3539	1583	1770	3539						3451	1583
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	1307	434	11	506	0	0	0	0	487	463	1043
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1307	434	11	506	0	0	0	0	0	950	1043
Turn Type		NA	Free	Prot	NA					Perm	NA	Free
Protected Phases		1 22 2		7	1 22 7						4 8	
Permitted Phases			Free							4 8		Free
Actuated Green, G (s)		62.2	130.0	17.8	65.0						35.0	130.0
Effective Green, g (s)		62.2	130.0	17.8	65.0						35.0	130.0
Actuated g/C Ratio		0.48	1.00	0.14	0.50						0.27	1.00
Clearance Time (s)				5.0								
Vehicle Extension (s)				2.0								
Lane Grp Cap (vph)		1693	1583	242	1769						929	1583
v/s Ratio Prot		c0.37		0.01	0.14							
v/s Ratio Perm			0.27								0.28	c0.66
v/c Ratio		0.77	0.27	0.05	0.29						1.02	0.66
Uniform Delay, d1		28.0	0.0	48.7	19.0						47.5	0.0
Progression Factor		0.99	1.00	0.57	0.16						1.00	1.00
Incremental Delay, d2		1.9	0.4	0.0	0.0						35.4	2.2
Delay (s)		29.5	0.4	27.6	3.0						82.9	2.2
Level of Service		C	A	C	A						F	A
Approach Delay (s)		22.2			3.5			0.0			40.6	
Approach LOS		C			A			A			D	

Intersection Summary			
HCM 2000 Control Delay	28.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	67.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

14: Mopac NBFR & Far West Blvd

Lane Group	EBL	NBL	NBT	ø1	ø2	ø4	ø7	ø8	ø22
Lane Configurations									
Volume (vph)	1606	398	25						
Lane Group Flow (vph)	1825	240	240						
Turn Type	Prot	Perm	NA						
Protected Phases	22 2 4		7 1 8	1	2	4	7	8	22
Permitted Phases		7 1 8							
Detector Phase	22 2 4	7 1 8	7 1 8						
Switch Phase									
Minimum Initial (s)				4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)				9.0	24.0	24.0	20.0	9.0	20.0
Total Split (s)				9.0	20.0	31.0	41.0	9.0	20.0
Total Split (%)				7%	15%	24%	32%	7%	15%
Yellow Time (s)				4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)				1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)									
Total Lost Time (s)									
Lead/Lag				Lead		Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes		Yes	Yes
Recall Mode				None	C-Max	None	None	None	None
v/c Ratio	1.05	0.34	0.34						
Control Delay	57.4	27.7	27.6						
Queue Delay	22.1	0.0	0.0						
Total Delay	79.5	27.7	27.6						
Queue Length 50th (ft)	~861	143	143						
Queue Length 95th (ft)	m#924	209	209						
Internal Link Dist (ft)	324		322						
Turn Bay Length (ft)									
Base Capacity (vph)	1742	698	704						
Starvation Cap Reductn	362	0	0						
Spillback Cap Reductn	0	0	0						
Storage Cap Reductn	0	0	0						
Reduced v/c Ratio	1.32	0.34	0.34						

Intersection Summary

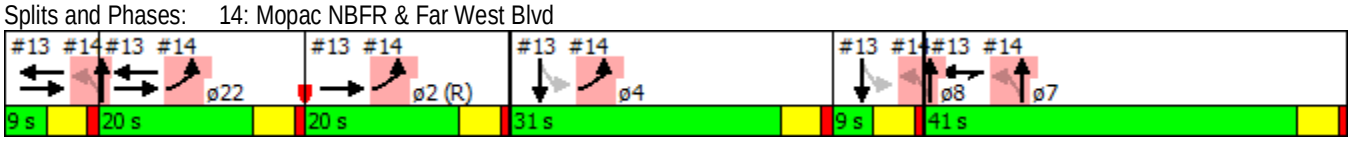
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBT, Start of 1st Green
Natural Cycle: 110
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 14: Mopac NBFR & Far West Blvd



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	1606	0	398	25	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0		
Lane Util. Factor	0.97		0.95	0.95		
Frt	1.00		1.00	1.00		
Flt Protected	0.95		0.95	0.96		
Satd. Flow (prot)	3433		1681	1695		
Flt Permitted	0.95		0.95	0.96		
Satd. Flow (perm)	3433		1681	1695		
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	1825	0	452	28	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1825	0	240	240	0	0
Turn Type	Prot		Perm	NA		
Protected Phases	22 2 4			7 1 8		
Permitted Phases			7 1 8			
Actuated Green, G (s)	66.0		54.0	54.0		
Effective Green, g (s)	66.0		54.0	54.0		
Actuated g/C Ratio	0.51		0.42	0.42		
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)	1742		698	704		
v/s Ratio Prot	c0.53					
v/s Ratio Perm			c0.14	0.14		
v/c Ratio	1.05		0.34	0.34		
Uniform Delay, d1	32.0		25.9	25.9		
Progression Factor	0.84		1.00	1.00		
Incremental Delay, d2	30.1		0.1	0.1		
Delay (s)	56.9		26.0	26.0		
Level of Service	E		C	C		
Approach Delay (s)	56.9			26.0	0.0	
Approach LOS	E			C	A	

Intersection Summary			
HCM 2000 Control Delay	50.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	80.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

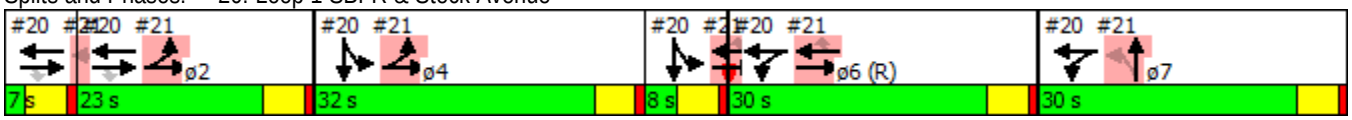
20: Loop 1 SBFR & Steck Avenue

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	ø1	ø2	ø4	ø5	ø6	ø7
Lane Configurations												
Volume (vph)	627	100	248	343	771	774						
Lane Group Flow (vph)	640	102	253	350	637	1280						
Turn Type	NA	Perm	Prot	NA	Split	NA						
Protected Phases	2 1		6 7	2 1 6 7	4 5	4 5	1	2	4	5	6	7
Permitted Phases		2 1										
Detector Phase	2 1	2 1	6 7	2 1 6 7	4 5	4 5						
Switch Phase												
Minimum Initial (s)							2.0	1.0	1.0	3.0	4.0	4.0
Minimum Split (s)							7.0	11.0	11.0	8.0	24.0	9.0
Total Split (s)							7.0	23.0	32.0	8.0	30.0	30.0
Total Split (%)							5%	18%	25%	6%	23%	23%
Yellow Time (s)							4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)							1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag							Lead	Lag	Lead	Lag		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode							None	Max	None	None	C-Max	None
v/c Ratio	0.94	0.24	0.34	0.15	1.47	1.43						
Control Delay	74.6	3.7	2.8	0.1	259.3	234.3						
Queue Delay	45.4	0.0	0.8	0.0	0.0	0.0						
Total Delay	120.0	3.7	3.6	0.1	259.3	234.3						
Queue Length 50th (ft)	282	0	6	0	~808	~793						
Queue Length 95th (ft)	#398	19	8	0	#1064	#940						
Internal Link Dist (ft)	737			327		333						
Turn Bay Length (ft)		100	80									
Base Capacity (vph)	680	419	748	2313	433	896						
Starvation Cap Reductn	0	0	261	0	0	0						
Spillback Cap Reductn	182	0	0	0	0	1						
Storage Cap Reductn	0	0	0	0	0	0						
Reduced v/c Ratio	1.29	0.24	0.52	0.15	1.47	1.43						

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 97 (75%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 20: Loop 1 SBFR & Steck Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	627	100	248	343	0	0	0	0	771	774	333
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0					5.0	5.0	
Lane Util. Factor		0.95	1.00	1.00	0.95					0.91	0.91	
Frt		1.00	0.85	1.00	1.00					1.00	0.96	
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.99	
Satd. Flow (prot)		3539	1583	1770	3539					1610	3236	
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.99	
Satd. Flow (perm)		3539	1583	1770	3539					1610	3236	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	640	102	253	350	0	0	0	0	787	790	340
RTOR Reduction (vph)	0	0	82	0	0	0	0	0	0	0	26	0
Lane Group Flow (vph)	0	640	20	253	350	0	0	0	0	637	1254	0
Turn Type		NA	Perm	Prot	NA					Split	NA	
Protected Phases		2 1		6 7	2 1 6 7					4 5	4 5	
Permitted Phases			2 1									
Actuated Green, G (s)		25.0	25.0	55.0	85.0					35.0	35.0	
Effective Green, g (s)		25.0	25.0	55.0	85.0					35.0	35.0	
Actuated g/C Ratio		0.19	0.19	0.42	0.65					0.27	0.27	
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		680	304	748	2313					433	871	
v/s Ratio Prot		c0.18		c0.14	0.10					c0.40	0.39	
v/s Ratio Perm			0.01									
v/c Ratio		0.94	0.06	0.34	0.15					1.47	1.44	
Uniform Delay, d1		51.8	42.9	25.2	8.6					47.5	47.5	
Progression Factor		1.00	1.00	0.07	0.00					1.00	1.00	
Incremental Delay, d2		21.0	0.0	0.1	0.0					224.3	204.6	
Delay (s)		72.8	43.0	1.8	0.0					271.8	252.1	
Level of Service		E	D	A	A					F	F	
Approach Delay (s)		68.7			0.7			0.0			258.7	
Approach LOS		E			A			A			F	

Intersection Summary			
HCM 2000 Control Delay	167.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	137.3%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

21: Loop 1 NBFR & Steck Avenue

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	ø1	ø2	ø4	ø5	ø6	ø7
Lane Configurations												
Volume (vph)	678	604	471	486	124	815						
Lane Group Flow (vph)	714	636	496	512	131	983						
Turn Type	Prot	NA	NA	Perm	Perm	NA						
Protected Phases	2 4	2 4 5 6	6 5			7 1	1	2	4	5	6	7
Permitted Phases				6 5	7 1							
Detector Phase	2 4	2 4 5 6	6 5	6 5	7 1	7 1						
Switch Phase												
Minimum Initial (s)							2.0	1.0	1.0	3.0	4.0	4.0
Minimum Split (s)							7.0	11.0	11.0	8.0	24.0	9.0
Total Split (s)							7.0	23.0	32.0	8.0	30.0	30.0
Total Split (%)							5%	18%	25%	6%	23%	23%
Yellow Time (s)							4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)							1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag							Lead	Lag	Lead	Lag		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode							None	Max	None	None	C-Max	None
v/c Ratio	1.05	0.27	0.55	1.01	0.16	2.17						
Control Delay	53.5	0.1	44.9	76.8	39.0	559.0						
Queue Delay	21.0	1.0	0.0	0.0	0.0	0.0						
Total Delay	74.5	1.1	44.9	76.8	39.0	559.0						
Queue Length 50th (ft)	~636	0	192	~341	44	~1335						
Queue Length 95th (ft)	m368	m0	250	#577	72	#1595						
Internal Link Dist (ft)		327	978			2452						
Turn Bay Length (ft)	80			170	110							
Base Capacity (vph)	680	2395	898	508	845	453						
Starvation Cap Reductn	175	1436	0	0	0	0						
Spillback Cap Reductn	0	0	0	0	0	0						
Storage Cap Reductn	0	0	0	0	0	0						
Reduced v/c Ratio	1.41	0.66	0.55	1.01	0.16	2.17						

Intersection Summary

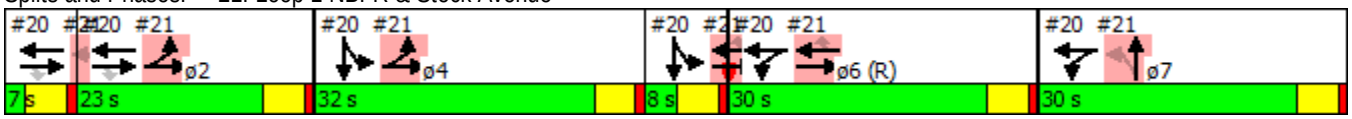
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 97 (75%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 21: Loop 1 NBFR & Steck Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	678	604	0	0	471	486	124	815	119	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0				
Lane Util. Factor	1.00	0.95			0.95	1.00	0.97	1.00				
Frt	1.00	1.00			1.00	0.85	1.00	0.98				
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (prot)	1770	3539			3539	1583	3433	1827				
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (perm)	1770	3539			3539	1583	3433	1827				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	714	636	0	0	496	512	131	858	125	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	107	0	4	0	0	0	0
Lane Group Flow (vph)	714	636	0	0	496	405	131	979	0	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA				
Protected Phases	2 4	2 4 5 6			6 5			7 1				
Permitted Phases						6 5	7 1					
Actuated Green, G (s)	50.0	88.0			33.0	33.0	32.0	32.0				
Effective Green, g (s)	50.0	88.0			33.0	33.0	32.0	32.0				
Actuated g/C Ratio	0.38	0.68			0.25	0.25	0.25	0.25				
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	680	2395			898	401	845	449				
v/s Ratio Prot	c0.40	0.18			0.14			c0.54				
v/s Ratio Perm						c0.26	0.04					
v/c Ratio	1.05	0.27			0.55	1.01	0.16	2.18				
Uniform Delay, d1	40.0	8.3			42.1	48.5	38.4	49.0				
Progression Factor	0.63	0.00			1.00	1.00	1.00	1.00				
Incremental Delay, d2	26.7	0.0			0.4	47.7	0.0	538.7				
Delay (s)	52.0	0.0			42.5	96.2	38.4	587.7				
Level of Service	D	A			D	F	D	F				
Approach Delay (s)		27.5			69.8			523.1			0.0	
Approach LOS		C			E			F			A	

Intersection Summary			
HCM 2000 Control Delay	198.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.55		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	137.3%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	91	139	28	96	186	93
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	99	151	30	104	202	101
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			250		340	174
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			250		340	174
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		68	88
cM capacity (veh/h)			1316		641	869

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	250	135	303
Volume Left	0	30	202
Volume Right	151	0	101
cSH	1700	1316	702
Volume to Capacity	0.15	0.02	0.43
Queue Length 95th (ft)	0	2	55
Control Delay (s)	0.0	1.9	14.0
Lane LOS		A	B
Approach Delay (s)	0.0	1.9	14.0
Approach LOS			B

Intersection Summary			
Average Delay	6.5		
Intersection Capacity Utilization	45.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	166	6	55	84	10	93
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	180	7	60	91	11	101
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			187		395	184
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			187		395	184
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			96		98	88
cM capacity (veh/h)			1387		584	859

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	187	151	112
Volume Left	0	60	11
Volume Right	7	0	101
cSH	1700	1387	821
Volume to Capacity	0.11	0.04	0.14
Queue Length 95th (ft)	0	3	12
Control Delay (s)	0.0	3.3	10.1
Lane LOS		A	B
Approach Delay (s)	0.0	3.3	10.1
Approach LOS			B

Intersection Summary			
Average Delay	3.6		
Intersection Capacity Utilization	32.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	149	6	14	80	10	23
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	162	7	15	87	11	25
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			168		283	165
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			168		283	165
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		98	97
cM capacity (veh/h)			1409		700	879

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	168	102	36
Volume Left	0	15	11
Volume Right	7	0	25
cSH	1700	1409	816
Volume to Capacity	0.10	0.01	0.04
Queue Length 95th (ft)	0	1	3
Control Delay (s)	0.0	1.2	9.6
Lane LOS		A	A
Approach Delay (s)	0.0	1.2	9.6
Approach LOS			A

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	26.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	132	16	14	76	28	23
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	143	17	15	83	30	25
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			161		265	152
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			161		265	152
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		96	97
cM capacity (veh/h)			1418		716	894

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	161	98	55
Volume Left	0	15	30
Volume Right	17	0	25
cSH	1700	1418	787
Volume to Capacity	0.09	0.01	0.07
Queue Length 95th (ft)	0	1	6
Control Delay (s)	0.0	1.2	9.9
Lane LOS		A	A
Approach Delay (s)	0.0	1.2	9.9
Approach LOS			A

Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	25.9%	ICU Level of Service	A
Analysis Period (min)	15		

1: Hart Ln & Spicewood Springs Rd

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1194	265	179	909	120	162
Lane Group Flow (vph)	1231	273	185	937	124	167
Turn Type	NA	Perm	Prot	NA	Prot	Free
Protected Phases	2		1	6	4	
Permitted Phases		2				Free
Detector Phase	2	2	1	6	4	
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	
Total Split (s)	73.0	73.0	33.0	106.0	24.0	
Total Split (%)	56.2%	56.2%	25.4%	81.5%	18.5%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Max	C-Max	Max	C-Max	None	
v/c Ratio	0.67	0.31	0.37	0.31	0.45	0.11
Control Delay	24.9	9.6	38.9	3.3	60.9	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.9	9.6	38.9	3.3	60.9	0.1
Queue Length 50th (ft)	386	60	138	43	53	0
Queue Length 95th (ft)	464	116	234	185	78	0
Internal Link Dist (ft)	211			988	285	
Turn Bay Length (ft)		110	220		160	
Base Capacity (vph)	1851	890	496	2980	501	1583
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.31	0.37	0.31	0.25	0.11

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of 1st Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 1: Hart Ln & Spicewood Springs Rd

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1194	265	179	909	120	162
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	4.0
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	3433	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	3433	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	1231	273	185	937	124	167
RTOR Reduction (vph)	0	63	0	0	0	0
Lane Group Flow (vph)	1231	210	185	937	124	167
Turn Type	NA	Perm	Prot	NA	Prot	Free
Protected Phases	2		1	6	4	
Permitted Phases		2				Free
Actuated Green, G (s)	68.0	68.0	36.5	109.5	10.5	130.0
Effective Green, g (s)	68.0	68.0	36.5	109.5	10.5	130.0
Actuated g/C Ratio	0.52	0.52	0.28	0.84	0.08	1.00
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	1851	828	496	2980	277	1583
v/s Ratio Prot	c0.35		c0.10	0.26	c0.04	
v/s Ratio Perm		0.13				0.11
v/c Ratio	0.67	0.25	0.37	0.31	0.45	0.11
Uniform Delay, d1	22.7	17.0	37.6	2.2	57.0	0.0
Progression Factor	1.00	1.00	0.93	1.21	1.00	1.00
Incremental Delay, d2	1.9	0.7	2.0	0.3	0.4	0.1
Delay (s)	24.6	17.8	37.1	2.9	57.4	0.1
Level of Service	C	B	D	A	E	A
Approach Delay (s)	23.3			8.6	24.5	
Approach LOS	C			A	C	

Intersection Summary			
HCM 2000 Control Delay	17.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	58.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

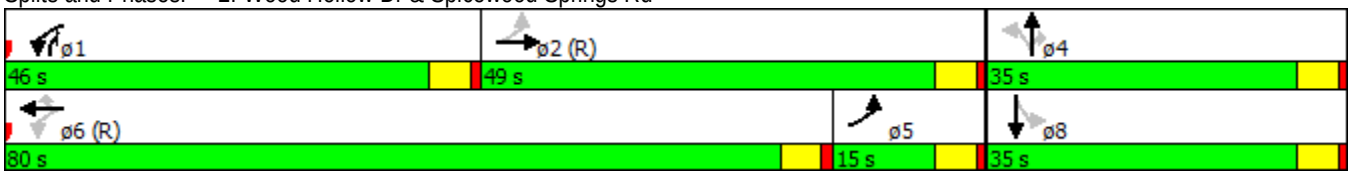
2: Wood Hollow Dr & Spicewood Springs Rd

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	8	1217	407	1017	11	69	4	177	6	0
Lane Group Flow (vph)	8	1406	424	1059	11	0	76	184	0	8
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Perm	NA	pm+ov	Perm	NA
Protected Phases	5	2	1	6			4	1		8
Permitted Phases	2		6		6	4		4	8	
Detector Phase	5	2	1	6	6	4	4	1	8	8
Switch Phase										
Minimum Initial (s)	6.0	25.0	6.0	5.0	5.0	5.0	5.0	6.0	5.0	5.0
Minimum Split (s)	15.0	30.0	15.0	11.0	11.0	35.0	35.0	15.0	35.0	35.0
Total Split (s)	15.0	49.0	46.0	80.0	80.0	35.0	35.0	46.0	35.0	35.0
Total Split (%)	11.5%	37.7%	35.4%	61.5%	61.5%	26.9%	26.9%	35.4%	26.9%	26.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead			Lead		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes			Yes		
Recall Mode	None	C-Max	None	C-Max	C-Max	Max	Max	None	None	None
v/c Ratio	0.03	0.63	0.95	0.45	0.01		0.24	0.23		0.02
Control Delay	21.0	28.3	60.7	12.8	0.0		43.2	12.5		0.1
Queue Delay	0.0	0.0	0.1	0.6	0.0		0.0	0.0		0.0
Total Delay	21.0	28.3	60.7	13.4	0.0		43.2	12.5		0.1
Queue Length 50th (ft)	4	424	264	162	0		53	59		0
Queue Length 95th (ft)	m9	506	411	392	m0		98	83		0
Internal Link Dist (ft)		988		494			464			203
Turn Bay Length (ft)	300		110		100					
Base Capacity (vph)	320	2230	614	2368	1079		319	949		443
Starvation Cap Reductn	0	0	7	832	0		0	0		0
Spillback Cap Reductn	0	0	0	0	0		0	0		0
Storage Cap Reductn	0	0	0	0	0		0	0		0
Reduced v/c Ratio	0.03	0.63	0.70	0.69	0.01		0.24	0.19		0.02

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 55 (42%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Wood Hollow Dr & Spicewood Springs Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	1217	132	407	1017	11	69	4	177	6	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0		5.0	5.0		5.0	
Lane Util. Factor	1.00	0.91		1.00	0.95	1.00		1.00	1.00		1.00	
Frt	1.00	0.99		1.00	1.00	0.85		1.00	0.85		0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.95	1.00		0.96	
Satd. Flow (prot)	1770	5010		1770	3539	1583		1779	1583		1735	
Flt Permitted	0.27	1.00		0.09	1.00	1.00		0.74	1.00		0.88	
Satd. Flow (perm)	503	5010		160	3539	1583		1384	1583		1583	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	8	1268	138	424	1059	11	72	4	184	6	0	2
RTOR Reduction (vph)	0	8	0	0	0	4	0	0	33	0	6	0
Lane Group Flow (vph)	8	1398	0	424	1059	7	0	76	151	0	2	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	pm+ov	Perm	NA	
Protected Phases	5	2		1	6			4	1		8	
Permitted Phases	2			6		6	4		4	8		
Actuated Green, G (s)	57.7	57.7		83.0	83.0	83.0		30.0	57.3		30.0	
Effective Green, g (s)	57.7	57.7		83.0	83.0	83.0		30.0	57.3		30.0	
Actuated g/C Ratio	0.44	0.44		0.64	0.64	0.64		0.23	0.44		0.23	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0		5.0	5.0		5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0		2.0	2.0		2.0	
Lane Grp Cap (vph)	242	2223		440	2259	1010		319	758		365	
v/s Ratio Prot	0.00	c0.28		c0.20	0.30				0.04			
v/s Ratio Perm	0.01			c0.41		0.00		c0.05	0.05		0.00	
v/c Ratio	0.03	0.63		0.96	0.47	0.01		0.24	0.20		0.01	
Uniform Delay, d1	20.4	27.9		38.9	12.1	8.5		40.7	22.3		38.5	
Progression Factor	0.80	0.93		0.86	1.12	1.00		1.00	1.00		1.00	
Incremental Delay, d2	0.0	1.1		31.4	0.6	0.0		1.8	0.0		0.0	
Delay (s)	16.3	27.0		64.9	14.2	8.5		42.5	22.3		38.5	
Level of Service	B	C		E	B	A		D	C		D	
Approach Delay (s)		26.9			28.5			28.2			38.5	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	27.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	67.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

3: Mopac SBFR & Spicewood Springs Rd

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR	ø1	ø2	ø4	ø5	ø6
Lane Configurations												
Volume (vph)	748	653	660	769	360	1184	666					
Lane Group Flow (vph)	771	673	680	793	334	1258	687					
Turn Type	NA	Free	Prot	NA	Split	NA	Free					
Protected Phases	2 1		19 6 7	2 1 19 6	4 5	4 5		1	2	4	5	6
Permitted Phases		Free					Free					
Detector Phase	2 1		19 6 7	2 1 19 6	4 5	4 5						
Switch Phase												
Minimum Initial (s)								3.0	1.0	1.0	3.0	4.0
Minimum Split (s)								8.0	11.0	11.0	8.0	24.0
Total Split (s)								8.0	24.0	34.0	8.0	30.0
Total Split (%)								6%	18%	26%	6%	23%
Yellow Time (s)								4.0	4.0	4.0	4.0	4.0
All-Red Time (s)								1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag								Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?								Yes	Yes	Yes	Yes	Yes
Recall Mode								None	Max	None	None	C-Max
v/c Ratio	1.05	0.43	0.98	0.46	0.73	1.31	0.43					
Control Delay	112.0	6.3	34.8	3.0	20.9	162.8	0.1					
Queue Delay	0.0	0.0	38.8	0.1	0.0	0.0	0.0					
Total Delay	112.0	6.3	73.6	3.0	20.9	162.8	0.1					
Queue Length 50th (ft)	~381	202	587	41	218	~737	0					
Queue Length 95th (ft)	#514	486	m568	m103	m154	m394	m0					
Internal Link Dist (ft)	494			333		2669						
Turn Bay Length (ft)			50		145							
Base Capacity (vph)	735	1583	694	1715	458	963	1583					
Starvation Cap Reductn	0	0	94	134	0	0	0					
Spillback Cap Reductn	0	0	0	0	0	0	0					
Storage Cap Reductn	0	0	0	0	0	0	0					
Reduced v/c Ratio	1.05	0.43	1.13	0.50	0.73	1.31	0.43					

Intersection Summary

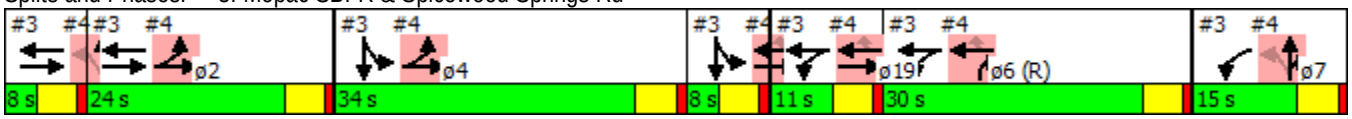
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 8 (6%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 140
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Mopac SBFR & Spicewood Springs Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	748	653	660	769	0	0	0	0	360	1184	666
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	4.0	5.0	5.0					5.0	5.0	4.0
Lane Util. Factor		0.95	1.00	1.00	0.95					0.91	0.91	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		3539	1583	1770	3539					1610	3385	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (perm)		3539	1583	1770	3539					1610	3385	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	771	673	680	793	0	0	0	0	371	1221	687
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	771	673	680	793	0	0	0	0	334	1258	687
Turn Type		NA	Free	Prot	NA					Split	NA	Free
Protected Phases		2 1		19 6 7	2 1 19 6					4 5	4 5	
Permitted Phases			Free									Free
Actuated Green, G (s)		27.0	130.0	51.0	63.0					37.0	37.0	130.0
Effective Green, g (s)		27.0	130.0	51.0	63.0					37.0	37.0	130.0
Actuated g/C Ratio		0.21	1.00	0.39	0.48					0.28	0.28	1.00
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		735	1583	694	1715					458	963	1583
v/s Ratio Prot		c0.22		c0.38	0.22					0.21	c0.37	
v/s Ratio Perm			0.43									0.43
v/c Ratio		1.05	0.43	0.98	0.46					0.73	1.31	0.43
Uniform Delay, d1		51.5	0.0	39.0	22.3					42.0	46.5	0.0
Progression Factor		1.43	1.00	0.69	0.22					0.47	0.49	1.00
Incremental Delay, d2		43.8	0.7	6.3	0.0					0.5	138.6	0.1
Delay (s)		117.5	0.7	33.1	4.9					20.0	161.6	0.1
Level of Service		F	A	C	A					C	F	A
Approach Delay (s)		63.0			17.9			0.0			92.1	
Approach LOS		E			B			A			F	

Intersection Summary			
HCM 2000 Control Delay	63.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.33		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	35.0
Intersection Capacity Utilization	98.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

4: Mopac NBFR & Anderson Ln

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	ø1	ø2	ø4	ø5	ø6
Lane Configurations												
Volume (vph)	319	789	1015	249	413	13	541					
Lane Group Flow (vph)	329	813	1046	257	345	334	318					
Turn Type	Prot	NA	NA	Perm	Perm	NA	custom					
Protected Phases	2 4	2 4 5 19	6 5 19			7 1	7 1 6	1	2	4	5	6
Permitted Phases				6 5 19	7 1							
Detector Phase	2 4	2 4 5 19	6 5 19	6 5 19	7 1	7 1	7 1 6					
Switch Phase												
Minimum Initial (s)								3.0	1.0	1.0	3.0	4.0
Minimum Split (s)								8.0	11.0	11.0	8.0	24.0
Total Split (s)								8.0	24.0	34.0	8.0	30.0
Total Split (%)								6%	18%	26%	6%	23%
Yellow Time (s)								4.0	4.0	4.0	4.0	4.0
All-Red Time (s)								1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag								Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?								Yes	Yes	Yes	Yes	Yes
Recall Mode								None	Max	None	None	C-Max
v/c Ratio	0.46	0.41	0.87	0.36	1.49	1.21	0.49					
Control Delay	8.4	0.2	49.8	5.1	266.4	143.9	3.4					
Queue Delay	2.8	1.4	19.4	0.0	0.0	0.1	0.0					
Total Delay	11.2	1.6	69.2	5.1	266.4	144.0	3.4					
Queue Length 50th (ft)	23	0	434	0	~428	~310	8					
Queue Length 95th (ft)	m44	m0	526	59	#636	#526	20					
Internal Link Dist (ft)		333	702			1795						
Turn Bay Length (ft)	50			360	280							
Base Capacity (vph)	721	1960	1197	705	232	277	654					
Starvation Cap Reductn	277	893	0	0	0	0	0					
Spillback Cap Reductn	0	0	177	0	0	3	0					
Storage Cap Reductn	0	0	0	0	0	0	0					
Reduced v/c Ratio	0.74	0.76	1.03	0.36	1.49	1.22	0.49					

Intersection Summary

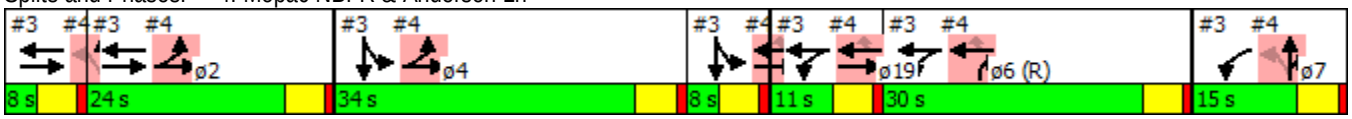
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 8 (6%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 140
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Mopac NBFR & Anderson Ln



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	319	789	0	0	1015	249	413	13	541	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0	5.0			
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.91	0.95			
Frt	1.00	1.00			1.00	0.85	1.00	0.89	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.99	1.00			
Satd. Flow (prot)	1770	3539			3539	1583	1681	1494	1504			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.99	1.00			
Satd. Flow (perm)	1770	3539			3539	1583	1681	1494	1504			
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	329	813	0	0	1046	257	426	13	558	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	170	0	71	100	0	0	0
Lane Group Flow (vph)	329	813	0	0	1046	87	345	263	218	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	custom			
Protected Phases	2 4	2 4 5 19			6 5 19			7 1	7 1 6			
Permitted Phases						6 5 19	7 1					
Actuated Green, G (s)	53.0	72.0			44.0	44.0	18.0	18.0	48.0			
Effective Green, g (s)	53.0	72.0			44.0	44.0	18.0	18.0	48.0			
Actuated g/C Ratio	0.41	0.55			0.34	0.34	0.14	0.14	0.37			
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	721	1960			1197	535	232	206	555			
v/s Ratio Prot	c0.19	0.23			c0.30				0.15			
v/s Ratio Perm						0.05	c0.21	0.18				
v/c Ratio	0.46	0.41			0.87	0.16	1.49	1.28	0.39			
Uniform Delay, d1	28.0	16.8			40.4	30.1	56.0	56.0	30.3			
Progression Factor	0.27	0.00			1.00	1.00	0.56	0.56	0.07			
Incremental Delay, d2	0.0	0.0			7.1	0.1	238.8	154.7	0.2			
Delay (s)	7.7	0.0			47.5	30.2	270.4	186.1	2.2			
Level of Service	A	A			D	C	F	F	A			
Approach Delay (s)		2.2			44.1			156.6			0.0	
Approach LOS		A			D			F			A	

Intersection Summary			
HCM 2000 Control Delay	62.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	35.0
Intersection Capacity Utilization	98.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	12	49	223	27	128	291
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	14	58	265	32	152	346
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						365
pX, platoon unblocked						
vC, conflicting volume	933	282			298	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	933	282			298	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	92			88	
cM capacity (veh/h)	260	757			1264	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	73	298	499
Volume Left	14	0	152
Volume Right	58	32	0
cSH	550	1700	1264
Volume to Capacity	0.13	0.18	0.12
Queue Length 95th (ft)	11	0	10
Control Delay (s)	12.5	0.0	3.4
Lane LOS	B		A
Approach Delay (s)	12.5	0.0	3.4
Approach LOS	B		

Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	49.5%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	14.1
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	29	64	24	0	31	59	49	0	56	188	108
Peak Hour Factor	0.92	0.88	0.88	0.88	0.92	0.88	0.88	0.88	0.92	0.88	0.88	0.88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	33	73	27	0	35	67	56	0	64	214	123
Number of Lanes	0	0	1	0	0	0	1	0	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	1
HCM Control Delay	11.7	12	12.2
HCM LOS	B	B	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	37%	0%	25%	22%	100%	0%
Vol Thru, %	63%	47%	55%	42%	0%	55%
Vol Right, %	0%	53%	21%	35%	0%	45%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	150	202	117	139	145	354
LT Vol	56	0	29	31	145	0
Through Vol	94	94	64	59	0	193
RT Vol	0	108	24	49	0	161
Lane Flow Rate	170	230	133	158	165	402
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.307	0.377	0.242	0.28	0.301	0.642
Departure Headway (Hd)	6.48	5.909	6.55	6.386	6.578	5.747
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	552	606	545	559	544	624
Service Time	4.252	3.681	4.635	4.469	4.345	3.513
HCM Lane V/C Ratio	0.308	0.38	0.244	0.283	0.303	0.644
HCM Control Delay	12.1	12.3	11.7	12	12.2	18.3
HCM Lane LOS	B	B	B	B	B	C
HCM 95th-tile Q	1.3	1.8	0.9	1.1	1.3	4.6

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	145	193	161
Peak Hour Factor	0.92	0.88	0.88	0.88
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	165	219	183
Number of Lanes	0	1	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	16.5
HCM LOS	C

Lane

Intersection	
Intersection Delay, s/veh	19.2
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	39	161	137	0	85	63	8	0	51	137	41
Peak Hour Factor	0.92	0.81	0.81	0.81	0.92	0.81	0.81	0.81	0.92	0.81	0.81	0.81
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	48	199	169	0	105	78	10	0	63	169	51
Number of Lanes	0	0	1	1	0	0	1	1	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	2
HCM Control Delay	15.6	16	17.7
HCM LOS	C	C	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	22%	20%	0%	57%	0%	5%
Vol Thru, %	60%	80%	0%	43%	0%	86%
Vol Right, %	18%	0%	100%	0%	100%	9%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	229	200	137	148	8	323
LT Vol	51	39	0	85	0	16
Through Vol	137	161	0	63	0	279
RT Vol	41	0	137	0	8	28
Lane Flow Rate	283	247	169	183	10	399
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.538	0.511	0.311	0.408	0.019	0.729
Departure Headway (Hd)	6.851	7.446	6.624	8.045	7.024	6.578
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	523	481	540	446	506	546
Service Time	4.933	5.225	4.403	5.836	4.815	4.65
HCM Lane V/C Ratio	0.541	0.514	0.313	0.41	0.02	0.731
HCM Control Delay	17.7	17.8	12.4	16.3	10	25.5
HCM Lane LOS	C	C	B	C	A	D
HCM 95th-tile Q	3.2	2.9	1.3	2	0.1	6.1

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	16	279	28
Peak Hour Factor	0.92	0.81	0.81	0.81
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	20	344	35
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	25.5
HCM LOS	D

Lane

Intersection	
Intersection Delay, s/veh	14.7
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	38	133	172	0	57	127	75	0	24	180	47
Peak Hour Factor	0.92	0.90	0.90	0.90	0.92	0.90	0.90	0.90	0.92	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	42	148	191	0	63	141	83	0	27	200	52
Number of Lanes	0	0	1	1	0	0	1	1	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	2
HCM Control Delay	13.5	14.1	16.3
HCM LOS	B	B	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	22%	0%	31%	0%	100%	0%
Vol Thru, %	0%	79%	78%	0%	69%	0%	0%	79%
Vol Right, %	0%	21%	0%	100%	0%	100%	0%	21%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	24	227	171	172	184	75	52	221
LT Vol	24	0	38	0	57	0	52	0
Through Vol	0	180	133	0	127	0	0	174
RT Vol	0	47	0	172	0	75	0	47
Lane Flow Rate	27	252	190	191	204	83	58	246
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.058	0.5	0.383	0.341	0.422	0.152	0.124	0.484
Departure Headway (Hd)	7.795	7.134	7.255	6.424	7.439	6.562	7.756	7.091
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	459	504	496	558	482	545	462	508
Service Time	5.547	4.886	5.007	4.177	5.194	4.317	5.507	4.842
HCM Lane V/C Ratio	0.059	0.5	0.383	0.342	0.423	0.152	0.126	0.484
HCM Control Delay	11	16.9	14.5	12.5	15.6	10.5	11.6	16.4
HCM Lane LOS	B	C	B	B	C	B	B	C
HCM 95th-tile Q	0.2	2.8	1.8	1.5	2.1	0.5	0.4	2.6

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	52	174	47
Peak Hour Factor	0.92	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	58	193	52
Number of Lanes	0	1	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	15.5
HCM LOS	C

Lane

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	241	0	0	2793	213
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	0	251	0	0	2909	222
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2909	970	3131			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2909	970	3131			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	1	100			
cM capacity (veh/h)	12	253	100			

Direction, Lane #	EB 1	SB 1	SB 2	SB 3	SB 4
Volume Total	251	970	970	970	222
Volume Left	0	0	0	0	0
Volume Right	251	0	0	0	222
cSH	253	1700	1700	1700	1700
Volume to Capacity	0.99	0.57	0.57	0.57	0.13
Queue Length 95th (ft)	240	0	0	0	0
Control Delay (s)	97.3	0.0	0.0	0.0	0.0
Lane LOS	F				
Approach Delay (s)	97.3	0.0			
Approach LOS	F				

Intersection Summary			
Average Delay	7.2		
Intersection Capacity Utilization	75.6%	ICU Level of Service	D
Analysis Period (min)	15		

11: Hart Ln & Far West Blvd

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	62	699	210	282	74	51	120	168	214	263
Lane Group Flow (vph)	75	950	253	340	89	61	145	202	258	359
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA
Protected Phases	5	2	1	6		7	4	1	3	8
Permitted Phases	2		6		6	4		4	8	
Detector Phase	5	2	1	6	6	7	4	1	3	8
Switch Phase										
Minimum Initial (s)	4.0	2.0	4.0	2.0	2.0	4.0	2.0	4.0	2.0	2.0
Minimum Split (s)	9.0	24.0	9.0	24.0	24.0	9.0	33.0	9.0	33.0	33.0
Total Split (s)	13.0	52.0	22.0	61.0	61.0	16.0	30.0	22.0	26.0	40.0
Total Split (%)	10.0%	40.0%	16.9%	46.9%	46.9%	12.3%	23.1%	16.9%	20.0%	30.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lead	Lag	Lag	Lag	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	C-Max	None	None	None	None	None
v/c Ratio	0.16	0.58	0.59	0.17	0.10	0.38	0.70	0.45	0.84	0.54
Control Delay	23.1	28.5	53.4	31.4	34.1	58.2	72.8	41.4	74.4	49.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.1	28.5	53.4	31.4	34.1	58.2	72.8	41.4	74.4	49.6
Queue Length 50th (ft)	35	305	158	111	56	48	120	141	209	145
Queue Length 95th (ft)	70	392	225	145	94	82	168	185	255	164
Internal Link Dist (ft)		1703		1174			695			1553
Turn Bay Length (ft)	130		100		490			100	100	
Base Capacity (vph)	481	1650	426	1992	890	180	358	444	372	935
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.58	0.59	0.17	0.10	0.34	0.41	0.45	0.69	0.38

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 100 (77%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green
Natural Cycle: 120
Control Type: Actuated-Coordinated

Splits and Phases: 11: Hart Ln & Far West Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	62	699	90	210	282	74	51	120	168	214	263	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95	
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3479		1770	3539	1583	1770	1863	1583	1770	3477	
Flt Permitted	0.48	1.00		0.24	1.00	1.00	0.56	1.00	1.00	0.66	1.00	
Satd. Flow (perm)	895	3479		450	3539	1583	1035	1863	1583	1238	3477	
Peak-hour factor, PHF	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Adj. Flow (vph)	75	842	108	253	340	89	61	145	202	258	317	42
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	75	950	0	253	340	89	61	145	202	258	359	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases	5	2		1	6		7	4	1	3	8	
Permitted Phases	2			6		6	4		4	8		
Actuated Green, G (s)	59.7	59.7		71.2	71.2	71.2	14.5	14.5	32.5	25.0	25.0	
Effective Green, g (s)	59.7	59.7		71.2	71.2	71.2	14.5	14.5	32.5	25.0	25.0	
Actuated g/C Ratio	0.46	0.46		0.55	0.55	0.55	0.11	0.11	0.25	0.19	0.19	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	454	1597		429	1938	866	156	207	456	310	668	
v/s Ratio Prot	0.01	c0.27		c0.08	0.10		0.02	c0.08	0.06	c0.11	0.10	
v/s Ratio Perm	0.07			0.24		0.06	0.02		0.07	c0.05		
v/c Ratio	0.17	0.59		0.59	0.18	0.10	0.39	0.70	0.44	0.83	0.54	
Uniform Delay, d1	20.0	26.2		30.2	14.7	14.1	53.2	55.7	41.1	49.3	47.3	
Progression Factor	1.00	1.00		1.49	1.87	1.93	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.1	1.6		1.3	0.2	0.2	0.6	8.4	0.3	16.4	0.4	
Delay (s)	20.1	27.8		46.2	27.8	27.4	53.8	64.1	41.4	65.7	47.7	
Level of Service	C	C		D	C	C	D	E	D	E	D	
Approach Delay (s)		27.2			34.6			51.3			55.2	
Approach LOS		C			C			D			E	

Intersection Summary			
HCM 2000 Control Delay	39.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	68.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

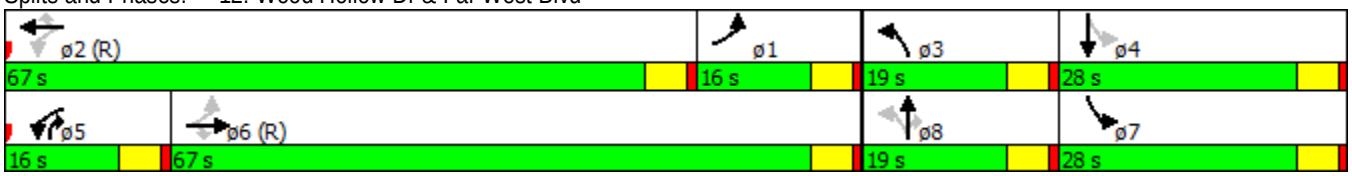
12: Wood Hollow Dr & Far West Blvd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Volume (vph)	91	1056	48	117	573	131	25	84	293	273	120
Lane Group Flow (vph)	97	1123	51	124	610	139	27	89	312	290	197
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA
Protected Phases	1	6		5	2		3	8	5	7	4
Permitted Phases	6		6	2		2	8		8	4	
Detector Phase	1	6	6	5	2	2	3	8	5	7	4
Switch Phase											
Minimum Initial (s)	4.0	2.0	2.0	4.0	2.0	2.0	4.0	2.0	4.0	4.0	2.0
Minimum Split (s)	9.0	11.0	11.0	9.0	11.0	11.0	9.0	11.0	9.0	9.0	11.0
Total Split (s)	16.0	67.0	67.0	16.0	67.0	67.0	19.0	19.0	16.0	28.0	28.0
Total Split (%)	12.3%	51.5%	51.5%	12.3%	51.5%	51.5%	14.6%	14.6%	12.3%	21.5%	21.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None
v/c Ratio	0.20	0.63	0.06	0.58	0.35	0.16	0.21	0.60	0.93	0.72	0.44
Control Delay	28.3	36.1	3.2	40.8	34.1	14.4	58.4	73.8	56.9	57.3	42.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.3	36.1	3.2	40.8	34.1	14.4	58.4	73.8	56.9	57.3	42.0
Queue Length 50th (ft)	63	482	3	72	191	31	22	74	115	225	130
Queue Length 95th (ft)	m102	567	m14	125	251	83	52	128	#202	#369	213
Internal Link Dist (ft)		1174			673			686			1879
Turn Bay Length (ft)	245		610	125			75		75		
Base Capacity (vph)	477	1778	845	223	1758	856	190	200	345	412	445
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.63	0.06	0.56	0.35	0.16	0.14	0.45	0.90	0.70	0.44

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 10 (8%), Referenced to phase 2:WBTL and 6:EBTL, Start of 1st Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 12: Wood Hollow Dr & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	91	1056	48	117	573	131	25	84	293	273	120	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1765	
Flt Permitted	0.42	1.00	1.00	0.10	1.00	1.00	0.68	1.00	1.00	0.70	1.00	
Satd. Flow (perm)	784	3539	1583	178	3539	1583	1263	1863	1583	1303	1765	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	97	1123	51	124	610	139	27	89	312	290	128	69
RTOR Reduction (vph)	0	0	26	0	0	72	0	0	85	0	14	0
Lane Group Flow (vph)	97	1123	25	124	610	67	27	89	227	290	183	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases	1	6		5	2		3	8	5	7	4	
Permitted Phases	6		6	2		2	8		8	4		
Actuated Green, G (s)	63.3	63.3	63.3	62.6	62.6	62.6	10.4	10.4	20.7	31.9	31.9	
Effective Green, g (s)	63.3	63.3	63.3	62.6	62.6	62.6	10.4	10.4	20.7	31.9	31.9	
Actuated g/C Ratio	0.49	0.49	0.49	0.48	0.48	0.48	0.08	0.08	0.16	0.25	0.25	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	465	1723	770	211	1704	762	118	149	252	413	433	
v/s Ratio Prot	0.02	c0.32		0.05	0.17		0.01	0.05	c0.07	c0.14	0.10	
v/s Ratio Perm	0.08		0.02	0.24		0.04	0.01		0.07	0.03		
v/c Ratio	0.21	0.65	0.03	0.59	0.36	0.09	0.23	0.60	0.90	0.70	0.42	
Uniform Delay, d1	19.5	25.1	17.4	24.3	21.1	18.2	55.9	57.8	53.6	43.8	41.3	
Progression Factor	1.35	1.41	1.00	1.55	1.64	4.63	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.1	1.6	0.1	2.3	0.5	0.2	0.4	4.2	31.3	4.4	0.2	
Delay (s)	26.4	37.0	17.4	40.1	35.1	84.7	56.2	62.0	85.0	48.2	41.6	
Level of Service	C	D	B	D	D	F	E	E	F	D	D	
Approach Delay (s)		35.4			43.7			78.4			45.5	
Approach LOS		D			D			E			D	

Intersection Summary			
HCM 2000 Control Delay	45.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	75.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

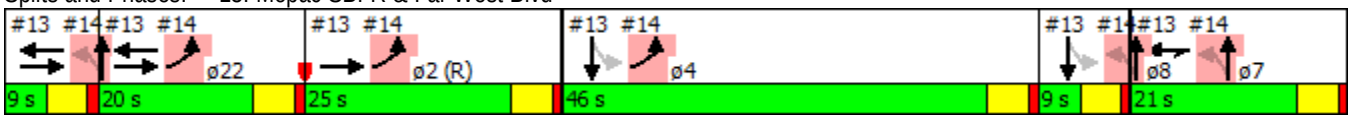
13: Mopac SBFR & Far West Blvd

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR	ø1	ø2	ø4	ø8	ø22
Lane Configurations											
Volume (vph)	810	456	18	564	528	892					
Lane Group Flow (vph)	835	470	19	581	723	920					
Turn Type	NA	Free	Prot	NA	NA	Free					
Protected Phases	1 22 2		7	1 22 7	4 8		1	2	4	8	22
Permitted Phases		Free				Free					
Detector Phase	1 22 2		7	1 22 7	4 8						
Switch Phase											
Minimum Initial (s)			4.0				4.0	4.0	4.0	4.0	4.0
Minimum Split (s)			20.0				9.0	24.0	24.0	9.0	20.0
Total Split (s)			21.0				9.0	25.0	46.0	9.0	20.0
Total Split (%)			16.2%				7%	19%	35%	7%	15%
Yellow Time (s)			4.0				4.0	4.0	4.0	4.0	4.0
All-Red Time (s)			1.0				1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)			0.0								
Total Lost Time (s)			5.0								
Lead/Lag							Lead		Lead	Lag	Lag
Lead-Lag Optimize?							Yes		Yes	Yes	Yes
Recall Mode			None				None	C-Max	None	None	None
v/c Ratio	0.61	0.30	0.09	0.46	0.55	0.58					
Control Delay	32.1	0.3	33.9	7.5	27.0	1.6					
Queue Delay	0.2	0.0	0.0	0.7	0.0	0.0					
Total Delay	32.3	0.3	33.9	8.2	27.0	1.6					
Queue Length 50th (ft)	356	0	7	232	157	25					
Queue Length 95th (ft)	m426	m0	m15	0	m190	m3					
Internal Link Dist (ft)	432			324	532						
Turn Bay Length (ft)		490									
Base Capacity (vph)	1366	1583	217	1258	1312	1583					
Starvation Cap Reductn	0	0	0	355	0	0					
Spillback Cap Reductn	101	0	0	0	0	0					
Storage Cap Reductn	0	0	0	0	0	0					
Reduced v/c Ratio	0.66	0.30	0.09	0.64	0.55	0.58					

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 106 (82%), Referenced to phase 2:EBT, Start of 1st Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Mopac SBFR & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	810	456	18	564	0	0	0	0	174	528	892
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	4.0	5.0	5.0						5.0	4.0
Lane Util. Factor		0.95	1.00	1.00	0.95						0.95	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (prot)		3539	1583	1770	3539						3496	1583
Flt Permitted		1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (perm)		3539	1583	1770	3539						3496	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	835	470	19	581	0	0	0	0	179	544	920
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	835	470	19	581	0	0	0	0	0	723	920
Turn Type		NA	Free	Prot	NA					Perm	NA	Free
Protected Phases		1 22 2		7	1 22 7						4 8	
Permitted Phases			Free							4 8		Free
Actuated Green, G (s)		50.3	130.0	16.0	46.2						48.7	130.0
Effective Green, g (s)		50.3	130.0	16.0	46.2						48.7	130.0
Actuated g/C Ratio		0.39	1.00	0.12	0.36						0.37	1.00
Clearance Time (s)				5.0								
Vehicle Extension (s)				2.0								
Lane Grp Cap (vph)		1369	1583	217	1257						1309	1583
v/s Ratio Prot		c0.24		0.01	0.16							
v/s Ratio Perm			0.30								0.21	c0.58
v/c Ratio		0.61	0.30	0.09	0.46						0.55	0.58
Uniform Delay, d1		32.0	0.0	50.5	32.3						32.1	0.0
Progression Factor		0.94	1.00	0.65	0.20						0.81	1.00
Incremental Delay, d2		0.4	0.3	0.1	0.1						0.2	1.1
Delay (s)		30.4	0.3	33.0	6.4						26.0	1.1
Level of Service		C	A	C	A						C	A
Approach Delay (s)		19.6			7.3			0.0			12.1	
Approach LOS		B			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	14.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	57.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

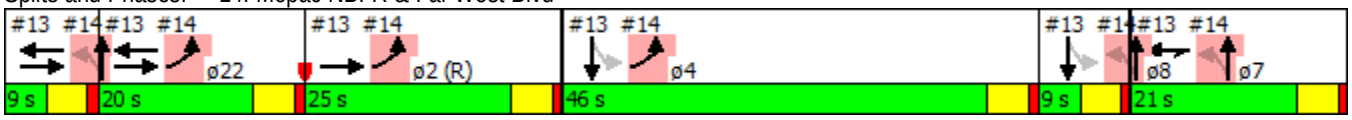
14: Mopac NBFR & Far West Blvd

Lane Group	EBL	NBL	NBT	ø1	ø2	ø4	ø7	ø8	ø22
Lane Configurations									
Volume (vph)	1001	583	2						
Lane Group Flow (vph)	1043	303	306						
Turn Type	Prot	Perm	NA						
Protected Phases	22 2 4		7 1 8	1	2	4	7	8	22
Permitted Phases		7 1 8							
Detector Phase	22 2 4	7 1 8	7 1 8						
Switch Phase									
Minimum Initial (s)				4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)				9.0	24.0	24.0	20.0	9.0	20.0
Total Split (s)				9.0	25.0	46.0	21.0	9.0	20.0
Total Split (%)				7%	19%	35%	16%	7%	15%
Yellow Time (s)				4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)				1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)									
Total Lost Time (s)									
Lead/Lag				Lead		Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes		Yes	Yes
Recall Mode				None	C-Max	None	None	None	None
v/c Ratio	0.52	0.54	0.54						
Control Delay	6.9	41.1	41.2						
Queue Delay	0.4	0.0	0.0						
Total Delay	7.2	41.1	41.2						
Queue Length 50th (ft)	34	214	216						
Queue Length 95th (ft)	21	355	357						
Internal Link Dist (ft)	324		322						
Turn Bay Length (ft)									
Base Capacity (vph)	2271	564	566						
Starvation Cap Reductn	640	0	0						
Spillback Cap Reductn	0	0	0						
Storage Cap Reductn	0	0	0						
Reduced v/c Ratio	0.64	0.54	0.54						

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 106 (82%), Referenced to phase 2:EBT, Start of 1st Green
Natural Cycle: 110
Control Type: Actuated-Coordinated

Splits and Phases: 14: Mopac NBFR & Far West Blvd



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	1001	0	583	2	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0		
Lane Util. Factor	0.97		0.95	0.95		
Frt	1.00		1.00	1.00		
Flt Protected	0.95		0.95	0.95		
Satd. Flow (prot)	3433		1681	1686		
Flt Permitted	0.95		0.95	0.95		
Satd. Flow (perm)	3433		1681	1686		
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	1043	0	607	2	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1043	0	303	306	0	0
Turn Type	Prot		Perm	NA		
Protected Phases	22 2 4			7 1 8		
Permitted Phases			7 1 8			
Actuated Green, G (s)	76.4		43.6	43.6		
Effective Green, g (s)	76.4		43.6	43.6		
Actuated g/C Ratio	0.59		0.34	0.34		
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)	2017		563	565		
v/s Ratio Prot	c0.30					
v/s Ratio Perm			0.18	0.18		
v/c Ratio	0.52		0.54	0.54		
Uniform Delay, d1	15.9		35.0	35.1		
Progression Factor	0.39		1.00	1.00		
Incremental Delay, d2	0.1		0.5	0.6		
Delay (s)	6.3		35.5	35.7		
Level of Service	A		D	D		
Approach Delay (s)	6.3			35.6	0.0	
Approach LOS	A			D	A	

Intersection Summary			
HCM 2000 Control Delay	17.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	70.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

20: Loop 1 SBFR & Steck Avenue

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	ø1	ø2	ø4	ø5	ø6	ø7
Lane Configurations												
Volume (vph)	535	136	149	350	951	1875						
Lane Group Flow (vph)	569	145	159	372	911	2409						
Turn Type	NA	Perm	Prot	NA	Split	NA						
Protected Phases	2 1		6 7	2 1 6 7	4 5	4 5	1	2	4	5	6	7
Permitted Phases		2 1										
Detector Phase	2 1	2 1	6 7	2 1 6 7	4 5	4 5						
Switch Phase												
Minimum Initial (s)							2.0	1.0	1.0	3.0	4.0	4.0
Minimum Split (s)							7.0	11.0	11.0	8.0	15.0	9.0
Total Split (s)							7.0	20.0	63.0	8.0	15.0	17.0
Total Split (%)							5%	15%	48%	6%	12%	13%
Yellow Time (s)							4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)							1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag							Lead	Lag	Lead	Lag		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode							None	Max	None	None	C-Max	None
v/c Ratio	0.95	0.38	0.43	0.25	1.12	1.42						
Control Delay	80.0	10.6	21.4	0.3	99.4	222.0						
Queue Delay	15.5	0.0	0.0	0.0	0.0	0.0						
Total Delay	95.5	10.6	21.4	0.3	99.4	222.0						
Queue Length 50th (ft)	252	1	25	0	~965	~1509						
Queue Length 95th (ft)	#367	61	m45	m0	#1243	#1648						
Internal Link Dist (ft)	737			327		333						
Turn Bay Length (ft)		100	80									
Base Capacity (vph)	598	386	367	1470	817	1693						
Starvation Cap Reductn	0	0	0	0	0	0						
Spillback Cap Reductn	42	0	0	0	0	0						
Storage Cap Reductn	0	0	0	0	0	0						
Reduced v/c Ratio	1.02	0.38	0.43	0.25	1.12	1.42						

Intersection Summary

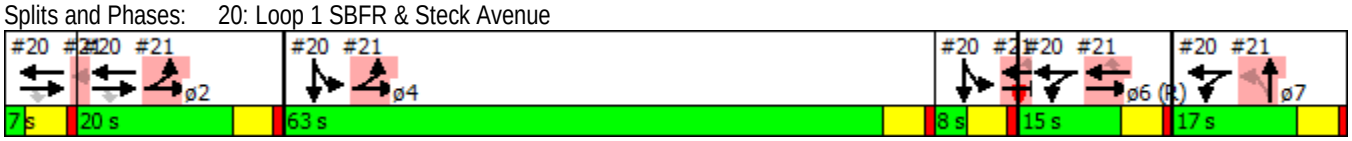
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 90 (69%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 20: Loop 1 SBFR & Steck Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	535	136	149	350	0	0	0	0	951	1875	294
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0					5.0	5.0	
Lane Util. Factor		0.95	1.00	1.00	0.95					0.91	0.91	
Frt		1.00	0.85	1.00	1.00					1.00	0.98	
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	3539					1610	3317	
Flt Permitted		1.00	1.00	0.95	1.00					0.95	1.00	
Satd. Flow (perm)		3539	1583	1770	3539					1610	3317	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	569	145	159	372	0	0	0	0	1012	1995	313
RTOR Reduction (vph)	0	0	119	0	0	0	0	0	0	0	8	0
Lane Group Flow (vph)	0	569	26	159	372	0	0	0	0	911	2401	0
Turn Type		NA	Perm	Prot	NA					Split	NA	
Protected Phases		2 1		6 7	2 1 6 7					4 5	4 5	
Permitted Phases			2 1									
Actuated Green, G (s)		22.0	22.0	27.0	54.0					66.0	66.0	
Effective Green, g (s)		22.0	22.0	27.0	54.0					66.0	66.0	
Actuated g/C Ratio		0.17	0.17	0.21	0.42					0.51	0.51	
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		598	267	367	1470					817	1684	
v/s Ratio Prot		c0.16		c0.09	0.11					0.57	c0.72	
v/s Ratio Perm			0.02									
v/c Ratio		0.95	0.10	0.43	0.25					1.12	1.43	
Uniform Delay, d1		53.5	45.6	44.8	24.8					32.0	32.0	
Progression Factor		1.00	1.00	0.41	0.00					1.00	1.00	
Incremental Delay, d2		25.0	0.1	0.2	0.0					68.0	195.0	
Delay (s)		78.5	45.7	18.6	0.0					100.0	227.0	
Level of Service		E	D	B	A					F	F	
Approach Delay (s)		71.8			5.6			0.0			192.2	
Approach LOS		E			A			A			F	

Intersection Summary			
HCM 2000 Control Delay	151.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.27		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	133.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

21: Loop 1 NBFR & Steck Avenue

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	ø1	ø2	ø4	ø5	ø6	ø7
Lane Configurations												
Volume (vph)	692	747	378	255	208	541						
Lane Group Flow (vph)	706	762	386	260	212	741						
Turn Type	Prot	NA	NA	Perm	Perm	NA						
Protected Phases	2 4	2 4 5 6	6 5			7 1	1	2	4	5	6	7
Permitted Phases				6 5	7 1							
Detector Phase	2 4	2 4 5 6	6 5	6 5	7 1	7 1						
Switch Phase												
Minimum Initial (s)							2.0	1.0	1.0	3.0	4.0	4.0
Minimum Split (s)							7.0	11.0	11.0	8.0	15.0	9.0
Total Split (s)							7.0	20.0	63.0	8.0	15.0	17.0
Total Split (%)							5%	15%	48%	6%	12%	13%
Yellow Time (s)							4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)							1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag							Lead	Lag	Lead	Lag		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode							None	Max	None	None	C-Max	None
v/c Ratio	0.66	0.28	0.79	0.67	0.42	2.73						
Control Delay	9.7	0.0	66.6	23.4	45.1	810.5						
Queue Delay	37.6	0.8	0.0	0.0	0.0	0.0						
Total Delay	47.2	0.9	66.6	23.4	45.1	810.5						
Queue Length 50th (ft)	217	0	167	48	74	~1059						
Queue Length 95th (ft)	m123	m0	#234	144	m109	m#1295						
Internal Link Dist (ft)		327	978			2452						
Turn Bay Length (ft)	80			170	110							
Base Capacity (vph)	1062	2749	490	389	501	271						
Starvation Cap Reductn	398	1599	0	0	0	0						
Spillback Cap Reductn	0	0	0	0	0	0						
Storage Cap Reductn	0	0	0	0	0	0						
Reduced v/c Ratio	1.06	0.66	0.79	0.67	0.42	2.73						

Intersection Summary

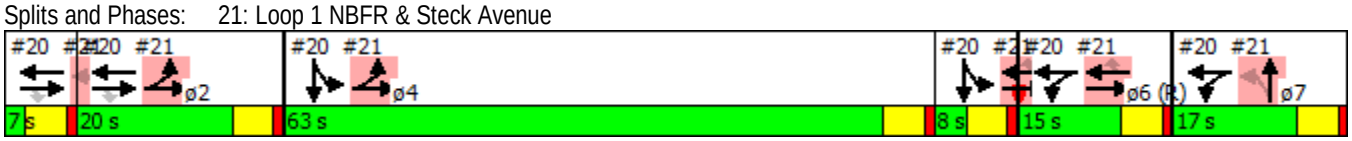
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 90 (69%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 21: Loop 1 NBFR & Steck Avenue



21: Loop 1 NBFR & Steck Avenue

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	692	747	0	0	378	255	208	541	185	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0				
Lane Util. Factor	1.00	0.95			0.95	1.00	0.97	1.00				
Frt	1.00	1.00			1.00	0.85	1.00	0.96				
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (prot)	1770	3539			3539	1583	3433	1791				
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (perm)	1770	3539			3539	1583	3433	1791				
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	706	762	0	0	386	260	212	552	189	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	171	0	9	0	0	0	0
Lane Group Flow (vph)	706	762	0	0	386	89	212	732	0	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA				
Protected Phases	2 4	2 4 5 6			6 5			7 1				
Permitted Phases						6 5	7 1					
Actuated Green, G (s)	78.0	101.0			18.0	18.0	19.0	19.0				
Effective Green, g (s)	78.0	101.0			18.0	18.0	19.0	19.0				
Actuated g/C Ratio	0.60	0.78			0.14	0.14	0.15	0.15				
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	1062	2749			490	219	501	261				
v/s Ratio Prot	c0.40	0.22			c0.11			c0.41				
v/s Ratio Perm						0.06	0.06					
v/c Ratio	0.66	0.28			0.79	0.41	0.42	2.80				
Uniform Delay, d1	17.3	4.1			54.2	51.1	50.5	55.5				
Progression Factor	0.52	0.00			1.00	1.00	0.84	0.84				
Incremental Delay, d2	0.1	0.0			7.6	0.5	0.2	821.7				
Delay (s)	9.2	0.0			61.7	51.6	42.5	868.5				
Level of Service	A	A			E	D	D	F				
Approach Delay (s)		4.4			57.7			684.8			0.0	
Approach LOS		A			E			F			A	

Intersection Summary			
HCM 2000 Control Delay	227.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.19		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	133.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	71	246	49	47	92	46
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	77	267	53	51	100	50
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			345		368	211
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			345		368	211
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			96		83	94
cM capacity (veh/h)			1214		604	829

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	345	104	150
Volume Left	0	53	100
Volume Right	267	0	50
cSH	1700	1214	664
Volume to Capacity	0.20	0.04	0.23
Queue Length 95th (ft)	0	3	22
Control Delay (s)	0.0	4.3	12.0
Lane LOS		A	B
Approach Delay (s)	0.0	4.3	12.0
Approach LOS			B

Intersection Summary			
Average Delay	3.8		
Intersection Capacity Utilization	42.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	71	10	98	178	5	46
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	77	11	107	193	5	50
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			88		489	83
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			88		489	83
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			93		99	95
cM capacity (veh/h)			1508		500	977

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	88	300	55
Volume Left	0	107	5
Volume Right	11	0	50
cSH	1700	1508	893
Volume to Capacity	0.05	0.07	0.06
Queue Length 95th (ft)	0	6	5
Control Delay (s)	0.0	3.1	9.3
Lane LOS		A	A
Approach Delay (s)	0.0	3.1	9.3
Approach LOS			A

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	31.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	70	10	24	159	5	11
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	76	11	26	173	5	12
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			87		307	82
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			87		307	82
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		99	99
cM capacity (veh/h)			1509		674	978

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	87	199	17
Volume Left	0	26	5
Volume Right	11	0	12
cSH	1700	1509	857
Volume to Capacity	0.05	0.02	0.02
Queue Length 95th (ft)	0	1	2
Control Delay (s)	0.0	1.1	9.3
Lane LOS		A	A
Approach Delay (s)	0.0	1.1	9.3
Approach LOS			A

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	26.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	69	29	24	140	14	11
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	75	32	26	152	15	12
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			107		295	91
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			107		295	91
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		98	99
cM capacity (veh/h)			1484		684	967

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	107	178	27
Volume Left	0	26	15
Volume Right	32	0	12
cSH	1700	1484	785
Volume to Capacity	0.06	0.02	0.03
Queue Length 95th (ft)	0	1	3
Control Delay (s)	0.0	1.2	9.8
Lane LOS		A	A
Approach Delay (s)	0.0	1.2	9.8
Approach LOS			A

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	25.4%	ICU Level of Service	A
Analysis Period (min)	15		

1: Hart Ln & Spicewood Springs Rd

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	864	141	139	1151	236	241
Lane Group Flow (vph)	960	157	154	1279	262	268
Turn Type	NA	Perm	Prot	NA	Prot	Free
Protected Phases	2		1	6	4	
Permitted Phases		2				Free
Detector Phase	2	2	1	6	4	
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	
Total Split (s)	79.0	79.0	39.0	118.0	32.0	
Total Split (%)	52.7%	52.7%	26.0%	78.7%	21.3%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Max	C-Max	Max	C-Max	None	
v/c Ratio	0.55	0.19	0.29	0.44	0.72	0.17
Control Delay	27.9	10.8	38.5	7.2	76.5	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.9	10.8	38.5	7.2	76.5	0.2
Queue Length 50th (ft)	336	39	119	301	130	0
Queue Length 95th (ft)	402	83	226	270	174	0
Internal Link Dist (ft)	211			988	285	
Turn Bay Length (ft)		110	220		160	
Base Capacity (vph)	1745	821	533	2929	617	1583
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.19	0.29	0.44	0.42	0.17

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of 1st Green
Natural Cycle: 75
Control Type: Actuated-Coordinated

Splits and Phases: 1: Hart Ln & Spicewood Springs Rd

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	864	141	139	1151	236	241
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	4.0
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	3433	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	3433	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	960	157	154	1279	262	268
RTOR Reduction (vph)	0	41	0	0	0	0
Lane Group Flow (vph)	960	116	154	1279	262	268
Turn Type	NA	Perm	Prot	NA	Prot	Free
Protected Phases	2		1	6	4	
Permitted Phases		2				Free
Actuated Green, G (s)	74.0	74.0	45.2	124.2	15.8	150.0
Effective Green, g (s)	74.0	74.0	45.2	124.2	15.8	150.0
Actuated g/C Ratio	0.49	0.49	0.30	0.83	0.11	1.00
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	1745	780	533	2930	361	1583
v/s Ratio Prot	c0.27		0.09	c0.36	c0.08	
v/s Ratio Perm		0.07				0.17
v/c Ratio	0.55	0.15	0.29	0.44	0.73	0.17
Uniform Delay, d1	26.4	20.8	40.1	3.5	65.0	0.0
Progression Factor	1.00	1.00	0.90	1.84	1.00	1.00
Incremental Delay, d2	1.3	0.4	1.1	0.4	6.0	0.2
Delay (s)	27.7	21.2	37.2	6.8	71.0	0.2
Level of Service	C	C	D	A	E	A
Approach Delay (s)	26.8			10.0	35.2	
Approach LOS	C			B	D	

Intersection Summary			
HCM 2000 Control Delay	20.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	50.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

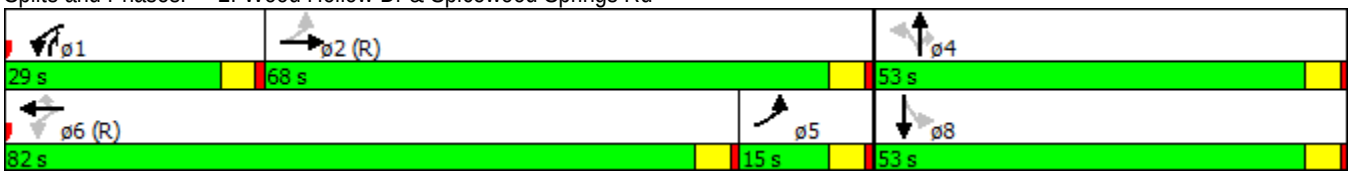
2: Wood Hollow Dr & Spicewood Springs Rd

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	5	1050	139	1067	1	209	8	316	1	4
Lane Group Flow (vph)	6	1249	158	1212	1	0	247	359	0	23
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Perm	NA	pm+ov	Perm	NA
Protected Phases	5	2	1	6			4	1		8
Permitted Phases	2		6		6	4		4	8	
Detector Phase	5	2	1	6	6	4	4	1	8	8
Switch Phase										
Minimum Initial (s)	6.0	25.0	6.0	5.0	5.0	5.0	5.0	6.0	5.0	5.0
Minimum Split (s)	15.0	30.0	15.0	11.0	11.0	35.0	35.0	15.0	35.0	35.0
Total Split (s)	15.0	68.0	29.0	82.0	82.0	53.0	53.0	29.0	53.0	53.0
Total Split (%)	10.0%	45.3%	19.3%	54.7%	54.7%	35.3%	35.3%	19.3%	35.3%	35.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead			Lead		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes			Yes		
Recall Mode	None	C-Max	None	C-Max	C-Max	Max	Max	None	None	None
v/c Ratio	0.03	0.49	0.59	0.58	0.00		0.58	0.51		0.04
Control Delay	7.4	12.5	29.8	16.7	0.0		49.0	28.7		17.5
Queue Delay	0.0	0.2	0.0	0.1	0.0		0.0	0.7		0.0
Total Delay	7.4	12.7	29.8	16.7	0.0		49.0	29.5		17.5
Queue Length 50th (ft)	1	324	48	213	0		202	221		4
Queue Length 95th (ft)	m4	398	144	372	m0		291	280		26
Internal Link Dist (ft)		988		494			464			203
Turn Bay Length (ft)	300		110		100					
Base Capacity (vph)	270	2549	395	2099	959		427	837		544
Starvation Cap Reductn	0	0	0	119	0		0	0		0
Spillback Cap Reductn	0	497	0	0	0		0	222		0
Storage Cap Reductn	0	0	0	0	0		0	0		0
Reduced v/c Ratio	0.02	0.61	0.40	0.61	0.00		0.58	0.58		0.04

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 55 (37%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Wood Hollow Dr & Spicewood Springs Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	1050	49	139	1067	1	209	8	316	1	4	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0		5.0	5.0		5.0	
Lane Util. Factor	1.00	0.91		1.00	0.95	1.00		1.00	1.00		1.00	
Frt	1.00	0.99		1.00	1.00	0.85		1.00	0.85		0.90	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.95	1.00		1.00	
Satd. Flow (prot)	1770	5051		1770	3539	1583		1777	1583		1673	
Flt Permitted	0.19	1.00		0.14	1.00	1.00		0.72	1.00		0.99	
Satd. Flow (perm)	348	5051		258	3539	1583		1336	1583		1665	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	6	1193	56	158	1212	1	238	9	359	1	5	17
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	31	0	12	0
Lane Group Flow (vph)	6	1246	0	158	1212	1	0	247	328	0	11	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	pm+ov	Perm	NA	
Protected Phases	5	2		1	6			4	1		8	
Permitted Phases	2			6		6	4		4	8		
Actuated Green, G (s)	75.6	75.6		85.0	85.0	85.0		48.0	59.4		48.0	
Effective Green, g (s)	75.6	75.6		85.0	85.0	85.0		48.0	59.4		48.0	
Actuated g/C Ratio	0.50	0.50		0.57	0.57	0.57		0.32	0.40		0.32	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0		5.0	5.0		5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0		2.0	2.0		2.0	
Lane Grp Cap (vph)	194	2545		261	2005	897		427	679		532	
v/s Ratio Prot	0.00	c0.25		0.05	c0.34				0.04			
v/s Ratio Perm	0.02			c0.30		0.00		c0.18	0.17		0.01	
v/c Ratio	0.03	0.49		0.61	0.60	0.00		0.58	0.48		0.02	
Uniform Delay, d1	26.6	24.5		19.0	21.4	14.1		42.6	33.8		34.9	
Progression Factor	0.34	0.48		1.42	0.78	1.00		1.00	1.00		1.00	
Incremental Delay, d2	0.0	0.6		2.6	1.3	0.0		5.6	0.2		0.0	
Delay (s)	9.0	12.3		29.7	18.1	14.1		48.2	34.0		34.9	
Level of Service	A	B		C	B	B		D	C		C	
Approach Delay (s)		12.3			19.4			39.8			34.9	
Approach LOS		B			B			D			C	

Intersection Summary			
HCM 2000 Control Delay	20.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	65.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

3: Mopac SBFR & Spicewood Springs Rd

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR	ø1	ø2	ø4	ø5	ø6
Lane Configurations												
Volume (vph)	1063	304	667	808	619	214	398					
Lane Group Flow (vph)	1131	323	710	860	329	558	423					
Turn Type	NA	Free	Prot	NA	Split	NA	Free					
Protected Phases	2 1		19 6 7 2 1 19 6		4 5	4 5		1	2	4	5	6
Permitted Phases		Free					Free					
Detector Phase	2 1		19 6 7 2 1 19 6		4 5	4 5						
Switch Phase												
Minimum Initial (s)								3.0	1.0	1.0	3.0	4.0
Minimum Split (s)								8.0	11.0	11.0	8.0	24.0
Total Split (s)								8.0	35.0	23.0	8.0	51.0
Total Split (%)								5%	23%	15%	5%	34%
Yellow Time (s)								4.0	4.0	4.0	4.0	4.0
All-Red Time (s)								1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag								Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?								Yes	Yes	Yes	Yes	Yes
Recall Mode								None	Max	None	None	C-Max
v/c Ratio	1.26	0.20	0.85	0.38	1.18	1.13dl	0.27					
Control Delay	173.2	0.3	25.6	1.7	163.3	93.8	0.4					
Queue Delay	0.6	0.0	7.8	0.2	0.0	0.0	0.0					
Total Delay	173.9	0.3	33.4	1.9	163.3	93.8	0.4					
Queue Length 50th (ft)	~745	0	663	35	~421	302	0					
Queue Length 95th (ft)	#878	0	m543	m58	#642	#431	0					
Internal Link Dist (ft)	494			333		2669						
Turn Bay Length (ft)			50		145							
Base Capacity (vph)	896	1583	837	2241	279	570	1583					
Starvation Cap Reductn	0	0	99	592	0	0	0					
Spillback Cap Reductn	98	0	0	0	0	0	0					
Storage Cap Reductn	0	0	0	0	0	0	0					
Reduced v/c Ratio	1.42	0.20	0.96	0.52	1.18	0.98	0.27					

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 89 (59%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 120
Control Type: Actuated-Coordinated

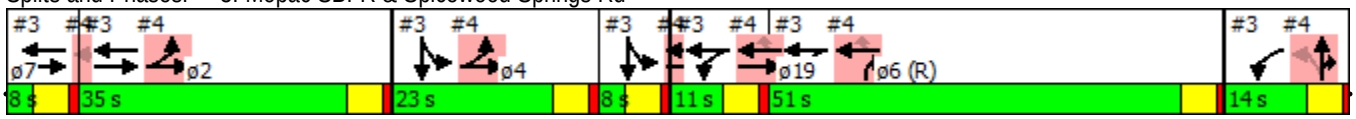
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 3: Mopac SBFR & Spicewood Springs Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1063	304	667	808	0	0	0	0	619	214	398
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	4.0	5.0	5.0					5.0	5.0	4.0
Lane Util. Factor		0.95	1.00	1.00	0.95					0.91	0.91	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.97	1.00
Satd. Flow (prot)		3539	1583	1770	3539					1610	3293	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.97	1.00
Satd. Flow (perm)		3539	1583	1770	3539					1610	3293	1583
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	1131	323	710	860	0	0	0	0	659	228	423
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1131	323	710	860	0	0	0	0	329	558	423
Turn Type		NA	Free	Prot	NA					Split	NA	Free
Protected Phases		2 1		19 6 7	2 1 19 6					4 5	4 5	
Permitted Phases			Free									Free
Actuated Green, G (s)		38.0	150.0	71.0	95.0					26.0	26.0	150.0
Effective Green, g (s)		38.0	150.0	71.0	95.0					26.0	26.0	150.0
Actuated g/C Ratio		0.25	1.00	0.47	0.63					0.17	0.17	1.00
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		896	1583	837	2241					279	570	1583
v/s Ratio Prot		c0.32		c0.40	0.24					c0.20	0.17	
v/s Ratio Perm			0.20									0.27
v/c Ratio		1.26	0.20	0.85	0.38					1.18	1.13dl	0.27
Uniform Delay, d1		56.0	0.0	34.8	13.3					62.0	61.7	0.0
Progression Factor		1.06	1.00	0.60	0.21					1.00	1.00	1.00
Incremental Delay, d2		126.1	0.3	3.0	0.0					111.4	31.8	0.4
Delay (s)		185.5	0.3	23.7	2.7					173.4	93.6	0.4
Level of Service		F	A	C	A					F	F	A
Approach Delay (s)		144.3			12.2			0.0			83.5	
Approach LOS		F			B			A			F	

Intersection Summary			
HCM 2000 Control Delay	78.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.21		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	35.0
Intersection Capacity Utilization	94.8%	ICU Level of Service	F
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group

4: Mopac NBFR & Anderson Ln

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	ø1	ø2	ø4	ø5	ø6
Lane Configurations												
Volume (vph)	524	1159	1180	435	295	43	580					
Lane Group Flow (vph)	552	1220	1242	458	280	351	336					
Turn Type	Prot	NA	NA	Perm	Perm	NA	custom					
Protected Phases	2 4	2 4 5 19	6 5 19			7 1	7 1 6	1	2	4	5	6
Permitted Phases				6 5 19	7 1							
Detector Phase	2 4	2 4 5 19	6 5 19	6 5 19	7 1	7 1	7 1 6					
Switch Phase												
Minimum Initial (s)								3.0	1.0	1.0	3.0	4.0
Minimum Split (s)								8.0	11.0	11.0	8.0	24.0
Total Split (s)								8.0	35.0	23.0	8.0	51.0
Total Split (%)								5%	23%	15%	5%	34%
Yellow Time (s)								4.0	4.0	4.0	4.0	4.0
All-Red Time (s)								1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag								Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?								Yes	Yes	Yes	Yes	Yes
Recall Mode								None	Max	None	None	C-Max
v/c Ratio	0.88	0.72	0.81	0.56	1.47	1.38	0.45					
Control Delay	27.6	0.3	42.3	16.8	283.0	225.6	19.1					
Queue Delay	49.4	14.1	1.3	0.0	0.0	0.2	0.0					
Total Delay	76.9	14.4	43.6	16.8	283.0	225.7	19.1					
Queue Length 50th (ft)	330	0	552	153	~394	~401	144					
Queue Length 95th (ft)	m182	m0	647	262	#594	#628	236					
Internal Link Dist (ft)		333	702			1795						
Turn Bay Length (ft)	50			360	280							
Base Capacity (vph)	625	1698	1533	823	190	255	749					
Starvation Cap Reductn	154	482	0	0	0	0	0					
Spillback Cap Reductn	0	0	130	0	0	3	0					
Storage Cap Reductn	0	0	0	0	0	0	0					
Reduced v/c Ratio	1.17	1.00	0.89	0.56	1.47	1.39	0.45					

Intersection Summary

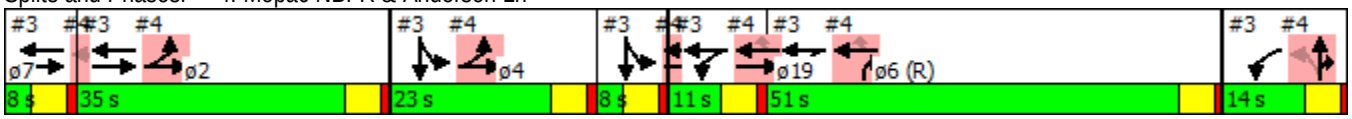
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 89 (59%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 120
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Mopac NBFR & Anderson Ln



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	524	1159	0	0	1180	435	295	43	580	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0	5.0			
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.91	0.95			
Frt	1.00	1.00			1.00	0.85	1.00	0.88	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	1770	3539			3539	1583	1681	1489	1504			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	1770	3539			3539	1583	1681	1489	1504			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	552	1220	0	0	1242	458	311	45	611	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	137	0	87	68	0	0	0
Lane Group Flow (vph)	552	1220	0	0	1242	321	280	264	268	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	custom			
Protected Phases	2 4	2 4 5 19			6 5 19			7 1	7 1 6			
Permitted Phases						6 5 19	7 1					
Actuated Green, G (s)	53.0	72.0			65.0	65.0	17.0	17.0	68.0			
Effective Green, g (s)	53.0	72.0			65.0	65.0	17.0	17.0	68.0			
Actuated g/C Ratio	0.35	0.48			0.43	0.43	0.11	0.11	0.45			
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	625	1698			1533	685	190	168	681			
v/s Ratio Prot	c0.31	c0.34			c0.35				0.18			
v/s Ratio Perm						0.20	0.17	0.18				
v/c Ratio	0.88	0.72			0.81	0.47	1.47	1.57	0.39			
Uniform Delay, d1	45.6	31.0			37.1	30.2	66.5	66.5	27.3			
Progression Factor	0.54	0.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	1.5	0.1			3.2	0.2	239.4	284.1	0.1			
Delay (s)	26.2	0.2			40.3	30.4	305.9	350.6	27.4			
Level of Service	C	A			D	C	F	F	C			
Approach Delay (s)		8.3			37.6			225.4			0.0	
Approach LOS		A			D			F			A	

Intersection Summary			
HCM 2000 Control Delay	66.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	35.0
Intersection Capacity Utilization	94.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	27	149	281	15	57	187
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	36	199	375	20	76	249
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						365
pX, platoon unblocked						
vC, conflicting volume	786	385			395	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	786	385			395	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	89	70			93	
cM capacity (veh/h)	337	663			1164	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	235	395	325
Volume Left	36	0	76
Volume Right	199	20	0
cSH	577	1700	1164
Volume to Capacity	0.41	0.23	0.07
Queue Length 95th (ft)	49	0	5
Control Delay (s)	15.4	0.0	2.4
Lane LOS	C		A
Approach Delay (s)	15.4	0.0	2.4
Approach LOS	C		

Intersection Summary			
Average Delay	4.6		
Intersection Capacity Utilization	49.4%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	23.8
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	91	113	55	0	64	66	152	0	32	280	66
Peak Hour Factor	0.92	0.76	0.76	0.76	0.92	0.76	0.76	0.76	0.92	0.76	0.76	0.76
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	120	149	72	0	84	87	200	0	42	368	87
Number of Lanes	0	0	1	0	0	0	1	0	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	1
HCM Control Delay	27.9	29.5	20.2
HCM LOS	D	D	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	19%	0%	35%	23%	100%	0%
Vol Thru, %	81%	68%	44%	23%	0%	75%
Vol Right, %	0%	32%	21%	54%	0%	25%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	172	206	259	282	51	164
LT Vol	32	0	91	64	51	0
Through Vol	140	140	113	66	0	123
RT Vol	0	66	55	152	0	41
Lane Flow Rate	226	271	341	371	67	216
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.51	0.587	0.719	0.753	0.167	0.494
Departure Headway (Hd)	8.12	7.791	7.595	7.303	8.951	8.249
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	444	464	474	494	400	436
Service Time	5.885	5.555	5.659	5.366	6.721	6.019
HCM Lane V/C Ratio	0.509	0.584	0.719	0.751	0.168	0.495
HCM Control Delay	19.1	21.1	27.9	29.5	13.5	18.9
HCM Lane LOS	C	C	D	D	B	C
HCM 95th-tile Q	2.8	3.7	5.7	6.4	0.6	2.7

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	51	123	41
Peak Hour Factor	0.92	0.76	0.76	0.76
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	67	162	54
Number of Lanes	0	1	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	17.6
HCM LOS	C

Lane

Intersection	
Intersection Delay, s/veh	14.8
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	37	76	48	0	97	136	51	0	96	205	58
Peak Hour Factor	0.92	0.94	0.94	0.94	0.92	0.94	0.94	0.94	0.92	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	39	81	51	0	103	145	54	0	102	218	62
Number of Lanes	0	0	1	1	0	0	1	1	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	2
HCM Control Delay	11.4	14.6	17.7
HCM LOS	B	B	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	27%	33%	0%	42%	0%	7%
Vol Thru, %	57%	67%	0%	58%	0%	64%
Vol Right, %	16%	0%	100%	0%	100%	29%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	359	113	48	233	51	207
LT Vol	96	37	0	97	0	15
Through Vol	205	76	0	136	0	132
RT Vol	58	0	48	0	51	60
Lane Flow Rate	382	120	51	248	54	220
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.613	0.24	0.089	0.471	0.089	0.372
Departure Headway (Hd)	5.879	7.18	6.293	6.954	6.024	6.081
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	619	502	572	521	598	595
Service Time	3.879	4.892	4.005	4.654	3.724	4.091
HCM Lane V/C Ratio	0.617	0.239	0.089	0.476	0.09	0.37
HCM Control Delay	17.7	12.1	9.6	15.7	9.3	12.7
HCM Lane LOS	C	B	A	C	A	B
HCM 95th-tile Q	4.2	0.9	0.3	2.5	0.3	1.7

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	15	132	60
Peak Hour Factor	0.92	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	16	140	64
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	12.7
HCM LOS	B

Lane

Intersection	
Intersection Delay, s/veh	18.4
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	41	75	53	0	93	239	99	0	83	266	76
Peak Hour Factor	0.92	0.99	0.99	0.99	0.92	0.99	0.99	0.99	0.92	0.99	0.99	0.99
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	41	76	54	0	94	241	100	0	84	269	77
Number of Lanes	0	0	1	1	0	0	1	1	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	2
HCM Control Delay	12.5	21.1	20.6
HCM LOS	B	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	35%	0%	28%	0%	100%	0%
Vol Thru, %	0%	78%	65%	0%	72%	0%	0%	82%
Vol Right, %	0%	22%	0%	100%	0%	100%	0%	18%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	83	342	116	53	332	99	67	180
LT Vol	83	0	41	0	93	0	67	0
Through Vol	0	266	75	0	239	0	0	147
RT Vol	0	76	0	53	0	99	0	33
Lane Flow Rate	84	345	117	54	335	100	68	182
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.178	0.668	0.258	0.104	0.679	0.179	0.15	0.372
Departure Headway (Hd)	7.633	6.963	7.928	7.025	7.294	6.435	8.001	7.356
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	469	518	452	509	496	557	448	489
Service Time	5.382	4.711	5.689	4.785	5.041	4.182	5.757	5.111
HCM Lane V/C Ratio	0.179	0.666	0.259	0.106	0.675	0.18	0.152	0.372
HCM Control Delay	12	22.7	13.4	10.6	24.2	10.6	12.2	14.4
HCM Lane LOS	B	C	B	B	C	B	B	B
HCM 95th-tile Q	0.6	4.9	1	0.3	5	0.6	0.5	1.7

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	67	147	33
Peak Hour Factor	0.92	0.99	0.99	0.99
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	68	148	33
Number of Lanes	0	1	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	13.8
HCM LOS	B

Lane

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	225	0	0	1926	398
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	0	259	0	0	2214	457
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2214	738	2671			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2214	738	2671			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	28	100			
cM capacity (veh/h)	37	360	153			

Direction, Lane #	EB 1	SB 1	SB 2	SB 3	SB 4
Volume Total	259	738	738	738	457
Volume Left	0	0	0	0	0
Volume Right	259	0	0	0	457
cSH	360	1700	1700	1700	1700
Volume to Capacity	0.72	0.43	0.43	0.43	0.27
Queue Length 95th (ft)	134	0	0	0	0
Control Delay (s)	36.7	0.0	0.0	0.0	0.0
Lane LOS	E				
Approach Delay (s)	36.7	0.0			
Approach LOS	E				

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	57.8%	ICU Level of Service	B
Analysis Period (min)	15		

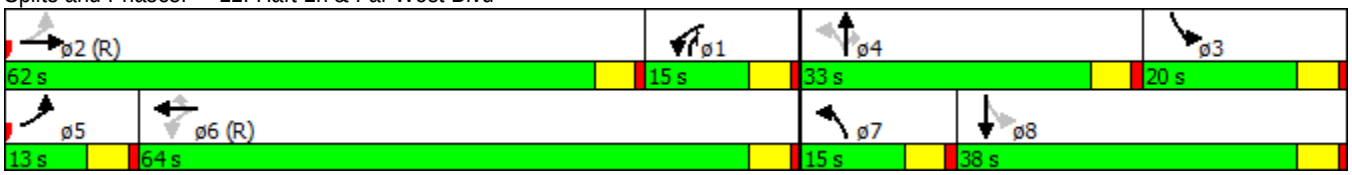
11: Hart Ln & Far West Blvd

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	49	561	185	529	156	62	139	142	173	96
Lane Group Flow (vph)	51	618	191	545	161	64	143	146	178	157
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA
Protected Phases	5	2	1	6		7	4	1	3	8
Permitted Phases	2		6		6	4		4	8	
Detector Phase	5	2	1	6	6	7	4	1	3	8
Switch Phase										
Minimum Initial (s)	4.0	2.0	4.0	2.0	2.0	4.0	2.0	4.0	2.0	2.0
Minimum Split (s)	9.0	24.0	9.0	24.0	24.0	9.0	33.0	9.0	33.0	33.0
Total Split (s)	13.0	62.0	15.0	64.0	64.0	15.0	33.0	15.0	20.0	38.0
Total Split (%)	10.0%	47.7%	11.5%	49.2%	49.2%	11.5%	25.4%	11.5%	15.4%	29.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lead	Lag	Lag	Lag	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	C-Max	None	None	None	None	None
v/c Ratio	0.11	0.31	0.35	0.25	0.17	0.40	0.69	0.41	0.74	0.30
Control Delay	15.8	16.6	37.7	29.7	30.9	59.2	72.6	45.7	71.3	49.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.8	16.6	37.7	29.7	30.9	59.2	72.6	45.7	71.3	49.5
Queue Length 50th (ft)	19	140	112	170	94	51	118	106	145	63
Queue Length 95th (ft)	46	211	207	263	180	93	182	163	210	91
Internal Link Dist (ft)		1703		1174			695			1553
Turn Bay Length (ft)	130		100		490			100	100	
Base Capacity (vph)	468	1984	551	2157	964	173	401	357	286	849
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.31	0.35	0.25	0.17	0.37	0.36	0.41	0.62	0.18

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 100 (77%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 11: Hart Ln & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	49	561	39	185	529	156	62	139	142	173	96	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3505		1770	3539	1583	1770	1863	1583	1770	3343	
Flt Permitted	0.38	1.00		0.42	1.00	1.00	0.56	1.00	1.00	0.67	1.00	
Satd. Flow (perm)	710	3505		778	3539	1583	1035	1863	1583	1240	3343	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	51	578	40	191	545	161	64	143	146	178	99	58
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	51	618	0	191	545	161	64	143	146	178	157	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases	5	2		1	6		7	4	1	3	8	
Permitted Phases	2			6		6	4		4	8		
Actuated Green, G (s)	71.7	71.7		77.3	77.3	77.3	14.4	14.4	25.4	20.1	20.1	
Effective Green, g (s)	71.7	71.7		77.3	77.3	77.3	14.4	14.4	25.4	20.1	20.1	
Actuated g/C Ratio	0.55	0.55		0.59	0.59	0.59	0.11	0.11	0.20	0.15	0.15	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	435	1933		546	2104	941	155	206	370	244	516	
v/s Ratio Prot	0.00	c0.18		0.03	0.15		0.02	c0.08	c0.03	c0.07	0.05	
v/s Ratio Perm	0.06			c0.18		0.10	0.02		0.06	c0.04		
v/c Ratio	0.12	0.32		0.35	0.26	0.17	0.41	0.69	0.39	0.73	0.30	
Uniform Delay, d1	13.9	15.9		14.2	12.6	11.9	53.4	55.7	45.6	51.5	48.7	
Progression Factor	1.00	1.00		2.10	2.15	2.20	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.0	0.4		0.1	0.3	0.4	0.7	7.9	0.3	8.9	0.1	
Delay (s)	13.9	16.3		29.9	27.4	26.6	54.0	63.6	45.9	60.4	48.9	
Level of Service	B	B		C	C	C	D	E	D	E	D	
Approach Delay (s)		16.1			27.8			54.5			55.0	
Approach LOS		B			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	32.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	60.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

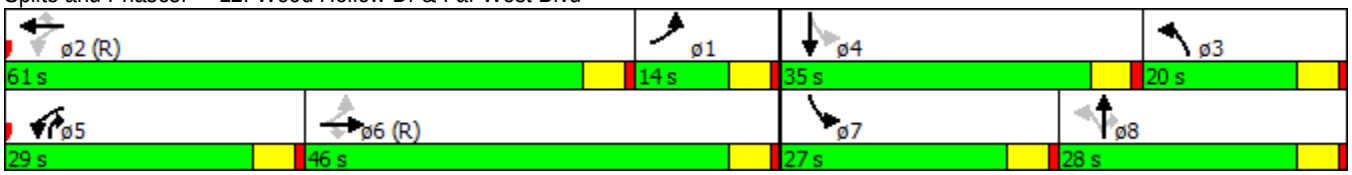
12: Wood Hollow Dr & Far West Blvd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Volume (vph)	114	765	63	225	677	160	101	185	318	166	101
Lane Group Flow (vph)	130	869	72	256	769	182	115	210	361	189	173
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA
Protected Phases	1	6		5	2		3	8	5	7	4
Permitted Phases	6		6	2		2	8		8	4	
Detector Phase	1	6	6	5	2	2	3	8	5	7	4
Switch Phase											
Minimum Initial (s)	4.0	2.0	2.0	4.0	2.0	2.0	4.0	2.0	4.0	4.0	2.0
Minimum Split (s)	9.0	11.0	11.0	9.0	11.0	11.0	9.0	11.0	9.0	9.0	11.0
Total Split (s)	14.0	46.0	46.0	29.0	61.0	61.0	20.0	28.0	29.0	27.0	35.0
Total Split (%)	10.8%	35.4%	35.4%	22.3%	46.9%	46.9%	15.4%	21.5%	22.3%	20.8%	26.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None
v/c Ratio	0.35	0.56	0.09	0.76	0.43	0.21	0.42	0.80	0.64	0.79	0.75
Control Delay	43.8	40.7	4.5	44.1	33.8	12.1	53.9	75.3	30.1	77.2	67.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.8	40.7	4.5	44.1	33.8	12.1	53.9	75.3	30.1	77.2	67.9
Queue Length 50th (ft)	80	320	4	163	273	32	88	173	182	156	128
Queue Length 95th (ft)	147	446	m18	246	344	77	144	246	240	227	192
Internal Link Dist (ft)		1174			673			686			1879
Turn Bay Length (ft)	245		610	125			75		75		
Base Capacity (vph)	372	1563	779	421	1771	883	274	329	648	299	422
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.56	0.09	0.61	0.43	0.21	0.42	0.64	0.56	0.63	0.41

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 20 (15%), Referenced to phase 2:WBTL and 6:EBTL, Start of 1st Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 12: Wood Hollow Dr & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	114	765	63	225	677	160	101	185	318	166	101	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1769	
Flt Permitted	0.36	1.00	1.00	0.16	1.00	1.00	0.00	1.00	1.00	0.00	1.00	
Satd. Flow (perm)	671	3539	1583	298	3539	1583	0	1863	1583	0	1769	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	130	869	72	256	769	182	115	210	361	189	115	58
RTOR Reduction (vph)	0	0	40	0	0	91	0	0	82	0	16	0
Lane Group Flow (vph)	130	869	32	256	769	91	115	210	279	189	157	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases	1	6		5	2		3	8	5	7	4	
Permitted Phases	6		6	2		2	8		8	4		
Actuated Green, G (s)	57.5	57.5	57.5	65.1	65.1	65.1	20.0	18.4	35.0	17.5	15.9	
Effective Green, g (s)	57.5	57.5	57.5	65.1	65.1	65.1	20.0	18.4	35.0	17.5	15.9	
Actuated g/C Ratio	0.44	0.44	0.44	0.50	0.50	0.50	0.15	0.14	0.27	0.13	0.12	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	372	1565	700	337	1772	792	272	263	487	238	216	
v/s Ratio Prot	0.02	c0.25		c0.10	0.22		0.06	c0.11	0.07	c0.11	0.09	
v/s Ratio Perm	0.13		0.02	c0.28		0.06			0.10			
v/c Ratio	0.35	0.56	0.05	0.76	0.43	0.12	0.42	0.80	0.57	0.79	0.73	
Uniform Delay, d1	25.1	26.8	20.6	23.0	20.7	17.2	49.8	54.0	41.0	54.5	55.0	
Progression Factor	1.31	1.31	1.00	1.39	1.49	3.80	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.2	1.4	0.1	7.3	0.7	0.3	0.4	14.5	1.0	15.5	9.9	
Delay (s)	33.1	36.5	20.7	39.3	31.6	65.6	50.2	68.5	42.1	70.0	64.9	
Level of Service	C	D	C	D	C	E	D	E	D	E	E	
Approach Delay (s)		35.1			38.3			51.5			67.5	
Approach LOS		D			D			D			E	

Intersection Summary			
HCM 2000 Control Delay	43.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	69.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

13: Mopac SBFR & Far West Blvd

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR	ø1	ø2	ø4	ø8	ø22
Lane Configurations											
Volume (vph)	1163	386	10	450	412	928					
Lane Group Flow (vph)	1307	434	11	506	950	1043					
Turn Type	NA	Free	Prot	NA	NA	Free					
Protected Phases	1 22 2		7	1 22 7	4 8		1	2	4	8	22
Permitted Phases		Free				Free					
Detector Phase	1 22 2		7	1 22 7	4 8						
Switch Phase											
Minimum Initial (s)			4.0				4.0	4.0	4.0	4.0	4.0
Minimum Split (s)			20.0				9.0	24.0	24.0	9.0	20.0
Total Split (s)			41.0				9.0	20.0	31.0	9.0	20.0
Total Split (%)			31.5%				7%	15%	24%	7%	15%
Yellow Time (s)			4.0				4.0	4.0	4.0	4.0	4.0
All-Red Time (s)			1.0				1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)			0.0								
Total Lost Time (s)			5.0								
Lead/Lag							Lead		Lead	Lag	Lag
Lead-Lag Optimize?							Yes		Yes	Yes	Yes
Recall Mode			None				None	C-Max	None	None	None
v/c Ratio	0.77	0.27	0.05	0.29	1.02	0.66					
Control Delay	32.1	0.4	26.0	3.4	82.0	2.2					
Queue Delay	49.5	0.0	0.0	0.3	0.0	0.0					
Total Delay	81.6	0.4	26.0	3.7	82.0	2.2					
Queue Length 50th (ft)	510	0	3	14	~447	0					
Queue Length 95th (ft)	654	0	m8	17	#570	0					
Internal Link Dist (ft)	432			324	532						
Turn Bay Length (ft)		490									
Base Capacity (vph)	1692	1583	490	1769	929	1583					
Starvation Cap Reductn	0	0	0	631	0	0					
Spillback Cap Reductn	751	0	0	0	0	0					
Storage Cap Reductn	0	0	0	0	0	0					
Reduced v/c Ratio	1.39	0.27	0.02	0.44	1.02	0.66					

Intersection Summary

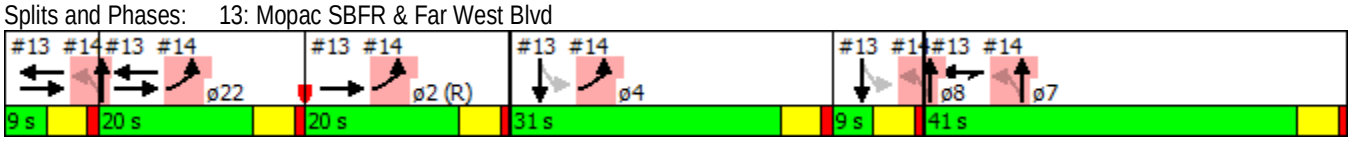
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBT, Start of 1st Green
Natural Cycle: 110
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Mopac SBFR & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1163	386	10	450	0	0	0	0	433	412	928
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	4.0	5.0	5.0						5.0	4.0
Lane Util. Factor		0.95	1.00	1.00	0.95						0.95	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.98	1.00
Satd. Flow (prot)		3539	1583	1770	3539						3451	1583
Flt Permitted		1.00	1.00	0.95	1.00						0.98	1.00
Satd. Flow (perm)		3539	1583	1770	3539						3451	1583
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	1307	434	11	506	0	0	0	0	487	463	1043
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1307	434	11	506	0	0	0	0	0	950	1043
Turn Type		NA	Free	Prot	NA					Perm	NA	Free
Protected Phases		1 22 2		7	1 22 7						4 8	
Permitted Phases			Free							4 8		Free
Actuated Green, G (s)		62.2	130.0	17.8	65.0						35.0	130.0
Effective Green, g (s)		62.2	130.0	17.8	65.0						35.0	130.0
Actuated g/C Ratio		0.48	1.00	0.14	0.50						0.27	1.00
Clearance Time (s)				5.0								
Vehicle Extension (s)				2.0								
Lane Grp Cap (vph)		1693	1583	242	1769						929	1583
v/s Ratio Prot		c0.37		0.01	0.14							
v/s Ratio Perm			0.27								0.28	c0.66
v/c Ratio		0.77	0.27	0.05	0.29						1.02	0.66
Uniform Delay, d1		28.0	0.0	48.7	19.0						47.5	0.0
Progression Factor		0.99	1.00	0.57	0.16						1.00	1.00
Incremental Delay, d2		1.9	0.4	0.0	0.0						35.4	2.2
Delay (s)		29.5	0.4	27.6	3.0						82.9	2.2
Level of Service		C	A	C	A						F	A
Approach Delay (s)		22.2			3.5			0.0			40.6	
Approach LOS		C			A			A			D	

Intersection Summary			
HCM 2000 Control Delay	28.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	67.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

14: Mopac NBFR & Far West Blvd

Lane Group	EBL	NBL	NBT	ø1	ø2	ø4	ø7	ø8	ø22
Lane Configurations									
Volume (vph)	1606	398	25						
Lane Group Flow (vph)	1825	240	240						
Turn Type	Prot	Perm	NA						
Protected Phases	22 2 4		7 1 8	1	2	4	7	8	22
Permitted Phases		7 1 8							
Detector Phase	22 2 4	7 1 8	7 1 8						
Switch Phase									
Minimum Initial (s)				4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)				9.0	24.0	24.0	20.0	9.0	20.0
Total Split (s)				9.0	20.0	31.0	41.0	9.0	20.0
Total Split (%)				7%	15%	24%	32%	7%	15%
Yellow Time (s)				4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)				1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)									
Total Lost Time (s)									
Lead/Lag				Lead		Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes		Yes	Yes
Recall Mode				None	C-Max	None	None	None	None
v/c Ratio	1.05	0.34	0.34						
Control Delay	57.4	27.7	27.6						
Queue Delay	22.1	0.0	0.0						
Total Delay	79.5	27.7	27.6						
Queue Length 50th (ft)	~861	143	143						
Queue Length 95th (ft)	m#924	209	209						
Internal Link Dist (ft)	324		322						
Turn Bay Length (ft)									
Base Capacity (vph)	1742	698	704						
Starvation Cap Reductn	362	0	0						
Spillback Cap Reductn	0	0	0						
Storage Cap Reductn	0	0	0						
Reduced v/c Ratio	1.32	0.34	0.34						

Intersection Summary

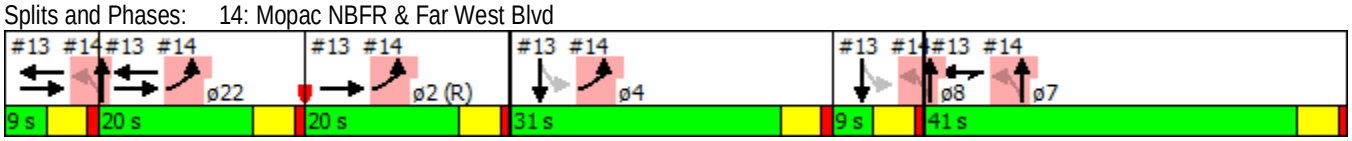
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBT, Start of 1st Green
Natural Cycle: 110
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 14: Mopac NBFR & Far West Blvd



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	1606	0	398	25	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0		
Lane Util. Factor	0.97		0.95	0.95		
Frt	1.00		1.00	1.00		
Flt Protected	0.95		0.95	0.96		
Satd. Flow (prot)	3433		1681	1695		
Flt Permitted	0.95		0.95	0.96		
Satd. Flow (perm)	3433		1681	1695		
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	1825	0	452	28	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1825	0	240	240	0	0
Turn Type	Prot		Perm	NA		
Protected Phases	22 2 4			7 1 8		
Permitted Phases			7 1 8			
Actuated Green, G (s)	66.0		54.0	54.0		
Effective Green, g (s)	66.0		54.0	54.0		
Actuated g/C Ratio	0.51		0.42	0.42		
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)	1742		698	704		
v/s Ratio Prot	c0.53					
v/s Ratio Perm			c0.14	0.14		
v/c Ratio	1.05		0.34	0.34		
Uniform Delay, d1	32.0		25.9	25.9		
Progression Factor	0.84		1.00	1.00		
Incremental Delay, d2	30.1		0.1	0.1		
Delay (s)	56.9		26.0	26.0		
Level of Service	E		C	C		
Approach Delay (s)	56.9			26.0	0.0	
Approach LOS	E			C	A	

Intersection Summary			
HCM 2000 Control Delay	50.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	80.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

20: Loop 1 SBFR & Steck Avenue

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	ø1	ø2	ø4	ø5	ø6	ø7
Lane Configurations												
Volume (vph)	627	100	248	343	771	774						
Lane Group Flow (vph)	640	102	253	350	637	1280						
Turn Type	NA	Perm	Prot	NA	Split	NA						
Protected Phases	2 1		6 7	2 1 6 7	4 5	4 5	1	2	4	5	6	7
Permitted Phases		2 1										
Detector Phase	2 1	2 1	6 7	2 1 6 7	4 5	4 5						
Switch Phase												
Minimum Initial (s)							2.0	1.0	1.0	3.0	4.0	4.0
Minimum Split (s)							7.0	11.0	11.0	8.0	24.0	9.0
Total Split (s)							7.0	23.0	32.0	8.0	30.0	30.0
Total Split (%)							5%	18%	25%	6%	23%	23%
Yellow Time (s)							4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)							1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag							Lead	Lag	Lead	Lag		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode							None	Max	None	None	C-Max	None
v/c Ratio	0.94	0.24	0.34	0.15	1.47	1.43						
Control Delay	74.6	3.7	2.8	0.1	259.3	234.3						
Queue Delay	45.4	0.0	0.8	0.0	0.0	0.0						
Total Delay	120.0	3.7	3.6	0.1	259.3	234.3						
Queue Length 50th (ft)	282	0	6	0	~808	~793						
Queue Length 95th (ft)	#398	19	8	0	#1064	#940						
Internal Link Dist (ft)	737			327		333						
Turn Bay Length (ft)		100	80									
Base Capacity (vph)	680	419	748	2313	433	896						
Starvation Cap Reductn	0	0	261	0	0	0						
Spillback Cap Reductn	182	0	0	0	0	1						
Storage Cap Reductn	0	0	0	0	0	0						
Reduced v/c Ratio	1.29	0.24	0.52	0.15	1.47	1.43						

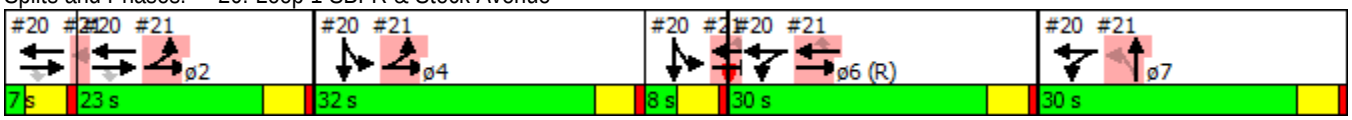
Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 97 (75%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 20: Loop 1 SBFR & Steck Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	627	100	248	343	0	0	0	0	771	774	333
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0					5.0	5.0	
Lane Util. Factor		0.95	1.00	1.00	0.95					0.91	0.91	
Frt		1.00	0.85	1.00	1.00					1.00	0.96	
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.99	
Satd. Flow (prot)		3539	1583	1770	3539					1610	3236	
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.99	
Satd. Flow (perm)		3539	1583	1770	3539					1610	3236	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	640	102	253	350	0	0	0	0	787	790	340
RTOR Reduction (vph)	0	0	82	0	0	0	0	0	0	0	26	0
Lane Group Flow (vph)	0	640	20	253	350	0	0	0	0	637	1254	0
Turn Type		NA	Perm	Prot	NA					Split	NA	
Protected Phases		2 1		6 7	2 1 6 7					4 5	4 5	
Permitted Phases			2 1									
Actuated Green, G (s)		25.0	25.0	55.0	85.0					35.0	35.0	
Effective Green, g (s)		25.0	25.0	55.0	85.0					35.0	35.0	
Actuated g/C Ratio		0.19	0.19	0.42	0.65					0.27	0.27	
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		680	304	748	2313					433	871	
v/s Ratio Prot		c0.18		c0.14	0.10					c0.40	0.39	
v/s Ratio Perm			0.01									
v/c Ratio		0.94	0.06	0.34	0.15					1.47	1.44	
Uniform Delay, d1		51.8	42.9	25.2	8.6					47.5	47.5	
Progression Factor		1.00	1.00	0.07	0.00					1.00	1.00	
Incremental Delay, d2		21.0	0.0	0.1	0.0					224.3	204.6	
Delay (s)		72.8	43.0	1.8	0.0					271.8	252.1	
Level of Service		E	D	A	A					F	F	
Approach Delay (s)		68.7			0.7			0.0			258.7	
Approach LOS		E			A			A			F	

Intersection Summary			
HCM 2000 Control Delay	167.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	137.3%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

21: Loop 1 NBFR & Steck Avenue

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	ø1	ø2	ø4	ø5	ø6	ø7
Lane Configurations												
Volume (vph)	678	604	471	486	124	815						
Lane Group Flow (vph)	714	636	496	512	131	983						
Turn Type	Prot	NA	NA	Perm	Perm	NA						
Protected Phases	2 4	2 4 5 6	6 5			7 1	1	2	4	5	6	7
Permitted Phases				6 5	7 1							
Detector Phase	2 4	2 4 5 6	6 5	6 5	7 1	7 1						
Switch Phase												
Minimum Initial (s)							2.0	1.0	1.0	3.0	4.0	4.0
Minimum Split (s)							7.0	11.0	11.0	8.0	24.0	9.0
Total Split (s)							7.0	23.0	32.0	8.0	30.0	30.0
Total Split (%)							5%	18%	25%	6%	23%	23%
Yellow Time (s)							4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)							1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag							Lead	Lag	Lead	Lag		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode							None	Max	None	None	C-Max	None
v/c Ratio	1.05	0.27	0.55	1.01	0.16	2.17						
Control Delay	53.5	0.1	44.9	76.8	39.0	559.0						
Queue Delay	21.0	1.0	0.0	0.0	0.0	0.0						
Total Delay	74.5	1.1	44.9	76.8	39.0	559.0						
Queue Length 50th (ft)	~636	0	192	~341	44	~1335						
Queue Length 95th (ft)	m368	m0	250	#577	72	#1595						
Internal Link Dist (ft)		327	978			2452						
Turn Bay Length (ft)	80			170	110							
Base Capacity (vph)	680	2395	898	508	845	453						
Starvation Cap Reductn	175	1436	0	0	0	0						
Spillback Cap Reductn	0	0	0	0	0	0						
Storage Cap Reductn	0	0	0	0	0	0						
Reduced v/c Ratio	1.41	0.66	0.55	1.01	0.16	2.17						

Intersection Summary

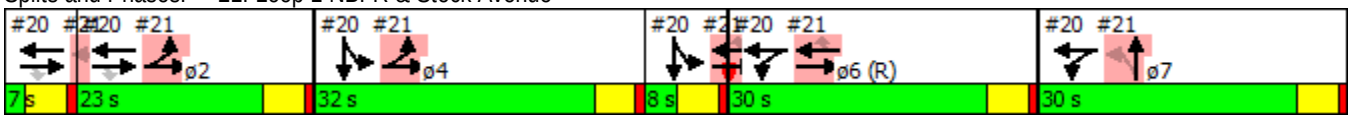
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 97 (75%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 21: Loop 1 NBFR & Steck Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	678	604	0	0	471	486	124	815	119	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0				
Lane Util. Factor	1.00	0.95			0.95	1.00	0.97	1.00				
Frt	1.00	1.00			1.00	0.85	1.00	0.98				
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (prot)	1770	3539			3539	1583	3433	1827				
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (perm)	1770	3539			3539	1583	3433	1827				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	714	636	0	0	496	512	131	858	125	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	107	0	4	0	0	0	0
Lane Group Flow (vph)	714	636	0	0	496	405	131	979	0	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA				
Protected Phases	2 4	2 4 5 6			6 5			7 1				
Permitted Phases						6 5	7 1					
Actuated Green, G (s)	50.0	88.0			33.0	33.0	32.0	32.0				
Effective Green, g (s)	50.0	88.0			33.0	33.0	32.0	32.0				
Actuated g/C Ratio	0.38	0.68			0.25	0.25	0.25	0.25				
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	680	2395			898	401	845	449				
v/s Ratio Prot	c0.40	0.18			0.14			c0.54				
v/s Ratio Perm						c0.26	0.04					
v/c Ratio	1.05	0.27			0.55	1.01	0.16	2.18				
Uniform Delay, d1	40.0	8.3			42.1	48.5	38.4	49.0				
Progression Factor	0.63	0.00			1.00	1.00	1.00	1.00				
Incremental Delay, d2	26.7	0.0			0.4	47.7	0.0	538.7				
Delay (s)	52.0	0.0			42.5	96.2	38.4	587.7				
Level of Service	D	A			D	F	D	F				
Approach Delay (s)		27.5			69.8			523.1			0.0	
Approach LOS		C			E			F			A	

Intersection Summary			
HCM 2000 Control Delay	198.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.55		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	137.3%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	91	139	28	96	186	93
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	99	151	30	104	202	101
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			250		340	174
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			250		340	174
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		68	88
cM capacity (veh/h)			1316		641	869

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	250	135	303
Volume Left	0	30	202
Volume Right	151	0	101
cSH	1700	1316	702
Volume to Capacity	0.15	0.02	0.43
Queue Length 95th (ft)	0	2	55
Control Delay (s)	0.0	1.9	14.0
Lane LOS		A	B
Approach Delay (s)	0.0	1.9	14.0
Approach LOS			B

Intersection Summary			
Average Delay	6.5		
Intersection Capacity Utilization	45.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	166	6	55	84	10	93
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	180	7	60	91	11	101
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			187		395	184
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			187		395	184
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			96		98	88
cM capacity (veh/h)			1387		584	859

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	187	151	112
Volume Left	0	60	11
Volume Right	7	0	101
cSH	1700	1387	821
Volume to Capacity	0.11	0.04	0.14
Queue Length 95th (ft)	0	3	12
Control Delay (s)	0.0	3.3	10.1
Lane LOS		A	B
Approach Delay (s)	0.0	3.3	10.1
Approach LOS			B

Intersection Summary			
Average Delay	3.6		
Intersection Capacity Utilization	32.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	149	6	14	80	10	23
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	162	7	15	87	11	25
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			168		283	165
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			168		283	165
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		98	97
cM capacity (veh/h)			1409		700	879

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	168	102	36
Volume Left	0	15	11
Volume Right	7	0	25
cSH	1700	1409	816
Volume to Capacity	0.10	0.01	0.04
Queue Length 95th (ft)	0	1	3
Control Delay (s)	0.0	1.2	9.6
Lane LOS		A	A
Approach Delay (s)	0.0	1.2	9.6
Approach LOS			A

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	26.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	132	16	14	76	28	23
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	143	17	15	83	30	25
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			161		265	152
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			161		265	152
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		96	97
cM capacity (veh/h)			1418		716	894

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	161	98	55
Volume Left	0	15	30
Volume Right	17	0	25
cSH	1700	1418	787
Volume to Capacity	0.09	0.01	0.07
Queue Length 95th (ft)	0	1	6
Control Delay (s)	0.0	1.2	9.9
Lane LOS		A	A
Approach Delay (s)	0.0	1.2	9.9
Approach LOS			A

Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	25.9%	ICU Level of Service	A
Analysis Period (min)	15		

Appendix P: Synchro Reports – 2022

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1212	246	166	925	104	154
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	1249	254	171	954	107	159
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						6
Median type	Raised			Raised		
Median storage veh)	1			1		
Upstream signal (ft)				1068		
pX, platoon unblocked					0.88	
vC, conflicting volume			1249		2069	625
vC1, stage 1 conf vol					1249	
vC2, stage 2 conf vol					819	
vCu, unblocked vol			1249		1937	625
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			69		25	63
cM capacity (veh/h)			553		142	428

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1
Volume Total	625	625	254	171	477	477	266
Volume Left	0	0	0	171	0	0	107
Volume Right	0	0	254	0	0	0	159
cSH	1700	1700	1700	553	1700	1700	352
Volume to Capacity	0.37	0.37	0.15	0.31	0.28	0.28	0.75
Queue Length 95th (ft)	0	0	0	33	0	0	149
Control Delay (s)	0.0	0.0	0.0	14.4	0.0	0.0	44.4
Lane LOS				B			E
Approach Delay (s)	0.0			2.2			44.4
Approach LOS							E

Intersection Summary			
Average Delay	4.9		
Intersection Capacity Utilization	58.5%	ICU Level of Service	B
Analysis Period (min)	15		

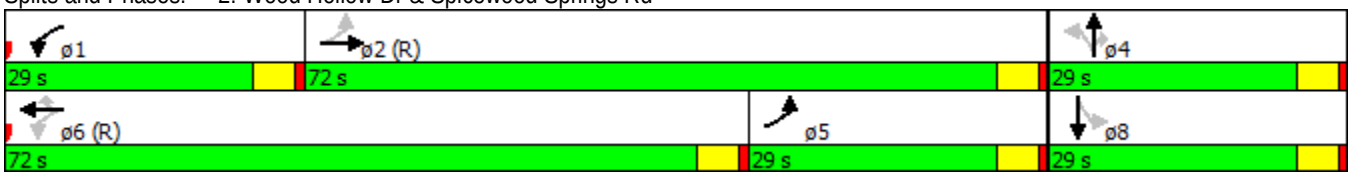
2: Wood Hollow Dr & Spicewood Springs Rd

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	8	1251	378	1037	11	51	5	153	7	0
Lane Group Flow (vph)	8	1414	394	1080	11	0	58	159	0	9
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA
Protected Phases	5	2	1	6			4			8
Permitted Phases	2		6		6	4		4	8	
Detector Phase	5	2	1	6	6	4	4	4	8	8
Switch Phase										
Minimum Initial (s)	6.0	25.0	6.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	15.0	30.0	15.0	11.0	11.0	35.0	35.0	35.0	35.0	35.0
Total Split (s)	29.0	72.0	29.0	72.0	72.0	29.0	29.0	29.0	29.0	29.0
Total Split (%)	22.3%	55.4%	22.3%	55.4%	55.4%	22.3%	22.3%	22.3%	22.3%	22.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Max	None	C-Max	C-Max	Max	Max	Max	None	None
v/c Ratio	0.02	0.54	0.92	0.44	0.01		0.22	0.38		0.02
Control Delay	16.0	21.9	52.0	12.4	0.0		47.8	9.4		0.1
Queue Delay	0.0	0.0	0.0	0.5	0.0		0.0	0.0		0.0
Total Delay	16.0	21.9	52.0	12.8	0.0		47.8	9.4		0.1
Queue Length 50th (ft)	3	281	228	148	0		42	0		0
Queue Length 95th (ft)	12	326	m#368	m398	m0		85	60		0
Internal Link Dist (ft)		988		494			464			203
Turn Bay Length (ft)	130		110		100			100		
Base Capacity (vph)	490	2597	426	2455	1116		259	421		370
Starvation Cap Reductn	0	0	0	826	0		0	0		0
Spillback Cap Reductn	0	0	0	0	0		0	0		0
Storage Cap Reductn	0	0	0	0	0		0	0		0
Reduced v/c Ratio	0.02	0.54	0.92	0.66	0.01		0.22	0.38		0.02

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 55 (42%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Wood Hollow Dr & Spicewood Springs Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	1251	107	378	1037	11	51	5	153	7	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0		5.0	5.0		5.0	
Lane Util. Factor	1.00	0.91		1.00	0.95	1.00		1.00	1.00		1.00	
Frt	1.00	0.99		1.00	1.00	0.85		1.00	0.85		0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.96	1.00		0.96	
Satd. Flow (prot)	1770	5025		1770	3539	1583		1781	1583		1739	
Flt Permitted	0.26	1.00		0.10	1.00	1.00		0.76	1.00		0.86	
Satd. Flow (perm)	493	5025		195	3539	1583		1407	1583		1562	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	8	1303	111	394	1080	11	53	5	159	7	0	2
RTOR Reduction (vph)	0	8	0	0	0	4	0	0	130	0	7	0
Lane Group Flow (vph)	8	1406	0	394	1080	7	0	58	29	0	2	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases	2			6		6	4		4	8		
Actuated Green, G (s)	67.0	67.0		86.2	86.2	86.2		24.0	24.0		24.0	
Effective Green, g (s)	67.0	67.0		86.2	86.2	86.2		24.0	24.0		24.0	
Actuated g/C Ratio	0.52	0.52		0.66	0.66	0.66		0.18	0.18		0.18	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0		5.0	5.0		5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0		2.0	2.0		2.0	
Lane Grp Cap (vph)	301	2589		420	2346	1049		259	292		288	
v/s Ratio Prot	0.00	c0.28		c0.17	0.31							
v/s Ratio Perm	0.01			c0.45		0.00		c0.04	0.02		0.00	
v/c Ratio	0.03	0.54		0.94	0.46	0.01		0.22	0.10		0.01	
Uniform Delay, d1	15.5	21.2		34.7	10.6	7.4		45.1	44.0		43.3	
Progression Factor	1.00	1.00		0.99	1.13	1.00		1.00	1.00		1.00	
Incremental Delay, d2	0.0	0.8		21.2	0.4	0.0		2.0	0.7		0.0	
Delay (s)	15.5	22.0		55.5	12.4	7.4		47.1	44.7		43.3	
Level of Service	B	C		E	B	A		D	D		D	
Approach Delay (s)		22.0			23.8			45.3			43.3	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	24.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	66.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

3: Mopac SBFR & Spicewood Springs Rd

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR	ø1	ø2	ø4	ø5	ø6
Lane Configurations												
Volume (vph)	732	679	642	749	375	1217	678					
Lane Group Flow (vph)	755	700	662	772	348	1294	699					
Turn Type	NA	Perm	Prot	NA	Split	NA	Perm					
Protected Phases	2 1		19 6 7	2 1 19 6	4 5	4 5		1	2	4	5	6
Permitted Phases		2 1					4 5					
Detector Phase	2 1	2 1	19 6 7	2 1 19 6	4 5	4 5	4 5					
Switch Phase												
Minimum Initial (s)								3.0	1.0	1.0	3.0	4.0
Minimum Split (s)								8.0	11.0	11.0	8.0	24.0
Total Split (s)								8.0	24.0	34.0	8.0	30.0
Total Split (%)								6%	18%	26%	6%	23%
Yellow Time (s)								4.0	4.0	4.0	4.0	4.0
All-Red Time (s)								1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag								Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?								Yes	Yes	Yes	Yes	Yes
Recall Mode								None	Max	None	None	C-Max
v/c Ratio	1.03	1.47	0.95	0.45	0.76	1.35	1.07					
Control Delay	108.6	263.0	31.3	2.8	21.8	180.2	52.0					
Queue Delay	0.0	0.0	42.7	0.1	0.0	0.0	0.0					
Total Delay	108.6	263.0	74.1	2.9	21.8	180.2	52.0					
Queue Length 50th (ft)	~367	~727	567	38	232	~772	~559					
Queue Length 95th (ft)	#499	#974	m538	m100	m157	m400	m205					
Internal Link Dist (ft)	494			333		2669						
Turn Bay Length (ft)			50		145							
Base Capacity (vph)	735	475	694	1715	458	962	654					
Starvation Cap Reductn	0	0	95	134	0	0	0					
Spillback Cap Reductn	0	0	0	0	0	0	0					
Storage Cap Reductn	0	0	0	0	0	0	0					
Reduced v/c Ratio	1.03	1.47	1.11	0.49	0.76	1.35	1.07					

Intersection Summary

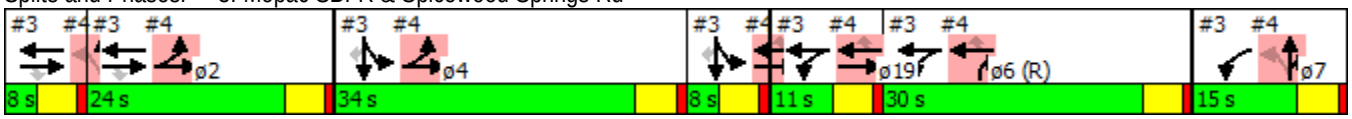
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 8 (6%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 130
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Mopac SBFR & Spicewood Springs Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	732	679	642	749	0	0	0	0	375	1217	678
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0					5.0	5.0	5.0
Lane Util. Factor		0.95	1.00	1.00	0.95					0.91	0.91	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		3539	1583	1770	3539					1610	3385	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (perm)		3539	1583	1770	3539					1610	3385	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	755	700	662	772	0	0	0	0	387	1255	699
RTOR Reduction (vph)	0	0	147	0	0	0	0	0	0	0	0	204
Lane Group Flow (vph)	0	755	553	662	772	0	0	0	0	348	1294	495
Turn Type		NA	Perm	Prot	NA					Split	NA	Perm
Protected Phases		2 1		19 6 7	2 1 19 6					4 5	4 5	
Permitted Phases			2 1									4 5
Actuated Green, G (s)		27.0	27.0	51.0	63.0					37.0	37.0	37.0
Effective Green, g (s)		27.0	27.0	51.0	63.0					37.0	37.0	37.0
Actuated g/C Ratio		0.21	0.21	0.39	0.48					0.28	0.28	0.28
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		735	328	694	1715					458	963	450
v/s Ratio Prot		0.21		c0.37	0.22					0.22	c0.38	
v/s Ratio Perm			c0.35									0.31
v/c Ratio		1.03	1.69	0.95	0.45					0.76	1.34	1.10
Uniform Delay, d1		51.5	51.5	38.4	22.1					42.4	46.5	46.5
Progression Factor		1.45	1.87	0.68	0.21					0.47	0.50	0.56
Incremental Delay, d2		38.0	320.5	3.7	0.0					0.6	155.3	48.8
Delay (s)		112.8	416.7	29.6	4.7					20.6	178.5	74.7
Level of Service		F	F	C	A					C	F	E
Approach Delay (s)		259.0			16.2			0.0			124.0	
Approach LOS		F			B			A			F	

Intersection Summary			
HCM 2000 Control Delay	132.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.51		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	35.0
Intersection Capacity Utilization	119.8%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

4: Mopac NBFR & Anderson Ln

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	ø1	ø2	ø4	ø5	ø6
Lane Configurations												
Volume (vph)	311	796	997	259	394	14	546					
Lane Group Flow (vph)	321	821	1028	267	341	327	315					
Turn Type	Prot	NA	NA	Perm	Perm	NA	custom					
Protected Phases	2 4	2 4 5 19	6 5 19			7 1	7 1 6	1	2	4	5	6
Permitted Phases				6 5 19	7 1							
Detector Phase	2 4	2 4 5 19	6 5 19	6 5 19	7 1	7 1	7 1 6					
Switch Phase												
Minimum Initial (s)								3.0	1.0	1.0	3.0	4.0
Minimum Split (s)								8.0	11.0	11.0	8.0	24.0
Total Split (s)								8.0	24.0	34.0	8.0	30.0
Total Split (%)								6%	18%	26%	6%	23%
Yellow Time (s)								4.0	4.0	4.0	4.0	4.0
All-Red Time (s)								1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag								Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?								Yes	Yes	Yes	Yes	Yes
Recall Mode								None	Max	None	None	C-Max
v/c Ratio	0.45	0.42	0.86	0.38	1.47	1.12	0.48					
Control Delay	9.0	0.2	48.6	5.1	259.4	111.4	3.0					
Queue Delay	2.6	1.4	12.5	0.0	0.0	0.2	0.0					
Total Delay	11.6	1.6	61.1	5.1	259.4	111.6	3.0					
Queue Length 50th (ft)	27	0	424	0	~421	~265	6					
Queue Length 95th (ft)	m45	m0	514	59	#627	#480	13					
Internal Link Dist (ft)		333	702			1795						
Turn Bay Length (ft)	50			360	280							
Base Capacity (vph)	721	1960	1197	712	232	292	653					
Starvation Cap Reductn	279	890	0	0	0	0	0					
Spillback Cap Reductn	0	0	168	0	0	4	0					
Storage Cap Reductn	0	0	0	0	0	0	0					
Reduced v/c Ratio	0.73	0.77	1.00	0.38	1.47	1.14	0.48					

Intersection Summary

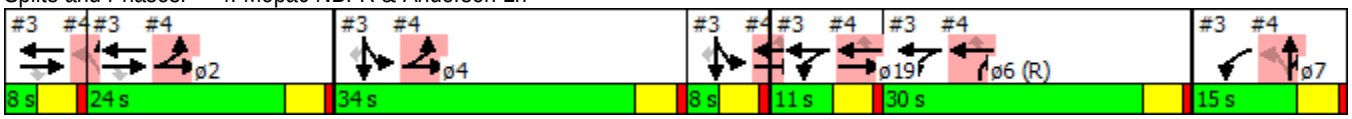
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 8 (6%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 130
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Mopac NBFR & Anderson Ln



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	311	796	0	0	997	259	394	14	546	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0	5.0			
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.91	0.95			
Frt	1.00	1.00			1.00	0.85	1.00	0.89	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.99	1.00			
Satd. Flow (prot)	1770	3539			3539	1583	1681	1487	1504			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.99	1.00			
Satd. Flow (perm)	1770	3539			3539	1583	1681	1487	1504			
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	321	821	0	0	1028	267	406	14	563	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	177	0	87	98	0	0	0
Lane Group Flow (vph)	321	821	0	0	1028	90	341	240	217	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	custom			
Protected Phases	2 4	2 4 5			6 5 19			7 1	7 1 6			
Permitted Phases						6 5 19	7 1					
Actuated Green, G (s)	53.0	72.0			44.0	44.0	18.0	18.0	48.0			
Effective Green, g (s)	53.0	72.0			44.0	44.0	18.0	18.0	48.0			
Actuated g/C Ratio	0.41	0.55			0.34	0.34	0.14	0.14	0.37			
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	721	1960			1197	535	232	205	555			
v/s Ratio Prot	c0.18	c0.23			c0.29				0.14			
v/s Ratio Perm						0.06	c0.20	0.16				
v/c Ratio	0.45	0.42			0.86	0.17	1.47	1.17	0.39			
Uniform Delay, d1	27.9	16.8			40.1	30.2	56.0	56.0	30.2			
Progression Factor	0.30	0.00			1.00	1.00	0.57	0.62	0.04			
Incremental Delay, d2	0.0	0.0			6.1	0.1	231.5	113.7	0.2			
Delay (s)	8.3	0.0			46.2	30.2	263.2	148.1	1.4			
Level of Service	A	A			D	C	F	F	A			
Approach Delay (s)		2.3			42.9			141.0			0.0	
Approach LOS		A			D			F			A	

Intersection Summary			
HCM 2000 Control Delay	57.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	35.0
Intersection Capacity Utilization	119.8%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	7	16	232	19	82	303
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	8	19	276	23	98	361
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	843	288			299	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	843	288			299	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	97	97			92	
cM capacity (veh/h)	308	752			1262	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	27	299	458
Volume Left	8	0	98
Volume Right	19	23	0
cSH	523	1700	1262
Volume to Capacity	0.05	0.18	0.08
Queue Length 95th (ft)	4	0	6
Control Delay (s)	12.3	0.0	2.3
Lane LOS	B		A
Approach Delay (s)	12.3	0.0	2.3
Approach LOS	B		

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	47.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	9	16	5	1	10	20	28	196	37	106	200	137
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	10	18	6	1	11	23	32	223	42	120	227	156
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											544	
pX, platoon unblocked	0.91	0.91	0.91	0.91	0.91		0.91					
vC, conflicting volume	882	874	305	868	931	244	383			265		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	818	810	181	803	872	244	267			265		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	96	93	99	100	95	97	97			91		
cM capacity (veh/h)	228	251	780	234	231	795	1175			1299		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	34	35	297	503
Volume Left	10	1	32	120
Volume Right	6	23	42	156
cSH	274	426	1175	1299
Volume to Capacity	0.12	0.08	0.03	0.09
Queue Length 95th (ft)	11	7	2	8
Control Delay (s)	20.0	14.2	1.1	2.7
Lane LOS	C	B	A	A
Approach Delay (s)	20.0	14.2	1.1	2.7
Approach LOS	C	B		

Intersection Summary			
Average Delay	3.3		
Intersection Capacity Utilization	54.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	21	0	0	2998	102
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	22	0	0	3156	107
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					1035	
pX, platoon unblocked	0.78	0.78	0.78			
vC, conflicting volume	3209	1106	3263			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2847	153	2916			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	97	100			
cM capacity (veh/h)	11	676	95			

Direction, Lane #	EB 1	SB 1	SB 2	SB 3
Volume Total	22	1262	1262	739
Volume Left	0	0	0	0
Volume Right	22	0	0	107
cSH	676	1700	1700	1700
Volume to Capacity	0.03	0.74	0.74	0.43
Queue Length 95th (ft)	3	0	0	0
Control Delay (s)	10.5	0.0	0.0	0.0
Lane LOS	B			
Approach Delay (s)	10.5	0.0		
Approach LOS	B			

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	70.2%	ICU Level of Service	C
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	20
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	41	168	143	0	84	65	8	0	53	133	36
Peak Hour Factor	0.92	0.81	0.81	0.81	0.92	0.81	0.81	0.81	0.92	0.81	0.81	0.81
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	51	207	177	0	104	80	10	0	65	164	44
Number of Lanes	0	0	1	1	0	0	1	1	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	2
HCM Control Delay	16.3	16.3	17.7
HCM LOS	C	C	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	24%	20%	0%	56%	0%	5%
Vol Thru, %	60%	80%	0%	44%	0%	86%
Vol Right, %	16%	0%	100%	0%	100%	9%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	222	209	143	149	8	330
LT Vol	53	41	0	84	0	17
Through Vol	133	168	0	65	0	284
RT Vol	36	0	143	0	8	29
Lane Flow Rate	274	258	177	184	10	407
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.53	0.536	0.326	0.414	0.019	0.75
Departure Headway (Hd)	6.966	7.48	6.657	8.107	7.091	6.629
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	515	480	537	441	501	542
Service Time	5.05	5.262	4.439	5.9	4.883	4.7
HCM Lane V/C Ratio	0.532	0.537	0.33	0.417	0.02	0.751
HCM Control Delay	17.7	18.7	12.7	16.6	10	27.1
HCM Lane LOS	C	C	B	C	A	D
HCM 95th-tile Q	3.1	3.1	1.4	2	0.1	6.5

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	17	284	29
Peak Hour Factor	0.92	0.81	0.81	0.81
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	21	351	36
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	27.1
HCM LOS	D

Lane

Intersection	
Intersection Delay, s/veh	13.3
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	34	139	179	0	60	132	34	0	25	133	48
Peak Hour Factor	0.92	0.90	0.90	0.90	0.92	0.90	0.90	0.90	0.92	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	38	154	199	0	67	147	38	0	28	148	53
Number of Lanes	0	0	1	1	0	0	1	1	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	2
HCM Control Delay	12.3	13.8	13.3
HCM LOS	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	20%	0%	31%	0%	100%	0%
Vol Thru, %	0%	73%	80%	0%	69%	0%	0%	78%
Vol Right, %	0%	27%	0%	100%	0%	100%	0%	22%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	25	181	173	179	192	34	23	209
LT Vol	25	0	34	0	60	0	23	0
Through Vol	0	133	139	0	132	0	0	164
RT Vol	0	48	0	179	0	34	0	45
Lane Flow Rate	28	201	192	199	213	38	26	232
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.058	0.381	0.356	0.324	0.416	0.064	0.053	0.431
Departure Headway (Hd)	7.514	6.814	6.793	5.979	7.018	6.144	7.449	6.805
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	479	531	532	605	514	585	482	532
Service Time	5.228	4.527	4.493	3.679	4.732	3.858	5.17	4.505
HCM Lane V/C Ratio	0.058	0.379	0.361	0.329	0.414	0.065	0.054	0.436
HCM Control Delay	10.7	13.7	13.2	11.5	14.6	9.3	10.6	14.6
HCM Lane LOS	B	B	B	B	B	A	B	B
HCM 95th-tile Q	0.2	1.8	1.6	1.4	2	0.2	0.2	2.1

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	23	164	45
Peak Hour Factor	0.92	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	26	182	50
Number of Lanes	0	1	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	14.2
HCM LOS	B

Lane

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	220	0	0	2842	177
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	0	229	0	0	2960	184
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	3053	1079	3145			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	3053	1079	3145			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	0	100			
cM capacity (veh/h)	10	214	99			

Direction, Lane #	EB 1	SB 1	SB 2	SB 3
Volume Total	229	1184	1184	776
Volume Left	0	0	0	0
Volume Right	229	0	0	184
cSH	214	1700	1700	1700
Volume to Capacity	1.07	0.70	0.70	0.46
Queue Length 95th (ft)	257	0	0	0
Control Delay (s)	129.5	0.0	0.0	0.0
Lane LOS	F			
Approach Delay (s)	129.5	0.0		
Approach LOS	F			

Intersection Summary			
Average Delay	8.8		
Intersection Capacity Utilization	79.1%	ICU Level of Service	D
Analysis Period (min)	15		

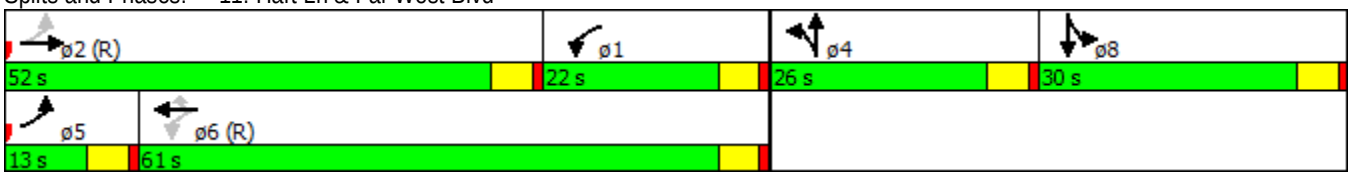
11: Hart Ln & Far West Blvd

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBT
Lane Configurations							
Volume (vph)	59	717	214	287	77	116	267
Lane Group Flow (vph)	71	976	258	346	93	408	631
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	NA
Protected Phases	5	2	1	6		4	8
Permitted Phases	2		6		6		
Detector Phase	5	2	1	6	6	4	8
Switch Phase							
Minimum Initial (s)	4.0	2.0	4.0	2.0	2.0	2.0	2.0
Minimum Split (s)	9.0	24.0	9.0	24.0	24.0	33.0	33.0
Total Split (s)	13.0	52.0	22.0	61.0	61.0	26.0	30.0
Total Split (%)	10.0%	40.0%	16.9%	46.9%	46.9%	20.0%	23.1%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lead	Lag	Lag	Lag		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		
Recall Mode	None	C-Max	None	C-Max	C-Max	None	None
v/c Ratio	0.20	0.76	0.77	0.21	0.13	0.84	0.94
Control Delay	29.1	40.7	75.2	40.0	40.9	70.3	74.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.1	40.7	75.2	40.0	40.9	70.3	74.4
Queue Length 50th (ft)	40	382	173	116	60	176	278
Queue Length 95th (ft)	69	414	#235	150	98	214	#344
Internal Link Dist (ft)		1703		1174		695	1553
Turn Bay Length (ft)	130		100		490		
Base Capacity (vph)	361	1289	337	1635	731	524	673
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.76	0.77	0.21	0.13	0.78	0.94

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 100 (77%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green
Natural Cycle: 120
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 11: Hart Ln & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	59	717	93	214	287	77	53	116	169	223	267	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0		5.0			5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		0.95			0.95	
Frt	1.00	0.98		1.00	1.00	0.85		0.93			0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.99			0.98	
Satd. Flow (prot)	1770	3478		1770	3539	1583		3248			3432	
Flt Permitted	0.44	1.00		0.17	1.00	1.00		0.99			0.98	
Satd. Flow (perm)	817	3478		321	3539	1583		3248			3432	
Peak-hour factor, PHF	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Adj. Flow (vph)	71	864	112	258	346	93	64	140	204	269	322	40
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	71	976	0	258	346	93	0	408	0	0	631	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Split	NA		Split	NA	
Protected Phases	5	2		1	6		4	4		8	8	
Permitted Phases	2			6		6						
Actuated Green, G (s)	47.2	47.2		59.1	59.1	59.1		19.3			25.5	
Effective Green, g (s)	47.2	47.2		59.1	59.1	59.1		19.3			25.5	
Actuated g/C Ratio	0.36	0.36		0.45	0.45	0.45		0.15			0.20	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0		5.0			5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0		2.0			2.0	
Lane Grp Cap (vph)	341	1262		346	1608	719		482			673	
v/s Ratio Prot	0.01	c0.28		c0.10	0.10			c0.13			c0.18	
v/s Ratio Perm	0.07			0.24		0.06						
v/c Ratio	0.21	0.77		0.75	0.22	0.13		0.85			0.94	
Uniform Delay, d1	27.7	36.7		40.4	21.4	20.5		53.9			51.5	
Progression Factor	1.00	1.00		1.42	1.80	1.84		1.00			1.00	
Incremental Delay, d2	0.1	4.7		7.1	0.3	0.4		12.4			20.4	
Delay (s)	27.8	41.3		64.3	38.9	38.2		66.3			71.8	
Level of Service	C	D		E	D	D		E			E	
Approach Delay (s)		40.4			48.2			66.3			71.8	
Approach LOS		D			D			E			E	

Intersection Summary			
HCM 2000 Control Delay	53.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	76.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

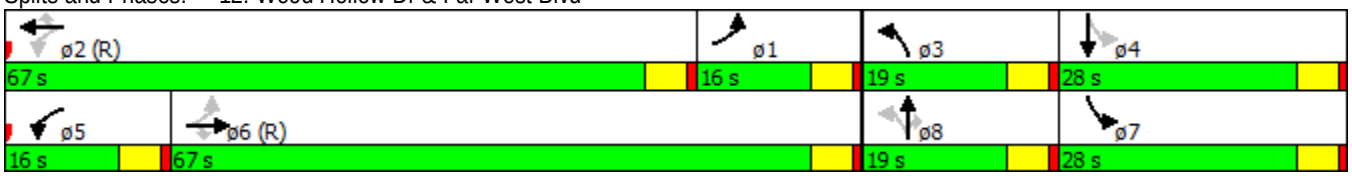
12: Wood Hollow Dr & Far West Blvd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Volume (vph)	80	1099	50	122	596	98	26	88	305	278	125
Lane Group Flow (vph)	85	1169	53	130	634	104	28	94	324	296	194
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA
Protected Phases	1	6		5	2		3	8		7	4
Permitted Phases	6		6	2		2	8		8	4	
Detector Phase	1	6	6	5	2	2	3	8	8	7	4
Switch Phase											
Minimum Initial (s)	4.0	2.0	2.0	4.0	2.0	2.0	4.0	2.0	2.0	4.0	2.0
Minimum Split (s)	9.0	11.0	11.0	9.0	11.0	11.0	9.0	11.0	11.0	9.0	11.0
Total Split (s)	16.0	67.0	67.0	16.0	67.0	67.0	19.0	19.0	19.0	28.0	28.0
Total Split (%)	12.3%	51.5%	51.5%	12.3%	51.5%	51.5%	14.6%	14.6%	14.6%	21.5%	21.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None
v/c Ratio	0.18	0.67	0.06	0.70	0.37	0.13	0.21	0.48	0.97	0.71	0.41
Control Delay	24.5	34.5	2.7	43.5	29.0	10.1	56.7	63.5	67.1	56.0	41.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.5	34.5	2.7	43.5	29.0	10.1	56.7	63.5	67.1	56.0	41.4
Queue Length 50th (ft)	55	472	4	66	176	17	22	76	122	231	130
Queue Length 95th (ft)	m65	m531	m4	m86	m184	m25	53	134	#313	#385	213
Internal Link Dist (ft)		1174			673			686			1879
Turn Bay Length (ft)	245		610	125		700	75		75		
Base Capacity (vph)	463	1748	833	207	1704	816	190	200	337	422	471
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.67	0.06	0.63	0.37	0.13	0.15	0.47	0.96	0.70	0.41

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 10 (8%), Referenced to phase 2:WBTL and 6:EBTL, Start of 1st Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 12: Wood Hollow Dr & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	80	1099	50	122	596	98	26	88	305	278	125	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1775	
Flt Permitted	0.41	1.00	1.00	0.08	1.00	1.00	0.44	1.00	1.00	0.70	1.00	
Satd. Flow (perm)	766	3539	1583	145	3539	1583	819	1863	1583	1297	1775	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	85	1169	53	130	634	104	28	94	324	296	133	61
RTOR Reduction (vph)	0	0	28	0	0	55	0	0	167	0	11	0
Lane Group Flow (vph)	85	1169	25	130	634	49	28	94	157	296	183	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2	8		8	4		
Actuated Green, G (s)	62.3	62.3	62.3	60.7	60.7	60.7	13.7	13.7	13.7	33.7	33.7	
Effective Green, g (s)	62.3	62.3	62.3	60.7	60.7	60.7	13.7	13.7	13.7	33.7	33.7	
Actuated g/C Ratio	0.48	0.48	0.48	0.47	0.47	0.47	0.11	0.11	0.11	0.26	0.26	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	452	1695	758	185	1652	739	119	196	166	425	460	
v/s Ratio Prot	0.02	c0.33		c0.05	0.18		0.01	0.05		c0.13	0.10	
v/s Ratio Perm	0.07		0.02	c0.28		0.03	0.02		c0.10	0.05		
v/c Ratio	0.19	0.69	0.03	0.70	0.38	0.07	0.24	0.48	0.94	0.70	0.40	
Uniform Delay, d1	19.8	26.3	17.9	26.6	22.5	19.1	53.0	54.8	57.8	42.4	39.8	
Progression Factor	1.19	1.30	38.60	1.36	1.33	2.89	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.0	1.4	0.0	5.0	0.3	0.1	0.4	0.7	52.7	4.0	0.2	
Delay (s)	23.6	35.6	691.7	41.2	30.3	55.2	53.3	55.5	110.5	46.4	40.0	
Level of Service	C	D	F	D	C	E	D	E	F	D	D	
Approach Delay (s)		61.5			34.9			95.3			43.8	
Approach LOS		E			C			F			D	

Intersection Summary			
HCM 2000 Control Delay	56.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	77.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

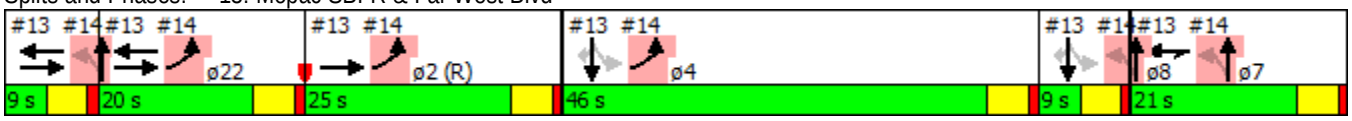
13: Mopac SBFR & Far West Blvd

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR	ø1	ø2	ø4	ø8	ø22
Lane Configurations											
Volume (vph)	837	474	19	548	550	928					
Lane Group Flow (vph)	863	489	20	565	711	957					
Turn Type	NA	Free	Prot	NA	NA	Perm					
Protected Phases	1 22 2		7	1 22 7	4 8		1	2	4	8	22
Permitted Phases		Free				4 8					
Detector Phase	1 22 2		7	1 22 7	4 8	4 8					
Switch Phase											
Minimum Initial (s)			4.0				4.0	4.0	4.0	4.0	4.0
Minimum Split (s)			20.0				9.0	24.0	24.0	9.0	20.0
Total Split (s)			21.0				9.0	25.0	46.0	9.0	20.0
Total Split (%)			16.2%				7%	19%	35%	7%	15%
Yellow Time (s)			4.0				4.0	4.0	4.0	4.0	4.0
All-Red Time (s)			1.0				1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)			0.0								
Total Lost Time (s)			5.0								
Lead/Lag							Lead		Lead	Lag	Lag
Lead-Lag Optimize?							Yes		Yes	Yes	Yes
Recall Mode			None				None	C-Max	None	None	None
v/c Ratio	0.65	0.31	0.09	0.46	0.53	1.06					
Control Delay	31.9	0.3	41.8	1.3	25.0	50.4					
Queue Delay	0.2	0.0	0.0	0.8	0.0	0.0					
Total Delay	32.1	0.3	41.8	2.1	25.0	50.4					
Queue Length 50th (ft)	353	0	5	0	192	~630					
Queue Length 95th (ft)	m416	m0	m13	0	m167	m220					
Internal Link Dist (ft)	432			324	532						
Turn Bay Length (ft)		490									
Base Capacity (vph)	1333	1583	217	1225	1347	902					
Starvation Cap Reductn	0	0	0	356	0	0					
Spillback Cap Reductn	82	0	0	0	0	0					
Storage Cap Reductn	0	0	0	0	0	0					
Reduced v/c Ratio	0.69	0.31	0.09	0.65	0.53	1.06					

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 106 (82%), Referenced to phase 2:EBT, Start of 1st Green
Natural Cycle: 130
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Mopac SBFR & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	837	474	19	548	0	0	0	0	140	550	928
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	4.0	5.0	5.0						5.0	5.0
Lane Util. Factor		0.95	1.00	1.00	0.95						0.95	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (prot)		3539	1583	1770	3539						3504	1583
Flt Permitted		1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (perm)		3539	1583	1770	3539						3504	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	863	489	20	565	0	0	0	0	144	567	957
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	294
Lane Group Flow (vph)	0	863	489	20	565	0	0	0	0	0	711	663
Turn Type		NA	Free	Prot	NA					Perm	NA	Perm
Protected Phases		1 22 2		7	1 22 7						4 8	
Permitted Phases			Free							4 8		4 8
Actuated Green, G (s)		49.0	130.0	16.0	45.0						50.0	50.0
Effective Green, g (s)		49.0	130.0	16.0	45.0						50.0	50.0
Actuated g/C Ratio		0.38	1.00	0.12	0.35						0.38	0.38
Clearance Time (s)				5.0								
Vehicle Extension (s)				2.0								
Lane Grp Cap (vph)		1333	1583	217	1225						1347	608
v/s Ratio Prot		c0.24		0.01	c0.16							
v/s Ratio Perm			0.31								0.20	c0.42
v/c Ratio		0.65	0.31	0.09	0.46						0.53	1.09
Uniform Delay, d1		33.4	0.0	50.6	33.1						30.9	40.0
Progression Factor		0.90	1.00	0.81	0.01						0.79	0.60
Incremental Delay, d2		0.5	0.3	0.0	0.1						0.1	50.6
Delay (s)		30.5	0.3	40.8	0.5						24.4	74.5
Level of Service		C	A	D	A						C	E
Approach Delay (s)		19.6			1.9			0.0			53.1	
Approach LOS		B			A			A			D	

Intersection Summary			
HCM 2000 Control Delay	32.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	95.7%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

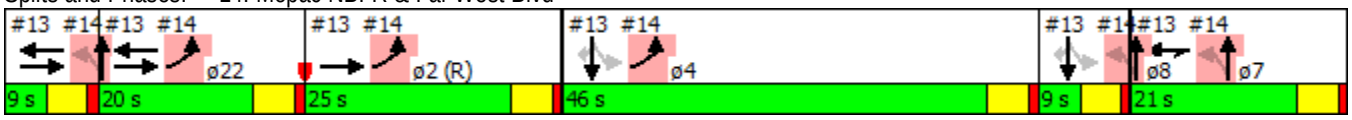
14: Mopac NBFR & Far West Blvd

Lane Group	EBL	NBL	NBT	ø1	ø2	ø4	ø7	ø8	ø22
Lane Configurations									
Volume (vph)	993	568	2						
Lane Group Flow (vph)	1034	296	298						
Turn Type	Prot	Perm	NA						
Protected Phases	22 2 4		7 1 8	1	2	4	7	8	22
Permitted Phases		7 1 8							
Detector Phase	22 2 4	7 1 8	7 1 8						
Switch Phase									
Minimum Initial (s)				4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)				9.0	24.0	24.0	20.0	9.0	20.0
Total Split (s)				9.0	25.0	46.0	21.0	9.0	20.0
Total Split (%)				7%	19%	35%	16%	7%	15%
Yellow Time (s)				4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)				1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)									
Total Lost Time (s)									
Lead/Lag				Lead		Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes		Yes	Yes
Recall Mode				None	C-Max	None	None	None	None
v/c Ratio	0.46	0.67	0.68						
Control Delay	3.6	51.9	52.0						
Queue Delay	0.7	0.0	0.0						
Total Delay	4.3	51.9	52.0						
Queue Length 50th (ft)	12	236	237						
Queue Length 95th (ft)	14	346	347						
Internal Link Dist (ft)	324		322						
Turn Bay Length (ft)									
Base Capacity (vph)	2271	439	440						
Starvation Cap Reductn	818	0	0						
Spillback Cap Reductn	0	0	0						
Storage Cap Reductn	0	0	0						
Reduced v/c Ratio	0.71	0.67	0.68						

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 106 (82%), Referenced to phase 2:EBT, Start of 1st Green
Natural Cycle: 130
Control Type: Actuated-Coordinated

Splits and Phases: 14: Mopac NBFR & Far West Blvd



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	993	0	568	2	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0		
Lane Util. Factor	0.97		0.95	0.95		
Frt	1.00		1.00	1.00		
Flt Protected	0.95		0.95	0.95		
Satd. Flow (prot)	3433		1681	1686		
Flt Permitted	0.95		0.95	0.95		
Satd. Flow (perm)	3433		1681	1686		
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	1034	0	592	2	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1034	0	296	298	0	0
Turn Type	Prot		Perm	NA		
Protected Phases	22 2 4			7 1 8		
Permitted Phases			7 1 8			
Actuated Green, G (s)	86.0		34.0	34.0		
Effective Green, g (s)	86.0		34.0	34.0		
Actuated g/C Ratio	0.66		0.26	0.26		
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)	2271		439	440		
v/s Ratio Prot	c0.30					
v/s Ratio Perm			0.18	0.18		
v/c Ratio	0.46		0.67	0.68		
Uniform Delay, d1	10.7		43.0	43.1		
Progression Factor	0.28		1.00	1.00		
Incremental Delay, d2	0.0		3.2	3.2		
Delay (s)	3.0		46.2	46.3		
Level of Service	A		D	D		
Approach Delay (s)	3.0			46.3	0.0	
Approach LOS	A			D	A	

Intersection Summary			
HCM 2000 Control Delay	18.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	108.9%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

20: Loop 1 SBFR & Steck Avenue

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	ø1	ø2	ø4	ø5	ø6	ø7
Lane Configurations												
Volume (vph)	556	142	155	364	990	1920						
Lane Group Flow (vph)	591	151	165	387	948	2474						
Turn Type	NA	Perm	Prot	NA	Split	NA						
Protected Phases	2 1		6 7	2 1 6 7	4 5	4 5	1	2	4	5	6	7
Permitted Phases		2 1										
Detector Phase	2 1	2 1	6 7	2 1 6 7	4 5	4 5						
Switch Phase												
Minimum Initial (s)							2.0	1.0	1.0	3.0	4.0	4.0
Minimum Split (s)							7.0	11.0	11.0	8.0	15.0	9.0
Total Split (s)							7.0	20.0	63.0	8.0	15.0	17.0
Total Split (%)							5%	15%	48%	6%	12%	13%
Yellow Time (s)							4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)							1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag							Lead	Lag	Lead	Lag		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode							None	Max	None	None	C-Max	None
v/c Ratio	0.99	0.39	0.45	0.26	1.16	1.46						
Control Delay	87.8	11.8	22.0	0.3	116.5	239.1						
Queue Delay	28.2	0.0	0.0	0.0	0.0	0.0						
Total Delay	115.9	11.8	22.0	0.3	116.5	239.1						
Queue Length 50th (ft)	264	6	27	0	~1037	~1573						
Queue Length 95th (ft)	#388	66	m46	m0	#1318	#1710						
Internal Link Dist (ft)	737			327		333						
Turn Bay Length (ft)		100	80									
Base Capacity (vph)	598	386	367	1470	817	1692						
Starvation Cap Reductn	0	0	0	0	0	0						
Spillback Cap Reductn	50	0	0	0	0	0						
Storage Cap Reductn	0	0	0	0	0	0						
Reduced v/c Ratio	1.08	0.39	0.45	0.26	1.16	1.46						

Intersection Summary

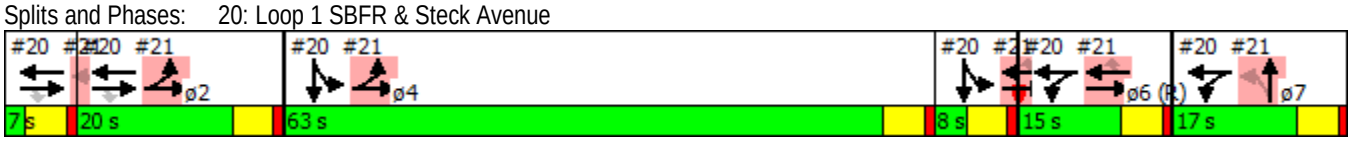
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 90 (69%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 20: Loop 1 SBFR & Steck Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	556	142	155	364	0	0	0	0	990	1920	306
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0					5.0	5.0	
Lane Util. Factor		0.95	1.00	1.00	0.95					0.91	0.91	
Frt		1.00	0.85	1.00	1.00					1.00	0.98	
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	3539					1610	3316	
Flt Permitted		1.00	1.00	0.95	1.00					0.95	1.00	
Satd. Flow (perm)		3539	1583	1770	3539					1610	3316	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	591	151	165	387	0	0	0	0	1053	2043	326
RTOR Reduction (vph)	0	0	119	0	0	0	0	0	0	0	9	0
Lane Group Flow (vph)	0	591	32	165	387	0	0	0	0	948	2465	0
Turn Type		NA	Perm	Prot	NA					Split	NA	
Protected Phases		2 1		6 7	2 1 6 7					4 5	4 5	
Permitted Phases			2 1									
Actuated Green, G (s)		22.0	22.0	27.0	54.0					66.0	66.0	
Effective Green, g (s)		22.0	22.0	27.0	54.0					66.0	66.0	
Actuated g/C Ratio		0.17	0.17	0.21	0.42					0.51	0.51	
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		598	267	367	1470					817	1683	
v/s Ratio Prot		c0.17		c0.09	0.11					0.59	c0.74	
v/s Ratio Perm			0.02									
v/c Ratio		0.99	0.12	0.45	0.26					1.16	1.46	
Uniform Delay, d1		53.9	45.8	45.0	24.9					32.0	32.0	
Progression Factor		1.00	1.00	0.42	0.00					1.00	1.00	
Incremental Delay, d2		33.4	0.1	0.2	0.0					85.6	212.4	
Delay (s)		87.3	45.9	19.1	0.0					117.6	244.4	
Level of Service		F	D	B	A					F	F	
Approach Delay (s)		78.8			5.7			0.0			209.3	
Approach LOS		E			A			A			F	

Intersection Summary			
HCM 2000 Control Delay	164.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.30		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	137.8%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

21: Loop 1 NBFR & Steck Avenue

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	ø1	ø2	ø4	ø5	ø6	ø7
Lane Configurations												
Volume (vph)	720	777	393	266	216	563						
Lane Group Flow (vph)	735	793	401	271	220	771						
Turn Type	Prot	NA	NA	Perm	Perm	NA						
Protected Phases	2 4	2 4 5 6	6 5			7 1	1	2	4	5	6	7
Permitted Phases				6 5	7 1							
Detector Phase	2 4	2 4 5 6	6 5	6 5	7 1	7 1						
Switch Phase												
Minimum Initial (s)							2.0	1.0	1.0	3.0	4.0	4.0
Minimum Split (s)							7.0	11.0	11.0	8.0	15.0	9.0
Total Split (s)							7.0	20.0	63.0	8.0	15.0	17.0
Total Split (%)							5%	15%	48%	6%	12%	13%
Yellow Time (s)							4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)							1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag							Lead	Lag	Lead	Lag		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode							None	Max	None	None	C-Max	None
v/c Ratio	0.69	0.29	0.82	0.72	0.44	2.85						
Control Delay	10.2	0.0	68.8	29.2	46.2	859.5						
Queue Delay	51.5	1.0	0.0	0.0	0.0	0.0						
Total Delay	61.7	1.0	68.8	29.2	46.2	859.5						
Queue Length 50th (ft)	255	0	175	67	78	~1113						
Queue Length 95th (ft)	m126	m0	#250	171	m115	m#1355						
Internal Link Dist (ft)		327	978			2452						
Turn Bay Length (ft)	80			170	110							
Base Capacity (vph)	1062	2749	490	378	501	271						
Starvation Cap Reductn	398	1598	0	0	0	0						
Spillback Cap Reductn	0	0	0	0	0	0						
Storage Cap Reductn	0	0	0	0	0	0						
Reduced v/c Ratio	1.11	0.69	0.82	0.72	0.44	2.85						

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 90 (69%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 21: Loop 1 NBFR & Steck Avenue

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	720	777	0	0	393	266	216	563	193	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0				
Lane Util. Factor	1.00	0.95			0.95	1.00	0.97	1.00				
Frt	1.00	1.00			1.00	0.85	1.00	0.96				
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (prot)	1770	3539			3539	1583	3433	1791				
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (perm)	1770	3539			3539	1583	3433	1791				
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	735	793	0	0	401	271	220	574	197	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	159	0	9	0	0	0	0
Lane Group Flow (vph)	735	793	0	0	401	112	220	762	0	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA				
Protected Phases	2 4	2 4 5 6			6 5			7 1				
Permitted Phases						6 5	7 1					
Actuated Green, G (s)	78.0	101.0			18.0	18.0	19.0	19.0				
Effective Green, g (s)	78.0	101.0			18.0	18.0	19.0	19.0				
Actuated g/C Ratio	0.60	0.78			0.14	0.14	0.15	0.15				
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	1062	2749			490	219	501	261				
v/s Ratio Prot	c0.42	0.22			c0.11			c0.43				
v/s Ratio Perm						0.07	0.06					
v/c Ratio	0.69	0.29			0.82	0.51	0.44	2.92				
Uniform Delay, d1	17.8	4.2			54.4	51.9	50.6	55.5				
Progression Factor	0.54	0.00			1.00	1.00	0.85	0.86				
Incremental Delay, d2	0.1	0.0			9.7	0.7	0.2	873.3				
Delay (s)	9.7	0.0			64.1	52.6	43.4	920.9				
Level of Service	A	A			E	D	D	F				
Approach Delay (s)		4.7			59.5			726.1			0.0	
Approach LOS		A			E			F			A	

Intersection Summary			
HCM 2000 Control Delay	240.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.24		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	137.8%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	874	122	127	1168	215	230
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	971	136	141	1298	239	256
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						6
Median type	Raised			Raised		
Median storage veh)	1			1		
Upstream signal (ft)				1068		
pX, platoon unblocked					0.83	
vC, conflicting volume			971		1902	486
vC1, stage 1 conf vol					971	
vC2, stage 2 conf vol					931	
vCu, unblocked vol			971		1683	486
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			80		0	52
cM capacity (veh/h)			706		185	528

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1
Volume Total	486	486	136	141	649	649	494
Volume Left	0	0	0	141	0	0	239
Volume Right	0	0	136	0	0	0	256
cSH	1700	1700	1700	706	1700	1700	321
Volume to Capacity	0.29	0.29	0.08	0.20	0.38	0.38	1.54
Queue Length 95th (ft)	0	0	0	19	0	0	706
Control Delay (s)	0.0	0.0	0.0	11.4	0.0	0.0	288.1
Lane LOS				B			F
Approach Delay (s)	0.0			1.1			288.1
Approach LOS							F

Intersection Summary			
Average Delay	47.4		
Intersection Capacity Utilization	53.1%	ICU Level of Service	A
Analysis Period (min)	15		

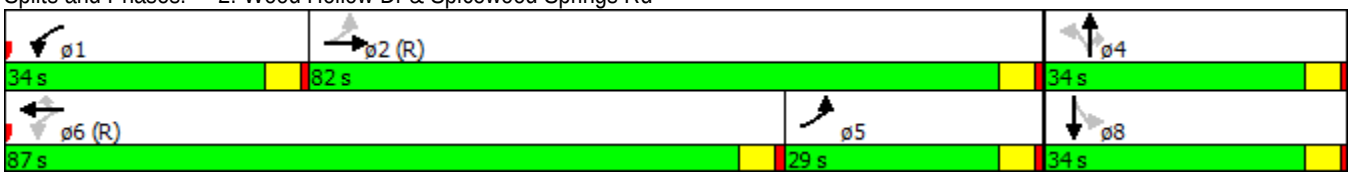
2: Wood Hollow Dr & Spicewood Springs Rd

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	6	1072	107	1092	1	187	8	284	1	5
Lane Group Flow (vph)	7	1248	122	1241	1	0	221	323	0	25
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA
Protected Phases	5	2	1	6			4			8
Permitted Phases	2		6		6	4		4	8	
Detector Phase	5	2	1	6	6	4	4	4	8	8
Switch Phase										
Minimum Initial (s)	6.0	25.0	6.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	15.0	30.0	15.0	11.0	11.0	35.0	35.0	35.0	35.0	35.0
Total Split (s)	29.0	82.0	34.0	87.0	87.0	34.0	34.0	34.0	34.0	34.0
Total Split (%)	19.3%	54.7%	22.7%	58.0%	58.0%	22.7%	22.7%	22.7%	22.7%	22.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Max	None	C-Max	C-Max	Max	Max	Max	None	None
v/c Ratio	0.02	0.38	0.40	0.50	0.00		0.86	0.67		0.07
Control Delay	10.5	12.6	12.4	10.8	0.0		88.0	25.7		25.0
Queue Delay	0.0	0.1	0.0	0.3	0.0		0.0	6.6		0.0
Total Delay	10.5	12.6	12.4	11.1	0.0		88.0	32.3		25.0
Queue Length 50th (ft)	2	190	25	155	0		212	95		6
Queue Length 95th (ft)	9	236	m61	342	m0		#347	198		32
Internal Link Dist (ft)		988		494			464			203
Turn Bay Length (ft)	130		110		100			100		
Base Capacity (vph)	468	3305	504	2481	1125		257	481		337
Starvation Cap Reductn	0	0	0	535	0		0	0		0
Spillback Cap Reductn	0	571	0	0	0		0	112		0
Storage Cap Reductn	0	0	0	0	0		0	0		0
Reduced v/c Ratio	0.01	0.46	0.24	0.64	0.00		0.86	0.88		0.07

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 55 (37%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Wood Hollow Dr & Spicewood Springs Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	1072	26	107	1092	1	187	8	284	1	5	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0		5.0	5.0		5.0	
Lane Util. Factor	1.00	0.91		1.00	0.95	1.00		1.00	1.00		1.00	
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85		0.90	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.95	1.00		1.00	
Satd. Flow (prot)	1770	5067		1770	3539	1583		1777	1583		1678	
Flt Permitted	0.20	1.00		0.17	1.00	1.00		0.72	1.00		0.99	
Satd. Flow (perm)	376	5067		319	3539	1583		1335	1583		1668	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	7	1218	30	122	1241	1	212	9	323	1	6	18
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	175	0	15	0
Lane Group Flow (vph)	7	1247	0	122	1241	1	0	221	148	0	10	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases	2			6		6	4		4	8		
Actuated Green, G (s)	97.9	97.9		101.2	101.2	101.2		29.0	29.0		29.0	
Effective Green, g (s)	97.9	97.9		101.2	101.2	101.2		29.0	29.0		29.0	
Actuated g/C Ratio	0.65	0.65		0.67	0.67	0.67		0.19	0.19		0.19	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0		5.0	5.0		5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0		2.0	2.0		2.0	
Lane Grp Cap (vph)	290	3307		293	2387	1067		258	306		322	
v/s Ratio Prot	0.00	c0.25		0.02	c0.35							
v/s Ratio Perm	0.01			0.26		0.00		c0.17	0.09		0.01	
v/c Ratio	0.02	0.38		0.42	0.52	0.00		0.86	0.48		0.03	
Uniform Delay, d1	12.9	12.0		10.0	12.2	7.9		58.5	53.8		49.1	
Progression Factor	1.00	1.00		0.97	0.85	1.00		1.00	1.00		1.00	
Incremental Delay, d2	0.0	0.3		0.3	0.7	0.0		28.8	5.4		0.0	
Delay (s)	13.0	12.3		10.0	11.1	7.9		87.3	59.2		49.1	
Level of Service	B	B		B	B	A		F	E		D	
Approach Delay (s)		12.3			11.0			70.6			49.1	
Approach LOS		B			B			E			D	

Intersection Summary			
HCM 2000 Control Delay	22.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	65.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

3: Mopac SBFR & Spicewood Springs Rd

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR	ø1	ø2	ø4	ø5	ø6
Lane Configurations												
Volume (vph)	1041	316	657	798	644	211	402					
Lane Group Flow (vph)	1107	336	699	849	342	567	428					
Turn Type	NA	Perm	Prot	NA	Split	NA	Perm					
Protected Phases	2 1		19 6 7 2 1	19 6	4 5	4 5		1	2	4	5	6
Permitted Phases		2 1					4 5					
Detector Phase	2 1	2 1	19 6 7 2 1	19 6	4 5	4 5	4 5					
Switch Phase												
Minimum Initial (s)								3.0	1.0	1.0	3.0	4.0
Minimum Split (s)								8.0	11.0	11.0	8.0	24.0
Total Split (s)								8.0	35.0	23.0	8.0	51.0
Total Split (%)								5%	23%	15%	5%	34%
Yellow Time (s)								4.0	4.0	4.0	4.0	4.0
All-Red Time (s)								1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag								Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?								Yes	Yes	Yes	Yes	Yes
Recall Mode								None	Max	None	None	C-Max
v/c Ratio	1.24	0.64	0.84	0.38	1.23	1.18dl	0.85					
Control Delay	161.5	36.8	24.4	1.7	179.1	97.5	38.1					
Queue Delay	0.6	0.2	6.4	0.2	0.0	0.0	0.0					
Total Delay	162.1	37.0	30.8	1.9	179.1	97.5	38.1					
Queue Length 50th (ft)	~706	196	647	34	~451	308	156					
Queue Length 95th (ft)	#853	300	m520	m55	#674	#443	#343					
Internal Link Dist (ft)	494			333		2669						
Turn Bay Length (ft)			50		145							
Base Capacity (vph)	896	526	837	2241	279	570	501					
Starvation Cap Reductn	0	15	100	591	0	0	0					
Spillback Cap Reductn	93	0	0	0	0	0	0					
Storage Cap Reductn	0	0	0	0	0	0	0					
Reduced v/c Ratio	1.38	0.66	0.95	0.51	1.23	0.99	0.85					

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 89 (59%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 110
Control Type: Actuated-Coordinated

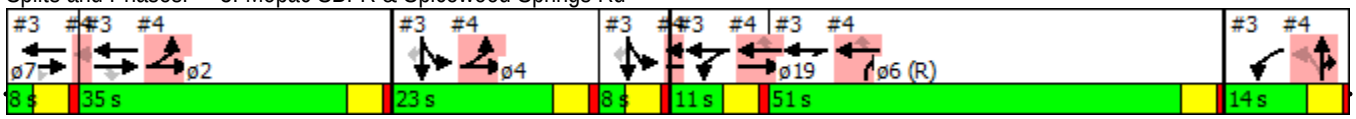
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 3: Mopac SBFR & Spicewood Springs Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1041	316	657	798	0	0	0	0	644	211	402
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0					5.0	5.0	5.0
Lane Util. Factor		0.95	1.00	1.00	0.95					0.91	0.91	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.97	1.00
Satd. Flow (prot)		3539	1583	1770	3539					1610	3291	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.97	1.00
Satd. Flow (perm)		3539	1583	1770	3539					1610	3291	1583
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	1107	336	699	849	0	0	0	0	685	224	428
RTOR Reduction (vph)	0	0	125	0	0	0	0	0	0	0	0	227
Lane Group Flow (vph)	0	1107	211	699	849	0	0	0	0	342	567	201
Turn Type		NA	Perm	Prot	NA					Split	NA	Perm
Protected Phases		2 1		19 6 7	2 1 19 6					4 5	4 5	
Permitted Phases			2 1									4 5
Actuated Green, G (s)		38.0	38.0	71.0	95.0					26.0	26.0	26.0
Effective Green, g (s)		38.0	38.0	71.0	95.0					26.0	26.0	26.0
Actuated g/C Ratio		0.25	0.25	0.47	0.63					0.17	0.17	0.17
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		896	401	837	2241					279	570	274
v/s Ratio Prot		c0.31		c0.40	0.24					c0.21	0.17	
v/s Ratio Perm			0.13									0.13
v/c Ratio		1.24	0.53	0.84	0.38					1.23	1.18dl	0.73
Uniform Delay, d1		56.0	48.2	34.4	13.3					62.0	61.9	58.7
Progression Factor		1.02	1.28	0.57	0.20					1.00	1.00	1.00
Incremental Delay, d2		114.9	0.5	2.9	0.0					129.2	36.1	8.4
Delay (s)		171.9	62.3	22.5	2.7					191.2	98.0	67.1
Level of Service		F	E	C	A					F	F	E
Approach Delay (s)		146.4			11.6			0.0			112.0	
Approach LOS		F			B			A			F	

Intersection Summary			
HCM 2000 Control Delay	87.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.20		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	35.0
Intersection Capacity Utilization	113.5%	ICU Level of Service	H
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group

4: Mopac NBFR & Anderson Ln

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	ø1	ø2	ø4	ø5	ø6
Lane Configurations												
Volume (vph)	515	1170	1178	453	277	45	580					
Lane Group Flow (vph)	542	1232	1240	477	263	351	336					
Turn Type	Prot	NA	NA	Perm	Perm	NA	custom					
Protected Phases	2 4	2 4 5 19	6 5 19			7 1	7 1 6	1	2	4	5	6
Permitted Phases				6 5 19	7 1							
Detector Phase	2 4	2 4 5 19	6 5 19	6 5 19	7 1	7 1	7 1 6					
Switch Phase												
Minimum Initial (s)								3.0	1.0	1.0	3.0	4.0
Minimum Split (s)								8.0	11.0	11.0	8.0	24.0
Total Split (s)								8.0	35.0	23.0	8.0	51.0
Total Split (%)								5%	23%	15%	5%	34%
Yellow Time (s)								4.0	4.0	4.0	4.0	4.0
All-Red Time (s)								1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag								Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?								Yes	Yes	Yes	Yes	Yes
Recall Mode								None	Max	None	None	C-Max
v/c Ratio	0.87	0.73	0.81	0.58	1.38	1.38	0.45					
Control Delay	27.9	0.3	42.2	17.8	248.6	225.6	19.1					
Queue Delay	50.1	14.2	1.1	0.0	0.0	0.1	0.0					
Total Delay	78.0	14.5	43.4	17.8	248.6	225.7	19.1					
Queue Length 50th (ft)	308	0	551	169	~357	~401	144					
Queue Length 95th (ft)	m181	m0	647	284	#554	#628	236					
Internal Link Dist (ft)		333	702			1795						
Turn Bay Length (ft)	50			360	280							
Base Capacity (vph)	625	1698	1533	824	190	255	749					
Starvation Cap Reductn	156	471	0	0	0	0	0					
Spillback Cap Reductn	0	0	120	0	0	2	0					
Storage Cap Reductn	0	0	0	0	0	0	0					
Reduced v/c Ratio	1.16	1.00	0.88	0.58	1.38	1.39	0.45					

Intersection Summary

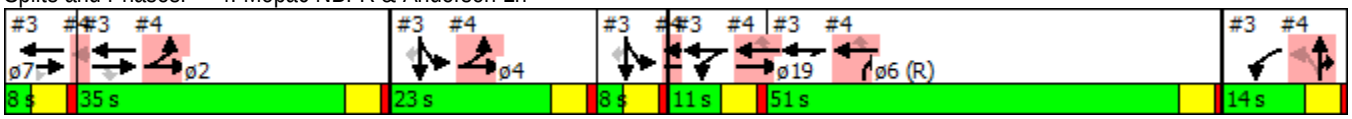
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 89 (59%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 110
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Mopac NBFR & Anderson Ln



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	515	1170	0	0	1178	453	277	45	580	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0	5.0			
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.91	0.95			
Frt	1.00	1.00			1.00	0.85	1.00	0.88	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	1770	3539			3539	1583	1681	1490	1504			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	1770	3539			3539	1583	1681	1490	1504			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	542	1232	0	0	1240	477	292	47	611	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	138	0	87	68	0	0	0
Lane Group Flow (vph)	542	1232	0	0	1240	339	263	264	268	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	custom			
Protected Phases	2 4	2 4 5 19			6 5 19			7 1	7 1 6			
Permitted Phases						6 5 19	7 1					
Actuated Green, G (s)	53.0	72.0			65.0	65.0	17.0	17.0	68.0			
Effective Green, g (s)	53.0	72.0			65.0	65.0	17.0	17.0	68.0			
Actuated g/C Ratio	0.35	0.48			0.43	0.43	0.11	0.11	0.45			
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	625	1698			1533	685	190	168	681			
v/s Ratio Prot	c0.31	c0.35			c0.35				0.18			
v/s Ratio Perm						0.21	0.16	0.18				
v/c Ratio	0.87	0.73			0.81	0.49	1.38	1.57	0.39			
Uniform Delay, d1	45.2	31.1			37.1	30.7	66.5	66.5	27.3			
Progression Factor	0.56	0.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	1.2	0.1			3.1	0.2	202.1	284.1	0.1			
Delay (s)	26.6	0.1			40.2	30.9	268.6	350.6	27.4			
Level of Service	C	A			D	C	F	F	C			
Approach Delay (s)		8.2			37.6			213.6			0.0	
Approach LOS		A			D			F			A	

Intersection Summary			
HCM 2000 Control Delay	63.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	35.0
Intersection Capacity Utilization	113.5%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	19	104	293	8	17	195
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	25	139	391	11	23	260
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	701	396			401	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	701	396			401	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	94	79			98	
cM capacity (veh/h)	397	653			1157	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	164	401	283
Volume Left	25	0	23
Volume Right	139	11	0
cSH	594	1700	1157
Volume to Capacity	0.28	0.24	0.02
Queue Length 95th (ft)	28	0	1
Control Delay (s)	13.4	0.0	0.8
Lane LOS	B		A
Approach Delay (s)	13.4	0.0	0.8
Approach LOS	B		

Intersection Summary			
Average Delay	2.9		
Intersection Capacity Utilization	38.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	64	62	27	21	14	114	8	292	7	16	128	18
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Hourly flow rate (vph)	84	82	36	28	18	150	11	384	9	21	168	24
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											544	
pX, platoon unblocked	1.00	1.00	1.00	1.00	1.00		1.00					
vC, conflicting volume	791	637	180	709	644	389	192			393		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	789	634	176	706	641	389	188			393		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	62	79	96	90	95	77	99			98		
cM capacity (veh/h)	224	385	864	275	381	659	1382			1165		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	201	196	404	213
Volume Left	84	28	11	21
Volume Right	36	150	9	24
cSH	320	521	1382	1165
Volume to Capacity	0.63	0.38	0.01	0.02
Queue Length 95th (ft)	100	43	1	1
Control Delay (s)	33.5	16.0	0.3	1.0
Lane LOS	D	C	A	A
Approach Delay (s)	33.5	16.0	0.3	1.0
Approach LOS	D	C		

Intersection Summary			
Average Delay	10.0		
Intersection Capacity Utilization	43.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	193	0	0	2098	30
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	0	212	0	0	2305	33
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					1035	
pX, platoon unblocked						
vC, conflicting volume	2322	785	2338			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2322	785	2338			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	37	100			
cM capacity (veh/h)	31	336	208			

Direction, Lane #	EB 1	SB 1	SB 2	SB 3
Volume Total	212	922	922	494
Volume Left	0	0	0	0
Volume Right	212	0	0	33
cSH	336	1700	1700	1700
Volume to Capacity	0.63	0.54	0.54	0.29
Queue Length 95th (ft)	102	0	0	0
Control Delay (s)	32.5	0.0	0.0	0.0
Lane LOS	D			
Approach Delay (s)	32.5	0.0		
Approach LOS	D			

Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	59.8%	ICU Level of Service	B
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	15.1
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	38	79	50	0	95	142	53	0	100	206	55
Peak Hour Factor	0.92	0.94	0.94	0.94	0.92	0.94	0.94	0.94	0.92	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	40	84	53	0	101	151	56	0	106	219	59
Number of Lanes	0	0	1	1	0	0	1	1	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	2
HCM Control Delay	11.5	14.8	18.2
HCM LOS	B	B	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	28%	32%	0%	40%	0%	8%
Vol Thru, %	57%	68%	0%	60%	0%	62%
Vol Right, %	15%	0%	100%	0%	100%	30%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	361	117	50	237	53	206
LT Vol	100	38	0	95	0	16
Through Vol	206	79	0	142	0	128
RT Vol	55	0	50	0	53	62
Lane Flow Rate	384	124	53	252	56	219
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.621	0.249	0.093	0.481	0.093	0.373
Departure Headway (Hd)	5.933	7.213	6.328	6.979	6.057	6.135
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	611	500	569	519	595	590
Service Time	3.933	4.925	4.04	4.679	3.757	4.145
HCM Lane V/C Ratio	0.628	0.248	0.093	0.486	0.094	0.371
HCM Control Delay	18.2	12.3	9.7	16	9.4	12.8
HCM Lane LOS	C	B	A	C	A	B
HCM 95th-tile Q	4.3	1	0.3	2.6	0.3	1.7

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	16	128	62
Peak Hour Factor	0.92	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	17	136	66
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	12.8
HCM LOS	B

Lane

Intersection	
Intersection Delay, s/veh	16.9
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	37	78	55	0	97	249	65	0	87	232	79
Peak Hour Factor	0.92	0.99	0.99	0.99	0.92	0.99	0.99	0.99	0.92	0.99	0.99	0.99
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	37	79	56	0	98	252	66	0	88	234	80
Number of Lanes	0	0	1	1	0	0	1	1	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	2
HCM Control Delay	11.8	20.8	16.9
HCM LOS	B	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	32%	0%	28%	0%	100%	0%
Vol Thru, %	0%	75%	68%	0%	72%	0%	0%	82%
Vol Right, %	0%	25%	0%	100%	0%	100%	0%	18%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	87	311	115	55	346	65	25	158
LT Vol	87	0	37	0	97	0	25	0
Through Vol	0	232	78	0	249	0	0	130
RT Vol	0	79	0	55	0	65	0	28
Lane Flow Rate	88	314	116	56	349	66	25	160
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.18	0.583	0.241	0.102	0.674	0.111	0.055	0.318
Departure Headway (Hd)	7.375	6.684	7.477	6.594	6.938	6.082	7.804	7.164
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	487	540	480	543	521	590	459	501
Service Time	5.113	4.422	5.225	4.341	4.675	3.818	5.549	4.909
HCM Lane V/C Ratio	0.181	0.581	0.242	0.103	0.67	0.112	0.054	0.319
HCM Control Delay	11.7	18.4	12.6	10.1	22.9	9.6	11	13.2
HCM Lane LOS	B	C	B	B	C	A	B	B
HCM 95th-tile Q	0.7	3.7	0.9	0.3	5	0.4	0.2	1.4

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	25	130	28
Peak Hour Factor	0.92	0.99	0.99	0.99
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	25	131	28
Number of Lanes	0	1	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	12.9
HCM LOS	B

Lane

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	189	0	0	1914	376
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	0	217	0	0	2200	432
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2416	949	2632			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2416	949	2632			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	17	100			
cM capacity (veh/h)	27	261	159			

Direction, Lane #	EB 1	SB 1	SB 2	SB 3
Volume Total	217	880	880	872
Volume Left	0	0	0	0
Volume Right	217	0	0	432
cSH	261	1700	1700	1700
Volume to Capacity	0.83	0.52	0.52	0.51
Queue Length 95th (ft)	167	0	0	0
Control Delay (s)	62.2	0.0	0.0	0.0
Lane LOS	F			
Approach Delay (s)	62.2	0.0		
Approach LOS	F			

Intersection Summary			
Average Delay	4.7		
Intersection Capacity Utilization	63.7%	ICU Level of Service	B
Analysis Period (min)	15		

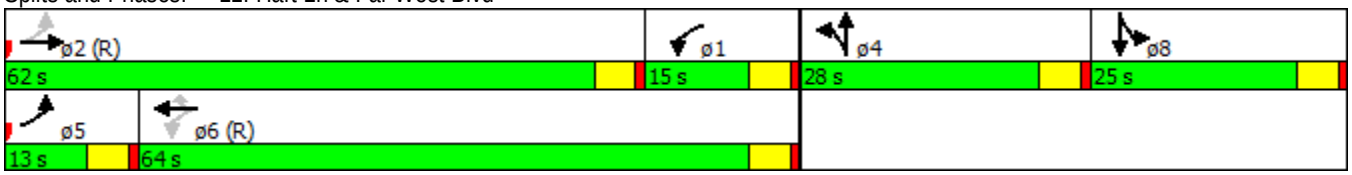
11: Hart Ln & Far West Blvd

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBT
Lane Configurations							
Volume (vph)	46	577	186	541	162	137	90
Lane Group Flow (vph)	47	637	192	558	167	354	333
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	NA
Protected Phases	5	2	1	6		4	8
Permitted Phases	2		6		6		
Detector Phase	5	2	1	6	6	4	8
Switch Phase							
Minimum Initial (s)	4.0	2.0	4.0	2.0	2.0	2.0	2.0
Minimum Split (s)	9.0	24.0	9.0	24.0	24.0	33.0	33.0
Total Split (s)	13.0	62.0	15.0	64.0	64.0	28.0	25.0
Total Split (%)	10.0%	47.7%	11.5%	49.2%	49.2%	21.5%	19.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lead	Lag	Lag	Lag		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		
Recall Mode	None	C-Max	None	C-Max	C-Max	None	None
v/c Ratio	0.12	0.36	0.39	0.29	0.19	0.77	0.77
Control Delay	19.8	21.6	10.7	7.7	7.9	65.0	66.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.8	21.6	10.7	7.7	7.9	65.0	66.6
Queue Length 50th (ft)	20	169	29	49	25	153	144
Queue Length 95th (ft)	47	241	53	71	47	200	193
Internal Link Dist (ft)		1703		1174		695	1553
Turn Bay Length (ft)	130		100		490		
Base Capacity (vph)	397	1750	492	1922	859	582	517
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.36	0.39	0.29	0.19	0.61	0.64

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 20 (15%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 11: Hart Ln & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	46	577	41	186	541	162	64	137	143	180	90	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0		5.0			5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		0.95			0.95	
Frt	1.00	0.99		1.00	1.00	0.85		0.94			0.98	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.99			0.97	
Satd. Flow (prot)	1770	3504		1770	3539	1583		3288			3359	
Flt Permitted	0.35	1.00		0.41	1.00	1.00		0.99			0.97	
Satd. Flow (perm)	660	3504		764	3539	1583		3288			3359	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	47	595	42	192	558	167	66	141	147	186	93	54
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	47	637	0	192	558	167	0	354	0	0	333	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Split	NA		Split	NA	
Protected Phases	5	2		1	6		4	4		8	8	
Permitted Phases	2			6		6						
Actuated Green, G (s)	64.0	64.0		69.7	69.7	69.7		18.2			16.8	
Effective Green, g (s)	64.0	64.0		69.7	69.7	69.7		18.2			16.8	
Actuated g/C Ratio	0.49	0.49		0.54	0.54	0.54		0.14			0.13	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0		5.0			5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0		2.0			2.0	
Lane Grp Cap (vph)	370	1725		494	1897	848		460			434	
v/s Ratio Prot	0.01	c0.18		c0.03	0.16			c0.11			c0.10	
v/s Ratio Perm	0.06			c0.18		0.11						
v/c Ratio	0.13	0.37		0.39	0.29	0.20		0.77			0.77	
Uniform Delay, d1	17.8	20.5		18.7	16.6	15.6		53.9			54.7	
Progression Factor	1.00	1.00		0.39	0.41	0.42		1.00			1.00	
Incremental Delay, d2	0.1	0.6		0.2	0.4	0.5		6.9			7.2	
Delay (s)	17.8	21.1		7.5	7.2	7.0		60.7			61.9	
Level of Service	B	C		A	A	A		E			E	
Approach Delay (s)		20.9			7.2			60.7			61.9	
Approach LOS		C			A			E			E	

Intersection Summary			
HCM 2000 Control Delay	27.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	64.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

12: Wood Hollow Dr & Far West Blvd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Volume (vph)	106	796	65	234	704	134	105	193	331	163	105
Lane Group Flow (vph)	120	905	74	266	800	152	119	219	376	185	162
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA
Protected Phases	1	6		5	2		3	8		7	4
Permitted Phases	6		6	2		2	8		8	4	
Detector Phase	1	6	6	5	2	2	3	8	8	7	4
Switch Phase											
Minimum Initial (s)	4.0	2.0	2.0	4.0	2.0	2.0	4.0	2.0	2.0	4.0	2.0
Minimum Split (s)	9.0	11.0	11.0	9.0	11.0	11.0	9.0	11.0	11.0	9.0	11.0
Total Split (s)	20.0	68.0	68.0	16.0	64.0	64.0	20.0	20.0	20.0	26.0	26.0
Total Split (%)	15.4%	52.3%	52.3%	12.3%	49.2%	49.2%	15.4%	15.4%	15.4%	20.0%	20.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None
v/c Ratio	0.27	0.53	0.09	1.00	0.49	0.19	0.44	0.85	0.93	0.79	0.74
Control Delay	16.1	18.4	1.1	52.0	29.0	7.8	56.8	82.4	53.8	78.0	70.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.1	18.4	1.1	52.0	29.0	7.8	56.8	82.4	53.8	78.0	70.4
Queue Length 50th (ft)	43	330	2	~165	222	13	92	183	144	152	124
Queue Length 95th (ft)	m64	224	m6	m135	m185	m15	158	#346	#343	225	187
Internal Link Dist (ft)		1174			673			686			1879
Turn Bay Length (ft)	245		610	125		700	75		75		
Base Capacity (vph)	444	1715	819	267	1626	809	273	259	405	285	298
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.53	0.09	1.00	0.49	0.19	0.44	0.85	0.93	0.65	0.54

Intersection Summary

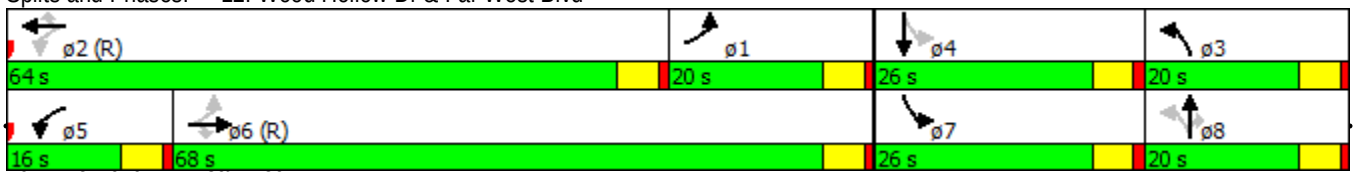
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 20 (15%), Referenced to phase 2:WBTL and 6:EBTL, Start of 1st Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 12: Wood Hollow Dr & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	106	796	65	234	704	134	105	193	331	163	105	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1789	
Flt Permitted	0.35	1.00	1.00	0.16	1.00	1.00	0.00	1.00	1.00	0.00	1.00	
Satd. Flow (perm)	651	3539	1583	292	3539	1583	0	1863	1583	0	1789	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	120	905	74	266	800	152	119	219	376	185	119	43
RTOR Reduction (vph)	0	0	38	0	0	82	0	0	185	0	11	0
Lane Group Flow (vph)	120	905	36	266	800	70	119	219	191	185	151	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2	8		8	4		
Actuated Green, G (s)	63.0	63.0	63.0	59.7	59.7	59.7	20.1	18.1	18.1	17.2	15.2	
Effective Green, g (s)	63.0	63.0	63.0	59.7	59.7	59.7	20.1	18.1	18.1	17.2	15.2	
Actuated g/C Ratio	0.48	0.48	0.48	0.46	0.46	0.46	0.15	0.14	0.14	0.13	0.12	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	444	1715	767	267	1625	726	273	259	220	234	209	
v/s Ratio Prot	0.03	c0.26		c0.09	0.23		0.07	0.12		c0.10	0.08	
v/s Ratio Perm	0.10		0.02	c0.37		0.04			c0.12			
v/c Ratio	0.27	0.53	0.05	1.00	0.49	0.10	0.44	0.85	0.87	0.79	0.72	
Uniform Delay, d1	21.2	23.2	17.7	27.9	24.6	19.9	49.8	54.6	54.8	54.7	55.4	
Progression Factor	0.66	0.74	0.60	1.42	1.16	2.46	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.1	1.1	0.1	15.5	0.1	0.0	0.4	20.8	27.5	15.5	10.1	
Delay (s)	14.1	18.2	10.8	55.2	28.5	48.9	50.2	75.4	82.3	70.1	65.4	
Level of Service	B	B	B	E	C	D	D	E	F	E	E	
Approach Delay (s)		17.3			36.9			74.8			67.9	
Approach LOS		B			D			E			E	

Intersection Summary			
HCM 2000 Control Delay	41.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	70.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

13: Mopac SBFR & Far West Blvd

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR	ø1	ø2	ø4	ø8	ø22
Lane Configurations											
Volume (vph)	1200	402	10	436	429	965					
Lane Group Flow (vph)	1348	452	11	490	921	1084					
Turn Type	NA	Free	Prot	NA	NA	Perm					
Protected Phases	1 22 2		7	1 22 7	4 8		1	2	4	8	22
Permitted Phases		Free				4 8					
Detector Phase	1 22 2		7	1 22 7	4 8	4 8					
Switch Phase											
Minimum Initial (s)			4.0				4.0	4.0	4.0	4.0	4.0
Minimum Split (s)			20.0				9.0	24.0	24.0	9.0	20.0
Total Split (s)			41.0				9.0	20.0	31.0	9.0	20.0
Total Split (%)			31.5%				7%	15%	24%	7%	15%
Yellow Time (s)			4.0				4.0	4.0	4.0	4.0	4.0
All-Red Time (s)			1.0				1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)			0.0								
Total Lost Time (s)			5.0								
Lead/Lag							Lead		Lead	Lag	Lag
Lead-Lag Optimize?							Yes		Yes	Yes	Yes
Recall Mode			None				None	C-Max	None	None	None
v/c Ratio	0.79	0.29	0.05	0.28	0.99	1.40					
Control Delay	31.2	0.4	26.3	3.5	74.3	211.2					
Queue Delay	49.3	0.0	0.0	0.3	0.0	0.0					
Total Delay	80.5	0.4	26.3	3.8	74.3	211.2					
Queue Length 50th (ft)	518	0	3	14	408	~917					
Queue Length 95th (ft)	m640	m0	m8	17	#542	#1156					
Internal Link Dist (ft)	432			324	532						
Turn Bay Length (ft)		490									
Base Capacity (vph)	1705	1583	490	1769	931	772					
Starvation Cap Reductn	0	0	0	649	0	0					
Spillback Cap Reductn	745	0	0	0	0	0					
Storage Cap Reductn	0	0	0	0	0	0					
Reduced v/c Ratio	1.40	0.29	0.02	0.44	0.99	1.40					

Intersection Summary

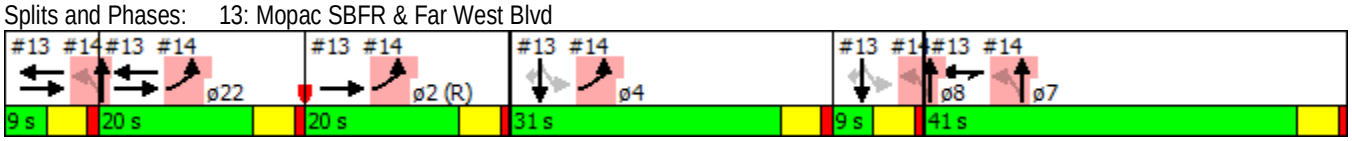
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBT, Start of 1st Green
Natural Cycle: 120
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Mopac SBFR & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1200	402	10	436	0	0	0	0	391	429	965
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	4.0	5.0	5.0						5.0	5.0
Lane Util. Factor		0.95	1.00	1.00	0.95						0.95	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.98	1.00
Satd. Flow (prot)		3539	1583	1770	3539						3457	1583
Flt Permitted		1.00	1.00	0.95	1.00						0.98	1.00
Satd. Flow (perm)		3539	1583	1770	3539						3457	1583
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	1348	452	11	490	0	0	0	0	439	482	1084
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	346
Lane Group Flow (vph)	0	1348	452	11	490	0	0	0	0	0	921	738
Turn Type		NA	Free	Prot	NA					Perm	NA	Perm
Protected Phases		1 22 2		7	1 22 7						4 8	
Permitted Phases			Free							4 8		4 8
Actuated Green, G (s)		62.7	130.0	17.3	65.0						35.0	35.0
Effective Green, g (s)		62.7	130.0	17.3	65.0						35.0	35.0
Actuated g/C Ratio		0.48	1.00	0.13	0.50						0.27	0.27
Clearance Time (s)				5.0								
Vehicle Extension (s)				2.0								
Lane Grp Cap (vph)		1706	1583	235	1769						930	426
v/s Ratio Prot		c0.38		0.01	0.14							
v/s Ratio Perm			c0.29								0.27	c0.47
v/c Ratio		0.79	0.29	0.05	0.28						0.99	1.73
Uniform Delay, d1		28.1	0.0	49.2	18.9						47.3	47.5
Progression Factor		0.95	1.00	0.56	0.17						1.00	1.00
Incremental Delay, d2		2.1	0.4	0.0	0.0						27.0	338.9
Delay (s)		28.7	0.4	27.7	3.2						74.3	386.4
Level of Service		C	A	C	A						E	F
Approach Delay (s)		21.6			3.7			0.0			243.0	
Approach LOS		C			A			A			F	

Intersection Summary			
HCM 2000 Control Delay	122.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	103.5%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

14: Mopac NBFR & Far West Blvd

Lane Group	EBL	NBL	NBT	ø1	ø2	ø4	ø7	ø8	ø22
Lane Configurations									
Volume (vph)	1603	382	26						
Lane Group Flow (vph)	1822	230	234						
Turn Type	Prot	Perm	NA						
Protected Phases	22 2 4		7 1 8	1	2	4	7	8	22
Permitted Phases		7 1 8							
Detector Phase	22 2 4	7 1 8	7 1 8						
Switch Phase									
Minimum Initial (s)				4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)				9.0	24.0	24.0	20.0	9.0	20.0
Total Split (s)				9.0	20.0	31.0	41.0	9.0	20.0
Total Split (%)				7%	15%	24%	32%	7%	15%
Yellow Time (s)				4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)				1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)									
Total Lost Time (s)									
Lead/Lag				Lead		Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes		Yes	Yes
Recall Mode				None	C-Max	None	None	None	None
v/c Ratio	1.05	0.33	0.33						
Control Delay	56.6	27.4	27.5						
Queue Delay	22.8	0.0	0.0						
Total Delay	79.3	27.4	27.5						
Queue Length 50th (ft)	~861	136	138						
Queue Length 95th (ft)	m#940	201	203						
Internal Link Dist (ft)	324		322						
Turn Bay Length (ft)									
Base Capacity (vph)	1742	698	704						
Starvation Cap Reductn	377	0	0						
Spillback Cap Reductn	0	0	0						
Storage Cap Reductn	0	0	0						
Reduced v/c Ratio	1.33	0.33	0.33						

Intersection Summary

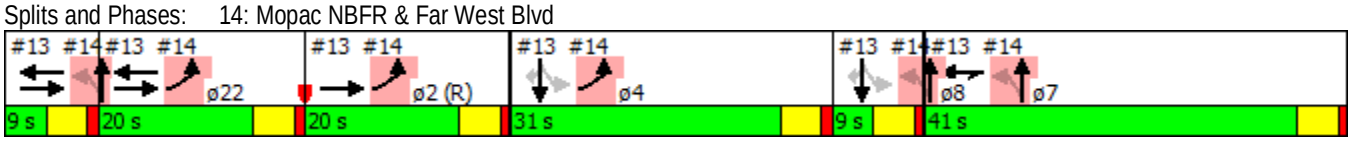
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBT, Start of 1st Green
Natural Cycle: 120
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 14: Mopac NBFR & Far West Blvd



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	1603	0	382	26	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0		
Lane Util. Factor	0.97		0.95	0.95		
Frt	1.00		1.00	1.00		
Flt Protected	0.95		0.95	0.96		
Satd. Flow (prot)	3433		1681	1696		
Flt Permitted	0.95		0.95	0.96		
Satd. Flow (perm)	3433		1681	1696		
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	1822	0	434	30	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1822	0	230	234	0	0
Turn Type	Prot		Perm	NA		
Protected Phases	22 2 4			7 1 8		
Permitted Phases			7 1 8			
Actuated Green, G (s)	66.0		54.0	54.0		
Effective Green, g (s)	66.0		54.0	54.0		
Actuated g/C Ratio	0.51		0.42	0.42		
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)	1742		698	704		
v/s Ratio Prot	c0.53					
v/s Ratio Perm			0.14	0.14		
v/c Ratio	1.05		0.33	0.33		
Uniform Delay, d1	32.0		25.7	25.8		
Progression Factor	0.83		1.00	1.00		
Incremental Delay, d2	29.5		0.1	0.1		
Delay (s)	56.1		25.8	25.9		
Level of Service	E		C	C		
Approach Delay (s)	56.1			25.9	0.0	
Approach LOS	E			C	A	

Intersection Summary			
HCM 2000 Control Delay	49.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	116.7%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

20: Loop 1 SBFR & Steck Avenue

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	ø1	ø2	ø4	ø5	ø6	ø7
Lane Configurations												
Volume (vph)	652	104	258	357	802	780						
Lane Group Flow (vph)	665	106	263	364	654	1314						
Turn Type	NA	Perm	Prot	NA	Split	NA						
Protected Phases	2 1		6 7	2 1 6 7	4 5	4 5	1	2	4	5	6	7
Permitted Phases		2 1										
Detector Phase	2 1	2 1	6 7	2 1 6 7	4 5	4 5						
Switch Phase												
Minimum Initial (s)							2.0	1.0	1.0	3.0	4.0	4.0
Minimum Split (s)							7.0	11.0	11.0	8.0	24.0	9.0
Total Split (s)							7.0	23.0	32.0	8.0	30.0	30.0
Total Split (%)							5%	18%	25%	6%	23%	23%
Yellow Time (s)							4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)							1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag							Lead	Lag	Lead	Lag		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode							None	Max	None	None	C-Max	None
v/c Ratio	0.98	0.25	0.35	0.16	1.51	1.46						
Control Delay	81.7	4.1	2.9	0.1	275.6	249.6						
Queue Delay	40.5	0.0	0.9	0.0	0.0	0.0						
Total Delay	122.2	4.1	3.7	0.1	275.6	249.6						
Queue Length 50th (ft)	296	0	6	0	~841	~825						
Queue Length 95th (ft)	#422	23	8	0	#1098	#973						
Internal Link Dist (ft)	737			327		333						
Turn Bay Length (ft)		100	80									
Base Capacity (vph)	680	419	748	2313	433	897						
Starvation Cap Reductn	0	0	259	0	0	0						
Spillback Cap Reductn	189	0	0	0	0	1						
Storage Cap Reductn	0	0	0	0	0	0						
Reduced v/c Ratio	1.35	0.25	0.54	0.16	1.51	1.47						

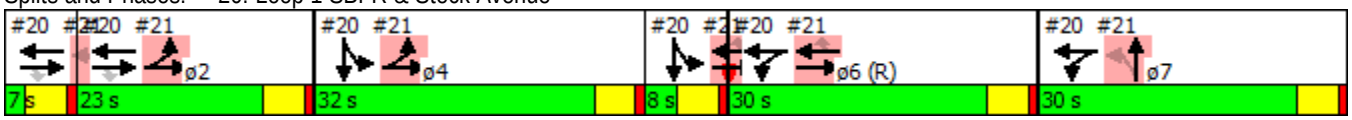
Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 97 (75%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 20: Loop 1 SBFR & Steck Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	652	104	258	357	0	0	0	0	802	780	347
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0					5.0	5.0	
Lane Util. Factor		0.95	1.00	1.00	0.95					0.91	0.91	
Frt		1.00	0.85	1.00	1.00					1.00	0.96	
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.99	
Satd. Flow (prot)		3539	1583	1770	3539					1610	3233	
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.99	
Satd. Flow (perm)		3539	1583	1770	3539					1610	3233	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	665	106	263	364	0	0	0	0	818	796	354
RTOR Reduction (vph)	0	0	86	0	0	0	0	0	0	0	26	0
Lane Group Flow (vph)	0	665	20	263	364	0	0	0	0	654	1288	0
Turn Type		NA	Perm	Prot	NA					Split	NA	
Protected Phases		2 1		6 7	2 1 6 7					4 5	4 5	
Permitted Phases			2 1									
Actuated Green, G (s)		25.0	25.0	55.0	85.0					35.0	35.0	
Effective Green, g (s)		25.0	25.0	55.0	85.0					35.0	35.0	
Actuated g/C Ratio		0.19	0.19	0.42	0.65					0.27	0.27	
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		680	304	748	2313					433	870	
v/s Ratio Prot		c0.19		c0.15	0.10					c0.41	0.40	
v/s Ratio Perm			0.01									
v/c Ratio		0.98	0.07	0.35	0.16					1.51	1.48	
Uniform Delay, d1		52.2	43.0	25.4	8.7					47.5	47.5	
Progression Factor		1.00	1.00	0.07	0.00					1.00	1.00	
Incremental Delay, d2		28.6	0.0	0.1	0.0					241.4	222.2	
Delay (s)		80.8	43.0	1.8	0.0					288.9	269.7	
Level of Service		F	D	A	A					F	F	
Approach Delay (s)		75.6			0.8			0.0			276.1	
Approach LOS		E			A			A			F	

Intersection Summary			
HCM 2000 Control Delay	178.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	142.3%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

21: Loop 1 NBFR & Steck Avenue

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	ø1	ø2	ø4	ø5	ø6	ø7
Lane Configurations												
Volume (vph)	705	628	490	506	130	848						
Lane Group Flow (vph)	742	661	516	533	137	1024						
Turn Type	Prot	NA	NA	Perm	Perm	NA						
Protected Phases	2 4	2 4 5 6	6 5			7 1	1	2	4	5	6	7
Permitted Phases				6 5	7 1							
Detector Phase	2 4	2 4 5 6	6 5	6 5	7 1	7 1						
Switch Phase												
Minimum Initial (s)							2.0	1.0	1.0	3.0	4.0	4.0
Minimum Split (s)							7.0	11.0	11.0	8.0	24.0	9.0
Total Split (s)							7.0	23.0	32.0	8.0	30.0	30.0
Total Split (%)							5%	18%	25%	6%	23%	23%
Yellow Time (s)							4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)							1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag							Lead	Lag	Lead	Lag		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode							None	Max	None	None	C-Max	None
v/c Ratio	1.09	0.28	0.57	1.05	0.16	2.26						
Control Delay	70.2	0.1	45.4	87.8	39.1	598.5						
Queue Delay	5.7	1.1	0.0	0.0	0.0	0.0						
Total Delay	75.9	1.2	45.4	87.8	39.1	598.5						
Queue Length 50th (ft)	~685	0	201	~392	46	~1408						
Queue Length 95th (ft)	m376	m0	261	#618	75	#1669						
Internal Link Dist (ft)		327	978			2452						
Turn Bay Length (ft)	80			170	110							
Base Capacity (vph)	680	2395	898	508	845	453						
Starvation Cap Reductn	173	1433	0	0	0	0						
Spillback Cap Reductn	0	0	0	0	0	0						
Storage Cap Reductn	0	0	0	0	0	0						
Reduced v/c Ratio	1.46	0.69	0.57	1.05	0.16	2.26						

Intersection Summary

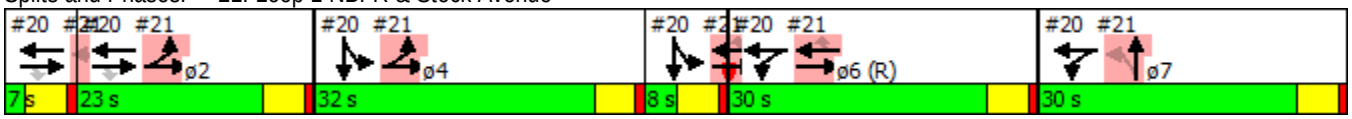
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 97 (75%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 21: Loop 1 NBFR & Steck Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	705	628	0	0	490	506	130	848	124	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0				
Lane Util. Factor	1.00	0.95			0.95	1.00	0.97	1.00				
Frt	1.00	1.00			1.00	0.85	1.00	0.98				
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (prot)	1770	3539			3539	1583	3433	1827				
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (perm)	1770	3539			3539	1583	3433	1827				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	742	661	0	0	516	533	137	893	131	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	107	0	4	0	0	0	0
Lane Group Flow (vph)	742	661	0	0	516	426	137	1020	0	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA				
Protected Phases	2 4	2 4 5 6			6 5			7 1				
Permitted Phases						6 5	7 1					
Actuated Green, G (s)	50.0	88.0			33.0	33.0	32.0	32.0				
Effective Green, g (s)	50.0	88.0			33.0	33.0	32.0	32.0				
Actuated g/C Ratio	0.38	0.68			0.25	0.25	0.25	0.25				
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	680	2395			898	401	845	449				
v/s Ratio Prot	c0.42	0.19			0.15			c0.56				
v/s Ratio Perm						c0.27	0.04					
v/c Ratio	1.09	0.28			0.57	1.06	0.16	2.27				
Uniform Delay, d1	40.0	8.3			42.4	48.5	38.5	49.0				
Progression Factor	0.63	0.00			1.00	1.00	1.00	1.00				
Incremental Delay, d2	43.7	0.0			0.6	62.7	0.0	579.6				
Delay (s)	68.9	0.0			42.9	111.2	38.5	628.6				
Level of Service	E	A			D	F	D	F				
Approach Delay (s)		36.5			77.6			558.9			0.0	
Approach LOS		D			E			F			A	

Intersection Summary			
HCM 2000 Control Delay	216.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.62		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	142.3%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

1: Hart Ln & Spicewood Springs Rd

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1276	310	211	965	144	182
Lane Group Flow (vph)	1315	320	218	995	148	188
Turn Type	NA	Perm	Prot	NA	Prot	Free
Protected Phases	2		1	6	4	
Permitted Phases		2				Free
Detector Phase	2	2	1	6	4	
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	
Total Split (s)	73.0	73.0	33.0	106.0	24.0	
Total Split (%)	56.2%	56.2%	25.4%	81.5%	18.5%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Max	C-Max	Max	C-Max	None	
v/c Ratio	0.71	0.36	0.45	0.34	0.50	0.12
Control Delay	26.2	10.6	41.2	3.8	61.7	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.2	10.6	41.2	3.8	61.7	0.2
Queue Length 50th (ft)	428	78	167	47	62	0
Queue Length 95th (ft)	512	143	272	216	91	0
Internal Link Dist (ft)	211			988	285	
Turn Bay Length (ft)		110	220		160	
Base Capacity (vph)	1851	897	487	2962	501	1583
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.36	0.45	0.34	0.30	0.12

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of 1st Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 1: Hart Ln & Spicewood Springs Rd

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1276	310	211	965	144	182
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	4.0
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	3433	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	3433	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	1315	320	218	995	148	188
RTOR Reduction (vph)	0	69	0	0	0	0
Lane Group Flow (vph)	1315	251	218	995	148	188
Turn Type	NA	Perm	Prot	NA	Prot	Free
Protected Phases	2		1	6	4	
Permitted Phases		2				Free
Actuated Green, G (s)	68.0	68.0	35.8	108.8	11.2	130.0
Effective Green, g (s)	68.0	68.0	35.8	108.8	11.2	130.0
Actuated g/C Ratio	0.52	0.52	0.28	0.84	0.09	1.00
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	1851	828	487	2961	295	1583
v/s Ratio Prot	c0.37		c0.12	0.28	c0.04	
v/s Ratio Perm		0.16				0.12
v/c Ratio	0.71	0.30	0.45	0.34	0.50	0.12
Uniform Delay, d1	23.5	17.6	38.9	2.4	56.7	0.0
Progression Factor	1.00	1.00	0.95	1.31	1.00	1.00
Incremental Delay, d2	2.3	0.9	2.7	0.3	0.5	0.2
Delay (s)	25.9	18.5	39.5	3.4	57.2	0.2
Level of Service	C	B	D	A	E	A
Approach Delay (s)	24.4			9.9	25.3	
Approach LOS	C			A	C	

Intersection Summary			
HCM 2000 Control Delay	19.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

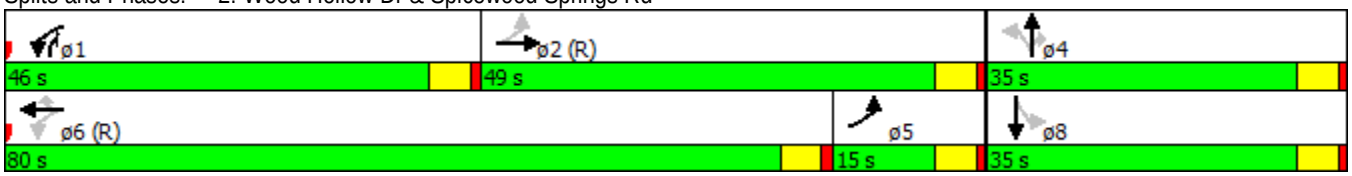
2: Wood Hollow Dr & Spicewood Springs Rd

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	8	1279	473	1082	11	91	5	213	7	0
Lane Group Flow (vph)	8	1510	493	1127	11	0	100	222	0	9
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Perm	NA	pm+ov	Perm	NA
Protected Phases	5	2	1	6			4	1		8
Permitted Phases	2		6		6	4		4	8	
Detector Phase	5	2	1	6	6	4	4	1	8	8
Switch Phase										
Minimum Initial (s)	6.0	25.0	6.0	5.0	5.0	5.0	5.0	6.0	5.0	5.0
Minimum Split (s)	15.0	30.0	15.0	11.0	11.0	35.0	35.0	15.0	35.0	35.0
Total Split (s)	15.0	49.0	46.0	80.0	80.0	35.0	35.0	46.0	35.0	35.0
Total Split (%)	11.5%	37.7%	35.4%	61.5%	61.5%	26.9%	26.9%	35.4%	26.9%	26.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead			Lead		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes			Yes		
Recall Mode	None	C-Max	None	C-Max	C-Max	Max	Max	None	None	None
v/c Ratio	0.03	0.74	0.99	0.48	0.01		0.32	0.26		0.02
Control Delay	22.2	33.9	66.2	12.9	0.0		44.9	12.4		0.1
Queue Delay	0.0	0.0	0.3	0.7	0.0		0.0	0.0		0.0
Total Delay	22.2	33.9	66.5	13.6	0.0		44.9	12.4		0.1
Queue Length 50th (ft)	5	485	361	158	0		70	71		0
Queue Length 95th (ft)	m9	541	#528	432	m0		125	104		0
Internal Link Dist (ft)		988		494			132			203
Turn Bay Length (ft)	300		110		100					
Base Capacity (vph)	291	2040	610	2368	1079		313	949		437
Starvation Cap Reductn	0	0	8	814	0		0	0		0
Spillback Cap Reductn	0	0	0	0	0		0	0		0
Storage Cap Reductn	0	0	0	0	0		0	0		0
Reduced v/c Ratio	0.03	0.74	0.82	0.73	0.01		0.32	0.23		0.02

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 55 (42%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Wood Hollow Dr & Spicewood Springs Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	1279	171	473	1082	11	91	5	213	7	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0		5.0	5.0		5.0	
Lane Util. Factor	1.00	0.91		1.00	0.95	1.00		1.00	1.00		1.00	
Frt	1.00	0.98		1.00	1.00	0.85		1.00	0.85		0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.95	1.00		0.96	
Satd. Flow (prot)	1770	4995		1770	3539	1583		1778	1583		1739	
Flt Permitted	0.25	1.00		0.08	1.00	1.00		0.73	1.00		0.86	
Satd. Flow (perm)	470	4995		147	3539	1583		1361	1583		1559	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	8	1332	178	493	1127	11	95	5	222	7	0	2
RTOR Reduction (vph)	0	12	0	0	0	4	0	0	31	0	7	0
Lane Group Flow (vph)	8	1498	0	493	1127	7	0	100	191	0	2	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	pm+ov	Perm	NA	
Protected Phases	5	2		1	6			4	1		8	
Permitted Phases	2			6		6	4		4	8		
Actuated Green, G (s)	52.8	52.8		83.0	83.0	83.0		30.0	62.2		30.0	
Effective Green, g (s)	52.8	52.8		83.0	83.0	83.0		30.0	62.2		30.0	
Actuated g/C Ratio	0.41	0.41		0.64	0.64	0.64		0.23	0.48		0.23	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0		5.0	5.0		5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0		2.0	2.0		2.0	
Lane Grp Cap (vph)	210	2028		495	2259	1010		314	818		359	
v/s Ratio Prot	0.00	c0.30		c0.25	0.32				0.06			
v/s Ratio Perm	0.01			c0.39		0.00		c0.07	0.06		0.00	
v/c Ratio	0.04	0.74		1.00	0.50	0.01		0.32	0.23		0.01	
Uniform Delay, d1	23.3	32.7		40.5	12.5	8.5		41.5	19.9		38.5	
Progression Factor	0.78	0.95		0.84	1.09	1.00		1.00	1.00		1.00	
Incremental Delay, d2	0.0	1.9		36.8	0.7	0.0		2.7	0.1		0.0	
Delay (s)	18.3	32.9		70.8	14.3	8.5		44.2	20.0		38.5	
Level of Service	B	C		E	B	A		D	B		D	
Approach Delay (s)		32.8			31.4			27.5			38.5	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	31.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	73.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

3: Mopac SBFR & Spicewood Springs Rd

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR	ø1	ø2	ø4	ø5	ø6
Lane Configurations												
Volume (vph)	820	679	737	857	375	1249	710					
Lane Group Flow (vph)	845	700	760	884	348	1327	732					
Turn Type	NA	Free	Prot	NA	Split	NA	Free					
Protected Phases	2 1		19 6 7	2 1 19 6	4 5	4 5		1	2	4	5	6
Permitted Phases		Free					Free					
Detector Phase	2 1		19 6 7	2 1 19 6	4 5	4 5						
Switch Phase												
Minimum Initial (s)								3.0	1.0	1.0	3.0	4.0
Minimum Split (s)								8.0	11.0	11.0	8.0	24.0
Total Split (s)								8.0	24.0	34.0	8.0	30.0
Total Split (%)								6%	18%	26%	6%	23%
Yellow Time (s)								4.0	4.0	4.0	4.0	4.0
All-Red Time (s)								1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag								Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?								Yes	Yes	Yes	Yes	Yes
Recall Mode								None	Max	None	None	C-Max
v/c Ratio	1.15	0.44	1.10	0.52	0.76	1.38	0.46					
Control Delay	137.2	5.7	73.3	3.8	21.6	194.7	0.1					
Queue Delay	0.1	0.0	2.9	0.1	0.0	0.0	0.0					
Total Delay	137.3	5.7	76.2	3.9	21.6	194.7	0.2					
Queue Length 50th (ft)	~453	284	~725	107	232	~804	0					
Queue Length 95th (ft)	#585	506	m#614	m106	m152	m400	m0					
Internal Link Dist (ft)	494			333		2669						
Turn Bay Length (ft)			50		145							
Base Capacity (vph)	735	1583	694	1715	458	963	1583					
Starvation Cap Reductn	0	0	93	135	0	0	0					
Spillback Cap Reductn	13	0	0	54	0	0	29					
Storage Cap Reductn	0	0	0	0	0	0	0					
Reduced v/c Ratio	1.17	0.44	1.26	0.56	0.76	1.38	0.47					

Intersection Summary

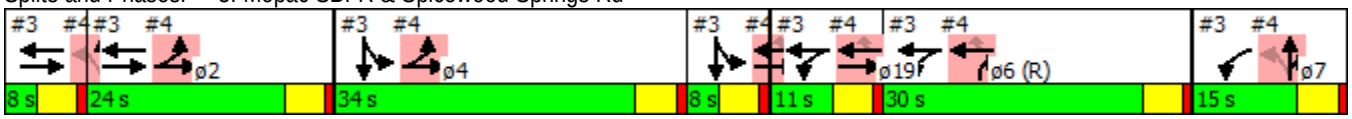
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 8 (6%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 130
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Mopac SBFR & Spicewood Springs Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	820	679	737	857	0	0	0	0	375	1249	710
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	4.0	5.0	5.0					5.0	5.0	4.0
Lane Util. Factor		0.95	1.00	1.00	0.95					0.91	0.91	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		3539	1583	1770	3539					1610	3385	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (perm)		3539	1583	1770	3539					1610	3385	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	845	700	760	884	0	0	0	0	387	1288	732
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	845	700	760	884	0	0	0	0	348	1327	732
Turn Type		NA	Free	Prot	NA					Split	NA	Free
Protected Phases		2 1		19 6 7	2 1 19 6					4 5	4 5	
Permitted Phases			Free									Free
Actuated Green, G (s)		27.0	130.0	51.0	63.0					37.0	37.0	130.0
Effective Green, g (s)		27.0	130.0	51.0	63.0					37.0	37.0	130.0
Actuated g/C Ratio		0.21	1.00	0.39	0.48					0.28	0.28	1.00
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		735	1583	694	1715					458	963	1583
v/s Ratio Prot		c0.24		c0.43	0.25					0.22	c0.39	
v/s Ratio Perm			0.44									0.46
v/c Ratio		1.15	0.44	1.10	0.52					0.76	1.38	0.46
Uniform Delay, d1		51.5	0.0	39.5	23.0					42.4	46.5	0.0
Progression Factor		1.33	1.00	0.69	0.27					0.47	0.49	1.00
Incremental Delay, d2		79.2	0.7	45.3	0.0					0.6	170.7	0.1
Delay (s)		147.5	0.7	72.4	6.3					20.4	193.6	0.1
Level of Service		F	A	E	A					C	F	A
Approach Delay (s)		81.0			36.9			0.0			109.7	
Approach LOS		F			D			A			F	

Intersection Summary			
HCM 2000 Control Delay	80.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.45		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	35.0
Intersection Capacity Utilization	106.3%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

4: Mopac NBFR & Anderson Ln

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	ø1	ø2	ø4	ø5	ø6
Lane Configurations												
Volume (vph)	351	844	1124	259	470	14	578					
Lane Group Flow (vph)	362	870	1159	267	378	365	352					
Turn Type	Prot	NA	NA	Perm	Perm	NA	custom					
Protected Phases	2 4 2 4 5 19		6 5 19			7 1	7 1 6	1	2	4	5	6
Permitted Phases				6 5 19	7 1							
Detector Phase	2 4 2 4 5 19		6 5 19	6 5 19	7 1	7 1	7 1 6					
Switch Phase												
Minimum Initial (s)								3.0	1.0	1.0	3.0	4.0
Minimum Split (s)								8.0	11.0	11.0	8.0	24.0
Total Split (s)								8.0	24.0	34.0	8.0	30.0
Total Split (%)								6%	18%	26%	6%	23%
Yellow Time (s)								4.0	4.0	4.0	4.0	4.0
All-Red Time (s)								1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag								Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?								Yes	Yes	Yes	Yes	Yes
Recall Mode								None	Max	None	None	C-Max
v/c Ratio	0.50	0.44	0.97	0.38	1.63	1.38	0.55					
Control Delay	8.4	0.1	61.9	5.1	326.6	214.9	5.4					
Queue Delay	4.2	2.0	41.8	0.0	0.0	0.1	0.0					
Total Delay	12.6	2.1	103.6	5.1	326.6	215.0	5.4					
Queue Length 50th (ft)	28	0	503	0	~490	~400	18					
Queue Length 95th (ft)	m44	m0	#654	59	#705	#620	41					
Internal Link Dist (ft)		333	702			1795						
Turn Bay Length (ft)	50			360	280							
Base Capacity (vph)	721	1960	1197	712	232	264	645					
Starvation Cap Reductn	276	896	0	0	0	0	0					
Spillback Cap Reductn	0	0	207	0	0	3	0					
Storage Cap Reductn	0	0	0	0	0	0	0					
Reduced v/c Ratio	0.81	0.82	1.17	0.38	1.63	1.40	0.55					

Intersection Summary

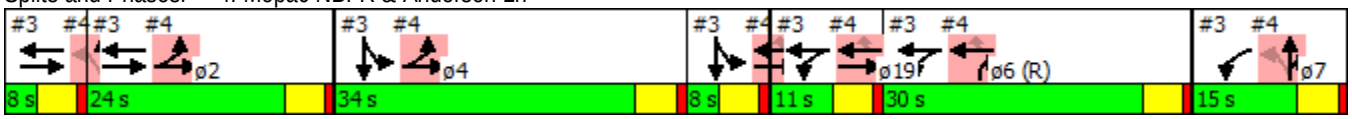
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 8 (6%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 130
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Mopac NBFR & Anderson Ln



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	351	844	0	0	1124	259	470	14	578	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0	5.0			
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.91	0.95			
Frt	1.00	1.00			1.00	0.85	1.00	0.90	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.99	1.00			
Satd. Flow (prot)	1770	3539			3539	1583	1681	1503	1504			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.99	1.00			
Satd. Flow (perm)	1770	3539			3539	1583	1681	1503	1504			
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	362	870	0	0	1159	267	485	14	596	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	177	0	56	90	0	0	0
Lane Group Flow (vph)	362	870	0	0	1159	90	378	309	262	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	custom			
Protected Phases	2 4	2 4 5			6 5 19			7 1	7 1 6			
Permitted Phases						6 5 19	7 1					
Actuated Green, G (s)	53.0	72.0			44.0	44.0	18.0	18.0	48.0			
Effective Green, g (s)	53.0	72.0			44.0	44.0	18.0	18.0	48.0			
Actuated g/C Ratio	0.41	0.55			0.34	0.34	0.14	0.14	0.37			
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	721	1960			1197	535	232	208	555			
v/s Ratio Prot	c0.20	0.25			c0.33				0.17			
v/s Ratio Perm						0.06	c0.22	0.21				
v/c Ratio	0.50	0.44			0.97	0.17	1.63	1.49	0.47			
Uniform Delay, d1	28.7	17.2			42.3	30.2	56.0	56.0	31.3			
Progression Factor	0.28	0.00			1.00	1.00	0.59	0.49	0.13			
Incremental Delay, d2	0.0	0.0			18.5	0.1	299.9	239.8	0.2			
Delay (s)	8.0	0.0			60.8	30.2	333.1	267.4	4.3			
Level of Service	A	A			E	C	F	F	A			
Approach Delay (s)		2.4			55.1			205.5			0.0	
Approach LOS		A			E			F			A	

Intersection Summary			
HCM 2000 Control Delay	81.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	35.0
Intersection Capacity Utilization	106.3%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	19	84	232	38	190	303
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	23	100	276	45	226	361
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						365
pX, platoon unblocked						
vC, conflicting volume	1112	299			321	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1112	299			321	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	88	86			82	
cM capacity (veh/h)	189	741			1238	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	123	321	587
Volume Left	23	0	226
Volume Right	100	45	0
cSH	481	1700	1238
Volume to Capacity	0.25	0.19	0.18
Queue Length 95th (ft)	25	0	17
Control Delay (s)	15.0	0.0	4.5
Lane LOS	C		A
Approach Delay (s)	15.0	0.0	4.5
Approach LOS	C		

Intersection Summary			
Average Delay	4.4		
Intersection Capacity Utilization	57.2%	ICU Level of Service	B
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	34
Intersection LOS	D

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	45	108	65	0	21	94	92	0	123	228	132
Peak Hour Factor	0.92	0.88	0.88	0.88	0.92	0.88	0.88	0.88	0.92	0.88	0.88	0.88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	51	123	74	0	24	107	105	0	140	259	150
Number of Lanes	0	0	1	0	0	0	1	0	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	1
HCM Control Delay	20.2	19.1	21.3
HCM LOS	C	C	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	52%	0%	21%	10%	100%	0%
Vol Thru, %	48%	46%	50%	45%	0%	49%
Vol Right, %	0%	54%	30%	44%	0%	51%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	237	246	218	207	158	446
LT Vol	123	0	45	21	158	0
Through Vol	114	114	108	94	0	220
RT Vol	0	132	65	92	0	226
Lane Flow Rate	269	280	248	235	180	507
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.61	0.582	0.549	0.519	0.412	1
Departure Headway (Hd)	8.153	7.496	7.983	7.943	8.253	7.37
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	450	486	458	461	438	497
Service Time	5.796	5.159	5.924	5.887	5.953	5.07
HCM Lane V/C Ratio	0.598	0.576	0.541	0.51	0.411	1.02
HCM Control Delay	22.7	20	20.2	19.1	16.6	67.7
HCM Lane LOS	C	C	C	C	C	F
HCM 95th-tile Q	4	3.6	3.2	2.9	2	13.5

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	158	220	226
Peak Hour Factor	0.92	0.88	0.88	0.88
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	180	250	257
Number of Lanes	0	1	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	54.3
HCM LOS	F

Lane

Intersection	
Intersection Delay, s/veh	24
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	41	168	143	0	92	65	8	0	53	152	49
Peak Hour Factor	0.92	0.81	0.81	0.81	0.92	0.81	0.81	0.81	0.92	0.81	0.81	0.81
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	51	207	177	0	114	80	10	0	65	188	60
Number of Lanes	0	0	1	1	0	0	1	1	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	2
HCM Control Delay	17.8	18.1	22.1
HCM LOS	C	C	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	21%	20%	0%	59%	0%	5%
Vol Thru, %	60%	80%	0%	41%	0%	87%
Vol Right, %	19%	0%	100%	0%	100%	8%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	254	209	143	157	8	342
LT Vol	53	41	0	92	0	17
Through Vol	152	168	0	65	0	296
RT Vol	49	0	143	0	8	29
Lane Flow Rate	314	258	177	194	10	422
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.633	0.567	0.347	0.461	0.021	0.82
Departure Headway (Hd)	7.267	7.91	7.084	8.558	7.526	6.988
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	495	457	507	421	475	519
Service Time	5.322	5.664	4.838	6.316	5.283	5.038
HCM Lane V/C Ratio	0.634	0.565	0.349	0.461	0.021	0.813
HCM Control Delay	22.1	20.6	13.6	18.5	10.4	34.6
HCM Lane LOS	C	C	B	C	B	D
HCM 95th-tile Q	4.3	3.4	1.5	2.4	0.1	8

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	17	296	29
Peak Hour Factor	0.92	0.81	0.81	0.81
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	21	365	36
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	34.6
HCM LOS	D

Lane

Intersection	
Intersection Delay, s/veh	19.8
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	47	139	179	0	60	132	129	0	25	247	48
Peak Hour Factor	0.92	0.90	0.90	0.90	0.92	0.90	0.90	0.90	0.92	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	52	154	199	0	67	147	143	0	28	274	53
Number of Lanes	0	0	1	1	0	0	1	1	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	2
HCM Control Delay	16.5	16.5	26.7
HCM LOS	C	C	D

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	25%	0%	31%	0%	100%	0%
Vol Thru, %	0%	84%	75%	0%	69%	0%	0%	79%
Vol Right, %	0%	16%	0%	100%	0%	100%	0%	21%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	25	295	186	179	192	129	83	249
LT Vol	25	0	47	0	60	0	83	0
Through Vol	0	247	139	0	132	0	0	196
RT Vol	0	48	0	179	0	129	0	53
Lane Flow Rate	28	328	207	199	213	143	92	277
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.065	0.713	0.468	0.403	0.489	0.293	0.217	0.601
Departure Headway (Hd)	8.465	7.832	8.144	7.291	8.256	7.371	8.49	7.82
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	421	459	440	491	433	484	421	459
Service Time	6.258	5.624	5.94	5.085	6.055	5.169	6.287	5.616
HCM Lane V/C Ratio	0.067	0.715	0.47	0.405	0.492	0.295	0.219	0.603
HCM Control Delay	11.9	28	18	15	18.8	13.2	13.7	21.8
HCM Lane LOS	B	D	C	B	C	B	B	C
HCM 95th-tile Q	0.2	5.6	2.4	1.9	2.6	1.2	0.8	3.9

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	83	196	53
Peak Hour Factor	0.92	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	92	218	59
Number of Lanes	0	1	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	19.8
HCM LOS	C

Lane

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	280	0	0	2962	272
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	0	292	0	0	3085	283
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	3085	1028	3369			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	3085	1028	3369			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	0	100			
cM capacity (veh/h)	9	231	80			

Direction, Lane #	EB 1	SB 1	SB 2	SB 3	SB 4
Volume Total	292	1028	1028	1028	283
Volume Left	0	0	0	0	0
Volume Right	292	0	0	0	283
cSH	231	1700	1700	1700	1700
Volume to Capacity	1.26	0.60	0.60	0.60	0.17
Queue Length 95th (ft)	373	0	0	0	0
Control Delay (s)	190.4	0.0	0.0	0.0	0.0
Lane LOS	F				
Approach Delay (s)	190.4	0.0			
Approach LOS	F				

Intersection Summary			
Average Delay	15.2		
Intersection Capacity Utilization	81.2%	ICU Level of Service	D
Analysis Period (min)	15		

11: Hart Ln & Far West Blvd

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	72	736	222	299	77	53	135	182	223	279
Lane Group Flow (vph)	87	999	267	360	93	64	163	219	269	385
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA
Protected Phases	5	2	1	6		7	4	1	3	8
Permitted Phases	2		6		6	4		4	8	
Detector Phase	5	2	1	6	6	7	4	1	3	8
Switch Phase										
Minimum Initial (s)	4.0	2.0	4.0	2.0	2.0	4.0	2.0	4.0	2.0	2.0
Minimum Split (s)	9.0	24.0	9.0	24.0	24.0	9.0	33.0	9.0	33.0	33.0
Total Split (s)	13.0	52.0	22.0	61.0	61.0	16.0	30.0	22.0	26.0	40.0
Total Split (%)	10.0%	40.0%	16.9%	46.9%	46.9%	12.3%	23.1%	16.9%	20.0%	30.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lead	Lag	Lag	Lag	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	C-Max	None	None	None	None	None
v/c Ratio	0.19	0.62	0.67	0.19	0.11	0.39	0.72	0.48	0.85	0.55
Control Delay	24.2	30.4	61.2	34.4	36.3	57.4	72.7	41.0	74.2	48.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.2	30.4	61.2	34.4	36.3	57.4	72.7	41.0	74.2	48.9
Queue Length 50th (ft)	42	334	166	117	58	50	134	152	217	155
Queue Length 95th (ft)	80	426	233	152	95	83	184	196	262	173
Internal Link Dist (ft)		1703		1174			695			1553
Turn Bay Length (ft)	130		100		490			100	100	
Base Capacity (vph)	458	1615	399	1899	849	184	358	459	381	934
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.62	0.67	0.19	0.11	0.35	0.46	0.48	0.71	0.41

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 100 (77%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green
Natural Cycle: 120
Control Type: Actuated-Coordinated

Splits and Phases: 11: Hart Ln & Far West Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	72	736	93	222	299	77	53	135	182	223	279	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95	
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3480		1770	3539	1583	1770	1863	1583	1770	3472	
Flt Permitted	0.46	1.00		0.22	1.00	1.00	0.48	1.00	1.00	0.65	1.00	
Satd. Flow (perm)	861	3480		415	3539	1583	898	1863	1583	1218	3472	
Peak-hour factor, PHF	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Adj. Flow (vph)	87	887	112	267	360	93	64	163	219	269	336	49
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	87	999	0	267	360	93	64	163	219	269	385	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases	5	2		1	6		7	4	1	3	8	
Permitted Phases	2			6		6	4		4	8		
Actuated Green, G (s)	59.4	59.4		68.8	68.8	68.8	15.7	15.7	32.7	26.2	26.2	
Effective Green, g (s)	59.4	59.4		68.8	68.8	68.8	15.7	15.7	32.7	26.2	26.2	
Actuated g/C Ratio	0.46	0.46		0.53	0.53	0.53	0.12	0.12	0.25	0.20	0.20	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	446	1590		396	1872	837	158	224	459	321	699	
v/s Ratio Prot	0.01	c0.29		c0.09	0.10		0.02	c0.09	0.06	c0.12	0.11	
v/s Ratio Perm	0.08			c0.27		0.06	0.03		0.08	c0.05		
v/c Ratio	0.20	0.63		0.67	0.19	0.11	0.41	0.73	0.48	0.84	0.55	
Uniform Delay, d1	20.4	26.9		32.5	16.0	15.3	52.2	55.1	41.4	48.6	46.6	
Progression Factor	1.00	1.00		1.51	1.93	1.96	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.1	1.9		3.4	0.2	0.3	0.6	9.6	0.3	16.4	0.5	
Delay (s)	20.5	28.8		52.3	31.1	30.3	52.8	64.7	41.7	65.0	47.1	
Level of Service	C	C		D	C	C	D	E	D	E	D	
Approach Delay (s)		28.1			38.9			51.7			54.5	
Approach LOS		C			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	40.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	71.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

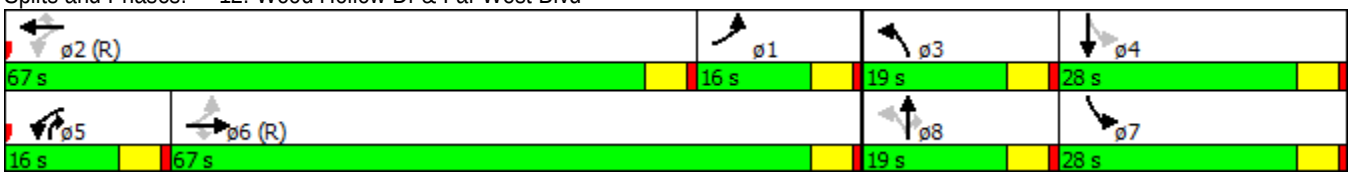
12: Wood Hollow Dr & Far West Blvd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Volume (vph)	112	1099	50	122	596	181	26	88	305	290	125
Lane Group Flow (vph)	119	1169	53	130	634	193	28	94	324	309	215
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA
Protected Phases	1	6		5	2		3	8	5	7	4
Permitted Phases	6		6	2		2	8		8	4	
Detector Phase	1	6	6	5	2	2	3	8	5	7	4
Switch Phase											
Minimum Initial (s)	4.0	2.0	2.0	4.0	2.0	2.0	4.0	2.0	4.0	4.0	2.0
Minimum Split (s)	9.0	11.0	11.0	9.0	11.0	11.0	9.0	11.0	9.0	9.0	11.0
Total Split (s)	16.0	67.0	67.0	16.0	67.0	67.0	19.0	19.0	16.0	28.0	28.0
Total Split (%)	12.3%	51.5%	51.5%	12.3%	51.5%	51.5%	14.6%	14.6%	12.3%	21.5%	21.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None
v/c Ratio	0.26	0.68	0.06	0.64	0.37	0.22	0.22	0.62	0.95	0.73	0.46
Control Delay	29.3	37.2	2.9	45.7	35.7	14.9	58.3	74.6	60.7	57.1	41.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.3	37.2	2.9	45.7	35.7	14.9	58.3	74.6	60.7	57.1	41.7
Queue Length 50th (ft)	78	508	3	79	207	52	22	78	123	243	143
Queue Length 95th (ft)	m116	592	m11	139	266	111	53	134	#225	#410	231
Internal Link Dist (ft)		1174			673			686			1879
Turn Bay Length (ft)	245		610	125			75		75		
Base Capacity (vph)	459	1727	824	208	1714	866	190	200	347	425	466
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.68	0.06	0.63	0.37	0.22	0.15	0.47	0.93	0.73	0.46

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 10 (8%), Referenced to phase 2:WBTL and 6:EBTL, Start of 1st Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 12: Wood Hollow Dr & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	112	1099	50	122	596	181	26	88	305	290	125	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1756	
Flt Permitted	0.41	1.00	1.00	0.08	1.00	1.00	0.67	1.00	1.00	0.70	1.00	
Satd. Flow (perm)	766	3539	1583	148	3539	1583	1242	1863	1583	1297	1756	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	119	1169	53	130	634	193	28	94	324	309	133	82
RTOR Reduction (vph)	0	0	28	0	0	102	0	0	85	0	16	0
Lane Group Flow (vph)	119	1169	25	130	634	91	28	94	239	309	199	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases	1	6		5	2		3	8	5	7	4	
Permitted Phases	6		6	2		2	8		8	4		
Actuated Green, G (s)	61.5	61.5	61.5	61.0	61.0	61.0	10.6	10.6	21.1	33.4	33.4	
Effective Green, g (s)	61.5	61.5	61.5	61.0	61.0	61.0	10.6	10.6	21.1	33.4	33.4	
Actuated g/C Ratio	0.47	0.47	0.47	0.47	0.47	0.47	0.08	0.08	0.16	0.26	0.26	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	447	1674	748	200	1660	742	119	151	256	432	451	
v/s Ratio Prot	0.02	c0.33		0.05	0.18		0.01	0.05	c0.08	c0.15	0.11	
v/s Ratio Perm	0.10		0.02	0.25		0.06	0.01		0.08	0.03		
v/c Ratio	0.27	0.70	0.03	0.65	0.38	0.12	0.24	0.62	0.94	0.72	0.44	
Uniform Delay, d1	21.4	27.0	18.3	26.3	22.3	19.4	55.7	57.8	53.8	43.0	40.5	
Progression Factor	1.30	1.36	40.35	1.40	1.64	5.59	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.1	1.9	0.1	4.7	0.6	0.3	0.4	5.6	38.3	4.6	0.3	
Delay (s)	28.0	38.5	739.9	41.7	37.2	108.8	56.1	63.4	92.1	47.7	40.7	
Level of Service	C	D	F	D	D	F	E	E	F	D	D	
Approach Delay (s)		65.3			52.2			83.8			44.8	
Approach LOS		E			D			F			D	

Intersection Summary			
HCM 2000 Control Delay	60.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	77.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

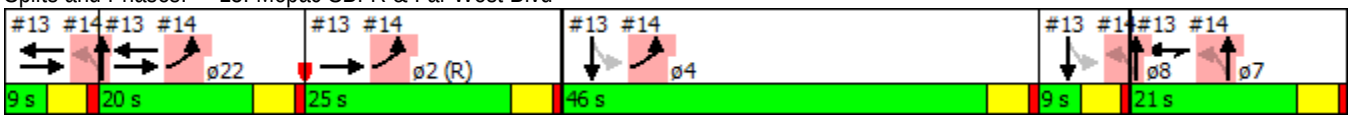
13: Mopac SBFR & Far West Blvd

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR	ø1	ø2	ø4	ø8	ø22
Lane Configurations											
Volume (vph)	849	474	19	631	550	928					
Lane Group Flow (vph)	875	489	20	651	794	957					
Turn Type	NA	Free	Prot	NA	NA	Free					
Protected Phases	1 22 2		7	1 22 7	4 8		1	2	4	8	22
Permitted Phases		Free				Free					
Detector Phase	1 22 2		7	1 22 7	4 8						
Switch Phase											
Minimum Initial (s)			4.0				4.0	4.0	4.0	4.0	4.0
Minimum Split (s)			20.0				9.0	24.0	24.0	9.0	20.0
Total Split (s)			21.0				9.0	25.0	46.0	9.0	20.0
Total Split (%)			16.2%				7%	19%	35%	7%	15%
Yellow Time (s)			4.0				4.0	4.0	4.0	4.0	4.0
All-Red Time (s)			1.0				1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)			0.0								
Total Lost Time (s)			5.0								
Lead/Lag							Lead		Lead	Lag	Lag
Lead-Lag Optimize?							Yes		Yes	Yes	Yes
Recall Mode			None				None	C-Max	None	None	None
v/c Ratio	0.66	0.31	0.09	0.53	0.59	0.60					
Control Delay	32.8	0.3	40.5	6.3	28.6	1.6					
Queue Delay	0.3	0.0	0.0	1.3	0.0	0.0					
Total Delay	33.1	0.3	40.5	7.6	28.6	1.6					
Queue Length 50th (ft)	375	0	3	158	201	16					
Queue Length 95th (ft)	m444	m0	m14	0	m213	m2					
Internal Link Dist (ft)	432			324	532						
Turn Bay Length (ft)		490									
Base Capacity (vph)	1333	1583	219	1229	1321	1583					
Starvation Cap Reductn	0	0	0	355	0	0					
Spillback Cap Reductn	110	0	0	0	0	0					
Storage Cap Reductn	0	0	0	0	0	0					
Reduced v/c Ratio	0.72	0.31	0.09	0.74	0.60	0.60					

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 106 (82%), Referenced to phase 2:EBT, Start of 1st Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Mopac SBFR & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	849	474	19	631	0	0	0	0	220	550	928
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	4.0	5.0	5.0						5.0	4.0
Lane Util. Factor		0.95	1.00	1.00	0.95						0.95	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (prot)		3539	1583	1770	3539						3489	1583
Flt Permitted		1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (perm)		3539	1583	1770	3539						3489	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	875	489	20	651	0	0	0	0	227	567	957
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	875	489	20	651	0	0	0	0	0	794	957
Turn Type		NA	Free	Prot	NA					Perm	NA	Free
Protected Phases		1 22 2		7	1 22 7						4 8	
Permitted Phases			Free							4 8		Free
Actuated Green, G (s)		49.0	130.0	16.2	45.2						49.8	130.0
Effective Green, g (s)		49.0	130.0	16.2	45.2						49.8	130.0
Actuated g/C Ratio		0.38	1.00	0.12	0.35						0.38	1.00
Clearance Time (s)				5.0								
Vehicle Extension (s)				2.0								
Lane Grp Cap (vph)		1333	1583	220	1230						1336	1583
v/s Ratio Prot		c0.25		0.01	0.18							
v/s Ratio Perm			0.31								0.23	c0.60
v/c Ratio		0.66	0.31	0.09	0.53						0.59	0.60
Uniform Delay, d1		33.5	0.0	50.4	33.9						32.0	0.0
Progression Factor		0.92	1.00	0.78	0.15						0.85	1.00
Incremental Delay, d2		0.6	0.3	0.0	0.1						0.3	1.2
Delay (s)		31.4	0.3	39.5	5.1						27.5	1.2
Level of Service		C	A	D	A						C	A
Approach Delay (s)		20.2			6.1			0.0			13.1	
Approach LOS		C			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	14.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	62.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

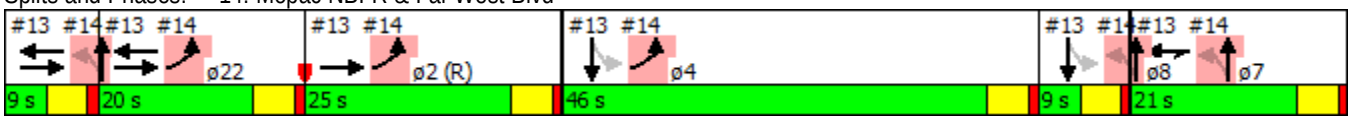
14: Mopac NBFR & Far West Blvd

Lane Group	EBL	NBL	NBT	ø1	ø2	ø4	ø7	ø8	ø22
Lane Configurations									
Volume (vph)	1085	651	2						
Lane Group Flow (vph)	1130	339	341						
Turn Type	Prot	Perm	NA						
Protected Phases	22 2 4		7 1 8	1	2	4	7	8	22
Permitted Phases		7 1 8							
Detector Phase	22 2 4	7 1 8	7 1 8						
Switch Phase									
Minimum Initial (s)				4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)				9.0	24.0	24.0	20.0	9.0	20.0
Total Split (s)				9.0	25.0	46.0	21.0	9.0	20.0
Total Split (%)				7%	19%	35%	16%	7%	15%
Yellow Time (s)				4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)				1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)									
Total Lost Time (s)									
Lead/Lag				Lead		Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes		Yes	Yes
Recall Mode				None	C-Max	None	None	None	None
v/c Ratio	0.54	0.64	0.64						
Control Delay	6.3	46.5	46.6						
Queue Delay	0.6	0.0	0.0						
Total Delay	6.8	46.5	46.6						
Queue Length 50th (ft)	32	261	262						
Queue Length 95th (ft)	24	#420	#425						
Internal Link Dist (ft)	324		322						
Turn Bay Length (ft)									
Base Capacity (vph)	2271	528	530						
Starvation Cap Reductn	672	0	0						
Spillback Cap Reductn	0	0	0						
Storage Cap Reductn	0	0	0						
Reduced v/c Ratio	0.71	0.64	0.64						

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 106 (82%), Referenced to phase 2:EBT, Start of 1st Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 14: Mopac NBFR & Far West Blvd



14: Mopac NBFR & Far West Blvd

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	1085	0	651	2	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0		
Lane Util. Factor	0.97		0.95	0.95		
Frt	1.00		1.00	1.00		
Flt Protected	0.95		0.95	0.95		
Satd. Flow (prot)	3433		1681	1686		
Flt Permitted	0.95		0.95	0.95		
Satd. Flow (perm)	3433		1681	1686		
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	1130	0	678	2	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1130	0	339	341	0	0
Turn Type	Prot		Perm	NA		
Protected Phases	22 2 4			7 1 8		
Permitted Phases			7 1 8			
Actuated Green, G (s)	79.1		40.9	40.9		
Effective Green, g (s)	79.1		40.9	40.9		
Actuated g/C Ratio	0.61		0.31	0.31		
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)	2088		528	530		
v/s Ratio Prot	c0.33					
v/s Ratio Perm			0.20	0.20		
v/c Ratio	0.54		0.64	0.64		
Uniform Delay, d1	14.9		38.3	38.3		
Progression Factor	0.38		1.00	1.00		
Incremental Delay, d2	0.1		2.0	2.0		
Delay (s)	5.7		40.3	40.3		
Level of Service	A		D	D		
Approach Delay (s)	5.7			40.3	0.0	
Approach LOS	A			D	A	

Intersection Summary			
HCM 2000 Control Delay	18.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	75.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

20: Loop 1 SBFR & Steck Avenue

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	ø1	ø2	ø4	ø5	ø6	ø7
Lane Configurations												
Volume (vph)	556	142	155	364	990	1984						
Lane Group Flow (vph)	591	151	165	387	948	2542						
Turn Type	NA	Perm	Prot	NA	Split	NA						
Protected Phases	2 1		6 7	2 1 6 7	4 5	4 5	1	2	4	5	6	7
Permitted Phases		2 1										
Detector Phase	2 1	2 1	6 7	2 1 6 7	4 5	4 5						
Switch Phase												
Minimum Initial (s)							2.0	1.0	1.0	3.0	4.0	4.0
Minimum Split (s)							7.0	11.0	11.0	8.0	15.0	9.0
Total Split (s)							7.0	20.0	63.0	8.0	15.0	17.0
Total Split (%)							5%	15%	48%	6%	12%	13%
Yellow Time (s)							4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)							1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag							Lead	Lag	Lead	Lag		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode							None	Max	None	None	C-Max	None
v/c Ratio	0.99	0.39	0.45	0.26	1.16	1.50						
Control Delay	87.8	11.8	22.0	0.3	116.5	256.2						
Queue Delay	28.2	0.0	0.0	0.0	0.0	0.0						
Total Delay	115.9	11.8	22.0	0.3	116.5	256.2						
Queue Length 50th (ft)	264	6	27	0	~1037	~1639						
Queue Length 95th (ft)	#388	66	m46	m0	#1318	#1774						
Internal Link Dist (ft)	737			327		333						
Turn Bay Length (ft)		100	80									
Base Capacity (vph)	598	386	367	1470	817	1693						
Starvation Cap Reductn	0	0	0	0	0	0						
Spillback Cap Reductn	50	0	0	0	0	0						
Storage Cap Reductn	0	0	0	0	0	0						
Reduced v/c Ratio	1.08	0.39	0.45	0.26	1.16	1.50						

Intersection Summary

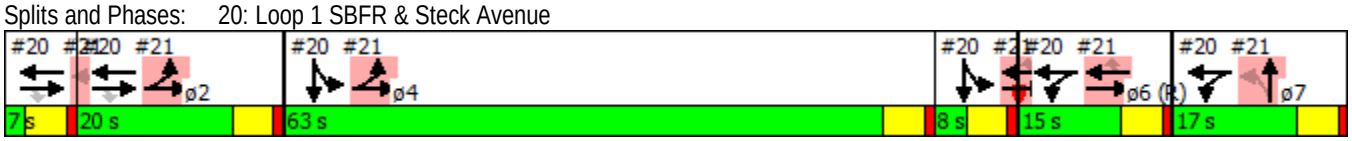
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 90 (69%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 20: Loop 1 SBFR & Steck Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	556	142	155	364	0	0	0	0	990	1984	306
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0					5.0	5.0	
Lane Util. Factor		0.95	1.00	1.00	0.95					0.91	0.91	
Frt		1.00	0.85	1.00	1.00					1.00	0.98	
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	3539					1610	3318	
Flt Permitted		1.00	1.00	0.95	1.00					0.95	1.00	
Satd. Flow (perm)		3539	1583	1770	3539					1610	3318	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	591	151	165	387	0	0	0	0	1053	2111	326
RTOR Reduction (vph)	0	0	119	0	0	0	0	0	0	0	8	0
Lane Group Flow (vph)	0	591	32	165	387	0	0	0	0	948	2534	0
Turn Type		NA	Perm	Prot	NA					Split	NA	
Protected Phases		2 1		6 7	2 1 6 7					4 5	4 5	
Permitted Phases			2 1									
Actuated Green, G (s)		22.0	22.0	27.0	54.0					66.0	66.0	
Effective Green, g (s)		22.0	22.0	27.0	54.0					66.0	66.0	
Actuated g/C Ratio		0.17	0.17	0.21	0.42					0.51	0.51	
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		598	267	367	1470					817	1684	
v/s Ratio Prot		c0.17		c0.09	0.11					0.59	c0.76	
v/s Ratio Perm			0.02									
v/c Ratio		0.99	0.12	0.45	0.26					1.16	1.50	
Uniform Delay, d1		53.9	45.8	45.0	24.9					32.0	32.0	
Progression Factor		1.00	1.00	0.42	0.00					1.00	1.00	
Incremental Delay, d2		33.4	0.1	0.2	0.0					85.6	230.2	
Delay (s)		87.3	45.9	19.2	0.0					117.6	262.2	
Level of Service		F	D	B	A					F	F	
Approach Delay (s)		78.8			5.7			0.0			222.9	
Approach LOS		E			A			A			F	

Intersection Summary			
HCM 2000 Control Delay	175.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.33		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	139.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

21: Loop 1 NBFR & Steck Avenue

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	ø1	ø2	ø4	ø5	ø6	ø7
Lane Configurations												
Volume (vph)	720	777	393	266	216	563						
Lane Group Flow (vph)	735	793	401	271	220	771						
Turn Type	Prot	NA	NA	Perm	Perm	NA						
Protected Phases	2 4	2 4 5 6	6 5			7 1	1	2	4	5	6	7
Permitted Phases				6 5	7 1							
Detector Phase	2 4	2 4 5 6	6 5	6 5	7 1	7 1						
Switch Phase												
Minimum Initial (s)							2.0	1.0	1.0	3.0	4.0	4.0
Minimum Split (s)							7.0	11.0	11.0	8.0	15.0	9.0
Total Split (s)							7.0	20.0	63.0	8.0	15.0	17.0
Total Split (%)							5%	15%	48%	6%	12%	13%
Yellow Time (s)							4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)							1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag							Lead	Lag	Lead	Lag		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode							None	Max	None	None	C-Max	None
v/c Ratio	0.69	0.29	0.82	0.72	0.44	2.85						
Control Delay	10.2	0.0	68.8	29.2	44.7	859.2						
Queue Delay	51.5	1.0	0.0	0.0	0.0	0.0						
Total Delay	61.7	1.0	68.8	29.2	44.7	859.2						
Queue Length 50th (ft)	255	0	175	67	76	~1112						
Queue Length 95th (ft)	m123	m0	#250	171	m111	m#1335						
Internal Link Dist (ft)		327	978			2452						
Turn Bay Length (ft)	80			170	110							
Base Capacity (vph)	1062	2749	490	378	501	271						
Starvation Cap Reductn	398	1599	0	0	0	0						
Spillback Cap Reductn	0	0	0	0	0	0						
Storage Cap Reductn	0	0	0	0	0	0						
Reduced v/c Ratio	1.11	0.69	0.82	0.72	0.44	2.85						

Intersection Summary

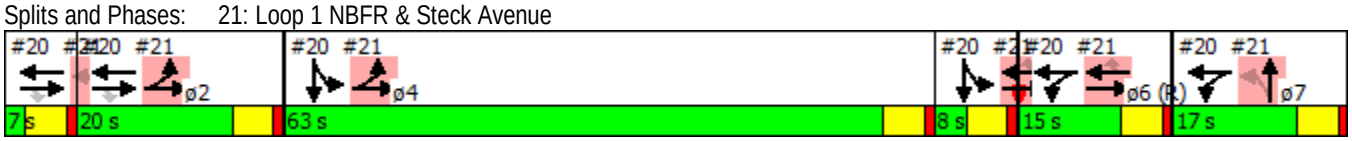
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 90 (69%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 21: Loop 1 NBFR & Steck Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	720	777	0	0	393	266	216	563	193	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0				
Lane Util. Factor	1.00	0.95			0.95	1.00	0.97	1.00				
Frt	1.00	1.00			1.00	0.85	1.00	0.96				
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (prot)	1770	3539			3539	1583	3433	1791				
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (perm)	1770	3539			3539	1583	3433	1791				
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	735	793	0	0	401	271	220	574	197	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	159	0	9	0	0	0	0
Lane Group Flow (vph)	735	793	0	0	401	112	220	762	0	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA				
Protected Phases	2 4	2 4 5 6			6 5			7 1				
Permitted Phases						6 5	7 1					
Actuated Green, G (s)	78.0	101.0			18.0	18.0	19.0	19.0				
Effective Green, g (s)	78.0	101.0			18.0	18.0	19.0	19.0				
Actuated g/C Ratio	0.60	0.78			0.14	0.14	0.15	0.15				
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	1062	2749			490	219	501	261				
v/s Ratio Prot	c0.42	0.22			c0.11			c0.43				
v/s Ratio Perm						0.07	0.06					
v/c Ratio	0.69	0.29			0.82	0.51	0.44	2.92				
Uniform Delay, d1	17.8	4.2			54.4	51.9	50.6	55.5				
Progression Factor	0.54	0.00			1.00	1.00	0.82	0.83				
Incremental Delay, d2	0.1	0.0			9.7	0.7	0.2	873.2				
Delay (s)	9.7	0.0			64.1	52.6	41.9	919.0				
Level of Service	A	A			E	D	D	F				
Approach Delay (s)		4.7			59.5			724.3			0.0	
Approach LOS		A			E			F			A	

Intersection Summary			
HCM 2000 Control Delay	239.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.24		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	139.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	143	255	51	116	91	45
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	155	277	55	126	99	49
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			433		531	294
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			433		531	294
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			95		80	93
cM capacity (veh/h)			1127		484	745

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	433	182	148
Volume Left	0	55	99
Volume Right	277	0	49
cSH	1700	1127	547
Volume to Capacity	0.25	0.05	0.27
Queue Length 95th (ft)	0	4	27
Control Delay (s)	0.0	2.9	14.0
Lane LOS		A	B
Approach Delay (s)	0.0	2.9	14.0
Approach LOS			B

Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	49.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	21	125	10	92	195	72	5	0	41	32	0	9
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	23	136	11	100	212	78	5	0	45	35	0	10
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	290			147			648	677	141	683	643	251
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	290			147			648	677	141	683	643	251
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			93			98	100	95	89	100	99
cM capacity (veh/h)	1272			1435			354	342	907	323	358	788

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	170	390	50	45
Volume Left	23	100	5	35
Volume Right	11	78	45	10
cSH	1272	1435	775	371
Volume to Capacity	0.02	0.07	0.06	0.12
Queue Length 95th (ft)	1	6	5	10
Control Delay (s)	1.2	2.5	10.0	16.0
Lane LOS	A	A	A	C
Approach Delay (s)	1.2	2.5	10.0	16.0
Approach LOS			A	C

Intersection Summary			
Average Delay	3.6		
Intersection Capacity Utilization	47.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	142	10	31	178	5	14
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	154	11	34	193	5	15
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			165		421	160
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			165		421	160
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		99	98
cM capacity (veh/h)			1413		575	885

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	165	227	21
Volume Left	0	34	5
Volume Right	11	0	15
cSH	1700	1413	775
Volume to Capacity	0.10	0.02	0.03
Queue Length 95th (ft)	0	2	2
Control Delay (s)	0.0	1.3	9.8
Lane LOS		A	A
Approach Delay (s)	0.0	1.3	9.8
Approach LOS			A

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	32.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	163	31	31	97	14	14
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	177	34	34	105	15	15
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			211		367	194
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			211		367	194
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		98	98
cM capacity (veh/h)			1360		617	847

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	211	139	30
Volume Left	0	34	15
Volume Right	34	0	15
cSH	1700	1360	714
Volume to Capacity	0.12	0.02	0.04
Queue Length 95th (ft)	0	2	3
Control Delay (s)	0.0	2.0	10.3
Lane LOS		A	B
Approach Delay (s)	0.0	2.0	10.3
Approach LOS			B

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	30.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	61	116	101	82	36	27
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	66	126	110	89	39	29
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	199				413	154
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	199				413	154
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	95				93	97
cM capacity (veh/h)	1373				567	892

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	192	199	68
Volume Left	66	0	39
Volume Right	0	89	29
cSH	1373	1700	672
Volume to Capacity	0.05	0.12	0.10
Queue Length 95th (ft)	4	0	8
Control Delay (s)	2.9	0.0	11.0
Lane LOS	A		B
Approach Delay (s)	2.9	0.0	11.0
Approach LOS			B

Intersection Summary			
Average Delay	2.9		
Intersection Capacity Utilization	33.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	21	177	350	72	32	9
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	23	192	380	78	35	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	459				658	420
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	459				658	420
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				92	98
cM capacity (veh/h)	1102				420	634

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	215	459	45
Volume Left	23	0	35
Volume Right	0	78	10
cSH	1102	1700	454
Volume to Capacity	0.02	0.27	0.10
Queue Length 95th (ft)	2	0	8
Control Delay (s)	1.1	0.0	13.8
Lane LOS	A		B
Approach Delay (s)	1.1	0.0	13.8
Approach LOS			B

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	36.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	209	422	21	9	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	227	459	23	10	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	482				697	470
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	482				697	470
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				98	100
cM capacity (veh/h)	1081				407	593

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	227	482	10
Volume Left	0	0	10
Volume Right	0	23	0
cSH	1081	1700	407
Volume to Capacity	0.00	0.28	0.02
Queue Length 95th (ft)	0	0	2
Control Delay (s)	0.0	0.0	14.1
Lane LOS			B
Approach Delay (s)	0.0	0.0	14.1
Approach LOS			B

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	33.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	9	9	21	280	599	21
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	10	23	304	651	23
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					212	
pX, platoon unblocked	0.86	0.86	0.86			
vC, conflicting volume	860	662	674			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	756	525	539			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	97	98	97			
cM capacity (veh/h)	288	427	881			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	20	124	203	674
Volume Left	10	23	0	0
Volume Right	10	0	0	23
cSH	344	881	1700	1700
Volume to Capacity	0.06	0.03	0.12	0.40
Queue Length 95th (ft)	5	2	0	0
Control Delay (s)	16.1	1.9	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	16.1	0.7		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	42.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	36	18	283	82	40	568
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	39	20	308	89	43	617
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						372
pX, platoon unblocked	0.86					
vC, conflicting volume	1057	198			397	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	985	198			397	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	81	98			96	
cM capacity (veh/h)	203	809			1158	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1
Volume Total	59	205	192	661
Volume Left	39	0	0	43
Volume Right	20	0	89	0
cSH	271	1700	1700	1158
Volume to Capacity	0.22	0.12	0.11	0.04
Queue Length 95th (ft)	20	0	0	3
Control Delay (s)	21.9	0.0	0.0	1.0
Lane LOS	C			A
Approach Delay (s)	21.9	0.0		1.0
Approach LOS	C			

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	55.9%	ICU Level of Service	B
Analysis Period (min)	15		

1: Hart Ln & Spicewood Springs Rd

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	924	172	162	1226	273	271
Lane Group Flow (vph)	1027	191	180	1362	303	301
Turn Type	NA	Perm	Prot	NA	Prot	Free
Protected Phases	2		1	6	4	
Permitted Phases		2				Free
Detector Phase	2	2	1	6	4	
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	
Total Split (s)	79.0	79.0	39.0	118.0	32.0	
Total Split (%)	52.7%	52.7%	26.0%	78.7%	21.3%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Max	C-Max	Max	C-Max	None	
v/c Ratio	0.59	0.23	0.35	0.47	0.75	0.19
Control Delay	28.9	11.9	42.1	7.7	75.9	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.9	11.9	42.1	7.7	75.9	0.3
Queue Length 50th (ft)	370	53	144	315	150	0
Queue Length 95th (ft)	440	102	256	278	196	0
Internal Link Dist (ft)	211			988	285	
Turn Bay Length (ft)		110	220		160	
Base Capacity (vph)	1745	826	511	2887	617	1583
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.23	0.35	0.47	0.49	0.19

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of 1st Green
Natural Cycle: 75
Control Type: Actuated-Coordinated

Splits and Phases: 1: Hart Ln & Spicewood Springs Rd

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	924	172	162	1226	273	271
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	4.0
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	3433	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	3433	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1027	191	180	1362	303	301
RTOR Reduction (vph)	0	46	0	0	0	0
Lane Group Flow (vph)	1027	145	180	1362	303	301
Turn Type	NA	Perm	Prot	NA	Prot	Free
Protected Phases	2		1	6	4	
Permitted Phases		2				Free
Actuated Green, G (s)	74.0	74.0	43.4	122.4	17.6	150.0
Effective Green, g (s)	74.0	74.0	43.4	122.4	17.6	150.0
Actuated g/C Ratio	0.49	0.49	0.29	0.82	0.12	1.00
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	1745	780	512	2887	402	1583
v/s Ratio Prot	c0.29		0.10	c0.38	c0.09	
v/s Ratio Perm		0.09				0.19
v/c Ratio	0.59	0.19	0.35	0.47	0.75	0.19
Uniform Delay, d1	27.1	21.2	42.2	4.1	64.1	0.0
Progression Factor	1.00	1.00	0.93	1.64	1.00	1.00
Incremental Delay, d2	1.5	0.5	1.5	0.4	7.0	0.3
Delay (s)	28.6	21.7	40.7	7.2	71.1	0.3
Level of Service	C	C	D	A	E	A
Approach Delay (s)	27.5			11.1	35.8	
Approach LOS	C			B	D	

Intersection Summary			
HCM 2000 Control Delay	21.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	54.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

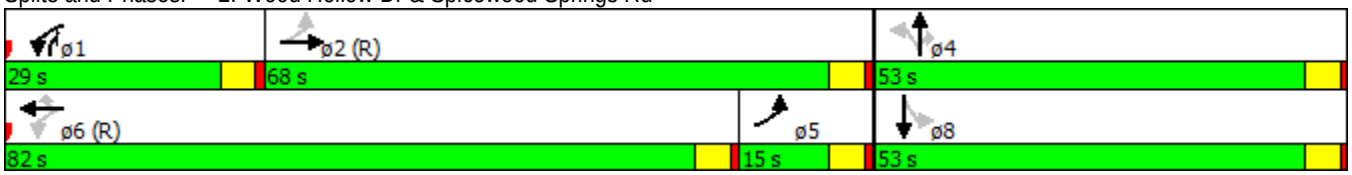
2: Wood Hollow Dr & Spicewood Springs Rd

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	6	1113	181	1127	1	245	8	372	1	5
Lane Group Flow (vph)	7	1351	206	1281	1	0	287	423	0	25
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Perm	NA	pm+ov	Perm	NA
Protected Phases	5	2	1	6			4	1		8
Permitted Phases	2		6		6	4		4	8	
Detector Phase	5	2	1	6	6	4	4	1	8	8
Switch Phase										
Minimum Initial (s)	6.0	25.0	6.0	5.0	5.0	5.0	5.0	6.0	5.0	5.0
Minimum Split (s)	15.0	30.0	15.0	11.0	11.0	35.0	35.0	15.0	35.0	35.0
Total Split (s)	15.0	68.0	29.0	82.0	82.0	53.0	53.0	29.0	53.0	53.0
Total Split (%)	10.0%	45.3%	19.3%	54.7%	54.7%	35.3%	35.3%	19.3%	35.3%	35.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead			Lead		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes			Yes		
Recall Mode	None	C-Max	None	C-Max	C-Max	Max	Max	None	None	None
v/c Ratio	0.03	0.56	0.73	0.61	0.00		0.67	0.56		0.05
Control Delay	10.8	16.9	50.6	17.4	0.0		53.4	28.3		17.7
Queue Delay	0.0	0.8	0.0	0.0	0.0		0.0	1.3		0.0
Total Delay	10.8	17.7	50.6	17.5	0.0		53.4	29.5		17.7
Queue Length 50th (ft)	2	384	118	231	0		244	264		5
Queue Length 95th (ft)	m7	468	217	410	m0		345	320		27
Internal Link Dist (ft)		988		494			132			203
Turn Bay Length (ft)	300		110		100					
Base Capacity (vph)	251	2396	370	2099	959		426	837		546
Starvation Cap Reductn	0	0	0	58	0		0	0		0
Spillback Cap Reductn	0	652	0	0	0		0	224		0
Storage Cap Reductn	0	0	0	0	0		0	0		0
Reduced v/c Ratio	0.03	0.77	0.56	0.63	0.00		0.67	0.69		0.05

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 55 (37%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Wood Hollow Dr & Spicewood Springs Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	1113	76	181	1127	1	245	8	372	1	5	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0		5.0	5.0		5.0	
Lane Util. Factor	1.00	0.91		1.00	0.95	1.00		1.00	1.00		1.00	
Frt	1.00	0.99		1.00	1.00	0.85		1.00	0.85		0.90	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.95	1.00		1.00	
Satd. Flow (prot)	1770	5037		1770	3539	1583		1777	1583		1678	
Flt Permitted	0.18	1.00		0.11	1.00	1.00		0.71	1.00		0.99	
Satd. Flow (perm)	326	5037		201	3539	1583		1331	1583		1670	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	7	1265	86	206	1281	1	278	9	423	1	6	18
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	29	0	12	0
Lane Group Flow (vph)	7	1346	0	206	1281	1	0	287	394	0	13	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	pm+ov	Perm	NA	
Protected Phases	5	2		1	6			4	1		8	
Permitted Phases	2			6		6	4		4	8		
Actuated Green, G (s)	71.3	71.3		85.0	85.0	85.0		48.0	63.7		48.0	
Effective Green, g (s)	71.3	71.3		85.0	85.0	85.0		48.0	63.7		48.0	
Actuated g/C Ratio	0.48	0.48		0.57	0.57	0.57		0.32	0.42		0.32	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0		5.0	5.0		5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0		2.0	2.0		2.0	
Lane Grp Cap (vph)	174	2394		278	2005	897		425	725		534	
v/s Ratio Prot	0.00	c0.27		c0.08	0.36				0.06			
v/s Ratio Perm	0.02			c0.34		0.00		c0.22	0.19		0.01	
v/c Ratio	0.04	0.56		0.74	0.64	0.00		0.68	0.54		0.02	
Uniform Delay, d1	28.7	28.2		23.8	22.1	14.1		44.2	32.3		34.9	
Progression Factor	0.42	0.56		1.70	0.79	1.00		1.00	1.00		1.00	
Incremental Delay, d2	0.0	0.9		8.6	1.5	0.0		8.3	0.4		0.0	
Delay (s)	12.2	16.5		49.0	18.9	14.1		52.6	32.7		35.0	
Level of Service	B	B		D	B	B		D	C		C	
Approach Delay (s)		16.5			23.1			40.7			35.0	
Approach LOS		B			C			D			C	

Intersection Summary			
HCM 2000 Control Delay	24.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	69.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

3: Mopac SBFR & Spicewood Springs Rd

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR	ø1	ø2	ø4	ø5	ø6
Lane Configurations												
Volume (vph)	1169	316	731	882	644	236	427					
Lane Group Flow (vph)	1244	336	778	938	342	594	454					
Turn Type	NA	Free	Prot	NA	Split	NA	Free					
Protected Phases	2 1		19 6 7 2 1 19 6		4 5	4 5		1	2	4	5	6
Permitted Phases		Free					Free					
Detector Phase	2 1		19 6 7 2 1 19 6		4 5	4 5						
Switch Phase												
Minimum Initial (s)								3.0	1.0	1.0	3.0	4.0
Minimum Split (s)								8.0	11.0	11.0	8.0	24.0
Total Split (s)								8.0	35.0	23.0	8.0	51.0
Total Split (%)								5%	23%	15%	5%	34%
Yellow Time (s)								4.0	4.0	4.0	4.0	4.0
All-Red Time (s)								1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag								Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?								Yes	Yes	Yes	Yes	Yes
Recall Mode								None	Max	None	None	C-Max
v/c Ratio	1.39	0.21	0.93	0.42	1.23	1.18dl	0.29					
Control Delay	221.8	0.3	26.0	1.9	179.1	107.4	0.5					
Queue Delay	0.9	0.0	27.0	0.3	0.0	0.0	0.0					
Total Delay	222.6	0.3	52.9	2.2	179.1	107.4	0.5					
Queue Length 50th (ft)	~864	0	762	42	~451	~343	0					
Queue Length 95th (ft)	#1002	0	m599	m101	#674	#474	0					
Internal Link Dist (ft)	494			333		2669						
Turn Bay Length (ft)			50		145							
Base Capacity (vph)	896	1583	837	2241	279	571	1583					
Starvation Cap Reductn	0	0	98	593	0	0	0					
Spillback Cap Reductn	127	0	0	3	0	0	1					
Storage Cap Reductn	0	0	0	0	0	0	0					
Reduced v/c Ratio	1.62	0.21	1.05	0.57	1.23	1.04	0.29					

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 89 (59%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 130
Control Type: Actuated-Coordinated

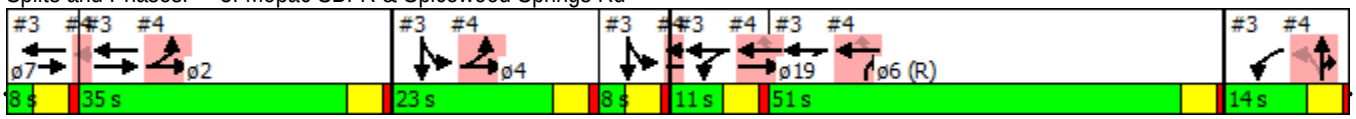
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 3: Mopac SBFR & Spicewood Springs Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1169	316	731	882	0	0	0	0	644	236	427
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	4.0	5.0	5.0					5.0	5.0	4.0
Lane Util. Factor		0.95	1.00	1.00	0.95					0.91	0.91	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.97	1.00
Satd. Flow (prot)		3539	1583	1770	3539					1610	3295	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.97	1.00
Satd. Flow (perm)		3539	1583	1770	3539					1610	3295	1583
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	1244	336	778	938	0	0	0	0	685	251	454
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1244	336	778	938	0	0	0	0	342	594	454
Turn Type		NA	Free	Prot	NA					Split	NA	Free
Protected Phases		2 1		19 6 7	2 1 19 6					4 5	4 5	
Permitted Phases			Free									Free
Actuated Green, G (s)		38.0	150.0	71.0	95.0					26.0	26.0	150.0
Effective Green, g (s)		38.0	150.0	71.0	95.0					26.0	26.0	150.0
Actuated g/C Ratio		0.25	1.00	0.47	0.63					0.17	0.17	1.00
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		896	1583	837	2241					279	571	1583
v/s Ratio Prot		c0.35		c0.44	0.27					c0.21	0.18	
v/s Ratio Perm			0.21									0.29
v/c Ratio		1.39	0.21	0.93	0.42					1.23	1.18dl	0.29
Uniform Delay, d1		56.0	0.0	37.1	13.7					62.0	62.0	0.0
Progression Factor		1.00	1.00	0.61	0.25					1.00	1.00	1.00
Incremental Delay, d2		180.6	0.3	2.1	0.0					129.2	48.5	0.5
Delay (s)		236.7	0.3	24.6	3.4					191.2	110.5	0.5
Level of Service		F	A	C	A					F	F	A
Approach Delay (s)		186.4			13.0			0.0			94.4	
Approach LOS		F			B			A			F	

Intersection Summary			
HCM 2000 Control Delay	95.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.31		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	35.0
Intersection Capacity Utilization	113.7%	ICU Level of Service	H
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group

4: Mopac NBFR & Anderson Ln

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	ø1	ø2	ø4	ø5	ø6
Lane Configurations												
Volume (vph)	573	1240	1277	453	337	45	627					
Lane Group Flow (vph)	603	1305	1344	477	319	380	363					
Turn Type	Prot	NA	NA	Perm	Perm	NA	custom					
Protected Phases	2 4	2 4 5 19	6 5 19			7 1	7 1 6	1	2	4	5	6
Permitted Phases				6 5 19	7 1							
Detector Phase	2 4	2 4 5 19	6 5 19	6 5 19	7 1	7 1	7 1 6					
Switch Phase												
Minimum Initial (s)								3.0	1.0	1.0	3.0	4.0
Minimum Split (s)								8.0	11.0	11.0	8.0	24.0
Total Split (s)								8.0	35.0	23.0	8.0	51.0
Total Split (%)								5%	23%	15%	5%	34%
Yellow Time (s)								4.0	4.0	4.0	4.0	4.0
All-Red Time (s)								1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag								Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?								Yes	Yes	Yes	Yes	Yes
Recall Mode								None	Max	None	None	C-Max
v/c Ratio	0.96	0.77	0.88	0.59	1.68	1.50	0.48					
Control Delay	32.2	0.6	46.6	19.8	365.4	274.5	20.6					
Queue Delay	42.2	40.7	6.1	0.0	0.0	0.2	0.0					
Total Delay	74.5	41.3	52.7	19.8	365.4	274.7	20.6					
Queue Length 50th (ft)	542	0	626	190	~477	~468	167					
Queue Length 95th (ft)	m178	m0	730	308	#687	#701	266					
Internal Link Dist (ft)		333	702			1795						
Turn Bay Length (ft)	50			360	280							
Base Capacity (vph)	625	1698	1533	810	190	254	749					
Starvation Cap Reductn	153	491	0	0	0	0	0					
Spillback Cap Reductn	0	0	153	0	0	3	0					
Storage Cap Reductn	0	0	0	0	0	0	0					
Reduced v/c Ratio	1.28	1.08	0.97	0.59	1.68	1.51	0.48					

Intersection Summary

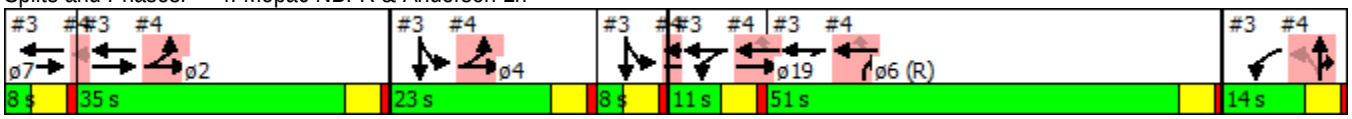
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 89 (59%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 130
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Mopac NBFR & Anderson Ln



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	573	1240	0	0	1277	453	337	45	627	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0	5.0			
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.91	0.95			
Frt	1.00	1.00			1.00	0.85	1.00	0.88	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	1770	3539			3539	1583	1681	1489	1504			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	1770	3539			3539	1583	1681	1489	1504			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	603	1305	0	0	1344	477	355	47	660	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	124	0	86	68	0	0	0
Lane Group Flow (vph)	603	1305	0	0	1344	353	319	294	295	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	custom			
Protected Phases	2 4	2 4 5			6 5	19		7 1	7 1 6			
Permitted Phases						6 5 19	7 1					
Actuated Green, G (s)	53.0	72.0			65.0	65.0	17.0	17.0	68.0			
Effective Green, g (s)	53.0	72.0			65.0	65.0	17.0	17.0	68.0			
Actuated g/C Ratio	0.35	0.48			0.43	0.43	0.11	0.11	0.45			
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	625	1698			1533	685	190	168	681			
v/s Ratio Prot	c0.34	c0.37			c0.38				0.20			
v/s Ratio Perm						0.22	0.19	0.20				
v/c Ratio	0.96	0.77			0.88	0.52	1.68	1.75	0.43			
Uniform Delay, d1	47.6	32.1			38.8	31.0	66.5	66.5	27.9			
Progression Factor	0.53	0.01			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	5.0	0.2			5.8	0.3	327.4	360.9	0.2			
Delay (s)	30.4	0.5			44.6	31.3	393.9	427.4	28.1			
Level of Service	C	A			D	C	F	F	C			
Approach Delay (s)		10.0			41.1			280.8			0.0	
Approach LOS		A			D			F			A	

Intersection Summary			
HCM 2000 Control Delay	81.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.21		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	35.0
Intersection Capacity Utilization	113.7%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	37	203	293	23	101	195
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	49	271	391	31	135	260
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						365
pX, platoon unblocked						
vC, conflicting volume	935	406			421	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	935	406			421	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	81	58			88	
cM capacity (veh/h)	260	645			1138	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	320	421	395
Volume Left	49	0	135
Volume Right	271	31	0
cSH	525	1700	1138
Volume to Capacity	0.61	0.25	0.12
Queue Length 95th (ft)	101	0	10
Control Delay (s)	22.0	0.0	3.7
Lane LOS	C		A
Approach Delay (s)	22.0	0.0	3.7
Approach LOS	C		

Intersection Summary			
Average Delay	7.5		
Intersection Capacity Utilization	57.2%	ICU Level of Service	B
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	58.5
Intersection LOS	F

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	117	174	115	0	50	93	197	0	82	317	81
Peak Hour Factor	0.92	0.76	0.76	0.76	0.92	0.76	0.76	0.76	0.92	0.76	0.76	0.76
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	154	229	151	0	66	122	259	0	108	417	107
Number of Lanes	0	0	1	0	0	0	1	0	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	1
HCM Control Delay	76.2	75.3	44.2
HCM LOS	F	F	E

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	34%	0%	29%	15%	100%	0%
Vol Thru, %	66%	66%	43%	27%	0%	64%
Vol Right, %	0%	34%	28%	58%	0%	36%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	241	240	406	340	70	244
LT Vol	82	0	117	50	70	0
Through Vol	159	159	174	93	0	157
RT Vol	0	81	115	197	0	87
Lane Flow Rate	316	315	534	447	92	321
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.846	0.807	1	1	0.26	0.839
Departure Headway (Hd)	9.63	9.223	9.101	8.894	10.154	9.405
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	377	394	401	412	356	388
Service Time	7.347	6.94	7.133	6.927	7.863	7.114
HCM Lane V/C Ratio	0.838	0.799	1.332	1.085	0.258	0.827
HCM Control Delay	47.5	40.9	76.2	75.3	16.4	45.6
HCM Lane LOS	E	E	F	F	C	E
HCM 95th-tile Q	7.9	7.1	12.2	12.3	1	7.8

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	70	157	87
Peak Hour Factor	0.92	0.76	0.76	0.76
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	92	207	114
Number of Lanes	0	1	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	39.1
HCM LOS	E

Lane

Intersection	
Intersection Delay, s/veh	17
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	38	79	50	0	107	142	53	0	100	221	65
Peak Hour Factor	0.92	0.94	0.94	0.94	0.92	0.94	0.94	0.94	0.92	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	40	84	53	0	114	151	56	0	106	235	69
Number of Lanes	0	0	1	1	0	0	1	1	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	2
HCM Control Delay	12	16.3	21.6
HCM LOS	B	C	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	26%	32%	0%	43%	0%	7%
Vol Thru, %	57%	68%	0%	57%	0%	65%
Vol Right, %	17%	0%	100%	0%	100%	28%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	386	117	50	249	53	224
LT Vol	100	38	0	107	0	16
Through Vol	221	79	0	142	0	146
RT Vol	65	0	50	0	53	62
Lane Flow Rate	411	124	53	265	56	238
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.691	0.258	0.097	0.528	0.098	0.419
Departure Headway (Hd)	6.055	7.472	6.584	7.179	6.241	6.331
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	595	480	543	501	573	567
Service Time	4.097	5.229	4.341	4.929	3.99	4.381
HCM Lane V/C Ratio	0.691	0.258	0.098	0.529	0.098	0.42
HCM Control Delay	21.6	12.8	10.1	17.7	9.7	13.9
HCM Lane LOS	C	B	B	C	A	B
HCM 95th-tile Q	5.4	1	0.3	3	0.3	2.1

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	16	146	62
Peak Hour Factor	0.92	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	17	155	66
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	13.9
HCM LOS	B

Lane

Intersection	
Intersection Delay, s/veh	25.8
Intersection LOS	D

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	47	78	55	0	97	249	139	0	87	321	79
Peak Hour Factor	0.92	0.99	0.99	0.99	0.92	0.99	0.99	0.99	0.92	0.99	0.99	0.99
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	47	79	56	0	98	252	140	0	88	324	80
Number of Lanes	0	0	1	1	0	0	1	1	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	2
HCM Control Delay	14.3	27	34.9
HCM LOS	B	D	D

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	38%	0%	28%	0%	100%	0%
Vol Thru, %	0%	80%	62%	0%	72%	0%	0%	82%
Vol Right, %	0%	20%	0%	100%	0%	100%	0%	18%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	87	400	125	55	346	139	113	217
LT Vol	87	0	47	0	97	0	113	0
Through Vol	0	321	78	0	249	0	0	177
RT Vol	0	79	0	55	0	139	0	40
Lane Flow Rate	88	404	126	56	349	140	114	219
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.2	0.846	0.307	0.121	0.77	0.276	0.271	0.482
Departure Headway (Hd)	8.195	7.538	8.752	7.829	7.933	7.068	8.561	7.911
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	437	477	409	455	454	505	418	454
Service Time	5.974	5.317	6.551	5.628	5.713	4.848	6.351	5.7
HCM Lane V/C Ratio	0.201	0.847	0.308	0.123	0.769	0.277	0.273	0.482
HCM Control Delay	13	39.7	15.4	11.7	32.8	12.6	14.5	17.9
HCM Lane LOS	B	E	C	B	D	B	B	C
HCM 95th-tile Q	0.7	8.5	1.3	0.4	6.6	1.1	1.1	2.6

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	113	177	40
Peak Hour Factor	0.92	0.99	0.99	0.99
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	114	179	40
Number of Lanes	0	1	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	16.7
HCM LOS	C

Lane

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	277	0	0	2089	450
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	0	318	0	0	2401	517
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2401	800	2918			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2401	800	2918			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	3	100			
cM capacity (veh/h)	28	328	122			

Direction, Lane #	EB 1	SB 1	SB 2	SB 3	SB 4
Volume Total	318	800	800	800	517
Volume Left	0	0	0	0	0
Volume Right	318	0	0	0	517
cSH	328	1700	1700	1700	1700
Volume to Capacity	0.97	0.47	0.47	0.47	0.30
Queue Length 95th (ft)	259	0	0	0	0
Control Delay (s)	79.2	0.0	0.0	0.0	0.0
Lane LOS	F				
Approach Delay (s)	79.2	0.0			
Approach LOS	F				

Intersection Summary			
Average Delay	7.8		
Intersection Capacity Utilization	64.2%	ICU Level of Service	C
Analysis Period (min)	15		

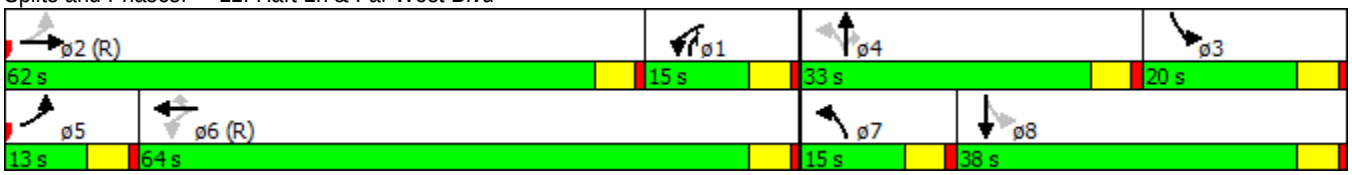
11: Hart Ln & Far West Blvd

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	56	592	198	559	162	64	152	153	180	108
Lane Group Flow (vph)	58	652	204	576	167	66	157	158	186	177
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA
Protected Phases	5	2	1	6		7	4	1	3	8
Permitted Phases	2		6		6	4		4	8	
Detector Phase	5	2	1	6	6	7	4	1	3	8
Switch Phase										
Minimum Initial (s)	4.0	2.0	4.0	2.0	2.0	4.0	2.0	4.0	2.0	2.0
Minimum Split (s)	9.0	24.0	9.0	24.0	24.0	9.0	33.0	9.0	33.0	33.0
Total Split (s)	13.0	62.0	15.0	64.0	64.0	15.0	33.0	15.0	20.0	38.0
Total Split (%)	10.0%	47.7%	11.5%	49.2%	49.2%	11.5%	25.4%	11.5%	15.4%	29.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lead	Lag	Lag	Lag	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	C-Max	None	None	None	None	None
v/c Ratio	0.13	0.33	0.39	0.27	0.18	0.40	0.72	0.43	0.75	0.33
Control Delay	16.4	17.4	40.2	31.2	32.0	58.4	72.7	45.4	70.9	49.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.4	17.4	40.2	31.2	32.0	58.4	72.7	45.4	70.9	49.0
Queue Length 50th (ft)	22	153	130	193	107	52	129	114	151	71
Queue Length 95th (ft)	51	229	216	276	183	94	196	172	216	100
Internal Link Dist (ft)		1703		1174			695			1553
Turn Bay Length (ft)	130		100		490			100	100	
Base Capacity (vph)	445	1957	529	2122	949	175	401	369	294	848
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.33	0.39	0.27	0.18	0.38	0.39	0.43	0.63	0.21

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 100 (77%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 11: Hart Ln & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	56	592	41	198	559	162	64	152	153	180	108	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3505		1770	3539	1583	1770	1863	1583	1770	3341	
Flt Permitted	0.36	1.00		0.40	1.00	1.00	0.50	1.00	1.00	0.66	1.00	
Satd. Flow (perm)	674	3505		753	3539	1583	931	1863	1583	1225	3341	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	58	610	42	204	576	167	66	157	158	186	111	66
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	58	652	0	204	576	167	66	157	158	186	177	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases	5	2		1	6		7	4	1	3	8	
Permitted Phases	2			6		6	4		4	8		
Actuated Green, G (s)	70.5	70.5		75.9	75.9	75.9	15.3	15.3	26.4	21.1	21.1	
Effective Green, g (s)	70.5	70.5		75.9	75.9	75.9	15.3	15.3	26.4	21.1	21.1	
Actuated g/C Ratio	0.54	0.54		0.58	0.58	0.58	0.12	0.12	0.20	0.16	0.16	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	413	1900		526	2066	924	156	219	382	253	542	
v/s Ratio Prot	0.01	c0.19		0.03	0.16		0.02	c0.08	c0.04	c0.07	0.05	
v/s Ratio Perm	0.07			c0.19		0.11	0.03		0.06	c0.05		
v/c Ratio	0.14	0.34		0.39	0.28	0.18	0.42	0.72	0.41	0.74	0.33	
Uniform Delay, d1	14.6	16.7		15.4	13.4	12.6	52.6	55.3	45.1	50.9	48.2	
Progression Factor	1.00	1.00		2.04	2.12	2.17	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.1	0.5		0.2	0.3	0.4	0.7	8.9	0.3	9.2	0.1	
Delay (s)	14.6	17.2		31.6	28.8	27.7	53.3	64.2	45.3	60.0	48.3	
Level of Service	B	B		C	C	C	D	E	D	E	D	
Approach Delay (s)		17.0			29.2			54.5			54.3	
Approach LOS		B			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	33.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	63.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

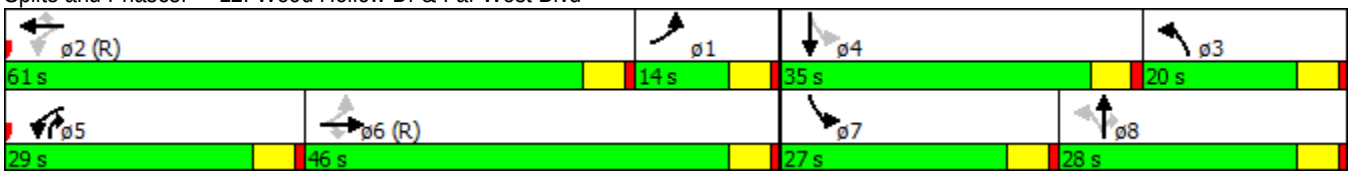
12: Wood Hollow Dr & Far West Blvd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Volume (vph)	131	796	65	234	704	198	105	193	331	181	105
Lane Group Flow (vph)	149	905	74	266	800	225	119	219	376	206	195
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA
Protected Phases	1	6		5	2		3	8	5	7	4
Permitted Phases	6		6	2		2	8		8	4	
Detector Phase	1	6	6	5	2	2	3	8	5	7	4
Switch Phase											
Minimum Initial (s)	4.0	2.0	2.0	4.0	2.0	2.0	4.0	2.0	4.0	4.0	2.0
Minimum Split (s)	9.0	11.0	11.0	9.0	11.0	11.0	9.0	11.0	9.0	9.0	11.0
Total Split (s)	14.0	46.0	46.0	29.0	61.0	61.0	20.0	28.0	29.0	27.0	35.0
Total Split (%)	10.8%	35.4%	35.4%	22.3%	46.9%	46.9%	15.4%	21.5%	22.3%	20.8%	26.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None
v/c Ratio	0.42	0.60	0.10	0.82	0.46	0.25	0.44	0.81	0.66	0.82	0.77
Control Delay	47.3	42.6	4.7	50.2	35.6	12.6	54.7	76.0	32.0	79.3	67.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.3	42.6	4.7	50.2	35.6	12.6	54.7	76.0	32.0	79.3	67.1
Queue Length 50th (ft)	95	336	4	175	292	40	91	180	200	169	142
Queue Length 95th (ft)	163	465	m20	256	362	91	150	256	265	246	209
Internal Link Dist (ft)		1174			673			686			1879
Turn Bay Length (ft)	245		610	125			75		75		
Base Capacity (vph)	354	1508	756	402	1734	890	272	329	646	299	422
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.60	0.10	0.66	0.46	0.25	0.44	0.67	0.58	0.69	0.46

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 20 (15%), Referenced to phase 2:WBTL and 6:EBTL, Start of 1st Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 12: Wood Hollow Dr & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	131	796	65	234	704	198	105	193	331	181	105	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1754	
Flt Permitted	0.35	1.00	1.00	0.13	1.00	1.00	0.00	1.00	1.00	0.00	1.00	
Satd. Flow (perm)	651	3539	1583	247	3539	1583	0	1863	1583	0	1754	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	149	905	74	266	800	225	119	219	376	206	119	76
RTOR Reduction (vph)	0	0	42	0	0	115	0	0	73	0	20	0
Lane Group Flow (vph)	149	905	32	266	800	110	119	219	303	206	175	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases	1	6		5	2		3	8	5	7	4	
Permitted Phases	6		6	2		2	8		8	4		
Actuated Green, G (s)	55.4	55.4	55.4	63.7	63.7	63.7	20.0	18.9	36.2	18.4	17.3	
Effective Green, g (s)	55.4	55.4	55.4	63.7	63.7	63.7	20.0	18.9	36.2	18.4	17.3	
Actuated g/C Ratio	0.43	0.43	0.43	0.49	0.49	0.49	0.15	0.15	0.28	0.14	0.13	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	354	1508	674	323	1734	775	272	270	501	250	233	
v/s Ratio Prot	0.03	c0.26		c0.11	0.23		0.07	c0.12	0.08	c0.12	0.10	
v/s Ratio Perm	0.15		0.02	c0.29		0.07			0.11			
v/c Ratio	0.42	0.60	0.05	0.82	0.46	0.14	0.44	0.81	0.61	0.82	0.75	
Uniform Delay, d1	27.8	28.8	21.8	26.9	21.8	18.2	49.9	53.8	40.7	54.2	54.3	
Progression Factor	1.28	1.29	1.00	1.24	1.50	4.27	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.3	1.7	0.1	12.7	0.7	0.3	0.4	15.9	1.4	18.5	11.4	
Delay (s)	35.9	38.7	22.0	46.1	33.4	77.9	50.3	69.7	42.1	72.7	65.7	
Level of Service	D	D	C	D	C	E	D	E	D	E	E	
Approach Delay (s)		37.2			43.8			51.9			69.3	
Approach LOS		D			D			D			E	

Intersection Summary			
HCM 2000 Control Delay	46.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	71.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

13: Mopac SBFR & Far West Blvd

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR	ø1	ø2	ø4	ø8	ø22
Lane Configurations											
Volume (vph)	1218	402	10	500	429	965					
Lane Group Flow (vph)	1369	452	11	562	1053	1084					
Turn Type	NA	Free	Prot	NA	NA	Free					
Protected Phases	1 22 2		7	1 22 7	4 8		1	2	4	8	22
Permitted Phases		Free				Free					
Detector Phase	1 22 2		7	1 22 7	4 8						
Switch Phase											
Minimum Initial (s)			4.0				4.0	4.0	4.0	4.0	4.0
Minimum Split (s)			20.0				9.0	24.0	24.0	9.0	20.0
Total Split (s)			41.0				9.0	20.0	31.0	9.0	20.0
Total Split (%)			31.5%				7%	15%	24%	7%	15%
Yellow Time (s)			4.0				4.0	4.0	4.0	4.0	4.0
All-Red Time (s)			1.0				1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)			0.0								
Total Lost Time (s)			5.0								
Lead/Lag							Lead		Lead	Lag	Lag
Lead-Lag Optimize?							Yes		Yes	Yes	Yes
Recall Mode			None				None	C-Max	None	None	None
v/c Ratio	0.85	0.29	0.04	0.32	1.20dl	0.68					
Control Delay	36.9	0.4	23.0	3.3	117.1	2.4					
Queue Delay	49.1	0.0	0.0	0.3	0.0	0.0					
Total Delay	86.0	0.4	23.0	3.5	117.1	2.4					
Queue Length 50th (ft)	554	0	3	14	~542	0					
Queue Length 95th (ft)	#764	0	m6	17	#666	0					
Internal Link Dist (ft)	432			324	532						
Turn Bay Length (ft)		490									
Base Capacity (vph)	1618	1583	490	1769	928	1583					
Starvation Cap Reductn	0	0	0	573	0	0					
Spillback Cap Reductn	729	0	0	0	0	0					
Storage Cap Reductn	0	0	0	0	0	0					
Reduced v/c Ratio	1.54	0.29	0.02	0.47	1.13	0.68					

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBT, Start of 1st Green
Natural Cycle: 110
Control Type: Actuated-Coordinated

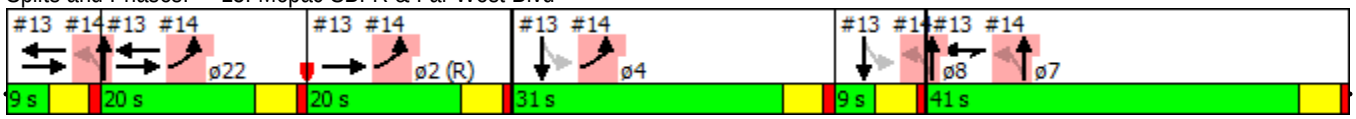
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 13: Mopac SBFR & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1218	402	10	500	0	0	0	0	508	429	965
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	4.0	5.0	5.0						5.0	4.0
Lane Util. Factor		0.95	1.00	1.00	0.95						0.95	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.97	1.00
Satd. Flow (prot)		3539	1583	1770	3539						3446	1583
Flt Permitted		1.00	1.00	0.95	1.00						0.97	1.00
Satd. Flow (perm)		3539	1583	1770	3539						3446	1583
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	1369	452	11	562	0	0	0	0	571	482	1084
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1369	452	11	562	0	0	0	0	0	1053	1084
Turn Type		NA	Free	Prot	NA					Perm	NA	Free
Protected Phases		1 22 2		7	1 22 7						4 8	
Permitted Phases			Free							4 8		Free
Actuated Green, G (s)		59.4	130.0	20.6	65.0						35.0	130.0
Effective Green, g (s)		59.4	130.0	20.6	65.0						35.0	130.0
Actuated g/C Ratio		0.46	1.00	0.16	0.50						0.27	1.00
Clearance Time (s)				5.0								
Vehicle Extension (s)				2.0								
Lane Grp Cap (vph)		1617	1583	280	1769						927	1583
v/s Ratio Prot		c0.39		0.01	0.16							
v/s Ratio Perm			0.29								0.31	c0.68
v/c Ratio		0.85	0.29	0.04	0.32						1.20dl	0.68
Uniform Delay, d1		31.3	0.0	46.3	19.3						47.5	0.0
Progression Factor		0.98	1.00	0.53	0.15						1.00	1.00
Incremental Delay, d2		3.7	0.4	0.0	0.0						74.5	2.4
Delay (s)		34.3	0.4	24.7	2.9						122.0	2.4
Level of Service		C	A	C	A						F	A
Approach Delay (s)		25.9			3.3			0.0			61.3	
Approach LOS		C			A			A			E	

Intersection Summary			
HCM 2000 Control Delay	39.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	72.7%	ICU Level of Service	C
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group

14: Mopac NBFR & Far West Blvd

Lane Group	EBL	NBL	NBT	ø1	ø2	ø4	ø7	ø8	ø22
Lane Configurations									
Volume (vph)	1737	446	26						
Lane Group Flow (vph)	1974	269	268						
Turn Type	Prot	Perm	NA						
Protected Phases	22 2 4		7 1 8	1	2	4	7	8	22
Permitted Phases		7 1 8							
Detector Phase	22 2 4	7 1 8	7 1 8						
Switch Phase									
Minimum Initial (s)				4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)				9.0	24.0	24.0	20.0	9.0	20.0
Total Split (s)				9.0	20.0	31.0	41.0	9.0	20.0
Total Split (%)				7%	15%	24%	32%	7%	15%
Yellow Time (s)				4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)				1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)									
Total Lost Time (s)									
Lead/Lag				Lead		Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes		Yes	Yes
Recall Mode				None	C-Max	None	None	None	None
v/c Ratio	1.13	0.39	0.38						
Control Delay	89.4	28.5	28.4						
Queue Delay	0.7	0.0	0.0						
Total Delay	90.2	28.5	28.4						
Queue Length 50th (ft)	~996	164	163						
Queue Length 95th (ft)	m#1000	235	234						
Internal Link Dist (ft)	324		322						
Turn Bay Length (ft)									
Base Capacity (vph)	1742	698	703						
Starvation Cap Reductn	347	0	0						
Spillback Cap Reductn	0	0	0						
Storage Cap Reductn	0	0	0						
Reduced v/c Ratio	1.42	0.39	0.38						

Intersection Summary

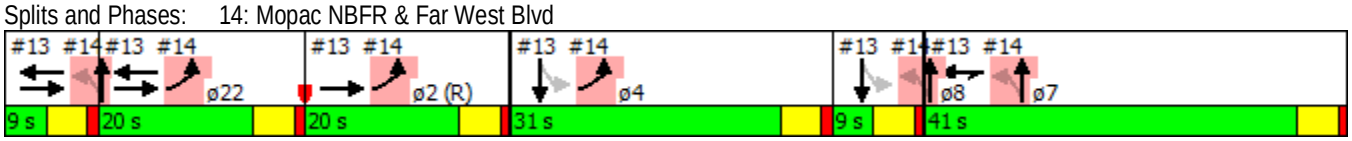
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBT, Start of 1st Green
Natural Cycle: 110
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 14: Mopac NBFR & Far West Blvd



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	1737	0	446	26	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0		
Lane Util. Factor	0.97		0.95	0.95		
Frt	1.00		1.00	1.00		
Flt Protected	0.95		0.95	0.96		
Satd. Flow (prot)	3433		1681	1694		
Flt Permitted	0.95		0.95	0.96		
Satd. Flow (perm)	3433		1681	1694		
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	1974	0	507	30	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1974	0	269	268	0	0
Turn Type	Prot		Perm	NA		
Protected Phases	22 2 4			7 1 8		
Permitted Phases			7 1 8			
Actuated Green, G (s)	66.0		54.0	54.0		
Effective Green, g (s)	66.0		54.0	54.0		
Actuated g/C Ratio	0.51		0.42	0.42		
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)	1742		698	703		
v/s Ratio Prot	c0.58					
v/s Ratio Perm			c0.16	0.16		
v/c Ratio	1.13		0.39	0.38		
Uniform Delay, d1	32.0		26.4	26.4		
Progression Factor	0.80		1.00	1.00		
Incremental Delay, d2	63.2		0.1	0.1		
Delay (s)	88.9		26.6	26.5		
Level of Service	F		C	C		
Approach Delay (s)	88.9			26.6	0.0	
Approach LOS	F			C	A	

Intersection Summary			
HCM 2000 Control Delay	75.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	85.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

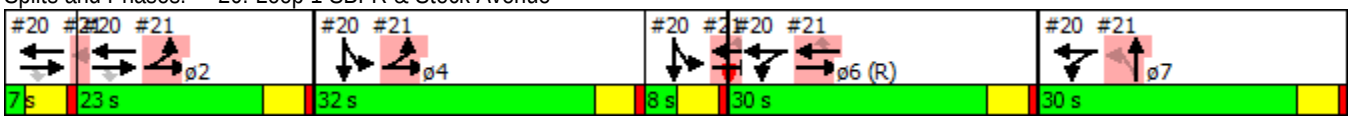
20: Loop 1 SBFR & Steck Avenue

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	ø1	ø2	ø4	ø5	ø6	ø7
Lane Configurations												
Volume (vph)	652	104	258	357	802	830						
Lane Group Flow (vph)	665	106	263	364	671	1348						
Turn Type	NA	Perm	Prot	NA	Split	NA						
Protected Phases	2 1		6 7	2 1 6 7	4 5	4 5	1	2	4	5	6	7
Permitted Phases		2 1										
Detector Phase	2 1	2 1	6 7	2 1 6 7	4 5	4 5						
Switch Phase												
Minimum Initial (s)							2.0	1.0	1.0	3.0	4.0	4.0
Minimum Split (s)							7.0	11.0	11.0	8.0	24.0	9.0
Total Split (s)							7.0	23.0	32.0	8.0	30.0	30.0
Total Split (%)							5%	18%	25%	6%	23%	23%
Yellow Time (s)							4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)							1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag							Lead	Lag	Lead	Lag		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode							None	Max	None	None	C-Max	None
v/c Ratio	0.98	0.25	0.35	0.16	1.55	1.50						
Control Delay	81.7	4.1	2.9	0.1	292.1	264.9						
Queue Delay	40.5	0.0	0.9	0.0	0.0	0.0						
Total Delay	122.2	4.1	3.7	0.1	292.1	264.9						
Queue Length 50th (ft)	296	0	6	0	~873	~858						
Queue Length 95th (ft)	#422	23	8	0	#1134	#1006						
Internal Link Dist (ft)	737			327		333						
Turn Bay Length (ft)		100	80									
Base Capacity (vph)	680	419	748	2313	433	898						
Starvation Cap Reductn	0	0	259	0	0	0						
Spillback Cap Reductn	189	0	0	0	0	1						
Storage Cap Reductn	0	0	0	0	0	0						
Reduced v/c Ratio	1.35	0.25	0.54	0.16	1.55	1.50						

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 97 (75%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 140
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 20: Loop 1 SBFR & Steck Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	652	104	258	357	0	0	0	0	802	830	347
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0					5.0	5.0	
Lane Util. Factor		0.95	1.00	1.00	0.95					0.91	0.91	
Frt		1.00	0.85	1.00	1.00					1.00	0.96	
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.99	
Satd. Flow (prot)		3539	1583	1770	3539					1610	3239	
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.99	
Satd. Flow (perm)		3539	1583	1770	3539					1610	3239	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	665	106	263	364	0	0	0	0	818	847	354
RTOR Reduction (vph)	0	0	86	0	0	0	0	0	0	0	26	0
Lane Group Flow (vph)	0	665	20	263	364	0	0	0	0	671	1322	0
Turn Type		NA	Perm	Prot	NA					Split	NA	
Protected Phases		2 1		6 7	2 1 6 7					4 5	4 5	
Permitted Phases			2 1									
Actuated Green, G (s)		25.0	25.0	55.0	85.0					35.0	35.0	
Effective Green, g (s)		25.0	25.0	55.0	85.0					35.0	35.0	
Actuated g/C Ratio		0.19	0.19	0.42	0.65					0.27	0.27	
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		680	304	748	2313					433	872	
v/s Ratio Prot		c0.19		c0.15	0.10					c0.42	0.41	
v/s Ratio Perm			0.01									
v/c Ratio		0.98	0.07	0.35	0.16					1.55	1.52	
Uniform Delay, d1		52.2	43.0	25.4	8.7					47.5	47.5	
Progression Factor		1.00	1.00	0.07	0.00					1.00	1.00	
Incremental Delay, d2		28.6	0.0	0.1	0.0					258.6	238.4	
Delay (s)		80.8	43.0	1.8	0.0					306.1	285.9	
Level of Service		F	D	A	A					F	F	
Approach Delay (s)		75.6			0.8			0.0			292.6	
Approach LOS		E			A			A			F	

Intersection Summary			
HCM 2000 Control Delay	190.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	143.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

21: Loop 1 NBFR & Steck Avenue

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	ø1	ø2	ø4	ø5	ø6	ø7
Lane Configurations												
Volume (vph)	705	628	490	506	130	848						
Lane Group Flow (vph)	742	661	516	533	137	1024						
Turn Type	Prot	NA	NA	Perm	Perm	NA						
Protected Phases	2 4	2 4 5 6	6 5			7 1	1	2	4	5	6	7
Permitted Phases				6 5	7 1							
Detector Phase	2 4	2 4 5 6	6 5	6 5	7 1	7 1						
Switch Phase												
Minimum Initial (s)							2.0	1.0	1.0	3.0	4.0	4.0
Minimum Split (s)							7.0	11.0	11.0	8.0	24.0	9.0
Total Split (s)							7.0	23.0	32.0	8.0	30.0	30.0
Total Split (%)							5%	18%	25%	6%	23%	23%
Yellow Time (s)							4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)							1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag							Lead	Lag	Lead	Lag		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode							None	Max	None	None	C-Max	None
v/c Ratio	1.09	0.28	0.57	1.05	0.16	2.26						
Control Delay	70.2	0.1	45.4	87.8	39.1	598.5						
Queue Delay	5.7	1.2	0.0	0.0	0.0	0.0						
Total Delay	76.0	1.2	45.4	87.8	39.1	598.5						
Queue Length 50th (ft)	~685	0	201	~392	46	~1408						
Queue Length 95th (ft)	m351	m0	261	#618	75	#1669						
Internal Link Dist (ft)		327	978			2452						
Turn Bay Length (ft)	80			170	110							
Base Capacity (vph)	680	2395	898	508	845	453						
Starvation Cap Reductn	177	1439	0	0	0	0						
Spillback Cap Reductn	0	0	0	0	0	0						
Storage Cap Reductn	0	0	0	0	0	0						
Reduced v/c Ratio	1.48	0.69	0.57	1.05	0.16	2.26						

Intersection Summary

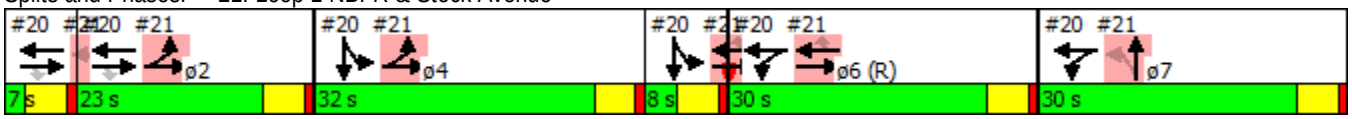
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 97 (75%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 140
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 21: Loop 1 NBFR & Steck Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	705	628	0	0	490	506	130	848	124	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0				
Lane Util. Factor	1.00	0.95			0.95	1.00	0.97	1.00				
Frt	1.00	1.00			1.00	0.85	1.00	0.98				
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (prot)	1770	3539			3539	1583	3433	1827				
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (perm)	1770	3539			3539	1583	3433	1827				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	742	661	0	0	516	533	137	893	131	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	107	0	4	0	0	0	0
Lane Group Flow (vph)	742	661	0	0	516	426	137	1020	0	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA				
Protected Phases	2 4	2 4 5 6			6 5			7 1				
Permitted Phases						6 5	7 1					
Actuated Green, G (s)	50.0	88.0			33.0	33.0	32.0	32.0				
Effective Green, g (s)	50.0	88.0			33.0	33.0	32.0	32.0				
Actuated g/C Ratio	0.38	0.68			0.25	0.25	0.25	0.25				
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	680	2395			898	401	845	449				
v/s Ratio Prot	c0.42	0.19			0.15			c0.56				
v/s Ratio Perm						c0.27	0.04					
v/c Ratio	1.09	0.28			0.57	1.06	0.16	2.27				
Uniform Delay, d1	40.0	8.3			42.4	48.5	38.5	49.0				
Progression Factor	0.63	0.00			1.00	1.00	1.00	1.00				
Incremental Delay, d2	43.7	0.0			0.6	62.7	0.0	579.6				
Delay (s)	68.9	0.0			42.9	111.2	38.5	628.6				
Level of Service	E	A			D	F	D	F				
Approach Delay (s)		36.5			77.6			558.9			0.0	
Approach LOS		D			E			F			A	

Intersection Summary			
HCM 2000 Control Delay	216.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.62		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	143.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	185	140	28	159	181	90
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	201	152	30	173	197	98
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			353		511	277
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			353		511	277
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		61	87
cM capacity (veh/h)			1205		509	762

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	353	203	295
Volume Left	0	30	197
Volume Right	152	0	98
cSH	1700	1205	572
Volume to Capacity	0.21	0.03	0.51
Queue Length 95th (ft)	0	2	73
Control Delay (s)	0.0	1.4	17.8
Lane LOS		A	C
Approach Delay (s)	0.0	1.4	17.8
Approach LOS			C

Intersection Summary			
Average Delay	6.5		
Intersection Capacity Utilization	53.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	11	191	6	51	138	40	9	0	82	63	0	18
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	12	208	7	55	150	43	10	0	89	68	0	20
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	193			214			537	539	211	607	521	172
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	193			214			537	539	211	607	521	172
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			96			98	100	89	80	100	98
cM capacity (veh/h)	1380			1356			428	427	829	351	437	872

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	226	249	99	88
Volume Left	12	55	10	68
Volume Right	7	43	89	20
cSH	1380	1356	759	405
Volume to Capacity	0.01	0.04	0.13	0.22
Queue Length 95th (ft)	1	3	11	20
Control Delay (s)	0.5	2.0	10.5	16.3
Lane LOS	A	A	B	C
Approach Delay (s)	0.5	2.0	10.5	16.3
Approach LOS			B	C

Intersection Summary			
Average Delay	4.7		
Intersection Capacity Utilization	44.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	180	6	17	148	9	28
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	196	7	18	161	10	30
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			202		397	199
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			202		397	199
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		98	96
cM capacity (veh/h)			1370		600	842

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	202	179	40
Volume Left	0	18	10
Volume Right	7	0	30
cSH	1700	1370	767
Volume to Capacity	0.12	0.01	0.05
Queue Length 95th (ft)	0	1	4
Control Delay (s)	0.0	0.9	10.0
Lane LOS		A	A
Approach Delay (s)	0.0	0.9	10.0
Approach LOS			A

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	31.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	119	17	17	149	28	28
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	129	18	18	162	30	30
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			148		338	139
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			148		338	139
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		95	97
cM capacity (veh/h)			1434		650	910

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	148	180	61
Volume Left	0	18	30
Volume Right	18	0	30
cSH	1700	1434	758
Volume to Capacity	0.09	0.01	0.08
Queue Length 95th (ft)	0	1	7
Control Delay (s)	0.0	0.9	10.2
Lane LOS		A	B
Approach Delay (s)	0.0	0.9	10.2
Approach LOS			B

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	29.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	34	113	112	45	73	54
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	37	123	122	49	79	59
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	171				343	146
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	171				343	146
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				88	93
cM capacity (veh/h)	1407				636	901

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	160	171	138
Volume Left	37	0	79
Volume Right	0	49	59
cSH	1407	1700	727
Volume to Capacity	0.03	0.10	0.19
Queue Length 95th (ft)	2	0	17
Control Delay (s)	1.9	0.0	11.1
Lane LOS	A		B
Approach Delay (s)	1.9	0.0	11.1
Approach LOS			B

Intersection Summary			
Average Delay	3.9		
Intersection Capacity Utilization	33.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	11	325	211	40	63	18
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	12	353	229	43	68	20
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	273				628	251
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	273				628	251
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				85	98
cM capacity (veh/h)	1290				442	788

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	365	273	88
Volume Left	12	0	68
Volume Right	0	43	20
cSH	1290	1700	490
Volume to Capacity	0.01	0.16	0.18
Queue Length 95th (ft)	1	0	16
Control Delay (s)	0.3	0.0	13.9
Lane LOS	A		B
Approach Delay (s)	0.3	0.0	13.9
Approach LOS			B

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	37.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	388	251	11	18	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	422	273	12	20	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	285				701	279
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	285				701	279
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				95	100
cM capacity (veh/h)	1277				405	760

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	422	285	20
Volume Left	0	0	20
Volume Right	0	12	0
cSH	1277	1700	405
Volume to Capacity	0.00	0.17	0.05
Queue Length 95th (ft)	0	0	4
Control Delay (s)	0.0	0.0	14.3
Lane LOS			B
Approach Delay (s)	0.0	0.0	14.3
Approach LOS			B

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	30.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	18	18	11	611	246	11
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	20	20	12	664	267	12
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					212	
pX, platoon unblocked	0.95	0.95	0.95			
vC, conflicting volume	629	273	279			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	580	204	211			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	95	97	99			
cM capacity (veh/h)	417	760	1285			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	39	233	443	279
Volume Left	20	12	0	0
Volume Right	20	0	0	12
cSH	539	1285	1700	1700
Volume to Capacity	0.07	0.01	0.26	0.16
Queue Length 95th (ft)	6	1	0	0
Control Delay (s)	12.2	0.5	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	12.2	0.2		0.0
Approach LOS	B			

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	34.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	73	36	586	45	23	241
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	79	39	637	49	25	262
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						372
pX, platoon unblocked	0.95					
vC, conflicting volume	973	343			686	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	947	343			686	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	67	94			97	
cM capacity (veh/h)	240	653			904	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1
Volume Total	118	425	261	287
Volume Left	79	0	0	25
Volume Right	39	0	49	0
cSH	304	1700	1700	904
Volume to Capacity	0.39	0.25	0.15	0.03
Queue Length 95th (ft)	45	0	0	2
Control Delay (s)	24.3	0.0	0.0	1.1
Lane LOS	C			A
Approach Delay (s)	24.3	0.0		1.1
Approach LOS	C			

Intersection Summary			
Average Delay	2.9		
Intersection Capacity Utilization	44.7%	ICU Level of Service	A
Analysis Period (min)	15		

1: Hart Ln & Spicewood Springs Rd

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1276	310	211	965	144	182
Lane Group Flow (vph)	1315	320	218	995	148	188
Turn Type	NA	Perm	Prot	NA	Prot	Free
Protected Phases	2		1	6	4	
Permitted Phases		2				Free
Detector Phase	2	2	1	6	4	
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	
Total Split (s)	73.0	73.0	33.0	106.0	24.0	
Total Split (%)	56.2%	56.2%	25.4%	81.5%	18.5%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Max	C-Max	Max	C-Max	None	
v/c Ratio	0.71	0.36	0.45	0.34	0.50	0.12
Control Delay	26.2	10.6	41.2	3.8	61.7	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.2	10.6	41.2	3.8	61.7	0.2
Queue Length 50th (ft)	428	78	167	47	62	0
Queue Length 95th (ft)	512	143	272	216	91	0
Internal Link Dist (ft)	211			988	285	
Turn Bay Length (ft)		110	220		160	
Base Capacity (vph)	1851	897	487	2962	501	1583
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.36	0.45	0.34	0.30	0.12

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of 1st Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 1: Hart Ln & Spicewood Springs Rd

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1276	310	211	965	144	182
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	4.0
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	3433	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	3433	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	1315	320	218	995	148	188
RTOR Reduction (vph)	0	69	0	0	0	0
Lane Group Flow (vph)	1315	251	218	995	148	188
Turn Type	NA	Perm	Prot	NA	Prot	Free
Protected Phases	2		1	6	4	
Permitted Phases		2				Free
Actuated Green, G (s)	68.0	68.0	35.8	108.8	11.2	130.0
Effective Green, g (s)	68.0	68.0	35.8	108.8	11.2	130.0
Actuated g/C Ratio	0.52	0.52	0.28	0.84	0.09	1.00
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	1851	828	487	2961	295	1583
v/s Ratio Prot	c0.37		c0.12	0.28	c0.04	
v/s Ratio Perm		0.16				0.12
v/c Ratio	0.71	0.30	0.45	0.34	0.50	0.12
Uniform Delay, d1	23.5	17.6	38.9	2.4	56.7	0.0
Progression Factor	1.00	1.00	0.95	1.31	1.00	1.00
Incremental Delay, d2	2.3	0.9	2.7	0.3	0.5	0.2
Delay (s)	25.9	18.5	39.5	3.4	57.2	0.2
Level of Service	C	B	D	A	E	A
Approach Delay (s)	24.4			9.9	25.3	
Approach LOS	C			A	C	

Intersection Summary			
HCM 2000 Control Delay	19.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

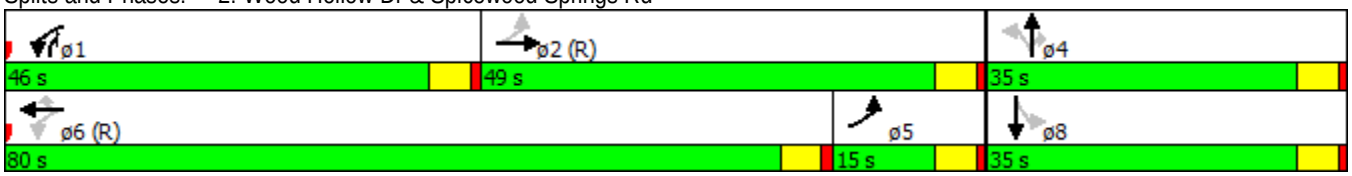
2: Wood Hollow Dr & Spicewood Springs Rd

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	8	1279	473	1082	11	91	5	213	7	0
Lane Group Flow (vph)	8	1510	493	1127	11	0	100	222	0	9
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Perm	NA	pm+ov	Perm	NA
Protected Phases	5	2	1	6			4	1		8
Permitted Phases	2		6		6	4		4	8	
Detector Phase	5	2	1	6	6	4	4	1	8	8
Switch Phase										
Minimum Initial (s)	6.0	25.0	6.0	5.0	5.0	5.0	5.0	6.0	5.0	5.0
Minimum Split (s)	15.0	30.0	15.0	11.0	11.0	35.0	35.0	15.0	35.0	35.0
Total Split (s)	15.0	49.0	46.0	80.0	80.0	35.0	35.0	46.0	35.0	35.0
Total Split (%)	11.5%	37.7%	35.4%	61.5%	61.5%	26.9%	26.9%	35.4%	26.9%	26.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead			Lead		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes			Yes		
Recall Mode	None	C-Max	None	C-Max	C-Max	Max	Max	None	None	None
v/c Ratio	0.03	0.74	0.99	0.48	0.01		0.32	0.26		0.02
Control Delay	22.2	33.9	66.2	12.9	0.0		44.9	12.4		0.1
Queue Delay	0.0	0.0	0.3	0.7	0.0		0.0	0.0		0.0
Total Delay	22.2	33.9	66.5	13.6	0.0		44.9	12.4		0.1
Queue Length 50th (ft)	5	485	361	158	0		70	71		0
Queue Length 95th (ft)	m9	541	#528	432	m0		125	104		0
Internal Link Dist (ft)		988		494			132			203
Turn Bay Length (ft)	300		110		100					
Base Capacity (vph)	291	2040	610	2368	1079		313	949		437
Starvation Cap Reductn	0	0	8	814	0		0	0		0
Spillback Cap Reductn	0	0	0	0	0		0	0		0
Storage Cap Reductn	0	0	0	0	0		0	0		0
Reduced v/c Ratio	0.03	0.74	0.82	0.73	0.01		0.32	0.23		0.02

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 55 (42%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Wood Hollow Dr & Spicewood Springs Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	1279	171	473	1082	11	91	5	213	7	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0		5.0	5.0		5.0	
Lane Util. Factor	1.00	0.91		1.00	0.95	1.00		1.00	1.00		1.00	
Frt	1.00	0.98		1.00	1.00	0.85		1.00	0.85		0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.95	1.00		0.96	
Satd. Flow (prot)	1770	4995		1770	3539	1583		1778	1583		1739	
Flt Permitted	0.25	1.00		0.08	1.00	1.00		0.73	1.00		0.86	
Satd. Flow (perm)	470	4995		147	3539	1583		1361	1583		1559	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	8	1332	178	493	1127	11	95	5	222	7	0	2
RTOR Reduction (vph)	0	12	0	0	0	4	0	0	31	0	7	0
Lane Group Flow (vph)	8	1498	0	493	1127	7	0	100	191	0	2	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	pm+ov	Perm	NA	
Protected Phases	5	2		1	6			4	1		8	
Permitted Phases	2			6		6	4		4	8		
Actuated Green, G (s)	52.8	52.8		83.0	83.0	83.0		30.0	62.2		30.0	
Effective Green, g (s)	52.8	52.8		83.0	83.0	83.0		30.0	62.2		30.0	
Actuated g/C Ratio	0.41	0.41		0.64	0.64	0.64		0.23	0.48		0.23	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0		5.0	5.0		5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0		2.0	2.0		2.0	
Lane Grp Cap (vph)	210	2028		495	2259	1010		314	818		359	
v/s Ratio Prot	0.00	c0.30		c0.25	0.32				0.06			
v/s Ratio Perm	0.01			c0.39		0.00		c0.07	0.06		0.00	
v/c Ratio	0.04	0.74		1.00	0.50	0.01		0.32	0.23		0.01	
Uniform Delay, d1	23.3	32.7		40.5	12.5	8.5		41.5	19.9		38.5	
Progression Factor	0.78	0.95		0.84	1.09	1.00		1.00	1.00		1.00	
Incremental Delay, d2	0.0	1.9		36.8	0.7	0.0		2.7	0.1		0.0	
Delay (s)	18.3	32.9		70.8	14.3	8.5		44.2	20.0		38.5	
Level of Service	B	C		E	B	A		D	B		D	
Approach Delay (s)		32.8			31.4			27.5			38.5	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	31.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	73.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

3: Mopac SBFR & Spicewood Springs Rd

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR	ø1	ø2	ø4	ø5	ø6
Lane Configurations												
Volume (vph)	820	679	737	857	375	1249	710					
Lane Group Flow (vph)	845	700	760	884	348	1327	732					
Turn Type	NA	Free	Prot	NA	Split	NA	Free					
Protected Phases	2 1		19 6 7 2 1 19 6		4 5	4 5		1	2	4	5	6
Permitted Phases		Free					Free					
Detector Phase	2 1		19 6 7 2 1 19 6		4 5	4 5						
Switch Phase												
Minimum Initial (s)								3.0	1.0	1.0	3.0	4.0
Minimum Split (s)								8.0	11.0	11.0	8.0	24.0
Total Split (s)								8.0	24.0	34.0	8.0	30.0
Total Split (%)								6%	18%	26%	6%	23%
Yellow Time (s)								4.0	4.0	4.0	4.0	4.0
All-Red Time (s)								1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag								Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?								Yes	Yes	Yes	Yes	Yes
Recall Mode								None	Max	None	None	C-Max
v/c Ratio	1.15	0.44	1.10	0.52	0.76	1.38	0.46					
Control Delay	137.2	5.7	73.3	3.8	21.6	194.7	0.1					
Queue Delay	0.1	0.0	2.9	0.1	0.0	0.0	0.0					
Total Delay	137.3	5.7	76.2	3.9	21.6	194.7	0.2					
Queue Length 50th (ft)	~453	284	~725	107	232	~804	0					
Queue Length 95th (ft)	#585	506	m#614	m106	m152	m400	m0					
Internal Link Dist (ft)	494			333		2669						
Turn Bay Length (ft)			50		145							
Base Capacity (vph)	735	1583	694	1715	458	963	1583					
Starvation Cap Reductn	0	0	93	135	0	0	0					
Spillback Cap Reductn	13	0	0	54	0	0	29					
Storage Cap Reductn	0	0	0	0	0	0	0					
Reduced v/c Ratio	1.17	0.44	1.26	0.56	0.76	1.38	0.47					

Intersection Summary

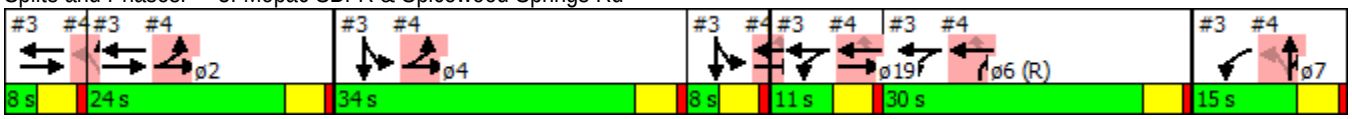
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 8 (6%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 130
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Mopac SBFR & Spicewood Springs Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	820	679	737	857	0	0	0	0	375	1249	710
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	4.0	5.0	5.0					5.0	5.0	4.0
Lane Util. Factor		0.95	1.00	1.00	0.95					0.91	0.91	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		3539	1583	1770	3539					1610	3385	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (perm)		3539	1583	1770	3539					1610	3385	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	845	700	760	884	0	0	0	0	387	1288	732
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	845	700	760	884	0	0	0	0	348	1327	732
Turn Type		NA	Free	Prot	NA					Split	NA	Free
Protected Phases		2 1		19 6 7	2 1 19 6					4 5	4 5	
Permitted Phases			Free									Free
Actuated Green, G (s)		27.0	130.0	51.0	63.0					37.0	37.0	130.0
Effective Green, g (s)		27.0	130.0	51.0	63.0					37.0	37.0	130.0
Actuated g/C Ratio		0.21	1.00	0.39	0.48					0.28	0.28	1.00
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		735	1583	694	1715					458	963	1583
v/s Ratio Prot		c0.24		c0.43	0.25					0.22	c0.39	
v/s Ratio Perm			0.44									0.46
v/c Ratio		1.15	0.44	1.10	0.52					0.76	1.38	0.46
Uniform Delay, d1		51.5	0.0	39.5	23.0					42.4	46.5	0.0
Progression Factor		1.33	1.00	0.69	0.27					0.47	0.49	1.00
Incremental Delay, d2		79.2	0.7	45.3	0.0					0.6	170.7	0.1
Delay (s)		147.5	0.7	72.4	6.3					20.4	193.6	0.1
Level of Service		F	A	E	A					C	F	A
Approach Delay (s)		81.0			36.9			0.0			109.7	
Approach LOS		F			D			A			F	

Intersection Summary			
HCM 2000 Control Delay	80.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.45		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	35.0
Intersection Capacity Utilization	106.3%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

4: Mopac NBFR & Anderson Ln

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	ø1	ø2	ø4	ø5	ø6
Lane Configurations												
Volume (vph)	351	844	1124	259	470	14	578					
Lane Group Flow (vph)	362	870	1159	267	378	365	352					
Turn Type	Prot	NA	NA	Perm	Perm	NA	custom					
Protected Phases	2 4 2 4 5 19		6 5 19			7 1	7 1 6	1	2	4	5	6
Permitted Phases				6 5 19	7 1							
Detector Phase	2 4 2 4 5 19		6 5 19	6 5 19	7 1	7 1	7 1 6					
Switch Phase												
Minimum Initial (s)								3.0	1.0	1.0	3.0	4.0
Minimum Split (s)								8.0	11.0	11.0	8.0	24.0
Total Split (s)								8.0	24.0	34.0	8.0	30.0
Total Split (%)								6%	18%	26%	6%	23%
Yellow Time (s)								4.0	4.0	4.0	4.0	4.0
All-Red Time (s)								1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag								Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?								Yes	Yes	Yes	Yes	Yes
Recall Mode								None	Max	None	None	C-Max
v/c Ratio	0.50	0.44	0.97	0.38	1.63	1.38	0.55					
Control Delay	8.4	0.1	61.9	5.1	326.6	214.9	5.4					
Queue Delay	4.2	2.0	41.8	0.0	0.0	0.1	0.0					
Total Delay	12.6	2.1	103.6	5.1	326.6	215.0	5.4					
Queue Length 50th (ft)	28	0	503	0	~490	~400	18					
Queue Length 95th (ft)	m44	m0	#654	59	#704	#620	41					
Internal Link Dist (ft)		333	702			1795						
Turn Bay Length (ft)	50			360	280							
Base Capacity (vph)	721	1960	1197	712	232	264	645					
Starvation Cap Reductn	276	896	0	0	0	0	0					
Spillback Cap Reductn	0	0	207	0	0	3	0					
Storage Cap Reductn	0	0	0	0	0	0	0					
Reduced v/c Ratio	0.81	0.82	1.17	0.38	1.63	1.40	0.55					

Intersection Summary

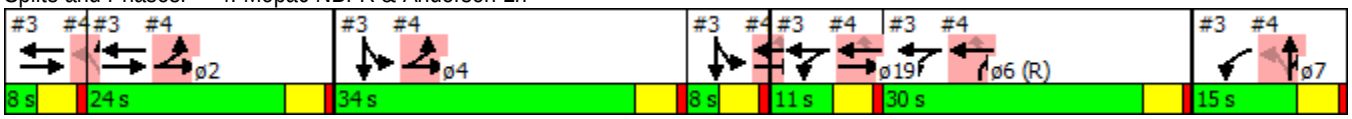
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 8 (6%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 130
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Mopac NBFR & Anderson Ln



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	351	844	0	0	1124	259	470	14	578	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0	5.0			
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.91	0.95			
Frt	1.00	1.00			1.00	0.85	1.00	0.90	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.99	1.00			
Satd. Flow (prot)	1770	3539			3539	1583	1681	1503	1504			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.99	1.00			
Satd. Flow (perm)	1770	3539			3539	1583	1681	1503	1504			
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	362	870	0	0	1159	267	485	14	596	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	177	0	56	90	0	0	0
Lane Group Flow (vph)	362	870	0	0	1159	90	378	309	262	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	custom			
Protected Phases	2 4	2 4 5			6 5 19			7 1	7 1 6			
Permitted Phases						6 5 19	7 1					
Actuated Green, G (s)	53.0	72.0			44.0	44.0	18.0	18.0	48.0			
Effective Green, g (s)	53.0	72.0			44.0	44.0	18.0	18.0	48.0			
Actuated g/C Ratio	0.41	0.55			0.34	0.34	0.14	0.14	0.37			
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	721	1960			1197	535	232	208	555			
v/s Ratio Prot	c0.20	0.25			c0.33				0.17			
v/s Ratio Perm						0.06	c0.22	0.21				
v/c Ratio	0.50	0.44			0.97	0.17	1.63	1.49	0.47			
Uniform Delay, d1	28.7	17.2			42.3	30.2	56.0	56.0	31.3			
Progression Factor	0.28	0.00			1.00	1.00	0.59	0.49	0.13			
Incremental Delay, d2	0.0	0.0			18.5	0.1	299.9	239.8	0.2			
Delay (s)	8.0	0.0			60.8	30.2	333.1	267.4	4.3			
Level of Service	A	A			E	C	F	F	A			
Approach Delay (s)		2.4			55.1			205.5			0.0	
Approach LOS		A			E			F			A	

Intersection Summary			
HCM 2000 Control Delay	81.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	35.0
Intersection Capacity Utilization	106.3%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	19	84	232	38	190	303
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	23	100	276	45	226	361
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						365
pX, platoon unblocked						
vC, conflicting volume	1112	299			321	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1112	299			321	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	88	86			82	
cM capacity (veh/h)	189	741			1238	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	123	321	587
Volume Left	23	0	226
Volume Right	100	45	0
cSH	481	1700	1238
Volume to Capacity	0.25	0.19	0.18
Queue Length 95th (ft)	25	0	17
Control Delay (s)	15.0	0.0	4.5
Lane LOS	C		A
Approach Delay (s)	15.0	0.0	4.5
Approach LOS	C		

Intersection Summary			
Average Delay	4.4		
Intersection Capacity Utilization	57.2%	ICU Level of Service	B
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	32
Intersection LOS	D

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	45	108	65	0	21	94	92	0	123	228	132
Peak Hour Factor	0.92	0.88	0.88	0.88	0.92	0.88	0.88	0.88	0.92	0.88	0.88	0.88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	51	123	74	0	24	107	105	0	140	259	150
Number of Lanes	0	0	2	0	0	0	1	1	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	2
HCM Control Delay	14.6	14.3	20.5
HCM LOS	B	B	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	52%	0%	45%	0%	18%	0%	100%	0%
Vol Thru, %	48%	46%	55%	45%	82%	0%	0%	49%
Vol Right, %	0%	54%	0%	55%	0%	100%	0%	51%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	237	246	99	119	115	92	158	446
LT Vol	123	0	45	0	21	0	158	0
Through Vol	114	114	54	54	94	0	0	220
RT Vol	0	132	0	65	0	92	0	226
Lane Flow Rate	269	280	112	135	131	105	180	507
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.599	0.571	0.275	0.311	0.316	0.232	0.4	1
Departure Headway (Hd)	8.012	7.357	8.784	8.171	8.695	7.995	8.015	7.138
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	458	498	412	442	416	457	449	507
Service Time	5.632	4.996	6.478	5.871	6.391	5.602	5.775	4.896
HCM Lane V/C Ratio	0.587	0.562	0.272	0.305	0.315	0.23	0.401	1
HCM Control Delay	21.8	19.3	14.8	14.5	15.4	13	16.1	66.8
HCM Lane LOS	C	C	B	B	C	B	C	F
HCM 95th-tile Q	3.8	3.5	1.1	1.3	1.3	0.9	1.9	13.7

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	158	220	226
Peak Hour Factor	0.92	0.88	0.88	0.88
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	180	250	257
Number of Lanes	0	1	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	53.5
HCM LOS	F

Lane

Intersection	
Intersection Delay, s/veh	24
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	41	168	143	0	92	65	8	0	53	152	49
Peak Hour Factor	0.92	0.81	0.81	0.81	0.92	0.81	0.81	0.81	0.92	0.81	0.81	0.81
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	51	207	177	0	114	80	10	0	65	188	60
Number of Lanes	0	0	1	1	0	0	1	1	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	2
HCM Control Delay	17.8	18.1	22.1
HCM LOS	C	C	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	21%	20%	0%	59%	0%	5%
Vol Thru, %	60%	80%	0%	41%	0%	87%
Vol Right, %	19%	0%	100%	0%	100%	8%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	254	209	143	157	8	342
LT Vol	53	41	0	92	0	17
Through Vol	152	168	0	65	0	296
RT Vol	49	0	143	0	8	29
Lane Flow Rate	314	258	177	194	10	422
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.633	0.567	0.347	0.461	0.021	0.82
Departure Headway (Hd)	7.267	7.91	7.084	8.558	7.526	6.988
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	495	457	507	421	475	519
Service Time	5.322	5.664	4.838	6.316	5.283	5.038
HCM Lane V/C Ratio	0.634	0.565	0.349	0.461	0.021	0.813
HCM Control Delay	22.1	20.6	13.6	18.5	10.4	34.6
HCM Lane LOS	C	C	B	C	B	D
HCM 95th-tile Q	4.3	3.4	1.5	2.4	0.1	8

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	17	296	29
Peak Hour Factor	0.92	0.81	0.81	0.81
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	21	365	36
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	34.6
HCM LOS	D

Lane

Intersection	
Intersection Delay, s/veh	19.8
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	47	139	179	0	60	132	129	0	25	247	48
Peak Hour Factor	0.92	0.90	0.90	0.90	0.92	0.90	0.90	0.90	0.92	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	52	154	199	0	67	147	143	0	28	274	53
Number of Lanes	0	0	1	1	0	0	1	1	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	2
HCM Control Delay	16.5	16.5	26.7
HCM LOS	C	C	D

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	25%	0%	31%	0%	100%	0%
Vol Thru, %	0%	84%	75%	0%	69%	0%	0%	79%
Vol Right, %	0%	16%	0%	100%	0%	100%	0%	21%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	25	295	186	179	192	129	83	249
LT Vol	25	0	47	0	60	0	83	0
Through Vol	0	247	139	0	132	0	0	196
RT Vol	0	48	0	179	0	129	0	53
Lane Flow Rate	28	328	207	199	213	143	92	277
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.065	0.713	0.468	0.403	0.489	0.293	0.217	0.601
Departure Headway (Hd)	8.465	7.832	8.144	7.291	8.256	7.371	8.49	7.82
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	421	459	440	491	433	484	421	459
Service Time	6.258	5.624	5.94	5.085	6.055	5.169	6.287	5.616
HCM Lane V/C Ratio	0.067	0.715	0.47	0.405	0.492	0.295	0.219	0.603
HCM Control Delay	11.9	28	18	15	18.8	13.2	13.7	21.8
HCM Lane LOS	B	D	C	B	C	B	B	C
HCM 95th-tile Q	0.2	5.6	2.4	1.9	2.6	1.2	0.8	3.9

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	83	196	53
Peak Hour Factor	0.92	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	92	218	59
Number of Lanes	0	1	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	19.8
HCM LOS	C

Lane

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	280	0	0	2962	272
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	0	292	0	0	3085	283
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	3085	1028	3369			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	3085	1028	3369			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	0	100			
cM capacity (veh/h)	9	231	80			

Direction, Lane #	EB 1	SB 1	SB 2	SB 3	SB 4
Volume Total	292	1028	1028	1028	283
Volume Left	0	0	0	0	0
Volume Right	292	0	0	0	283
cSH	231	1700	1700	1700	1700
Volume to Capacity	1.26	0.60	0.60	0.60	0.17
Queue Length 95th (ft)	373	0	0	0	0
Control Delay (s)	190.4	0.0	0.0	0.0	0.0
Lane LOS	F				
Approach Delay (s)	190.4	0.0			
Approach LOS	F				

Intersection Summary			
Average Delay	15.2		
Intersection Capacity Utilization	81.2%	ICU Level of Service	D
Analysis Period (min)	15		

11: Hart Ln & Far West Blvd

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	72	736	222	299	77	53	135	182	223	279
Lane Group Flow (vph)	87	999	267	360	93	64	163	219	269	385
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA
Protected Phases	5	2	1	6		7	4	1	3	8
Permitted Phases	2		6		6	4		4	8	
Detector Phase	5	2	1	6	6	7	4	1	3	8
Switch Phase										
Minimum Initial (s)	4.0	2.0	4.0	2.0	2.0	4.0	2.0	4.0	2.0	2.0
Minimum Split (s)	9.0	24.0	9.0	24.0	24.0	9.0	33.0	9.0	33.0	33.0
Total Split (s)	13.0	52.0	22.0	61.0	61.0	16.0	30.0	22.0	26.0	40.0
Total Split (%)	10.0%	40.0%	16.9%	46.9%	46.9%	12.3%	23.1%	16.9%	20.0%	30.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lead	Lag	Lag	Lag	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	C-Max	None	None	None	None	None
v/c Ratio	0.19	0.62	0.67	0.19	0.11	0.39	0.72	0.48	0.85	0.55
Control Delay	24.2	30.4	61.2	34.4	36.3	57.4	72.7	41.0	74.2	48.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.2	30.4	61.2	34.4	36.3	57.4	72.7	41.0	74.2	48.9
Queue Length 50th (ft)	42	334	166	117	58	50	134	152	217	155
Queue Length 95th (ft)	80	426	233	152	95	83	184	196	262	173
Internal Link Dist (ft)		1703		1174			695			1553
Turn Bay Length (ft)	130		100		490			100	100	
Base Capacity (vph)	458	1615	399	1899	849	184	358	459	381	934
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.62	0.67	0.19	0.11	0.35	0.46	0.48	0.71	0.41

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 100 (77%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green
Natural Cycle: 120
Control Type: Actuated-Coordinated

Splits and Phases: 11: Hart Ln & Far West Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	72	736	93	222	299	77	53	135	182	223	279	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95	
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3480		1770	3539	1583	1770	1863	1583	1770	3472	
Flt Permitted	0.46	1.00		0.22	1.00	1.00	0.48	1.00	1.00	0.65	1.00	
Satd. Flow (perm)	861	3480		415	3539	1583	898	1863	1583	1218	3472	
Peak-hour factor, PHF	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Adj. Flow (vph)	87	887	112	267	360	93	64	163	219	269	336	49
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	87	999	0	267	360	93	64	163	219	269	385	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases	5	2		1	6		7	4	1	3	8	
Permitted Phases	2			6		6	4		4	8		
Actuated Green, G (s)	59.4	59.4		68.8	68.8	68.8	15.7	15.7	32.7	26.2	26.2	
Effective Green, g (s)	59.4	59.4		68.8	68.8	68.8	15.7	15.7	32.7	26.2	26.2	
Actuated g/C Ratio	0.46	0.46		0.53	0.53	0.53	0.12	0.12	0.25	0.20	0.20	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	446	1590		396	1872	837	158	224	459	321	699	
v/s Ratio Prot	0.01	c0.29		c0.09	0.10		0.02	c0.09	0.06	c0.12	0.11	
v/s Ratio Perm	0.08			c0.27		0.06	0.03		0.08	c0.05		
v/c Ratio	0.20	0.63		0.67	0.19	0.11	0.41	0.73	0.48	0.84	0.55	
Uniform Delay, d1	20.4	26.9		32.5	16.0	15.3	52.2	55.1	41.4	48.6	46.6	
Progression Factor	1.00	1.00		1.51	1.93	1.96	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.1	1.9		3.4	0.2	0.3	0.6	9.6	0.3	16.4	0.5	
Delay (s)	20.5	28.8		52.3	31.1	30.3	52.8	64.7	41.7	65.0	47.1	
Level of Service	C	C		D	C	C	D	E	D	E	D	
Approach Delay (s)		28.1			38.9			51.7			54.5	
Approach LOS		C			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	40.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	71.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

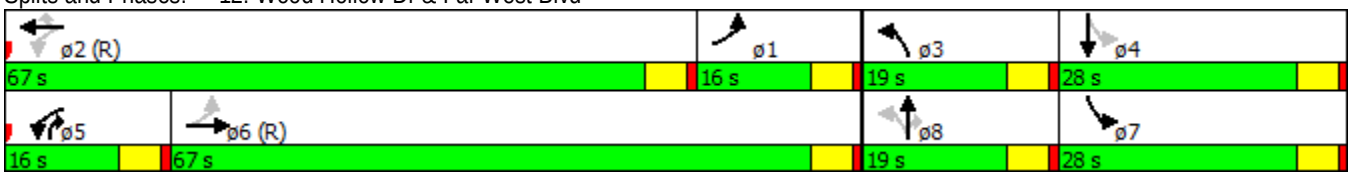
12: Wood Hollow Dr & Far West Blvd

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	112	1099	122	596	181	26	88	305	290	125
Lane Group Flow (vph)	119	1222	130	634	193	28	94	324	309	215
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA
Protected Phases	1	6	5	2		3	8	5	7	4
Permitted Phases	6		2		2	8		8	4	
Detector Phase	1	6	5	2	2	3	8	5	7	4
Switch Phase										
Minimum Initial (s)	4.0	2.0	4.0	2.0	2.0	4.0	2.0	4.0	4.0	2.0
Minimum Split (s)	9.0	11.0	9.0	11.0	11.0	9.0	11.0	9.0	9.0	11.0
Total Split (s)	16.0	67.0	16.0	67.0	67.0	19.0	19.0	16.0	28.0	28.0
Total Split (%)	12.3%	51.5%	12.3%	51.5%	51.5%	14.6%	14.6%	12.3%	21.5%	21.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	C-Max	None	None	None	None	None
v/c Ratio	0.26	0.49	0.56	0.37	0.22	0.22	0.62	0.95	0.73	0.46
Control Delay	29.3	31.2	40.1	35.7	14.9	58.3	74.6	60.7	57.1	41.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.3	31.2	40.1	35.7	14.9	58.3	74.6	60.7	57.1	41.7
Queue Length 50th (ft)	78	322	79	207	52	22	78	123	243	143
Queue Length 95th (ft)	m116	384	133	266	111	53	134	#225	#410	231
Internal Link Dist (ft)		1174		673			686			1879
Turn Bay Length (ft)	245		125			75		75		
Base Capacity (vph)	459	2469	239	1714	866	190	200	347	425	466
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.49	0.54	0.37	0.22	0.15	0.47	0.93	0.73	0.46

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 10 (8%), Referenced to phase 2:WBTL and 6:EBTL, Start of 1st Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 12: Wood Hollow Dr & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	112	1099	50	122	596	181	26	88	305	290	125	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.91		1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	5052		1770	3539	1583	1770	1863	1583	1770	1756	
Flt Permitted	0.41	1.00		0.12	1.00	1.00	0.67	1.00	1.00	0.70	1.00	
Satd. Flow (perm)	766	5052		223	3539	1583	1242	1863	1583	1297	1756	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	119	1169	53	130	634	193	28	94	324	309	133	82
RTOR Reduction (vph)	0	4	0	0	0	102	0	0	85	0	16	0
Lane Group Flow (vph)	119	1218	0	130	634	91	28	94	239	309	199	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases	1	6		5	2		3	8	5	7	4	
Permitted Phases	6			2		2	8		8	4		
Actuated Green, G (s)	61.5	61.5		61.0	61.0	61.0	10.6	10.6	21.1	33.4	33.4	
Effective Green, g (s)	61.5	61.5		61.0	61.0	61.0	10.6	10.6	21.1	33.4	33.4	
Actuated g/C Ratio	0.47	0.47		0.47	0.47	0.47	0.08	0.08	0.16	0.26	0.26	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	447	2389		229	1660	742	119	151	256	432	451	
v/s Ratio Prot	0.02	c0.24		0.05	0.18		0.01	0.05	c0.08	c0.15	0.11	
v/s Ratio Perm	0.10			c0.22		0.06	0.01		0.08	0.03		
v/c Ratio	0.27	0.51		0.57	0.38	0.12	0.24	0.62	0.94	0.72	0.44	
Uniform Delay, d1	21.4	23.8		22.7	22.3	19.4	55.7	57.8	53.8	43.0	40.5	
Progression Factor	1.30	1.35		1.68	1.64	5.59	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.1	0.6		1.6	0.6	0.3	0.4	5.6	38.3	4.6	0.3	
Delay (s)	28.0	32.7		39.8	37.2	108.8	56.1	63.4	92.1	47.7	40.7	
Level of Service	C	C		D	D	F	E	E	F	D	D	
Approach Delay (s)		32.2			52.0			83.8			44.8	
Approach LOS		C			D			F			D	

Intersection Summary			
HCM 2000 Control Delay	47.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	69.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

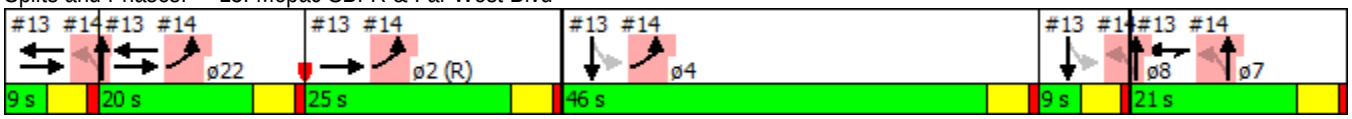
13: Mopac SBFR & Far West Blvd

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR	ø1	ø2	ø4	ø8	ø22
Lane Configurations											
Volume (vph)	849	474	19	631	550	928					
Lane Group Flow (vph)	875	489	20	651	794	957					
Turn Type	NA	Free	Prot	NA	NA	Free					
Protected Phases	1 22 2		7	1 22 7	4 8		1	2	4	8	22
Permitted Phases		Free				Free					
Detector Phase	1 22 2		7	1 22 7	4 8						
Switch Phase											
Minimum Initial (s)			4.0				4.0	4.0	4.0	4.0	4.0
Minimum Split (s)			20.0				9.0	24.0	24.0	9.0	20.0
Total Split (s)			21.0				9.0	25.0	46.0	9.0	20.0
Total Split (%)			16.2%				7%	19%	35%	7%	15%
Yellow Time (s)			4.0				4.0	4.0	4.0	4.0	4.0
All-Red Time (s)			1.0				1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)			0.0								
Total Lost Time (s)			5.0								
Lead/Lag							Lead		Lead	Lag	Lag
Lead-Lag Optimize?							Yes		Yes	Yes	Yes
Recall Mode			None				None	C-Max	None	None	None
v/c Ratio	0.66	0.31	0.09	0.53	0.59	0.60					
Control Delay	36.2	0.4	40.5	6.3	28.6	1.6					
Queue Delay	0.3	0.0	0.0	1.3	0.0	0.0					
Total Delay	36.5	0.4	40.5	7.6	28.6	1.6					
Queue Length 50th (ft)	375	0	3	158	201	16					
Queue Length 95th (ft)	m444	m0	m14	0	m213	m2					
Internal Link Dist (ft)	432			324	532						
Turn Bay Length (ft)		490									
Base Capacity (vph)	1333	1583	219	1229	1321	1583					
Starvation Cap Reductn	0	0	0	355	0	0					
Spillback Cap Reductn	112	0	0	0	0	0					
Storage Cap Reductn	0	0	0	0	0	0					
Reduced v/c Ratio	0.72	0.31	0.09	0.74	0.60	0.60					

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 106 (82%), Referenced to phase 2:EBT, Start of 1st Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Mopac SBFR & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	849	474	19	631	0	0	0	0	220	550	928
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	4.0	5.0	5.0						5.0	4.0
Lane Util. Factor		0.95	1.00	1.00	0.95						0.95	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (prot)		3539	1583	1770	3539						3489	1583
Flt Permitted		1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (perm)		3539	1583	1770	3539						3489	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	875	489	20	651	0	0	0	0	227	567	957
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	875	489	20	651	0	0	0	0	0	794	957
Turn Type		NA	Free	Prot	NA					Perm	NA	Free
Protected Phases		1 22 2		7	1 22 7						4 8	
Permitted Phases			Free							4 8		Free
Actuated Green, G (s)		49.0	130.0	16.2	45.2						49.8	130.0
Effective Green, g (s)		49.0	130.0	16.2	45.2						49.8	130.0
Actuated g/C Ratio		0.38	1.00	0.12	0.35						0.38	1.00
Clearance Time (s)				5.0								
Vehicle Extension (s)				2.0								
Lane Grp Cap (vph)		1333	1583	220	1230						1336	1583
v/s Ratio Prot		c0.25		0.01	0.18							
v/s Ratio Perm			0.31								0.23	c0.60
v/c Ratio		0.66	0.31	0.09	0.53						0.59	0.60
Uniform Delay, d1		33.5	0.0	50.4	33.9						32.0	0.0
Progression Factor		1.01	1.00	0.78	0.15						0.85	1.00
Incremental Delay, d2		0.7	0.4	0.0	0.1						0.3	1.2
Delay (s)		34.6	0.4	39.5	5.1						27.5	1.2
Level of Service		C	A	D	A						C	A
Approach Delay (s)		22.3			6.1			0.0			13.1	
Approach LOS		C			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	15.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	62.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

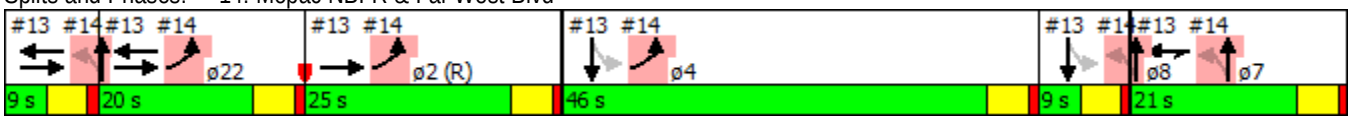
14: Mopac NBFR & Far West Blvd

Lane Group	EBL	NBL	NBT	ø1	ø2	ø4	ø7	ø8	ø22
Lane Configurations									
Volume (vph)	1085	651	2						
Lane Group Flow (vph)	1130	339	341						
Turn Type	Prot	Perm	NA						
Protected Phases	22 2 4		7 1 8	1	2	4	7	8	22
Permitted Phases		7 1 8							
Detector Phase	22 2 4	7 1 8	7 1 8						
Switch Phase									
Minimum Initial (s)				4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)				9.0	24.0	24.0	20.0	9.0	20.0
Total Split (s)				9.0	25.0	46.0	21.0	9.0	20.0
Total Split (%)				7%	19%	35%	16%	7%	15%
Yellow Time (s)				4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)				1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)									
Total Lost Time (s)									
Lead/Lag				Lead		Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes		Yes	Yes
Recall Mode				None	C-Max	None	None	None	None
v/c Ratio	0.54	0.64	0.64						
Control Delay	6.3	46.5	46.6						
Queue Delay	0.6	0.0	0.0						
Total Delay	6.8	46.5	46.6						
Queue Length 50th (ft)	32	261	262						
Queue Length 95th (ft)	24	#420	#425						
Internal Link Dist (ft)	324		322						
Turn Bay Length (ft)									
Base Capacity (vph)	2271	528	530						
Starvation Cap Reductn	672	0	0						
Spillback Cap Reductn	0	0	0						
Storage Cap Reductn	0	0	0						
Reduced v/c Ratio	0.71	0.64	0.64						

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 106 (82%), Referenced to phase 2:EBT, Start of 1st Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 14: Mopac NBFR & Far West Blvd



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	1085	0	651	2	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0		
Lane Util. Factor	0.97		0.95	0.95		
Frt	1.00		1.00	1.00		
Flt Protected	0.95		0.95	0.95		
Satd. Flow (prot)	3433		1681	1686		
Flt Permitted	0.95		0.95	0.95		
Satd. Flow (perm)	3433		1681	1686		
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	1130	0	678	2	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1130	0	339	341	0	0
Turn Type	Prot		Perm	NA		
Protected Phases	22 2 4			7 1 8		
Permitted Phases			7 1 8			
Actuated Green, G (s)	79.1		40.9	40.9		
Effective Green, g (s)	79.1		40.9	40.9		
Actuated g/C Ratio	0.61		0.31	0.31		
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)	2088		528	530		
v/s Ratio Prot	c0.33					
v/s Ratio Perm			0.20	0.20		
v/c Ratio	0.54		0.64	0.64		
Uniform Delay, d1	14.9		38.3	38.3		
Progression Factor	0.38		1.00	1.00		
Incremental Delay, d2	0.1		2.0	2.0		
Delay (s)	5.7		40.3	40.3		
Level of Service	A		D	D		
Approach Delay (s)	5.7			40.3	0.0	
Approach LOS	A			D	A	

Intersection Summary			
HCM 2000 Control Delay	18.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	75.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

20: Loop 1 SBFR & Steck Avenue

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	ø1	ø2	ø4	ø5	ø6	ø7
Lane Configurations												
Volume (vph)	556	142	155	364	990	1984						
Lane Group Flow (vph)	591	151	165	387	948	2542						
Turn Type	NA	Perm	Prot	NA	Split	NA						
Protected Phases	2 1		6 7	2 1 6 7	4 5	4 5	1	2	4	5	6	7
Permitted Phases		2 1										
Detector Phase	2 1	2 1	6 7	2 1 6 7	4 5	4 5						
Switch Phase												
Minimum Initial (s)							2.0	1.0	1.0	3.0	4.0	4.0
Minimum Split (s)							7.0	11.0	11.0	8.0	15.0	9.0
Total Split (s)							7.0	20.0	63.0	8.0	15.0	17.0
Total Split (%)							5%	15%	48%	6%	12%	13%
Yellow Time (s)							4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)							1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag							Lead	Lag	Lead	Lag		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode							None	Max	None	None	C-Max	None
v/c Ratio	0.99	0.39	0.45	0.26	1.16	1.50						
Control Delay	87.8	11.8	22.0	0.3	116.5	256.2						
Queue Delay	28.2	0.0	0.0	0.0	0.0	0.0						
Total Delay	115.9	11.8	22.0	0.3	116.5	256.2						
Queue Length 50th (ft)	264	6	27	0	~1037	~1639						
Queue Length 95th (ft)	#388	66	m46	m0	#1318	#1774						
Internal Link Dist (ft)	737			327		333						
Turn Bay Length (ft)		100	80									
Base Capacity (vph)	598	386	367	1470	817	1693						
Starvation Cap Reductn	0	0	0	0	0	0						
Spillback Cap Reductn	50	0	0	0	0	0						
Storage Cap Reductn	0	0	0	0	0	0						
Reduced v/c Ratio	1.08	0.39	0.45	0.26	1.16	1.50						

Intersection Summary

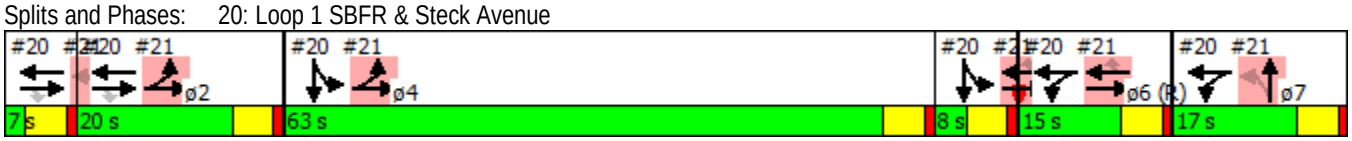
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 90 (69%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 20: Loop 1 SBFR & Steck Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	556	142	155	364	0	0	0	0	990	1984	306
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0					5.0	5.0	
Lane Util. Factor		0.95	1.00	1.00	0.95					0.91	0.91	
Frt		1.00	0.85	1.00	1.00					1.00	0.98	
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	3539					1610	3318	
Flt Permitted		1.00	1.00	0.95	1.00					0.95	1.00	
Satd. Flow (perm)		3539	1583	1770	3539					1610	3318	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	591	151	165	387	0	0	0	0	1053	2111	326
RTOR Reduction (vph)	0	0	119	0	0	0	0	0	0	0	8	0
Lane Group Flow (vph)	0	591	32	165	387	0	0	0	0	948	2534	0
Turn Type		NA	Perm	Prot	NA					Split	NA	
Protected Phases		2 1		6 7	2 1 6 7					4 5	4 5	
Permitted Phases			2 1									
Actuated Green, G (s)		22.0	22.0	27.0	54.0					66.0	66.0	
Effective Green, g (s)		22.0	22.0	27.0	54.0					66.0	66.0	
Actuated g/C Ratio		0.17	0.17	0.21	0.42					0.51	0.51	
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		598	267	367	1470					817	1684	
v/s Ratio Prot		c0.17		c0.09	0.11					0.59	c0.76	
v/s Ratio Perm			0.02									
v/c Ratio		0.99	0.12	0.45	0.26					1.16	1.50	
Uniform Delay, d1		53.9	45.8	45.0	24.9					32.0	32.0	
Progression Factor		1.00	1.00	0.42	0.00					1.00	1.00	
Incremental Delay, d2		33.4	0.1	0.2	0.0					85.6	230.2	
Delay (s)		87.3	45.9	19.2	0.0					117.6	262.2	
Level of Service		F	D	B	A					F	F	
Approach Delay (s)		78.8			5.7			0.0			222.9	
Approach LOS		E			A			A			F	

Intersection Summary			
HCM 2000 Control Delay	175.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.33		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	139.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

21: Loop 1 NBFR & Steck Avenue

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	ø1	ø2	ø4	ø5	ø6	ø7
Lane Configurations												
Volume (vph)	720	777	393	266	216	563						
Lane Group Flow (vph)	735	793	401	271	220	771						
Turn Type	Prot	NA	NA	Perm	Perm	NA						
Protected Phases	2 4	2 4 5 6	6 5			7 1	1	2	4	5	6	7
Permitted Phases				6 5	7 1							
Detector Phase	2 4	2 4 5 6	6 5	6 5	7 1	7 1						
Switch Phase												
Minimum Initial (s)							2.0	1.0	1.0	3.0	4.0	4.0
Minimum Split (s)							7.0	11.0	11.0	8.0	15.0	9.0
Total Split (s)							7.0	20.0	63.0	8.0	15.0	17.0
Total Split (%)							5%	15%	48%	6%	12%	13%
Yellow Time (s)							4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)							1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag							Lead	Lag	Lead	Lag		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode							None	Max	None	None	C-Max	None
v/c Ratio	0.69	0.29	0.82	0.72	0.44	2.85						
Control Delay	10.2	0.0	68.8	29.2	44.7	859.2						
Queue Delay	51.5	1.0	0.0	0.0	0.0	0.0						
Total Delay	61.7	1.0	68.8	29.2	44.7	859.2						
Queue Length 50th (ft)	255	0	175	67	76	~1112						
Queue Length 95th (ft)	m123	m0	#250	171	m111	m#1335						
Internal Link Dist (ft)		327	978			2452						
Turn Bay Length (ft)	80			170	110							
Base Capacity (vph)	1062	2749	490	378	501	271						
Starvation Cap Reductn	398	1599	0	0	0	0						
Spillback Cap Reductn	0	0	0	0	0	0						
Storage Cap Reductn	0	0	0	0	0	0						
Reduced v/c Ratio	1.11	0.69	0.82	0.72	0.44	2.85						

Intersection Summary

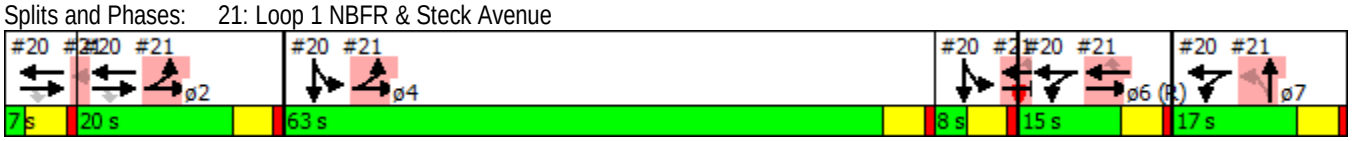
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 90 (69%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 21: Loop 1 NBFR & Steck Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	720	777	0	0	393	266	216	563	193	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0				
Lane Util. Factor	1.00	0.95			0.95	1.00	0.97	1.00				
Frt	1.00	1.00			1.00	0.85	1.00	0.96				
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (prot)	1770	3539			3539	1583	3433	1791				
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (perm)	1770	3539			3539	1583	3433	1791				
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	735	793	0	0	401	271	220	574	197	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	159	0	9	0	0	0	0
Lane Group Flow (vph)	735	793	0	0	401	112	220	762	0	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA				
Protected Phases	2 4	2 4 5 6			6 5			7 1				
Permitted Phases						6 5	7 1					
Actuated Green, G (s)	78.0	101.0			18.0	18.0	19.0	19.0				
Effective Green, g (s)	78.0	101.0			18.0	18.0	19.0	19.0				
Actuated g/C Ratio	0.60	0.78			0.14	0.14	0.15	0.15				
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	1062	2749			490	219	501	261				
v/s Ratio Prot	c0.42	0.22			c0.11			c0.43				
v/s Ratio Perm						0.07	0.06					
v/c Ratio	0.69	0.29			0.82	0.51	0.44	2.92				
Uniform Delay, d1	17.8	4.2			54.4	51.9	50.6	55.5				
Progression Factor	0.54	0.00			1.00	1.00	0.82	0.83				
Incremental Delay, d2	0.1	0.0			9.7	0.7	0.2	873.2				
Delay (s)	9.7	0.0			64.1	52.6	41.9	919.0				
Level of Service	A	A			E	D	D	F				
Approach Delay (s)		4.7			59.5			724.3			0.0	
Approach LOS		A			E			F			A	

Intersection Summary			
HCM 2000 Control Delay	239.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.24		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	139.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	143	255	51	116	91	45
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	155	277	55	126	99	49
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			433		531	294
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			433		531	294
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			95		80	93
cM capacity (veh/h)			1127		484	745

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	433	182	148
Volume Left	0	55	99
Volume Right	277	0	49
cSH	1700	1127	547
Volume to Capacity	0.25	0.05	0.27
Queue Length 95th (ft)	0	4	27
Control Delay (s)	0.0	2.9	14.0
Lane LOS		A	B
Approach Delay (s)	0.0	2.9	14.0
Approach LOS			B

Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	49.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	21	125	10	92	195	72	5	0	41	32	0	9
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	23	136	11	100	212	78	5	0	45	35	0	10
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	290			147			648	677	141	683	643	251
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	290			147			648	677	141	683	643	251
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			93			98	100	95	89	100	99
cM capacity (veh/h)	1272			1435			354	342	907	323	358	788

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	170	390	50	45
Volume Left	23	100	5	35
Volume Right	11	78	45	10
cSH	1272	1435	775	371
Volume to Capacity	0.02	0.07	0.06	0.12
Queue Length 95th (ft)	1	6	5	10
Control Delay (s)	1.2	2.5	10.0	16.0
Lane LOS	A	A	A	C
Approach Delay (s)	1.2	2.5	10.0	16.0
Approach LOS			A	C

Intersection Summary			
Average Delay	3.6		
Intersection Capacity Utilization	47.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	142	10	31	178	5	14
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	154	11	34	193	5	15
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			165		421	160
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			165		421	160
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		99	98
cM capacity (veh/h)			1413		575	885

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	165	227	21
Volume Left	0	34	5
Volume Right	11	0	15
cSH	1700	1413	775
Volume to Capacity	0.10	0.02	0.03
Queue Length 95th (ft)	0	2	2
Control Delay (s)	0.0	1.3	9.8
Lane LOS		A	A
Approach Delay (s)	0.0	1.3	9.8
Approach LOS			A

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	32.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	163	31	31	97	14	14
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	177	34	34	105	15	15
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			211		367	194
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			211		367	194
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		98	98
cM capacity (veh/h)			1360		617	847

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	211	139	30
Volume Left	0	34	15
Volume Right	34	0	15
cSH	1700	1360	714
Volume to Capacity	0.12	0.02	0.04
Queue Length 95th (ft)	0	2	3
Control Delay (s)	0.0	2.0	10.3
Lane LOS		A	B
Approach Delay (s)	0.0	2.0	10.3
Approach LOS			B

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	30.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	61	116	101	82	36	27
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	66	126	110	89	39	29
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	199				413	154
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	199				413	154
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	95				93	97
cM capacity (veh/h)	1373				567	892

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	192	199	68
Volume Left	66	0	39
Volume Right	0	89	29
cSH	1373	1700	672
Volume to Capacity	0.05	0.12	0.10
Queue Length 95th (ft)	4	0	8
Control Delay (s)	2.9	0.0	11.0
Lane LOS	A		B
Approach Delay (s)	2.9	0.0	11.0
Approach LOS			B

Intersection Summary			
Average Delay	2.9		
Intersection Capacity Utilization	33.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	21	177	350	72	32	9
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	23	192	380	78	35	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	459				658	420
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	459				658	420
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				92	98
cM capacity (veh/h)	1102				420	634

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	215	459	45
Volume Left	23	0	35
Volume Right	0	78	10
cSH	1102	1700	454
Volume to Capacity	0.02	0.27	0.10
Queue Length 95th (ft)	2	0	8
Control Delay (s)	1.1	0.0	13.8
Lane LOS	A		B
Approach Delay (s)	1.1	0.0	13.8
Approach LOS			B

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	36.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	209	422	21	9	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	227	459	23	10	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	482				697	470
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	482				697	470
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				98	100
cM capacity (veh/h)	1081				407	593

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	227	482	10
Volume Left	0	0	10
Volume Right	0	23	0
cSH	1081	1700	407
Volume to Capacity	0.00	0.28	0.02
Queue Length 95th (ft)	0	0	2
Control Delay (s)	0.0	0.0	14.1
Lane LOS			B
Approach Delay (s)	0.0	0.0	14.1
Approach LOS			B

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	33.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	9	9	21	280	599	21
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	10	23	304	651	23
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					212	
pX, platoon unblocked	0.86	0.86	0.86			
vC, conflicting volume	860	662	674			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	756	525	539			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	97	98	97			
cM capacity (veh/h)	288	427	881			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	20	124	203	674
Volume Left	10	23	0	0
Volume Right	10	0	0	23
cSH	344	881	1700	1700
Volume to Capacity	0.06	0.03	0.12	0.40
Queue Length 95th (ft)	5	2	0	0
Control Delay (s)	16.1	1.9	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	16.1	0.7		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	42.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	36	18	283	82	40	568
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	39	20	308	89	43	617
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						372
pX, platoon unblocked	0.86					
vC, conflicting volume	1057	198			397	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	985	198			397	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	81	98			96	
cM capacity (veh/h)	203	809			1158	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1
Volume Total	59	205	192	661
Volume Left	39	0	0	43
Volume Right	20	0	89	0
cSH	271	1700	1700	1158
Volume to Capacity	0.22	0.12	0.11	0.04
Queue Length 95th (ft)	20	0	0	3
Control Delay (s)	21.9	0.0	0.0	1.0
Lane LOS	C			A
Approach Delay (s)	21.9	0.0		1.0
Approach LOS	C			

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	55.9%	ICU Level of Service	B
Analysis Period (min)	15		

1: Hart Ln & Spicewood Springs Rd

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	924	172	162	1226	273	271
Lane Group Flow (vph)	1027	191	180	1362	303	301
Turn Type	NA	Perm	Prot	NA	Prot	Free
Protected Phases	2		1	6	4	
Permitted Phases		2				Free
Detector Phase	2	2	1	6	4	
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	
Total Split (s)	79.0	79.0	39.0	118.0	32.0	
Total Split (%)	52.7%	52.7%	26.0%	78.7%	21.3%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Max	C-Max	Max	C-Max	None	
v/c Ratio	0.59	0.23	0.35	0.47	0.75	0.19
Control Delay	28.9	11.9	42.1	7.7	75.9	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.9	11.9	42.1	7.7	75.9	0.3
Queue Length 50th (ft)	370	53	144	315	150	0
Queue Length 95th (ft)	440	102	256	278	196	0
Internal Link Dist (ft)	211			988	285	
Turn Bay Length (ft)		110	220		160	
Base Capacity (vph)	1745	826	511	2887	617	1583
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.23	0.35	0.47	0.49	0.19

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of 1st Green
Natural Cycle: 75
Control Type: Actuated-Coordinated

Splits and Phases: 1: Hart Ln & Spicewood Springs Rd

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	924	172	162	1226	273	271
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	4.0
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	3433	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	3433	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1027	191	180	1362	303	301
RTOR Reduction (vph)	0	46	0	0	0	0
Lane Group Flow (vph)	1027	145	180	1362	303	301
Turn Type	NA	Perm	Prot	NA	Prot	Free
Protected Phases	2		1	6	4	
Permitted Phases		2				Free
Actuated Green, G (s)	74.0	74.0	43.4	122.4	17.6	150.0
Effective Green, g (s)	74.0	74.0	43.4	122.4	17.6	150.0
Actuated g/C Ratio	0.49	0.49	0.29	0.82	0.12	1.00
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	1745	780	512	2887	402	1583
v/s Ratio Prot	c0.29		0.10	c0.38	c0.09	
v/s Ratio Perm		0.09				0.19
v/c Ratio	0.59	0.19	0.35	0.47	0.75	0.19
Uniform Delay, d1	27.1	21.2	42.2	4.1	64.1	0.0
Progression Factor	1.00	1.00	0.93	1.64	1.00	1.00
Incremental Delay, d2	1.5	0.5	1.5	0.4	7.0	0.3
Delay (s)	28.6	21.7	40.7	7.2	71.1	0.3
Level of Service	C	C	D	A	E	A
Approach Delay (s)	27.5			11.1	35.8	
Approach LOS	C			B	D	

Intersection Summary			
HCM 2000 Control Delay	21.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	54.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

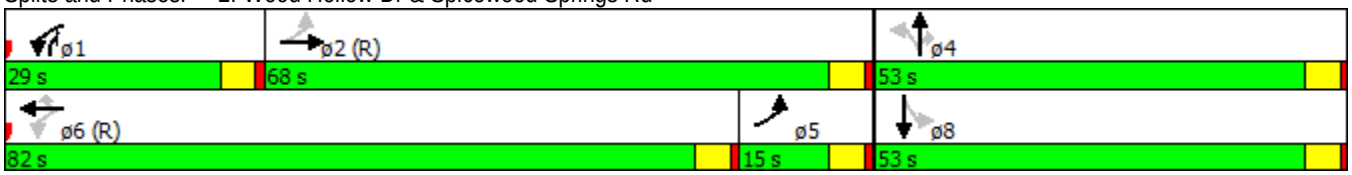
2: Wood Hollow Dr & Spicewood Springs Rd

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	6	1113	181	1127	1	245	8	372	1	5
Lane Group Flow (vph)	7	1351	206	1281	1	0	287	423	0	25
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Perm	NA	pm+ov	Perm	NA
Protected Phases	5	2	1	6			4	1		8
Permitted Phases	2		6		6	4		4	8	
Detector Phase	5	2	1	6	6	4	4	1	8	8
Switch Phase										
Minimum Initial (s)	6.0	25.0	6.0	5.0	5.0	5.0	5.0	6.0	5.0	5.0
Minimum Split (s)	15.0	30.0	15.0	11.0	11.0	35.0	35.0	15.0	35.0	35.0
Total Split (s)	15.0	68.0	29.0	82.0	82.0	53.0	53.0	29.0	53.0	53.0
Total Split (%)	10.0%	45.3%	19.3%	54.7%	54.7%	35.3%	35.3%	19.3%	35.3%	35.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead			Lead		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes			Yes		
Recall Mode	None	C-Max	None	C-Max	C-Max	Max	Max	None	None	None
v/c Ratio	0.03	0.56	0.73	0.61	0.00		0.67	0.56		0.05
Control Delay	10.8	16.9	50.6	17.4	0.0		53.4	28.3		17.7
Queue Delay	0.0	0.8	0.0	0.0	0.0		0.0	1.3		0.0
Total Delay	10.8	17.7	50.6	17.5	0.0		53.4	29.5		17.7
Queue Length 50th (ft)	2	384	118	231	0		244	264		5
Queue Length 95th (ft)	m7	468	217	410	m0		345	320		27
Internal Link Dist (ft)		988		494			132			203
Turn Bay Length (ft)	300		110		100					
Base Capacity (vph)	251	2396	370	2099	959		426	837		546
Starvation Cap Reductn	0	0	0	58	0		0	0		0
Spillback Cap Reductn	0	652	0	0	0		0	224		0
Storage Cap Reductn	0	0	0	0	0		0	0		0
Reduced v/c Ratio	0.03	0.77	0.56	0.63	0.00		0.67	0.69		0.05

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 55 (37%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Wood Hollow Dr & Spicewood Springs Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	1113	76	181	1127	1	245	8	372	1	5	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0		5.0	5.0		5.0	
Lane Util. Factor	1.00	0.91		1.00	0.95	1.00		1.00	1.00		1.00	
Frt	1.00	0.99		1.00	1.00	0.85		1.00	0.85		0.90	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.95	1.00		1.00	
Satd. Flow (prot)	1770	5037		1770	3539	1583		1777	1583		1678	
Flt Permitted	0.18	1.00		0.11	1.00	1.00		0.71	1.00		0.99	
Satd. Flow (perm)	326	5037		201	3539	1583		1331	1583		1670	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	7	1265	86	206	1281	1	278	9	423	1	6	18
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	29	0	12	0
Lane Group Flow (vph)	7	1346	0	206	1281	1	0	287	394	0	13	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	pm+ov	Perm	NA	
Protected Phases	5	2		1	6			4	1		8	
Permitted Phases	2			6		6	4		4	8		
Actuated Green, G (s)	71.3	71.3		85.0	85.0	85.0		48.0	63.7		48.0	
Effective Green, g (s)	71.3	71.3		85.0	85.0	85.0		48.0	63.7		48.0	
Actuated g/C Ratio	0.48	0.48		0.57	0.57	0.57		0.32	0.42		0.32	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0		5.0	5.0		5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0		2.0	2.0		2.0	
Lane Grp Cap (vph)	174	2394		278	2005	897		425	725		534	
v/s Ratio Prot	0.00	c0.27		c0.08	0.36				0.06			
v/s Ratio Perm	0.02			c0.34		0.00		c0.22	0.19		0.01	
v/c Ratio	0.04	0.56		0.74	0.64	0.00		0.68	0.54		0.02	
Uniform Delay, d1	28.7	28.2		23.8	22.1	14.1		44.2	32.3		34.9	
Progression Factor	0.42	0.56		1.70	0.79	1.00		1.00	1.00		1.00	
Incremental Delay, d2	0.0	0.9		8.6	1.5	0.0		8.3	0.4		0.0	
Delay (s)	12.2	16.5		49.0	18.9	14.1		52.6	32.7		35.0	
Level of Service	B	B		D	B	B		D	C		C	
Approach Delay (s)		16.5			23.1			40.7			35.0	
Approach LOS		B			C			D			C	

Intersection Summary			
HCM 2000 Control Delay	24.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	69.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

3: Mopac SBFR & Spicewood Springs Rd

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR	ø1	ø2	ø4	ø5	ø6
Lane Configurations												
Volume (vph)	1169	316	731	882	644	236	427					
Lane Group Flow (vph)	1244	336	778	938	342	594	454					
Turn Type	NA	Free	Prot	NA	Split	NA	Free					
Protected Phases	2 1		19 6 7 2 1 19 6		4 5	4 5		1	2	4	5	6
Permitted Phases		Free					Free					
Detector Phase	2 1		19 6 7 2 1 19 6		4 5	4 5						
Switch Phase												
Minimum Initial (s)								3.0	1.0	1.0	3.0	4.0
Minimum Split (s)								8.0	11.0	11.0	8.0	24.0
Total Split (s)								8.0	35.0	23.0	8.0	51.0
Total Split (%)								5%	23%	15%	5%	34%
Yellow Time (s)								4.0	4.0	4.0	4.0	4.0
All-Red Time (s)								1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag								Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?								Yes	Yes	Yes	Yes	Yes
Recall Mode								None	Max	None	None	C-Max
v/c Ratio	1.39	0.21	0.93	0.42	1.23	1.18dl	0.29					
Control Delay	221.8	0.3	26.0	1.9	179.1	107.4	0.5					
Queue Delay	0.9	0.0	27.0	0.3	0.0	0.0	0.0					
Total Delay	222.6	0.3	52.9	2.2	179.1	107.4	0.5					
Queue Length 50th (ft)	~864	0	762	42	~451	~343	0					
Queue Length 95th (ft)	#1002	0	m599	m101	#674	#474	0					
Internal Link Dist (ft)	494			333		2669						
Turn Bay Length (ft)			50		145							
Base Capacity (vph)	896	1583	837	2241	279	571	1583					
Starvation Cap Reductn	0	0	98	593	0	0	0					
Spillback Cap Reductn	127	0	0	3	0	0	1					
Storage Cap Reductn	0	0	0	0	0	0	0					
Reduced v/c Ratio	1.62	0.21	1.05	0.57	1.23	1.04	0.29					

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 89 (59%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 130
Control Type: Actuated-Coordinated

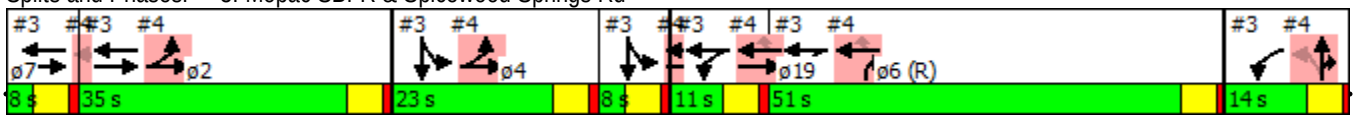
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 3: Mopac SBFR & Spicewood Springs Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1169	316	731	882	0	0	0	0	644	236	427
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	4.0	5.0	5.0					5.0	5.0	4.0
Lane Util. Factor		0.95	1.00	1.00	0.95					0.91	0.91	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.97	1.00
Satd. Flow (prot)		3539	1583	1770	3539					1610	3295	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.97	1.00
Satd. Flow (perm)		3539	1583	1770	3539					1610	3295	1583
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	1244	336	778	938	0	0	0	0	685	251	454
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1244	336	778	938	0	0	0	0	342	594	454
Turn Type		NA	Free	Prot	NA					Split	NA	Free
Protected Phases		2 1		19 6 7	2 1 19 6					4 5	4 5	
Permitted Phases			Free									Free
Actuated Green, G (s)		38.0	150.0	71.0	95.0					26.0	26.0	150.0
Effective Green, g (s)		38.0	150.0	71.0	95.0					26.0	26.0	150.0
Actuated g/C Ratio		0.25	1.00	0.47	0.63					0.17	0.17	1.00
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		896	1583	837	2241					279	571	1583
v/s Ratio Prot		c0.35		c0.44	0.27					c0.21	0.18	
v/s Ratio Perm			0.21									0.29
v/c Ratio		1.39	0.21	0.93	0.42					1.23	1.18dl	0.29
Uniform Delay, d1		56.0	0.0	37.1	13.7					62.0	62.0	0.0
Progression Factor		1.00	1.00	0.61	0.25					1.00	1.00	1.00
Incremental Delay, d2		180.6	0.3	2.1	0.0					129.2	48.5	0.5
Delay (s)		236.7	0.3	24.6	3.4					191.2	110.5	0.5
Level of Service		F	A	C	A					F	F	A
Approach Delay (s)		186.4			13.0			0.0			94.4	
Approach LOS		F			B			A			F	

Intersection Summary			
HCM 2000 Control Delay	95.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.31		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	35.0
Intersection Capacity Utilization	113.7%	ICU Level of Service	H
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group

4: Mopac NBFR & Anderson Ln

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	ø1	ø2	ø4	ø5	ø6
Lane Configurations												
Volume (vph)	573	1240	1277	453	337	45	627					
Lane Group Flow (vph)	603	1305	1344	477	319	380	363					
Turn Type	Prot	NA	NA	Perm	Perm	NA	custom					
Protected Phases	2 4	2 4 5 19	6 5 19			7 1	7 1 6	1	2	4	5	6
Permitted Phases				6 5 19	7 1							
Detector Phase	2 4	2 4 5 19	6 5 19	6 5 19	7 1	7 1	7 1 6					
Switch Phase												
Minimum Initial (s)								3.0	1.0	1.0	3.0	4.0
Minimum Split (s)								8.0	11.0	11.0	8.0	24.0
Total Split (s)								8.0	35.0	23.0	8.0	51.0
Total Split (%)								5%	23%	15%	5%	34%
Yellow Time (s)								4.0	4.0	4.0	4.0	4.0
All-Red Time (s)								1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag								Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?								Yes	Yes	Yes	Yes	Yes
Recall Mode								None	Max	None	None	C-Max
v/c Ratio	0.96	0.77	0.88	0.59	1.68	1.50	0.48					
Control Delay	32.2	0.6	46.6	19.8	365.4	274.5	20.6					
Queue Delay	42.2	40.7	6.1	0.0	0.0	0.2	0.0					
Total Delay	74.5	41.3	52.7	19.8	365.4	274.7	20.6					
Queue Length 50th (ft)	542	0	626	190	~477	~468	167					
Queue Length 95th (ft)	m178	m0	730	308	#687	#701	266					
Internal Link Dist (ft)		333	702			1795						
Turn Bay Length (ft)	50			360	280							
Base Capacity (vph)	625	1698	1533	810	190	254	749					
Starvation Cap Reductn	153	491	0	0	0	0	0					
Spillback Cap Reductn	0	0	153	0	0	3	0					
Storage Cap Reductn	0	0	0	0	0	0	0					
Reduced v/c Ratio	1.28	1.08	0.97	0.59	1.68	1.51	0.48					

Intersection Summary

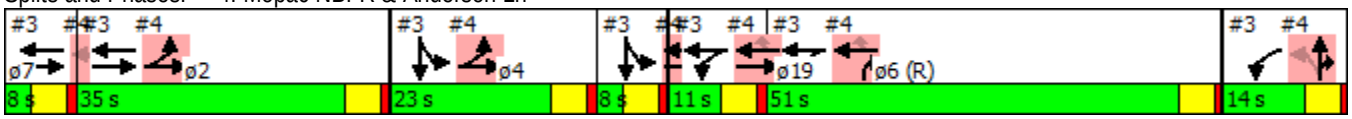
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 89 (59%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 130
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Mopac NBFR & Anderson Ln



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	573	1240	0	0	1277	453	337	45	627	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0	5.0			
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.91	0.95			
Frt	1.00	1.00			1.00	0.85	1.00	0.88	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	1770	3539			3539	1583	1681	1489	1504			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	1770	3539			3539	1583	1681	1489	1504			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	603	1305	0	0	1344	477	355	47	660	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	124	0	86	68	0	0	0
Lane Group Flow (vph)	603	1305	0	0	1344	353	319	294	295	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	custom			
Protected Phases	2 4	2 4 5 19			6 5 19			7 1	7 1 6			
Permitted Phases						6 5 19	7 1					
Actuated Green, G (s)	53.0	72.0			65.0	65.0	17.0	17.0	68.0			
Effective Green, g (s)	53.0	72.0			65.0	65.0	17.0	17.0	68.0			
Actuated g/C Ratio	0.35	0.48			0.43	0.43	0.11	0.11	0.45			
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	625	1698			1533	685	190	168	681			
v/s Ratio Prot	c0.34	c0.37			c0.38				0.20			
v/s Ratio Perm						0.22	0.19	0.20				
v/c Ratio	0.96	0.77			0.88	0.52	1.68	1.75	0.43			
Uniform Delay, d1	47.6	32.1			38.8	31.0	66.5	66.5	27.9			
Progression Factor	0.53	0.01			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	5.0	0.2			5.8	0.3	327.4	360.9	0.2			
Delay (s)	30.4	0.5			44.6	31.3	393.9	427.4	28.1			
Level of Service	C	A			D	C	F	F	C			
Approach Delay (s)		10.0			41.1			280.8			0.0	
Approach LOS		A			D			F			A	

Intersection Summary			
HCM 2000 Control Delay	81.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.21		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	35.0
Intersection Capacity Utilization	113.7%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	37	203	293	23	101	195
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	49	271	391	31	135	260
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						365
pX, platoon unblocked						
vC, conflicting volume	935	406			421	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	935	406			421	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	81	58			88	
cM capacity (veh/h)	260	645			1138	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	320	421	395
Volume Left	49	0	135
Volume Right	271	31	0
cSH	525	1700	1138
Volume to Capacity	0.61	0.25	0.12
Queue Length 95th (ft)	101	0	10
Control Delay (s)	22.0	0.0	3.7
Lane LOS	C		A
Approach Delay (s)	22.0	0.0	3.7
Approach LOS	C		

Intersection Summary			
Average Delay	7.5		
Intersection Capacity Utilization	57.2%	ICU Level of Service	B
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	35.5
Intersection LOS	E

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	117	174	115	0	50	93	197	0	82	317	81
Peak Hour Factor	0.92	0.76	0.76	0.76	0.92	0.76	0.76	0.76	0.92	0.76	0.76	0.76
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	154	229	151	0	66	122	259	0	108	417	107
Number of Lanes	0	0	2	0	0	0	1	1	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	2
HCM Control Delay	32	25.3	42.7
HCM LOS	D	D	E

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	34%	0%	57%	0%	35%	0%	100%	0%
Vol Thru, %	66%	66%	43%	43%	65%	0%	0%	64%
Vol Right, %	0%	34%	0%	57%	0%	100%	0%	36%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	241	240	204	202	143	197	70	244
LT Vol	82	0	117	0	50	0	70	0
Through Vol	159	159	87	87	93	0	0	157
RT Vol	0	81	0	115	0	197	0	87
Lane Flow Rate	316	315	268	266	188	259	92	321
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.837	0.796	0.732	0.672	0.519	0.648	0.262	0.843
Departure Headway (Hd)	9.522	9.096	9.818	9.1	9.921	9.003	10.243	9.458
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	380	397	368	396	363	402	351	382
Service Time	7.279	6.852	7.573	6.855	7.677	6.758	8.002	7.216
HCM Lane V/C Ratio	0.832	0.793	0.728	0.672	0.518	0.644	0.262	0.84
HCM Control Delay	46	39.3	35.3	28.7	23	27	16.6	46.6
HCM Lane LOS	E	E	E	D	C	D	C	E
HCM 95th-tile Q	7.7	6.9	5.6	4.7	2.9	4.4	1	7.8

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	70	157	87
Peak Hour Factor	0.92	0.76	0.76	0.76
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	92	207	114
Number of Lanes	0	1	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	39.9
HCM LOS	E

Lane

Intersection	
Intersection Delay, s/veh	17
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	38	79	50	0	107	142	53	0	100	221	65
Peak Hour Factor	0.92	0.94	0.94	0.94	0.92	0.94	0.94	0.94	0.92	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	40	84	53	0	114	151	56	0	106	235	69
Number of Lanes	0	0	1	1	0	0	1	1	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	2
HCM Control Delay	12	16.3	21.6
HCM LOS	B	C	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	26%	32%	0%	43%	0%	7%
Vol Thru, %	57%	68%	0%	57%	0%	65%
Vol Right, %	17%	0%	100%	0%	100%	28%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	386	117	50	249	53	224
LT Vol	100	38	0	107	0	16
Through Vol	221	79	0	142	0	146
RT Vol	65	0	50	0	53	62
Lane Flow Rate	411	124	53	265	56	238
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.691	0.258	0.097	0.528	0.098	0.419
Departure Headway (Hd)	6.055	7.472	6.584	7.179	6.241	6.331
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	595	480	543	501	573	567
Service Time	4.097	5.229	4.341	4.929	3.99	4.381
HCM Lane V/C Ratio	0.691	0.258	0.098	0.529	0.098	0.42
HCM Control Delay	21.6	12.8	10.1	17.7	9.7	13.9
HCM Lane LOS	C	B	B	C	A	B
HCM 95th-tile Q	5.4	1	0.3	3	0.3	2.1

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	16	146	62
Peak Hour Factor	0.92	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	17	155	66
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	13.9
HCM LOS	B

Lane

Intersection	
Intersection Delay, s/veh	25.8
Intersection LOS	D

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	47	78	55	0	97	249	139	0	87	321	79
Peak Hour Factor	0.92	0.99	0.99	0.99	0.92	0.99	0.99	0.99	0.92	0.99	0.99	0.99
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	47	79	56	0	98	252	140	0	88	324	80
Number of Lanes	0	0	1	1	0	0	1	1	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	2
HCM Control Delay	14.3	27	34.9
HCM LOS	B	D	D

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	38%	0%	28%	0%	100%	0%
Vol Thru, %	0%	80%	62%	0%	72%	0%	0%	82%
Vol Right, %	0%	20%	0%	100%	0%	100%	0%	18%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	87	400	125	55	346	139	113	217
LT Vol	87	0	47	0	97	0	113	0
Through Vol	0	321	78	0	249	0	0	177
RT Vol	0	79	0	55	0	139	0	40
Lane Flow Rate	88	404	126	56	349	140	114	219
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.2	0.846	0.307	0.121	0.77	0.276	0.271	0.482
Departure Headway (Hd)	8.195	7.538	8.752	7.829	7.933	7.068	8.561	7.911
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	437	477	409	455	454	505	418	454
Service Time	5.974	5.317	6.551	5.628	5.713	4.848	6.351	5.7
HCM Lane V/C Ratio	0.201	0.847	0.308	0.123	0.769	0.277	0.273	0.482
HCM Control Delay	13	39.7	15.4	11.7	32.8	12.6	14.5	17.9
HCM Lane LOS	B	E	C	B	D	B	B	C
HCM 95th-tile Q	0.7	8.5	1.3	0.4	6.6	1.1	1.1	2.6

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	113	177	40
Peak Hour Factor	0.92	0.99	0.99	0.99
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	114	179	40
Number of Lanes	0	1	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	16.7
HCM LOS	C

Lane

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	277	0	0	2089	450
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	0	318	0	0	2401	517
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2401	800	2918			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2401	800	2918			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	3	100			
cM capacity (veh/h)	28	328	122			

Direction, Lane #	EB 1	SB 1	SB 2	SB 3	SB 4
Volume Total	318	800	800	800	517
Volume Left	0	0	0	0	0
Volume Right	318	0	0	0	517
cSH	328	1700	1700	1700	1700
Volume to Capacity	0.97	0.47	0.47	0.47	0.30
Queue Length 95th (ft)	259	0	0	0	0
Control Delay (s)	79.2	0.0	0.0	0.0	0.0
Lane LOS	F				
Approach Delay (s)	79.2	0.0			
Approach LOS	F				

Intersection Summary			
Average Delay	7.8		
Intersection Capacity Utilization	64.2%	ICU Level of Service	C
Analysis Period (min)	15		

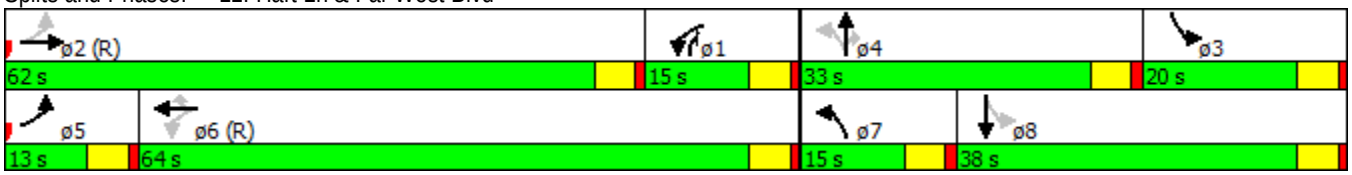
11: Hart Ln & Far West Blvd

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	56	592	198	559	162	64	152	153	180	108
Lane Group Flow (vph)	58	652	204	576	167	66	157	158	186	177
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA
Protected Phases	5	2	1	6		7	4	1	3	8
Permitted Phases	2		6		6	4		4	8	
Detector Phase	5	2	1	6	6	7	4	1	3	8
Switch Phase										
Minimum Initial (s)	4.0	2.0	4.0	2.0	2.0	4.0	2.0	4.0	2.0	2.0
Minimum Split (s)	9.0	24.0	9.0	24.0	24.0	9.0	33.0	9.0	33.0	33.0
Total Split (s)	13.0	62.0	15.0	64.0	64.0	15.0	33.0	15.0	20.0	38.0
Total Split (%)	10.0%	47.7%	11.5%	49.2%	49.2%	11.5%	25.4%	11.5%	15.4%	29.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lead	Lag	Lag	Lag	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	C-Max	None	None	None	None	None
v/c Ratio	0.13	0.33	0.39	0.27	0.18	0.40	0.72	0.43	0.75	0.33
Control Delay	16.4	17.4	41.9	32.8	33.3	58.4	72.7	45.4	70.9	49.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.4	17.4	41.9	32.8	33.3	58.4	72.7	45.4	70.9	49.0
Queue Length 50th (ft)	22	153	143	213	117	52	129	114	151	71
Queue Length 95th (ft)	51	229	215	271	183	94	196	172	216	100
Internal Link Dist (ft)		1703		1174			695			1553
Turn Bay Length (ft)	130		100		490			100	100	
Base Capacity (vph)	445	1957	529	2122	949	175	401	369	294	848
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.33	0.39	0.27	0.18	0.38	0.39	0.43	0.63	0.21

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 100 (77%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 11: Hart Ln & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	56	592	41	198	559	162	64	152	153	180	108	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3505		1770	3539	1583	1770	1863	1583	1770	3341	
Flt Permitted	0.36	1.00		0.40	1.00	1.00	0.50	1.00	1.00	0.66	1.00	
Satd. Flow (perm)	674	3505		753	3539	1583	931	1863	1583	1225	3341	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	58	610	42	204	576	167	66	157	158	186	111	66
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	58	652	0	204	576	167	66	157	158	186	177	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases	5	2		1	6		7	4	1	3	8	
Permitted Phases	2			6		6	4		4	8		
Actuated Green, G (s)	70.5	70.5		75.9	75.9	75.9	15.3	15.3	26.4	21.1	21.1	
Effective Green, g (s)	70.5	70.5		75.9	75.9	75.9	15.3	15.3	26.4	21.1	21.1	
Actuated g/C Ratio	0.54	0.54		0.58	0.58	0.58	0.12	0.12	0.20	0.16	0.16	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	413	1900		526	2066	924	156	219	382	253	542	
v/s Ratio Prot	0.01	c0.19		0.03	0.16		0.02	c0.08	c0.04	c0.07	0.05	
v/s Ratio Perm	0.07			c0.19		0.11	0.03		0.06	c0.05		
v/c Ratio	0.14	0.34		0.39	0.28	0.18	0.42	0.72	0.41	0.74	0.33	
Uniform Delay, d1	14.6	16.7		15.4	13.4	12.6	52.6	55.3	45.1	50.9	48.2	
Progression Factor	1.00	1.00		2.13	2.23	2.26	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.1	0.5		0.2	0.3	0.4	0.7	8.9	0.3	9.2	0.1	
Delay (s)	14.6	17.2		33.0	30.3	28.8	53.3	64.2	45.3	60.0	48.3	
Level of Service	B	B		C	C	C	D	E	D	E	D	
Approach Delay (s)		17.0			30.6			54.5			54.3	
Approach LOS		B			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	34.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	63.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

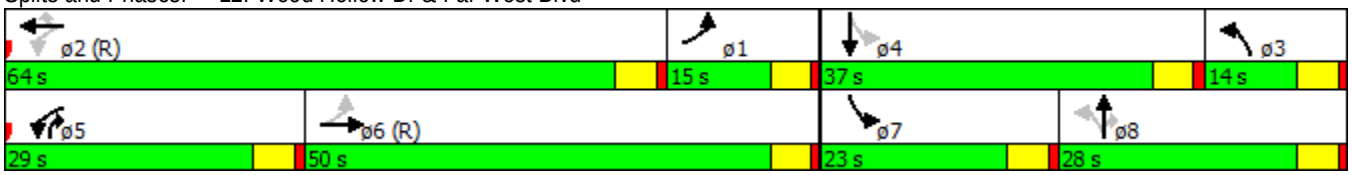
12: Wood Hollow Dr & Far West Blvd

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	131	796	234	704	198	105	193	331	181	105
Lane Group Flow (vph)	149	979	266	800	225	119	219	376	206	195
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA
Protected Phases	1	6	5	2		3	8	5	7	4
Permitted Phases	6		2		2	8		8	4	
Detector Phase	1	6	5	2	2	3	8	5	7	4
Switch Phase										
Minimum Initial (s)	4.0	2.0	4.0	2.0	2.0	4.0	2.0	4.0	4.0	2.0
Minimum Split (s)	9.0	11.0	9.0	11.0	11.0	9.0	11.0	9.0	9.0	11.0
Total Split (s)	15.0	50.0	29.0	64.0	64.0	14.0	28.0	29.0	23.0	37.0
Total Split (%)	11.5%	38.5%	22.3%	49.2%	49.2%	10.8%	21.5%	22.3%	17.7%	28.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	C-Max	None	None	None	None	None
v/c Ratio	0.40	0.44	0.75	0.46	0.25	0.42	0.81	0.63	0.79	0.77
Control Delay	44.3	36.0	44.2	35.6	12.7	54.0	76.0	27.0	74.7	66.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.3	36.0	44.2	35.6	12.7	54.0	76.0	27.0	74.7	66.8
Queue Length 50th (ft)	91	234	174	292	40	92	180	170	171	142
Queue Length 95th (ft)	156	311	250	353	91	146	256	238	238	209
Internal Link Dist (ft)		1174		673			686			1879
Turn Bay Length (ft)	245		125			75		75		
Base Capacity (vph)	371	2211	426	1758	899	283	329	668	281	449
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.44	0.62	0.46	0.25	0.42	0.67	0.56	0.73	0.43

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 20 (15%), Referenced to phase 2:WBTL and 6:EBTL, Start of 1st Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 12: Wood Hollow Dr & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	131	796	65	234	704	198	105	193	331	181	105	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.91		1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	5028		1770	3539	1583	1770	1863	1583	1770	1754	
Flt Permitted	0.35	1.00		0.17	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Satd. Flow (perm)	651	5028		320	3539	1583	1863	1863	1583	1863	1754	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	149	905	74	266	800	225	119	219	376	206	119	76
RTOR Reduction (vph)	0	6	0	0	0	113	0	0	98	0	20	0
Lane Group Flow (vph)	149	973	0	266	800	112	119	219	278	206	175	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases	1	6		5	2		3	8	5	7	4	
Permitted Phases	6			2		2	8		8	4		
Actuated Green, G (s)	56.9	56.9		64.5	64.5	64.5	19.0	19.0	36.6	17.4	17.4	
Effective Green, g (s)	56.9	56.9		64.5	64.5	64.5	19.0	19.0	36.6	17.4	17.4	
Actuated g/C Ratio	0.44	0.44		0.50	0.50	0.50	0.15	0.15	0.28	0.13	0.13	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	371	2200		355	1755	785	272	272	506	249	234	
v/s Ratio Prot	0.03	c0.19		c0.10	0.23		0.06	c0.12	0.07	0.10	0.10	
v/s Ratio Perm	0.14			c0.27		0.07	0.01		0.10	c0.01		
v/c Ratio	0.40	0.44		0.75	0.46	0.14	0.44	0.81	0.55	0.83	0.75	
Uniform Delay, d1	26.7	25.5		22.0	21.3	17.8	49.1	53.7	39.7	55.3	54.2	
Progression Factor	1.28	1.30		1.47	1.56	4.69	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.2	0.6		6.2	0.7	0.3	0.4	15.0	0.7	18.8	10.8	
Delay (s)	34.4	33.8		38.7	34.0	83.7	49.5	68.7	40.4	74.1	65.0	
Level of Service	C	C		D	C	F	D	E	D	E	E	
Approach Delay (s)		33.9			43.6			50.6			69.7	
Approach LOS		C			D			D			E	

Intersection Summary			
HCM 2000 Control Delay	44.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	66.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

13: Mopac SBFR & Far West Blvd

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR	ø1	ø2	ø4	ø8	ø22
Lane Configurations											
Volume (vph)	1218	402	10	500	429	965					
Lane Group Flow (vph)	1369	452	11	562	1053	1084					
Turn Type	NA	Free	Prot	NA	NA	Free					
Protected Phases	1 22 2		7	1 22 7	4 8		1	2	4	8	22
Permitted Phases		Free				Free					
Detector Phase	1 22 2		7	1 22 7	4 8						
Switch Phase											
Minimum Initial (s)			4.0				4.0	4.0	4.0	4.0	4.0
Minimum Split (s)			20.0				9.0	24.0	24.0	9.0	20.0
Total Split (s)			41.0				9.0	20.0	31.0	9.0	20.0
Total Split (%)			31.5%				7%	15%	24%	7%	15%
Yellow Time (s)			4.0				4.0	4.0	4.0	4.0	4.0
All-Red Time (s)			1.0				1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)			0.0								
Total Lost Time (s)			5.0								
Lead/Lag							Lead		Lead	Lag	Lag
Lead-Lag Optimize?							Yes		Yes	Yes	Yes
Recall Mode			None				None	C-Max	None	None	None
v/c Ratio	0.85	0.29	0.04	0.32	1.20dl	0.68					
Control Delay	37.3	0.4	23.0	3.3	117.1	2.4					
Queue Delay	49.1	0.0	0.0	0.3	0.0	0.0					
Total Delay	86.4	0.4	23.0	3.5	117.1	2.4					
Queue Length 50th (ft)	545	0	3	14	~542	0					
Queue Length 95th (ft)	#753	0	m6	17	#666	0					
Internal Link Dist (ft)	432			324	532						
Turn Bay Length (ft)		490									
Base Capacity (vph)	1618	1583	490	1769	928	1583					
Starvation Cap Reductn	0	0	0	573	0	0					
Spillback Cap Reductn	729	0	0	0	0	0					
Storage Cap Reductn	0	0	0	0	0	0					
Reduced v/c Ratio	1.54	0.29	0.02	0.47	1.13	0.68					

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBT, Start of 1st Green
Natural Cycle: 110
Control Type: Actuated-Coordinated

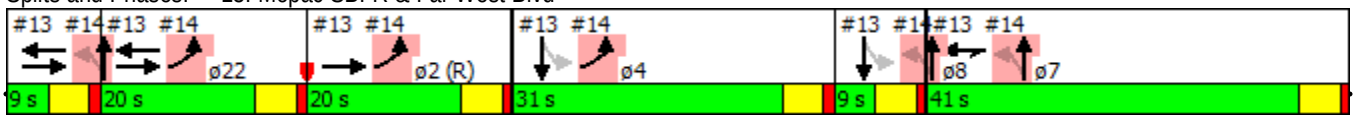
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 13: Mopac SBFR & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1218	402	10	500	0	0	0	0	508	429	965
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	4.0	5.0	5.0						5.0	4.0
Lane Util. Factor		0.95	1.00	1.00	0.95						0.95	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.97	1.00
Satd. Flow (prot)		3539	1583	1770	3539						3446	1583
Flt Permitted		1.00	1.00	0.95	1.00						0.97	1.00
Satd. Flow (perm)		3539	1583	1770	3539						3446	1583
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	1369	452	11	562	0	0	0	0	571	482	1084
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1369	452	11	562	0	0	0	0	0	1053	1084
Turn Type		NA	Free	Prot	NA					Perm	NA	Free
Protected Phases		1 22 2		7	1 22 7						4 8	
Permitted Phases			Free							4 8		Free
Actuated Green, G (s)		59.4	130.0	20.6	65.0						35.0	130.0
Effective Green, g (s)		59.4	130.0	20.6	65.0						35.0	130.0
Actuated g/C Ratio		0.46	1.00	0.16	0.50						0.27	1.00
Clearance Time (s)				5.0								
Vehicle Extension (s)				2.0								
Lane Grp Cap (vph)		1617	1583	280	1769						927	1583
v/s Ratio Prot		c0.39		0.01	0.16							
v/s Ratio Perm			0.29								0.31	c0.68
v/c Ratio		0.85	0.29	0.04	0.32						1.20dl	0.68
Uniform Delay, d1		31.3	0.0	46.3	19.3						47.5	0.0
Progression Factor		0.99	1.00	0.53	0.15						1.00	1.00
Incremental Delay, d2		3.8	0.4	0.0	0.0						74.5	2.4
Delay (s)		34.7	0.4	24.7	2.9						122.0	2.4
Level of Service		C	A	C	A						F	A
Approach Delay (s)		26.2			3.3			0.0			61.3	
Approach LOS		C			A			A			E	

Intersection Summary			
HCM 2000 Control Delay	39.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	72.7%	ICU Level of Service	C
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group

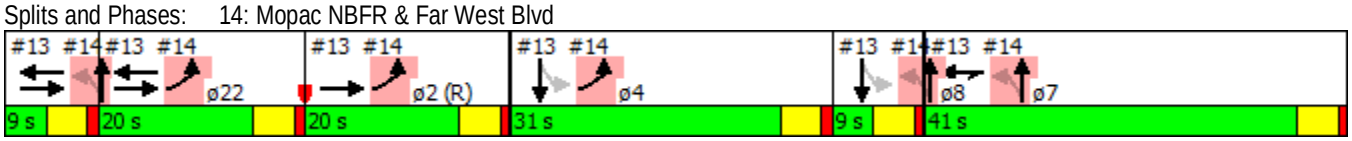
14: Mopac NBFR & Far West Blvd

Lane Group	EBL	NBL	NBT	ø1	ø2	ø4	ø7	ø8	ø22
Lane Configurations									
Volume (vph)	1737	446	26						
Lane Group Flow (vph)	1974	269	268						
Turn Type	Prot	Perm	NA						
Protected Phases	22 2 4		7 1 8	1	2	4	7	8	22
Permitted Phases		7 1 8							
Detector Phase	22 2 4	7 1 8	7 1 8						
Switch Phase									
Minimum Initial (s)				4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)				9.0	24.0	24.0	20.0	9.0	20.0
Total Split (s)				9.0	20.0	31.0	41.0	9.0	20.0
Total Split (%)				7%	15%	24%	32%	7%	15%
Yellow Time (s)				4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)				1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)									
Total Lost Time (s)									
Lead/Lag				Lead		Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes		Yes	Yes
Recall Mode				None	C-Max	None	None	None	None
v/c Ratio	1.13	0.39	0.38						
Control Delay	89.5	28.5	28.4						
Queue Delay	0.7	0.0	0.0						
Total Delay	90.2	28.5	28.4						
Queue Length 50th (ft)	~995	164	163						
Queue Length 95th (ft)	m#1001	235	234						
Internal Link Dist (ft)	324		322						
Turn Bay Length (ft)									
Base Capacity (vph)	1742	698	703						
Starvation Cap Reductn	347	0	0						
Spillback Cap Reductn	0	0	0						
Storage Cap Reductn	0	0	0						
Reduced v/c Ratio	1.42	0.39	0.38						

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBT, Start of 1st Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 14: Mopac NBFR & Far West Blvd



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	1737	0	446	26	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0		
Lane Util. Factor	0.97		0.95	0.95		
Frt	1.00		1.00	1.00		
Flt Protected	0.95		0.95	0.96		
Satd. Flow (prot)	3433		1681	1694		
Flt Permitted	0.95		0.95	0.96		
Satd. Flow (perm)	3433		1681	1694		
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	1974	0	507	30	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1974	0	269	268	0	0
Turn Type	Prot		Perm	NA		
Protected Phases	22 2 4			7 1 8		
Permitted Phases			7 1 8			
Actuated Green, G (s)	66.0		54.0	54.0		
Effective Green, g (s)	66.0		54.0	54.0		
Actuated g/C Ratio	0.51		0.42	0.42		
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)	1742		698	703		
v/s Ratio Prot	c0.58					
v/s Ratio Perm			c0.16	0.16		
v/c Ratio	1.13		0.39	0.38		
Uniform Delay, d1	32.0		26.4	26.4		
Progression Factor	0.81		1.00	1.00		
Incremental Delay, d2	63.2		0.1	0.1		
Delay (s)	88.9		26.6	26.5		
Level of Service	F		C	C		
Approach Delay (s)	88.9			26.6	0.0	
Approach LOS	F			C	A	

Intersection Summary			
HCM 2000 Control Delay	75.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	85.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

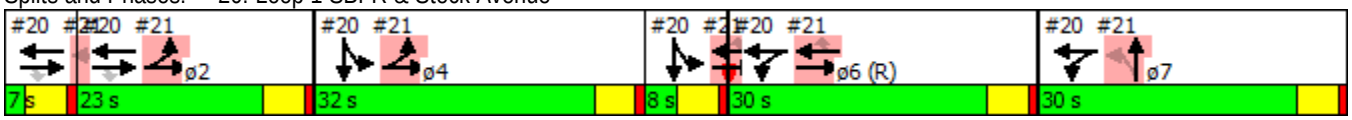
20: Loop 1 SBFR & Steck Avenue

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	ø1	ø2	ø4	ø5	ø6	ø7
Lane Configurations												
Volume (vph)	652	104	258	357	802	830						
Lane Group Flow (vph)	665	106	263	364	671	1348						
Turn Type	NA	Perm	Prot	NA	Split	NA						
Protected Phases	2 1		6 7	2 1 6 7	4 5	4 5	1	2	4	5	6	7
Permitted Phases		2 1										
Detector Phase	2 1	2 1	6 7	2 1 6 7	4 5	4 5						
Switch Phase												
Minimum Initial (s)							2.0	1.0	1.0	3.0	4.0	4.0
Minimum Split (s)							7.0	11.0	11.0	8.0	24.0	9.0
Total Split (s)							7.0	23.0	32.0	8.0	30.0	30.0
Total Split (%)							5%	18%	25%	6%	23%	23%
Yellow Time (s)							4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)							1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag							Lead	Lag	Lead	Lag		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode							None	Max	None	None	C-Max	None
v/c Ratio	0.98	0.25	0.35	0.16	1.55	1.50						
Control Delay	81.7	4.1	2.9	0.1	292.1	264.9						
Queue Delay	40.5	0.0	0.9	0.0	0.0	0.0						
Total Delay	122.2	4.1	3.7	0.1	292.1	264.9						
Queue Length 50th (ft)	296	0	6	0	~873	~858						
Queue Length 95th (ft)	#422	23	8	0	#1134	#1006						
Internal Link Dist (ft)	737			327		333						
Turn Bay Length (ft)		100	80									
Base Capacity (vph)	680	419	748	2313	433	898						
Starvation Cap Reductn	0	0	259	0	0	0						
Spillback Cap Reductn	189	0	0	0	0	1						
Storage Cap Reductn	0	0	0	0	0	0						
Reduced v/c Ratio	1.35	0.25	0.54	0.16	1.55	1.50						

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 97 (75%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 140
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 20: Loop 1 SBFR & Steck Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	652	104	258	357	0	0	0	0	802	830	347
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0					5.0	5.0	
Lane Util. Factor		0.95	1.00	1.00	0.95					0.91	0.91	
Frt		1.00	0.85	1.00	1.00					1.00	0.96	
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.99	
Satd. Flow (prot)		3539	1583	1770	3539					1610	3239	
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.99	
Satd. Flow (perm)		3539	1583	1770	3539					1610	3239	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	665	106	263	364	0	0	0	0	818	847	354
RTOR Reduction (vph)	0	0	86	0	0	0	0	0	0	0	26	0
Lane Group Flow (vph)	0	665	20	263	364	0	0	0	0	671	1322	0
Turn Type		NA	Perm	Prot	NA					Split	NA	
Protected Phases		2 1		6 7	2 1 6 7					4 5	4 5	
Permitted Phases			2 1									
Actuated Green, G (s)		25.0	25.0	55.0	85.0					35.0	35.0	
Effective Green, g (s)		25.0	25.0	55.0	85.0					35.0	35.0	
Actuated g/C Ratio		0.19	0.19	0.42	0.65					0.27	0.27	
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		680	304	748	2313					433	872	
v/s Ratio Prot		c0.19		c0.15	0.10					c0.42	0.41	
v/s Ratio Perm			0.01									
v/c Ratio		0.98	0.07	0.35	0.16					1.55	1.52	
Uniform Delay, d1		52.2	43.0	25.4	8.7					47.5	47.5	
Progression Factor		1.00	1.00	0.07	0.00					1.00	1.00	
Incremental Delay, d2		28.6	0.0	0.1	0.0					258.6	238.4	
Delay (s)		80.8	43.0	1.8	0.0					306.1	285.9	
Level of Service		F	D	A	A					F	F	
Approach Delay (s)		75.6			0.8			0.0			292.6	
Approach LOS		E			A			A			F	

Intersection Summary			
HCM 2000 Control Delay	190.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	143.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

21: Loop 1 NBFR & Steck Avenue

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	ø1	ø2	ø4	ø5	ø6	ø7
Lane Configurations												
Volume (vph)	705	628	490	506	130	848						
Lane Group Flow (vph)	742	661	516	533	137	1024						
Turn Type	Prot	NA	NA	Perm	Perm	NA						
Protected Phases	2 4	2 4 5 6	6 5			7 1	1	2	4	5	6	7
Permitted Phases				6 5	7 1							
Detector Phase	2 4	2 4 5 6	6 5	6 5	7 1	7 1						
Switch Phase												
Minimum Initial (s)							2.0	1.0	1.0	3.0	4.0	4.0
Minimum Split (s)							7.0	11.0	11.0	8.0	24.0	9.0
Total Split (s)							7.0	23.0	32.0	8.0	30.0	30.0
Total Split (%)							5%	18%	25%	6%	23%	23%
Yellow Time (s)							4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)							1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag							Lead	Lag	Lead	Lag		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode							None	Max	None	None	C-Max	None
v/c Ratio	1.09	0.28	0.57	1.05	0.16	2.26						
Control Delay	70.2	0.1	45.4	87.8	39.1	598.5						
Queue Delay	5.7	1.2	0.0	0.0	0.0	0.0						
Total Delay	76.0	1.2	45.4	87.8	39.1	598.5						
Queue Length 50th (ft)	~685	0	201	~392	46	~1408						
Queue Length 95th (ft)	m351	m0	261	#618	75	#1669						
Internal Link Dist (ft)		327	978			2452						
Turn Bay Length (ft)	80			170	110							
Base Capacity (vph)	680	2395	898	508	845	453						
Starvation Cap Reductn	177	1439	0	0	0	0						
Spillback Cap Reductn	0	0	0	0	0	0						
Storage Cap Reductn	0	0	0	0	0	0						
Reduced v/c Ratio	1.48	0.69	0.57	1.05	0.16	2.26						

Intersection Summary

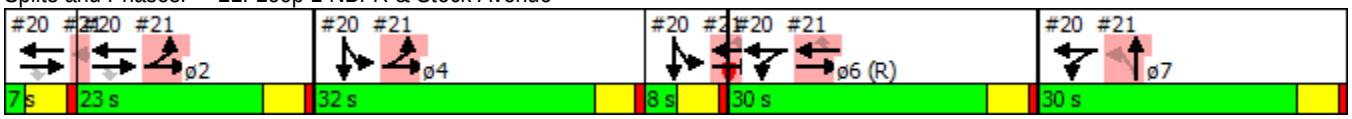
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 97 (75%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 140
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 21: Loop 1 NBFR & Steck Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	705	628	0	0	490	506	130	848	124	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0				
Lane Util. Factor	1.00	0.95			0.95	1.00	0.97	1.00				
Frt	1.00	1.00			1.00	0.85	1.00	0.98				
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (prot)	1770	3539			3539	1583	3433	1827				
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (perm)	1770	3539			3539	1583	3433	1827				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	742	661	0	0	516	533	137	893	131	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	107	0	4	0	0	0	0
Lane Group Flow (vph)	742	661	0	0	516	426	137	1020	0	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA				
Protected Phases	2 4	2 4 5 6			6 5			7 1				
Permitted Phases						6 5	7 1					
Actuated Green, G (s)	50.0	88.0			33.0	33.0	32.0	32.0				
Effective Green, g (s)	50.0	88.0			33.0	33.0	32.0	32.0				
Actuated g/C Ratio	0.38	0.68			0.25	0.25	0.25	0.25				
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	680	2395			898	401	845	449				
v/s Ratio Prot	c0.42	0.19			0.15			c0.56				
v/s Ratio Perm						c0.27	0.04					
v/c Ratio	1.09	0.28			0.57	1.06	0.16	2.27				
Uniform Delay, d1	40.0	8.3			42.4	48.5	38.5	49.0				
Progression Factor	0.63	0.00			1.00	1.00	1.00	1.00				
Incremental Delay, d2	43.7	0.0			0.6	62.7	0.0	579.6				
Delay (s)	68.9	0.0			42.9	111.2	38.5	628.6				
Level of Service	E	A			D	F	D	F				
Approach Delay (s)		36.5			77.6			558.9			0.0	
Approach LOS		D			E			F			A	

Intersection Summary			
HCM 2000 Control Delay	216.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.62		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	143.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	185	140	28	159	181	90
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	201	152	30	173	197	98
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			353		511	277
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			353		511	277
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		61	87
cM capacity (veh/h)			1205		509	762

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	353	203	295
Volume Left	0	30	197
Volume Right	152	0	98
cSH	1700	1205	572
Volume to Capacity	0.21	0.03	0.51
Queue Length 95th (ft)	0	2	73
Control Delay (s)	0.0	1.4	17.8
Lane LOS		A	C
Approach Delay (s)	0.0	1.4	17.8
Approach LOS			C

Intersection Summary			
Average Delay	6.5		
Intersection Capacity Utilization	53.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	11	191	6	51	138	40	9	0	82	63	0	18
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	12	208	7	55	150	43	10	0	89	68	0	20
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	193			214			537	539	211	607	521	172
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	193			214			537	539	211	607	521	172
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			96			98	100	89	80	100	98
cM capacity (veh/h)	1380			1356			428	427	829	351	437	872

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	226	249	99	88
Volume Left	12	55	10	68
Volume Right	7	43	89	20
cSH	1380	1356	759	405
Volume to Capacity	0.01	0.04	0.13	0.22
Queue Length 95th (ft)	1	3	11	20
Control Delay (s)	0.5	2.0	10.5	16.3
Lane LOS	A	A	B	C
Approach Delay (s)	0.5	2.0	10.5	16.3
Approach LOS			B	C

Intersection Summary			
Average Delay	4.7		
Intersection Capacity Utilization	44.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	180	6	17	148	9	28
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	196	7	18	161	10	30
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			202		397	199
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			202		397	199
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		98	96
cM capacity (veh/h)			1370		600	842

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	202	179	40
Volume Left	0	18	10
Volume Right	7	0	30
cSH	1700	1370	767
Volume to Capacity	0.12	0.01	0.05
Queue Length 95th (ft)	0	1	4
Control Delay (s)	0.0	0.9	10.0
Lane LOS		A	A
Approach Delay (s)	0.0	0.9	10.0
Approach LOS			A

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	31.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	119	17	17	149	28	28
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	129	18	18	162	30	30
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			148		338	139
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			148		338	139
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		95	97
cM capacity (veh/h)			1434		650	910

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	148	180	61
Volume Left	0	18	30
Volume Right	18	0	30
cSH	1700	1434	758
Volume to Capacity	0.09	0.01	0.08
Queue Length 95th (ft)	0	1	7
Control Delay (s)	0.0	0.9	10.2
Lane LOS		A	B
Approach Delay (s)	0.0	0.9	10.2
Approach LOS			B

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	29.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	34	113	112	45	73	54
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	37	123	122	49	79	59
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	171				343	146
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	171				343	146
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				88	93
cM capacity (veh/h)	1407				636	901

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	160	171	138
Volume Left	37	0	79
Volume Right	0	49	59
cSH	1407	1700	727
Volume to Capacity	0.03	0.10	0.19
Queue Length 95th (ft)	2	0	17
Control Delay (s)	1.9	0.0	11.1
Lane LOS	A		B
Approach Delay (s)	1.9	0.0	11.1
Approach LOS			B

Intersection Summary			
Average Delay	3.9		
Intersection Capacity Utilization	33.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	11	325	211	40	63	18
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	12	353	229	43	68	20
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	273				628	251
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	273				628	251
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				85	98
cM capacity (veh/h)	1290				442	788

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	365	273	88
Volume Left	12	0	68
Volume Right	0	43	20
cSH	1290	1700	490
Volume to Capacity	0.01	0.16	0.18
Queue Length 95th (ft)	1	0	16
Control Delay (s)	0.3	0.0	13.9
Lane LOS	A		B
Approach Delay (s)	0.3	0.0	13.9
Approach LOS			B

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	37.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	388	251	11	18	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	422	273	12	20	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	285				701	279
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	285				701	279
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				95	100
cM capacity (veh/h)	1277				405	760

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	422	285	20
Volume Left	0	0	20
Volume Right	0	12	0
cSH	1277	1700	405
Volume to Capacity	0.00	0.17	0.05
Queue Length 95th (ft)	0	0	4
Control Delay (s)	0.0	0.0	14.3
Lane LOS			B
Approach Delay (s)	0.0	0.0	14.3
Approach LOS			B

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	30.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	18	18	11	611	246	11
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	20	20	12	664	267	12
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					212	
pX, platoon unblocked	0.95	0.95	0.95			
vC, conflicting volume	629	273	279			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	580	204	211			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	95	97	99			
cM capacity (veh/h)	417	760	1285			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	39	233	443	279
Volume Left	20	12	0	0
Volume Right	20	0	0	12
cSH	539	1285	1700	1700
Volume to Capacity	0.07	0.01	0.26	0.16
Queue Length 95th (ft)	6	1	0	0
Control Delay (s)	12.2	0.5	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	12.2	0.2		0.0
Approach LOS	B			

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	34.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	73	36	586	45	23	241
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	79	39	637	49	25	262
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						372
pX, platoon unblocked	0.95					
vC, conflicting volume	973	343			686	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	947	343			686	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	67	94			97	
cM capacity (veh/h)	240	653			904	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1
Volume Total	118	425	261	287
Volume Left	79	0	0	25
Volume Right	39	0	49	0
cSH	304	1700	1700	904
Volume to Capacity	0.39	0.25	0.15	0.03
Queue Length 95th (ft)	45	0	0	2
Control Delay (s)	24.3	0.0	0.0	1.1
Lane LOS	C			A
Approach Delay (s)	24.3	0.0		1.1
Approach LOS	C			

Intersection Summary			
Average Delay	2.9		
Intersection Capacity Utilization	44.7%	ICU Level of Service	A
Analysis Period (min)	15		

Appendix Q: Synchro Reports – 2024

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1261	255	172	962	108	161
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	1300	263	177	992	111	166
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						6
Median type	Raised			Raised		
Median storage veh)	1			1		
Upstream signal (ft)				1068		
pX, platoon unblocked					0.87	
vC, conflicting volume			1300		2151	650
vC1, stage 1 conf vol					1300	
vC2, stage 2 conf vol					851	
vCu, unblocked vol			1300		2019	650
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			66		16	60
cM capacity (veh/h)			529		132	412

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1
Volume Total	650	650	263	177	496	496	277
Volume Left	0	0	0	177	0	0	111
Volume Right	0	0	263	0	0	0	166
cSH	1700	1700	1700	529	1700	1700	329
Volume to Capacity	0.38	0.38	0.15	0.34	0.29	0.29	0.84
Queue Length 95th (ft)	0	0	0	37	0	0	187
Control Delay (s)	0.0	0.0	0.0	15.2	0.0	0.0	53.7
Lane LOS				C			F
Approach Delay (s)	0.0			2.3			53.7
Approach LOS							F

Intersection Summary			
Average Delay	5.8		
Intersection Capacity Utilization	60.4%	ICU Level of Service	B
Analysis Period (min)	15		

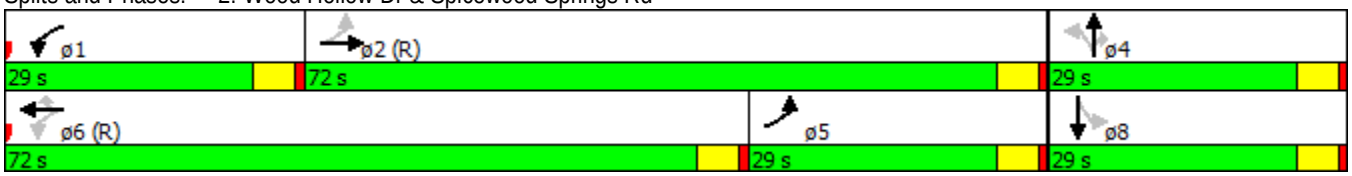
2: Wood Hollow Dr & Spicewood Springs Rd

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	8	1302	394	1079	12	53	5	159	7	0
Lane Group Flow (vph)	8	1472	410	1124	12	0	60	166	0	9
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA
Protected Phases	5	2	1	6			4			8
Permitted Phases	2		6		6	4		4	8	
Detector Phase	5	2	1	6	6	4	4	4	8	8
Switch Phase										
Minimum Initial (s)	6.0	25.0	6.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	15.0	30.0	15.0	11.0	11.0	35.0	35.0	35.0	35.0	35.0
Total Split (s)	29.0	72.0	29.0	72.0	72.0	29.0	29.0	29.0	29.0	29.0
Total Split (%)	22.3%	55.4%	22.3%	55.4%	55.4%	22.3%	22.3%	22.3%	22.3%	22.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Max	None	C-Max	C-Max	Max	Max	Max	None	None
v/c Ratio	0.02	0.57	0.99	0.46	0.01		0.23	0.39		0.02
Control Delay	16.1	22.4	64.2	12.5	0.0		47.9	9.4		0.1
Queue Delay	0.0	0.0	0.0	0.5	0.0		0.0	0.0		0.0
Total Delay	16.1	22.4	64.2	13.0	0.0		47.9	9.4		0.1
Queue Length 50th (ft)	3	298	264	153	0		44	0		0
Queue Length 95th (ft)	12	344	m#390	m405	m0		86	62		0
Internal Link Dist (ft)		988		494			464			203
Turn Bay Length (ft)	130		110		100			100		
Base Capacity (vph)	482	2597	416	2455	1116		259	427		370
Starvation Cap Reductn	0	0	0	820	0		0	0		0
Spillback Cap Reductn	0	0	0	0	0		0	0		0
Storage Cap Reductn	0	0	0	0	0		0	0		0
Reduced v/c Ratio	0.02	0.57	0.99	0.69	0.01		0.23	0.39		0.02

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 55 (42%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Wood Hollow Dr & Spicewood Springs Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	1302	111	394	1079	12	53	5	159	7	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0		5.0	5.0		5.0	
Lane Util. Factor	1.00	0.91		1.00	0.95	1.00		1.00	1.00		1.00	
Frt	1.00	0.99		1.00	1.00	0.85		1.00	0.85		0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.96	1.00		0.96	
Satd. Flow (prot)	1770	5025		1770	3539	1583		1781	1583		1739	
Flt Permitted	0.25	1.00		0.09	1.00	1.00		0.75	1.00		0.86	
Satd. Flow (perm)	472	5025		176	3539	1583		1402	1583		1561	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	8	1356	116	410	1124	12	55	5	166	7	0	2
RTOR Reduction (vph)	0	8	0	0	0	4	0	0	135	0	7	0
Lane Group Flow (vph)	8	1464	0	410	1124	8	0	60	31	0	2	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases	2			6		6	4		4	8		
Actuated Green, G (s)	67.0	67.0		86.2	86.2	86.2		24.0	24.0		24.0	
Effective Green, g (s)	67.0	67.0		86.2	86.2	86.2		24.0	24.0		24.0	
Actuated g/C Ratio	0.52	0.52		0.66	0.66	0.66		0.18	0.18		0.18	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0		5.0	5.0		5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0		2.0	2.0		2.0	
Lane Grp Cap (vph)	291	2589		410	2346	1049		258	292		288	
v/s Ratio Prot	0.00	c0.29		c0.18	0.32							
v/s Ratio Perm	0.01			c0.48		0.01		c0.04	0.02		0.00	
v/c Ratio	0.03	0.57		1.00	0.48	0.01		0.23	0.10		0.01	
Uniform Delay, d1	15.5	21.5		37.9	10.8	7.4		45.2	44.1		43.3	
Progression Factor	1.00	1.00		0.95	1.12	1.00		1.00	1.00		1.00	
Incremental Delay, d2	0.0	0.9		34.8	0.4	0.0		2.1	0.7		0.0	
Delay (s)	15.5	22.4		70.9	12.5	7.4		47.3	44.8		43.3	
Level of Service	B	C		E	B	A		D	D		D	
Approach Delay (s)		22.4			28.0			45.4			43.3	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	26.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	68.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

3: Mopac SBFR & Spicewood Springs Rd

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR	ø1	ø2	ø4	ø5	ø6
Lane Configurations												
Volume (vph)	762	707	668	779	390	1267	705					
Lane Group Flow (vph)	786	729	689	803	362	1346	727					
Turn Type	NA	Perm	Prot	NA	Split	NA	Perm					
Protected Phases	2 1		19 6 7	2 1 19 6	4 5	4 5		1	2	4	5	6
Permitted Phases		2 1					4 5					
Detector Phase	2 1	2 1	19 6 7	2 1 19 6	4 5	4 5	4 5					
Switch Phase												
Minimum Initial (s)								3.0	1.0	1.0	3.0	4.0
Minimum Split (s)								8.0	11.0	11.0	8.0	24.0
Total Split (s)								8.0	24.0	34.0	8.0	30.0
Total Split (%)								6%	18%	26%	6%	23%
Yellow Time (s)								4.0	4.0	4.0	4.0	4.0
All-Red Time (s)								1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag								Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?								Yes	Yes	Yes	Yes	Yes
Recall Mode								None	Max	None	None	C-Max
v/c Ratio	1.07	1.53	0.99	0.47	0.79	1.40	1.12					
Control Delay	118.4	288.0	36.7	3.1	22.6	203.6	76.1					
Queue Delay	0.0	0.0	36.3	0.1	0.0	0.0	0.0					
Total Delay	118.4	288.0	72.9	3.2	22.6	203.6	76.1					
Queue Length 50th (ft)	~396	~778	600	52	248	~821	~516					
Queue Length 95th (ft)	#530	#1030	m538	m101	m159	m#409	m213					
Internal Link Dist (ft)	494			333		2669						
Turn Bay Length (ft)			50		145							
Base Capacity (vph)	735	475	694	1715	458	963	647					
Starvation Cap Reductn	0	0	95	134	0	0	0					
Spillback Cap Reductn	0	0	0	0	0	0	0					
Storage Cap Reductn	0	0	0	0	0	0	0					
Reduced v/c Ratio	1.07	1.53	1.15	0.51	0.79	1.40	1.12					

Intersection Summary

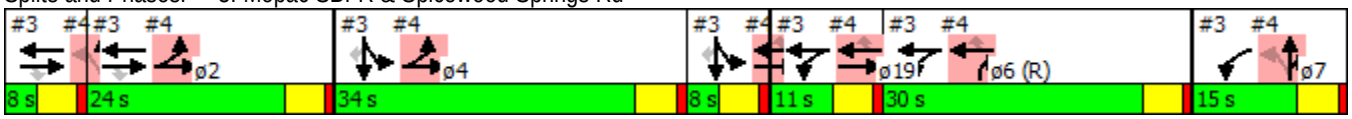
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 8 (6%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 130
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Mopac SBFR & Spicewood Springs Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	762	707	668	779	0	0	0	0	390	1267	705
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0					5.0	5.0	5.0
Lane Util. Factor		0.95	1.00	1.00	0.95					0.91	0.91	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		3539	1583	1770	3539					1610	3385	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (perm)		3539	1583	1770	3539					1610	3385	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	786	729	689	803	0	0	0	0	402	1306	727
RTOR Reduction (vph)	0	0	147	0	0	0	0	0	0	0	0	197
Lane Group Flow (vph)	0	786	582	689	803	0	0	0	0	362	1346	530
Turn Type		NA	Perm	Prot	NA					Split	NA	Perm
Protected Phases		2 1		19 6 7	2 1 19 6					4 5	4 5	
Permitted Phases			2 1									4 5
Actuated Green, G (s)		27.0	27.0	51.0	63.0					37.0	37.0	37.0
Effective Green, g (s)		27.0	27.0	51.0	63.0					37.0	37.0	37.0
Actuated g/C Ratio		0.21	0.21	0.39	0.48					0.28	0.28	0.28
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		735	328	694	1715					458	963	450
v/s Ratio Prot		0.22		c0.39	0.23					0.22	c0.40	
v/s Ratio Perm			c0.37									0.33
v/c Ratio		1.07	1.78	0.99	0.47					0.79	1.40	1.18
Uniform Delay, d1		51.5	51.5	39.3	22.3					42.9	46.5	46.5
Progression Factor		1.45	1.86	0.67	0.23					0.47	0.50	0.56
Incremental Delay, d2		50.9	359.4	8.6	0.0					0.8	179.6	81.9
Delay (s)		125.3	455.2	35.0	5.2					21.2	202.7	107.7
Level of Service		F	F	D	A					C	F	F
Approach Delay (s)		284.1			19.0			0.0			147.4	
Approach LOS		F			B			A			F	

Intersection Summary			
HCM 2000 Control Delay	150.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.58		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	35.0
Intersection Capacity Utilization	124.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

4: Mopac NBFR & Anderson Ln

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	ø1	ø2	ø4	ø5	ø6
Lane Configurations												
Volume (vph)	323	828	1037	269	410	14	568					
Lane Group Flow (vph)	333	854	1069	277	355	340	328					
Turn Type	Prot	NA	NA	Perm	Perm	NA	custom					
Protected Phases	2 4	2 4 5 19	6 5 19			7 1	7 1 6	1	2	4	5	6
Permitted Phases				6 5 19	7 1							
Detector Phase	2 4	2 4 5 19	6 5 19	6 5 19	7 1	7 1	7 1 6					
Switch Phase												
Minimum Initial (s)								3.0	1.0	1.0	3.0	4.0
Minimum Split (s)								8.0	11.0	11.0	8.0	24.0
Total Split (s)								8.0	24.0	34.0	8.0	30.0
Total Split (%)								6%	18%	26%	6%	23%
Yellow Time (s)								4.0	4.0	4.0	4.0	4.0
All-Red Time (s)								1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag								Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?								Yes	Yes	Yes	Yes	Yes
Recall Mode								None	Max	None	None	C-Max
v/c Ratio	0.46	0.44	0.89	0.39	1.53	1.16	0.51					
Control Delay	9.2	0.2	51.5	5.1	284.1	127.0	3.4					
Queue Delay	3.0	1.7	26.4	0.0	0.0	0.2	0.0					
Total Delay	12.2	1.9	77.9	5.1	284.1	127.1	3.4					
Queue Length 50th (ft)	30	0	447	0	~447	~292	8					
Queue Length 95th (ft)	m45	m0	#555	61	#655	#507	16					
Internal Link Dist (ft)		333	702			1795						
Turn Bay Length (ft)	50			360	280							
Base Capacity (vph)	721	1960	1197	719	232	292	645					
Starvation Cap Reductn	280	889	0	0	0	0	0					
Spillback Cap Reductn	0	0	177	0	0	4	0					
Storage Cap Reductn	0	0	0	0	0	0	0					
Reduced v/c Ratio	0.76	0.80	1.05	0.39	1.53	1.18	0.51					

Intersection Summary

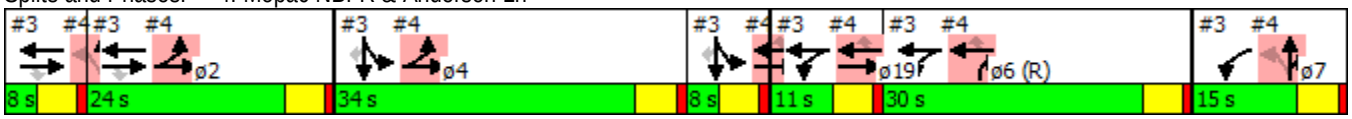
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 8 (6%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 130
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Mopac NBFR & Anderson Ln



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	323	828	0	0	1037	269	410	14	568	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0	5.0			
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.91	0.95			
Frt	1.00	1.00			1.00	0.85	1.00	0.89	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.99	1.00			
Satd. Flow (prot)	1770	3539			3539	1583	1681	1487	1504			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.99	1.00			
Satd. Flow (perm)	1770	3539			3539	1583	1681	1487	1504			
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	333	854	0	0	1069	277	423	14	586	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	183	0	87	90	0	0	0
Lane Group Flow (vph)	333	854	0	0	1069	94	355	253	238	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	custom			
Protected Phases	2 4	2 4 5			6 5 19			7 1	7 1 6			
Permitted Phases						6 5 19	7 1					
Actuated Green, G (s)	53.0	72.0			44.0	44.0	18.0	18.0	48.0			
Effective Green, g (s)	53.0	72.0			44.0	44.0	18.0	18.0	48.0			
Actuated g/C Ratio	0.41	0.55			0.34	0.34	0.14	0.14	0.37			
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	721	1960			1197	535	232	205	555			
v/s Ratio Prot	c0.19	c0.24			c0.30				0.16			
v/s Ratio Perm						0.06	c0.21	0.17				
v/c Ratio	0.46	0.44			0.89	0.18	1.53	1.23	0.43			
Uniform Delay, d1	28.1	17.1			40.8	30.2	56.0	56.0	30.7			
Progression Factor	0.31	0.00			1.00	1.00	0.56	0.61	0.05			
Incremental Delay, d2	0.0	0.0			8.6	0.1	257.2	137.2	0.2			
Delay (s)	8.6	0.0			49.3	30.3	288.4	171.5	1.7			
Level of Service	A	A			D	C	F	F	A			
Approach Delay (s)		2.4			45.4			157.6			0.0	
Approach LOS		A			D			F			A	

Intersection Summary			
HCM 2000 Control Delay	63.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	35.0
Intersection Capacity Utilization	124.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	7	16	241	20	86	315
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	8	19	287	24	102	375
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	879	299			311	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	879	299			311	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	97	97			92	
cM capacity (veh/h)	292	741			1250	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	27	311	477
Volume Left	8	0	102
Volume Right	19	24	0
cSH	505	1700	1250
Volume to Capacity	0.05	0.18	0.08
Queue Length 95th (ft)	4	0	7
Control Delay (s)	12.5	0.0	2.4
Lane LOS	B		A
Approach Delay (s)	12.5	0.0	2.4
Approach LOS	B		

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	48.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	9	16	5	1	11	21	29	204	39	110	209	143
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	10	18	6	1	12	24	33	232	44	125	238	162
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											544	
pX, platoon unblocked	0.90	0.90	0.90	0.90	0.90		0.90					
vC, conflicting volume	919	911	319	903	970	254	400			276		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	854	845	188	837	911	254	278			276		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	95	92	99	99	94	97	97			90		
cM capacity (veh/h)	211	236	769	218	216	785	1157			1287		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	34	38	309	525
Volume Left	10	1	33	125
Volume Right	6	24	44	162
cSH	257	402	1157	1287
Volume to Capacity	0.13	0.09	0.03	0.10
Queue Length 95th (ft)	11	8	2	8
Control Delay (s)	21.2	14.9	1.1	2.7
Lane LOS	C	B	A	A
Approach Delay (s)	21.2	14.9	1.1	2.7
Approach LOS	C	B		

Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	56.4%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	22	0	0	3119	107
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	23	0	0	3283	113
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					1035	
pX, platoon unblocked	0.78	0.78	0.78			
vC, conflicting volume	3339	1151	3396			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	3013	209	3085			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	96	100			
cM capacity (veh/h)	8	622	81			

Direction, Lane #	EB 1	SB 1	SB 2	SB 3
Volume Total	23	1313	1313	769
Volume Left	0	0	0	0
Volume Right	23	0	0	113
cSH	622	1700	1700	1700
Volume to Capacity	0.04	0.77	0.77	0.45
Queue Length 95th (ft)	3	0	0	0
Control Delay (s)	11.0	0.0	0.0	0.0
Lane LOS	B			
Approach Delay (s)	11.0	0.0		
Approach LOS	B			

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	72.6%	ICU Level of Service	C
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	22.7
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	42	175	149	0	88	68	8	0	55	138	37
Peak Hour Factor	0.92	0.81	0.81	0.81	0.92	0.81	0.81	0.81	0.92	0.81	0.81	0.81
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	52	216	184	0	109	84	10	0	68	170	46
Number of Lanes	0	0	1	1	0	0	1	1	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	2
HCM Control Delay	17.8	17.5	19.8
HCM LOS	C	C	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	24%	19%	0%	56%	0%	5%
Vol Thru, %	60%	81%	0%	44%	0%	86%
Vol Right, %	16%	0%	100%	0%	100%	9%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	230	217	149	156	8	343
LT Vol	55	42	0	88	0	18
Through Vol	138	175	0	68	0	295
RT Vol	37	0	149	0	8	30
Lane Flow Rate	284	268	184	193	10	423
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.575	0.579	0.355	0.451	0.02	0.801
Departure Headway (Hd)	7.287	7.776	6.953	8.439	7.419	6.94
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	497	466	519	428	483	525
Service Time	5.318	5.502	4.679	6.17	5.15	4.94
HCM Lane V/C Ratio	0.571	0.575	0.355	0.451	0.021	0.806
HCM Control Delay	19.8	20.7	13.5	17.9	10.3	32.3
HCM Lane LOS	C	C	B	C	B	D
HCM 95th-tile Q	3.6	3.6	1.6	2.3	0.1	7.6

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	18	295	30
Peak Hour Factor	0.92	0.81	0.81	0.81
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	22	364	37
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	32.3
HCM LOS	D

Lane

Intersection	
Intersection Delay, s/veh	14
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	35	144	186	0	62	137	35	0	26	138	50
Peak Hour Factor	0.92	0.90	0.90	0.90	0.92	0.90	0.90	0.90	0.92	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	39	160	207	0	69	152	39	0	29	153	56
Number of Lanes	0	0	1	1	0	0	1	1	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	2
HCM Control Delay	12.9	14.5	13.9
HCM LOS	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	20%	0%	31%	0%	100%	0%
Vol Thru, %	0%	73%	80%	0%	69%	0%	0%	78%
Vol Right, %	0%	27%	0%	100%	0%	100%	0%	22%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	26	188	179	186	199	35	23	218
LT Vol	26	0	35	0	62	0	23	0
Through Vol	0	138	144	0	137	0	0	171
RT Vol	0	50	0	186	0	35	0	47
Lane Flow Rate	29	209	199	207	221	39	26	242
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.061	0.403	0.381	0.349	0.439	0.068	0.054	0.465
Departure Headway (Hd)	7.649	6.947	6.898	6.084	7.154	6.279	7.577	6.911
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	469	518	521	591	504	570	473	521
Service Time	5.39	4.688	4.636	3.822	4.895	4.02	5.317	4.651
HCM Lane V/C Ratio	0.062	0.403	0.382	0.35	0.438	0.068	0.055	0.464
HCM Control Delay	10.9	14.3	13.8	12.1	15.4	9.5	10.8	15.5
HCM Lane LOS	B	B	B	B	C	A	B	C
HCM 95th-tile Q	0.2	1.9	1.8	1.6	2.2	0.2	0.2	2.4

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	23	171	47
Peak Hour Factor	0.92	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	26	190	52
Number of Lanes	0	1	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	15.1
HCM LOS	C

Lane

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	228	0	0	2957	184
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	0	238	0	0	3080	192
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	3176	1123	3272			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	3176	1123	3272			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	0	100			
cM capacity (veh/h)	8	200	88			

Direction, Lane #	EB 1	SB 1	SB 2	SB 3
Volume Total	238	1232	1232	808
Volume Left	0	0	0	0
Volume Right	238	0	0	192
cSH	200	1700	1700	1700
Volume to Capacity	1.19	0.72	0.72	0.48
Queue Length 95th (ft)	302	0	0	0
Control Delay (s)	172.1	0.0	0.0	0.0
Lane LOS	F			
Approach Delay (s)	172.1	0.0		
Approach LOS	F			

Intersection Summary			
Average Delay	11.6		
Intersection Capacity Utilization	82.0%	ICU Level of Service	E
Analysis Period (min)	15		

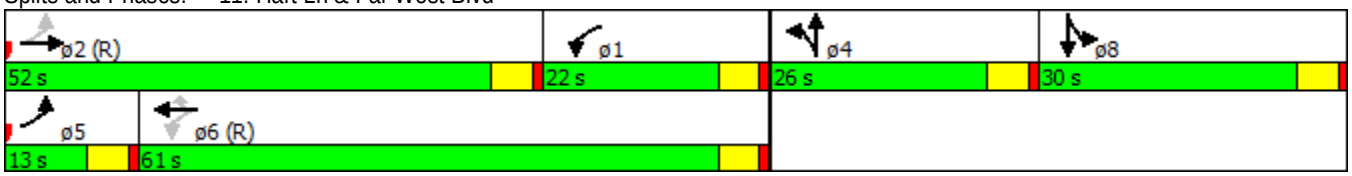
11: Hart Ln & Far West Blvd

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBT
Lane Configurations							
Volume (vph)	61	746	223	299	80	121	278
Lane Group Flow (vph)	73	1016	269	360	96	424	656
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	NA
Protected Phases	5	2	1	6		4	8
Permitted Phases	2		6		6		
Detector Phase	5	2	1	6	6	4	8
Switch Phase							
Minimum Initial (s)	4.0	2.0	4.0	2.0	2.0	2.0	2.0
Minimum Split (s)	9.0	24.0	9.0	24.0	24.0	33.0	33.0
Total Split (s)	13.0	52.0	22.0	61.0	61.0	26.0	30.0
Total Split (%)	10.0%	40.0%	16.9%	46.9%	46.9%	20.0%	23.1%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lead	Lag	Lag	Lag		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		
Recall Mode	None	C-Max	None	C-Max	C-Max	None	None
v/c Ratio	0.21	0.80	0.84	0.22	0.13	0.86	0.96
Control Delay	29.4	43.1	86.5	42.0	42.0	71.7	76.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.4	43.1	86.5	42.0	42.0	71.7	76.6
Queue Length 50th (ft)	41	404	183	122	62	183	293
Queue Length 95th (ft)	70	436	#268	157	101	222	#367
Internal Link Dist (ft)		1703		1174		695	1553
Turn Bay Length (ft)	130		100		490		
Base Capacity (vph)	347	1266	320	1610	720	524	686
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.80	0.84	0.22	0.13	0.81	0.96

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 100 (77%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green
Natural Cycle: 120
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 11: Hart Ln & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	61	746	97	223	299	80	55	121	176	232	278	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0		5.0			5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		0.95			0.95	
Frt	1.00	0.98		1.00	1.00	0.85		0.93			0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.99			0.98	
Satd. Flow (prot)	1770	3478		1770	3539	1583		3248			3433	
Flt Permitted	0.42	1.00		0.15	1.00	1.00		0.99			0.98	
Satd. Flow (perm)	788	3478		273	3539	1583		3248			3433	
Peak-hour factor, PHF	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Adj. Flow (vph)	73	899	117	269	360	96	66	146	212	280	335	41
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	73	1016	0	269	360	96	0	424	0	0	656	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Split	NA		Split	NA	
Protected Phases	5	2		1	6		4	4		8	8	
Permitted Phases	2			6		6						
Actuated Green, G (s)	46.2	46.2		58.1	58.1	58.1		19.7			26.0	
Effective Green, g (s)	46.2	46.2		58.1	58.1	58.1		19.7			26.0	
Actuated g/C Ratio	0.36	0.36		0.45	0.45	0.45		0.15			0.20	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0		5.0			5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0		2.0			2.0	
Lane Grp Cap (vph)	326	1236		330	1581	707		492			686	
v/s Ratio Prot	0.01	c0.29		c0.11	0.10			c0.13			c0.19	
v/s Ratio Perm	0.07			0.25		0.06						
v/c Ratio	0.22	0.82		0.82	0.23	0.14		0.86			0.96	
Uniform Delay, d1	28.5	38.2		42.8	22.1	21.2		53.8			51.4	
Progression Factor	1.00	1.00		1.44	1.86	1.88		1.00			1.00	
Incremental Delay, d2	0.1	6.2		12.9	0.3	0.4		13.9			23.7	
Delay (s)	28.6	44.4		74.5	41.4	40.1		67.8			75.1	
Level of Service	C	D		E	D	D		E			E	
Approach Delay (s)		43.3			53.5			67.8			75.1	
Approach LOS		D			D			E			E	

Intersection Summary			
HCM 2000 Control Delay	56.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	78.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

12: Wood Hollow Dr & Far West Blvd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Volume (vph)	83	1144	52	127	620	102	27	91	318	289	130
Lane Group Flow (vph)	88	1217	55	135	660	109	29	97	338	307	202
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA
Protected Phases	1	6		5	2		3	8		7	4
Permitted Phases	6		6	2		2	8		8	4	
Detector Phase	1	6	6	5	2	2	3	8	8	7	4
Switch Phase											
Minimum Initial (s)	4.0	2.0	2.0	4.0	2.0	2.0	4.0	2.0	2.0	4.0	2.0
Minimum Split (s)	9.0	11.0	11.0	9.0	11.0	11.0	9.0	11.0	11.0	9.0	11.0
Total Split (s)	16.0	67.0	67.0	16.0	67.0	67.0	19.0	19.0	19.0	28.0	28.0
Total Split (%)	12.3%	51.5%	51.5%	12.3%	51.5%	51.5%	14.6%	14.6%	14.6%	21.5%	21.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None
v/c Ratio	0.20	0.71	0.07	0.71	0.39	0.13	0.21	0.48	1.02	0.72	0.42
Control Delay	24.4	34.9	2.6	43.4	29.4	9.8	56.7	63.5	81.3	56.6	41.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.4	34.9	2.6	43.4	29.4	9.8	56.7	63.5	81.3	56.6	41.4
Queue Length 50th (ft)	56	491	4	70	183	18	23	78	~156	241	136
Queue Length 95th (ft)	m62	m549	m4	m88	m186	m25	54	137	#349	#407	221
Internal Link Dist (ft)		1174			673			686			1879
Turn Bay Length (ft)	245		610	125		700	75		75		
Base Capacity (vph)	450	1726	823	207	1687	811	190	200	331	425	479
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.71	0.07	0.65	0.39	0.13	0.15	0.48	1.02	0.72	0.42

Intersection Summary

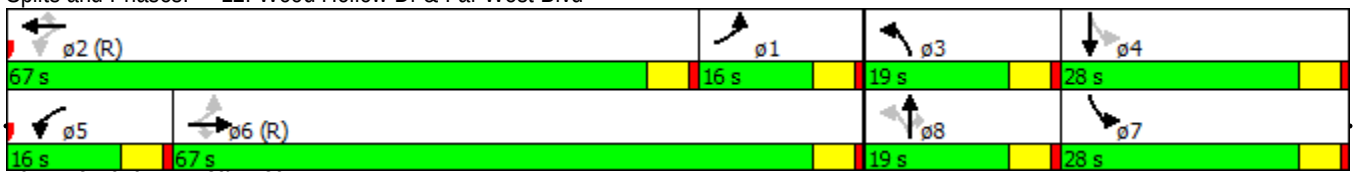
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 10 (8%), Referenced to phase 2:WBTL and 6:EBTL, Start of 1st Green
Natural Cycle: 65
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 12: Wood Hollow Dr & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	83	1144	52	127	620	102	27	91	318	289	130	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1774	
Flt Permitted	0.40	1.00	1.00	0.08	1.00	1.00	0.43	1.00	1.00	0.69	1.00	
Satd. Flow (perm)	747	3539	1583	148	3539	1583	801	1863	1583	1293	1774	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	88	1217	55	135	660	109	29	97	338	307	138	64
RTOR Reduction (vph)	0	0	29	0	0	59	0	0	162	0	12	0
Lane Group Flow (vph)	88	1217	26	135	660	50	29	97	176	307	190	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2	8		8	4		
Actuated Green, G (s)	61.4	61.4	61.4	60.0	60.0	60.0	14.0	14.0	14.0	34.3	34.3	
Effective Green, g (s)	61.4	61.4	61.4	60.0	60.0	60.0	14.0	14.0	14.0	34.3	34.3	
Actuated g/C Ratio	0.47	0.47	0.47	0.46	0.46	0.46	0.11	0.11	0.11	0.26	0.26	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	439	1671	747	188	1633	730	121	200	170	432	468	
v/s Ratio Prot	0.02	c0.34		c0.05	0.19		0.01	0.05		c0.14	0.11	
v/s Ratio Perm	0.08		0.02	0.28		0.03	0.02		c0.11	0.05		
v/c Ratio	0.20	0.73	0.03	0.72	0.40	0.07	0.24	0.48	1.04	0.71	0.41	
Uniform Delay, d1	20.5	27.6	18.4	27.5	23.2	19.5	52.7	54.6	58.0	42.2	39.5	
Progression Factor	1.17	1.27	9.68	1.36	1.32	2.88	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.0	1.5	0.0	4.9	0.3	0.1	0.4	0.7	79.4	4.5	0.2	
Delay (s)	24.0	36.4	178.2	42.5	30.9	56.1	53.1	55.3	137.4	46.7	39.7	
Level of Service	C	D	F	D	C	E	D	E	F	D	D	
Approach Delay (s)		41.4			35.6			115.0			43.9	
Approach LOS		D			D			F			D	

Intersection Summary			
HCM 2000 Control Delay	50.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	79.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

13: Mopac SBFR & Far West Blvd

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR	ø1	ø2	ø4	ø8	ø22
Lane Configurations											
Volume (vph)	871	493	20	571	572	965					
Lane Group Flow (vph)	898	508	21	589	739	995					
Turn Type	NA	Free	Prot	NA	NA	Perm					
Protected Phases	1 22 2		7	1 22 7	4 8		1	2	4	8	22
Permitted Phases		Free				4 8					
Detector Phase	1 22 2		7	1 22 7	4 8	4 8					
Switch Phase											
Minimum Initial (s)			4.0				4.0	4.0	4.0	4.0	4.0
Minimum Split (s)			20.0				9.0	24.0	24.0	9.0	20.0
Total Split (s)			21.0				9.0	25.0	46.0	9.0	20.0
Total Split (%)			16.2%				7%	19%	35%	7%	15%
Yellow Time (s)			4.0				4.0	4.0	4.0	4.0	4.0
All-Red Time (s)			1.0				1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)			0.0								
Total Lost Time (s)			5.0								
Lead/Lag							Lead		Lead	Lag	Lag
Lead-Lag Optimize?							Yes		Yes	Yes	Yes
Recall Mode			None				None	C-Max	None	None	None
v/c Ratio	0.67	0.32	0.10	0.48	0.55	1.11					
Control Delay	31.8	0.3	43.6	1.4	25.1	68.7					
Queue Delay	0.3	0.0	0.0	0.9	0.0	0.0					
Total Delay	32.0	0.3	43.6	2.3	25.1	68.7					
Queue Length 50th (ft)	372	0	5	0	204	~337					
Queue Length 95th (ft)	m430	m0	m13	0	m169	m284					
Internal Link Dist (ft)	432			324	532						
Turn Bay Length (ft)		490									
Base Capacity (vph)	1333	1583	217	1225	1347	898					
Starvation Cap Reductn	0	0	0	356	0	0					
Spillback Cap Reductn	83	0	0	0	0	0					
Storage Cap Reductn	0	0	0	0	0	0					
Reduced v/c Ratio	0.72	0.32	0.10	0.68	0.55	1.11					

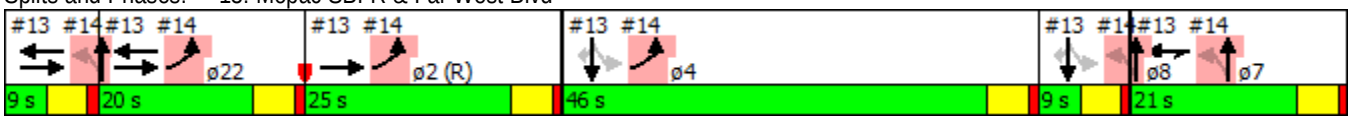
Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 106 (82%), Referenced to phase 2:EBT, Start of 1st Green
Natural Cycle: 140
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Mopac SBFR & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	871	493	20	571	0	0	0	0	145	572	965
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	4.0	5.0	5.0						5.0	5.0
Lane Util. Factor		0.95	1.00	1.00	0.95						0.95	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (prot)		3539	1583	1770	3539						3504	1583
Flt Permitted		1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (perm)		3539	1583	1770	3539						3504	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	898	508	21	589	0	0	0	0	149	590	995
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	289
Lane Group Flow (vph)	0	898	508	21	589	0	0	0	0	0	739	706
Turn Type		NA	Free	Prot	NA					Perm	NA	Perm
Protected Phases		1 22 2		7	1 22 7						4 8	
Permitted Phases			Free							4 8		4 8
Actuated Green, G (s)		49.0	130.0	16.0	45.0						50.0	50.0
Effective Green, g (s)		49.0	130.0	16.0	45.0						50.0	50.0
Actuated g/C Ratio		0.38	1.00	0.12	0.35						0.38	0.38
Clearance Time (s)				5.0								
Vehicle Extension (s)				2.0								
Lane Grp Cap (vph)		1333	1583	217	1225						1347	608
v/s Ratio Prot		c0.25		0.01	c0.17							
v/s Ratio Perm			0.32								0.21	c0.45
v/c Ratio		0.67	0.32	0.10	0.48						0.55	1.16
Uniform Delay, d1		33.8	0.0	50.6	33.3						31.2	40.0
Progression Factor		0.88	1.00	0.84	0.01						0.79	0.61
Incremental Delay, d2		0.7	0.3	0.0	0.1						0.1	77.5
Delay (s)		30.4	0.3	42.7	0.5						24.6	102.0
Level of Service		C	A	D	A						C	F
Approach Delay (s)		19.6			1.9			0.0			69.0	
Approach LOS		B			A			A			E	

Intersection Summary			
HCM 2000 Control Delay	39.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	99.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

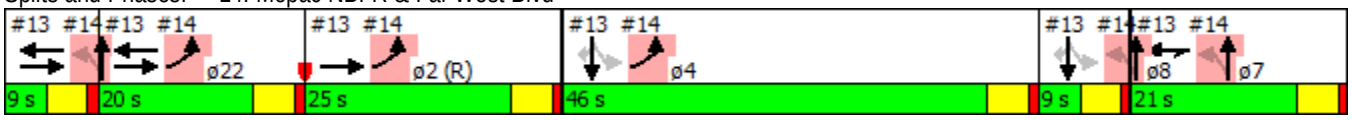
14: Mopac NBFR & Far West Blvd

Lane Group	EBL	NBL	NBT	ø1	ø2	ø4	ø7	ø8	ø22
Lane Configurations									
Volume (vph)	1033	591	2						
Lane Group Flow (vph)	1076	308	310						
Turn Type	Prot	Perm	NA						
Protected Phases	22 2 4		7 1 8	1	2	4	7	8	22
Permitted Phases		7 1 8							
Detector Phase	22 2 4	7 1 8	7 1 8						
Switch Phase									
Minimum Initial (s)				4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)				9.0	24.0	24.0	20.0	9.0	20.0
Total Split (s)				9.0	25.0	46.0	21.0	9.0	20.0
Total Split (%)				7%	19%	35%	16%	7%	15%
Yellow Time (s)				4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)				1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)									
Total Lost Time (s)									
Lead/Lag				Lead		Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes		Yes	Yes
Recall Mode				None	C-Max	None	None	None	None
v/c Ratio	0.47	0.70	0.70						
Control Delay	3.6	53.2	53.4						
Queue Delay	0.8	0.0	0.0						
Total Delay	4.5	53.2	53.4						
Queue Length 50th (ft)	13	248	250						
Queue Length 95th (ft)	15	361	363						
Internal Link Dist (ft)	324		322						
Turn Bay Length (ft)									
Base Capacity (vph)	2271	439	440						
Starvation Cap Reductn	819	0	0						
Spillback Cap Reductn	0	0	0						
Storage Cap Reductn	0	0	0						
Reduced v/c Ratio	0.74	0.70	0.70						

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 106 (82%), Referenced to phase 2:EBT, Start of 1st Green
Natural Cycle: 140
Control Type: Actuated-Coordinated

Splits and Phases: 14: Mopac NBFR & Far West Blvd



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	1033	0	591	2	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0		
Lane Util. Factor	0.97		0.95	0.95		
Frt	1.00		1.00	1.00		
Flt Protected	0.95		0.95	0.95		
Satd. Flow (prot)	3433		1681	1686		
Flt Permitted	0.95		0.95	0.95		
Satd. Flow (perm)	3433		1681	1686		
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	1076	0	616	2	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1076	0	308	310	0	0
Turn Type	Prot		Perm	NA		
Protected Phases	22 2 4			7 1 8		
Permitted Phases			7 1 8			
Actuated Green, G (s)	86.0		34.0	34.0		
Effective Green, g (s)	86.0		34.0	34.0		
Actuated g/C Ratio	0.66		0.26	0.26		
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)	2271		439	440		
v/s Ratio Prot	c0.31					
v/s Ratio Perm			0.18	0.18		
v/c Ratio	0.47		0.70	0.70		
Uniform Delay, d1	10.8		43.4	43.5		
Progression Factor	0.28		1.00	1.00		
Incremental Delay, d2	0.0		4.1	4.2		
Delay (s)	3.1		47.5	47.6		
Level of Service	A		D	D		
Approach Delay (s)	3.1			47.6	0.0	
Approach LOS	A			D	A	

Intersection Summary			
HCM 2000 Control Delay	19.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	112.8%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

20: Loop 1 SBFR & Steck Avenue

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	ø1	ø2	ø4	ø5	ø6	ø7
Lane Configurations												
Volume (vph)	579	148	162	378	1030	1998						
Lane Group Flow (vph)	616	157	172	402	986	2575						
Turn Type	NA	Perm	Prot	NA	Split	NA						
Protected Phases	2 1		6 7	2 1 6 7	4 5	4 5	1	2	4	5	6	7
Permitted Phases		2 1										
Detector Phase	2 1	2 1	6 7	2 1 6 7	4 5	4 5						
Switch Phase												
Minimum Initial (s)							2.0	1.0	1.0	3.0	4.0	4.0
Minimum Split (s)							7.0	11.0	11.0	8.0	15.0	9.0
Total Split (s)							7.0	20.0	63.0	8.0	15.0	17.0
Total Split (%)							5%	15%	48%	6%	12%	13%
Yellow Time (s)							4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)							1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag							Lead	Lag	Lead	Lag		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode							None	Max	None	None	C-Max	None
v/c Ratio	1.03	0.41	0.47	0.27	1.21	1.52						
Control Delay	97.1	12.9	22.8	0.3	135.0	265.1						
Queue Delay	25.9	0.0	0.0	0.0	0.0	0.0						
Total Delay	123.0	12.9	22.8	0.3	135.0	265.1						
Queue Length 50th (ft)	~291	10	29	0	~1110	~1671						
Queue Length 95th (ft)	#413	73	m48	m0	#1391	#1806						
Internal Link Dist (ft)	737			327		333						
Turn Bay Length (ft)		100	80									
Base Capacity (vph)	598	386	367	1470	817	1692						
Starvation Cap Reductn	0	0	0	0	0	0						
Spillback Cap Reductn	61	0	0	0	0	0						
Storage Cap Reductn	0	0	0	0	0	0						
Reduced v/c Ratio	1.15	0.41	0.47	0.27	1.21	1.52						

Intersection Summary

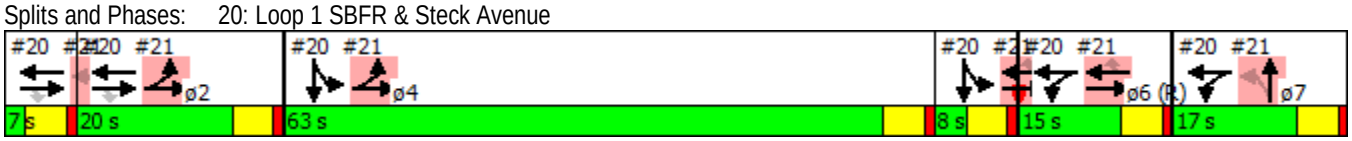
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 90 (69%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 20: Loop 1 SBFR & Steck Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	579	148	162	378	0	0	0	0	1030	1998	319
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0					5.0	5.0	
Lane Util. Factor		0.95	1.00	1.00	0.95					0.91	0.91	
Frt		1.00	0.85	1.00	1.00					1.00	0.98	
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	3539					1610	3316	
Flt Permitted		1.00	1.00	0.95	1.00					0.95	1.00	
Satd. Flow (perm)		3539	1583	1770	3539					1610	3316	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	616	157	172	402	0	0	0	0	1096	2126	339
RTOR Reduction (vph)	0	0	119	0	0	0	0	0	0	0	9	0
Lane Group Flow (vph)	0	616	38	172	402	0	0	0	0	986	2566	0
Turn Type		NA	Perm	Prot	NA					Split	NA	
Protected Phases		2 1		6 7	2 1 6 7					4 5	4 5	
Permitted Phases			2 1									
Actuated Green, G (s)		22.0	22.0	27.0	54.0					66.0	66.0	
Effective Green, g (s)		22.0	22.0	27.0	54.0					66.0	66.0	
Actuated g/C Ratio		0.17	0.17	0.21	0.42					0.51	0.51	
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		598	267	367	1470					817	1683	
v/s Ratio Prot		c0.17		c0.10	0.11					0.61	c0.77	
v/s Ratio Perm			0.02									
v/c Ratio		1.03	0.14	0.47	0.27					1.21	1.52	
Uniform Delay, d1		54.0	46.0	45.2	25.1					32.0	32.0	
Progression Factor		1.00	1.00	0.43	0.00					1.00	1.00	
Incremental Delay, d2		44.7	0.1	0.2	0.0					104.5	239.2	
Delay (s)		98.7	46.1	19.8	0.0					136.5	271.2	
Level of Service		F	D	B	A					F	F	
Approach Delay (s)		88.0			5.9			0.0			233.9	
Approach LOS		F			A			A			F	

Intersection Summary			
HCM 2000 Control Delay	184.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.36		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	143.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

21: Loop 1 NBFR & Steck Avenue

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	ø1	ø2	ø4	ø5	ø6	ø7
Lane Configurations												
Volume (vph)	749	808	409	277	225	586						
Lane Group Flow (vph)	764	824	417	283	230	802						
Turn Type	Prot	NA	NA	Perm	Perm	NA						
Protected Phases	2 4	2 4 5 6	6 5			7 1	1	2	4	5	6	7
Permitted Phases				6 5	7 1							
Detector Phase	2 4	2 4 5 6	6 5	6 5	7 1	7 1						
Switch Phase												
Minimum Initial (s)							2.0	1.0	1.0	3.0	4.0	4.0
Minimum Split (s)							7.0	11.0	11.0	8.0	15.0	9.0
Total Split (s)							7.0	20.0	63.0	8.0	15.0	17.0
Total Split (%)							5%	15%	48%	6%	12%	13%
Yellow Time (s)							4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)							1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag							Lead	Lag	Lead	Lag		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode							None	Max	None	None	C-Max	None
v/c Ratio	0.72	0.30	0.85	0.77	0.46	2.96						
Control Delay	10.8	0.0	71.7	35.2	46.4	910.0						
Queue Delay	51.4	1.1	0.0	0.0	0.0	0.0						
Total Delay	62.2	1.1	71.7	35.2	46.4	910.0						
Queue Length 50th (ft)	355	0	183	89	82	~1166						
Queue Length 95th (ft)	m123	m0	#267	#218	m120	m#1406						
Internal Link Dist (ft)		327	978			2452						
Turn Bay Length (ft)	80			170	110							
Base Capacity (vph)	1062	2749	490	369	501	271						
Starvation Cap Reductn	399	1599	0	0	0	0						
Spillback Cap Reductn	0	0	0	0	0	0						
Storage Cap Reductn	0	0	0	0	0	0						
Reduced v/c Ratio	1.15	0.72	0.85	0.77	0.46	2.96						

Intersection Summary

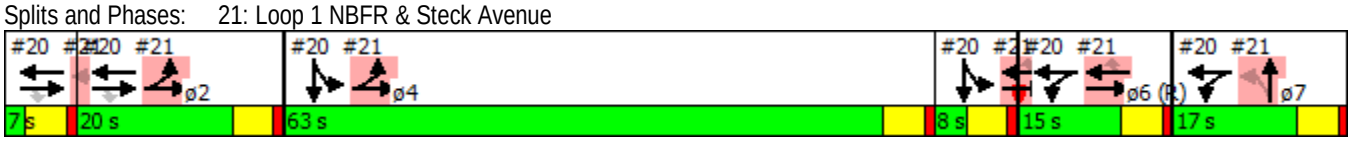
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 90 (69%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 21: Loop 1 NBFR & Steck Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	749	808	0	0	409	277	225	586	200	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0				
Lane Util. Factor	1.00	0.95			0.95	1.00	0.97	1.00				
Frt	1.00	1.00			1.00	0.85	1.00	0.96				
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (prot)	1770	3539			3539	1583	3433	1792				
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (perm)	1770	3539			3539	1583	3433	1792				
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	764	824	0	0	417	283	230	598	204	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	150	0	9	0	0	0	0
Lane Group Flow (vph)	764	824	0	0	417	133	230	793	0	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA				
Protected Phases	2 4	2 4 5 6			6 5			7 1				
Permitted Phases						6 5	7 1					
Actuated Green, G (s)	78.0	101.0			18.0	18.0	19.0	19.0				
Effective Green, g (s)	78.0	101.0			18.0	18.0	19.0	19.0				
Actuated g/C Ratio	0.60	0.78			0.14	0.14	0.15	0.15				
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	1062	2749			490	219	501	261				
v/s Ratio Prot	c0.43	0.23			c0.12			c0.44				
v/s Ratio Perm						0.08	0.07					
v/c Ratio	0.72	0.30			0.85	0.61	0.46	3.04				
Uniform Delay, d1	18.3	4.2			54.7	52.7	50.8	55.5				
Progression Factor	0.55	0.00			1.00	1.00	0.85	0.85				
Incremental Delay, d2	0.2	0.0			12.9	3.3	0.2	926.5				
Delay (s)	10.2	0.0			67.5	55.9	43.4	973.9				
Level of Service	B	A			E	E	D	F				
Approach Delay (s)		4.9			62.8			766.6			0.0	
Approach LOS		A			E			F			A	

Intersection Summary			
HCM 2000 Control Delay	253.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.29		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	143.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	909	127	132	1215	224	239
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	1010	141	147	1350	249	266
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						6
Median type	Raised			Raised		
Median storage veh)	1			1		
Upstream signal (ft)				1068		
pX, platoon unblocked					0.82	
vC, conflicting volume			1010		1978	505
vC1, stage 1 conf vol					1010	
vC2, stage 2 conf vol					968	
vCu, unblocked vol			1010		1755	505
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			78		0	48
cM capacity (veh/h)			682		175	512

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1
Volume Total	505	505	141	147	675	675	514
Volume Left	0	0	0	147	0	0	249
Volume Right	0	0	141	0	0	0	266
cSH	1700	1700	1700	682	1700	1700	294
Volume to Capacity	0.30	0.30	0.08	0.22	0.40	0.40	1.75
Queue Length 95th (ft)	0	0	0	20	0	0	834
Control Delay (s)	0.0	0.0	0.0	11.7	0.0	0.0	381.1
Lane LOS				B			F
Approach Delay (s)	0.0			1.1			381.1
Approach LOS							F

Intersection Summary			
Average Delay	62.5		
Intersection Capacity Utilization	54.9%	ICU Level of Service	A
Analysis Period (min)	15		

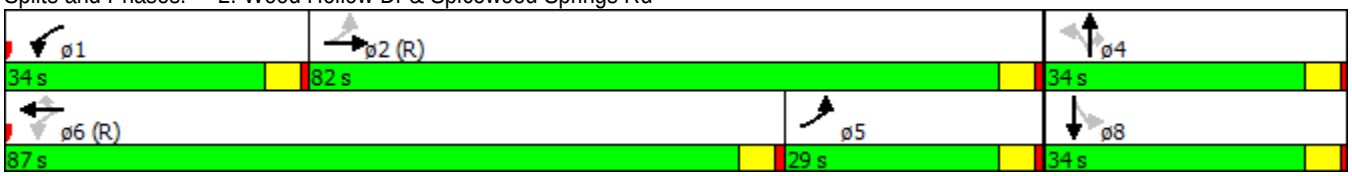
2: Wood Hollow Dr & Spicewood Springs Rd

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	6	1115	111	1137	1	194	8	295	1	5
Lane Group Flow (vph)	7	1298	126	1292	1	0	229	335	0	25
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA
Protected Phases	5	2	1	6			4			8
Permitted Phases	2		6		6	4		4	8	
Detector Phase	5	2	1	6	6	4	4	4	8	8
Switch Phase										
Minimum Initial (s)	6.0	25.0	6.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	15.0	30.0	15.0	11.0	11.0	35.0	35.0	35.0	35.0	35.0
Total Split (s)	29.0	82.0	34.0	87.0	87.0	34.0	34.0	34.0	34.0	34.0
Total Split (%)	19.3%	54.7%	22.7%	58.0%	58.0%	22.7%	22.7%	22.7%	22.7%	22.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Max	None	C-Max	C-Max	Max	Max	Max	None	None
v/c Ratio	0.02	0.39	0.43	0.52	0.00		0.89	0.70		0.07
Control Delay	10.7	12.9	12.9	11.1	0.0		92.6	27.6		25.0
Queue Delay	0.0	0.1	0.0	0.3	0.0		0.0	10.1		0.0
Total Delay	10.7	13.0	12.9	11.4	0.0		92.6	37.7		25.0
Queue Length 50th (ft)	2	201	25	159	0		221	107		6
Queue Length 95th (ft)	9	250	m63	382	m0		#365	214		32
Internal Link Dist (ft)		988		494			464			203
Turn Bay Length (ft)	130		110		100			100		
Base Capacity (vph)	455	3300	493	2481	1125		257	481		337
Starvation Cap Reductn	0	0	0	505	0		0	0		0
Spillback Cap Reductn	0	690	0	0	0		0	117		0
Storage Cap Reductn	0	0	0	0	0		0	0		0
Reduced v/c Ratio	0.02	0.50	0.26	0.65	0.00		0.89	0.92		0.07

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 55 (37%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Wood Hollow Dr & Spicewood Springs Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	1115	27	111	1137	1	194	8	295	1	5	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0		5.0	5.0		5.0	
Lane Util. Factor	1.00	0.91		1.00	0.95	1.00		1.00	1.00		1.00	
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85		0.90	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.95	1.00		1.00	
Satd. Flow (prot)	1770	5067		1770	3539	1583		1777	1583		1678	
Flt Permitted	0.19	1.00		0.16	1.00	1.00		0.72	1.00		0.99	
Satd. Flow (perm)	350	5067		298	3539	1583		1334	1583		1668	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	7	1267	31	126	1292	1	220	9	335	1	6	18
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	176	0	15	0
Lane Group Flow (vph)	7	1297	0	126	1292	1	0	229	159	0	10	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases	2			6		6	4		4	8		
Actuated Green, G (s)	97.7	97.7		101.2	101.2	101.2		29.0	29.0		29.0	
Effective Green, g (s)	97.7	97.7		101.2	101.2	101.2		29.0	29.0		29.0	
Actuated g/C Ratio	0.65	0.65		0.67	0.67	0.67		0.19	0.19		0.19	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0		5.0	5.0		5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0		2.0	2.0		2.0	
Lane Grp Cap (vph)	273	3300		282	2387	1067		257	306		322	
v/s Ratio Prot	0.00	c0.26		0.02	c0.37							
v/s Ratio Perm	0.02			0.28		0.00		c0.17	0.10		0.01	
v/c Ratio	0.03	0.39		0.45	0.54	0.00		0.89	0.52		0.03	
Uniform Delay, d1	13.7	12.3		10.3	12.5	7.9		59.0	54.3		49.1	
Progression Factor	1.00	1.00		0.97	0.84	1.00		1.00	1.00		1.00	
Incremental Delay, d2	0.0	0.4		0.4	0.8	0.0		33.9	6.2		0.0	
Delay (s)	13.8	12.6		10.4	11.3	7.9		92.8	60.5		49.1	
Level of Service	B	B		B	B	A		F	E		D	
Approach Delay (s)		12.6			11.2			73.6			49.1	
Approach LOS		B			B			E			D	

Intersection Summary			
HCM 2000 Control Delay	22.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	66.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

3: Mopac SBFR & Spicewood Springs Rd

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR	ø1	ø2	ø4	ø5	ø6
Lane Configurations												
Volume (vph)	1083	329	683	831	670	219	418					
Lane Group Flow (vph)	1152	350	727	884	356	590	445					
Turn Type	NA	Perm	Prot	NA	Split	NA	Perm					
Protected Phases	2 1		19 6 7 2 1	19 6	4 5	4 5		1	2	4	5	6
Permitted Phases		2 1					4 5					
Detector Phase	2 1	2 1	19 6 7 2 1	19 6	4 5	4 5	4 5					
Switch Phase												
Minimum Initial (s)								3.0	1.0	1.0	3.0	4.0
Minimum Split (s)								8.0	11.0	11.0	8.0	24.0
Total Split (s)								8.0	35.0	23.0	8.0	51.0
Total Split (%)								5%	23%	15%	5%	34%
Yellow Time (s)								4.0	4.0	4.0	4.0	4.0
All-Red Time (s)								1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag								Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?								Yes	Yes	Yes	Yes	Yes
Recall Mode								None	Max	None	None	C-Max
v/c Ratio	1.29	0.67	0.87	0.39	1.28	1.23dl	0.91					
Control Delay	181.2	38.9	25.0	1.8	197.0	106.2	47.9					
Queue Delay	0.7	0.2	11.2	0.2	0.0	0.0	0.0					
Total Delay	181.9	39.1	36.3	2.0	197.0	106.2	47.9					
Queue Length 50th (ft)	~755	215	687	36	~482	~339	194					
Queue Length 95th (ft)	#902	323	m527	m83	#707	#469	#402					
Internal Link Dist (ft)	494			333		2669						
Turn Bay Length (ft)			50		145							
Base Capacity (vph)	896	520	837	2241	279	570	490					
Starvation Cap Reductn	0	14	100	591	0	0	0					
Spillback Cap Reductn	108	0	0	0	0	0	0					
Storage Cap Reductn	0	0	0	0	0	0	0					
Reduced v/c Ratio	1.46	0.69	0.99	0.54	1.28	1.04	0.91					

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 89 (59%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 120
Control Type: Actuated-Coordinated

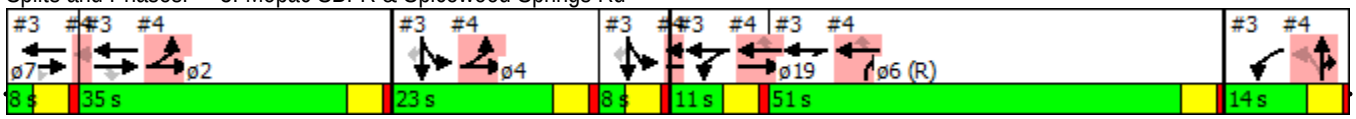
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 3: Mopac SBFR & Spicewood Springs Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1083	329	683	831	0	0	0	0	670	219	418
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0					5.0	5.0	5.0
Lane Util. Factor		0.95	1.00	1.00	0.95					0.91	0.91	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.97	1.00
Satd. Flow (prot)		3539	1583	1770	3539					1610	3291	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.97	1.00
Satd. Flow (perm)		3539	1583	1770	3539					1610	3291	1583
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	1152	350	727	884	0	0	0	0	713	233	445
RTOR Reduction (vph)	0	0	119	0	0	0	0	0	0	0	0	217
Lane Group Flow (vph)	0	1152	231	727	884	0	0	0	0	356	590	228
Turn Type		NA	Perm	Prot	NA					Split	NA	Perm
Protected Phases		2 1		19 6 7	2 1 19 6					4 5	4 5	
Permitted Phases			2 1									4 5
Actuated Green, G (s)		38.0	38.0	71.0	95.0					26.0	26.0	26.0
Effective Green, g (s)		38.0	38.0	71.0	95.0					26.0	26.0	26.0
Actuated g/C Ratio		0.25	0.25	0.47	0.63					0.17	0.17	0.17
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		896	401	837	2241					279	570	274
v/s Ratio Prot		c0.33		c0.41	0.25					c0.22	0.18	
v/s Ratio Perm			0.15									0.14
v/c Ratio		1.29	0.57	0.87	0.39					1.28	1.23dl	0.83
Uniform Delay, d1		56.0	48.9	35.3	13.4					62.0	62.0	59.9
Progression Factor		1.02	1.21	0.56	0.22					1.00	1.00	1.00
Incremental Delay, d2		136.3	1.1	3.4	0.0					149.0	47.1	18.3
Delay (s)		193.4	60.3	23.2	3.0					211.0	109.1	78.3
Level of Service		F	E	C	A					F	F	E
Approach Delay (s)		162.4			12.1			0.0			125.3	
Approach LOS		F			B			A			F	

Intersection Summary			
HCM 2000 Control Delay	97.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.25		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	35.0
Intersection Capacity Utilization	117.9%	ICU Level of Service	H
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group

4: Mopac NBFR & Anderson Ln

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	ø1	ø2	ø4	ø5	ø6
Lane Configurations												
Volume (vph)	535	1217	1226	471	288	47	603					
Lane Group Flow (vph)	563	1281	1291	496	273	365	349					
Turn Type	Prot	NA	NA	Perm	Perm	NA	custom					
Protected Phases	2 4	2 4 5 19	6 5 19			7 1	7 1 6	1	2	4	5	6
Permitted Phases				6 5 19	7 1							
Detector Phase	2 4	2 4 5 19	6 5 19	6 5 19	7 1	7 1	7 1 6					
Switch Phase												
Minimum Initial (s)								3.0	1.0	1.0	3.0	4.0
Minimum Split (s)								8.0	11.0	11.0	8.0	24.0
Total Split (s)								8.0	35.0	23.0	8.0	51.0
Total Split (%)								5%	23%	15%	5%	34%
Yellow Time (s)								4.0	4.0	4.0	4.0	4.0
All-Red Time (s)								1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag								Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?								Yes	Yes	Yes	Yes	Yes
Recall Mode								None	Max	None	None	C-Max
v/c Ratio	0.90	0.75	0.84	0.61	1.44	1.43	0.47					
Control Delay	29.3	0.4	44.2	19.9	268.7	247.8	19.8					
Queue Delay	48.5	26.7	2.0	0.0	0.0	0.2	0.0					
Total Delay	77.8	27.1	46.2	19.9	268.7	247.9	19.8					
Queue Length 50th (ft)	364	0	587	197	~380	~432	155					
Queue Length 95th (ft)	m180	m0	687	319	#575	#662	250					
Internal Link Dist (ft)		333	702			1795						
Turn Bay Length (ft)	50			360	280							
Base Capacity (vph)	625	1698	1533	817	190	255	749					
Starvation Cap Reductn	156	472	0	0	0	0	0					
Spillback Cap Reductn	0	0	125	0	0	3	0					
Storage Cap Reductn	0	0	0	0	0	0	0					
Reduced v/c Ratio	1.20	1.04	0.92	0.61	1.44	1.45	0.47					

Intersection Summary

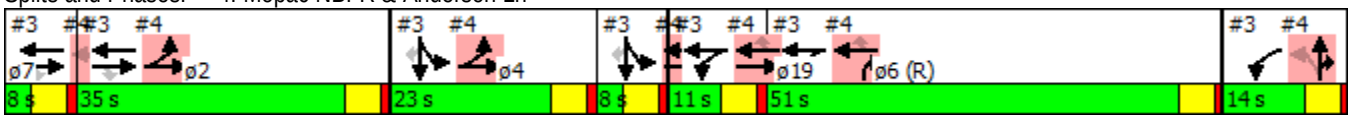
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 89 (59%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 120
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Mopac NBFR & Anderson Ln



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	535	1217	0	0	1226	471	288	47	603	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0	5.0			
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.91	0.95			
Frt	1.00	1.00			1.00	0.85	1.00	0.88	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	1770	3539			3539	1583	1681	1490	1504			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	1770	3539			3539	1583	1681	1490	1504			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	563	1281	0	0	1291	496	303	49	635	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	131	0	87	68	0	0	0
Lane Group Flow (vph)	563	1281	0	0	1291	365	273	278	281	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	custom			
Protected Phases	2 4	2 4 5			6 5	19		7 1	7 1 6			
Permitted Phases						6 5 19	7 1					
Actuated Green, G (s)	53.0	72.0			65.0	65.0	17.0	17.0	68.0			
Effective Green, g (s)	53.0	72.0			65.0	65.0	17.0	17.0	68.0			
Actuated g/C Ratio	0.35	0.48			0.43	0.43	0.11	0.11	0.45			
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	625	1698			1533	685	190	168	681			
v/s Ratio Prot	c0.32	c0.36			c0.36				0.19			
v/s Ratio Perm						0.23	0.16	0.19				
v/c Ratio	0.90	0.75			0.84	0.53	1.44	1.66	0.41			
Uniform Delay, d1	46.0	31.8			37.9	31.3	66.5	66.5	27.6			
Progression Factor	0.57	0.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	1.9	0.2			4.2	0.4	223.9	319.9	0.1			
Delay (s)	27.9	0.3			42.1	31.7	290.4	386.4	27.7			
Level of Service	C	A			D	C	F	F	C			
Approach Delay (s)		8.7			39.2			233.0			0.0	
Approach LOS		A			D			F			A	

Intersection Summary			
HCM 2000 Control Delay	68.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	35.0
Intersection Capacity Utilization	117.9%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	20	108	305	8	18	203
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	27	144	407	11	24	271
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	731	412			417	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	731	412			417	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	93	77			98	
cM capacity (veh/h)	381	640			1142	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	171	417	295
Volume Left	27	0	24
Volume Right	144	11	0
cSH	578	1700	1142
Volume to Capacity	0.30	0.25	0.02
Queue Length 95th (ft)	31	0	2
Control Delay (s)	13.8	0.0	0.9
Lane LOS	B		A
Approach Delay (s)	13.8	0.0	0.9
Approach LOS	B		

Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	40.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	67	64	28	22	14	118	8	303	7	16	134	19
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Hourly flow rate (vph)	88	84	37	29	18	155	11	399	9	21	176	25
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											544	
pX, platoon unblocked	1.00	1.00	1.00	1.00	1.00		1.00					
vC, conflicting volume	820	660	189	734	668	403	201			408		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	817	656	183	731	664	403	195			408		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	58	77	96	89	95	76	99			98		
cM capacity (veh/h)	211	373	856	261	370	647	1371			1151		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	209	203	418	222
Volume Left	88	29	11	21
Volume Right	37	155	9	25
cSH	305	506	1371	1151
Volume to Capacity	0.69	0.40	0.01	0.02
Queue Length 95th (ft)	118	48	1	1
Control Delay (s)	39.2	16.8	0.3	0.9
Lane LOS	E	C	A	A
Approach Delay (s)	39.2	16.8	0.3	0.9
Approach LOS	E	C		

Intersection Summary			
Average Delay	11.3		
Intersection Capacity Utilization	45.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	200	0	0	2183	32
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	0	220	0	0	2399	35
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					1035	
pX, platoon unblocked						
vC, conflicting volume	2416	817	2434			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2416	817	2434			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	31	100			
cM capacity (veh/h)	27	319	191			

Direction, Lane #	EB 1	SB 1	SB 2	SB 3
Volume Total	220	960	960	515
Volume Left	0	0	0	0
Volume Right	220	0	0	35
cSH	319	1700	1700	1700
Volume to Capacity	0.69	0.56	0.56	0.30
Queue Length 95th (ft)	120	0	0	0
Control Delay (s)	37.8	0.0	0.0	0.0
Lane LOS	E			
Approach Delay (s)	37.8	0.0		
Approach LOS	E			

Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	61.9%	ICU Level of Service	B
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	16.4
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	40	82	52	0	98	148	55	0	104	214	57
Peak Hour Factor	0.92	0.94	0.94	0.94	0.92	0.94	0.94	0.94	0.92	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	43	87	55	0	104	157	59	0	111	228	61
Number of Lanes	0	0	1	1	0	0	1	1	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	2
HCM Control Delay	12	15.8	20.5
HCM LOS	B	C	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	28%	33%	0%	40%	0%	7%
Vol Thru, %	57%	67%	0%	60%	0%	63%
Vol Right, %	15%	0%	100%	0%	100%	30%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	375	122	52	246	55	214
LT Vol	104	40	0	98	0	16
Through Vol	214	82	0	148	0	134
RT Vol	57	0	52	0	55	64
Lane Flow Rate	399	130	55	262	59	228
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.669	0.266	0.1	0.516	0.1	0.398
Departure Headway (Hd)	6.039	7.374	6.486	7.098	6.176	6.288
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	598	487	552	508	579	571
Service Time	4.079	5.129	4.239	4.846	3.924	4.336
HCM Lane V/C Ratio	0.667	0.267	0.1	0.516	0.102	0.399
HCM Control Delay	20.5	12.8	10	17.2	9.6	13.5
HCM Lane LOS	C	B	A	C	A	B
HCM 95th-tile Q	5	1.1	0.3	2.9	0.3	1.9

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	16	134	64
Peak Hour Factor	0.92	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	17	143	68
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	13.5
HCM LOS	B

Lane

Intersection	
Intersection Delay, s/veh	18.3
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	39	81	57	0	101	259	68	0	90	241	82
Peak Hour Factor	0.92	0.99	0.99	0.99	0.92	0.99	0.99	0.99	0.92	0.99	0.99	0.99
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	39	82	58	0	102	262	69	0	91	243	83
Number of Lanes	0	0	1	1	0	0	1	1	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	2
HCM Control Delay	12.1	23.1	18.3
HCM LOS	B	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	33%	0%	28%	0%	100%	0%
Vol Thru, %	0%	75%	68%	0%	72%	0%	0%	82%
Vol Right, %	0%	25%	0%	100%	0%	100%	0%	18%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	90	323	120	57	360	68	26	164
LT Vol	90	0	39	0	101	0	26	0
Through Vol	0	241	81	0	259	0	0	135
RT Vol	0	82	0	57	0	68	0	29
Lane Flow Rate	91	326	121	58	364	69	26	166
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.19	0.618	0.257	0.108	0.714	0.118	0.058	0.337
Departure Headway (Hd)	7.511	6.819	7.645	6.759	7.064	6.207	7.969	7.329
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	478	529	469	529	513	577	449	490
Service Time	5.255	4.562	5.398	4.512	4.805	3.948	5.722	5.081
HCM Lane V/C Ratio	0.19	0.616	0.258	0.11	0.71	0.12	0.058	0.339
HCM Control Delay	12	20	13	10.3	25.6	9.8	11.2	13.8
HCM Lane LOS	B	C	B	B	D	A	B	B
HCM 95th-tile Q	0.7	4.2	1	0.4	5.7	0.4	0.2	1.5

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	26	135	29
Peak Hour Factor	0.92	0.99	0.99	0.99
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	26	136	29
Number of Lanes	0	1	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	13.4
HCM LOS	B

Lane

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	197	0	0	1992	391
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	0	226	0	0	2290	449
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2514	988	2739			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2514	988	2739			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	8	100			
cM capacity (veh/h)	23	246	144			

Direction, Lane #	EB 1	SB 1	SB 2	SB 3
Volume Total	226	916	916	907
Volume Left	0	0	0	0
Volume Right	226	0	0	449
cSH	246	1700	1700	1700
Volume to Capacity	0.92	0.54	0.54	0.53
Queue Length 95th (ft)	202	0	0	0
Control Delay (s)	81.6	0.0	0.0	0.0
Lane LOS	F			
Approach Delay (s)	81.6	0.0		
Approach LOS	F			

Intersection Summary			
Average Delay	6.2		
Intersection Capacity Utilization	66.1%	ICU Level of Service	C
Analysis Period (min)	15		

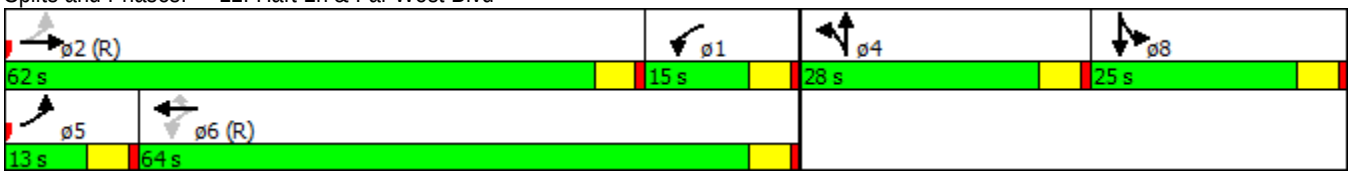
11: Hart Ln & Far West Blvd

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBT
Lane Configurations							
Volume (vph)	48	600	193	562	169	143	94
Lane Group Flow (vph)	49	662	199	579	174	370	346
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	NA
Protected Phases	5	2	1	6		4	8
Permitted Phases	2		6		6		
Detector Phase	5	2	1	6	6	4	8
Switch Phase							
Minimum Initial (s)	4.0	2.0	4.0	2.0	2.0	2.0	2.0
Minimum Split (s)	9.0	24.0	9.0	24.0	24.0	33.0	33.0
Total Split (s)	13.0	62.0	15.0	64.0	64.0	28.0	25.0
Total Split (%)	10.0%	47.7%	11.5%	49.2%	49.2%	21.5%	19.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lead	Lag	Lag	Lag		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		
Recall Mode	None	C-Max	None	C-Max	C-Max	None	None
v/c Ratio	0.13	0.38	0.42	0.31	0.21	0.78	0.78
Control Delay	20.2	22.4	11.6	8.0	8.2	65.4	67.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.2	22.4	11.6	8.0	8.2	65.4	67.1
Queue Length 50th (ft)	21	181	32	55	28	160	150
Queue Length 95th (ft)	49	252	55	73	49	208	200
Internal Link Dist (ft)		1703		1174		695	1553
Turn Bay Length (ft)	130		100		490		
Base Capacity (vph)	382	1727	474	1896	848	582	517
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.38	0.42	0.31	0.21	0.64	0.67

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 20 (15%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 11: Hart Ln & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	48	600	42	193	562	169	67	143	149	187	94	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0		5.0			5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		0.95			0.95	
Frt	1.00	0.99		1.00	1.00	0.85		0.94			0.98	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.99			0.97	
Satd. Flow (prot)	1770	3505		1770	3539	1583		3288			3360	
Flt Permitted	0.34	1.00		0.40	1.00	1.00		0.99			0.97	
Satd. Flow (perm)	633	3505		737	3539	1583		3288			3360	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	49	619	43	199	579	174	69	147	154	193	97	56
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	49	662	0	199	579	174	0	370	0	0	346	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Split	NA		Split	NA	
Protected Phases	5	2		1	6		4	4		8	8	
Permitted Phases	2			6		6						
Actuated Green, G (s)	63.1	63.1		68.7	68.7	68.7		18.7			17.2	
Effective Green, g (s)	63.1	63.1		68.7	68.7	68.7		18.7			17.2	
Actuated g/C Ratio	0.49	0.49		0.53	0.53	0.53		0.14			0.13	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0		5.0			5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0		2.0			2.0	
Lane Grp Cap (vph)	354	1701		476	1870	836		472			444	
v/s Ratio Prot	0.01	c0.19		c0.04	0.16			c0.11			c0.10	
v/s Ratio Perm	0.06			c0.19		0.11						
v/c Ratio	0.14	0.39		0.42	0.31	0.21		0.78			0.78	
Uniform Delay, d1	18.3	21.2		20.1	17.3	16.2		53.7			54.6	
Progression Factor	1.00	1.00		0.40	0.41	0.42		1.00			1.00	
Incremental Delay, d2	0.1	0.7		0.2	0.4	0.5		7.7			7.7	
Delay (s)	18.4	21.9		8.2	7.5	7.4		61.4			62.3	
Level of Service	B	C		A	A	A		E			E	
Approach Delay (s)		21.7			7.6			61.4			62.3	
Approach LOS		C			A			E			E	

Intersection Summary			
HCM 2000 Control Delay	28.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	66.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

12: Wood Hollow Dr & Far West Blvd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Volume (vph)	110	828	68	244	732	139	109	200	344	170	109
Lane Group Flow (vph)	125	941	77	277	832	158	124	227	391	193	169
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA
Protected Phases	1	6		5	2		3	8		7	4
Permitted Phases	6		6	2		2	8		8	4	
Detector Phase	1	6	6	5	2	2	3	8	8	7	4
Switch Phase											
Minimum Initial (s)	4.0	2.0	2.0	4.0	2.0	2.0	4.0	2.0	2.0	4.0	2.0
Minimum Split (s)	9.0	11.0	11.0	9.0	11.0	11.0	9.0	11.0	11.0	9.0	11.0
Total Split (s)	20.0	68.0	68.0	16.0	64.0	64.0	20.0	20.0	20.0	26.0	26.0
Total Split (%)	15.4%	52.3%	52.3%	12.3%	49.2%	49.2%	15.4%	15.4%	15.4%	20.0%	20.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None
v/c Ratio	0.29	0.55	0.09	1.12	0.52	0.20	0.45	0.86	0.96	0.81	0.75
Control Delay	16.8	18.4	1.1	95.0	29.3	7.6	57.1	84.3	59.8	79.0	71.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.8	18.4	1.1	95.0	29.3	7.6	57.1	84.3	59.8	79.0	71.4
Queue Length 50th (ft)	44	346	2	~185	230	14	96	191	160	159	130
Queue Length 95th (ft)	m65	252	m6	m144	m185	m14	165	#362	#370	233	195
Internal Link Dist (ft)		1174			673			686			1879
Turn Bay Length (ft)	245		610	125		700	75		75		
Base Capacity (vph)	428	1715	819	247	1606	804	278	263	409	285	298
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.55	0.09	1.12	0.52	0.20	0.45	0.86	0.96	0.68	0.57

Intersection Summary

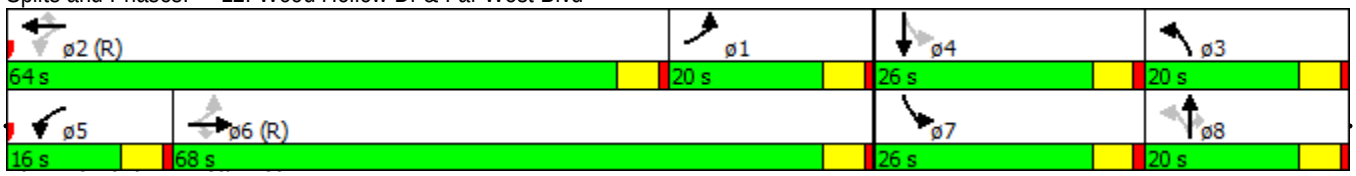
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 20 (15%), Referenced to phase 2:WBTL and 6:EBTL, Start of 1st Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 12: Wood Hollow Dr & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	110	828	68	244	732	139	109	200	344	170	109	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1788	
Flt Permitted	0.33	1.00	1.00	0.14	1.00	1.00	0.00	1.00	1.00	0.00	1.00	
Satd. Flow (perm)	607	3539	1583	266	3539	1583	0	1863	1583	0	1788	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	125	941	77	277	832	158	124	227	391	193	124	45
RTOR Reduction (vph)	0	0	40	0	0	86	0	0	185	0	11	0
Lane Group Flow (vph)	125	941	37	277	832	72	124	227	206	193	158	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2	8		8	4		
Actuated Green, G (s)	63.0	63.0	63.0	59.0	59.0	59.0	20.4	18.4	18.4	17.6	15.6	
Effective Green, g (s)	63.0	63.0	63.0	59.0	59.0	59.0	20.4	18.4	18.4	17.6	15.6	
Actuated g/C Ratio	0.48	0.48	0.48	0.45	0.45	0.45	0.16	0.14	0.14	0.14	0.12	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	428	1715	767	247	1606	718	277	263	224	239	214	
v/s Ratio Prot	0.03	c0.27		c0.09	0.24		0.07	0.12		c0.11	0.09	
v/s Ratio Perm	0.11		0.02	c0.41		0.05			c0.13			
v/c Ratio	0.29	0.55	0.05	1.12	0.52	0.10	0.45	0.86	0.92	0.81	0.74	
Uniform Delay, d1	22.7	23.5	17.7	28.1	25.3	20.3	49.7	54.6	55.1	54.6	55.2	
Progression Factor	0.66	0.73	0.57	1.52	1.14	2.43	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.1	1.2	0.1	60.2	0.1	0.0	0.4	23.4	37.4	16.9	11.4	
Delay (s)	15.2	18.2	10.1	102.9	29.0	49.4	50.1	78.0	92.4	71.5	66.6	
Level of Service	B	B	B	F	C	D	D	E	F	E	E	
Approach Delay (s)		17.4			47.7			80.9			69.2	
Approach LOS		B			D			F			E	

Intersection Summary			
HCM 2000 Control Delay	47.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	73.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

13: Mopac SBFR & Far West Blvd

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR	ø1	ø2	ø4	ø8	ø22
Lane Configurations											
Volume (vph)	1249	418	11	453	446	1004					
Lane Group Flow (vph)	1403	470	12	509	958	1128					
Turn Type	NA	Free	Prot	NA	NA	Perm					
Protected Phases	1 22 2		7	1 22 7	4 8		1	2	4	8	22
Permitted Phases		Free				4 8					
Detector Phase	1 22 2		7	1 22 7	4 8	4 8					
Switch Phase											
Minimum Initial (s)			4.0				4.0	4.0	4.0	4.0	4.0
Minimum Split (s)			20.0				9.0	24.0	24.0	9.0	20.0
Total Split (s)			41.0				9.0	20.0	31.0	9.0	20.0
Total Split (%)			31.5%				7%	15%	24%	7%	15%
Yellow Time (s)			4.0				4.0	4.0	4.0	4.0	4.0
All-Red Time (s)			1.0				1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)			0.0								
Total Lost Time (s)			5.0								
Lead/Lag							Lead		Lead	Lag	Lag
Lead-Lag Optimize?							Yes		Yes	Yes	Yes
Recall Mode			None				None	C-Max	None	None	None
v/c Ratio	0.83	0.30	0.05	0.29	1.03	1.48					
Control Delay	33.2	0.4	26.8	3.6	83.6	244.0					
Queue Delay	49.1	0.0	0.0	0.3	0.0	0.0					
Total Delay	82.2	0.4	26.8	3.8	83.6	244.0					
Queue Length 50th (ft)	551	0	4	14	~453	~1011					
Queue Length 95th (ft)	m#721	m0	m9	18	#576	#1251					
Internal Link Dist (ft)	432			324	532						
Turn Bay Length (ft)		490									
Base Capacity (vph)	1691	1583	490	1769	931	763					
Starvation Cap Reductn	0	0	0	631	0	0					
Spillback Cap Reductn	745	0	0	0	0	0					
Storage Cap Reductn	0	0	0	0	0	0					
Reduced v/c Ratio	1.48	0.30	0.02	0.45	1.03	1.48					

Intersection Summary

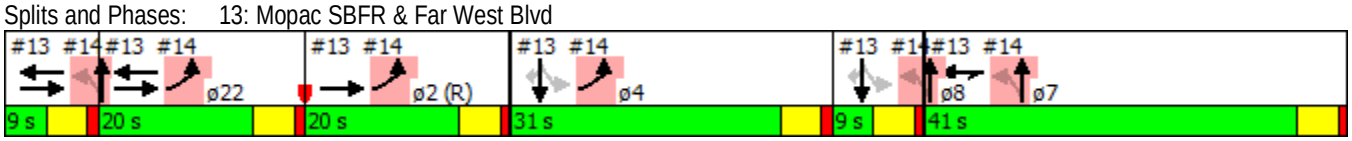
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBT, Start of 1st Green
Natural Cycle: 120
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Mopac SBFR & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1249	418	11	453	0	0	0	0	407	446	1004
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	4.0	5.0	5.0						5.0	5.0
Lane Util. Factor		0.95	1.00	1.00	0.95						0.95	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.98	1.00
Satd. Flow (prot)		3539	1583	1770	3539						3457	1583
Flt Permitted		1.00	1.00	0.95	1.00						0.98	1.00
Satd. Flow (perm)		3539	1583	1770	3539						3457	1583
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	1403	470	12	509	0	0	0	0	457	501	1128
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	338
Lane Group Flow (vph)	0	1403	470	12	509	0	0	0	0	0	958	790
Turn Type		NA	Free	Prot	NA					Perm	NA	Perm
Protected Phases		1 22 2		7	1 22 7						4 8	
Permitted Phases			Free							4 8		4 8
Actuated Green, G (s)		62.1	130.0	17.9	65.0						35.0	35.0
Effective Green, g (s)		62.1	130.0	17.9	65.0						35.0	35.0
Actuated g/C Ratio		0.48	1.00	0.14	0.50						0.27	0.27
Clearance Time (s)				5.0								
Vehicle Extension (s)				2.0								
Lane Grp Cap (vph)		1690	1583	243	1769						930	426
v/s Ratio Prot		c0.40		0.01	0.14							
v/s Ratio Perm			c0.30								0.28	c0.50
v/c Ratio		0.83	0.30	0.05	0.29						1.03	1.86
Uniform Delay, d1		29.4	0.0	48.7	19.0						47.5	47.5
Progression Factor		0.95	1.00	0.58	0.17						1.00	1.00
Incremental Delay, d2		2.9	0.4	0.0	0.0						37.5	393.9
Delay (s)		30.8	0.4	28.3	3.2						85.0	441.4
Level of Service		C	A	C	A						F	F
Approach Delay (s)		23.2			3.8			0.0			277.7	
Approach LOS		C			A			A			F	

Intersection Summary			
HCM 2000 Control Delay	139.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.23		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	107.7%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

14: Mopac NBFR & Far West Blvd

Lane Group	EBL	NBL	NBT	ø1	ø2	ø4	ø7	ø8	ø22
Lane Configurations									
Volume (vph)	1667	397	27						
Lane Group Flow (vph)	1894	239	243						
Turn Type	Prot	Perm	NA						
Protected Phases	22 2 4		7 1 8	1	2	4	7	8	22
Permitted Phases		7 1 8							
Detector Phase	22 2 4	7 1 8	7 1 8						
Switch Phase									
Minimum Initial (s)				4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)				9.0	24.0	24.0	20.0	9.0	20.0
Total Split (s)				9.0	20.0	31.0	41.0	9.0	20.0
Total Split (%)				7%	15%	24%	32%	7%	15%
Yellow Time (s)				4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)				1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)									
Total Lost Time (s)									
Lead/Lag				Lead		Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes		Yes	Yes
Recall Mode				None	C-Max	None	None	None	None
v/c Ratio	1.09	0.34	0.35						
Control Delay	71.3	27.7	27.7						
Queue Delay	6.2	0.0	0.0						
Total Delay	77.5	27.7	27.7						
Queue Length 50th (ft)	~927	142	145						
Queue Length 95th (ft)	m#987	208	212						
Internal Link Dist (ft)	324		322						
Turn Bay Length (ft)									
Base Capacity (vph)	1742	698	704						
Starvation Cap Reductn	377	0	0						
Spillback Cap Reductn	0	0	0						
Storage Cap Reductn	0	0	0						
Reduced v/c Ratio	1.39	0.34	0.35						

Intersection Summary

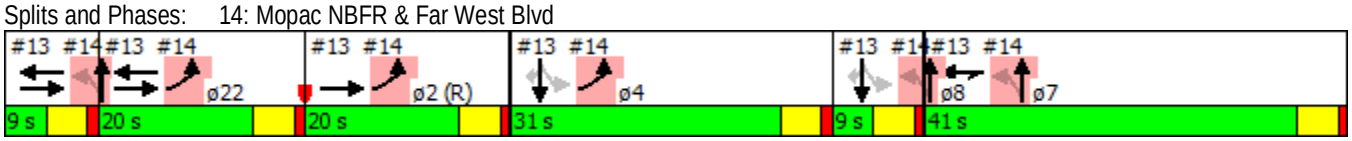
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBT, Start of 1st Green
Natural Cycle: 120
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 14: Mopac NBFR & Far West Blvd



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	1667	0	397	27	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0		
Lane Util. Factor	0.97		0.95	0.95		
Frt	1.00		1.00	1.00		
Flt Protected	0.95		0.95	0.96		
Satd. Flow (prot)	3433		1681	1696		
Flt Permitted	0.95		0.95	0.96		
Satd. Flow (perm)	3433		1681	1696		
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	1894	0	451	31	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1894	0	239	243	0	0
Turn Type	Prot		Perm	NA		
Protected Phases	22 2 4			7 1 8		
Permitted Phases			7 1 8			
Actuated Green, G (s)	66.0		54.0	54.0		
Effective Green, g (s)	66.0		54.0	54.0		
Actuated g/C Ratio	0.51		0.42	0.42		
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)	1742		698	704		
v/s Ratio Prot	c0.55					
v/s Ratio Perm			0.14	0.14		
v/c Ratio	1.09		0.34	0.35		
Uniform Delay, d1	32.0		25.9	25.9		
Progression Factor	0.82		1.00	1.00		
Incremental Delay, d2	44.7		0.1	0.1		
Delay (s)	70.8		26.0	26.0		
Level of Service	E		C	C		
Approach Delay (s)	70.8			26.0	0.0	
Approach LOS	E			C	A	

Intersection Summary			
HCM 2000 Control Delay	61.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	120.9%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

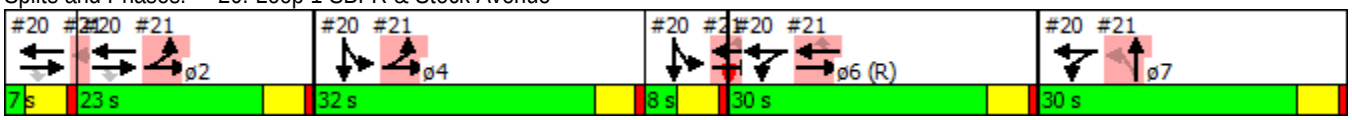
20: Loop 1 SBFR & Steck Avenue

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	ø1	ø2	ø4	ø5	ø6	ø7
Lane Configurations												
Volume (vph)	678	108	268	371	834	812						
Lane Group Flow (vph)	692	110	273	379	681	1367						
Turn Type	NA	Perm	Prot	NA	Split	NA						
Protected Phases	2 1		6 7	2 1 6 7	4 5	4 5	1	2	4	5	6	7
Permitted Phases		2 1										
Detector Phase	2 1	2 1	6 7	2 1 6 7	4 5	4 5						
Switch Phase												
Minimum Initial (s)							2.0	1.0	1.0	3.0	4.0	4.0
Minimum Split (s)							7.0	11.0	11.0	8.0	24.0	9.0
Total Split (s)							7.0	23.0	32.0	8.0	30.0	30.0
Total Split (%)							5%	18%	25%	6%	23%	23%
Yellow Time (s)							4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)							1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag							Lead	Lag	Lead	Lag		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode							None	Max	None	None	C-Max	None
v/c Ratio	1.02	0.26	0.36	0.16	1.57	1.52						
Control Delay	90.6	4.5	2.9	0.1	301.8	274.6						
Queue Delay	31.7	0.0	1.0	0.0	0.0	0.0						
Total Delay	122.2	4.5	3.8	0.1	301.8	274.6						
Queue Length 50th (ft)	~324	0	6	0	~893	~877						
Queue Length 95th (ft)	#449	27	8	0	#1152	#1024						
Internal Link Dist (ft)	737			327		333						
Turn Bay Length (ft)		100	80									
Base Capacity (vph)	680	419	748	2313	433	897						
Starvation Cap Reductn	0	0	257	0	0	0						
Spillback Cap Reductn	200	0	0	0	0	1						
Storage Cap Reductn	0	0	0	0	0	0						
Reduced v/c Ratio	1.44	0.26	0.56	0.16	1.57	1.53						

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 97 (75%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 20: Loop 1 SBFR & Steck Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	678	108	268	371	0	0	0	0	834	812	361
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0					5.0	5.0	
Lane Util. Factor		0.95	1.00	1.00	0.95					0.91	0.91	
Frt		1.00	0.85	1.00	1.00					1.00	0.96	
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.99	
Satd. Flow (prot)		3539	1583	1770	3539					1610	3233	
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.99	
Satd. Flow (perm)		3539	1583	1770	3539					1610	3233	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	692	110	273	379	0	0	0	0	851	829	368
RTOR Reduction (vph)	0	0	89	0	0	0	0	0	0	0	26	0
Lane Group Flow (vph)	0	692	21	273	379	0	0	0	0	681	1341	0
Turn Type		NA	Perm	Prot	NA					Split	NA	
Protected Phases		2 1		6 7	2 1 6 7					4 5	4 5	
Permitted Phases			2 1									
Actuated Green, G (s)		25.0	25.0	55.0	85.0					35.0	35.0	
Effective Green, g (s)		25.0	25.0	55.0	85.0					35.0	35.0	
Actuated g/C Ratio		0.19	0.19	0.42	0.65					0.27	0.27	
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		680	304	748	2313					433	870	
v/s Ratio Prot		c0.20		c0.15	0.11					c0.42	0.41	
v/s Ratio Perm			0.01									
v/c Ratio		1.02	0.07	0.36	0.16					1.57	1.54	
Uniform Delay, d1		52.5	43.0	25.6	8.7					47.5	47.5	
Progression Factor		1.00	1.00	0.06	0.00					1.00	1.00	
Incremental Delay, d2		39.0	0.0	0.1	0.0					268.7	249.2	
Delay (s)		91.5	43.0	1.8	0.0					316.2	296.7	
Level of Service		F	D	A	A					F	F	
Approach Delay (s)		84.9			0.7			0.0			303.2	
Approach LOS		F			A			A			F	

Intersection Summary			
HCM 2000 Control Delay	196.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	147.9%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

21: Loop 1 NBFR & Steck Avenue

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	ø1	ø2	ø4	ø5	ø6	ø7
Lane Configurations												
Volume (vph)	733	654	510	526	135	882						
Lane Group Flow (vph)	772	688	537	554	142	1064						
Turn Type	Prot	NA	NA	Perm	Perm	NA						
Protected Phases	2 4	2 4 5 6	6 5			7 1	1	2	4	5	6	7
Permitted Phases				6 5	7 1							
Detector Phase	2 4	2 4 5 6	6 5	6 5	7 1	7 1						
Switch Phase												
Minimum Initial (s)							2.0	1.0	1.0	3.0	4.0	4.0
Minimum Split (s)							7.0	11.0	11.0	8.0	24.0	9.0
Total Split (s)							7.0	23.0	32.0	8.0	30.0	30.0
Total Split (%)							5%	18%	25%	6%	23%	23%
Yellow Time (s)							4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)							1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag							Lead	Lag	Lead	Lag		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode							None	Max	None	None	C-Max	None
v/c Ratio	1.14	0.29	0.60	1.09	0.17	2.35						
Control Delay	89.1	0.1	45.9	100.7	39.2	637.2						
Queue Delay	2.2	1.3	0.0	0.0	0.0	0.0						
Total Delay	91.3	1.4	45.9	100.7	39.2	637.2						
Queue Length 50th (ft)	~737	0	210	~430	48	~1479						
Queue Length 95th (ft)	m376	m0	272	#657	77	#1741						
Internal Link Dist (ft)		327	978			2452						
Turn Bay Length (ft)	80			170	110							
Base Capacity (vph)	680	2395	898	508	845	453						
Starvation Cap Reductn	173	1434	0	0	0	0						
Spillback Cap Reductn	0	0	0	0	0	0						
Storage Cap Reductn	0	0	0	0	0	0						
Reduced v/c Ratio	1.52	0.72	0.60	1.09	0.17	2.35						

Intersection Summary

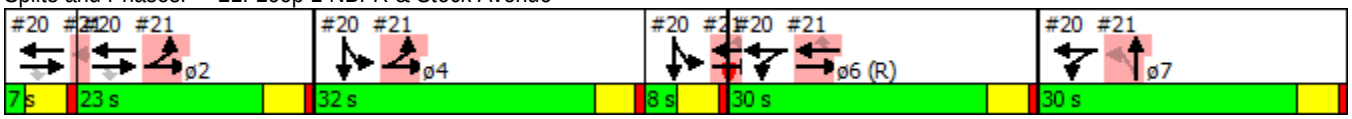
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 97 (75%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 21: Loop 1 NBFR & Steck Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	733	654	0	0	510	526	135	882	129	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0				
Lane Util. Factor	1.00	0.95			0.95	1.00	0.97	1.00				
Frt	1.00	1.00			1.00	0.85	1.00	0.98				
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (prot)	1770	3539			3539	1583	3433	1827				
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (perm)	1770	3539			3539	1583	3433	1827				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	772	688	0	0	537	554	142	928	136	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	107	0	4	0	0	0	0
Lane Group Flow (vph)	772	688	0	0	537	447	142	1060	0	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA				
Protected Phases	2 4	2 4 5 6			6 5			7 1				
Permitted Phases						6 5	7 1					
Actuated Green, G (s)	50.0	88.0			33.0	33.0	32.0	32.0				
Effective Green, g (s)	50.0	88.0			33.0	33.0	32.0	32.0				
Actuated g/C Ratio	0.38	0.68			0.25	0.25	0.25	0.25				
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	680	2395			898	401	845	449				
v/s Ratio Prot	c0.44	0.19			0.15			c0.58				
v/s Ratio Perm						c0.28	0.04					
v/c Ratio	1.14	0.29			0.60	1.12	0.17	2.36				
Uniform Delay, d1	40.0	8.4			42.7	48.5	38.5	49.0				
Progression Factor	0.63	0.00			1.00	1.00	1.00	1.00				
Incremental Delay, d2	62.8	0.0			0.7	80.1	0.0	619.5				
Delay (s)	88.0	0.0			43.4	128.6	38.6	668.5				
Level of Service	F	A			D	F	D	F				
Approach Delay (s)		46.5			86.7			594.3			0.0	
Approach LOS		D			F			F			A	

Intersection Summary			
HCM 2000 Control Delay	234.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.69		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	147.9%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

1: Hart Ln & Spicewood Springs Rd

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1341	335	228	1006	152	192
Lane Group Flow (vph)	1382	345	235	1037	157	198
Turn Type	NA	Perm	Prot	NA	Prot	Free
Protected Phases	2		1	6	4	
Permitted Phases		2				Free
Detector Phase	2	2	1	6	4	
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	
Total Split (s)	73.0	73.0	33.0	106.0	24.0	
Total Split (%)	56.2%	56.2%	25.4%	81.5%	18.5%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Max	C-Max	Max	C-Max	None	
v/c Ratio	0.75	0.38	0.49	0.35	0.52	0.13
Control Delay	27.4	11.3	41.9	4.3	62.1	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.4	11.3	41.9	4.3	62.1	0.2
Queue Length 50th (ft)	464	90	183	59	67	0
Queue Length 95th (ft)	554	159	295	243	96	0
Internal Link Dist (ft)	211			988	285	
Turn Bay Length (ft)		110	220		160	
Base Capacity (vph)	1851	899	484	2956	501	1583
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.75	0.38	0.49	0.35	0.31	0.13

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of 1st Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 1: Hart Ln & Spicewood Springs Rd

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1341	335	228	1006	152	192
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	4.0
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	3433	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	3433	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	1382	345	235	1037	157	198
RTOR Reduction (vph)	0	71	0	0	0	0
Lane Group Flow (vph)	1382	274	235	1037	157	198
Turn Type	NA	Perm	Prot	NA	Prot	Free
Protected Phases	2		1	6	4	
Permitted Phases		2				Free
Actuated Green, G (s)	68.0	68.0	35.6	108.6	11.4	130.0
Effective Green, g (s)	68.0	68.0	35.6	108.6	11.4	130.0
Actuated g/C Ratio	0.52	0.52	0.27	0.84	0.09	1.00
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	1851	828	484	2956	301	1583
v/s Ratio Prot	c0.39		c0.13	0.29	c0.05	
v/s Ratio Perm		0.17				0.13
v/c Ratio	0.75	0.33	0.49	0.35	0.52	0.13
Uniform Delay, d1	24.3	17.9	39.5	2.5	56.7	0.0
Progression Factor	1.00	1.00	0.94	1.44	1.00	1.00
Incremental Delay, d2	2.8	1.1	3.1	0.3	0.8	0.2
Delay (s)	27.1	18.9	40.2	3.9	57.4	0.2
Level of Service	C	B	D	A	E	A
Approach Delay (s)	25.4			10.6	25.5	
Approach LOS	C			B	C	

Intersection Summary			
HCM 2000 Control Delay	19.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	66.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

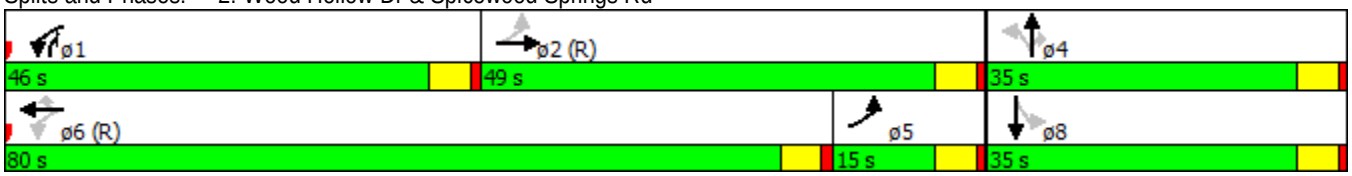
2: Wood Hollow Dr & Spicewood Springs Rd

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	8	1333	514	1135	12	97	5	225	7	0
Lane Group Flow (vph)	8	1588	535	1182	12	0	106	234	0	9
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Perm	NA	pm+ov	Perm	NA
Protected Phases	5	2	1	6			4	1		8
Permitted Phases	2		6		6	4		4	8	
Detector Phase	5	2	1	6	6	4	4	1	8	8
Switch Phase										
Minimum Initial (s)	6.0	25.0	6.0	5.0	5.0	5.0	5.0	6.0	5.0	5.0
Minimum Split (s)	15.0	30.0	15.0	11.0	11.0	35.0	35.0	15.0	35.0	35.0
Total Split (s)	15.0	49.0	46.0	80.0	80.0	35.0	35.0	46.0	35.0	35.0
Total Split (%)	11.5%	37.7%	35.4%	61.5%	61.5%	26.9%	26.9%	35.4%	26.9%	26.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead			Lead		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes			Yes		
Recall Mode	None	C-Max	None	C-Max	C-Max	Max	Max	None	None	None
v/c Ratio	0.03	0.83	0.99	0.50	0.01		0.34	0.27		0.02
Control Delay	23.0	38.3	63.5	13.4	0.0		45.4	11.7		0.1
Queue Delay	0.0	0.0	0.5	0.8	0.0		0.0	0.0		0.0
Total Delay	23.0	38.3	64.0	14.3	0.0		45.4	11.7		0.1
Queue Length 50th (ft)	5	513	392	162	0		75	71		0
Queue Length 95th (ft)	m8	#580	#604	471	m0		132	111		0
Internal Link Dist (ft)		988		494			132			203
Turn Bay Length (ft)	300		110		100					
Base Capacity (vph)	271	1919	613	2368	1079		313	949		436
Starvation Cap Reductn	0	0	7	801	0		0	0		0
Spillback Cap Reductn	0	0	0	0	0		0	0		0
Storage Cap Reductn	0	0	0	0	0		0	0		0
Reduced v/c Ratio	0.03	0.83	0.88	0.75	0.01		0.34	0.25		0.02

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 55 (42%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Wood Hollow Dr & Spicewood Springs Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	1333	191	514	1135	12	97	5	225	7	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0		5.0	5.0		5.0	
Lane Util. Factor	1.00	0.91		1.00	0.95	1.00		1.00	1.00		1.00	
Frt	1.00	0.98		1.00	1.00	0.85		1.00	0.85		0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.95	1.00		0.96	
Satd. Flow (prot)	1770	4990		1770	3539	1583		1778	1583		1739	
Flt Permitted	0.24	1.00		0.08	1.00	1.00		0.73	1.00		0.86	
Satd. Flow (perm)	445	4990		156	3539	1583		1360	1583		1556	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	8	1389	199	535	1182	12	101	5	234	7	0	2
RTOR Reduction (vph)	0	14	0	0	0	4	0	0	29	0	7	0
Lane Group Flow (vph)	8	1574	0	535	1182	8	0	106	205	0	2	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	pm+ov	Perm	NA	
Protected Phases	5	2		1	6			4	1		8	
Permitted Phases	2			6		6	4		4	8		
Actuated Green, G (s)	49.7	49.7		83.0	83.0	83.0		30.0	65.3		30.0	
Effective Green, g (s)	49.7	49.7		83.0	83.0	83.0		30.0	65.3		30.0	
Actuated g/C Ratio	0.38	0.38		0.64	0.64	0.64		0.23	0.50		0.23	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0		5.0	5.0		5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0		2.0	2.0		2.0	
Lane Grp Cap (vph)	190	1907		537	2259	1010		313	856		359	
v/s Ratio Prot	0.00	c0.32		c0.27	0.33				0.06			
v/s Ratio Perm	0.02			c0.36		0.00		c0.08	0.06		0.00	
v/c Ratio	0.04	0.83		1.00	0.52	0.01		0.34	0.24		0.01	
Uniform Delay, d1	25.3	36.2		39.8	12.8	8.5		41.7	18.3		38.5	
Progression Factor	0.78	0.95		0.84	1.11	1.00		1.00	1.00		1.00	
Incremental Delay, d2	0.0	3.2		35.0	0.8	0.0		2.9	0.1		0.0	
Delay (s)	19.6	37.5		68.3	14.9	8.5		44.6	18.4		38.5	
Level of Service	B	D		E	B	A		D	B		D	
Approach Delay (s)		37.4			31.4			26.5			38.5	
Approach LOS		D			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	33.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	77.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

3: Mopac SBFR & Spicewood Springs Rd

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR	ø1	ø2	ø4	ø5	ø6
Lane Configurations												
Volume (vph)	858	707	788	915	390	1307	745					
Lane Group Flow (vph)	885	729	812	943	362	1387	768					
Turn Type	NA	Free	Prot	NA	Split	NA	Free					
Protected Phases	2 1		19 6 7 2 1 19 6		4 5	4 5		1	2	4	5	6
Permitted Phases		Free					Free					
Detector Phase	2 1		19 6 7 2 1 19 6		4 5	4 5						
Switch Phase												
Minimum Initial (s)								3.0	1.0	1.0	3.0	4.0
Minimum Split (s)								8.0	11.0	11.0	8.0	24.0
Total Split (s)								8.0	24.0	34.0	8.0	30.0
Total Split (%)								6%	18%	26%	6%	23%
Yellow Time (s)								4.0	4.0	4.0	4.0	4.0
All-Red Time (s)								1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag								Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?								Yes	Yes	Yes	Yes	Yes
Recall Mode								None	Max	None	None	C-Max
v/c Ratio	1.20	0.46	1.17	0.55	0.79	1.44	0.49					
Control Delay	153.7	6.0	105.5	4.3	22.4	222.4	0.5					
Queue Delay	0.1	0.0	1.0	0.1	0.0	0.0	0.0					
Total Delay	153.8	6.0	106.5	4.4	22.4	222.4	0.5					
Queue Length 50th (ft)	~490	356	~818	144	248	~861	0					
Queue Length 95th (ft)	#626	544	m#618	m106	m153	m#407	m0					
Internal Link Dist (ft)	494			333		2669						
Turn Bay Length (ft)			50		145							
Base Capacity (vph)	735	1583	694	1715	458	963	1583					
Starvation Cap Reductn	0	0	93	135	0	0	0					
Spillback Cap Reductn	17	0	0	67	0	0	34					
Storage Cap Reductn	0	0	0	0	0	0	0					
Reduced v/c Ratio	1.23	0.46	1.35	0.60	0.79	1.44	0.50					

Intersection Summary

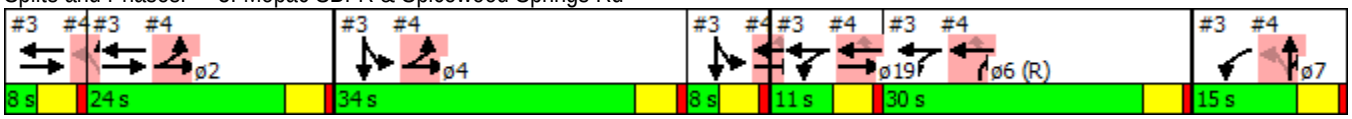
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 8 (6%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Mopac SBFR & Spicewood Springs Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	858	707	788	915	0	0	0	0	390	1307	745
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	4.0	5.0	5.0					5.0	5.0	4.0
Lane Util. Factor		0.95	1.00	1.00	0.95					0.91	0.91	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		3539	1583	1770	3539					1610	3385	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (perm)		3539	1583	1770	3539					1610	3385	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	885	729	812	943	0	0	0	0	402	1347	768
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	885	729	812	943	0	0	0	0	362	1387	768
Turn Type		NA	Free	Prot	NA					Split	NA	Free
Protected Phases		2 1		19 6 7	2 1 19 6					4 5	4 5	
Permitted Phases			Free									Free
Actuated Green, G (s)		27.0	130.0	51.0	63.0					37.0	37.0	130.0
Effective Green, g (s)		27.0	130.0	51.0	63.0					37.0	37.0	130.0
Actuated g/C Ratio		0.21	1.00	0.39	0.48					0.28	0.28	1.00
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		735	1583	694	1715					458	963	1583
v/s Ratio Prot		c0.25		c0.46	0.27					0.22	c0.41	
v/s Ratio Perm			0.46									0.49
v/c Ratio		1.20	0.46	1.17	0.55					0.79	1.44	0.49
Uniform Delay, d1		51.5	0.0	39.5	23.5					42.9	46.5	0.0
Progression Factor		1.27	1.00	0.68	0.30					0.47	0.49	1.00
Incremental Delay, d2		100.5	0.6	78.1	0.0					0.8	198.7	0.1
Delay (s)		165.7	0.6	105.0	7.2					20.9	221.5	0.1
Level of Service		F	A	F	A					C	F	A
Approach Delay (s)		91.2			52.4			0.0			125.1	
Approach LOS		F			D			A			F	

Intersection Summary			
HCM 2000 Control Delay	94.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.53		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	35.0
Intersection Capacity Utilization	111.5%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

4: Mopac NBFR & Anderson Ln

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	ø1	ø2	ø4	ø5	ø6
Lane Configurations												
Volume (vph)	367	881	1197	269	506	14	603					
Lane Group Flow (vph)	378	908	1234	277	402	383	373					
Turn Type	Prot	NA	NA	Perm	Perm	NA	custom					
Protected Phases	2 4	2 4 5 19	6 5 19			7 1	7 1 6	1	2	4	5	6
Permitted Phases				6 5 19	7 1							
Detector Phase	2 4	2 4 5 19	6 5 19	6 5 19	7 1	7 1	7 1 6					
Switch Phase												
Minimum Initial (s)								3.0	1.0	1.0	3.0	4.0
Minimum Split (s)								8.0	11.0	11.0	8.0	24.0
Total Split (s)								8.0	24.0	34.0	8.0	30.0
Total Split (%)								6%	18%	26%	6%	23%
Yellow Time (s)								4.0	4.0	4.0	4.0	4.0
All-Red Time (s)								1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag								Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?								Yes	Yes	Yes	Yes	Yes
Recall Mode								None	Max	None	None	C-Max
v/c Ratio	0.52	0.46	1.03	0.39	1.73	1.47	0.58					
Control Delay	8.8	0.2	76.4	5.2	370.6	253.1	6.1					
Queue Delay	5.4	2.6	27.5	0.0	0.0	0.2	0.0					
Total Delay	14.3	2.8	103.9	5.2	370.6	253.3	6.1					
Queue Length 50th (ft)	32	0	~585	1	~536	~443	23					
Queue Length 95th (ft)	m44	m0	#723	62	#755	#669	46					
Internal Link Dist (ft)		333	702			1795						
Turn Bay Length (ft)	50			360	280							
Base Capacity (vph)	721	1960	1197	717	232	260	645					
Starvation Cap Reductn	276	897	0	0	0	0	0					
Spillback Cap Reductn	0	0	228	0	0	3	0					
Storage Cap Reductn	0	0	0	0	0	0	0					
Reduced v/c Ratio	0.85	0.85	1.27	0.39	1.73	1.49	0.58					

Intersection Summary

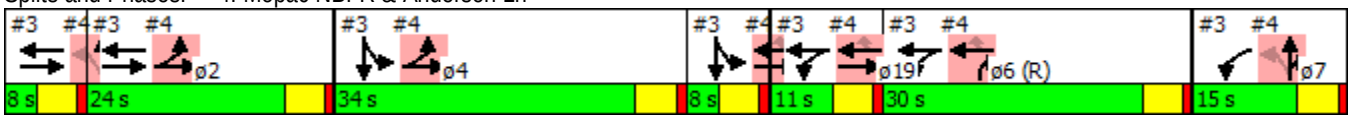
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 8 (6%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Mopac NBFR & Anderson Ln



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	367	881	0	0	1197	269	506	14	603	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0	5.0			
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.91	0.95			
Frt	1.00	1.00			1.00	0.85	1.00	0.90	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.98	1.00			
Satd. Flow (prot)	1770	3539			3539	1583	1681	1506	1504			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.98	1.00			
Satd. Flow (perm)	1770	3539			3539	1583	1681	1506	1504			
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	378	908	0	0	1234	277	522	14	622	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	182	0	52	90	0	0	0
Lane Group Flow (vph)	378	908	0	0	1234	95	402	331	283	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	custom			
Protected Phases	2 4	2 4 5 19			6 5 19			7 1	7 1 6			
Permitted Phases						6 5 19	7 1					
Actuated Green, G (s)	53.0	72.0			44.0	44.0	18.0	18.0	48.0			
Effective Green, g (s)	53.0	72.0			44.0	44.0	18.0	18.0	48.0			
Actuated g/C Ratio	0.41	0.55			0.34	0.34	0.14	0.14	0.37			
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	721	1960			1197	535	232	208	555			
v/s Ratio Prot	c0.21	0.26			c0.35				0.19			
v/s Ratio Perm						0.06	c0.24	0.22				
v/c Ratio	0.52	0.46			1.03	0.18	1.73	1.59	0.51			
Uniform Delay, d1	29.0	17.4			43.0	30.3	56.0	56.0	31.9			
Progression Factor	0.29	0.01			1.00	1.00	0.59	0.49	0.14			
Incremental Delay, d2	0.0	0.0			34.3	0.1	344.9	285.6	0.2			
Delay (s)	8.4	0.1			77.3	30.3	378.1	313.3	4.8			
Level of Service	A	A			E	C	F	F	A			
Approach Delay (s)		2.5			68.7			236.4			0.0	
Approach LOS		A			E			F			A	

Intersection Summary			
HCM 2000 Control Delay	96.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	35.0
Intersection Capacity Utilization	111.5%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	20	90	241	44	222	315
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	24	107	287	52	264	375
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						365
pX, platoon unblocked						
vC, conflicting volume	1217	313			339	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1217	313			339	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	85	85			78	
cM capacity (veh/h)	157	727			1220	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	131	339	639
Volume Left	24	0	264
Volume Right	107	52	0
cSH	437	1700	1220
Volume to Capacity	0.30	0.20	0.22
Queue Length 95th (ft)	31	0	21
Control Delay (s)	16.7	0.0	5.1
Lane LOS	C		A
Approach Delay (s)	16.7	0.0	5.1
Approach LOS	C		

Intersection Summary			
Average Delay	4.9		
Intersection Capacity Utilization	60.9%	ICU Level of Service	B
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	33.8
Intersection LOS	D

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	48	98	84	0	23	65	119	0	149	236	167
Peak Hour Factor	0.92	0.88	0.88	0.88	0.92	0.88	0.88	0.88	0.92	0.88	0.88	0.88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	55	111	95	0	26	74	135	0	169	268	190
Number of Lanes	0	0	2	0	0	0	1	1	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	2
HCM Control Delay	15.3	14.5	24.9
HCM LOS	C	B	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	56%	0%	49%	0%	26%	0%	100%	0%
Vol Thru, %	44%	41%	51%	37%	74%	0%	0%	46%
Vol Right, %	0%	59%	0%	63%	0%	100%	0%	54%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	267	285	97	133	88	119	208	470
LT Vol	149	0	48	0	23	0	208	0
Through Vol	118	118	49	49	65	0	0	218
RT Vol	0	167	0	84	0	119	0	252
Lane Flow Rate	303	324	110	151	100	135	236	534
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.681	0.663	0.277	0.35	0.251	0.307	0.545	1
Departure Headway (Hd)	8.077	7.367	9.053	8.336	9.025	8.161	8.295	7.394
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	449	489	400	434	402	442	437	497
Service Time	5.807	5.117	6.723	6.035	6.697	5.869	5.995	5.094
HCM Lane V/C Ratio	0.675	0.663	0.275	0.348	0.249	0.305	0.54	1.074
HCM Control Delay	26.4	23.5	15.1	15.5	14.7	14.4	20.5	67.8
HCM Lane LOS	D	C	C	C	B	B	C	F
HCM 95th-tile Q	5	4.8	1.1	1.5	1	1.3	3.2	13.5

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	208	218	252
Peak Hour Factor	0.92	0.88	0.88	0.88
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	236	248	286
Number of Lanes	0	1	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	53.3
HCM LOS	F

Lane

Intersection	
Intersection Delay, s/veh	29
Intersection LOS	D

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	42	175	149	0	97	68	8	0	55	162	53
Peak Hour Factor	0.92	0.81	0.81	0.81	0.92	0.81	0.81	0.81	0.92	0.81	0.81	0.81
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	52	216	184	0	120	84	10	0	68	200	65
Number of Lanes	0	0	1	1	0	0	1	1	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	2
HCM Control Delay	19.7	20	26.6
HCM LOS	C	C	D

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	20%	19%	0%	59%	0%	5%
Vol Thru, %	60%	81%	0%	41%	0%	87%
Vol Right, %	20%	0%	100%	0%	100%	8%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	270	217	149	165	8	356
LT Vol	55	42	0	97	0	18
Through Vol	162	175	0	68	0	308
RT Vol	53	0	149	0	8	30
Lane Flow Rate	333	268	184	204	10	440
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.7	0.612	0.378	0.503	0.022	0.888
Departure Headway (Hd)	7.564	8.219	7.392	8.89	7.854	7.275
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	477	439	486	405	454	497
Service Time	5.639	5.991	5.163	6.667	5.631	5.34
HCM Lane V/C Ratio	0.698	0.61	0.379	0.504	0.022	0.885
HCM Control Delay	26.6	23.2	14.6	20.4	10.8	44.9
HCM Lane LOS	D	C	B	C	B	E
HCM 95th-tile Q	5.4	4	1.7	2.7	0.1	9.8

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	18	308	30
Peak Hour Factor	0.92	0.81	0.81	0.81
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	22	380	37
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	44.9
HCM LOS	E

Lane

Intersection	
Intersection Delay, s/veh	25.6
Intersection LOS	D

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	51	144	186	0	62	137	155	0	26	282	50
Peak Hour Factor	0.92	0.90	0.90	0.90	0.92	0.90	0.90	0.90	0.92	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	57	160	207	0	69	152	172	0	29	313	56
Number of Lanes	0	0	1	1	0	0	1	1	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	2
HCM Control Delay	18.9	18.9	41.1
HCM LOS	C	C	E

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	26%	0%	31%	0%	100%	0%
Vol Thru, %	0%	85%	74%	0%	69%	0%	0%	79%
Vol Right, %	0%	15%	0%	100%	0%	100%	0%	21%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	26	332	195	186	199	155	89	262
LT Vol	26	0	51	0	62	0	89	0
Through Vol	0	282	144	0	137	0	0	206
RT Vol	0	50	0	186	0	155	0	56
Lane Flow Rate	29	369	217	207	221	172	99	291
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.072	0.851	0.526	0.452	0.541	0.379	0.249	0.677
Departure Headway (Hd)	8.934	8.307	8.736	7.873	8.814	7.924	9.049	8.374
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	401	435	412	457	409	453	397	431
Service Time	6.686	6.058	6.492	5.628	6.571	5.68	6.803	6.128
HCM Lane V/C Ratio	0.072	0.848	0.527	0.453	0.54	0.38	0.249	0.675
HCM Control Delay	12.4	43.3	20.8	17	21.5	15.5	14.8	27
HCM Lane LOS	B	E	C	C	C	C	B	D
HCM 95th-tile Q	0.2	8.4	3	2.3	3.1	1.7	1	4.9

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	89	206	56
Peak Hour Factor	0.92	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	99	229	62
Number of Lanes	0	1	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	23.9
HCM LOS	C

Lane

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	294	0	0	3088	304
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	0	306	0	0	3217	317
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	3217	1072	3533			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	3217	1072	3533			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	0	100			
cM capacity (veh/h)	7	216	68			

Direction, Lane #	EB 1	SB 1	SB 2	SB 3	SB 4
Volume Total	306	1072	1072	1072	317
Volume Left	0	0	0	0	0
Volume Right	306	0	0	0	317
cSH	216	1700	1700	1700	1700
Volume to Capacity	1.42	0.63	0.63	0.63	0.19
Queue Length 95th (ft)	444	0	0	0	0
Control Delay (s)	254.9	0.0	0.0	0.0	0.0
Lane LOS	F				
Approach Delay (s)	254.9	0.0			
Approach LOS	F				

Intersection Summary			
Average Delay	20.3		
Intersection Capacity Utilization	84.5%	ICU Level of Service	E
Analysis Period (min)	15		

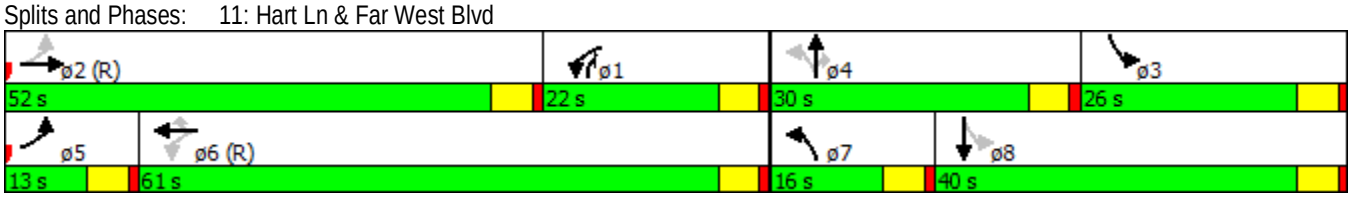
11: Hart Ln & Far West Blvd

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	77	770	232	312	80	55	145	192	232	291
Lane Group Flow (vph)	93	1045	280	376	96	66	175	231	280	403
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA
Protected Phases	5	2	1	6		7	4	1	3	8
Permitted Phases	2		6		6	4		4	8	
Detector Phase	5	2	1	6	6	7	4	1	3	8
Switch Phase										
Minimum Initial (s)	4.0	2.0	4.0	2.0	2.0	4.0	2.0	4.0	2.0	2.0
Minimum Split (s)	9.0	24.0	9.0	24.0	24.0	9.0	33.0	9.0	33.0	33.0
Total Split (s)	13.0	52.0	22.0	61.0	61.0	16.0	30.0	22.0	26.0	40.0
Total Split (%)	10.0%	40.0%	16.9%	46.9%	46.9%	12.3%	23.1%	16.9%	20.0%	30.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lead	Lag	Lag	Lag	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	C-Max	None	None	None	None	None
v/c Ratio	0.21	0.66	0.74	0.20	0.11	0.40	0.74	0.49	0.86	0.56
Control Delay	24.9	32.0	69.2	36.9	37.9	56.8	72.5	40.8	75.3	48.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.9	32.0	69.2	36.9	37.9	56.8	72.5	40.8	75.3	48.5
Queue Length 50th (ft)	45	363	176	124	60	51	144	161	225	162
Queue Length 95th (ft)	85	452	#253	159	99	85	195	205	273	181
Internal Link Dist (ft)		1703		1174			695			1553
Turn Bay Length (ft)	130		100		490			100	100	
Base Capacity (vph)	443	1590	379	1869	836	185	358	469	386	934
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.66	0.74	0.20	0.11	0.36	0.49	0.49	0.73	0.43

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 100 (77%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green
Natural Cycle: 130
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 11: Hart Ln & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	77	770	97	232	312	80	55	145	192	232	291	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95	
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3480		1770	3539	1583	1770	1863	1583	1770	3471	
Flt Permitted	0.45	1.00		0.20	1.00	1.00	0.44	1.00	1.00	0.65	1.00	
Satd. Flow (perm)	835	3480		373	3539	1583	819	1863	1583	1205	3471	
Peak-hour factor, PHF	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Adj. Flow (vph)	93	928	117	280	376	96	66	175	231	280	351	52
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	93	1045	0	280	376	96	66	175	231	280	403	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases	5	2		1	6		7	4	1	3	8	
Permitted Phases	2			6		6	4		4	8		
Actuated Green, G (s)	58.5	58.5		67.7	67.7	67.7	16.6	16.6	33.6	27.0	27.0	
Effective Green, g (s)	58.5	58.5		67.7	67.7	67.7	16.6	16.6	33.6	27.0	27.0	
Actuated g/C Ratio	0.45	0.45		0.52	0.52	0.52	0.13	0.13	0.26	0.21	0.21	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	431	1566		376	1843	824	159	237	470	328	720	
v/s Ratio Prot	0.01	c0.30		c0.10	0.11		0.02	c0.09	0.06	c0.12	0.12	
v/s Ratio Perm	0.08			c0.29		0.06	0.03		0.08	c0.06		
v/c Ratio	0.22	0.67		0.74	0.20	0.12	0.42	0.74	0.49	0.85	0.56	
Uniform Delay, d1	21.0	28.1		34.7	16.7	15.9	51.5	54.6	40.9	48.3	46.2	
Progression Factor	1.00	1.00		1.54	1.99	1.99	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.1	2.3		6.4	0.2	0.3	0.6	9.9	0.3	18.3	0.5	
Delay (s)	21.1	30.4		59.7	33.5	31.9	52.1	64.5	41.2	66.6	46.7	
Level of Service	C	C		E	C	C	D	E	D	E	D	
Approach Delay (s)		29.6			43.1			51.4			54.9	
Approach LOS		C			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	42.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	74.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

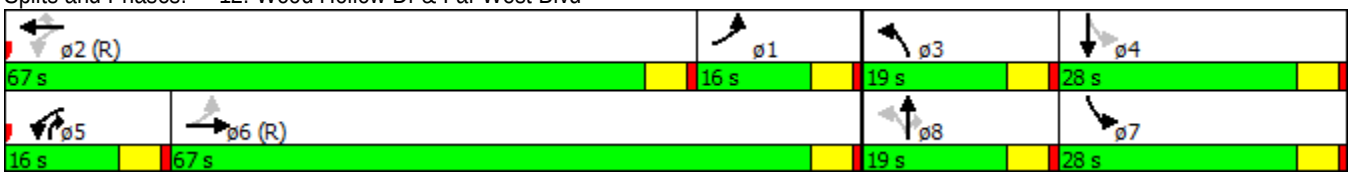
12: Wood Hollow Dr & Far West Blvd

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	123	1144	127	620	206	27	91	318	302	130
Lane Group Flow (vph)	131	1272	135	660	219	29	97	338	321	225
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA
Protected Phases	1	6	5	2		3	8	5	7	4
Permitted Phases	6		2		2	8		8	4	
Detector Phase	1	6	5	2	2	3	8	5	7	4
Switch Phase										
Minimum Initial (s)	4.0	2.0	4.0	2.0	2.0	4.0	2.0	4.0	4.0	2.0
Minimum Split (s)	9.0	11.0	9.0	11.0	11.0	9.0	11.0	9.0	9.0	11.0
Total Split (s)	16.0	67.0	16.0	67.0	67.0	19.0	19.0	16.0	28.0	28.0
Total Split (%)	12.3%	51.5%	12.3%	51.5%	51.5%	14.6%	14.6%	12.3%	21.5%	21.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	C-Max	None	None	None	None	None
v/c Ratio	0.30	0.53	0.61	0.39	0.25	0.22	0.63	0.97	0.74	0.47
Control Delay	29.9	31.6	42.3	36.8	15.1	58.3	75.0	66.6	57.1	41.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.9	31.6	42.3	36.8	15.1	58.3	75.0	66.6	57.1	41.9
Queue Length 50th (ft)	87	336	84	221	65	23	80	133	255	151
Queue Length 95th (ft)	m119	401	140	281	125	54	137	#252	#433	243
Internal Link Dist (ft)		1174		673			686			1879
Turn Bay Length (ft)	245		125			75		75		
Base Capacity (vph)	443	2422	225	1689	870	190	200	349	436	478
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.53	0.60	0.39	0.25	0.15	0.48	0.97	0.74	0.47

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 10 (8%), Referenced to phase 2:WBTL and 6:EBTL, Start of 1st Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 12: Wood Hollow Dr & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	123	1144	52	127	620	206	27	91	318	302	130	82
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.91		1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	5052		1770	3539	1583	1770	1863	1583	1770	1755	
Flt Permitted	0.40	1.00		0.10	1.00	1.00	0.66	1.00	1.00	0.69	1.00	
Satd. Flow (perm)	747	5052		193	3539	1583	1221	1863	1583	1293	1755	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	131	1217	55	135	660	219	29	97	338	321	138	87
RTOR Reduction (vph)	0	4	0	0	0	118	0	0	84	0	15	0
Lane Group Flow (vph)	131	1268	0	135	660	101	29	97	254	321	210	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases	1	6		5	2		3	8	5	7	4	
Permitted Phases	6			2		2	8		8	4		
Actuated Green, G (s)	60.1	60.1		60.0	60.0	60.0	10.8	10.8	21.7	34.3	34.3	
Effective Green, g (s)	60.1	60.1		60.0	60.0	60.0	10.8	10.8	21.7	34.3	34.3	
Actuated g/C Ratio	0.46	0.46		0.46	0.46	0.46	0.08	0.08	0.17	0.26	0.26	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	431	2335		221	1633	730	121	154	264	444	463	
v/s Ratio Prot	0.03	c0.25		0.05	0.19		0.01	0.05	c0.08	c0.16	0.12	
v/s Ratio Perm	0.11			c0.23		0.06	0.01		0.08	0.03		
v/c Ratio	0.30	0.54		0.61	0.40	0.14	0.24	0.63	0.96	0.72	0.45	
Uniform Delay, d1	22.8	25.1		23.9	23.2	20.1	55.6	57.7	53.7	42.6	40.0	
Progression Factor	1.28	1.31		1.60	1.65	5.97	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.1	0.7		2.8	0.6	0.3	0.4	5.7	44.4	4.9	0.3	
Delay (s)	29.2	33.5		41.0	38.8	120.6	56.0	63.4	98.1	47.5	40.3	
Level of Service	C	C		D	D	F	E	E	F	D	D	
Approach Delay (s)		33.1			56.7			88.2			44.5	
Approach LOS		C			E			F			D	

Intersection Summary			
HCM 2000 Control Delay	49.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	72.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

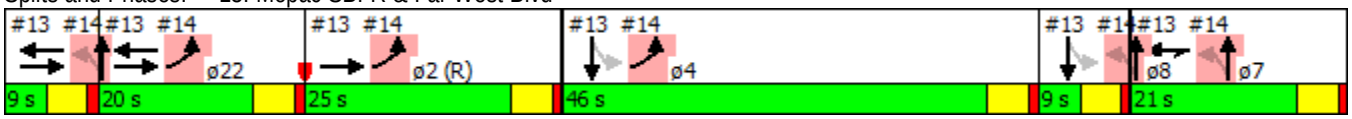
13: Mopac SBFR & Far West Blvd

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR	ø1	ø2	ø4	ø8	ø22
Lane Configurations											
Volume (vph)	884	493	20	675	572	965					
Lane Group Flow (vph)	911	508	21	696	830	995					
Turn Type	NA	Free	Prot	NA	NA	Free					
Protected Phases	1 22 2		7	1 22 7	4 8		1	2	4	8	22
Permitted Phases		Free				Free					
Detector Phase	1 22 2		7	1 22 7	4 8						
Switch Phase											
Minimum Initial (s)			4.0				4.0	4.0	4.0	4.0	4.0
Minimum Split (s)			20.0				9.0	24.0	24.0	9.0	20.0
Total Split (s)			21.0				9.0	25.0	46.0	9.0	20.0
Total Split (%)			16.2%				7%	19%	35%	7%	15%
Yellow Time (s)			4.0				4.0	4.0	4.0	4.0	4.0
All-Red Time (s)			1.0				1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)			0.0								
Total Lost Time (s)			5.0								
Lead/Lag							Lead		Lead	Lag	Lag
Lead-Lag Optimize?							Yes		Yes	Yes	Yes
Recall Mode			None				None	C-Max	None	None	None
v/c Ratio	0.68	0.32	0.10	0.57	0.62	0.63					
Control Delay	36.4	0.4	45.4	5.7	29.8	1.7					
Queue Delay	0.4	0.0	0.0	1.8	0.0	0.0					
Total Delay	36.8	0.4	45.4	7.5	29.8	1.7					
Queue Length 50th (ft)	393	0	4	0	225	13					
Queue Length 95th (ft)	m458	m0	m13	0	m222	m2					
Internal Link Dist (ft)	432			324	532						
Turn Bay Length (ft)		490									
Base Capacity (vph)	1333	1583	217	1225	1340	1583					
Starvation Cap Reductn	0	0	0	354	0	0					
Spillback Cap Reductn	115	0	0	0	0	0					
Storage Cap Reductn	0	0	0	0	0	0					
Reduced v/c Ratio	0.75	0.32	0.10	0.80	0.62	0.63					

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 106 (82%), Referenced to phase 2:EBT, Start of 1st Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Mopac SBFR & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	884	493	20	675	0	0	0	0	233	572	965
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	4.0	5.0	5.0						5.0	4.0
Lane Util. Factor		0.95	1.00	1.00	0.95						0.95	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (prot)		3539	1583	1770	3539						3489	1583
Flt Permitted		1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (perm)		3539	1583	1770	3539						3489	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	911	508	21	696	0	0	0	0	240	590	995
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	911	508	21	696	0	0	0	0	0	830	995
Turn Type		NA	Free	Prot	NA					Perm	NA	Free
Protected Phases		1 22 2		7	1 22 7						4 8	
Permitted Phases			Free							4 8		Free
Actuated Green, G (s)		49.0	130.0	16.0	45.0						50.0	130.0
Effective Green, g (s)		49.0	130.0	16.0	45.0						50.0	130.0
Actuated g/C Ratio		0.38	1.00	0.12	0.35						0.38	1.00
Clearance Time (s)				5.0								
Vehicle Extension (s)				2.0								
Lane Grp Cap (vph)		1333	1583	217	1225						1341	1583
v/s Ratio Prot		c0.26		0.01	0.20							
v/s Ratio Perm			0.32								0.24	c0.63
v/c Ratio		0.68	0.32	0.10	0.57						0.62	0.63
Uniform Delay, d1		34.0	0.0	50.6	34.6						32.3	0.0
Progression Factor		0.99	1.00	0.88	0.12						0.87	1.00
Incremental Delay, d2		0.9	0.4	0.0	0.3						0.4	1.2
Delay (s)		34.7	0.4	44.4	4.5						28.5	1.2
Level of Service		C	A	D	A						C	A
Approach Delay (s)		22.4			5.7			0.0			13.6	
Approach LOS		C			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	15.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	65.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

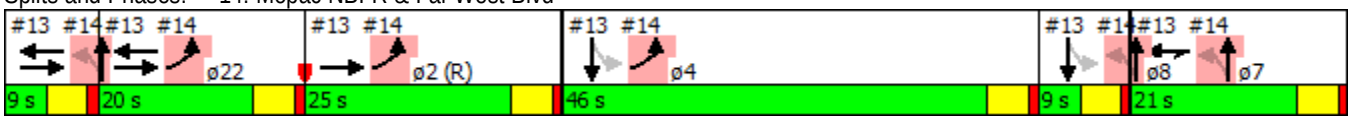
14: Mopac NBFR & Far West Blvd

Lane Group	EBL	NBL	NBT	ø1	ø2	ø4	ø7	ø8	ø22
Lane Configurations									
Volume (vph)	1134	695	2						
Lane Group Flow (vph)	1181	362	364						
Turn Type	Prot	Perm	NA						
Protected Phases	22 2 4		7 1 8	1	2	4	7	8	22
Permitted Phases		7 1 8							
Detector Phase	22 2 4	7 1 8	7 1 8						
Switch Phase									
Minimum Initial (s)				4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)				9.0	24.0	24.0	20.0	9.0	20.0
Total Split (s)				9.0	25.0	46.0	21.0	9.0	20.0
Total Split (%)				7%	19%	35%	16%	7%	15%
Yellow Time (s)				4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)				1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)									
Total Lost Time (s)									
Lead/Lag				Lead		Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes		Yes	Yes
Recall Mode				None	C-Max	None	None	None	None
v/c Ratio	0.56	0.71	0.71						
Control Delay	6.1	50.3	50.4						
Queue Delay	0.7	0.0	0.0						
Total Delay	6.8	50.3	50.4						
Queue Length 50th (ft)	31	288	289						
Queue Length 95th (ft)	25	#468	#470						
Internal Link Dist (ft)	324		322						
Turn Bay Length (ft)									
Base Capacity (vph)	2271	512	513						
Starvation Cap Reductn	686	0	0						
Spillback Cap Reductn	0	0	0						
Storage Cap Reductn	0	0	0						
Reduced v/c Ratio	0.75	0.71	0.71						

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 106 (82%), Referenced to phase 2:EBT, Start of 1st Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 14: Mopac NBFR & Far West Blvd



14: Mopac NBFR & Far West Blvd

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	1134	0	695	2	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0		
Lane Util. Factor	0.97		0.95	0.95		
Frt	1.00		1.00	1.00		
Flt Protected	0.95		0.95	0.95		
Satd. Flow (prot)	3433		1681	1686		
Flt Permitted	0.95		0.95	0.95		
Satd. Flow (perm)	3433		1681	1686		
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	1181	0	724	2	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1181	0	362	364	0	0
Turn Type	Prot		Perm	NA		
Protected Phases	22 2 4			7 1 8		
Permitted Phases			7 1 8			
Actuated Green, G (s)	80.4		39.6	39.6		
Effective Green, g (s)	80.4		39.6	39.6		
Actuated g/C Ratio	0.62		0.30	0.30		
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)	2123		512	513		
v/s Ratio Prot	c0.34					
v/s Ratio Perm			0.22	0.22		
v/c Ratio	0.56		0.71	0.71		
Uniform Delay, d1	14.4		40.1	40.1		
Progression Factor	0.37		1.00	1.00		
Incremental Delay, d2	0.1		3.6	3.7		
Delay (s)	5.5		43.7	43.8		
Level of Service	A		D	D		
Approach Delay (s)	5.5			43.7	0.0	
Approach LOS	A			D	A	

Intersection Summary			
HCM 2000 Control Delay	20.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	78.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

20: Loop 1 SBFR & Steck Avenue

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	ø1	ø2	ø4	ø5	ø6	ø7
Lane Configurations												
Volume (vph)	579	148	162	378	1030	2078						
Lane Group Flow (vph)	616	157	172	402	986	2660						
Turn Type	NA	Perm	Prot	NA	Split	NA						
Protected Phases	2 1		6 7	2 1 6 7	4 5	4 5	1	2	4	5	6	7
Permitted Phases		2 1										
Detector Phase	2 1	2 1	6 7	2 1 6 7	4 5	4 5						
Switch Phase												
Minimum Initial (s)							2.0	1.0	1.0	3.0	4.0	4.0
Minimum Split (s)							7.0	11.0	11.0	8.0	15.0	9.0
Total Split (s)							7.0	20.0	63.0	8.0	15.0	17.0
Total Split (%)							5%	15%	48%	6%	12%	13%
Yellow Time (s)							4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)							1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag							Lead	Lag	Lead	Lag		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode							None	Max	None	None	C-Max	None
v/c Ratio	1.03	0.41	0.47	0.27	1.21	1.57						
Control Delay	97.1	12.9	22.8	0.3	135.0	286.6						
Queue Delay	25.9	0.0	0.0	0.0	0.0	0.0						
Total Delay	123.0	12.9	22.8	0.3	135.0	286.6						
Queue Length 50th (ft)	~291	10	29	0	~1110	~1754						
Queue Length 95th (ft)	#413	73	m48	m0	#1391	#1886						
Internal Link Dist (ft)	737			327		333						
Turn Bay Length (ft)		100	80									
Base Capacity (vph)	598	386	367	1470	817	1693						
Starvation Cap Reductn	0	0	0	0	0	0						
Spillback Cap Reductn	61	0	0	0	0	0						
Storage Cap Reductn	0	0	0	0	0	0						
Reduced v/c Ratio	1.15	0.41	0.47	0.27	1.21	1.57						

Intersection Summary

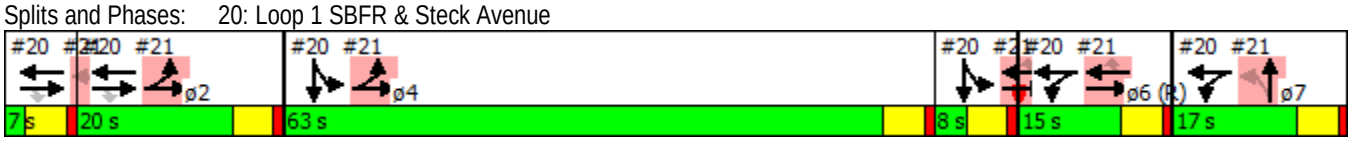
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 90 (69%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 20: Loop 1 SBFR & Steck Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	579	148	162	378	0	0	0	0	1030	2078	319
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0					5.0	5.0	
Lane Util. Factor		0.95	1.00	1.00	0.95					0.91	0.91	
Frt		1.00	0.85	1.00	1.00					1.00	0.98	
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	3539					1610	3319	
Flt Permitted		1.00	1.00	0.95	1.00					0.95	1.00	
Satd. Flow (perm)		3539	1583	1770	3539					1610	3319	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	616	157	172	402	0	0	0	0	1096	2211	339
RTOR Reduction (vph)	0	0	119	0	0	0	0	0	0	0	8	0
Lane Group Flow (vph)	0	616	38	172	402	0	0	0	0	986	2652	0
Turn Type		NA	Perm	Prot	NA					Split	NA	
Protected Phases		2 1		6 7	2 1 6 7					4 5	4 5	
Permitted Phases			2 1									
Actuated Green, G (s)		22.0	22.0	27.0	54.0					66.0	66.0	
Effective Green, g (s)		22.0	22.0	27.0	54.0					66.0	66.0	
Actuated g/C Ratio		0.17	0.17	0.21	0.42					0.51	0.51	
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		598	267	367	1470					817	1685	
v/s Ratio Prot		c0.17		c0.10	0.11					0.61	c0.80	
v/s Ratio Perm			0.02									
v/c Ratio		1.03	0.14	0.47	0.27					1.21	1.57	
Uniform Delay, d1		54.0	46.0	45.2	25.1					32.0	32.0	
Progression Factor		1.00	1.00	0.43	0.00					1.00	1.00	
Incremental Delay, d2		44.7	0.1	0.2	0.0					104.5	261.0	
Delay (s)		98.7	46.1	19.9	0.0					136.5	293.0	
Level of Service		F	D	B	A					F	F	
Approach Delay (s)		88.0			6.0			0.0			250.7	
Approach LOS		F			A			A			F	

Intersection Summary			
HCM 2000 Control Delay	197.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.39		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	144.7%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

21: Loop 1 NBFR & Steck Avenue

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	ø1	ø2	ø4	ø5	ø6	ø7
Lane Configurations												
Volume (vph)	749	808	409	277	225	586						
Lane Group Flow (vph)	764	824	417	283	230	802						
Turn Type	Prot	NA	NA	Perm	Perm	NA						
Protected Phases	2 4	2 4 5 6	6 5			7 1	1	2	4	5	6	7
Permitted Phases				6 5	7 1							
Detector Phase	2 4	2 4 5 6	6 5	6 5	7 1	7 1						
Switch Phase												
Minimum Initial (s)							2.0	1.0	1.0	3.0	4.0	4.0
Minimum Split (s)							7.0	11.0	11.0	8.0	15.0	9.0
Total Split (s)							7.0	20.0	63.0	8.0	15.0	17.0
Total Split (%)							5%	15%	48%	6%	12%	13%
Yellow Time (s)							4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)							1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag							Lead	Lag	Lead	Lag		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode							None	Max	None	None	C-Max	None
v/c Ratio	0.72	0.30	0.85	0.77	0.46	2.96						
Control Delay	10.8	0.0	71.7	35.2	45.2	909.8						
Queue Delay	51.4	1.1	0.0	0.0	0.0	0.0						
Total Delay	62.2	1.1	71.7	35.2	45.2	909.8						
Queue Length 50th (ft)	353	0	183	89	80	~1166						
Queue Length 95th (ft)	m123	m0	#267	#218	m117	m#1391						
Internal Link Dist (ft)		327	978			2452						
Turn Bay Length (ft)	80			170	110							
Base Capacity (vph)	1062	2749	490	369	501	271						
Starvation Cap Reductn	399	1600	0	0	0	0						
Spillback Cap Reductn	0	0	0	0	0	0						
Storage Cap Reductn	0	0	0	0	0	0						
Reduced v/c Ratio	1.15	0.72	0.85	0.77	0.46	2.96						

Intersection Summary

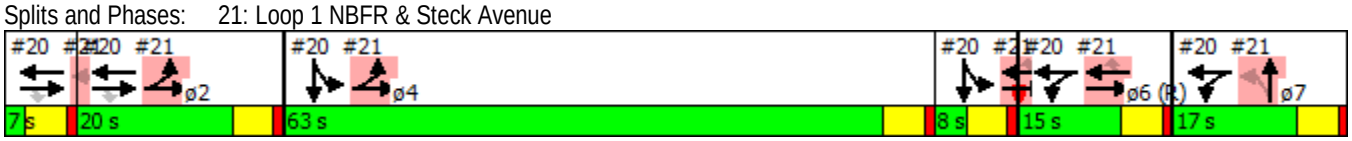
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 90 (69%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 21: Loop 1 NBFR & Steck Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	749	808	0	0	409	277	225	586	200	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0				
Lane Util. Factor	1.00	0.95			0.95	1.00	0.97	1.00				
Frt	1.00	1.00			1.00	0.85	1.00	0.96				
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (prot)	1770	3539			3539	1583	3433	1792				
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (perm)	1770	3539			3539	1583	3433	1792				
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	764	824	0	0	417	283	230	598	204	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	150	0	9	0	0	0	0
Lane Group Flow (vph)	764	824	0	0	417	133	230	793	0	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA				
Protected Phases	2 4	2 4 5 6			6 5			7 1				
Permitted Phases						6 5	7 1					
Actuated Green, G (s)	78.0	101.0			18.0	18.0	19.0	19.0				
Effective Green, g (s)	78.0	101.0			18.0	18.0	19.0	19.0				
Actuated g/C Ratio	0.60	0.78			0.14	0.14	0.15	0.15				
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	1062	2749			490	219	501	261				
v/s Ratio Prot	c0.43	0.23			c0.12			c0.44				
v/s Ratio Perm						0.08	0.07					
v/c Ratio	0.72	0.30			0.85	0.61	0.46	3.04				
Uniform Delay, d1	18.3	4.2			54.7	52.7	50.8	55.5				
Progression Factor	0.55	0.00			1.00	1.00	0.83	0.83				
Incremental Delay, d2	0.2	0.0			12.9	3.3	0.2	926.4				
Delay (s)	10.2	0.0			67.5	55.9	42.3	972.3				
Level of Service	B	A			E	E	D	F				
Approach Delay (s)		4.9			62.8			765.0			0.0	
Approach LOS		A			E			F			A	

Intersection Summary			
HCM 2000 Control Delay	253.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.29		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	144.7%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	120	203	68	130	52	52
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	130	221	74	141	57	57
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			351		530	241
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			351		530	241
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			94		88	93
cM capacity (veh/h)			1208		478	798

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	351	215	113
Volume Left	0	74	57
Volume Right	221	0	57
cSH	1700	1208	598
Volume to Capacity	0.21	0.06	0.19
Queue Length 95th (ft)	0	5	17
Control Delay (s)	0.0	3.2	12.4
Lane LOS		A	B
Approach Delay (s)	0.0	3.2	12.4
Approach LOS			B

Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	45.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	27	163	27	81	233	68	11	0	31	26	0	11
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	29	177	29	88	253	74	12	0	34	28	0	12
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	327			207			729	754	192	751	732	290
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	327			207			729	754	192	751	732	290
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			94			96	100	96	90	100	98
cM capacity (veh/h)	1232			1365			311	309	850	293	318	749

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	236	415	46	40
Volume Left	29	88	12	28
Volume Right	29	74	34	12
cSH	1232	1365	585	358
Volume to Capacity	0.02	0.06	0.08	0.11
Queue Length 95th (ft)	2	5	6	9
Control Delay (s)	1.2	2.2	11.7	16.3
Lane LOS	A	A	B	C
Approach Delay (s)	1.2	2.2	11.7	16.3
Approach LOS			B	C

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	45.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	206	14	27	228	5	11
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	224	15	29	248	5	12
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			239		538	232
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			239		538	232
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		99	99
cM capacity (veh/h)			1328		493	808

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	239	277	17
Volume Left	0	29	5
Volume Right	15	0	12
cSH	1700	1328	673
Volume to Capacity	0.14	0.02	0.03
Queue Length 95th (ft)	0	2	2
Control Delay (s)	0.0	1.0	10.5
Lane LOS		A	B
Approach Delay (s)	0.0	1.0	10.5
Approach LOS			B

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	38.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	204	27	27	99	11	11
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	222	29	29	108	12	12
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			251		403	236
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			251		403	236
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		98	99
cM capacity (veh/h)			1314		590	803

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	251	137	24
Volume Left	0	29	12
Volume Right	29	0	12
cSH	1700	1314	680
Volume to Capacity	0.15	0.02	0.04
Queue Length 95th (ft)	0	2	3
Control Delay (s)	0.0	1.8	10.5
Lane LOS		A	B
Approach Delay (s)	0.0	1.8	10.5
Approach LOS			B

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	32.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	41	174	111	122	46	15
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	45	189	121	133	50	16
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	253				465	187
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	253				465	187
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				91	98
cM capacity (veh/h)	1312				537	855

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	234	253	66
Volume Left	45	0	50
Volume Right	0	133	16
cSH	1312	1700	591
Volume to Capacity	0.03	0.15	0.11
Queue Length 95th (ft)	3	0	9
Control Delay (s)	1.7	0.0	11.9
Lane LOS	A		B
Approach Delay (s)	1.7	0.0	11.9
Approach LOS			B

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	38.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	27	193	371	68	26	11
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	29	210	403	74	28	12
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	477				709	440
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	477				709	440
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				93	98
cM capacity (veh/h)	1085				390	617

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	239	477	40
Volume Left	29	0	28
Volume Right	0	74	12
cSH	1085	1700	438
Volume to Capacity	0.03	0.28	0.09
Queue Length 95th (ft)	2	0	8
Control Delay (s)	1.3	0.0	14.1
Lane LOS	A		B
Approach Delay (s)	1.3	0.0	14.1
Approach LOS			B

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	42.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	219	439	27	11	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	238	477	29	12	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	507				730	492
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	507				730	492
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				97	100
cM capacity (veh/h)	1058				389	577

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	238	507	12
Volume Left	0	0	12
Volume Right	0	29	0
cSH	1058	1700	389
Volume to Capacity	0.00	0.30	0.03
Queue Length 95th (ft)	0	0	2
Control Delay (s)	0.0	0.0	14.5
Lane LOS			B
Approach Delay (s)	0.0	0.0	14.5
Approach LOS			B

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	34.7%	ICU Level of Service	A
Analysis Period (min)	15		

304: Wood Hollow Dr & Driveway 9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	5	5	14	292	659	14
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	5	15	317	716	15
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					212	
pX, platoon unblocked	0.84	0.84	0.84			
vC, conflicting volume	913	724	732			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	803	578	587			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	99	98			
cM capacity (veh/h)	265	386	828			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	11	121	212	732
Volume Left	5	15	0	0
Volume Right	5	0	0	15
cSH	315	828	1700	1700
Volume to Capacity	0.03	0.02	0.12	0.43
Queue Length 95th (ft)	3	1	0	0
Control Delay (s)	16.8	1.3	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	16.8	0.5		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	45.5%	ICU Level of Service	A
Analysis Period (min)	15		

305: Wood Hollow Dr & Driveway 10

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	41	11	295	108	27	637
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	45	12	321	117	29	692
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						372
pX, platoon unblocked	0.84					
vC, conflicting volume	1130	219			438	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1061	219			438	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	75	98			97	
cM capacity (veh/h)	179	785			1118	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1
Volume Total	57	214	224	722
Volume Left	45	0	0	29
Volume Right	12	0	117	0
cSH	214	1700	1700	1118
Volume to Capacity	0.26	0.13	0.13	0.03
Queue Length 95th (ft)	26	0	0	2
Control Delay (s)	27.7	0.0	0.0	0.7
Lane LOS	D			A
Approach Delay (s)	27.7	0.0		0.7
Approach LOS	D			

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	60.0%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	176	297	155	27	26	52
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	191	323	168	29	28	57
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	198				889	183
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	198				889	183
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	86				90	93
cM capacity (veh/h)	1375				270	859

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	514	198	85
Volume Left	191	0	28
Volume Right	0	29	57
cSH	1375	1700	498
Volume to Capacity	0.14	0.12	0.17
Queue Length 95th (ft)	12	0	15
Control Delay (s)	3.9	0.0	13.7
Lane LOS	A		B
Approach Delay (s)	3.9	0.0	13.7
Approach LOS			B

Intersection Summary			
Average Delay	3.9		
Intersection Capacity Utilization	49.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	68	104	172	68	26	26
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	74	113	187	74	28	28
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	261				485	224
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	261				485	224
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	94				94	97
cM capacity (veh/h)	1304				511	816

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	187	261	57
Volume Left	74	0	28
Volume Right	0	74	28
cSH	1304	1700	628
Volume to Capacity	0.06	0.15	0.09
Queue Length 95th (ft)	5	0	7
Control Delay (s)	3.4	0.0	11.3
Lane LOS	A		B
Approach Delay (s)	3.4	0.0	11.3
Approach LOS			B

Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	35.8%	ICU Level of Service	A
Analysis Period (min)	15		

1: Hart Ln & Spicewood Springs Rd

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	964	182	170	1290	299	292
Lane Group Flow (vph)	1071	202	189	1433	332	324
Turn Type	NA	Perm	Prot	NA	Prot	Free
Protected Phases	2		1	6	4	
Permitted Phases		2				Free
Detector Phase	2	2	1	6	4	
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	
Total Split (s)	79.0	79.0	39.0	118.0	32.0	
Total Split (%)	52.7%	52.7%	26.0%	78.7%	21.3%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Max	C-Max	Max	C-Max	None	
v/c Ratio	0.61	0.24	0.38	0.50	0.77	0.20
Control Delay	29.5	12.3	44.2	8.4	75.5	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.5	12.3	44.2	8.4	75.5	0.3
Queue Length 50th (ft)	392	58	153	338	164	0
Queue Length 95th (ft)	465	110	m265	304	211	0
Internal Link Dist (ft)	211			988	285	
Turn Bay Length (ft)		110	220		160	
Base Capacity (vph)	1745	827	497	2858	617	1583
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.24	0.38	0.50	0.54	0.20

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of 1st Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Hart Ln & Spicewood Springs Rd

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	964	182	170	1290	299	292
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	4.0
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	3433	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	3433	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1071	202	189	1433	332	324
RTOR Reduction (vph)	0	47	0	0	0	0
Lane Group Flow (vph)	1071	155	189	1433	332	324
Turn Type	NA	Perm	Prot	NA	Prot	Free
Protected Phases	2		1	6	4	
Permitted Phases		2				Free
Actuated Green, G (s)	74.0	74.0	42.1	121.1	18.9	150.0
Effective Green, g (s)	74.0	74.0	42.1	121.1	18.9	150.0
Actuated g/C Ratio	0.49	0.49	0.28	0.81	0.13	1.00
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	1745	780	496	2857	432	1583
v/s Ratio Prot	c0.30		0.11	c0.40	c0.10	
v/s Ratio Perm		0.10				0.20
v/c Ratio	0.61	0.20	0.38	0.50	0.77	0.20
Uniform Delay, d1	27.6	21.4	43.5	4.7	63.4	0.0
Progression Factor	1.00	1.00	0.95	1.57	1.00	1.00
Incremental Delay, d2	1.6	0.6	1.7	0.5	7.2	0.3
Delay (s)	29.2	21.9	42.8	7.8	70.7	0.3
Level of Service	C	C	D	A	E	A
Approach Delay (s)	28.1			11.9	35.9	
Approach LOS	C			B	D	

Intersection Summary			
HCM 2000 Control Delay	22.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	57.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

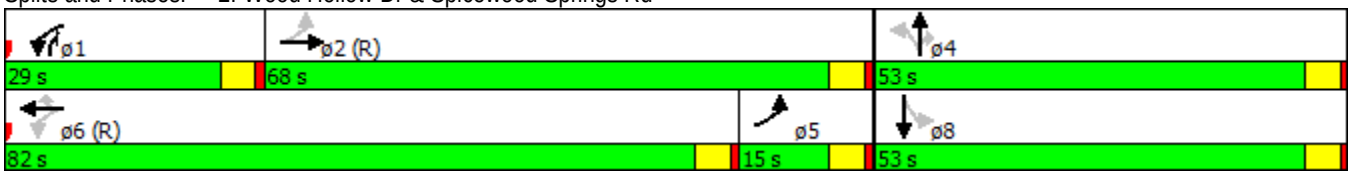
2: Wood Hollow Dr & Spicewood Springs Rd

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	6	1168	193	1175	1	269	8	408	1	5
Lane Group Flow (vph)	7	1420	219	1335	1	0	315	464	0	25
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Perm	NA	pm+ov	Perm	NA
Protected Phases	5	2	1	6			4	1		8
Permitted Phases	2		6		6	4		4	8	
Detector Phase	5	2	1	6	6	4	4	1	8	8
Switch Phase										
Minimum Initial (s)	6.0	25.0	6.0	5.0	5.0	5.0	5.0	6.0	5.0	5.0
Minimum Split (s)	15.0	30.0	15.0	11.0	11.0	35.0	35.0	15.0	35.0	35.0
Total Split (s)	15.0	68.0	29.0	82.0	82.0	53.0	53.0	29.0	53.0	53.0
Total Split (%)	10.0%	45.3%	19.3%	54.7%	54.7%	35.3%	35.3%	19.3%	35.3%	35.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead			Lead		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes			Yes		
Recall Mode	None	C-Max	None	C-Max	C-Max	Max	Max	None	None	None
v/c Ratio	0.03	0.60	0.79	0.64	0.00		0.74	0.61		0.05
Control Delay	11.0	18.1	61.2	18.0	0.0		57.6	29.6		17.7
Queue Delay	0.0	2.3	0.0	0.0	0.0		0.0	1.9		0.0
Total Delay	11.0	20.4	61.2	18.0	0.0		57.6	31.5		17.7
Queue Length 50th (ft)	2	417	143	241	0		275	299		5
Queue Length 95th (ft)	m7	500	242	429	m0		386	364		27
Internal Link Dist (ft)		988		494			132			203
Turn Bay Length (ft)	300		110		100					
Base Capacity (vph)	238	2370	358	2099	959		425	837		546
Starvation Cap Reductn	0	0	0	17	0		0	0		0
Spillback Cap Reductn	0	777	0	0	0		0	225		0
Storage Cap Reductn	0	0	0	0	0		0	0		0
Reduced v/c Ratio	0.03	0.89	0.61	0.64	0.00		0.74	0.76		0.05

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 55 (37%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Wood Hollow Dr & Spicewood Springs Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	1168	82	193	1175	1	269	8	408	1	5	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0		5.0	5.0		5.0	
Lane Util. Factor	1.00	0.91		1.00	0.95	1.00		1.00	1.00		1.00	
Frt	1.00	0.99		1.00	1.00	0.85		1.00	0.85		0.90	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.95	1.00		1.00	
Satd. Flow (prot)	1770	5035		1770	3539	1583		1776	1583		1678	
Flt Permitted	0.16	1.00		0.09	1.00	1.00		0.71	1.00		0.99	
Satd. Flow (perm)	297	5035		174	3539	1583		1330	1583		1669	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	7	1327	93	219	1335	1	306	9	464	1	6	18
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	29	0	12	0
Lane Group Flow (vph)	7	1415	0	219	1335	1	0	315	435	0	13	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	pm+ov	Perm	NA	
Protected Phases	5	2		1	6			4	1		8	
Permitted Phases	2			6		6	4		4	8		
Actuated Green, G (s)	70.5	70.5		85.0	85.0	85.0		48.0	64.5		48.0	
Effective Green, g (s)	70.5	70.5		85.0	85.0	85.0		48.0	64.5		48.0	
Actuated g/C Ratio	0.47	0.47		0.57	0.57	0.57		0.32	0.43		0.32	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0		5.0	5.0		5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0		2.0	2.0		2.0	
Lane Grp Cap (vph)	159	2366		274	2005	897		425	733		534	
v/s Ratio Prot	0.00	c0.28		c0.09	0.38				0.07			
v/s Ratio Perm	0.02			c0.37		0.00		c0.24	0.21		0.01	
v/c Ratio	0.04	0.60		0.80	0.67	0.00		0.74	0.59		0.02	
Uniform Delay, d1	30.4	29.3		32.3	22.6	14.1		45.5	32.7		34.9	
Progression Factor	0.42	0.57		1.56	0.79	1.00		1.00	1.00		1.00	
Incremental Delay, d2	0.0	1.0		13.4	1.7	0.0		11.1	0.9		0.0	
Delay (s)	12.9	17.7		63.8	19.5	14.1		56.5	33.6		35.0	
Level of Service	B	B		E	B	B		E	C		C	
Approach Delay (s)		17.7			25.8			42.9			35.0	
Approach LOS		B			C			D			C	

Intersection Summary			
HCM 2000 Control Delay	26.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	72.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

3: Mopac SBFR & Spicewood Springs Rd

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR	ø1	ø2	ø4	ø5	ø6
Lane Configurations												
Volume (vph)	1248	329	765	924	670	246	445					
Lane Group Flow (vph)	1328	350	814	983	356	619	473					
Turn Type	NA	Free	Prot	NA	Split	NA	Free					
Protected Phases	2 1		19 6 7	2 1 19 6	4 5	4 5		1	2	4	5	6
Permitted Phases		Free					Free					
Detector Phase	2 1		19 6 7	2 1 19 6	4 5	4 5						
Switch Phase												
Minimum Initial (s)								3.0	1.0	1.0	3.0	4.0
Minimum Split (s)								8.0	11.0	11.0	8.0	24.0
Total Split (s)								8.0	35.0	23.0	8.0	51.0
Total Split (%)								5%	23%	15%	5%	34%
Yellow Time (s)								4.0	4.0	4.0	4.0	4.0
All-Red Time (s)								1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag								Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?								Yes	Yes	Yes	Yes	Yes
Recall Mode								None	Max	None	None	C-Max
v/c Ratio	1.48	0.22	0.97	0.44	1.28	1.23dl	0.30					
Control Delay	260.3	0.3	29.3	2.2	197.0	119.0	0.5					
Queue Delay	1.0	0.0	40.2	0.3	0.0	0.0	0.0					
Total Delay	261.3	0.3	69.5	2.5	197.0	119.0	0.5					
Queue Length 50th (ft)	~948	0	819	46	~482	~371	0					
Queue Length 95th (ft)	#1095	0	m600	m101	#707	#504	0					
Internal Link Dist (ft)	494			333		2669						
Turn Bay Length (ft)			50		145							
Base Capacity (vph)	896	1583	837	2241	279	571	1583					
Starvation Cap Reductn	0	0	98	592	0	0	0					
Spillback Cap Reductn	147	0	0	22	0	0	9					
Storage Cap Reductn	0	0	0	0	0	0	0					
Reduced v/c Ratio	1.77	0.22	1.10	0.60	1.28	1.08	0.30					

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 89 (59%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 130
Control Type: Actuated-Coordinated

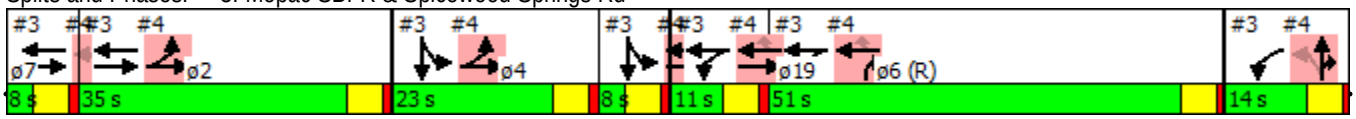
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 3: Mopac SBFR & Spicewood Springs Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1248	329	765	924	0	0	0	0	670	246	445
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	4.0	5.0	5.0					5.0	5.0	4.0
Lane Util. Factor		0.95	1.00	1.00	0.95					0.91	0.91	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.97	1.00
Satd. Flow (prot)		3539	1583	1770	3539					1610	3295	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.97	1.00
Satd. Flow (perm)		3539	1583	1770	3539					1610	3295	1583
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	1328	350	814	983	0	0	0	0	713	262	473
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1328	350	814	983	0	0	0	0	356	619	473
Turn Type		NA	Free	Prot	NA					Split	NA	Free
Protected Phases		2 1		19 6 7	2 1 19 6					4 5	4 5	
Permitted Phases			Free									Free
Actuated Green, G (s)		38.0	150.0	71.0	95.0					26.0	26.0	150.0
Effective Green, g (s)		38.0	150.0	71.0	95.0					26.0	26.0	150.0
Actuated g/C Ratio		0.25	1.00	0.47	0.63					0.17	0.17	1.00
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		896	1583	837	2241					279	571	1583
v/s Ratio Prot		c0.38		c0.46	0.28					c0.22	0.19	
v/s Ratio Perm			0.22									0.30
v/c Ratio		1.48	0.22	0.97	0.44					1.28	1.23dl	0.30
Uniform Delay, d1		56.0	0.0	38.5	14.0					62.0	62.0	0.0
Progression Factor		0.99	1.00	0.60	0.28					1.00	1.00	1.00
Incremental Delay, d2		221.9	0.3	4.7	0.0					149.0	62.5	0.5
Delay (s)		277.3	0.3	27.9	3.9					211.0	124.5	0.5
Level of Service		F	A	C	A					F	F	A
Approach Delay (s)		219.5			14.7			0.0			105.2	
Approach LOS		F			B			A			F	

Intersection Summary			
HCM 2000 Control Delay	111.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.38		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	35.0
Intersection Capacity Utilization	119.7%	ICU Level of Service	H
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group

4: Mopac NBFR & Anderson Ln

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	ø1	ø2	ø4	ø5	ø6
Lane Configurations												
Volume (vph)	610	1307	1336	471	354	47	663					
Lane Group Flow (vph)	642	1376	1406	496	336	400	384					
Turn Type	Prot	NA	NA	Perm	Perm	NA	custom					
Protected Phases	2 4	2 4 5 19	6 5 19			7 1	7 1 6	1	2	4	5	6
Permitted Phases				6 5 19	7 1							
Detector Phase	2 4	2 4 5 19	6 5 19	6 5 19	7 1	7 1	7 1 6					
Switch Phase												
Minimum Initial (s)								3.0	1.0	1.0	3.0	4.0
Minimum Split (s)								8.0	11.0	11.0	8.0	24.0
Total Split (s)								8.0	35.0	23.0	8.0	51.0
Total Split (%)								5%	23%	15%	5%	34%
Yellow Time (s)								4.0	4.0	4.0	4.0	4.0
All-Red Time (s)								1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag								Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?								Yes	Yes	Yes	Yes	Yes
Recall Mode								None	Max	None	None	C-Max
v/c Ratio	1.03	0.81	0.92	0.62	1.77	1.56	0.51					
Control Delay	46.1	1.1	50.4	22.2	402.4	301.9	21.8					
Queue Delay	28.2	48.1	17.1	0.0	0.0	0.2	0.0					
Total Delay	74.4	49.3	67.5	22.2	402.4	302.1	21.8					
Queue Length 50th (ft)	~597	0	674	221	~513	~509	187					
Queue Length 95th (ft)	m179	m0	#787	346	#727	#747	291					
Internal Link Dist (ft)		333	702			1795						
Turn Bay Length (ft)	50			360	280							
Base Capacity (vph)	625	1698	1533	801	190	256	749					
Starvation Cap Reductn	153	493	0	0	0	0	0					
Spillback Cap Reductn	0	0	163	0	0	4	0					
Storage Cap Reductn	0	0	0	0	0	0	0					
Reduced v/c Ratio	1.36	1.14	1.03	0.62	1.77	1.59	0.51					

Intersection Summary

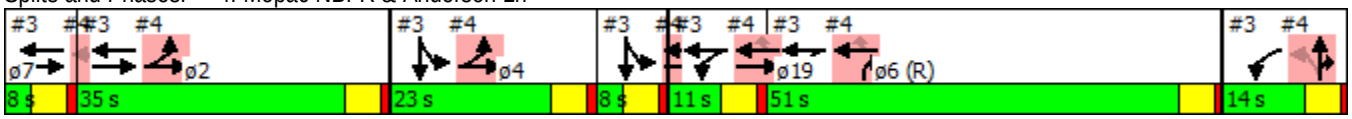
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 89 (59%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 130
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Mopac NBFR & Anderson Ln



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	610	1307	0	0	1336	471	354	47	663	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0	5.0			
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.91	0.95			
Frt	1.00	1.00			1.00	0.85	1.00	0.88	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	1770	3539			3539	1583	1681	1489	1504			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	1770	3539			3539	1583	1681	1489	1504			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	642	1376	0	0	1406	496	373	49	698	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	116	0	88	68	0	0	0
Lane Group Flow (vph)	642	1376	0	0	1406	380	336	312	316	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	custom			
Protected Phases	2 4	2 4 5 19			6 5 19			7 1	7 1 6			
Permitted Phases						6 5 19	7 1					
Actuated Green, G (s)	53.0	72.0			65.0	65.0	17.0	17.0	68.0			
Effective Green, g (s)	53.0	72.0			65.0	65.0	17.0	17.0	68.0			
Actuated g/C Ratio	0.35	0.48			0.43	0.43	0.11	0.11	0.45			
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	625	1698			1533	685	190	168	681			
v/s Ratio Prot	c0.36	c0.39			c0.40				0.21			
v/s Ratio Perm						0.24	0.20	0.21				
v/c Ratio	1.03	0.81			0.92	0.56	1.77	1.86	0.46			
Uniform Delay, d1	48.5	33.2			40.0	31.7	66.5	66.5	28.4			
Progression Factor	0.53	0.02			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	18.7	0.3			8.8	0.6	366.4	408.3	0.2			
Delay (s)	44.6	1.0			48.8	32.3	432.9	474.8	28.6			
Level of Service	D	A			D	C	F	F	C			
Approach Delay (s)		14.9			44.5			309.2			0.0	
Approach LOS		B			D			F			A	

Intersection Summary			
HCM 2000 Control Delay	91.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.28		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	35.0
Intersection Capacity Utilization	119.7%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	43	236	305	24	111	203
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	57	315	407	32	148	271
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						365
pX, platoon unblocked						
vC, conflicting volume	989	423			439	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	989	423			439	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	76	50			87	
cM capacity (veh/h)	237	631			1121	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	372	439	419
Volume Left	57	0	148
Volume Right	315	32	0
cSH	503	1700	1121
Volume to Capacity	0.74	0.26	0.13
Queue Length 95th (ft)	155	0	11
Control Delay (s)	29.9	0.0	4.0
Lane LOS	D		A
Approach Delay (s)	29.9	0.0	4.0
Approach LOS	D		

Intersection Summary			
Average Delay	10.4		
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	50.7
Intersection LOS	F

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	125	147	163	0	60	73	252	0	90	325	95
Peak Hour Factor	0.92	0.76	0.76	0.76	0.92	0.76	0.76	0.76	0.92	0.76	0.76	0.76
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	164	193	214	0	79	96	332	0	118	428	125
Number of Lanes	0	0	2	0	0	0	1	1	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	2
HCM Control Delay	42.9	42.6	62.2
HCM LOS	E	E	F

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	36%	0%	63%	0%	45%	0%	100%	0%
Vol Thru, %	64%	63%	37%	31%	55%	0%	0%	58%
Vol Right, %	0%	37%	0%	69%	0%	100%	0%	42%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	253	258	199	237	133	252	101	256
LT Vol	90	0	125	0	60	0	101	0
Through Vol	163	163	74	74	73	0	0	149
RT Vol	0	95	0	163	0	252	0	107
Lane Flow Rate	332	339	261	311	175	332	133	337
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.936	0.911	0.758	0.831	0.511	0.879	0.4	0.936
Departure Headway (Hd)	10.143	9.684	10.454	9.615	10.514	9.539	10.838	10.004
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	359	373	345	377	343	378	332	364
Service Time	7.914	7.455	8.225	7.385	8.286	7.311	8.614	7.779
HCM Lane V/C Ratio	0.925	0.909	0.757	0.825	0.51	0.878	0.401	0.926
HCM Control Delay	65.7	58.8	39.7	45.5	23.8	52.5	20.7	65.1
HCM Lane LOS	F	F	E	E	C	F	C	F
HCM 95th-tile Q	9.8	9.4	6	7.5	2.8	8.6	1.9	9.9

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	101	149	107
Peak Hour Factor	0.92	0.76	0.76	0.76
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	133	196	141
Number of Lanes	0	1	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	52.5
HCM LOS	F

Lane

Intersection	
Intersection Delay, s/veh	18.9
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	40	82	52	0	113	148	55	0	104	230	68
Peak Hour Factor	0.92	0.94	0.94	0.94	0.92	0.94	0.94	0.94	0.92	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	43	87	55	0	120	157	59	0	111	245	72
Number of Lanes	0	0	1	1	0	0	1	1	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	2
HCM Control Delay	12.5	17.7	25
HCM LOS	B	C	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	26%	33%	0%	43%	0%	7%
Vol Thru, %	57%	67%	0%	57%	0%	66%
Vol Right, %	17%	0%	100%	0%	100%	27%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	402	122	52	261	55	237
LT Vol	104	40	0	113	0	16
Through Vol	230	82	0	148	0	157
RT Vol	68	0	52	0	55	64
Lane Flow Rate	428	130	55	278	59	252
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.739	0.277	0.105	0.568	0.104	0.457
Departure Headway (Hd)	6.223	7.694	6.803	7.364	6.422	6.529
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	582	466	524	489	556	550
Service Time	4.276	5.467	4.575	5.126	4.184	4.594
HCM Lane V/C Ratio	0.735	0.279	0.105	0.569	0.106	0.458
HCM Control Delay	25	13.4	10.4	19.4	9.9	15
HCM Lane LOS	C	B	B	C	A	B
HCM 95th-tile Q	6.3	1.1	0.3	3.5	0.3	2.4

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	16	157	64
Peak Hour Factor	0.92	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	17	167	68
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	15
HCM LOS	B

Lane

Intersection	
Intersection Delay, s/veh	32.5
Intersection LOS	D

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	50	81	57	0	101	259	150	0	90	340	82
Peak Hour Factor	0.92	0.99	0.99	0.99	0.92	0.99	0.99	0.99	0.92	0.99	0.99	0.99
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	51	82	58	0	102	262	152	0	91	343	83
Number of Lanes	0	0	1	1	0	0	1	1	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	2
HCM Control Delay	15.5	33.2	47.7
HCM LOS	C	D	E

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	38%	0%	28%	0%	100%	0%
Vol Thru, %	0%	81%	62%	0%	72%	0%	0%	82%
Vol Right, %	0%	19%	0%	100%	0%	100%	0%	18%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	90	422	131	57	360	150	139	239
LT Vol	90	0	50	0	101	0	139	0
Through Vol	0	340	81	0	259	0	0	195
RT Vol	0	82	0	57	0	150	0	44
Lane Flow Rate	91	426	132	58	364	152	140	241
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.215	0.931	0.342	0.134	0.835	0.311	0.35	0.558
Departure Headway (Hd)	8.637	7.98	9.295	8.364	8.386	7.517	8.971	8.319
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	418	456	389	431	436	482	403	435
Service Time	6.337	5.68	7.01	6.079	6.086	5.217	6.684	6.031
HCM Lane V/C Ratio	0.218	0.934	0.339	0.135	0.835	0.315	0.347	0.554
HCM Control Delay	13.7	55	16.8	12.4	41.3	13.6	16.4	21
HCM Lane LOS	B	F	C	B	E	B	C	C
HCM 95th-tile Q	0.8	10.8	1.5	0.5	8	1.3	1.5	3.3

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	139	195	44
Peak Hour Factor	0.92	0.99	0.99	0.99
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	140	197	44
Number of Lanes	0	1	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	19.3
HCM LOS	C

Lane

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	310	0	0	2217	473
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	0	356	0	0	2548	544
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2548	849	3092			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2548	849	3092			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	0	100			
cM capacity (veh/h)	22	304	104			

Direction, Lane #	EB 1	SB 1	SB 2	SB 3	SB 4
Volume Total	356	849	849	849	544
Volume Left	0	0	0	0	0
Volume Right	356	0	0	0	544
cSH	304	1700	1700	1700	1700
Volume to Capacity	1.17	0.50	0.50	0.50	0.32
Queue Length 95th (ft)	382	0	0	0	0
Control Delay (s)	143.4	0.0	0.0	0.0	0.0
Lane LOS	F				
Approach Delay (s)	143.4	0.0			
Approach LOS	F				

Intersection Summary			
Average Delay	14.8		
Intersection Capacity Utilization	68.7%	ICU Level of Service	C
Analysis Period (min)	15		

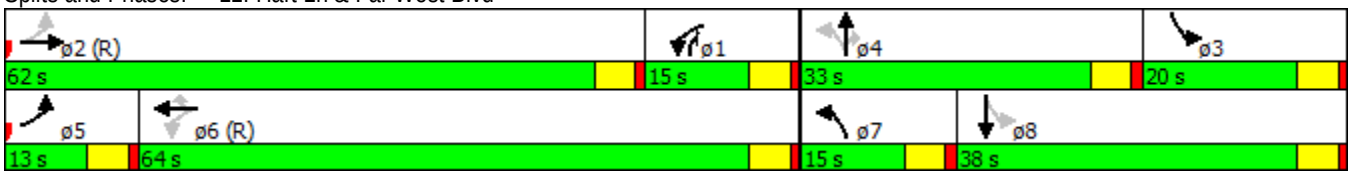
11: Hart Ln & Far West Blvd

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	59	616	208	585	169	67	159	160	187	117
Lane Group Flow (vph)	61	678	214	603	174	69	164	165	193	192
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA
Protected Phases	5	2	1	6		7	4	1	3	8
Permitted Phases	2		6		6	4		4	8	
Detector Phase	5	2	1	6	6	7	4	1	3	8
Switch Phase										
Minimum Initial (s)	4.0	2.0	4.0	2.0	2.0	4.0	2.0	4.0	2.0	2.0
Minimum Split (s)	9.0	24.0	9.0	24.0	24.0	9.0	33.0	9.0	33.0	33.0
Total Split (s)	13.0	62.0	15.0	64.0	64.0	15.0	33.0	15.0	20.0	38.0
Total Split (%)	10.0%	47.7%	11.5%	49.2%	49.2%	11.5%	25.4%	11.5%	15.4%	29.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lead	Lag	Lag	Lag	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	C-Max	None	None	None	None	None
v/c Ratio	0.15	0.35	0.42	0.29	0.19	0.42	0.73	0.44	0.76	0.34
Control Delay	16.9	18.1	44.0	33.9	34.0	58.5	72.4	45.3	70.9	48.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.9	18.1	44.0	33.9	34.0	58.5	72.4	45.3	70.9	48.8
Queue Length 50th (ft)	23	163	152	225	124	54	135	119	156	77
Queue Length 95th (ft)	54	243	221	282	187	97	203	178	222	106
Internal Link Dist (ft)		1703		1174			695			1553
Turn Bay Length (ft)	130		100		490			100	100	
Base Capacity (vph)	428	1938	514	2098	938	175	401	375	299	849
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.35	0.42	0.29	0.19	0.39	0.41	0.44	0.65	0.23

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 100 (77%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 11: Hart Ln & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	59	616	42	208	585	169	67	159	160	187	117	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3506		1770	3539	1583	1770	1863	1583	1770	3343	
Flt Permitted	0.35	1.00		0.39	1.00	1.00	0.47	1.00	1.00	0.65	1.00	
Satd. Flow (perm)	645	3506		734	3539	1583	877	1863	1583	1217	3343	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	61	635	43	214	603	174	69	164	165	193	121	71
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	61	678	0	214	603	174	69	164	165	193	192	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases	5	2		1	6		7	4	1	3	8	
Permitted Phases	2			6		6	4		4	8		
Actuated Green, G (s)	69.9	69.9		75.1	75.1	75.1	15.8	15.8	26.8	21.8	21.8	
Effective Green, g (s)	69.9	69.9		75.1	75.1	75.1	15.8	15.8	26.8	21.8	21.8	
Actuated g/C Ratio	0.54	0.54		0.58	0.58	0.58	0.12	0.12	0.21	0.17	0.17	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	397	1885		511	2044	914	156	226	387	260	560	
v/s Ratio Prot	0.01	c0.19		0.04	0.17		0.02	c0.09	c0.04	c0.08	0.06	
v/s Ratio Perm	0.08			c0.21		0.11	0.03		0.07	c0.05		
v/c Ratio	0.15	0.36		0.42	0.30	0.19	0.44	0.73	0.43	0.74	0.34	
Uniform Delay, d1	15.0	17.2		16.4	14.0	13.0	52.3	55.0	44.9	50.5	47.8	
Progression Factor	1.00	1.00		2.07	2.21	2.22	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.1	0.5		0.2	0.3	0.4	0.7	9.4	0.3	9.6	0.1	
Delay (s)	15.0	17.8		34.1	31.2	29.3	53.0	64.4	45.2	60.1	47.9	
Level of Service	B	B		C	C	C	D	E	D	E	D	
Approach Delay (s)		17.5			31.5			54.5			54.0	
Approach LOS		B			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	34.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	65.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

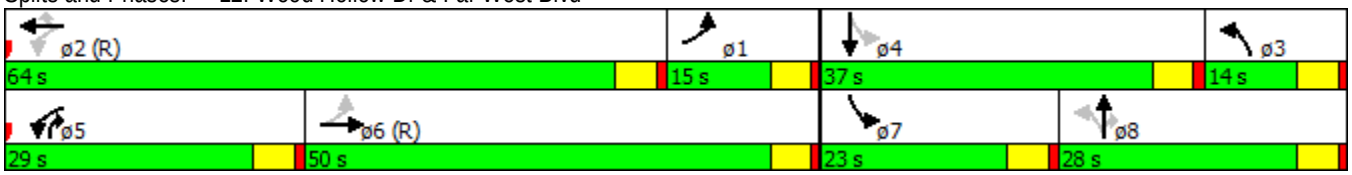
12: Wood Hollow Dr & Far West Blvd

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	137	828	244	732	210	109	200	344	193	109
Lane Group Flow (vph)	156	1018	277	832	239	124	227	391	219	213
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA
Protected Phases	1	6	5	2		3	8	5	7	4
Permitted Phases	6		2		2	8		8	4	
Detector Phase	1	6	5	2	2	3	8	5	7	4
Switch Phase										
Minimum Initial (s)	4.0	2.0	4.0	2.0	2.0	4.0	2.0	4.0	4.0	2.0
Minimum Split (s)	9.0	11.0	9.0	11.0	11.0	9.0	11.0	9.0	9.0	11.0
Total Split (s)	15.0	50.0	29.0	64.0	64.0	14.0	28.0	29.0	23.0	37.0
Total Split (%)	11.5%	38.5%	22.3%	49.2%	49.2%	10.8%	21.5%	22.3%	17.7%	28.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	C-Max	None	None	None	None	None
v/c Ratio	0.44	0.47	0.79	0.48	0.27	0.43	0.82	0.65	0.79	0.79
Control Delay	46.6	37.5	47.4	36.6	12.8	54.0	76.9	28.7	72.9	66.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.6	37.5	47.4	36.6	12.8	54.0	76.9	28.7	72.9	66.6
Queue Length 50th (ft)	97	246	183	307	43	96	187	188	182	155
Queue Length 95th (ft)	162	326	260	368	96	152	265	261	248	222
Internal Link Dist (ft)		1174		673			686			1879
Turn Bay Length (ft)	245		125			75		75		
Base Capacity (vph)	356	2147	413	1735	897	288	329	666	291	449
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.47	0.67	0.48	0.27	0.43	0.69	0.59	0.75	0.47

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 20 (15%), Referenced to phase 2:WBTL and 6:EBTL, Start of 1st Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 12: Wood Hollow Dr & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	137	828	68	244	732	210	109	200	344	193	109	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.91		1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	5028		1770	3539	1583	1770	1863	1583	1770	1746	
Flt Permitted	0.34	1.00		0.15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Satd. Flow (perm)	631	5028		285	3539	1583	1863	1863	1583	1863	1746	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	156	941	77	277	832	239	124	227	391	219	124	89
RTOR Reduction (vph)	0	6	0	0	0	122	0	0	89	0	22	0
Lane Group Flow (vph)	156	1012	0	277	832	117	124	227	302	219	191	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases	1	6		5	2		3	8	5	7	4	
Permitted Phases	6			2		2	8		8	4		
Actuated Green, G (s)	55.3	55.3		63.6	63.6	63.6	19.3	19.3	37.7	18.5	18.5	
Effective Green, g (s)	55.3	55.3		63.6	63.6	63.6	19.3	19.3	37.7	18.5	18.5	
Actuated g/C Ratio	0.43	0.43		0.49	0.49	0.49	0.15	0.15	0.29	0.14	0.14	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	356	2138		349	1731	774	276	276	519	265	248	
v/s Ratio Prot	0.03	c0.20		c0.11	0.24		0.06	c0.12	0.08	0.11	0.11	
v/s Ratio Perm	0.15			c0.28		0.07	0.01		0.11	c0.01		
v/c Ratio	0.44	0.47		0.79	0.48	0.15	0.45	0.82	0.58	0.83	0.77	
Uniform Delay, d1	28.5	26.9		23.4	22.2	18.3	49.0	53.7	39.4	54.6	53.7	
Progression Factor	1.26	1.29		1.36	1.55	4.79	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.3	0.7		9.2	0.8	0.3	0.4	16.9	1.1	17.8	12.1	
Delay (s)	36.4	35.4		41.0	35.1	88.0	49.5	70.6	40.5	72.4	65.8	
Level of Service	D	D		D	D	F	D	E	D	E	E	
Approach Delay (s)		35.6			45.7			51.2			69.2	
Approach LOS		D			D			D			E	

Intersection Summary			
HCM 2000 Control Delay	46.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	68.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

13: Mopac SBFR & Far West Blvd

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR	ø1	ø2	ø4	ø8	ø22
Lane Configurations											
Volume (vph)	1272	418	11	524	446	1004					
Lane Group Flow (vph)	1429	470	12	589	1127	1128					
Turn Type	NA	Free	Prot	NA	NA	Free					
Protected Phases	1 22 2		7	1 22 7	4 8		1	2	4	8	22
Permitted Phases		Free				Free					
Detector Phase	1 22 2		7	1 22 7	4 8						
Switch Phase											
Minimum Initial (s)			4.0				4.0	4.0	4.0	4.0	4.0
Minimum Split (s)			20.0				9.0	24.0	24.0	9.0	20.0
Total Split (s)			41.0				9.0	20.0	31.0	9.0	20.0
Total Split (%)			31.5%				7%	15%	24%	7%	15%
Yellow Time (s)			4.0				4.0	4.0	4.0	4.0	4.0
All-Red Time (s)			1.0				1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)			0.0								
Total Lost Time (s)			5.0								
Lead/Lag							Lead		Lead	Lag	Lag
Lead-Lag Optimize?							Yes		Yes	Yes	Yes
Recall Mode			None				None	C-Max	None	None	None
v/c Ratio	0.90	0.30	0.04	0.33	1.32dl	0.71					
Control Delay	41.4	0.4	21.7	3.3	147.9	2.8					
Queue Delay	48.2	0.0	0.0	0.3	0.0	0.0					
Total Delay	89.6	0.4	21.7	3.6	147.9	2.8					
Queue Length 50th (ft)	573	0	3	14	~611	0					
Queue Length 95th (ft)	#834	0	m6	17	#735	0					
Internal Link Dist (ft)	432			324	532						
Turn Bay Length (ft)		490									
Base Capacity (vph)	1590	1583	490	1767	927	1583					
Starvation Cap Reductn	0	0	0	548	0	0					
Spillback Cap Reductn	730	0	0	0	0	0					
Storage Cap Reductn	0	0	0	0	0	0					
Reduced v/c Ratio	1.66	0.30	0.02	0.48	1.22	0.71					

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBT, Start of 1st Green
Natural Cycle: 120
Control Type: Actuated-Coordinated

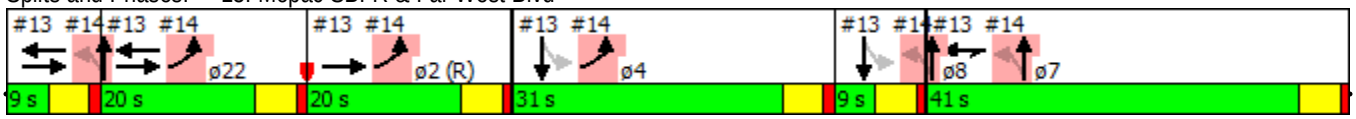
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 13: Mopac SBFR & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1272	418	11	524	0	0	0	0	557	446	1004
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	4.0	5.0	5.0						5.0	4.0
Lane Util. Factor		0.95	1.00	1.00	0.95						0.95	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.97	1.00
Satd. Flow (prot)		3539	1583	1770	3539						3444	1583
Flt Permitted		1.00	1.00	0.95	1.00						0.97	1.00
Satd. Flow (perm)		3539	1583	1770	3539						3444	1583
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	1429	470	12	589	0	0	0	0	626	501	1128
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1429	470	12	589	0	0	0	0	0	1127	1128
Turn Type		NA	Free	Prot	NA					Perm	NA	Free
Protected Phases		1 22 2		7	1 22 7						4 8	
Permitted Phases			Free							4 8		Free
Actuated Green, G (s)		58.4	130.0	21.6	65.0						35.0	130.0
Effective Green, g (s)		58.4	130.0	21.6	65.0						35.0	130.0
Actuated g/C Ratio		0.45	1.00	0.17	0.50						0.27	1.00
Clearance Time (s)				5.0								
Vehicle Extension (s)				2.0								
Lane Grp Cap (vph)		1589	1583	294	1769						927	1583
v/s Ratio Prot		c0.40		0.01	0.17							
v/s Ratio Perm			0.30								0.33	c0.71
v/c Ratio		0.90	0.30	0.04	0.33						1.32dl	0.71
Uniform Delay, d1		33.1	0.0	45.5	19.5						47.5	0.0
Progression Factor		0.98	1.00	0.52	0.15						1.00	1.00
Incremental Delay, d2		6.5	0.4	0.0	0.0						107.0	2.8
Delay (s)		39.0	0.4	23.5	2.9						154.5	2.8
Level of Service		D	A	C	A						F	A
Approach Delay (s)		29.5			3.3			0.0			78.6	
Approach LOS		C			A			A			E	

Intersection Summary			
HCM 2000 Control Delay	49.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	76.7%	ICU Level of Service	D
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group

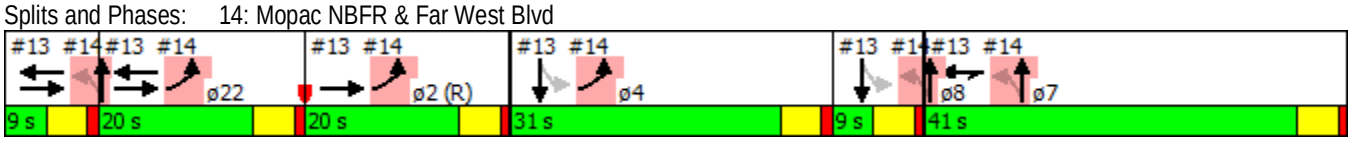
14: Mopac NBFR & Far West Blvd

Lane Group	EBL	NBL	NBT	ø1	ø2	ø4	ø7	ø8	ø22
Lane Configurations									
Volume (vph)	1840	468	27						
Lane Group Flow (vph)	2091	282	281						
Turn Type	Prot	Perm	NA						
Protected Phases	22 2 4		7 1 8	1	2	4	7	8	22
Permitted Phases		7 1 8							
Detector Phase	22 2 4	7 1 8	7 1 8						
Switch Phase									
Minimum Initial (s)				4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)				9.0	24.0	24.0	20.0	9.0	20.0
Total Split (s)				9.0	20.0	31.0	41.0	9.0	20.0
Total Split (%)				7%	15%	24%	32%	7%	15%
Yellow Time (s)				4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)				1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)									
Total Lost Time (s)									
Lead/Lag				Lead		Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes		Yes	Yes
Recall Mode				None	C-Max	None	None	None	None
v/c Ratio	1.20	0.40	0.40						
Control Delay	117.6	28.9	28.8						
Queue Delay	0.7	0.0	0.0						
Total Delay	118.4	28.9	28.8						
Queue Length 50th (ft)	~1102	173	172						
Queue Length 95th (ft)	m#1063	247	246						
Internal Link Dist (ft)	324		322						
Turn Bay Length (ft)									
Base Capacity (vph)	1742	697	702						
Starvation Cap Reductn	340	0	0						
Spillback Cap Reductn	0	0	0						
Storage Cap Reductn	0	0	0						
Reduced v/c Ratio	1.49	0.40	0.40						

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBT, Start of 1st Green
Natural Cycle: 120
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 14: Mopac NBFR & Far West Blvd



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	1840	0	468	27	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0		
Lane Util. Factor	0.97		0.95	0.95		
Frt	1.00		1.00	1.00		
Flt Protected	0.95		0.95	0.96		
Satd. Flow (prot)	3433		1681	1694		
Flt Permitted	0.95		0.95	0.96		
Satd. Flow (perm)	3433		1681	1694		
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	2091	0	532	31	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	2091	0	282	281	0	0
Turn Type	Prot		Perm	NA		
Protected Phases	22 2 4			7 1 8		
Permitted Phases			7 1 8			
Actuated Green, G (s)	66.0		54.0	54.0		
Effective Green, g (s)	66.0		54.0	54.0		
Actuated g/C Ratio	0.51		0.42	0.42		
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)	1742		698	703		
v/s Ratio Prot	c0.61					
v/s Ratio Perm			c0.17	0.17		
v/c Ratio	1.20		0.40	0.40		
Uniform Delay, d1	32.0		26.7	26.6		
Progression Factor	0.79		1.00	1.00		
Incremental Delay, d2	91.8		0.1	0.1		
Delay (s)	117.0		26.8	26.8		
Level of Service	F		C	C		
Approach Delay (s)	117.0			26.8	0.0	
Approach LOS	F			C	A	

Intersection Summary			
HCM 2000 Control Delay	97.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	89.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

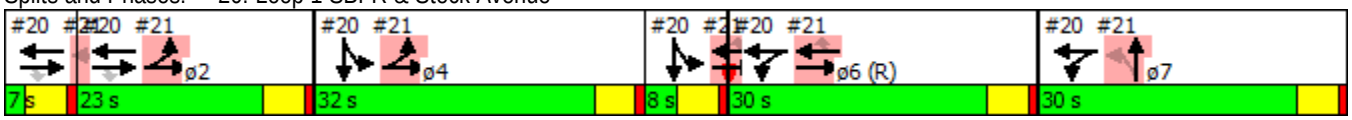
20: Loop 1 SBFR & Steck Avenue

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	ø1	ø2	ø4	ø5	ø6	ø7
Lane Configurations												
Volume (vph)	678	108	268	371	834	867						
Lane Group Flow (vph)	692	110	273	379	698	1406						
Turn Type	NA	Perm	Prot	NA	Split	NA						
Protected Phases	2 1		6 7	2 1 6 7	4 5	4 5	1	2	4	5	6	7
Permitted Phases		2 1										
Detector Phase	2 1	2 1	6 7	2 1 6 7	4 5	4 5						
Switch Phase												
Minimum Initial (s)							2.0	1.0	1.0	3.0	4.0	4.0
Minimum Split (s)							7.0	11.0	11.0	8.0	24.0	9.0
Total Split (s)							7.0	23.0	32.0	8.0	30.0	30.0
Total Split (%)							5%	18%	25%	6%	23%	23%
Yellow Time (s)							4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)							1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag							Lead	Lag	Lead	Lag		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode							None	Max	None	None	C-Max	None
v/c Ratio	1.02	0.26	0.36	0.16	1.61	1.57						
Control Delay	90.6	4.5	2.9	0.1	318.3	293.2						
Queue Delay	31.7	0.0	1.0	0.0	0.0	0.0						
Total Delay	122.2	4.5	3.8	0.1	318.3	293.2						
Queue Length 50th (ft)	~324	0	6	0	~926	~915						
Queue Length 95th (ft)	#449	27	8	0	#1187	#1064						
Internal Link Dist (ft)	737			327		333						
Turn Bay Length (ft)		100	80									
Base Capacity (vph)	680	419	748	2313	433	897						
Starvation Cap Reductn	0	0	257	0	0	0						
Spillback Cap Reductn	200	0	0	0	0	1						
Storage Cap Reductn	0	0	0	0	0	0						
Reduced v/c Ratio	1.44	0.26	0.56	0.16	1.61	1.57						

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 97 (75%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 140
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 20: Loop 1 SBFR & Steck Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	678	108	268	371	0	0	0	0	834	867	361
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0					5.0	5.0	
Lane Util. Factor		0.95	1.00	1.00	0.95					0.91	0.91	
Frt		1.00	0.85	1.00	1.00					1.00	0.96	
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.99	
Satd. Flow (prot)		3539	1583	1770	3539					1610	3239	
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.99	
Satd. Flow (perm)		3539	1583	1770	3539					1610	3239	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	692	110	273	379	0	0	0	0	851	885	368
RTOR Reduction (vph)	0	0	89	0	0	0	0	0	0	0	25	0
Lane Group Flow (vph)	0	692	21	273	379	0	0	0	0	698	1381	0
Turn Type		NA	Perm	Prot	NA					Split	NA	
Protected Phases		2 1		6 7	2 1 6 7					4 5	4 5	
Permitted Phases			2 1									
Actuated Green, G (s)		25.0	25.0	55.0	85.0					35.0	35.0	
Effective Green, g (s)		25.0	25.0	55.0	85.0					35.0	35.0	
Actuated g/C Ratio		0.19	0.19	0.42	0.65					0.27	0.27	
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		680	304	748	2313					433	872	
v/s Ratio Prot		c0.20		c0.15	0.11					c0.43	0.43	
v/s Ratio Perm			0.01									
v/c Ratio		1.02	0.07	0.36	0.16					1.61	1.58	
Uniform Delay, d1		52.5	43.0	25.6	8.7					47.5	47.5	
Progression Factor		1.00	1.00	0.06	0.00					1.00	1.00	
Incremental Delay, d2		39.0	0.0	0.1	0.0					285.9	268.2	
Delay (s)		91.5	43.0	1.8	0.0					333.4	315.7	
Level of Service		F	D	A	A					F	F	
Approach Delay (s)		84.9			0.7			0.0			321.6	
Approach LOS		F			A			A			F	

Intersection Summary			
HCM 2000 Control Delay	209.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	148.9%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

21: Loop 1 NBFR & Steck Avenue

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	ø1	ø2	ø4	ø5	ø6	ø7
Lane Configurations												
Volume (vph)	733	654	510	526	135	882						
Lane Group Flow (vph)	772	688	537	554	142	1064						
Turn Type	Prot	NA	NA	Perm	Perm	NA						
Protected Phases	2 4	2 4 5 6	6 5			7 1	1	2	4	5	6	7
Permitted Phases				6 5	7 1							
Detector Phase	2 4	2 4 5 6	6 5	6 5	7 1	7 1						
Switch Phase												
Minimum Initial (s)							2.0	1.0	1.0	3.0	4.0	4.0
Minimum Split (s)							7.0	11.0	11.0	8.0	24.0	9.0
Total Split (s)							7.0	23.0	32.0	8.0	30.0	30.0
Total Split (%)							5%	18%	25%	6%	23%	23%
Yellow Time (s)							4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)							1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag							Lead	Lag	Lead	Lag		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode							None	Max	None	None	C-Max	None
v/c Ratio	1.14	0.29	0.60	1.09	0.17	2.35						
Control Delay	89.1	0.1	45.9	100.7	39.2	637.2						
Queue Delay	2.2	1.3	0.0	0.0	0.0	0.0						
Total Delay	91.3	1.4	45.9	100.7	39.2	637.2						
Queue Length 50th (ft)	~738	0	210	~430	48	~1479						
Queue Length 95th (ft)	m349	m0	272	#657	77	#1741						
Internal Link Dist (ft)		327	978			2452						
Turn Bay Length (ft)	80			170	110							
Base Capacity (vph)	680	2395	898	508	845	453						
Starvation Cap Reductn	177	1439	0	0	0	0						
Spillback Cap Reductn	0	0	0	0	0	0						
Storage Cap Reductn	0	0	0	0	0	0						
Reduced v/c Ratio	1.53	0.72	0.60	1.09	0.17	2.35						

Intersection Summary

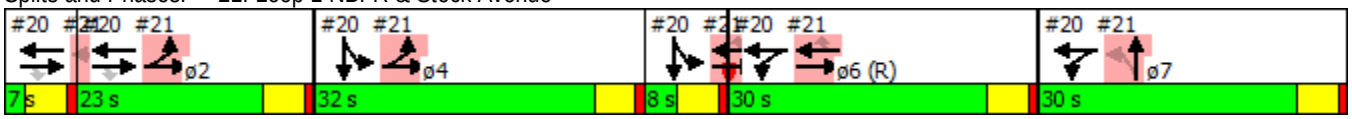
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 97 (75%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 140
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 21: Loop 1 NBFR & Steck Avenue



21: Loop 1 NBFR & Steck Avenue

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	733	654	0	0	510	526	135	882	129	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0				
Lane Util. Factor	1.00	0.95			0.95	1.00	0.97	1.00				
Frt	1.00	1.00			1.00	0.85	1.00	0.98				
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (prot)	1770	3539			3539	1583	3433	1827				
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (perm)	1770	3539			3539	1583	3433	1827				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	772	688	0	0	537	554	142	928	136	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	107	0	4	0	0	0	0
Lane Group Flow (vph)	772	688	0	0	537	447	142	1060	0	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA				
Protected Phases	2 4	2 4 5 6			6 5			7 1				
Permitted Phases						6 5	7 1					
Actuated Green, G (s)	50.0	88.0			33.0	33.0	32.0	32.0				
Effective Green, g (s)	50.0	88.0			33.0	33.0	32.0	32.0				
Actuated g/C Ratio	0.38	0.68			0.25	0.25	0.25	0.25				
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	680	2395			898	401	845	449				
v/s Ratio Prot	c0.44	0.19			0.15			c0.58				
v/s Ratio Perm						c0.28	0.04					
v/c Ratio	1.14	0.29			0.60	1.12	0.17	2.36				
Uniform Delay, d1	40.0	8.4			42.7	48.5	38.5	49.0				
Progression Factor	0.63	0.00			1.00	1.00	1.00	1.00				
Incremental Delay, d2	62.8	0.0			0.7	80.1	0.0	619.5				
Delay (s)	88.0	0.0			43.4	128.6	38.6	668.5				
Level of Service	F	A			D	F	D	F				
Approach Delay (s)		46.5			86.7			594.3			0.0	
Approach LOS		D			F			F			A	

Intersection Summary			
HCM 2000 Control Delay	234.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.69		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	148.9%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	224	97	32	152	123	123
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	243	105	35	165	134	134
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			349		531	296
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			349		531	296
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		73	82
cM capacity (veh/h)			1210		494	743

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	349	200	267
Volume Left	0	35	134
Volume Right	105	0	134
cSH	1700	1210	594
Volume to Capacity	0.21	0.03	0.45
Queue Length 95th (ft)	0	2	58
Control Delay (s)	0.0	1.6	15.9
Lane LOS		A	C
Approach Delay (s)	0.0	1.6	15.9
Approach LOS			C

Intersection Summary			
Average Delay	5.6		
Intersection Capacity Utilization	51.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	13	225	13	39	179	32	25	0	74	62	0	25
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	14	245	14	42	195	35	27	0	80	67	0	27
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	229			259			604	594	252	657	584	212
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	229			259			604	594	252	657	584	212
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			97			93	100	90	79	100	97
cM capacity (veh/h)	1339			1306			384	400	787	328	406	828

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	273	272	108	95
Volume Left	14	42	27	67
Volume Right	14	35	80	27
cSH	1339	1306	622	397
Volume to Capacity	0.01	0.03	0.17	0.24
Queue Length 95th (ft)	1	3	16	23
Control Delay (s)	0.5	1.5	12.0	16.9
Lane LOS	A	A	B	C
Approach Delay (s)	0.5	1.5	12.0	16.9
Approach LOS			B	C

Intersection Summary			
Average Delay	4.6		
Intersection Capacity Utilization	44.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	226	6	13	216	13	25
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	246	7	14	235	14	27
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			252		512	249
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			252		512	249
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		97	97
cM capacity (veh/h)			1313		516	790

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	252	249	41
Volume Left	0	14	14
Volume Right	7	0	27
cSH	1700	1313	669
Volume to Capacity	0.15	0.01	0.06
Queue Length 95th (ft)	0	1	5
Control Delay (s)	0.0	0.5	10.7
Lane LOS		A	B
Approach Delay (s)	0.0	0.5	10.7
Approach LOS			B

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	32.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	115	13	13	195	25	25
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	125	14	14	212	27	27
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			139		372	132
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			139		372	132
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		96	97
cM capacity (veh/h)			1444		622	917

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	139	226	54
Volume Left	0	14	27
Volume Right	14	0	27
cSH	1700	1444	742
Volume to Capacity	0.08	0.01	0.07
Queue Length 95th (ft)	0	1	6
Control Delay (s)	0.0	0.5	10.2
Lane LOS		A	B
Approach Delay (s)	0.0	0.5	10.2
Approach LOS			B

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	30.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	19	121	171	58	111	37
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	21	132	186	63	121	40
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	249				390	217
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	249				390	217
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				80	95
cM capacity (veh/h)	1317				604	822

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	152	249	161
Volume Left	21	0	121
Volume Right	0	63	40
cSH	1317	1700	647
Volume to Capacity	0.02	0.15	0.25
Queue Length 95th (ft)	1	0	24
Control Delay (s)	1.2	0.0	12.4
Lane LOS	A		B
Approach Delay (s)	1.2	0.0	12.4
Approach LOS			B

Intersection Summary			
Average Delay	3.9		
Intersection Capacity Utilization	37.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	13	348	225	32	62	25
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	14	378	245	35	67	27
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	279				668	262
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	279				668	262
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				84	97
cM capacity (veh/h)	1283				418	777

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	392	279	95
Volume Left	14	0	67
Volume Right	0	35	27
cSH	1283	1700	482
Volume to Capacity	0.01	0.16	0.20
Queue Length 95th (ft)	1	0	18
Control Delay (s)	0.4	0.0	14.3
Lane LOS	A		B
Approach Delay (s)	0.4	0.0	14.3
Approach LOS			B

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	40.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	410	257	13	25	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	446	279	14	27	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	293				732	286
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	293				732	286
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				93	100
cM capacity (veh/h)	1268				388	753

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	446	293	27
Volume Left	0	0	27
Volume Right	0	14	0
cSH	1268	1700	388
Volume to Capacity	0.00	0.17	0.07
Queue Length 95th (ft)	0	0	6
Control Delay (s)	0.0	0.0	15.0
Lane LOS			B
Approach Delay (s)	0.0	0.0	15.0
Approach LOS			B

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	31.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	13	13	6	669	259	6
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	14	14	7	727	282	7
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					212	
pX, platoon unblocked	0.94	0.94	0.94			
vC, conflicting volume	661	285	288			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	611	212	215			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	96	98	99			
cM capacity (veh/h)	399	748	1275			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	28	249	485	288
Volume Left	14	7	0	0
Volume Right	14	0	0	7
cSH	521	1275	1700	1700
Volume to Capacity	0.05	0.01	0.29	0.17
Queue Length 95th (ft)	4	0	0	0
Control Delay (s)	12.3	0.3	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	12.3	0.1		0.0
Approach LOS	B			

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	32.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	98	25	650	52	13	259
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	107	27	707	57	14	282
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						372
pX, platoon unblocked	0.95					
vC, conflicting volume	1045	382			763	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1020	382			763	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	51	96			98	
cM capacity (veh/h)	217	616			845	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1
Volume Total	134	471	292	296
Volume Left	107	0	0	14
Volume Right	27	0	57	0
cSH	250	1700	1700	845
Volume to Capacity	0.53	0.28	0.17	0.02
Queue Length 95th (ft)	72	0	0	1
Control Delay (s)	34.8	0.0	0.0	0.6
Lane LOS	D			A
Approach Delay (s)	34.8	0.0		0.6
Approach LOS	D			

Intersection Summary			
Average Delay	4.1		
Intersection Capacity Utilization	37.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	84	259	262	13	62	123
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	91	282	285	14	67	134
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	299				756	292
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	299				756	292
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	93				81	82
cM capacity (veh/h)	1262				349	747

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	373	299	201
Volume Left	91	0	67
Volume Right	0	14	134
cSH	1262	1700	540
Volume to Capacity	0.07	0.18	0.37
Queue Length 95th (ft)	6	0	43
Control Delay (s)	2.5	0.0	15.6
Lane LOS	A		C
Approach Delay (s)	2.5	0.0	15.6
Approach LOS			C

Intersection Summary			
Average Delay	4.7		
Intersection Capacity Utilization	53.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	32	315	122	32	62	62
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	35	342	133	35	67	67
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	167				562	150
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	167				562	150
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				86	92
cM capacity (veh/h)	1410				476	896

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	377	167	135
Volume Left	35	0	67
Volume Right	0	35	67
cSH	1410	1700	622
Volume to Capacity	0.02	0.10	0.22
Queue Length 95th (ft)	2	0	20
Control Delay (s)	0.9	0.0	12.4
Lane LOS	A		B
Approach Delay (s)	0.9	0.0	12.4
Approach LOS			B

Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	44.0%	ICU Level of Service	A
Analysis Period (min)	15		

1: Hart Ln & Spicewood Springs Rd

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1341	335	228	1006	152	192
Lane Group Flow (vph)	1382	345	235	1037	157	198
Turn Type	NA	Perm	Prot	NA	Prot	Free
Protected Phases	2		1	6	4	
Permitted Phases		2				Free
Detector Phase	2	2	1	6	4	
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	
Total Split (s)	73.0	73.0	33.0	106.0	24.0	
Total Split (%)	56.2%	56.2%	25.4%	81.5%	18.5%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Max	C-Max	Max	C-Max	None	
v/c Ratio	0.75	0.38	0.49	0.35	0.52	0.13
Control Delay	27.4	11.3	41.9	4.3	62.1	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.4	11.3	41.9	4.3	62.1	0.2
Queue Length 50th (ft)	464	90	183	59	67	0
Queue Length 95th (ft)	554	159	295	243	96	0
Internal Link Dist (ft)	211			988	285	
Turn Bay Length (ft)		110	220		160	
Base Capacity (vph)	1851	899	484	2956	501	1583
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.75	0.38	0.49	0.35	0.31	0.13

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of 1st Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 1: Hart Ln & Spicewood Springs Rd

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1341	335	228	1006	152	192
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	4.0
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	3433	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	3433	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	1382	345	235	1037	157	198
RTOR Reduction (vph)	0	71	0	0	0	0
Lane Group Flow (vph)	1382	274	235	1037	157	198
Turn Type	NA	Perm	Prot	NA	Prot	Free
Protected Phases	2		1	6	4	
Permitted Phases		2				Free
Actuated Green, G (s)	68.0	68.0	35.6	108.6	11.4	130.0
Effective Green, g (s)	68.0	68.0	35.6	108.6	11.4	130.0
Actuated g/C Ratio	0.52	0.52	0.27	0.84	0.09	1.00
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	1851	828	484	2956	301	1583
v/s Ratio Prot	c0.39		c0.13	0.29	c0.05	
v/s Ratio Perm		0.17				0.13
v/c Ratio	0.75	0.33	0.49	0.35	0.52	0.13
Uniform Delay, d1	24.3	17.9	39.5	2.5	56.7	0.0
Progression Factor	1.00	1.00	0.94	1.44	1.00	1.00
Incremental Delay, d2	2.8	1.1	3.1	0.3	0.8	0.2
Delay (s)	27.1	18.9	40.2	3.9	57.4	0.2
Level of Service	C	B	D	A	E	A
Approach Delay (s)	25.4			10.6	25.5	
Approach LOS	C			B	C	

Intersection Summary			
HCM 2000 Control Delay	19.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	66.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

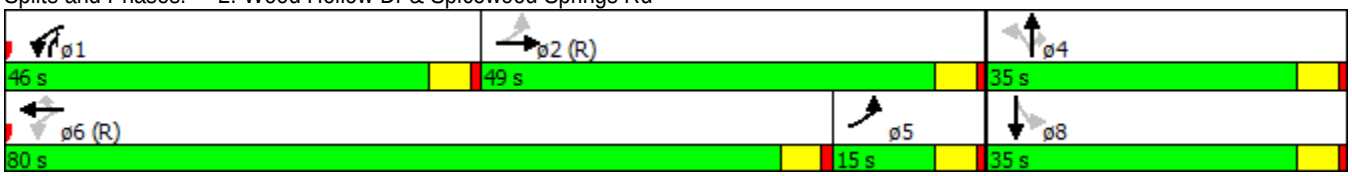
2: Wood Hollow Dr & Spicewood Springs Rd

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	8	1333	514	1135	12	97	5	225	7	0
Lane Group Flow (vph)	8	1588	535	1182	12	0	106	234	0	9
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Perm	NA	pm+ov	Perm	NA
Protected Phases	5	2	1	6			4	1		8
Permitted Phases	2		6		6	4		4	8	
Detector Phase	5	2	1	6	6	4	4	1	8	8
Switch Phase										
Minimum Initial (s)	6.0	25.0	6.0	5.0	5.0	5.0	5.0	6.0	5.0	5.0
Minimum Split (s)	15.0	30.0	15.0	11.0	11.0	35.0	35.0	15.0	35.0	35.0
Total Split (s)	15.0	49.0	46.0	80.0	80.0	35.0	35.0	46.0	35.0	35.0
Total Split (%)	11.5%	37.7%	35.4%	61.5%	61.5%	26.9%	26.9%	35.4%	26.9%	26.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead			Lead		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes			Yes		
Recall Mode	None	C-Max	None	C-Max	C-Max	Max	Max	None	None	None
v/c Ratio	0.03	0.83	0.99	0.50	0.01		0.34	0.27		0.02
Control Delay	23.0	38.3	63.5	13.4	0.0		45.4	11.7		0.1
Queue Delay	0.0	0.0	0.5	0.8	0.0		0.0	0.0		0.0
Total Delay	23.0	38.3	64.0	14.3	0.0		45.4	11.7		0.1
Queue Length 50th (ft)	5	513	392	162	0		75	71		0
Queue Length 95th (ft)	m8	#580	#604	471	m0		132	111		0
Internal Link Dist (ft)		988		494			132			203
Turn Bay Length (ft)	300		250		100					
Base Capacity (vph)	271	1919	613	2368	1079		313	949		436
Starvation Cap Reductn	0	0	7	801	0		0	0		0
Spillback Cap Reductn	0	0	0	0	0		0	0		0
Storage Cap Reductn	0	0	0	0	0		0	0		0
Reduced v/c Ratio	0.03	0.83	0.88	0.75	0.01		0.34	0.25		0.02

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 55 (42%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Wood Hollow Dr & Spicewood Springs Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	1333	191	514	1135	12	97	5	225	7	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0		5.0	5.0		5.0	
Lane Util. Factor	1.00	0.91		1.00	0.95	1.00		1.00	1.00		1.00	
Frt	1.00	0.98		1.00	1.00	0.85		1.00	0.85		0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.95	1.00		0.96	
Satd. Flow (prot)	1770	4990		1770	3539	1583		1778	1583		1739	
Flt Permitted	0.24	1.00		0.08	1.00	1.00		0.73	1.00		0.86	
Satd. Flow (perm)	445	4990		156	3539	1583		1360	1583		1556	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	8	1389	199	535	1182	12	101	5	234	7	0	2
RTOR Reduction (vph)	0	14	0	0	0	4	0	0	29	0	7	0
Lane Group Flow (vph)	8	1574	0	535	1182	8	0	106	205	0	2	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	pm+ov	Perm	NA	
Protected Phases	5	2		1	6			4	1		8	
Permitted Phases	2			6		6	4		4	8		
Actuated Green, G (s)	49.7	49.7		83.0	83.0	83.0		30.0	65.3		30.0	
Effective Green, g (s)	49.7	49.7		83.0	83.0	83.0		30.0	65.3		30.0	
Actuated g/C Ratio	0.38	0.38		0.64	0.64	0.64		0.23	0.50		0.23	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0		5.0	5.0		5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0		2.0	2.0		2.0	
Lane Grp Cap (vph)	190	1907		537	2259	1010		313	856		359	
v/s Ratio Prot	0.00	c0.32		c0.27	0.33				0.06			
v/s Ratio Perm	0.02			c0.36		0.00		c0.08	0.06		0.00	
v/c Ratio	0.04	0.83		1.00	0.52	0.01		0.34	0.24		0.01	
Uniform Delay, d1	25.3	36.2		39.8	12.8	8.5		41.7	18.3		38.5	
Progression Factor	0.78	0.95		0.84	1.11	1.00		1.00	1.00		1.00	
Incremental Delay, d2	0.0	3.2		35.0	0.8	0.0		2.9	0.1		0.0	
Delay (s)	19.6	37.5		68.3	14.9	8.5		44.6	18.4		38.5	
Level of Service	B	D		E	B	A		D	B		D	
Approach Delay (s)		37.4			31.4			26.5			38.5	
Approach LOS		D			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	33.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	77.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

3: Mopac SBFR & Spicewood Springs Rd

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR	ø1	ø2	ø4	ø5	ø6
Lane Configurations												
Volume (vph)	858	707	788	915	390	1307	745					
Lane Group Flow (vph)	885	729	812	943	362	1387	768					
Turn Type	NA	Free	Prot	NA	Split	NA	Free					
Protected Phases	2 1		19 6 7 2 1 19 6		4 5	4 5		1	2	4	5	6
Permitted Phases		Free					Free					
Detector Phase	2 1		19 6 7 2 1 19 6		4 5	4 5						
Switch Phase												
Minimum Initial (s)								3.0	1.0	1.0	3.0	4.0
Minimum Split (s)								8.0	11.0	11.0	8.0	24.0
Total Split (s)								8.0	24.0	34.0	8.0	30.0
Total Split (%)								6%	18%	26%	6%	23%
Yellow Time (s)								4.0	4.0	4.0	4.0	4.0
All-Red Time (s)								1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag								Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?								Yes	Yes	Yes	Yes	Yes
Recall Mode								None	Max	None	None	C-Max
v/c Ratio	1.20	0.46	1.17	0.55	0.79	1.44	0.49					
Control Delay	153.7	6.0	105.5	4.3	22.4	222.4	0.5					
Queue Delay	0.1	0.0	1.0	0.1	0.0	0.0	0.0					
Total Delay	153.8	6.0	106.5	4.4	22.4	222.4	0.5					
Queue Length 50th (ft)	~490	356	~818	144	248	~861	0					
Queue Length 95th (ft)	#626	544	m#618	m106	m153	m#407	m0					
Internal Link Dist (ft)	494			333		2669						
Turn Bay Length (ft)			50		145							
Base Capacity (vph)	735	1583	694	1715	458	963	1583					
Starvation Cap Reductn	0	0	93	135	0	0	0					
Spillback Cap Reductn	17	0	0	67	0	0	34					
Storage Cap Reductn	0	0	0	0	0	0	0					
Reduced v/c Ratio	1.23	0.46	1.35	0.60	0.79	1.44	0.50					

Intersection Summary

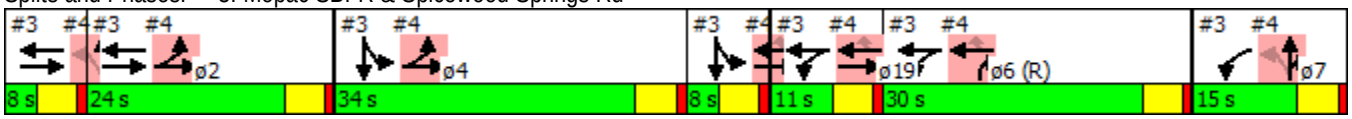
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 8 (6%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Mopac SBFR & Spicewood Springs Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	858	707	788	915	0	0	0	0	390	1307	745
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	4.0	5.0	5.0					5.0	5.0	4.0
Lane Util. Factor		0.95	1.00	1.00	0.95					0.91	0.91	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		3539	1583	1770	3539					1610	3385	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (perm)		3539	1583	1770	3539					1610	3385	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	885	729	812	943	0	0	0	0	402	1347	768
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	885	729	812	943	0	0	0	0	362	1387	768
Turn Type		NA	Free	Prot	NA					Split	NA	Free
Protected Phases		2 1		19 6 7	2 1 19 6					4 5	4 5	
Permitted Phases			Free									Free
Actuated Green, G (s)		27.0	130.0	51.0	63.0					37.0	37.0	130.0
Effective Green, g (s)		27.0	130.0	51.0	63.0					37.0	37.0	130.0
Actuated g/C Ratio		0.21	1.00	0.39	0.48					0.28	0.28	1.00
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		735	1583	694	1715					458	963	1583
v/s Ratio Prot		c0.25		c0.46	0.27					0.22	c0.41	
v/s Ratio Perm			0.46									0.49
v/c Ratio		1.20	0.46	1.17	0.55					0.79	1.44	0.49
Uniform Delay, d1		51.5	0.0	39.5	23.5					42.9	46.5	0.0
Progression Factor		1.27	1.00	0.68	0.30					0.47	0.49	1.00
Incremental Delay, d2		100.5	0.6	78.1	0.0					0.8	198.7	0.1
Delay (s)		165.7	0.6	105.0	7.2					20.9	221.5	0.1
Level of Service		F	A	F	A					C	F	A
Approach Delay (s)		91.2			52.4			0.0			125.1	
Approach LOS		F			D			A			F	

Intersection Summary			
HCM 2000 Control Delay	94.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.53		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	35.0
Intersection Capacity Utilization	111.5%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

4: Mopac NBFR & Anderson Ln

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	ø1	ø2	ø4	ø5	ø6
Lane Configurations												
Volume (vph)	367	881	1197	269	506	14	603					
Lane Group Flow (vph)	378	908	1234	277	402	383	373					
Turn Type	Prot	NA	NA	Perm	Perm	NA	custom					
Protected Phases	2 4	2 4 5 19	6 5 19			7 1	7 1 6	1	2	4	5	6
Permitted Phases				6 5 19	7 1							
Detector Phase	2 4	2 4 5 19	6 5 19	6 5 19	7 1	7 1	7 1 6					
Switch Phase												
Minimum Initial (s)								3.0	1.0	1.0	3.0	4.0
Minimum Split (s)								8.0	11.0	11.0	8.0	24.0
Total Split (s)								8.0	24.0	34.0	8.0	30.0
Total Split (%)								6%	18%	26%	6%	23%
Yellow Time (s)								4.0	4.0	4.0	4.0	4.0
All-Red Time (s)								1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag								Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?								Yes	Yes	Yes	Yes	Yes
Recall Mode								None	Max	None	None	C-Max
v/c Ratio	0.52	0.46	1.03	0.39	1.73	1.47	0.58					
Control Delay	8.8	0.2	76.4	5.2	370.6	253.1	6.1					
Queue Delay	5.4	2.6	27.5	0.0	0.0	0.2	0.0					
Total Delay	14.3	2.8	103.9	5.2	370.6	253.3	6.1					
Queue Length 50th (ft)	32	0	~585	1	~535	~442	23					
Queue Length 95th (ft)	m44	m0	#723	62	#752	#665	46					
Internal Link Dist (ft)		333	702			1795						
Turn Bay Length (ft)	50			360	280							
Base Capacity (vph)	721	1960	1197	717	232	260	645					
Starvation Cap Reductn	276	897	0	0	0	0	0					
Spillback Cap Reductn	0	0	228	0	0	3	0					
Storage Cap Reductn	0	0	0	0	0	0	0					
Reduced v/c Ratio	0.85	0.85	1.27	0.39	1.73	1.49	0.58					

Intersection Summary

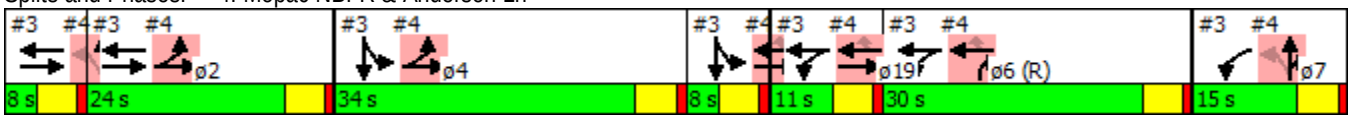
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 8 (6%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Mopac NBFR & Anderson Ln



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	367	881	0	0	1197	269	506	14	603	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0	5.0			
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.91	0.95			
Frt	1.00	1.00			1.00	0.85	1.00	0.90	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.98	1.00			
Satd. Flow (prot)	1770	3539			3539	1583	1681	1506	1504			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.98	1.00			
Satd. Flow (perm)	1770	3539			3539	1583	1681	1506	1504			
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	378	908	0	0	1234	277	522	14	622	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	182	0	52	90	0	0	0
Lane Group Flow (vph)	378	908	0	0	1234	95	402	331	283	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	custom			
Protected Phases	2 4	2 4 5 19			6 5 19			7 1	7 1 6			
Permitted Phases						6 5 19	7 1					
Actuated Green, G (s)	53.0	72.0			44.0	44.0	18.0	18.0	48.0			
Effective Green, g (s)	53.0	72.0			44.0	44.0	18.0	18.0	48.0			
Actuated g/C Ratio	0.41	0.55			0.34	0.34	0.14	0.14	0.37			
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	721	1960			1197	535	232	208	555			
v/s Ratio Prot	c0.21	0.26			c0.35				0.19			
v/s Ratio Perm						0.06	c0.24	0.22				
v/c Ratio	0.52	0.46			1.03	0.18	1.73	1.59	0.51			
Uniform Delay, d1	29.0	17.4			43.0	30.3	56.0	56.0	31.9			
Progression Factor	0.29	0.01			1.00	1.00	0.59	0.49	0.14			
Incremental Delay, d2	0.0	0.0			34.3	0.1	344.9	285.6	0.2			
Delay (s)	8.4	0.1			77.3	30.3	378.1	313.2	4.8			
Level of Service	A	A			E	C	F	F	A			
Approach Delay (s)		2.5			68.7			236.4			0.0	
Approach LOS		A			E			F			A	

Intersection Summary			
HCM 2000 Control Delay	96.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	35.0
Intersection Capacity Utilization	111.5%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	20	90	241	44	222	315
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	24	107	287	52	264	375
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		4				
Median type			None			None
Median storage veh)						
Upstream signal (ft)						365
pX, platoon unblocked						
vC, conflicting volume	1217	313			339	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1217	313			339	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	85	85			78	
cM capacity (veh/h)	157	727			1220	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	131	339	264	375
Volume Left	24	0	264	0
Volume Right	107	52	0	0
cSH	861	1700	1220	1700
Volume to Capacity	0.15	0.20	0.22	0.22
Queue Length 95th (ft)	13	0	21	0
Control Delay (s)	14.7	0.0	8.8	0.0
Lane LOS	B		A	
Approach Delay (s)	14.7	0.0	3.6	
Approach LOS	B			

Intersection Summary			
Average Delay	3.8		
Intersection Capacity Utilization	41.0%	ICU Level of Service	A
Analysis Period (min)	15		

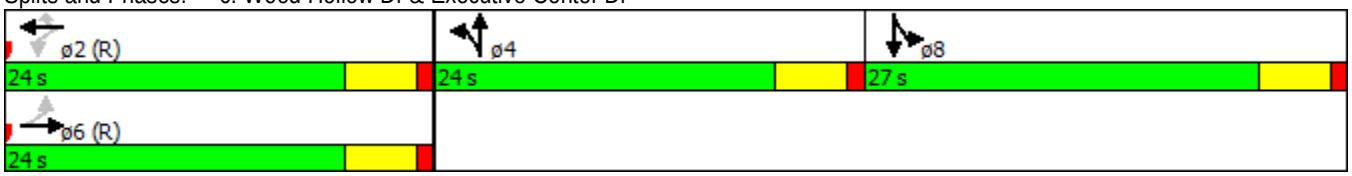
6: Wood Hollow Dr & Executive Center Dr

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	48	98	23	65	119	236	208	218
Lane Group Flow (vph)	0	261	0	100	135	627	236	534
Turn Type	Perm	NA	Perm	NA	Perm	NA	Split	NA
Protected Phases		6		2		4	8	8
Permitted Phases	6		2		2			
Detector Phase	6	6	2	2	2	4	8	8
Switch Phase								
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	27.0	27.0
Total Split (%)	32.0%	32.0%	32.0%	32.0%	32.0%	32.0%	36.0%	36.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0		5.0	5.0	5.0	5.0	5.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	None	None	None
v/c Ratio		0.30		0.22	0.25	0.79	0.44	0.92
Control Delay		15.2		23.8	5.9	31.2	24.1	47.0
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0
Total Delay		15.2		23.8	5.9	31.2	24.1	47.0
Queue Length 50th (ft)		32		37	0	122	86	205
Queue Length 95th (ft)		60		74	37	170	149	#392
Internal Link Dist (ft)		152		189		1068		93
Turn Bay Length (ft)					15			
Base Capacity (vph)		873		451	534	910	546	582
Starvation Cap Reductn		0		0	0	0	0	0
Spillback Cap Reductn		0		0	0	0	0	0
Storage Cap Reductn		0		0	0	0	0	0
Reduced v/c Ratio		0.30		0.22	0.25	0.69	0.43	0.92

Intersection Summary

Cycle Length: 75
Actuated Cycle Length: 75
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of 1st Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: Wood Hollow Dr & Executive Center Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	48	98	84	23	65	119	149	236	167	208	218	252
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0	5.0		5.0		5.0	5.0	
Lane Util. Factor		0.95			1.00	1.00		0.95		1.00	1.00	
Frt		0.95			1.00	0.85		0.95		1.00	0.92	
Flt Protected		0.99			0.99	1.00		0.99		0.95	1.00	
Satd. Flow (prot)		3311			1839	1583		3333		1770	1713	
Flt Permitted		0.87			0.88	1.00		0.99		0.95	1.00	
Satd. Flow (perm)		2921			1636	1583		3333		1770	1713	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	55	111	95	26	74	135	169	268	190	236	248	286
RTOR Reduction (vph)	0	69	0	0	0	98	0	68	0	0	54	0
Lane Group Flow (vph)	0	192	0	0	100	37	0	559	0	236	480	0
Turn Type	Perm	NA		Perm	NA	Perm	Split	NA		Split	NA	
Protected Phases		6			2		4	4		8	8	
Permitted Phases	6			2		2						
Actuated Green, G (s)		20.7			20.7	20.7		16.4		22.9	22.9	
Effective Green, g (s)		20.7			20.7	20.7		16.4		22.9	22.9	
Actuated g/C Ratio		0.28			0.28	0.28		0.22		0.31	0.31	
Clearance Time (s)		5.0			5.0	5.0		5.0		5.0	5.0	
Vehicle Extension (s)		2.0			2.0	2.0		2.0		2.0	2.0	
Lane Grp Cap (vph)		806			451	436		728		540	523	
v/s Ratio Prot								c0.17		0.13	c0.28	
v/s Ratio Perm		c0.07			0.06	0.02						
v/c Ratio		0.24			0.22	0.09		0.77		0.44	0.92	
Uniform Delay, d1		21.0			20.9	20.1		27.5		20.9	25.1	
Progression Factor		1.00			1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2		0.7			1.1	0.4		4.4		0.2	20.6	
Delay (s)		21.7			22.1	20.5		31.9		21.1	45.7	
Level of Service		C			C	C		C		C	D	
Approach Delay (s)		21.7			21.2			31.9			38.2	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	31.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	71.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Intersection Delay, s/veh	20.5
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	42	175	149	0	97	68	8	0	55	162	53
Peak Hour Factor	0.92	0.81	0.81	0.81	0.92	0.81	0.81	0.81	0.92	0.81	0.81	0.81
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	52	216	184	0	120	84	10	0	68	200	65
Number of Lanes	0	0	1	1	0	0	1	1	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	2	2
HCM Control Delay	18.5	18.9	28.6
HCM LOS	C	C	D

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	20%	19%	0%	59%	0%	10%	0%
Vol Thru, %	60%	81%	0%	41%	0%	90%	84%
Vol Right, %	20%	0%	100%	0%	100%	0%	16%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	270	217	149	165	8	172	184
LT Vol	55	42	0	97	0	18	0
Through Vol	162	175	0	68	0	154	154
RT Vol	53	0	149	0	8	0	30
Lane Flow Rate	333	268	184	204	10	212	227
Geometry Grp	6	7	7	7	7	7	7
Degree of Util (X)	0.72	0.59	0.363	0.485	0.021	0.46	0.481
Departure Headway (Hd)	7.778	7.923	7.1	8.576	7.544	7.801	7.629
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	463	453	504	418	471	459	470
Service Time	5.866	5.709	4.885	6.372	5.339	5.591	5.419
HCM Lane V/C Ratio	0.719	0.592	0.365	0.488	0.021	0.462	0.483
HCM Control Delay	28.6	21.6	13.9	19.3	10.5	17.1	17.4
HCM Lane LOS	D	C	B	C	B	C	C
HCM 95th-tile Q	5.7	3.7	1.6	2.6	0.1	2.4	2.6

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	18	308	30
Peak Hour Factor	0.92	0.81	0.81	0.81
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	22	380	37
Number of Lanes	0	0	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	17.3
HCM LOS	C

Lane

Intersection	
Intersection Delay, s/veh	18.7
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	51	144	186	0	62	137	155	0	26	282	50
Peak Hour Factor	0.92	0.90	0.90	0.90	0.92	0.90	0.90	0.90	0.92	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	57	160	207	0	69	152	172	0	29	313	56
Number of Lanes	0	0	1	1	0	0	1	1	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	2
HCM Control Delay	17.6	17.6	17.6
HCM LOS	C	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	16%	0%	26%	0%	31%	0%	100%	0%
Vol Thru, %	84%	74%	74%	0%	69%	0%	0%	79%
Vol Right, %	0%	26%	0%	100%	0%	100%	0%	21%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	167	191	195	186	199	155	89	262
LT Vol	26	0	51	0	62	0	89	0
Through Vol	141	141	144	0	137	0	0	206
RT Vol	0	50	0	186	0	155	0	56
Lane Flow Rate	186	212	217	207	221	172	99	291
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.428	0.473	0.502	0.429	0.517	0.36	0.239	0.65
Departure Headway (Hd)	8.299	8.029	8.334	7.475	8.41	7.525	8.705	8.033
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	432	446	431	479	427	475	410	448
Service Time	6.095	5.824	6.13	5.269	6.206	5.319	6.498	5.826
HCM Lane V/C Ratio	0.431	0.475	0.503	0.432	0.518	0.362	0.241	0.65
HCM Control Delay	17.2	17.9	19.3	15.8	20	14.5	14.2	24.7
HCM Lane LOS	C	C	C	C	C	B	B	C
HCM 95th-tile Q	2.1	2.5	2.7	2.1	2.9	1.6	0.9	4.5

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	89	206	56
Peak Hour Factor	0.92	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	99	229	62
Number of Lanes	0	1	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	22
HCM LOS	C

Lane

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	294	0	0	3088	304
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	0	306	0	0	3217	317
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	3217	1072	3533			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	3217	1072	3533			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	0	100			
cM capacity (veh/h)	7	216	68			

Direction, Lane #	EB 1	SB 1	SB 2	SB 3	SB 4
Volume Total	306	1072	1072	1072	317
Volume Left	0	0	0	0	0
Volume Right	306	0	0	0	317
cSH	216	1700	1700	1700	1700
Volume to Capacity	1.42	0.63	0.63	0.63	0.19
Queue Length 95th (ft)	444	0	0	0	0
Control Delay (s)	254.9	0.0	0.0	0.0	0.0
Lane LOS	F				
Approach Delay (s)	254.9	0.0			
Approach LOS	F				

Intersection Summary			
Average Delay	20.3		
Intersection Capacity Utilization	84.5%	ICU Level of Service	E
Analysis Period (min)	15		

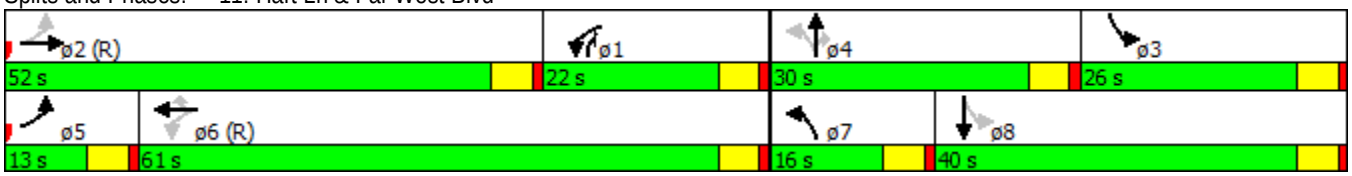
11: Hart Ln & Far West Blvd

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	77	770	232	312	80	55	145	192	232	291
Lane Group Flow (vph)	93	1045	280	376	96	66	175	231	280	403
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA
Protected Phases	5	2	1	6		7	4	1	3	8
Permitted Phases	2		6		6	4		4	8	
Detector Phase	5	2	1	6	6	7	4	1	3	8
Switch Phase										
Minimum Initial (s)	4.0	2.0	4.0	2.0	2.0	4.0	2.0	4.0	2.0	2.0
Minimum Split (s)	9.0	24.0	9.0	24.0	24.0	9.0	33.0	9.0	33.0	33.0
Total Split (s)	13.0	52.0	22.0	61.0	61.0	16.0	30.0	22.0	26.0	40.0
Total Split (%)	10.0%	40.0%	16.9%	46.9%	46.9%	12.3%	23.1%	16.9%	20.0%	30.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lead	Lag	Lag	Lag	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	C-Max	None	None	None	None	None
v/c Ratio	0.21	0.66	0.74	0.20	0.11	0.40	0.74	0.49	0.86	0.56
Control Delay	24.9	32.0	53.9	27.2	30.1	56.8	72.5	40.8	75.3	48.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.9	32.0	53.9	27.2	30.1	56.8	72.5	40.8	75.3	48.5
Queue Length 50th (ft)	45	363	112	78	38	51	144	161	225	162
Queue Length 95th (ft)	85	452	#262	164	103	85	195	205	273	181
Internal Link Dist (ft)		1703		1174			695			1243
Turn Bay Length (ft)	130		100		490			100	100	
Base Capacity (vph)	443	1590	379	1869	836	185	358	469	386	934
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.66	0.74	0.20	0.11	0.36	0.49	0.49	0.73	0.43

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 100 (77%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green
Natural Cycle: 130
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 11: Hart Ln & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	77	770	97	232	312	80	55	145	192	232	291	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95	
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3480		1770	3539	1583	1770	1863	1583	1770	3471	
Flt Permitted	0.45	1.00		0.20	1.00	1.00	0.44	1.00	1.00	0.65	1.00	
Satd. Flow (perm)	835	3480		373	3539	1583	819	1863	1583	1205	3471	
Peak-hour factor, PHF	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Adj. Flow (vph)	93	928	117	280	376	96	66	175	231	280	351	52
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	93	1045	0	280	376	96	66	175	231	280	403	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases	5	2		1	6		7	4	1	3	8	
Permitted Phases	2			6		6	4		4	8		
Actuated Green, G (s)	58.5	58.5		67.7	67.7	67.7	16.6	16.6	33.6	27.0	27.0	
Effective Green, g (s)	58.5	58.5		67.7	67.7	67.7	16.6	16.6	33.6	27.0	27.0	
Actuated g/C Ratio	0.45	0.45		0.52	0.52	0.52	0.13	0.13	0.26	0.21	0.21	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	431	1566		376	1843	824	159	237	470	328	720	
v/s Ratio Prot	0.01	c0.30		c0.10	0.11		0.02	c0.09	0.06	c0.12	0.12	
v/s Ratio Perm	0.08			c0.29		0.06	0.03		0.08	c0.06		
v/c Ratio	0.22	0.67		0.74	0.20	0.12	0.42	0.74	0.49	0.85	0.56	
Uniform Delay, d1	21.0	28.1		34.7	16.7	15.9	51.5	54.6	40.9	48.3	46.2	
Progression Factor	1.00	1.00		1.11	1.47	1.58	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.1	2.3		6.5	0.2	0.3	0.6	9.9	0.3	18.3	0.5	
Delay (s)	21.1	30.4		45.0	24.7	25.4	52.1	64.5	41.2	66.6	46.7	
Level of Service	C	C		D	C	C	D	E	D	E	D	
Approach Delay (s)		29.6			32.4			51.4			54.9	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	39.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	74.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

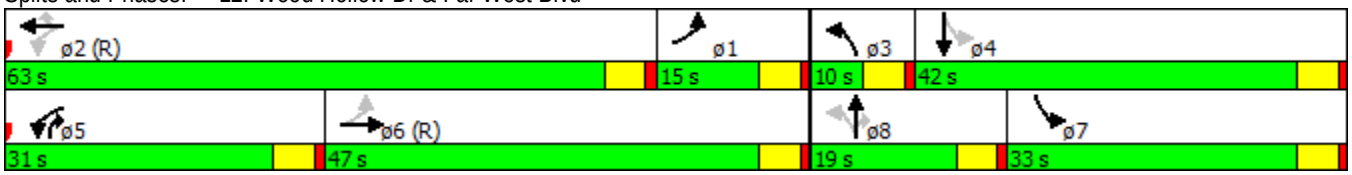
12: Wood Hollow Dr & Far West Blvd

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	123	1144	127	620	206	27	91	318	302	130
Lane Group Flow (vph)	131	1272	135	660	219	29	97	338	321	225
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA
Protected Phases	1	6	5	2		3	8	5	7	4
Permitted Phases	6		2		2	8		8	4	
Detector Phase	1	6	5	2	2	3	8	5	7	4
Switch Phase										
Minimum Initial (s)	4.0	2.0	4.0	2.0	2.0	4.0	2.0	4.0	4.0	2.0
Minimum Split (s)	9.0	11.0	9.0	11.0	11.0	9.0	11.0	9.0	9.0	11.0
Total Split (s)	15.0	47.0	31.0	63.0	63.0	10.0	19.0	31.0	33.0	42.0
Total Split (%)	11.5%	36.2%	23.8%	48.5%	48.5%	7.7%	14.6%	23.8%	25.4%	32.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	C-Max	None	None	None	None	None
v/c Ratio	0.29	0.51	0.47	0.35	0.23	0.27	0.63	0.86	0.87	0.53
Control Delay	32.6	31.7	34.0	32.1	14.2	60.1	75.0	44.3	71.1	42.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.6	31.7	34.0	32.1	14.2	60.1	75.0	44.3	71.1	42.9
Queue Length 50th (ft)	89	351	85	224	65	23	80	130	257	150
Queue Length 95th (ft)	m151	454	144	290	126	54	137	162	341	218
Internal Link Dist (ft)		1174		673			686			1879
Turn Bay Length (ft)	245		125			75		75		
Base Capacity (vph)	448	2506	423	1879	943	110	200	520	478	516
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.51	0.32	0.35	0.23	0.26	0.48	0.65	0.67	0.44

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 10 (8%), Referenced to phase 2:WBTL and 6:EBTL, Start of 1st Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 12: Wood Hollow Dr & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	123	1144	52	127	620	206	27	91	318	302	130	82
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.91		1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	5052		1770	3539	1583	1770	1863	1583	1770	1755	
Flt Permitted	0.40	1.00		0.11	1.00	1.00	0.51	1.00	1.00	0.69	1.00	
Satd. Flow (perm)	747	5052		211	3539	1583	955	1863	1583	1293	1755	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	131	1217	55	135	660	219	29	97	338	321	138	87
RTOR Reduction (vph)	0	3	0	0	0	106	0	0	81	0	18	0
Lane Group Flow (vph)	131	1269	0	135	660	113	29	97	257	321	207	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases	1	6		5	2		3	8	5	7	4	
Permitted Phases	6			2		2	8		8	4		
Actuated Green, G (s)	62.4	62.4		67.1	67.1	67.1	10.8	10.8	25.5	29.9	29.9	
Effective Green, g (s)	62.4	62.4		67.1	67.1	67.1	10.8	10.8	25.5	29.9	29.9	
Actuated g/C Ratio	0.48	0.48		0.52	0.52	0.52	0.08	0.08	0.20	0.23	0.23	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	437	2424		285	1826	817	98	154	310	378	403	
v/s Ratio Prot	0.02	c0.25		0.05	0.19		0.01	0.05	c0.09	c0.14	0.12	
v/s Ratio Perm	0.12			0.19		0.07	0.02		0.07	c0.05		
v/c Ratio	0.30	0.52		0.47	0.36	0.14	0.30	0.63	0.83	0.85	0.51	
Uniform Delay, d1	21.3	23.5		19.8	18.7	16.4	55.6	57.7	50.2	46.6	43.7	
Progression Factor	1.20	1.25		1.63	1.64	5.15	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.1	0.6		0.4	0.4	0.3	0.6	5.7	15.7	15.5	0.5	
Delay (s)	25.7	30.0		32.6	31.1	84.7	56.2	63.4	65.9	62.1	44.1	
Level of Service	C	C		C	C	F	E	E	E	E	D	
Approach Delay (s)		29.6			42.9			64.8			54.7	
Approach LOS		C			D			E			D	

Intersection Summary			
HCM 2000 Control Delay	42.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	72.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

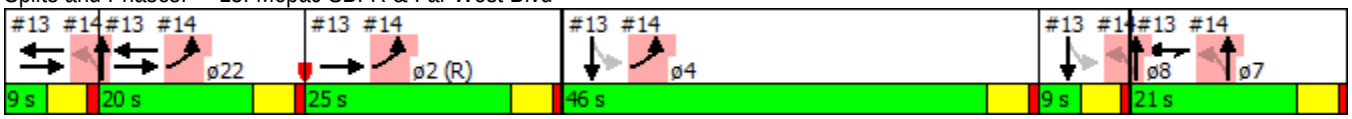
13: Mopac SBFR & Far West Blvd

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR	ø1	ø2	ø4	ø8	ø22
Lane Configurations											
Volume (vph)	884	493	20	675	572	965					
Lane Group Flow (vph)	911	508	21	696	830	995					
Turn Type	NA	Free	Prot	NA	NA	Free					
Protected Phases	1 22 2		7	1 22 7	4 8		1	2	4	8	22
Permitted Phases		Free				Free					
Detector Phase	1 22 2		7	1 22 7	4 8						
Switch Phase											
Minimum Initial (s)			4.0				4.0	4.0	4.0	4.0	4.0
Minimum Split (s)			20.0				9.0	24.0	24.0	9.0	20.0
Total Split (s)			21.0				9.0	25.0	46.0	9.0	20.0
Total Split (%)			16.2%				7%	19%	35%	7%	15%
Yellow Time (s)			4.0				4.0	4.0	4.0	4.0	4.0
All-Red Time (s)			1.0				1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)			0.0								
Total Lost Time (s)			5.0								
Lead/Lag							Lead		Lead	Lag	Lag
Lead-Lag Optimize?							Yes		Yes	Yes	Yes
Recall Mode			None				None	C-Max	None	None	None
v/c Ratio	0.68	0.32	0.10	0.57	0.62	0.63					
Control Delay	36.0	0.4	45.4	5.7	29.8	1.7					
Queue Delay	0.4	0.0	0.0	1.8	0.0	0.0					
Total Delay	36.4	0.4	45.4	7.5	29.8	1.7					
Queue Length 50th (ft)	387	0	4	0	225	13					
Queue Length 95th (ft)	462	0	m13	0	m222	m2					
Internal Link Dist (ft)	432			324	532						
Turn Bay Length (ft)		490									
Base Capacity (vph)	1333	1583	217	1225	1340	1583					
Starvation Cap Reductn	0	0	0	354	0	0					
Spillback Cap Reductn	113	0	0	0	0	0					
Storage Cap Reductn	0	0	0	0	0	0					
Reduced v/c Ratio	0.75	0.32	0.10	0.80	0.62	0.63					

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 106 (82%), Referenced to phase 2:EBT, Start of 1st Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Mopac SBFR & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	884	493	20	675	0	0	0	0	233	572	965
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	4.0	5.0	5.0						5.0	4.0
Lane Util. Factor		0.95	1.00	1.00	0.95						0.95	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (prot)		3539	1583	1770	3539						3489	1583
Flt Permitted		1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (perm)		3539	1583	1770	3539						3489	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	911	508	21	696	0	0	0	0	240	590	995
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	911	508	21	696	0	0	0	0	0	830	995
Turn Type		NA	Free	Prot	NA					Perm	NA	Free
Protected Phases		1 22 2		7	1 22 7						4 8	
Permitted Phases			Free							4 8		Free
Actuated Green, G (s)		49.0	130.0	16.0	45.0						50.0	130.0
Effective Green, g (s)		49.0	130.0	16.0	45.0						50.0	130.0
Actuated g/C Ratio		0.38	1.00	0.12	0.35						0.38	1.00
Clearance Time (s)				5.0								
Vehicle Extension (s)				2.0								
Lane Grp Cap (vph)		1333	1583	217	1225						1341	1583
v/s Ratio Prot		c0.26		0.01	0.20							
v/s Ratio Perm			0.32								0.24	c0.63
v/c Ratio		0.68	0.32	0.10	0.57						0.62	0.63
Uniform Delay, d1		34.0	0.0	50.6	34.6						32.3	0.0
Progression Factor		0.98	1.00	0.88	0.12						0.87	1.00
Incremental Delay, d2		1.0	0.4	0.0	0.3						0.4	1.2
Delay (s)		34.3	0.4	44.4	4.5						28.5	1.2
Level of Service		C	A	D	A						C	A
Approach Delay (s)		22.2			5.7			0.0			13.6	
Approach LOS		C			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	15.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	65.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

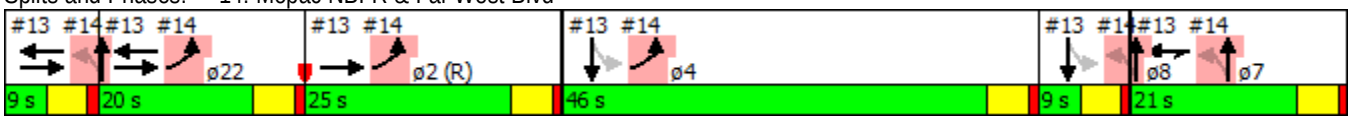
14: Mopac NBFR & Far West Blvd

Lane Group	EBL	NBL	NBT	ø1	ø2	ø4	ø7	ø8	ø22
Lane Configurations									
Volume (vph)	1134	695	2						
Lane Group Flow (vph)	1181	362	364						
Turn Type	Prot	Perm	NA						
Protected Phases	22 2 4		7 1 8	1	2	4	7	8	22
Permitted Phases		7 1 8							
Detector Phase	22 2 4	7 1 8	7 1 8						
Switch Phase									
Minimum Initial (s)				4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)				9.0	24.0	24.0	20.0	9.0	20.0
Total Split (s)				9.0	25.0	46.0	21.0	9.0	20.0
Total Split (%)				7%	19%	35%	16%	7%	15%
Yellow Time (s)				4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)				1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)									
Total Lost Time (s)									
Lead/Lag				Lead		Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes		Yes	Yes
Recall Mode				None	C-Max	None	None	None	None
v/c Ratio	0.56	0.71	0.71						
Control Delay	6.0	50.3	50.4						
Queue Delay	0.7	0.0	0.0						
Total Delay	6.8	50.3	50.4						
Queue Length 50th (ft)	31	288	289						
Queue Length 95th (ft)	25	#468	#470						
Internal Link Dist (ft)	324		322						
Turn Bay Length (ft)									
Base Capacity (vph)	2271	512	513						
Starvation Cap Reductn	686	0	0						
Spillback Cap Reductn	0	0	0						
Storage Cap Reductn	0	0	0						
Reduced v/c Ratio	0.75	0.71	0.71						

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 106 (82%), Referenced to phase 2:EBT, Start of 1st Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 14: Mopac NBFR & Far West Blvd



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	1134	0	695	2	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0		
Lane Util. Factor	0.97		0.95	0.95		
Frt	1.00		1.00	1.00		
Flt Protected	0.95		0.95	0.95		
Satd. Flow (prot)	3433		1681	1686		
Flt Permitted	0.95		0.95	0.95		
Satd. Flow (perm)	3433		1681	1686		
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	1181	0	724	2	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1181	0	362	364	0	0
Turn Type	Prot		Perm	NA		
Protected Phases	22 2 4			7 1 8		
Permitted Phases			7 1 8			
Actuated Green, G (s)	80.4		39.6	39.6		
Effective Green, g (s)	80.4		39.6	39.6		
Actuated g/C Ratio	0.62		0.30	0.30		
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)	2123		512	513		
v/s Ratio Prot	c0.34					
v/s Ratio Perm			0.22	0.22		
v/c Ratio	0.56		0.71	0.71		
Uniform Delay, d1	14.4		40.1	40.1		
Progression Factor	0.37		1.00	1.00		
Incremental Delay, d2	0.1		3.6	3.7		
Delay (s)	5.5		43.7	43.8		
Level of Service	A		D	D		
Approach Delay (s)	5.5			43.7	0.0	
Approach LOS	A			D	A	

Intersection Summary			
HCM 2000 Control Delay	20.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	78.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

20: Loop 1 SBFR & Steck Avenue

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	ø1	ø2	ø4	ø5	ø6	ø7
Lane Configurations												
Volume (vph)	579	148	162	378	1030	2078						
Lane Group Flow (vph)	616	157	172	402	986	2660						
Turn Type	NA	Perm	Prot	NA	Split	NA						
Protected Phases	2 1		6 7	2 1 6 7	4 5	4 5	1	2	4	5	6	7
Permitted Phases		2 1										
Detector Phase	2 1	2 1	6 7	2 1 6 7	4 5	4 5						
Switch Phase												
Minimum Initial (s)							2.0	1.0	1.0	3.0	4.0	4.0
Minimum Split (s)							7.0	11.0	11.0	8.0	15.0	9.0
Total Split (s)							7.0	20.0	63.0	8.0	15.0	17.0
Total Split (%)							5%	15%	48%	6%	12%	13%
Yellow Time (s)							4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)							1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag							Lead	Lag	Lead	Lag		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode							None	Max	None	None	C-Max	None
v/c Ratio	1.03	0.41	0.47	0.27	1.21	1.57						
Control Delay	97.1	12.9	22.8	0.3	135.0	286.6						
Queue Delay	25.9	0.0	0.0	0.0	0.0	0.0						
Total Delay	123.0	12.9	22.8	0.3	135.0	286.6						
Queue Length 50th (ft)	~291	10	29	0	~1110	~1754						
Queue Length 95th (ft)	#413	73	m48	m0	#1391	#1886						
Internal Link Dist (ft)	737			327		333						
Turn Bay Length (ft)		100	80									
Base Capacity (vph)	598	386	367	1470	817	1693						
Starvation Cap Reductn	0	0	0	0	0	0						
Spillback Cap Reductn	61	0	0	0	0	0						
Storage Cap Reductn	0	0	0	0	0	0						
Reduced v/c Ratio	1.15	0.41	0.47	0.27	1.21	1.57						

Intersection Summary

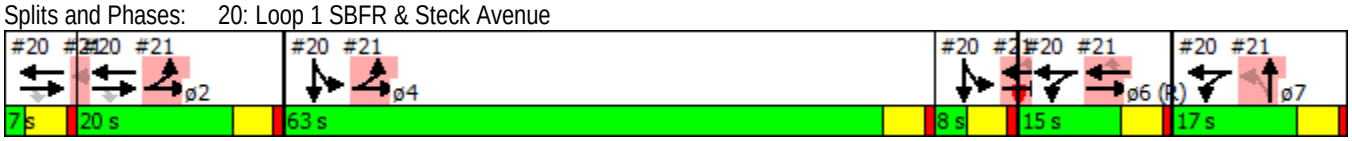
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 90 (69%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 20: Loop 1 SBFR & Steck Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	579	148	162	378	0	0	0	0	1030	2078	319
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0					5.0	5.0	
Lane Util. Factor		0.95	1.00	1.00	0.95					0.91	0.91	
Frt		1.00	0.85	1.00	1.00					1.00	0.98	
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	3539					1610	3319	
Flt Permitted		1.00	1.00	0.95	1.00					0.95	1.00	
Satd. Flow (perm)		3539	1583	1770	3539					1610	3319	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	616	157	172	402	0	0	0	0	1096	2211	339
RTOR Reduction (vph)	0	0	119	0	0	0	0	0	0	0	8	0
Lane Group Flow (vph)	0	616	38	172	402	0	0	0	0	986	2652	0
Turn Type		NA	Perm	Prot	NA					Split	NA	
Protected Phases		2 1		6 7	2 1 6 7					4 5	4 5	
Permitted Phases			2 1									
Actuated Green, G (s)		22.0	22.0	27.0	54.0					66.0	66.0	
Effective Green, g (s)		22.0	22.0	27.0	54.0					66.0	66.0	
Actuated g/C Ratio		0.17	0.17	0.21	0.42					0.51	0.51	
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		598	267	367	1470					817	1685	
v/s Ratio Prot		c0.17		c0.10	0.11					0.61	c0.80	
v/s Ratio Perm			0.02									
v/c Ratio		1.03	0.14	0.47	0.27					1.21	1.57	
Uniform Delay, d1		54.0	46.0	45.2	25.1					32.0	32.0	
Progression Factor		1.00	1.00	0.43	0.00					1.00	1.00	
Incremental Delay, d2		44.7	0.1	0.2	0.0					104.5	261.0	
Delay (s)		98.7	46.1	19.9	0.0					136.5	293.0	
Level of Service		F	D	B	A					F	F	
Approach Delay (s)		88.0			6.0			0.0			250.7	
Approach LOS		F			A			A			F	

Intersection Summary			
HCM 2000 Control Delay	197.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.39		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	144.7%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

21: Loop 1 NBFR & Steck Avenue

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	ø1	ø2	ø4	ø5	ø6	ø7
Lane Configurations												
Volume (vph)	749	808	409	277	225	586						
Lane Group Flow (vph)	764	824	417	283	230	802						
Turn Type	Prot	NA	NA	Perm	Perm	NA						
Protected Phases	2 4	2 4 5 6	6 5			7 1	1	2	4	5	6	7
Permitted Phases				6 5	7 1							
Detector Phase	2 4	2 4 5 6	6 5	6 5	7 1	7 1						
Switch Phase												
Minimum Initial (s)							2.0	1.0	1.0	3.0	4.0	4.0
Minimum Split (s)							7.0	11.0	11.0	8.0	15.0	9.0
Total Split (s)							7.0	20.0	63.0	8.0	15.0	17.0
Total Split (%)							5%	15%	48%	6%	12%	13%
Yellow Time (s)							4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)							1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag							Lead	Lag	Lead	Lag		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode							None	Max	None	None	C-Max	None
v/c Ratio	0.72	0.30	0.85	0.77	0.46	2.96						
Control Delay	10.8	0.0	71.7	35.2	45.2	909.8						
Queue Delay	51.4	1.1	0.0	0.0	0.0	0.0						
Total Delay	62.2	1.1	71.7	35.2	45.2	909.8						
Queue Length 50th (ft)	353	0	183	89	80	~1166						
Queue Length 95th (ft)	m123	m0	#267	#218	m117	m#1391						
Internal Link Dist (ft)		327	978			2452						
Turn Bay Length (ft)	80			170	110							
Base Capacity (vph)	1062	2749	490	369	501	271						
Starvation Cap Reductn	399	1600	0	0	0	0						
Spillback Cap Reductn	0	0	0	0	0	0						
Storage Cap Reductn	0	0	0	0	0	0						
Reduced v/c Ratio	1.15	0.72	0.85	0.77	0.46	2.96						

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 90 (69%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 21: Loop 1 NBFR & Steck Avenue

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	749	808	0	0	409	277	225	586	200	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0				
Lane Util. Factor	1.00	0.95			0.95	1.00	0.97	1.00				
Frt	1.00	1.00			1.00	0.85	1.00	0.96				
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (prot)	1770	3539			3539	1583	3433	1792				
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (perm)	1770	3539			3539	1583	3433	1792				
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	764	824	0	0	417	283	230	598	204	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	150	0	9	0	0	0	0
Lane Group Flow (vph)	764	824	0	0	417	133	230	793	0	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA				
Protected Phases	2 4	2 4 5 6			6 5			7 1				
Permitted Phases						6 5	7 1					
Actuated Green, G (s)	78.0	101.0			18.0	18.0	19.0	19.0				
Effective Green, g (s)	78.0	101.0			18.0	18.0	19.0	19.0				
Actuated g/C Ratio	0.60	0.78			0.14	0.14	0.15	0.15				
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	1062	2749			490	219	501	261				
v/s Ratio Prot	c0.43	0.23			c0.12			c0.44				
v/s Ratio Perm						0.08	0.07					
v/c Ratio	0.72	0.30			0.85	0.61	0.46	3.04				
Uniform Delay, d1	18.3	4.2			54.7	52.7	50.8	55.5				
Progression Factor	0.55	0.00			1.00	1.00	0.83	0.83				
Incremental Delay, d2	0.2	0.0			12.9	3.3	0.2	926.4				
Delay (s)	10.2	0.0			67.5	55.9	42.3	972.3				
Level of Service	B	A			E	E	D	F				
Approach Delay (s)		4.9			62.8			765.0			0.0	
Approach LOS		A			E			F			A	

Intersection Summary			
HCM 2000 Control Delay	253.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.29		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	144.7%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	120	203	68	130	52	52
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	130	221	74	141	57	57
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			351		530	241
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			351		530	241
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			94		88	93
cM capacity (veh/h)			1208		478	798

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	351	215	113
Volume Left	0	74	57
Volume Right	221	0	57
cSH	1700	1208	598
Volume to Capacity	0.21	0.06	0.19
Queue Length 95th (ft)	0	5	17
Control Delay (s)	0.0	3.2	12.4
Lane LOS		A	B
Approach Delay (s)	0.0	3.2	12.4
Approach LOS			B

Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	45.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	27	163	27	81	233	68	11	0	31	26	0	11
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	29	177	29	88	253	74	12	0	34	28	0	12
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	327			207			729	754	192	751	732	290
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	327			207			729	754	192	751	732	290
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			94			96	100	96	90	100	98
cM capacity (veh/h)	1232			1365			311	309	850	293	318	749

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	236	415	46	40
Volume Left	29	88	12	28
Volume Right	29	74	34	12
cSH	1232	1365	585	358
Volume to Capacity	0.02	0.06	0.08	0.11
Queue Length 95th (ft)	2	5	6	9
Control Delay (s)	1.2	2.2	11.7	16.3
Lane LOS	A	A	B	C
Approach Delay (s)	1.2	2.2	11.7	16.3
Approach LOS			B	C

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	45.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	206	14	27	228	5	11
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	224	15	29	248	5	12
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			239		538	232
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			239		538	232
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		99	99
cM capacity (veh/h)			1328		493	808

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	239	277	17
Volume Left	0	29	5
Volume Right	15	0	12
cSH	1700	1328	673
Volume to Capacity	0.14	0.02	0.03
Queue Length 95th (ft)	0	2	2
Control Delay (s)	0.0	1.0	10.5
Lane LOS		A	B
Approach Delay (s)	0.0	1.0	10.5
Approach LOS			B

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	38.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	204	27	27	99	11	11
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	222	29	29	108	12	12
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			251		403	236
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			251		403	236
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		98	99
cM capacity (veh/h)			1314		590	803

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	251	137	24
Volume Left	0	29	12
Volume Right	29	0	12
cSH	1700	1314	680
Volume to Capacity	0.15	0.02	0.04
Queue Length 95th (ft)	0	2	3
Control Delay (s)	0.0	1.8	10.5
Lane LOS		A	B
Approach Delay (s)	0.0	1.8	10.5
Approach LOS			B

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	32.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	41	174	111	122	46	15
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	45	189	121	133	50	16
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	253				465	187
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	253				465	187
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				91	98
cM capacity (veh/h)	1312				537	855

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	234	253	66
Volume Left	45	0	50
Volume Right	0	133	16
cSH	1312	1700	591
Volume to Capacity	0.03	0.15	0.11
Queue Length 95th (ft)	3	0	9
Control Delay (s)	1.7	0.0	11.9
Lane LOS	A		B
Approach Delay (s)	1.7	0.0	11.9
Approach LOS			B

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	38.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	27	193	371	68	26	11
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	29	210	403	74	28	12
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	477				709	440
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	477				709	440
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				93	98
cM capacity (veh/h)	1085				390	617

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	239	477	40
Volume Left	29	0	28
Volume Right	0	74	12
cSH	1085	1700	438
Volume to Capacity	0.03	0.28	0.09
Queue Length 95th (ft)	2	0	8
Control Delay (s)	1.3	0.0	14.1
Lane LOS	A		B
Approach Delay (s)	1.3	0.0	14.1
Approach LOS			B

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	42.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	219	439	27	11	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	238	477	29	12	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	507				730	492
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	507				730	492
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				97	100
cM capacity (veh/h)	1058				389	577

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	238	507	12
Volume Left	0	0	12
Volume Right	0	29	0
cSH	1058	1700	389
Volume to Capacity	0.00	0.30	0.03
Queue Length 95th (ft)	0	0	2
Control Delay (s)	0.0	0.0	14.5
Lane LOS			B
Approach Delay (s)	0.0	0.0	14.5
Approach LOS			B

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	34.7%	ICU Level of Service	A
Analysis Period (min)	15		

304: Wood Hollow Dr & Driveway 9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	5	5	14	292	659	14
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	5	15	317	716	15
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					212	
pX, platoon unblocked	0.84	0.84	0.84			
vC, conflicting volume	913	724	732			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	803	578	587			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	99	98			
cM capacity (veh/h)	265	386	828			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	11	121	212	732
Volume Left	5	15	0	0
Volume Right	5	0	0	15
cSH	315	828	1700	1700
Volume to Capacity	0.03	0.02	0.12	0.43
Queue Length 95th (ft)	3	1	0	0
Control Delay (s)	16.8	1.3	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	16.8	0.5		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	45.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	41	11	295	108	27	637
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	45	12	321	117	29	692
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						372
pX, platoon unblocked	0.84					
vC, conflicting volume	1130	219			438	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1061	219			438	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	75	98			97	
cM capacity (veh/h)	179	785			1118	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1
Volume Total	57	214	224	722
Volume Left	45	0	0	29
Volume Right	12	0	117	0
cSH	214	1700	1700	1118
Volume to Capacity	0.26	0.13	0.13	0.03
Queue Length 95th (ft)	26	0	0	2
Control Delay (s)	27.7	0.0	0.0	0.7
Lane LOS	D			A
Approach Delay (s)	27.7	0.0		0.7
Approach LOS	D			

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	60.0%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	176	297	155	27	26	52
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	191	323	168	29	28	57
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	198				889	183
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	198				889	183
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	86				90	93
cM capacity (veh/h)	1375				270	859

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	514	198	85
Volume Left	191	0	28
Volume Right	0	29	57
cSH	1375	1700	498
Volume to Capacity	0.14	0.12	0.17
Queue Length 95th (ft)	12	0	15
Control Delay (s)	3.9	0.0	13.7
Lane LOS	A		B
Approach Delay (s)	3.9	0.0	13.7
Approach LOS			B

Intersection Summary			
Average Delay	3.9		
Intersection Capacity Utilization	49.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	68	104	172	68	26	26
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	74	113	187	74	28	28
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	261				485	224
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	261				485	224
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	94				94	97
cM capacity (veh/h)	1304				511	816

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	187	261	57
Volume Left	74	0	28
Volume Right	0	74	28
cSH	1304	1700	628
Volume to Capacity	0.06	0.15	0.09
Queue Length 95th (ft)	5	0	7
Control Delay (s)	3.4	0.0	11.3
Lane LOS	A		B
Approach Delay (s)	3.4	0.0	11.3
Approach LOS			B

Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	35.8%	ICU Level of Service	A
Analysis Period (min)	15		

1: Hart Ln & Spicewood Springs Rd

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	964	182	170	1290	299	292
Lane Group Flow (vph)	1071	202	189	1433	332	324
Turn Type	NA	Perm	Prot	NA	Prot	Free
Protected Phases	2		1	6	4	
Permitted Phases		2				Free
Detector Phase	2	2	1	6	4	
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	
Total Split (s)	79.0	79.0	39.0	118.0	32.0	
Total Split (%)	52.7%	52.7%	26.0%	78.7%	21.3%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Max	C-Max	Max	C-Max	None	
v/c Ratio	0.61	0.24	0.38	0.50	0.77	0.20
Control Delay	29.5	12.3	42.8	8.5	75.5	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.5	12.3	42.8	8.5	75.5	0.3
Queue Length 50th (ft)	392	58	155	338	164	0
Queue Length 95th (ft)	465	110	262	304	211	0
Internal Link Dist (ft)	211			988	285	
Turn Bay Length (ft)		110	220		160	
Base Capacity (vph)	1745	827	497	2858	617	1583
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.24	0.38	0.50	0.54	0.20

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of 1st Green
Natural Cycle: 75
Control Type: Actuated-Coordinated

Splits and Phases: 1: Hart Ln & Spicewood Springs Rd

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	964	182	170	1290	299	292
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	4.0
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	3433	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	3433	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1071	202	189	1433	332	324
RTOR Reduction (vph)	0	47	0	0	0	0
Lane Group Flow (vph)	1071	155	189	1433	332	324
Turn Type	NA	Perm	Prot	NA	Prot	Free
Protected Phases	2		1	6	4	
Permitted Phases		2				Free
Actuated Green, G (s)	74.0	74.0	42.1	121.1	18.9	150.0
Effective Green, g (s)	74.0	74.0	42.1	121.1	18.9	150.0
Actuated g/C Ratio	0.49	0.49	0.28	0.81	0.13	1.00
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	1745	780	496	2857	432	1583
v/s Ratio Prot	c0.30		0.11	c0.40	c0.10	
v/s Ratio Perm		0.10				0.20
v/c Ratio	0.61	0.20	0.38	0.50	0.77	0.20
Uniform Delay, d1	27.6	21.4	43.5	4.7	63.4	0.0
Progression Factor	1.00	1.00	0.92	1.61	1.00	1.00
Incremental Delay, d2	1.6	0.6	1.6	0.5	7.2	0.3
Delay (s)	29.2	21.9	41.5	8.0	70.7	0.3
Level of Service	C	C	D	A	E	A
Approach Delay (s)	28.1			11.9	35.9	
Approach LOS	C			B	D	

Intersection Summary			
HCM 2000 Control Delay	22.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	57.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

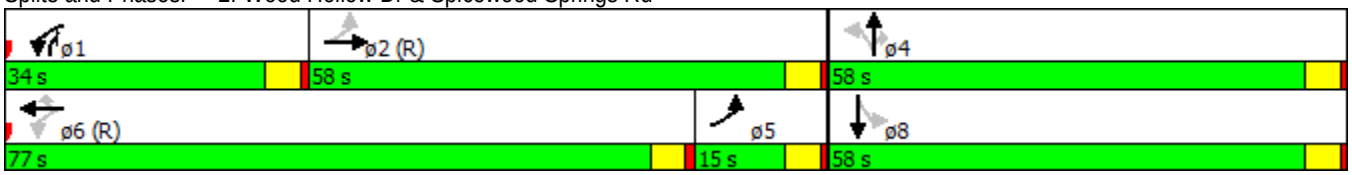
2: Wood Hollow Dr & Spicewood Springs Rd

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	6	1168	193	1175	1	269	8	408	1	5
Lane Group Flow (vph)	7	1420	219	1335	1	0	315	464	0	25
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Perm	NA	pm+ov	Perm	NA
Protected Phases	5	2	1	6			4	1		8
Permitted Phases	2		6		6	4		4	8	
Detector Phase	5	2	1	6	6	4	4	1	8	8
Switch Phase										
Minimum Initial (s)	6.0	25.0	6.0	5.0	5.0	5.0	5.0	6.0	5.0	5.0
Minimum Split (s)	15.0	30.0	15.0	11.0	11.0	35.0	35.0	15.0	35.0	35.0
Total Split (s)	15.0	58.0	34.0	77.0	77.0	58.0	58.0	34.0	58.0	58.0
Total Split (%)	10.0%	38.7%	22.7%	51.3%	51.3%	38.7%	38.7%	22.7%	38.7%	38.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead			Lead		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes			Yes		
Recall Mode	None	C-Max	None	C-Max	C-Max	Max	Max	None	None	None
v/c Ratio	0.04	0.64	0.84	0.67	0.00		0.67	0.57		0.04
Control Delay	12.5	19.4	72.6	22.1	0.0		43.2	24.8		16.0
Queue Delay	0.0	3.1	0.0	0.0	0.0		0.3	1.1		0.0
Total Delay	12.5	22.5	72.6	22.1	0.0		43.5	26.0		16.0
Queue Length 50th (ft)	2	418	157	277	0		240	274		5
Queue Length 95th (ft)	m7	517	254	476	m0		351	342		25
Internal Link Dist (ft)		988		494			132			203
Turn Bay Length (ft)	300		110		100					
Base Capacity (vph)	218	2208	398	1981	908		469	939		601
Starvation Cap Reductn	0	0	0	7	0		15	213		0
Spillback Cap Reductn	0	662	0	0	0		0	259		0
Storage Cap Reductn	0	0	0	0	0		0	0		0
Reduced v/c Ratio	0.03	0.92	0.55	0.68	0.00		0.69	0.68		0.04

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 55 (37%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Wood Hollow Dr & Spicewood Springs Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	1168	82	193	1175	1	269	8	408	1	5	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0		5.0	5.0		5.0	
Lane Util. Factor	1.00	0.91		1.00	0.95	1.00		1.00	1.00		1.00	
Frt	1.00	0.99		1.00	1.00	0.85		1.00	0.85		0.90	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.95	1.00		1.00	
Satd. Flow (prot)	1770	5035		1770	3539	1583		1776	1583		1678	
Flt Permitted	0.15	1.00		0.08	1.00	1.00		0.71	1.00		0.99	
Satd. Flow (perm)	271	5035		152	3539	1583		1330	1583		1670	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	7	1327	93	219	1335	1	306	9	464	1	6	18
RTOR Reduction (vph)	0	4	0	0	0	0	0	0	27	0	12	0
Lane Group Flow (vph)	7	1416	0	219	1335	1	0	315	437	0	13	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	pm+ov	Perm	NA	
Protected Phases	5	2		1	6			4	1		8	
Permitted Phases	2			6		6	4		4	8		
Actuated Green, G (s)	65.7	65.7		80.0	80.0	80.0		53.0	69.3		53.0	
Effective Green, g (s)	65.7	65.7		80.0	80.0	80.0		53.0	69.3		53.0	
Actuated g/C Ratio	0.44	0.44		0.53	0.53	0.53		0.35	0.46		0.35	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0		5.0	5.0		5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0		2.0	2.0		2.0	
Lane Grp Cap (vph)	138	2205		256	1887	844		469	784		590	
v/s Ratio Prot	0.00	c0.28		c0.09	0.38				0.06			
v/s Ratio Perm	0.02			c0.36		0.00		c0.24	0.22		0.01	
v/c Ratio	0.05	0.64		0.86	0.71	0.00		0.67	0.56		0.02	
Uniform Delay, d1	35.9	33.0		38.4	26.2	16.3		41.1	29.2		31.6	
Progression Factor	0.42	0.53		1.46	0.83	1.00		0.88	0.98		1.00	
Incremental Delay, d2	0.0	1.3		21.6	2.1	0.0		6.3	0.4		0.0	
Delay (s)	14.9	18.9		77.7	23.9	16.3		42.3	28.9		31.6	
Level of Service	B	B		E	C	B		D	C		C	
Approach Delay (s)		18.8			31.5			34.4			31.6	
Approach LOS		B			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	27.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	72.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

3: Mopac SBFR & Spicewood Springs Rd

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR	ø1	ø2	ø4	ø5	ø6
Lane Configurations												
Volume (vph)	1248	329	765	924	670	246	445					
Lane Group Flow (vph)	1328	350	814	983	356	619	473					
Turn Type	NA	Free	Prot	NA	Split	NA	Free					
Protected Phases	2 1		19 6 7 2 1 19 6		4 5	4 5		1	2	4	5	6
Permitted Phases		Free					Free					
Detector Phase	2 1		19 6 7 2 1 19 6		4 5	4 5						
Switch Phase												
Minimum Initial (s)								3.0	1.0	1.0	3.0	4.0
Minimum Split (s)								8.0	11.0	11.0	8.0	24.0
Total Split (s)								8.0	35.0	23.0	8.0	51.0
Total Split (%)								5%	23%	15%	5%	34%
Yellow Time (s)								4.0	4.0	4.0	4.0	4.0
All-Red Time (s)								1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag								Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?								Yes	Yes	Yes	Yes	Yes
Recall Mode								None	Max	None	None	C-Max
v/c Ratio	1.48	0.22	0.97	0.44	1.28	1.23dl	0.30					
Control Delay	260.8	0.3	29.3	2.2	197.0	119.0	0.5					
Queue Delay	1.0	0.0	40.2	0.3	0.0	0.0	0.0					
Total Delay	261.8	0.3	69.5	2.5	197.0	119.0	0.5					
Queue Length 50th (ft)	~962	0	819	46	~482	~371	0					
Queue Length 95th (ft)	#1095	0	m600	m101	#707	#504	0					
Internal Link Dist (ft)	494			333		2669						
Turn Bay Length (ft)			50		145							
Base Capacity (vph)	896	1583	837	2241	279	571	1583					
Starvation Cap Reductn	0	0	98	592	0	0	0					
Spillback Cap Reductn	147	0	0	34	0	0	60					
Storage Cap Reductn	0	0	0	0	0	0	0					
Reduced v/c Ratio	1.77	0.22	1.10	0.60	1.28	1.08	0.31					

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 89 (59%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 130
Control Type: Actuated-Coordinated

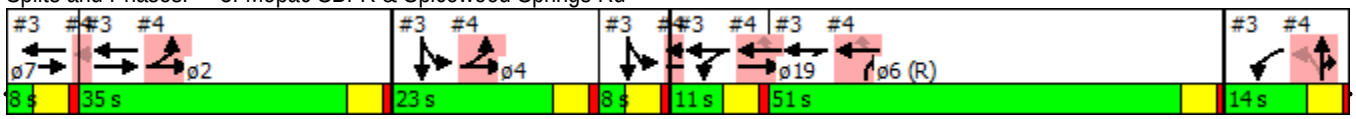
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 3: Mopac SBFR & Spicewood Springs Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1248	329	765	924	0	0	0	0	670	246	445
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	4.0	5.0	5.0					5.0	5.0	4.0
Lane Util. Factor		0.95	1.00	1.00	0.95					0.91	0.91	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.97	1.00
Satd. Flow (prot)		3539	1583	1770	3539					1610	3295	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.97	1.00
Satd. Flow (perm)		3539	1583	1770	3539					1610	3295	1583
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	1328	350	814	983	0	0	0	0	713	262	473
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1328	350	814	983	0	0	0	0	356	619	473
Turn Type		NA	Free	Prot	NA					Split	NA	Free
Protected Phases		2 1		19 6 7	2 1 19 6					4 5	4 5	
Permitted Phases			Free									Free
Actuated Green, G (s)		38.0	150.0	71.0	95.0					26.0	26.0	150.0
Effective Green, g (s)		38.0	150.0	71.0	95.0					26.0	26.0	150.0
Actuated g/C Ratio		0.25	1.00	0.47	0.63					0.17	0.17	1.00
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		896	1583	837	2241					279	571	1583
v/s Ratio Prot		c0.38		c0.46	0.28					c0.22	0.19	
v/s Ratio Perm			0.22									0.30
v/c Ratio		1.48	0.22	0.97	0.44					1.28	1.23dl	0.30
Uniform Delay, d1		56.0	0.0	38.5	14.0					62.0	62.0	0.0
Progression Factor		1.01	1.00	0.60	0.28					1.00	1.00	1.00
Incremental Delay, d2		221.8	0.3	4.7	0.0					149.0	62.5	0.5
Delay (s)		278.5	0.3	27.9	3.9					211.0	124.5	0.5
Level of Service		F	A	C	A					F	F	A
Approach Delay (s)		220.5			14.7			0.0			105.2	
Approach LOS		F			B			A			F	

Intersection Summary			
HCM 2000 Control Delay	111.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.38		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	35.0
Intersection Capacity Utilization	119.7%	ICU Level of Service	H
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group

4: Mopac NBFR & Anderson Ln

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	ø1	ø2	ø4	ø5	ø6
Lane Configurations												
Volume (vph)	610	1307	1336	471	354	47	663					
Lane Group Flow (vph)	642	1376	1406	496	336	400	384					
Turn Type	Prot	NA	NA	Perm	Perm	NA	custom					
Protected Phases	2 4	2 4 5 19	6 5 19			7 1	7 1 6	1	2	4	5	6
Permitted Phases				6 5 19	7 1							
Detector Phase	2 4	2 4 5 19	6 5 19	6 5 19	7 1	7 1	7 1 6					
Switch Phase												
Minimum Initial (s)								3.0	1.0	1.0	3.0	4.0
Minimum Split (s)								8.0	11.0	11.0	8.0	24.0
Total Split (s)								8.0	35.0	23.0	8.0	51.0
Total Split (%)								5%	23%	15%	5%	34%
Yellow Time (s)								4.0	4.0	4.0	4.0	4.0
All-Red Time (s)								1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag								Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?								Yes	Yes	Yes	Yes	Yes
Recall Mode								None	Max	None	None	C-Max
v/c Ratio	1.03	0.81	0.92	0.62	1.77	1.56	0.51					
Control Delay	46.1	1.1	50.4	22.2	402.4	301.9	21.8					
Queue Delay	28.2	48.1	17.1	0.0	0.0	0.2	0.0					
Total Delay	74.3	49.3	67.5	22.2	402.4	302.1	21.8					
Queue Length 50th (ft)	~597	0	674	221	~513	~509	187					
Queue Length 95th (ft)	m178	m0	#787	346	#727	#747	291					
Internal Link Dist (ft)		333	702			1795						
Turn Bay Length (ft)	50			360	280							
Base Capacity (vph)	625	1698	1533	801	190	256	749					
Starvation Cap Reductn	153	493	0	0	0	0	0					
Spillback Cap Reductn	0	0	163	0	0	4	0					
Storage Cap Reductn	0	0	0	0	0	0	0					
Reduced v/c Ratio	1.36	1.14	1.03	0.62	1.77	1.59	0.51					

Intersection Summary

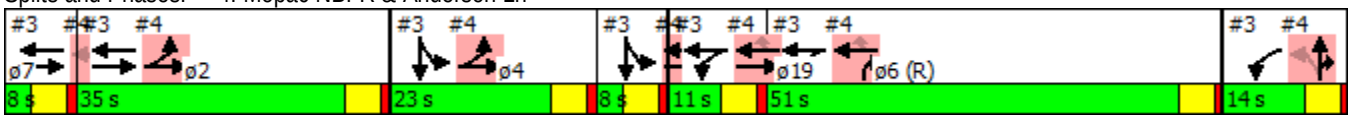
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 89 (59%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 130
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Mopac NBFR & Anderson Ln



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	610	1307	0	0	1336	471	354	47	663	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0	5.0			
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.91	0.95			
Frt	1.00	1.00			1.00	0.85	1.00	0.88	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	1770	3539			3539	1583	1681	1489	1504			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	1770	3539			3539	1583	1681	1489	1504			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	642	1376	0	0	1406	496	373	49	698	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	116	0	88	68	0	0	0
Lane Group Flow (vph)	642	1376	0	0	1406	380	336	312	316	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	custom			
Protected Phases	2 4	2 4 5 19			6 5 19			7 1	7 1 6			
Permitted Phases						6 5 19	7 1					
Actuated Green, G (s)	53.0	72.0			65.0	65.0	17.0	17.0	68.0			
Effective Green, g (s)	53.0	72.0			65.0	65.0	17.0	17.0	68.0			
Actuated g/C Ratio	0.35	0.48			0.43	0.43	0.11	0.11	0.45			
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	625	1698			1533	685	190	168	681			
v/s Ratio Prot	c0.36	c0.39			c0.40				0.21			
v/s Ratio Perm						0.24	0.20	0.21				
v/c Ratio	1.03	0.81			0.92	0.56	1.77	1.86	0.46			
Uniform Delay, d1	48.5	33.2			40.0	31.7	66.5	66.5	28.4			
Progression Factor	0.53	0.02			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	18.7	0.3			8.8	0.6	366.4	408.3	0.2			
Delay (s)	44.6	1.0			48.8	32.3	432.9	474.8	28.6			
Level of Service	D	A			D	C	F	F	C			
Approach Delay (s)		14.8			44.5			309.2			0.0	
Approach LOS		B			D			F			A	

Intersection Summary			
HCM 2000 Control Delay	91.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.28		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	35.0
Intersection Capacity Utilization	119.7%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	43	236	305	24	111	203
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	57	315	407	32	148	271
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		4				
Median type			None			None
Median storage veh)						
Upstream signal (ft)						365
pX, platoon unblocked						
vC, conflicting volume	989	423			439	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	989	423			439	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	76	50			87	
cM capacity (veh/h)	237	631			1121	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	372	439	148	271
Volume Left	57	0	148	0
Volume Right	315	32	0	0
cSH	746	1700	1121	1700
Volume to Capacity	0.50	0.26	0.13	0.16
Queue Length 95th (ft)	70	0	11	0
Control Delay (s)	17.6	0.0	8.7	0.0
Lane LOS	C		A	
Approach Delay (s)	17.6	0.0	3.1	
Approach LOS	C			

Intersection Summary			
Average Delay	6.4		
Intersection Capacity Utilization	38.8%	ICU Level of Service	A
Analysis Period (min)	15		

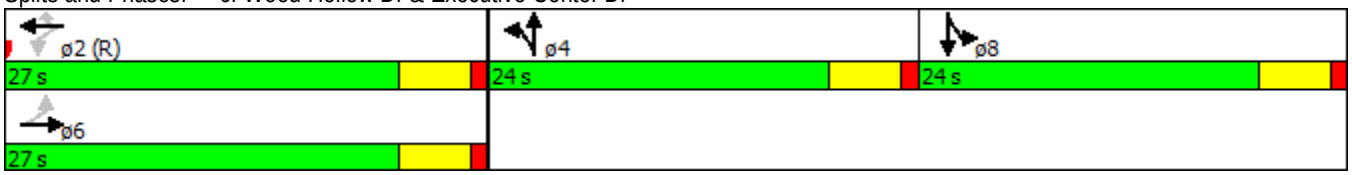
6: Wood Hollow Dr & Executive Center Dr

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	125	147	60	73	252	325	101	149
Lane Group Flow (vph)	0	571	0	175	332	671	133	337
Turn Type	Perm	NA	Perm	NA	Perm	NA	Split	NA
Protected Phases		6		2		4	8	8
Permitted Phases	6		2		2			
Detector Phase	6	6	2	2	2	4	8	8
Switch Phase								
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	27.0	27.0	27.0	27.0	27.0	24.0	24.0	24.0
Total Split (%)	36.0%	36.0%	36.0%	36.0%	36.0%	32.0%	32.0%	32.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0		5.0	5.0	5.0	5.0	5.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	C-Max	C-Max	C-Max	None	None	None
v/c Ratio		0.54		0.44	0.48	0.82	0.35	0.83
Control Delay		16.8		23.7	9.9	35.1	32.9	54.7
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0
Total Delay		16.8		23.7	9.9	35.1	32.9	54.7
Queue Length 50th (ft)		80		69	49	143	88	230
Queue Length 95th (ft)		102		m88	m60	162	111	252
Internal Link Dist (ft)		152		189		1068		93
Turn Bay Length (ft)					15			
Base Capacity (vph)		1056		400	694	889	448	476
Starvation Cap Reductn		0		0	0	0	0	0
Spillback Cap Reductn		0		0	0	0	0	0
Storage Cap Reductn		0		0	0	0	0	0
Reduced v/c Ratio		0.54		0.44	0.48	0.75	0.30	0.71

Intersection Summary

Cycle Length: 75
Actuated Cycle Length: 75
Offset: 0 (0%), Referenced to phase 2:WBTL, Start of 1st Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Wood Hollow Dr & Executive Center Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	125	147	163	60	73	252	90	325	95	101	149	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0	5.0		5.0		5.0	5.0	
Lane Util. Factor		0.95			1.00	1.00		0.95		1.00	1.00	
Frt		0.94			1.00	0.85		0.97		1.00	0.94	
Flt Protected		0.99			0.98	1.00		0.99		0.95	1.00	
Satd. Flow (prot)		3293			1822	1583		3410		1770	1746	
Flt Permitted		0.80			0.61	1.00		0.99		0.95	1.00	
Satd. Flow (perm)		2674			1129	1583		3410		1770	1746	
Peak-hour factor, PHF	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Adj. Flow (vph)	164	193	214	79	96	332	118	428	125	133	196	141
RTOR Reduction (vph)	0	108	0	0	0	133	0	27	0	0	36	0
Lane Group Flow (vph)	0	463	0	0	175	199	0	644	0	133	301	0
Turn Type	Perm	NA		Perm	NA	Perm	Split	NA		Split	NA	
Protected Phases		6			2		4	4		8	8	
Permitted Phases	6			2		2						
Actuated Green, G (s)		26.6			26.6	26.6		17.4		16.0	16.0	
Effective Green, g (s)		26.6			26.6	26.6		17.4		16.0	16.0	
Actuated g/C Ratio		0.35			0.35	0.35		0.23		0.21	0.21	
Clearance Time (s)		5.0			5.0	5.0		5.0		5.0	5.0	
Vehicle Extension (s)		2.0			2.0	2.0		2.0		2.0	2.0	
Lane Grp Cap (vph)		948			400	561		791		377	372	
v/s Ratio Prot								c0.19		0.08	c0.17	
v/s Ratio Perm		c0.17			0.16	0.13						
v/c Ratio		0.49			0.44	0.35		0.81		0.35	0.81	
Uniform Delay, d1		18.9			18.5	17.9		27.3		25.1	28.0	
Progression Factor		1.00			0.99	0.97		1.00		1.25	1.60	
Incremental Delay, d2		1.8			3.4	1.8		6.1		0.2	11.1	
Delay (s)		20.7			21.7	19.1		33.4		31.5	56.1	
Level of Service		C			C	B		C		C	E	
Approach Delay (s)		20.7			20.0			33.4			49.1	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	30.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	65.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Intersection Delay, s/veh	21.7
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	40	82	52	0	113	148	55	0	104	230	68
Peak Hour Factor	0.92	0.94	0.94	0.94	0.92	0.94	0.94	0.94	0.92	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	43	87	55	0	120	157	59	0	111	245	72
Number of Lanes	0	0	1	1	0	0	1	1	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	2	2
HCM Control Delay	12.8	18.4	33.5
HCM LOS	B	C	D

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	26%	33%	0%	43%	0%	17%	0%
Vol Thru, %	57%	67%	0%	57%	0%	83%	55%
Vol Right, %	17%	0%	100%	0%	100%	0%	45%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	402	122	52	261	55	95	143
LT Vol	104	40	0	113	0	16	0
Through Vol	230	82	0	148	0	79	79
RT Vol	68	0	52	0	55	0	64
Lane Flow Rate	428	130	55	278	59	101	152
Geometry Grp	6	7	7	7	7	7	7
Degree of Util (X)	0.814	0.283	0.107	0.578	0.106	0.207	0.295
Departure Headway (Hd)	6.848	7.841	6.949	7.494	6.552	7.404	6.995
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	530	457	514	480	545	484	512
Service Time	4.898	5.61	4.718	5.253	4.311	5.168	4.758
HCM Lane V/C Ratio	0.808	0.284	0.107	0.579	0.108	0.209	0.297
HCM Control Delay	33.5	13.7	10.6	20.1	10.1	12.1	12.7
HCM Lane LOS	D	B	B	C	B	B	B
HCM 95th-tile Q	7.9	1.2	0.4	3.6	0.4	0.8	1.2

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	16	157	64
Peak Hour Factor	0.92	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	17	167	68
Number of Lanes	0	0	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	12.5
HCM LOS	B

Lane

Intersection	
Intersection Delay, s/veh	22.9
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	50	81	57	0	101	259	150	0	90	340	82
Peak Hour Factor	0.92	0.99	0.99	0.99	0.92	0.99	0.99	0.99	0.92	0.99	0.99	0.99
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	51	82	58	0	102	262	152	0	91	343	83
Number of Lanes	0	0	1	1	0	0	1	1	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	2
HCM Control Delay	14.9	30.7	20.9
HCM LOS	B	D	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	35%	0%	38%	0%	28%	0%	100%	5%
Vol Thru, %	65%	67%	62%	0%	72%	0%	0%	77%
Vol Right, %	0%	33%	0%	100%	0%	100%	0%	17%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	260	252	131	57	360	150	125	253
LT Vol	90	0	50	0	101	0	125	14
Through Vol	170	170	81	0	259	0	0	195
RT Vol	0	82	0	57	0	150	0	44
Lane Flow Rate	263	255	132	58	364	152	126	255
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.593	0.546	0.328	0.128	0.816	0.304	0.305	0.573
Departure Headway (Hd)	8.129	7.716	8.933	8.007	8.08	7.214	8.688	8.073
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	441	466	401	445	447	495	412	444
Service Time	5.911	5.497	6.728	5.8	5.855	4.989	6.472	5.857
HCM Lane V/C Ratio	0.596	0.547	0.329	0.13	0.814	0.307	0.306	0.574
HCM Control Delay	22.2	19.5	16.1	12	38.1	13.1	15.3	21.2
HCM Lane LOS	C	C	C	B	E	B	C	C
HCM 95th-tile Q	3.7	3.2	1.4	0.4	7.6	1.3	1.3	3.5

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	139	195	44
Peak Hour Factor	0.92	0.99	0.99	0.99
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	140	197	44
Number of Lanes	0	1	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	19.2
HCM LOS	C

Lane

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	310	0	0	2217	473
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	0	356	0	0	2548	544
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2548	849	3092			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2548	849	3092			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	0	100			
cM capacity (veh/h)	22	304	104			

Direction, Lane #	EB 1	SB 1	SB 2	SB 3	SB 4
Volume Total	356	849	849	849	544
Volume Left	0	0	0	0	0
Volume Right	356	0	0	0	544
cSH	304	1700	1700	1700	1700
Volume to Capacity	1.17	0.50	0.50	0.50	0.32
Queue Length 95th (ft)	382	0	0	0	0
Control Delay (s)	143.4	0.0	0.0	0.0	0.0
Lane LOS	F				
Approach Delay (s)	143.4	0.0			
Approach LOS	F				

Intersection Summary			
Average Delay	14.8		
Intersection Capacity Utilization	68.7%	ICU Level of Service	C
Analysis Period (min)	15		

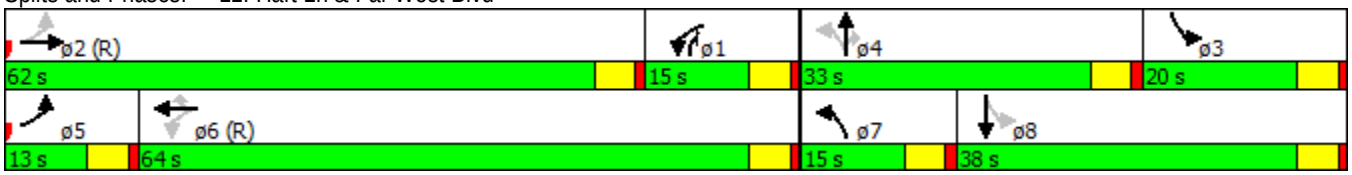
11: Hart Ln & Far West Blvd

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	59	616	208	585	169	67	159	160	187	117
Lane Group Flow (vph)	61	678	214	603	174	69	164	165	193	192
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA
Protected Phases	5	2	1	6		7	4	1	3	8
Permitted Phases	2		6		6	4		4	8	
Detector Phase	5	2	1	6	6	7	4	1	3	8
Switch Phase										
Minimum Initial (s)	4.0	2.0	4.0	2.0	2.0	4.0	2.0	4.0	2.0	2.0
Minimum Split (s)	9.0	24.0	9.0	24.0	24.0	9.0	33.0	9.0	33.0	33.0
Total Split (s)	13.0	62.0	15.0	64.0	64.0	15.0	33.0	15.0	20.0	38.0
Total Split (%)	10.0%	47.7%	11.5%	49.2%	49.2%	11.5%	25.4%	11.5%	15.4%	29.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lead	Lag	Lag	Lag	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	C-Max	None	None	None	None	None
v/c Ratio	0.15	0.35	0.42	0.29	0.19	0.42	0.73	0.44	0.76	0.34
Control Delay	16.9	18.1	44.0	33.9	34.0	58.5	72.4	45.3	70.9	48.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.9	18.1	44.0	33.9	34.0	58.5	72.4	45.3	70.9	48.8
Queue Length 50th (ft)	23	163	152	225	124	54	135	119	156	77
Queue Length 95th (ft)	54	243	221	282	187	97	203	178	222	106
Internal Link Dist (ft)		1703		1174			695			1243
Turn Bay Length (ft)	130		100		490			100	100	
Base Capacity (vph)	428	1938	514	2098	938	175	401	375	299	849
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.35	0.42	0.29	0.19	0.39	0.41	0.44	0.65	0.23

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 100 (77%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 11: Hart Ln & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	59	616	42	208	585	169	67	159	160	187	117	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3506		1770	3539	1583	1770	1863	1583	1770	3343	
Flt Permitted	0.35	1.00		0.39	1.00	1.00	0.47	1.00	1.00	0.65	1.00	
Satd. Flow (perm)	645	3506		734	3539	1583	877	1863	1583	1217	3343	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	61	635	43	214	603	174	69	164	165	193	121	71
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	61	678	0	214	603	174	69	164	165	193	192	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases	5	2		1	6		7	4	1	3	8	
Permitted Phases	2			6		6	4		4	8		
Actuated Green, G (s)	69.9	69.9		75.1	75.1	75.1	15.8	15.8	26.8	21.8	21.8	
Effective Green, g (s)	69.9	69.9		75.1	75.1	75.1	15.8	15.8	26.8	21.8	21.8	
Actuated g/C Ratio	0.54	0.54		0.58	0.58	0.58	0.12	0.12	0.21	0.17	0.17	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	397	1885		511	2044	914	156	226	387	260	560	
v/s Ratio Prot	0.01	c0.19		0.04	0.17		0.02	c0.09	c0.04	c0.08	0.06	
v/s Ratio Perm	0.08			c0.21		0.11	0.03		0.07	c0.05		
v/c Ratio	0.15	0.36		0.42	0.30	0.19	0.44	0.73	0.43	0.74	0.34	
Uniform Delay, d1	15.0	17.2		16.4	14.0	13.0	52.3	55.0	44.9	50.5	47.8	
Progression Factor	1.00	1.00		2.07	2.21	2.22	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.1	0.5		0.2	0.3	0.4	0.7	9.4	0.3	9.6	0.1	
Delay (s)	15.0	17.8		34.1	31.2	29.3	53.0	64.4	45.2	60.1	47.9	
Level of Service	B	B		C	C	C	D	E	D	E	D	
Approach Delay (s)		17.5			31.5			54.5			54.0	
Approach LOS		B			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	34.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	65.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

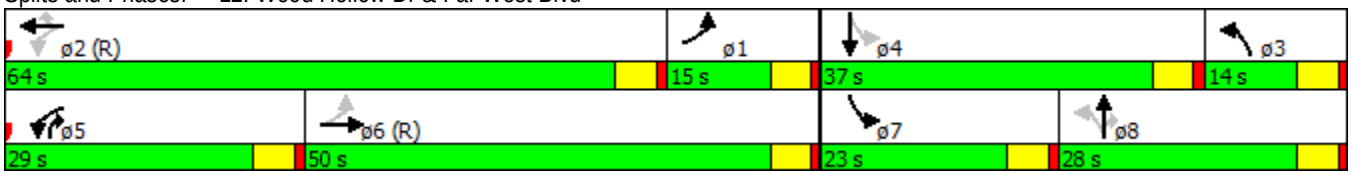
12: Wood Hollow Dr & Far West Blvd

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	137	828	244	732	210	109	200	344	193	109
Lane Group Flow (vph)	156	1018	277	832	239	124	227	391	219	213
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA
Protected Phases	1	6	5	2		3	8	5	7	4
Permitted Phases	6		2		2	8		8	4	
Detector Phase	1	6	5	2	2	3	8	5	7	4
Switch Phase										
Minimum Initial (s)	4.0	2.0	4.0	2.0	2.0	4.0	2.0	4.0	4.0	2.0
Minimum Split (s)	9.0	11.0	9.0	11.0	11.0	9.0	11.0	9.0	9.0	11.0
Total Split (s)	15.0	50.0	29.0	64.0	64.0	14.0	28.0	29.0	23.0	37.0
Total Split (%)	11.5%	38.5%	22.3%	49.2%	49.2%	10.8%	21.5%	22.3%	17.7%	28.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	C-Max	None	None	None	None	None
v/c Ratio	0.44	0.47	0.79	0.48	0.27	0.43	0.82	0.65	0.79	0.79
Control Delay	46.6	37.5	47.4	36.6	12.8	54.0	76.9	28.7	72.9	66.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.6	37.5	47.4	36.6	12.8	54.0	76.9	28.7	72.9	66.6
Queue Length 50th (ft)	97	246	183	307	43	96	187	188	182	155
Queue Length 95th (ft)	162	326	260	368	96	152	265	261	248	222
Internal Link Dist (ft)		1174		673			686			1879
Turn Bay Length (ft)	245		125			75		75		
Base Capacity (vph)	356	2147	413	1735	897	288	329	666	291	449
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.47	0.67	0.48	0.27	0.43	0.69	0.59	0.75	0.47

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 20 (15%), Referenced to phase 2:WBTL and 6:EBTL, Start of 1st Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 12: Wood Hollow Dr & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	137	828	68	244	732	210	109	200	344	193	109	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.91		1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	5028		1770	3539	1583	1770	1863	1583	1770	1746	
Flt Permitted	0.34	1.00		0.15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Satd. Flow (perm)	631	5028		285	3539	1583	1863	1863	1583	1863	1746	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	156	941	77	277	832	239	124	227	391	219	124	89
RTOR Reduction (vph)	0	6	0	0	0	122	0	0	89	0	22	0
Lane Group Flow (vph)	156	1012	0	277	832	117	124	227	302	219	191	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases	1	6		5	2		3	8	5	7	4	
Permitted Phases	6			2		2	8		8	4		
Actuated Green, G (s)	55.3	55.3		63.6	63.6	63.6	19.3	19.3	37.7	18.5	18.5	
Effective Green, g (s)	55.3	55.3		63.6	63.6	63.6	19.3	19.3	37.7	18.5	18.5	
Actuated g/C Ratio	0.43	0.43		0.49	0.49	0.49	0.15	0.15	0.29	0.14	0.14	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	356	2138		349	1731	774	276	276	519	265	248	
v/s Ratio Prot	0.03	c0.20		c0.11	0.24		0.06	c0.12	0.08	0.11	0.11	
v/s Ratio Perm	0.15			c0.28		0.07	0.01		0.11	c0.01		
v/c Ratio	0.44	0.47		0.79	0.48	0.15	0.45	0.82	0.58	0.83	0.77	
Uniform Delay, d1	28.5	26.9		23.4	22.2	18.3	49.0	53.7	39.4	54.6	53.7	
Progression Factor	1.26	1.29		1.36	1.55	4.79	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.3	0.7		9.2	0.8	0.3	0.4	16.9	1.1	17.8	12.1	
Delay (s)	36.4	35.4		41.0	35.1	88.0	49.5	70.6	40.5	72.4	65.8	
Level of Service	D	D		D	D	F	D	E	D	E	E	
Approach Delay (s)		35.6			45.7			51.2			69.2	
Approach LOS		D			D			D			E	

Intersection Summary			
HCM 2000 Control Delay	46.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	68.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

13: Mopac SBFR & Far West Blvd

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR	ø1	ø2	ø4	ø8	ø22
Lane Configurations											
Volume (vph)	1272	418	11	524	446	1004					
Lane Group Flow (vph)	1429	470	12	589	1127	1128					
Turn Type	NA	Free	Prot	NA	NA	Free					
Protected Phases	1 22 2		7	1 22 7	4 8		1	2	4	8	22
Permitted Phases		Free				Free					
Detector Phase	1 22 2		7	1 22 7	4 8						
Switch Phase											
Minimum Initial (s)			4.0				4.0	4.0	4.0	4.0	4.0
Minimum Split (s)			20.0				9.0	24.0	24.0	9.0	20.0
Total Split (s)			41.0				9.0	20.0	31.0	9.0	20.0
Total Split (%)			31.5%				7%	15%	24%	7%	15%
Yellow Time (s)			4.0				4.0	4.0	4.0	4.0	4.0
All-Red Time (s)			1.0				1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)			0.0								
Total Lost Time (s)			5.0								
Lead/Lag							Lead		Lead	Lag	Lag
Lead-Lag Optimize?							Yes		Yes	Yes	Yes
Recall Mode			None				None	C-Max	None	None	None
v/c Ratio	0.90	0.30	0.04	0.33	1.32dl	0.71					
Control Delay	41.4	0.4	21.7	3.3	147.9	2.8					
Queue Delay	48.2	0.0	0.0	0.3	0.0	0.0					
Total Delay	89.6	0.4	21.7	3.6	147.9	2.8					
Queue Length 50th (ft)	573	0	3	14	~611	0					
Queue Length 95th (ft)	#834	0	m6	17	#735	0					
Internal Link Dist (ft)	432			324	532						
Turn Bay Length (ft)		490									
Base Capacity (vph)	1590	1583	490	1767	927	1583					
Starvation Cap Reductn	0	0	0	548	0	0					
Spillback Cap Reductn	730	0	0	0	0	0					
Storage Cap Reductn	0	0	0	0	0	0					
Reduced v/c Ratio	1.66	0.30	0.02	0.48	1.22	0.71					

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBT, Start of 1st Green
Natural Cycle: 120
Control Type: Actuated-Coordinated

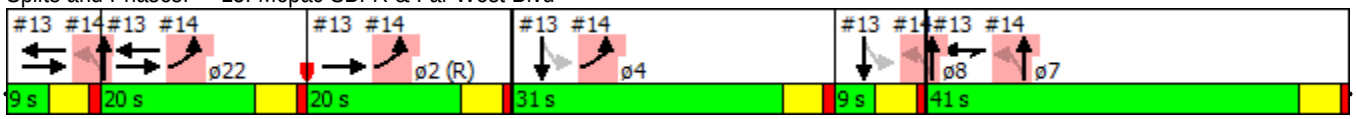
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 13: Mopac SBFR & Far West Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1272	418	11	524	0	0	0	0	557	446	1004
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	4.0	5.0	5.0						5.0	4.0
Lane Util. Factor		0.95	1.00	1.00	0.95						0.95	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.97	1.00
Satd. Flow (prot)		3539	1583	1770	3539						3444	1583
Flt Permitted		1.00	1.00	0.95	1.00						0.97	1.00
Satd. Flow (perm)		3539	1583	1770	3539						3444	1583
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	1429	470	12	589	0	0	0	0	626	501	1128
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1429	470	12	589	0	0	0	0	0	1127	1128
Turn Type		NA	Free	Prot	NA					Perm	NA	Free
Protected Phases		1 22 2		7	1 22 7						4 8	
Permitted Phases			Free							4 8		Free
Actuated Green, G (s)		58.4	130.0	21.6	65.0						35.0	130.0
Effective Green, g (s)		58.4	130.0	21.6	65.0						35.0	130.0
Actuated g/C Ratio		0.45	1.00	0.17	0.50						0.27	1.00
Clearance Time (s)				5.0								
Vehicle Extension (s)				2.0								
Lane Grp Cap (vph)		1589	1583	294	1769						927	1583
v/s Ratio Prot		c0.40		0.01	0.17							
v/s Ratio Perm			0.30								0.33	c0.71
v/c Ratio		0.90	0.30	0.04	0.33						1.32dl	0.71
Uniform Delay, d1		33.1	0.0	45.5	19.5						47.5	0.0
Progression Factor		0.98	1.00	0.52	0.15						1.00	1.00
Incremental Delay, d2		6.5	0.4	0.0	0.0						107.0	2.8
Delay (s)		39.0	0.4	23.5	2.9						154.5	2.8
Level of Service		D	A	C	A						F	A
Approach Delay (s)		29.5			3.3			0.0			78.6	
Approach LOS		C			A			A			E	

Intersection Summary			
HCM 2000 Control Delay	49.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	76.7%	ICU Level of Service	D
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group

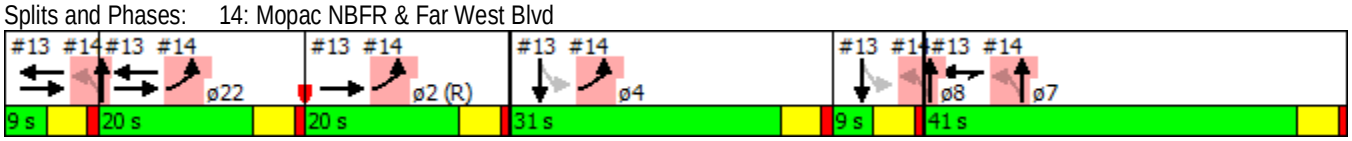
14: Mopac NBFR & Far West Blvd

Lane Group	EBL	NBL	NBT	ø1	ø2	ø4	ø7	ø8	ø22
Lane Configurations									
Volume (vph)	1840	468	27						
Lane Group Flow (vph)	2091	282	281						
Turn Type	Prot	Perm	NA						
Protected Phases	22 2 4		7 1 8	1	2	4	7	8	22
Permitted Phases		7 1 8							
Detector Phase	22 2 4	7 1 8	7 1 8						
Switch Phase									
Minimum Initial (s)				4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)				9.0	24.0	24.0	20.0	9.0	20.0
Total Split (s)				9.0	20.0	31.0	41.0	9.0	20.0
Total Split (%)				7%	15%	24%	32%	7%	15%
Yellow Time (s)				4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)				1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)									
Total Lost Time (s)									
Lead/Lag				Lead		Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes		Yes	Yes
Recall Mode				None	C-Max	None	None	None	None
v/c Ratio	1.20	0.40	0.40						
Control Delay	117.6	28.9	28.8						
Queue Delay	0.7	0.0	0.0						
Total Delay	118.4	28.9	28.8						
Queue Length 50th (ft)	~1102	173	172						
Queue Length 95th (ft)	m#1063	247	246						
Internal Link Dist (ft)	324		322						
Turn Bay Length (ft)									
Base Capacity (vph)	1742	697	702						
Starvation Cap Reductn	340	0	0						
Spillback Cap Reductn	0	0	0						
Storage Cap Reductn	0	0	0						
Reduced v/c Ratio	1.49	0.40	0.40						

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBT, Start of 1st Green
Natural Cycle: 120
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 14: Mopac NBFR & Far West Blvd



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	1840	0	468	27	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0		
Lane Util. Factor	0.97		0.95	0.95		
Frt	1.00		1.00	1.00		
Flt Protected	0.95		0.95	0.96		
Satd. Flow (prot)	3433		1681	1694		
Flt Permitted	0.95		0.95	0.96		
Satd. Flow (perm)	3433		1681	1694		
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	2091	0	532	31	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	2091	0	282	281	0	0
Turn Type	Prot		Perm	NA		
Protected Phases	22 2 4			7 1 8		
Permitted Phases			7 1 8			
Actuated Green, G (s)	66.0		54.0	54.0		
Effective Green, g (s)	66.0		54.0	54.0		
Actuated g/C Ratio	0.51		0.42	0.42		
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)	1742		698	703		
v/s Ratio Prot	c0.61					
v/s Ratio Perm			c0.17	0.17		
v/c Ratio	1.20		0.40	0.40		
Uniform Delay, d1	32.0		26.7	26.6		
Progression Factor	0.79		1.00	1.00		
Incremental Delay, d2	91.8		0.1	0.1		
Delay (s)	117.0		26.8	26.8		
Level of Service	F		C	C		
Approach Delay (s)	117.0			26.8	0.0	
Approach LOS	F			C	A	

Intersection Summary			
HCM 2000 Control Delay	97.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	89.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

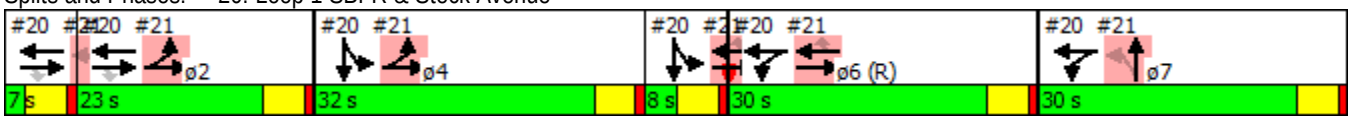
20: Loop 1 SBFR & Steck Avenue

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	ø1	ø2	ø4	ø5	ø6	ø7
Lane Configurations												
Volume (vph)	678	108	268	371	834	867						
Lane Group Flow (vph)	692	110	273	379	698	1406						
Turn Type	NA	Perm	Prot	NA	Split	NA						
Protected Phases	2 1		6 7	2 1 6 7	4 5	4 5	1	2	4	5	6	7
Permitted Phases		2 1										
Detector Phase	2 1	2 1	6 7	2 1 6 7	4 5	4 5						
Switch Phase												
Minimum Initial (s)							2.0	1.0	1.0	3.0	4.0	4.0
Minimum Split (s)							7.0	11.0	11.0	8.0	24.0	9.0
Total Split (s)							7.0	23.0	32.0	8.0	30.0	30.0
Total Split (%)							5%	18%	25%	6%	23%	23%
Yellow Time (s)							4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)							1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag							Lead	Lag	Lead	Lag		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode							None	Max	None	None	C-Max	None
v/c Ratio	1.02	0.26	0.36	0.16	1.61	1.57						
Control Delay	90.6	4.5	2.9	0.1	318.3	293.2						
Queue Delay	31.7	0.0	1.0	0.0	0.0	0.0						
Total Delay	122.2	4.5	3.8	0.1	318.3	293.2						
Queue Length 50th (ft)	~324	0	6	0	~926	~915						
Queue Length 95th (ft)	#449	27	8	0	#1187	#1064						
Internal Link Dist (ft)	737			327		333						
Turn Bay Length (ft)		100	80									
Base Capacity (vph)	680	419	748	2313	433	897						
Starvation Cap Reductn	0	0	257	0	0	0						
Spillback Cap Reductn	200	0	0	0	0	1						
Storage Cap Reductn	0	0	0	0	0	0						
Reduced v/c Ratio	1.44	0.26	0.56	0.16	1.61	1.57						

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 97 (75%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 140
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 20: Loop 1 SBFR & Steck Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	678	108	268	371	0	0	0	0	834	867	361
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0					5.0	5.0	
Lane Util. Factor		0.95	1.00	1.00	0.95					0.91	0.91	
Frt		1.00	0.85	1.00	1.00					1.00	0.96	
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.99	
Satd. Flow (prot)		3539	1583	1770	3539					1610	3239	
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.99	
Satd. Flow (perm)		3539	1583	1770	3539					1610	3239	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	692	110	273	379	0	0	0	0	851	885	368
RTOR Reduction (vph)	0	0	89	0	0	0	0	0	0	0	25	0
Lane Group Flow (vph)	0	692	21	273	379	0	0	0	0	698	1381	0
Turn Type		NA	Perm	Prot	NA					Split	NA	
Protected Phases		2 1		6 7	2 1 6 7					4 5	4 5	
Permitted Phases			2 1									
Actuated Green, G (s)		25.0	25.0	55.0	85.0					35.0	35.0	
Effective Green, g (s)		25.0	25.0	55.0	85.0					35.0	35.0	
Actuated g/C Ratio		0.19	0.19	0.42	0.65					0.27	0.27	
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)		680	304	748	2313					433	872	
v/s Ratio Prot		c0.20		c0.15	0.11					c0.43	0.43	
v/s Ratio Perm			0.01									
v/c Ratio		1.02	0.07	0.36	0.16					1.61	1.58	
Uniform Delay, d1		52.5	43.0	25.6	8.7					47.5	47.5	
Progression Factor		1.00	1.00	0.06	0.00					1.00	1.00	
Incremental Delay, d2		39.0	0.0	0.1	0.0					285.9	268.2	
Delay (s)		91.5	43.0	1.8	0.0					333.4	315.7	
Level of Service		F	D	A	A					F	F	
Approach Delay (s)		84.9			0.7			0.0			321.6	
Approach LOS		F			A			A			F	

Intersection Summary			
HCM 2000 Control Delay	209.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	148.9%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

21: Loop 1 NBFR & Steck Avenue

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	ø1	ø2	ø4	ø5	ø6	ø7
Lane Configurations												
Volume (vph)	733	654	510	526	135	882						
Lane Group Flow (vph)	772	688	537	554	142	1064						
Turn Type	Prot	NA	NA	Perm	Perm	NA						
Protected Phases	2 4	2 4 5 6	6 5			7 1	1	2	4	5	6	7
Permitted Phases				6 5	7 1							
Detector Phase	2 4	2 4 5 6	6 5	6 5	7 1	7 1						
Switch Phase												
Minimum Initial (s)							2.0	1.0	1.0	3.0	4.0	4.0
Minimum Split (s)							7.0	11.0	11.0	8.0	24.0	9.0
Total Split (s)							7.0	23.0	32.0	8.0	30.0	30.0
Total Split (%)							5%	18%	25%	6%	23%	23%
Yellow Time (s)							4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)							1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)												
Total Lost Time (s)												
Lead/Lag							Lead	Lag	Lead	Lag		
Lead-Lag Optimize?							Yes	Yes	Yes	Yes		
Recall Mode							None	Max	None	None	C-Max	None
v/c Ratio	1.14	0.29	0.60	1.09	0.17	2.35						
Control Delay	89.1	0.1	45.9	100.7	39.2	637.2						
Queue Delay	2.2	1.3	0.0	0.0	0.0	0.0						
Total Delay	91.3	1.4	45.9	100.7	39.2	637.2						
Queue Length 50th (ft)	~738	0	210	~430	48	~1479						
Queue Length 95th (ft)	m349	m0	272	#657	77	#1741						
Internal Link Dist (ft)		327	978			2452						
Turn Bay Length (ft)	80			170	110							
Base Capacity (vph)	680	2395	898	508	845	453						
Starvation Cap Reductn	177	1439	0	0	0	0						
Spillback Cap Reductn	0	0	0	0	0	0						
Storage Cap Reductn	0	0	0	0	0	0						
Reduced v/c Ratio	1.53	0.72	0.60	1.09	0.17	2.35						

Intersection Summary

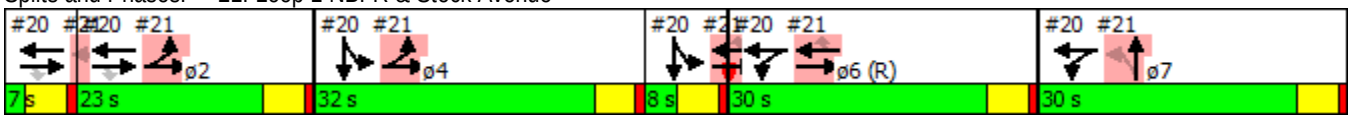
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 97 (75%), Referenced to phase 6:WBTL, Start of 1st Green
Natural Cycle: 140
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 21: Loop 1 NBFR & Steck Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	733	654	0	0	510	526	135	882	129	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0	5.0	5.0	5.0				
Lane Util. Factor	1.00	0.95			0.95	1.00	0.97	1.00				
Frt	1.00	1.00			1.00	0.85	1.00	0.98				
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (prot)	1770	3539			3539	1583	3433	1827				
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (perm)	1770	3539			3539	1583	3433	1827				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	772	688	0	0	537	554	142	928	136	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	107	0	4	0	0	0	0
Lane Group Flow (vph)	772	688	0	0	537	447	142	1060	0	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA				
Protected Phases	2 4	2 4 5 6			6 5			7 1				
Permitted Phases						6 5	7 1					
Actuated Green, G (s)	50.0	88.0			33.0	33.0	32.0	32.0				
Effective Green, g (s)	50.0	88.0			33.0	33.0	32.0	32.0				
Actuated g/C Ratio	0.38	0.68			0.25	0.25	0.25	0.25				
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)	680	2395			898	401	845	449				
v/s Ratio Prot	c0.44	0.19			0.15			c0.58				
v/s Ratio Perm						c0.28	0.04					
v/c Ratio	1.14	0.29			0.60	1.12	0.17	2.36				
Uniform Delay, d1	40.0	8.4			42.7	48.5	38.5	49.0				
Progression Factor	0.63	0.00			1.00	1.00	1.00	1.00				
Incremental Delay, d2	62.8	0.0			0.7	80.1	0.0	619.5				
Delay (s)	88.0	0.0			43.4	128.6	38.6	668.5				
Level of Service	F	A			D	F	D	F				
Approach Delay (s)		46.5			86.7			594.3			0.0	
Approach LOS		D			F			F			A	

Intersection Summary			
HCM 2000 Control Delay	234.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.69		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	148.9%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	224	97	32	152	123	123
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	243	105	35	165	134	134
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			349		531	296
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			349		531	296
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		73	82
cM capacity (veh/h)			1210		494	743

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	349	200	267
Volume Left	0	35	134
Volume Right	105	0	134
cSH	1700	1210	594
Volume to Capacity	0.21	0.03	0.45
Queue Length 95th (ft)	0	2	58
Control Delay (s)	0.0	1.6	15.9
Lane LOS		A	C
Approach Delay (s)	0.0	1.6	15.9
Approach LOS			C

Intersection Summary			
Average Delay	5.6		
Intersection Capacity Utilization	51.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	13	225	13	39	179	32	25	0	74	62	0	25
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	14	245	14	42	195	35	27	0	80	67	0	27
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	229			259			604	594	252	657	584	212
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	229			259			604	594	252	657	584	212
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			97			93	100	90	79	100	97
cM capacity (veh/h)	1339			1306			384	400	787	328	406	828

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	273	272	108	95
Volume Left	14	42	27	67
Volume Right	14	35	80	27
cSH	1339	1306	622	397
Volume to Capacity	0.01	0.03	0.17	0.24
Queue Length 95th (ft)	1	3	16	23
Control Delay (s)	0.5	1.5	12.0	16.9
Lane LOS	A	A	B	C
Approach Delay (s)	0.5	1.5	12.0	16.9
Approach LOS			B	C

Intersection Summary			
Average Delay	4.6		
Intersection Capacity Utilization	44.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	226	6	13	216	13	25
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	246	7	14	235	14	27
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			252		512	249
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			252		512	249
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		97	97
cM capacity (veh/h)			1313		516	790

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	252	249	41
Volume Left	0	14	14
Volume Right	7	0	27
cSH	1700	1313	669
Volume to Capacity	0.15	0.01	0.06
Queue Length 95th (ft)	0	1	5
Control Delay (s)	0.0	0.5	10.7
Lane LOS		A	B
Approach Delay (s)	0.0	0.5	10.7
Approach LOS			B

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	32.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	115	13	13	195	25	25
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	125	14	14	212	27	27
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			139		372	132
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			139		372	132
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		96	97
cM capacity (veh/h)			1444		622	917

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	139	226	54
Volume Left	0	14	27
Volume Right	14	0	27
cSH	1700	1444	742
Volume to Capacity	0.08	0.01	0.07
Queue Length 95th (ft)	0	1	6
Control Delay (s)	0.0	0.5	10.2
Lane LOS		A	B
Approach Delay (s)	0.0	0.5	10.2
Approach LOS			B

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	30.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	19	121	171	58	111	37
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	21	132	186	63	121	40
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	249				390	217
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	249				390	217
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				80	95
cM capacity (veh/h)	1317				604	822

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	152	249	161
Volume Left	21	0	121
Volume Right	0	63	40
cSH	1317	1700	647
Volume to Capacity	0.02	0.15	0.25
Queue Length 95th (ft)	1	0	24
Control Delay (s)	1.2	0.0	12.4
Lane LOS	A		B
Approach Delay (s)	1.2	0.0	12.4
Approach LOS			B

Intersection Summary			
Average Delay	3.9		
Intersection Capacity Utilization	37.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	13	348	225	32	62	25
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	14	378	245	35	67	27
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	279				668	262
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	279				668	262
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				84	97
cM capacity (veh/h)	1283				418	777

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	392	279	95
Volume Left	14	0	67
Volume Right	0	35	27
cSH	1283	1700	482
Volume to Capacity	0.01	0.16	0.20
Queue Length 95th (ft)	1	0	18
Control Delay (s)	0.4	0.0	14.3
Lane LOS	A		B
Approach Delay (s)	0.4	0.0	14.3
Approach LOS			B

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	40.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	410	257	13	25	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	446	279	14	27	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	293				732	286
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	293				732	286
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				93	100
cM capacity (veh/h)	1268				388	753

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	446	293	27
Volume Left	0	0	27
Volume Right	0	14	0
cSH	1268	1700	388
Volume to Capacity	0.00	0.17	0.07
Queue Length 95th (ft)	0	0	6
Control Delay (s)	0.0	0.0	15.0
Lane LOS			B
Approach Delay (s)	0.0	0.0	15.0
Approach LOS			B

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	31.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	13	13	6	669	259	6
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	14	14	7	727	282	7
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					212	
pX, platoon unblocked	0.94	0.94	0.94			
vC, conflicting volume	661	285	288			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	607	205	209			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	96	98	99			
cM capacity (veh/h)	400	752	1276			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	28	249	485	288
Volume Left	14	7	0	0
Volume Right	14	0	0	7
cSH	522	1276	1700	1700
Volume to Capacity	0.05	0.01	0.29	0.17
Queue Length 95th (ft)	4	0	0	0
Control Delay (s)	12.3	0.3	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	12.3	0.1		0.0
Approach LOS	B			

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	32.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	98	25	650	52	13	259
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	107	27	707	57	14	282
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						372
pX, platoon unblocked	0.94					
vC, conflicting volume	1045	382			763	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1017	382			763	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	51	96			98	
cM capacity (veh/h)	217	616			845	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1
Volume Total	134	471	292	296
Volume Left	107	0	0	14
Volume Right	27	0	57	0
cSH	250	1700	1700	845
Volume to Capacity	0.54	0.28	0.17	0.02
Queue Length 95th (ft)	72	0	0	1
Control Delay (s)	34.9	0.0	0.0	0.6
Lane LOS	D			A
Approach Delay (s)	34.9	0.0		0.6
Approach LOS	D			

Intersection Summary			
Average Delay	4.1		
Intersection Capacity Utilization	37.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	84	259	262	13	62	123
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	91	282	285	14	67	134
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	299				756	292
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	299				756	292
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	93				81	82
cM capacity (veh/h)	1262				349	747

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	373	299	201
Volume Left	91	0	67
Volume Right	0	14	134
cSH	1262	1700	540
Volume to Capacity	0.07	0.18	0.37
Queue Length 95th (ft)	6	0	43
Control Delay (s)	2.5	0.0	15.6
Lane LOS	A		C
Approach Delay (s)	2.5	0.0	15.6
Approach LOS			C

Intersection Summary			
Average Delay	4.7		
Intersection Capacity Utilization	53.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	32	315	122	32	62	62
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	35	342	133	35	67	67
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	167				562	150
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	167				562	150
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				86	92
cM capacity (veh/h)	1410				476	896

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	377	167	135
Volume Left	35	0	67
Volume Right	0	35	67
cSH	1410	1700	622
Volume to Capacity	0.02	0.10	0.22
Queue Length 95th (ft)	2	0	20
Control Delay (s)	0.9	0.0	12.4
Lane LOS	A		B
Approach Delay (s)	0.9	0.0	12.4
Approach LOS			B

Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	44.0%	ICU Level of Service	A
Analysis Period (min)	15		

Appendix R: Preliminary Engineer's Estimate of Probable Construction Costs

TABLE 26

OPINION OF PROBABLE COST SUMMARY – PHASE I IMPROVEMENTS

AUSTIN OAKS TIA

Improvement Name	Improvement Description	Opinion of Probable Cost ($)	Site Traffic (%)	Pro-Rata Cost Share ($)
1. Spicewood Springs Road & Hart Lane (2018)	Install a fully actuated traffic signal at the intersection of Spicewood Springs Road and Hart Lane.	$ 420,000	11.0%	$ 46,200
2. Spicewood Springs Road & Hart Lane (2018)	Widen Hart Lane between Executive Center Drive and Spicewood Springs Road.	$ 150,000	11.0%	$ 16,500
3. Spicewood Springs Road & Wood Hollow Drive (2018)	Extend the westbound left-turn bay of Spicewood Springs Road to Wood Hollow Drive.	$ 50,000	42.5%	$ 21,250
4. Spicewood Springs Road & Wood Hollow Drive (2018)	Provide a right-turn overlap operation at the northbound right-turn movement of Wood Hollow Drive to Spicewood Springs Road.	$ 10,000	29.3%	$ 2,930
5. Executive Center Drive & Wood Hollow Drive (2018)	Restripe Wood Hollow Drive between Executive Center Drive and Spicewood Springs Road.	$ 20,000	40.1%	$ 8,020
6. Spicewood Springs Road & Loop 1 SBFR (2018)	Provide a FREE, channelized operation at the southbound right-turn movement from Loop 1 SBFR to FSpicewood Springs Road (westbound)	$ 175,000	7.3%	$ 12,780
7. Spicewood Springs Road & Loop 1 SBFR (2018)	Provide a FREE eastbound right-turn movement from Spicewood Springs Road to Loop 1 SBFR	$ 35,000	7.3%	$ 2,560
8. Executive Center Drive & Wood Hollow Drive (2018)	Provide stop-control at the northbound and southbound approaches of Wood Hollow Drive.	$ 10,000	52.6%	$ 5,260
9. Executive Center Drive & Loop 1 SBFR (2018)	Construct a southbound right-turn deceleration lane on Loop 1 SBFR (upstream of Executive Center Drive).	$ 160,000	77.5%	$ 124,000
10. Executive Center Drive & Loop 1 SBFR (2018)	Construct a southbound accceleration lane on Loop 1 SBFR (downstream of Executive Center Drive).	$ 130,000	85.6%	$ 111,280
11. Greystone Drive & Loop 1 SBFR (2018)	Construct a southbound right-turn deceleration lane on Loop 1 SBFR (upstream of Greystone Drive).	$ 160,000	39.5%	$ 63,200
12. Far West Boulevard & Hart Lane (2018)	Widen the northbound approach and restripe the southbound approach of Hart Lane at the intersection of Far West Boulevard.	$ 110,000	8.6%	$ 9,460
13. Far West Boulevard & Wood Hollow Drive (2018)	Provide a right-turn overlap operation at the northbound right-turn movement from Wood Hollow Drive to Far West Boulevard.	$ 20,000	5.8%	$ 1,160
14. Far West Boulevard & Loop 1 SBFR (2018)	Provide a FREE, channelized operation at the southbound right-turn movement from Loop 1 SBFR to Far West Boulevard (westbound)	$ 175,000	7.5%	$ 13,130
	Phase I Improvements Subtotal	**$ 1,625,000**	**-**	**$ 437,730**

THE ENGINEER HAS NO CONTROL OVER THE COST OF LABOR, MATERIALS, EQUIPMENT, OR OVER THE CONTRACTOR'S METHODS OF DETERMINING PRICES OR OVER COMPETITIVE BIDDING OR MARKET CONDITIONS. OPINIONS OF PROBABLE COSTS PROVIDED HEREIN ARE BASED ON THE INFORMATION KNOWN TO ENGINEER AT THIS TIME AND REPRESENT ONLY THE ENGINEER'S JUDGMENT AS A DESIGN PROFESSIONAL FAMILIAR WITH THE CONSTRUCTION INDUSTRY. THE ENGINEER CANNOT AND DOES NOT GUARANTEE THAT PROPOSALS, BIDS, OR ACTUAL CONSTRUCTION COSTS WILL NOT VARY FROM ITS OPINIONS OF PROBABLE COSTS.

TABLE 27

OPINION OF PROBABLE COST SUMMARY – PHASE II, III, & IV IMPROVEMENTS

AUSTIN OAKS TIA

Improvement Name	Improvement Description	Opinion of Probable Cost ($)	Site Traffic (%)	Pro-Rata Cost Share ($)
2020 improvements				
1. Far West Boulevard & Wood Hollow Drive (2020)	Adjust signal timing at the intersection of Far West Boulevard and Wood Hollow Drive.	$ 10,000	5.6%	$ 560
2022 improvements				
1. Executive Center Drive & Wood Hollow Drive (2022)	Widen Executive Center Drive to include a four-lane cross-section at eastbound and westbound approaches	$ 20,000	52.6%	$ 10,520
2. Far West Boulevard & Wood Hollow Drive (2022)	Restripe the eastbound approach of Far West Boulevard at Wood Hollow Drive.	$ 10,000	3.0%	$ 300
2024 improvements				
1. Executive Center Drive & Hart Lane (2024)	Restripe the westbound approach of Executive Center Drive at Hart Lane (1a) and restripe Hart Lane between Executive Center Drive and Spicewood Springs Road (1b).	$ 20,000	79.1%	$ 15,820
2. Executive Center Drive & Hart Lane (2024)	Restripe Restripe Hart Lane between Executive Center Drive and Spicewood Springs Road	$ 20,000	79.1%	$ 15,820
3a. Executive Center Drive & Wood Hollow Drive (2024)	Preform Traffic Signal Warrant Analysis at the intersection of Executive Center Drive and Wood Hollow Drive.	$ 10,000	52.6%	$ 5,260
3b. Executive Center Drive & Wood Hollow Drive (2024)	Install a fully actuated traffic signal at the intersection of Executive Center Drive and Wood Hollow Drive.	$ 250,000	52.6%	$ 131,500
4. Greystone Drive & Hart Lane (2024)	Restripe the southbound approach of Hart Lane at Greystone Drive.	$ 20,000	9.7%	$ 1,940
5. Greystone Drive & Wood Hollow Drive (2024)	Restripe the northbound approach of Wood Hollow Drive at Greystone Drive.	$ 20,000	40.2%	$ 8,040
6. Far West Boulevard & Wood Hollow Drive (2024)	Adjust signal timing at the intersection of Spicewood Springs Road and Wood Hollow Drive.	$ 10,000	5.6%	$ 560
	Phase II, III, & IV Improvements Subtotal	**$ 390,000**	**-**	**$ 190,320**
	Recommened Improvements Total (Rounded)	**$ 2,015,000**	**-**	**$ 628,000**

THE ENGINEER HAS NO CONTROL OVER THE COST OF LABOR, MATERIALS, EQUIPMENT, OR OVER THE CONTRACTOR'S METHODS OF DETERMINING PRICES OR OVER COMPETITIVE BIDDING OR MARKET CONDITIONS. OPINIONS OF PROBABLE COSTS PROVIDED HEREIN ARE BASED ON THE INFORMATION KNOWN TO ENGINEER AT THIS TIME AND REPRESENT ONLY THE ENGINEER'S JUDGMENT AS A DESIGN PROFESSIONAL FAMILIAR WITH THE CONSTRUCTION INDUSTRY. THE ENGINEER CANNOT AND DOES NOT GUARANTEE THAT PROPOSALS, BIDS, OR ACTUAL CONSTRUCTION COSTS WILL NOT VARY FROM ITS OPINIONS OF PROBABLE COSTS.

Appendix S: TSWA - Spicewood Springs Road at Hart Lane

TRAFFIC SIGNAL WARRANT ANALYSIS (2011 TXMUTCD)

MAJOR STREET:	Spicewood Springs Road	EB	WB	# OF APPROACH LANES:	2
MINOR STREET:	Hart Lane	NB		# OF APPROACH LANES:	1
CITY, STATE:	Austin, Texas				
COMMENTS:	**Austin Oaks TIA - 2016 Existing Conditions**				

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): N

85TH PERCENTILE SPEED OR POSTED SPEED LIMIT GREATER THAN 40 MPH ON MAJOR STREET: Y

			Spicewood Springs Road Sum of Both Approaches	Hart Lane NB Approach
12:00 AM	TO	01:00 AM	60	2
01:00 AM	TO	02:00 AM	29	1
02:00 AM	TO	03:00 AM	19	1
03:00 AM	TO	04:00 AM	19	1
04:00 AM	TO	05:00 AM	21	2
05:00 AM	TO	06:00 AM	123	3
06:00 AM	TO	07:00 AM	458	15
07:00 AM	TO	08:00 AM	1572	72
08:00 AM	TO	09:00 AM	1928	96
09:00 AM	TO	10:00 AM	1481	63
10:00 AM	TO	11:00 AM	1241	57
11:00 AM	TO	12:00 PM	1324	74
12:00 PM	TO	01:00 PM	1513	85
01:00 PM	TO	02:00 PM	1569	77
02:00 PM	TO	03:00 PM	1385	81
03:00 PM	TO	04:00 PM	1423	113
04:00 PM	TO	05:00 PM	1674	124
05:00 PM	TO	06:00 PM	1736	151
06:00 PM	TO	07:00 PM	1458	102
07:00 PM	TO	08:00 PM	950	45
08:00 PM	TO	09:00 PM	627	32
09:00 PM	TO	10:00 PM	444	29
10:00 PM	TO	11:00 PM	227	11
11:00 PM	TO	12:00 AM	104	4

Warrant	Description	Warrant Met?
1	Eight-Hour Volume	WARRANT MET
2	Four-Hour Volume	WARRANT MET
3	Peak Hour Volume	WARRANT MET
4	Pedestrian Volume	Not Evaluated
5	School Crossing	N/A
6	Coordinated Signal System	Not Evaluated
7	Crash Experience	Not Evaluated
8	Roadway Network	Not Evaluated
9	Intersection Near a Grade C	N/A

04/19/16

Kimley-Horn and Associates, Inc.

TRAFFIC SIGNAL WARRANT ANALYSIS (2011 TXMUTCD)

MAJOR STREET: **Spicewood Springs Road** EB WB # OF APPROACH LANES: **2**

MINOR STREET: **Hart Lane** NB # OF APPROACH LANES: **1**

CITY, STATE: **Austin, Texas**

COMMENTS: Austin Oaks TIA - 2016 Existing Conditions

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): **N**

85TH PERCENTILE SPEED OR POSTED SPEED LIMIT GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): **Y** (see Speed Data collected 3/9/16)

	MAJOR ST TWO-WAY TRAFFIC	MINOR ST TRAFFIC HEAVY LEG	WARRANT 1 - Condition A, Part 1			WARRANT 1 - Condition B, Part 1			WARRANT 1 - Condition A, Part 2			WARRANT 1 - Condition B, Part 2			WARRANT 2 Four-Hour	WARRANT 3 Peak Hour
			MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET		
THRESHOLD VALUES →			**420**	**105**		**630**	**53**		**336**	**84**		**504**	**42**			
12:00 AM TO 01:00 AM	60	2														
01:00 AM TO 02:00 AM	29	1														
02:00 AM TO 03:00 AM	19	1														
03:00 AM TO 04:00 AM	19	1														
04:00 AM TO 05:00 AM	21	2														
05:00 AM TO 06:00 AM	123	3														
06:00 AM TO 07:00 AM	458	15	Y						Y							
07:00 AM TO 08:00 AM	1,572	72	Y			Y	Y	**Y**	Y			Y	Y	**Y**	**Y**	
08:00 AM TO 09:00 AM	1,928	96	Y			Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**	**Y**	**Y**
09:00 AM TO 10:00 AM	1,481	63	Y			Y	Y	**Y**	Y			Y	Y	**Y**	**Y**	
10:00 AM TO 11:00 AM	1,241	57	Y			Y	Y	**Y**	Y			Y	Y	**Y**		
11:00 AM TO 12:00 PM	1,324	74	Y			Y	Y	**Y**	Y			Y	Y	**Y**		
12:00 PM TO 01:00 PM	1,513	85	Y			Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**		
01:00 PM TO 02:00 PM	1,569	77	Y			Y	Y	**Y**	Y			Y	Y	**Y**		
02:00 PM TO 03:00 PM	1,385	81	Y			Y	Y	**Y**	Y			Y	Y	**Y**		
03:00 PM TO 04:00 PM	1,423	113	Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**		
04:00 PM TO 05:00 PM	1,674	124	Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**		
05:00 PM TO 06:00 PM	1,736	151	Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**		
06:00 PM TO 07:00 PM	1,458	102	Y			Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**	**Y**	**Y**
07:00 PM TO 08:00 PM	950	45	Y			Y			Y			Y	Y	**Y**		
08:00 PM TO 09:00 PM	627	32	Y						Y			Y				
09:00 PM TO 10:00 PM	444	29	Y						Y							
10:00 PM TO 11:00 PM	227	11														
11:00 PM TO 12:00 AM	104	4														
	21,385	1,241	16	3	**3**	13	12	**12**	16	6	**6**	14	13	**13**	**4**	**2**
			8 HOURS NEEDED			8 HOURS NEEDED			8 HOURS NEEDED for both Condition A & B						4 HRS NEEDED	1 HR NEEDED
			NOT SATISFIED			**SATISFIED**			**NOT SATISFIED**						**SATISFIED**	**SATISFIED**

04/19/16

Kimley-Horn and Associates, Inc.

Appendix T: TSWA - Executive Center Drive at Wood Hollow Drive

TRAFFIC SIGNAL WARRANT ANALYSIS (2011 TXMUTCD)

MAJOR STREET:	Wood Hollow Drive	NB	SB	# OF APPROACH LANES:	1
MINOR STREET:	Executive Center Drive	EB		# OF APPROACH LANES:	1
CITY, STATE:	Austin, Texas				

COMMENTS: **Austin Oaks TIA - 2024 Mitigated Conditions**

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): N

85TH PERCENTILE SPEED OR POSTED SPEED LIMIT GREATER THAN 40 MPH ON MAJOR STREET: N

			Wood Hollow Drive Sum of Both Approaches	Executive Center Drive EB Approach
12:00 AM	TO	01:00 AM	100	2
01:00 AM	TO	02:00 AM	29	1
02:00 AM	TO	03:00 AM	19	1
03:00 AM	TO	04:00 AM	26	1
04:00 AM	TO	05:00 AM	8	2
05:00 AM	TO	06:00 AM	87	3
06:00 AM	TO	07:00 AM	198	15
07:00 AM	TO	08:00 AM	772	72
08:00 AM	TO	09:00 AM	904	96
09:00 AM	TO	10:00 AM	746	63
10:00 AM	TO	11:00 AM	537	57
11:00 AM	TO	12:00 PM	669	74
12:00 PM	TO	01:00 PM	949	85
01:00 PM	TO	02:00 PM	886	77
02:00 PM	TO	03:00 PM	809	81
03:00 PM	TO	04:00 PM	764	113
04:00 PM	TO	05:00 PM	1000	124
05:00 PM	TO	06:00 PM	1193	151
06:00 PM	TO	07:00 PM	928	102
07:00 PM	TO	08:00 PM	651	45
08:00 PM	TO	09:00 PM	539	32
09:00 PM	TO	10:00 PM	428	29
10:00 PM	TO	11:00 PM	238	11
11:00 PM	TO	12:00 AM	124	4

Warrant	Description	Warrant Met?
1	Eight-Hour Volume	WARRANT MET
2	Four-Hour Volume	Warrant NOT Met
3	Peak Hour Volume	WARRANT MET
4	Pedestrian Volume	Not Evaluated
5	School Crossing	N/A
6	Coordinated Signal System	Not Evaluated
7	Crash Experience	Not Evaluated
8	Roadway Network	Not Evaluated
9	Intersection Near a Grade C	N/A

07/21/16

Kimley-Horn and Associates, Inc.

TRAFFIC SIGNAL WARRANT ANALYSIS (2011 TXMUTCD)

MAJOR STREET: **Wood Hollow Drive** NB SB # OF APPROACH LANES: **1**

MINOR STREET: **Executive Center Drive** EB # OF APPROACH LANES: **1**

CITY, STATE: **Austin, Texas**

COMMENTS: Austin Oaks TIA - 2024 Mitigated Conditions

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): **N**

85TH PERCENTILE SPEED OR POSTED SPEED LIMIT GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): **N** (see Speed Data collected 3/9/16)

	MAJOR ST TWO-WAY TRAFFIC	MINOR ST TRAFFIC HEAVY LEG	WARRANT 1 - Condition A, Part 1			WARRANT 1 - Condition B, Part 1			WARRANT 1 - Condition A, Part 2			WARRANT 1 - Condition B, Part 2			WARRANT 2 Four-Hour	WARRANT 3 Peak Hour
			MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET		
THRESHOLD VALUES →			**500**	**150**		**750**	**75**		**400**	**120**		**600**	**60**			
12:00 AM TO 01:00 AM	100	2														
01:00 AM TO 02:00 AM	29	1														
02:00 AM TO 03:00 AM	19	1														
03:00 AM TO 04:00 AM	26	1														
04:00 AM TO 05:00 AM	8	2														
05:00 AM TO 06:00 AM	87	3														
06:00 AM TO 07:00 AM	198	15														
07:00 AM TO 08:00 AM	772	72	Y			Y			Y			Y	Y	**Y**		
08:00 AM TO 09:00 AM	904	96	Y			Y	Y	**Y**	Y			Y	Y	**Y**		
09:00 AM TO 10:00 AM	746	63	Y						Y			Y	Y	**Y**		
10:00 AM TO 11:00 AM	537	57	Y						Y							
11:00 AM TO 12:00 PM	669	74	Y						Y			Y	Y	**Y**		
12:00 PM TO 01:00 PM	949	85	Y			Y	Y	**Y**	Y			Y	Y	**Y**		
01:00 PM TO 02:00 PM	886	77	Y			Y	Y	**Y**	Y			Y	Y	**Y**		
02:00 PM TO 03:00 PM	809	81	Y			Y	Y	**Y**	Y			Y	Y	**Y**		
03:00 PM TO 04:00 PM	764	113	Y			Y	Y	**Y**	Y			Y	Y	**Y**		
04:00 PM TO 05:00 PM	1,000	124	Y			Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**	**Y**	
05:00 PM TO 06:00 PM	1,193	151	Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**	**Y**	**Y**
06:00 PM TO 07:00 PM	928	102	Y			Y	Y	**Y**	Y			Y	Y	**Y**		
07:00 PM TO 08:00 PM	651	45	Y						Y			Y				
08:00 PM TO 09:00 PM	539	32	Y						Y							
09:00 PM TO 10:00 PM	428	29							Y							
10:00 PM TO 11:00 PM	238	11														
11:00 PM TO 12:00 AM	124	4														
	12,604	1,241	14	1	**1**	9	8	**8**	15	2	**2**	12	11	**11**	**2**	**1**
			8 HOURS NEEDED			8 HOURS NEEDED			8 HOURS NEEDED for both Condition A & B						4 HRS NEEDED	1 HR NEEDED
			NOT SATISFIED			**SATISFIED**			**NOT SATISFIED**						**NOT SATISFIED**	**SATISFIED**

07/21/16

Kimley-Horn and Associates, Inc.

Appendix U: TIA Comment Response

MEMORANDUM

To: Bryan Golden, DSD

Date: June 20, 2016

Project: Austin Oaks

CC: Scott A. James, PE/DSD

From: André H. Betit, Jr. PE
Dipti Borkar-Desai, PE
Upal Barua, P. Eng., PE
Austin Transportation Department

Re: TIA Comments

The Traffic Engineering and Arterial Management Divisions have reviewed the April 21, 2016 traffic report regarding the *"Traffic Impact Analysis, Austin Oaks, Austin, Texas"*, prepared by Kimley-Horn. The proposal calls for constructing 672,995 SF of General Office, 250 Apartment units, a 100 Room Hotel, 169,000 SF of Medical Office and 46,700 SF of High Turnover (Sit Down) Restaurant and. The development would be constructed at the Southwest corner of the Spicewood Springs/Mopac intersection and will be constructed in 4 phases. The following comments summarize our review findings:

1. The TIA reduces the area trips by removing the existing office development traffic. However, the traffic is estimated using ITE LUC 710 (General Office Building) rather than actual traffic counts of the existing facility. We recommend that the trip reduction be based on actual count data versus ITE Trip Generation.

2. Existing Traffic Volumes: Traffic counts were taken in March 2014 and are greater than 2 years old. We recommend that new traffic counts be obtained as opposed to applying a growth factor to old data.

3. Existing Traffic Volumes: Traffic volumes are reported for the Loop 1 on and off ramps. However no count data was provided in the Appendix. We recommend that the count data be included in the Appendix or an explanation of how the volumes were determined be provided.

4. Existing Traffic Volumes: It appears that the volumes shown in Exhibit 4 do not always agree with the peak hour counts included in Appendix E. It is unclear if the volumes presented are to use a uniform peak hour or are from balancing. We recommend that the Applicant clarify this discrepancy.

5. Existing Traffic Volumes: It appears that there may be an issue with intersection balancing between Executive Center Drive and Greystone Drive at their intersections with the Loop 1 southbound frontage road. The volume of traffic leaving the Executive Center Drive/ Loop 1 southbound frontage road intersection is 2,681 vehicles in the AM Peak Hour and 2,034 vehicles in the PM Peak Hour. However the number of vehicles arriving at the Greystone Drive/Loop 1 southbound frontage road intersection is 3,277 vehicles in the AM Peak Hour and 1,908 vehicles

in the PM Peak Hour. This is a difference of a 596 vehicle increase in the AM Peak Hour and a 126 vehicle decrease in the PM Peak Hour. We recommend that the Applicant clarify this discrepancy.

6. Existing / 2016 Traffic Volumes: It appears that there may be an issue with traffic counts at the intersections of Mopac Service Road (NB and SB) and Spicewood Springs. Specifically during the PM peak hour, there appears to be a difference of 483 vehicles in the westbound direction and a difference of 254 vehicles in the eastbound direction along Spicewood Springs bridge between NB and SB Mopac (there is no access in between). All the analyses for 2016, 2018, and so forth were based on this count. We recommend that the Applicant review the balancing of intersections and clarify this discrepancy.

7. Existing / 2016 Traffic Volumes: Similar concerns exist in the traffic counts along Spicewood Springs between SB Mopac and Wood Hollow. During the PM peak hour, there is a difference of 271 vehicles in the eastbound direction between Wood Hollow and SB Mopac (there is no access in between). On the westbound direction, despite a Ri/Ro access between SB Mopac and Wood Hollow, it is concerning that there is a deficit of 729 vehicles in the westbound direction, from SB Mopac to Wood Hollow. It is not conceivable that 729 vehicles could make right-in and no vehicles made right-out from at the Ri/Ro access in the PM peak hour. We recommend that the Applicant review the balancing of intersections and clarify this discrepancy.

8. Background Growth: The TIA indicates that a 2% background growth rate was used as identified in the scoping document. The TIA indicates that this rate was reviewed based on count data from TXDOT. However, the TIA does not appear to contain information or supporting calculations showing this review. We recommend that the Applicant provide this information and supporting calculations as an Appendix to the TIA.

9. Trip Distribution: Site trips were assigned to the various site driveways as part of the analysis. However, no explanation or discussion of how the trips were assigned to each driveway is provided in the TIA. We recommend that the Applicant provide this information in the TIA.

10. Trip Distribution: From the information provided in Exhibit 6, it appears that 8% of the exiting site trips are anticipated to turn right onto the Loop 1 SB frontage road and then make 2 left turns at Far West Blvd. to take Loop 1 north and then exit Loop 1 and make a right onto Anderson Lane rather than using Spicewood Springs Road from either Hart Lane or Wood Hollow Drive. We recommend that the Applicant provide justification why such a significant number of trips will use the proposed indirect route, as opposed to eastbound Spicewood Springs which is more of a direct route (noted that 10% exiting trips were assigned to this route).

11. Trip Distribution: Site trips were assigned to the various site driveways as part of the analysis. However, no explanation or discussion of how the trips were assigned to each driveway is provided in the TIA. We recommend that the Applicant provide this information in the TIA.

12. 2018 Traffic Volumes: The traffic volumes shown on Exhibit 12 at the site driveway differ from those shown on Exhibit 10. The TIA does not include an explanation of why these volumes are different and provides no supporting documentation for the difference. This discrepancy was noted on all other analysis periods as well. We recommend that the Applicant clarify this discrepancy with an explanation as well as documentation and calculations supporting the explanation provided.

13. 2020 Global Trip Assignment: The traffic volumes shown on Exhibit 16 appear to have some calculation discrepancies between the distribution percentage and the volumes reported. For example at the Loop 1 SB on ramp, the reported volumes are 30 AM peak hour and 43 PM peak hour trips. However, when the distribution percentages shown on Exhibit 6 are applied, the volumes for the Loop 1 SB on ramp calculate to be, 50 AM peak hour and 71 PM peak hour trips. These types of discrepancies were noted in other analysis periods as well. We recommend that the Applicant clarify these discrepancies and verify all trip calculations.

14. 2020 Local Trip Distribution: From the information provided in Exhibit 17, the percentage of site trips entering the phase 1 portion of the site is lower than it was with the 2018 Local Trip Distribution. We recommend that the Applicant provide an explanation for this difference.

15. Advisory Comment on Intersection Capacity Analysis: The TIA Scope (included in Appendix A) asked for

    f)
    - existing conditions (am + pm on one sheet),
    - six (6) future conditions:
        - (am background, am background + site, am background + site + mitigation)
        - (pm background, pm background + site, pm background + site + mitigation)

    The scope specifically asked for future conditions am/pm background, am/pm background + site, then am/pm background + site **+ MITIGATION**. It was asked to compare Build and No-Build scenarios without mitigation, and then with mitigation. Introducing mitigation on existing condition and assuming them in the No-Build scenario on the opening day, made it very difficult to compare Build and No-Build scenarios, and assess the impact(s) from the proposed development. It is recommended that the mitigation analysis focus on the Build and Phasing years, rather than existing conditions as per the approved scope.

16. The TIA scope asked for v/c, LOS, delay and 95% queue length by movements, the TIA report provided the parameters by approaches. Please update the analysis tables so they agree with what was identified in the approved scope.

17. LOS Analysis: The LOS analysis presented uses an overall intersection Peak Hour Factor (PHF) rather than the PHFs by approach. We recommend that the analysis be prepared using the PHF by approach

18. 2016 Improvements at Spicewood Springs Road & Hart Lane: About 27% of inbound trips and 17% outbound trips were shown to use this intersection to access the site (Exhibit 6). However, there was no discussion about this impacted intersection under 2018 Build Analysis Results section. Please include discussion(s) on the impact of the site traffic on this intersection and propose appropriate recommendation(s) accordingly. The northbound taper length shown appears to be substandard. We recommend that the Applicant review this length.

    In addition, , the intersection at Spicewood Springs / Hart Lane is at a steep downhill east to west in combination with a tight horizontal curve. There are significant safety concerns associated with eastbound vehicles driving on a downhill with very limited sight distance, if a traffic signal is constructed. We recommend that a more conventional intersection configuration be considered which eliminates the existing center triangle island on the westbound roadway.

    Due to the safety concern associated with the eastbound vehicles (in case of a traffic signal), it is recommended to install an advance warning flasher west of the intersection synchronized with the traffic signal to address this potential safety issue.

19. Spicewood Springs / Wood Hollow Drive: It appears that westbound left-turn bay extension and right-turn overlap phase were recommended at the intersection of Spicewood Springs / Wood Hollow Drive; however, the Applicants contribution to these improvements was not included in the TIA report. From the data presented in the TIA it appears that about 15% of the inbound trips and 15% of the outbound trips were shown to use these left-turn and right-turn lanes to access the site (Exhibit 6). No discussions were included about these impacted movements under 2018 Build Analysis Results section and how any proposed improvements would address these impacts. Please include discussions on the impact of the site traffic on these movements and propose appropriate recommendation(s) accordingly

    In addition, The TIA report recommended adjustment of signal timing at the intersection of Spicewood Springs / Wood Hollow Drive. However, no specific signal timing plan(s) were proposed or included in the TIA report. We recommend that these be included in the TIA for review.

20. Executive Center / Wood Hollow Drive: A multi-lane roundabout was recommended at the intersection of Executive Center / Wood Hollow Drive. Reviewing the analysis results at this intersection, it appears that the recommended multi-lane roundabout would be warranted at the opening day (2018). No analysis results were included supporting that an all-way stop would work in the interim. Reviewing the traffic volume during the peak hour, it appears that an all-way Stop may not work in the interim. Therefore, we recommend that the roundabout be constructed opening day to accommodate the propsed 2018 build traffic.

21. Mopac Southbound Frontage Road from Spicewood Springs Road to Far West Boulevard: The TIA report recommended improvements at Mopac Southbound Frontage Road / Spicewood Springs Eastbound to Southbound Right-turn, at the Mopac Southbound Frontage Road / Executive Center Drive intersection, and Mopac Southbound Frontage Road / Greystone Drive intersection, back and forth between 2016 and 2018 (Exhibit C). However, the exhibits provided didn't show how the improvements interact with each other, i.e. how the weaving, merging, diverging would occur along Mopac Southbound Frontage Road from Spicewood Springs to Greystone Drive. Please present / provide all these improvements in one conceptual figure / drawing, with existing and proposed right of way (ROW), dimension and scale (including the tapers; the tapers appeared to be deficient from cursory review) from Spicewood Springs to Greystone Drive.

    Based on the cursory review of the proposed improvement concepts of southbound Mopac Service Road, from Spicewood Springs Road to Far West Boulevard, it appeared that there may be significant safety concerns with weaving, merging, diverging. It is recommended that a continuous additional lane be considered along Mopac Service Road from Spicewood Springs Road to Far West Boulevard.

    Additionally, at the intersection of Executive Center Drive @ /Mopac Loop 1 SB Frontage Road: the 2016 improvements show 4 SB thru lanes approaching this intersection while only 3 receiving lanes currently exist.

22. Intersection of Southbound Mopac / Spicewood Springs Road: The intersection of Southbound Mopac / Spicewood Springs Road was reported to fail under 2018 build scenario (e.g. PM peak: EBT v/c 1.49, LOS F, queue length 1095 feet etc. and continue to deteriorate in the following phases). However, no discussion was included in the TIA report on the failing movements, and how the proposed development impacts these movements during the peak hour(s). No mitigation measures were recommended to address these failing movements and no discussion / justification was not provided. We recommend that Applicant review operations at this intersection and include a discussion of needed mitigation to address the failing conditions.

    Also, in Table 11, at the intersection of Spicewood Springs / SB Mopac, it shows that during the AM peak hour, the EB approach improves from v/c of 1.52 & delay of

253 sec/veh under No-build Condition to v/c 1.27 & delay of 121 sec/veh under Build Condition (without mitigation). Please provide discussion / justification how additional site traffic would/could improve traffic operation (v/c, delay etc.) without any mitigation(s).

Additionally, the proposed improvements at Spicewood Springs Road/ Mopac /Loop 1 Service Road show 2-11' receiving lanes as part of the improvements at the intersection. We recommend that these receiving lanes be a minimum of 12'.

23. Intersection of Northbound Mopac / Spicewood Springs Road: The intersection of Northbound Mopac / Spicewood Springs Road was reported to fail under 2018 build scenario (e.g. AM peak: NBL v/c 1.43, LOS F, queue length 609 feet etc. and continue to deteriorate in the following phases). However, no discussion was included in the TIA report on the failing movements, and how the proposed development impacts these movements during the peak hour(s). No mitigation measures were recommended to address these failing movements and no discussion / justification was not provided. We recommend that Applicant review operations at this intersection and include a discussion of needed mitigation to address the failing conditions.

24. Intersection of Greystone Drive / Southbound Mopac: The TIA report under the 2018 build condition identifies that the right-out movement fails at the intersection of Greystone Drive / Southbound Mopac due to lack of acceptable and safe gap in the southbound Mopac traffic stream (as reported in Section B 2018 Build Analysis Results). However, the TIA report didn't identify how to address / mitigate this safety and operational concern with the right-out movement at Greystone Drive. Please provide recommendations to address these concerns.

25. Intersection of Hart Lane and Greystone Drive: The proposed improvement(s) / re-configuration at the intersection of Hart Lane / Greystone Drive as presented in Exhibit C 2024 Improvements, call(s) for removal of the bi-cycle lane from Hart Lane north of Greystone Drive. What alternative bicycle facility is being proposed to facilitate Bicycle movements on Hart Lane, north of Greystone Drive? Also, please provide dimensions on Greystone Drive at the intersection approaches, so that the reviewers can complete geometric review.

26. Intersection of Hart Lane and Executive Center Drive: The proposed improvement(s) / re-configuration at the intersection of Hart Lane / Executive Center Drive is presented in Exhibit A 2024 Improvements. However, the figure was not dimensioned on Hart Lane at the intersection approach. Based on the cursory review, it appears that the intersection approaches on Hart Lane may not work geometrically. The Northbound lane on Hart Lane was aligned with the opposing left-turn lane, leaving a full lane off-set with the northbound through receiving lane. Also, the northbound receiving lane appeared to have conflict between northbound

vehicles and bicycles. Please provide revised recommendation(s)/figure(s) with proper intersection geometry.

27. Intersection of Far West Boulevard and Hart Lane: The reviewer acknowledges recommended improvement(s)/reconfiguration at the intersection of Far West Boulevard / Hart Lane. However, the reviewer was unable to compare no-build and build scenario to assess the impact from additional traffic from the proposed development (as per the scope), as improvements were already assumed in the existing condition (2016). Se previous comments regarding this. Exhibit (Exhibit F) was included in the Appendix; however, necessary dimensions (lane widths) were not provided to assess the feasibility, geometry, and need for additional ROW. Proposed sidewalk at the northbound approach was proposed as 4 feet, which is deficient. Please include minimum standard sidewalk on the northbound approach.

28. Intersection of Northbound Mopac Service Road / Far West Boulevard: The intersection of Northbound Mopac / Far West Boulevard was reported to fail under 2018 build scenario (e.g. PM peak: EBL v/c over 1, LOS F, queue length 879 feet etc. and continue to deteriorate in the following phases). However, no discussion was included in the TIA report on the failing movement, and how the proposed development impacts this movement during the peak hour(s). No mitigation measures were recommended to address this failing movement and no discussion / justification was provided. We recommend that Applicant review operations at this intersection and include a discussion of needed mitigation to address the failing conditions.

29. There may be additional comments based on the review of any additional addendum / analysis /revision submitted.

30. TXDOT Review: The Applicant should be aware that TXDOT also needs to approve and review all proposed improvements along their roadways.

July 11, 2016

Andre H Betit, Jr. PE
Dipti Borkat-Desai, PE
Upal Barua, P. Eng., PE
City of Austin
Austin Transportation Department

RE: Austin Oaks TIA – TIA Comment Response

Dear Mr. Betit, Mr Borkar-Desai, and Mr. Barua:

Please accept this Comment Response Letter for the above referenced project. This submittal is in response to the comments provided by the Austin Transportation Department. The original comments have also been included below for reference.

Traffic Engineering and Arterial Management Division staff comments received 7/1/2016.

1. The TIA reduces the area trips by removing the existing office development traffic. However, the traffic is estimated using ITE LUG 710 (General Office Building) rather than actual traffic counts of the existing facility. We recommend that the trip reduction be based on actual count data versus ITE Trip Generation.

Response: The methodology of estimating the existing office development traffic using ITE LUG 710 was submitted in the scoping meeting notes. For consistency, it is appropriate to estimate existing office trips using ITE LUG 710 as this methodology was used to estimate proposed office trips.

2. Existing Traffic Volumes: Traffic counts were taken in March 2014 and are greater than 2 years old. We recommend that new traffic counts be obtained as opposed to applying a growth factor to old data.

Response: This approach was used during the Austin Oaks charrette. 24 hour counts were collected in 2016 to verify the practicality of growing the TMCs collected March 2014 by 2%. Please also note the City utilizes 2% growth in the scoping document. Attached is an analysis showing the validity of using the 2014 counts grown at 2% and volume balanced. See ***Attachment***

3. Existing Traffic Volumes: Traffic volumes are reported for the Loop 1 on and off ramps. However no count data was provided in the Appendix. We recommend that the count data be included in the Appendix or an explanation of how the volumes were determined be provided.

Response: These volumes were calculated based upon volumes collected at intersections adjacent to each ramp:

- SB Off-Ramp – the volume difference between SB receiving lanes of Mopac & Spicewood Springs and SB approach lanes of Mopac & Executive Center
- SB On-Ramp – the volume difference between SB receiving lanes of Mopac & Executive Center Drive and SB approach lanes of Mopac & Far West
- NB On-Ramp – the NB receiving lanes of Mopac & Far West

- NB Off-Ramp – the NB approach lanes of Mopac & Spicewood Springs

4. Existing Traffic Volumes: It appears that the volumes shown in Exhibit 4 do not always agree with the peak hour counts included in Appendix E. It is unclear if the volumes presented are to use a uniform peak hour or are from balancing. We recommend that the Applicant clarify this discrepancy.

Response: The peak hour of each intersection was used. The peak hour counts included in Appendix E are year 2014. The volumes shown in Exhibit 4 are year 2016 (2014 volumes grown by 2% annually). Also, volume balancing will be completed in response to Comments 5,6, and 7 which will lead to the count exhibits and count volumes varying. Please also note the City utilizes 2% growth in the scoping document.

5. Existing Traffic Volumes: It appears that there may be an issue with intersection balancing between Executive Center Drive and Greystone Drive at their intersections with the Loop 1 southbound frontage road. The volume of traffic leaving the Executive Center Drive/ Loop 1 southbound frontage road intersection is 2,681 vehicles in the AM Peak Hour and 2,034 vehicles in the PM Peak Hour. However the number of vehicles arriving at the Greystone Drive/Loop 1 southbound frontage road intersection is 3,277 vehicles in the AM Peak Hour and 1,908 vehicles in the PM Peak Hour. This is a difference of a 596 vehicle increase in the AM Peak Hour and a 126 vehicle decrease in the PM Peak Hour. We recommend that the Applicant clarify this discrepancy.

Response: There are existing driveways between the intersections and the intersections have varying peak hours. Both these factors can contribute to discrepancies in volume balance between adjacent intersections. Were the volumes between intersections to be balanced, the recommendations of the analysis are not expected to change. The volumes will be balanced in the updated analysis.

6. Existing & 2016 Traffic Volumes: It appears that there may be an issue with traffic counts at the intersections of Mopac Service Road (NB and SB) and Spicewood Springs. Specifically during the PM peak hour, there appears to be a difference of 483 vehicles in the westbound direction and a difference of 254 vehicles in the eastbound direction along Spicewood Springs bridge between NB and SB Mopac (there is no access in between). All the analyses for 2016, 2018, and so forth were based on this count. We recommend that the Applicant review the balancing of intersections and clarify this discrepancy.

Response: The volumes used for the analysis reflect the data collected. Were the volumes between intersections to be balanced, the recommendations of the analysis are not expected to change. The volumes will be balanced in the updated analysis.

7. Existing I 2016 Traffic Volumes: Similar concerns exist in the traffic counts along Spicewood Springs between SB Mopac and Wood Hollow. During the PM peak hour, there is a difference of 271 vehicles in the eastbound direction between Wood Hollow and SB Mopac (there is no access in between). On the westbound direction, despite a Ri/Ro access between SB Mopac and Wood Hollow, it is concerning that there is a deficit of 729 vehicles in the westbound direction, from SB Mopac to Wood Hollow. It is not conceivable that 729 vehicles could make right-in and no vehicles made right-out from at the Ri/Ro access in the PM peak hour. We recommend that the Applicant review the balancing of intersections and clarify this discrepancy.

Response: The volumes used for the analysis reflect the data collected. Were the volumes between intersections to be balanced, the recommendations of the analysis are not expected to change. The volumes will be balanced in the updated analysis. The volumes balancing was focused on the thru movements of Spicewood Springs.

8. Background Growth: The TIA indicates that a 2% background growth rate was used as identified in the scoping document. The TIA indicates that this rate was reviewed based on count data from TXDOT. However, the TIA does not appear to contain information or supporting calculations showing this review. We recommend that the Applicant provide this information and supporting calculations as an Appendix to the TIA.

Response: Supporting calculations for the background growth rate will be provided as an Appendix to the TIA. Please also note the City utilizes 2% growth in the scoping document. See ***Attachment***.

9. Trip Distribution: Site trips were assigned to the various site driveways as part of the analysis. However, no explanation or discussion of how the trips were assigned to each driveway is provided in the TIA. We recommend that the Applicant provide this information in the TIA.

Response: Trips were assigned to driveways based on the quantity of trips generated by the land uses the driveway provides access to. In other words, the trips were distributed among driveways based on the square footage of development served. Local distribution information will be provided as an Appendix to the TIA. See ***Attachment***.

10. Trip Distribution: From the information provided in Exhibit 6, it appears that 8% of the exiting site trips are anticipated to turn right onto the Loop 1 SB frontage road and then make 2 left turns at Far West Blvd. to take Loop 1 north and then exit Loop 1 and make a right onto Anderson Lane rather than using Spicewood Springs Road from either Hart Lane or Wood Hollow Drive. We recommend that the Applicant provide justification why such a significant number of trips will use the proposed indirect route, as opposed to eastbound Spicewood Springs which is more of a direct route (noted that 10% exiting trips were assigned to this route).

Response: Using the frontage road, although a greater distance, is comparable to traveling north on Wood Hollow Drive and East on Spicewood Springs Road; particularly vehicles accessing the southbound frontage road via Greystone Drive.

11. Trip Distribution: Site trips were assigned to the various site driveways as part of the analysis. However, no explanation or discussion of how the trips were assigned to each driveway is provided in the TIA. We recommend that the Applicant provide this information in the TIA.

Response: See **Response #9**.

12. 2018 Traffic Volumes: The traffic volumes shown on Exhibit 12 at the site driveway differ from those shown on Exhibit 10. The TIA does not include an explanation of why these volumes are different and provides no supporting documentation for the difference. This discrepancy was noted on all other analysis periods as well. We recommend that the Applicant clarify this discrepancy with an explanation as well as documentation and calculations supporting the explanation provided.

Response: We understand that the combination of Exhibit 10 and Exhibit 12 may be confusing. We intend to eliminate Exhibit 10 and clarify that the public intersection analysis is based on the net new traffic while the driveway analysis is based on the entire site trip generation.

13. 2020 Global Trip Assignment: The traffic volumes shown on Exhibit 16 appear to have some calculation discrepancies between the distribution percentage and the volumes reported. For example at the Loop 1 SB on ramp, the reported volumes are 30 AM peak hour and 43 PM peak hour trips. However, when the distribution percentages shown on Exhibit 6 are applied, the volumes for the Loop 1 SB on ramp calculate to be, 50 AM peak hour and 71 PM peak hour trips. These types of discrepancies were noted in other analysis periods as well. We recommend that the Applicant clarify these discrepancies and verify all trip calculations.

Response: We agree; ramp volumes have been updated. However, this does not affect the results of the analysis as volumes at the ramps were not used for the analysis.

14. 2020 Local Trip Distribution: From the information provided in Exhibit 17, the percentage of site trips entering the phase 1 portion of the site is lower than it was with the 2018 Local Trip Distribution. We recommend that the Applicant provide an explanation for this difference.

Response: As additional phases of the development are constructed, the percent of overall trips allocated to one portion (or phase) of the site decreases. Each analysis year was analyzed independently.

15. Advisory Comment on Intersection Capacity Analysis: The TIA Scope (included in Appendix A) asked for
f)
- existing conditions (am + pm on one sheet),
- six (6) future conditions:
  - (am background, am background + site, am background + site + mitigation)
  - (pm background, pm background + site, pm background + site + mitigation)

The scope specifically asked for future conditions am/pm background, am/pm background+ site, then am/pm background+ site+ **MITIGATION**. It was asked to compare Build and No-Build scenarios without mitigation, and then with mitigation. Introducing mitigation on existing condition and assuming them in the No-Build scenario on the opening day, made it very difficult to compare Build and No-Build scenarios, and assess the impact(s) from the proposed development. It is recommended that the mitigation analysis focus on the Build and Phasing years, rather than existing conditions as per the approved scope.

Response: The existing (2016) mitigation will be moved into the 2018 scenario. No mitigation will be assumed with the existing scenario. For future years mitigation recommended in previous years is incorporated into build analyses in order to identify improvements in the current phase. A comparison of build without mitigation and build with previous phase & current phase mitigation would not allow one to identify the impacts of mitigation recommended in the current phase. The OPCC has been updated and is provided as an ***Attachment***.

16. The TIA scope asked for v/c, LOS, delay and 95% queue length by movements, the TIA report provided the parameters by approaches. Please update the analysis tables so they agree with what was identified in the approved scope.

Response: Acknowledged that the review will be by movement.

17. LOS Analysis: The LOS analysis presented uses an overall intersection Peak Hour Factor (PHF) rather than the PHFs by approach. We recommend that the analysis be prepared using the PHF by approach

Response: Note the HCM 2010 recommends one peak hour for the entire intersection. This was a change for the HCM 2000. As described in the HCM 2010: "The use of a single peak hour factor for the entire intersection is intended to avoid the likelihood of creating demand scenarios with conflicting volumes that are disproportionate to the actual volumes during the 15-min analysis period."

18. 2016 Improvements at Spicewood Springs Road & Hart Lane: About 27% of inbound trips and 17% outbound trips were shown to use this intersection to access the site (Exhibit 6). However, there was no discussion about this impacted intersection under 2018 Build Analysis Results section. Please include discussion(s) on the impact of the site traffic on this intersection and propose appropriate recommendation(s) accordingly. The northbound taper length shown appears to be substandard. We recommend that the Applicant review this length.

In addition, the intersection at Spicewood Springs & Hart Lane is at a steep downhill east to west in combination with a tight horizontal curve. There are significant safety concerns associated with eastbound vehicles driving on a downhill with very limited sight distance, if a traffic signal is constructed. We recommend that a more conventional intersection configuration be considered which eliminates the existing center triangle island on the westbound roadway.

Due to the safety concern associated with the eastbound vehicles (in case of a traffic signal), it is recommended to install an advance warning flasher west of the intersection synchronized with the traffic signal to address this potential safety issue.

Response: The intersection of Spicewood Springs Road & Hart Lane operates at LOS B in the 2018 Build condition and the northbound taper is adequate to provide storage for the 95th percentile queue length reported. No improvements to the intersection are necessary in year 2018.

We agree, it is recommended to install an advance warning flasher west of the intersection synchronized with the traffic signal to address this potential safety issue. Furthermore, the design of the traffic signal at the intersection at Spicewood Springs & Hart Lane should address safety concerns and consider more conventional intersection configurations.

19. Spicewood Springs & Wood Hollow Drive: It appears that westbound left-turn bay extension and right-turn overlap phase were recommended at the intersection of Spicewood Springs & Wood Hollow Drive; however, the Applicant contribution to these improvements was not included in the TIA report. From the data presented in the TIA it appears that about 15% of the inbound trips and 15% of the outbound trips were shown to use these left-turn and right-turn lanes to access the site (Exhibit 6). No discussions were included about these impacted movements under 2018 Build Analysis Results section and how any proposed improvements would address these impacts. Please include discussions on the impact of the site traffic on these movements and propose appropriate recommendation(s) accordingly

In addition, The TIA report recommended adjustment of signal timing at the intersection of Spicewood Springs & Wood Hollow Drive. However, no specific signal timing plan(s) were proposed or included in the TIA report. We recommend that these be included in the TIA for review.

Response: The westbound left-turn bay extension and right-turn overlap phase improvements are recommended at the intersection of Spicewood Springs & Wood Hollow Drive to improve existing

traffic operations. Note this existing (2016) mitigation will be moved into the 2018 scenario. Further improvements to the intersection are not required to mitigate site traffic. A specific signal timing plan for the intersection will be provided as an Appendix to the TIA. See ***Attachment***.

20. Executive Center & Wood Hollow Drive: A multi-lane roundabout was recommended at the intersection of Executive Center & Wood Hollow Drive. Reviewing the analysis results at this intersection, it appears that the recommended multi-lane roundabout would be warranted at the opening day (2018). No analysis results were included supporting that an all-way stop would work in the interim. Reviewing the traffic volume during the peak hour, it appears that an all-way Stop may not work in the interim. Therefore, we recommend that the roundabout be constructed opening day to accommodate the proposed 2018 build traffic.

Response: The roundabout improvement requires right-of-way. It is recommended the traffic volumes at the intersection be monitored until the volumes merit the construction of the roundabout. An analysis will be provided which indicates that an all-way stop would work in the interim (years 2020 and 2022). The updated TIA will recommend future analysis in 2020/2022 and the roundabout in 2024. See ***Attachment***.

21. Mopac Southbound Frontage Road from Spicewood Springs Road to Far West Boulevard: The TIA report recommended improvements at Mopac Southbound Frontage Road & Spicewood Springs Eastbound to Southbound Right-turn, at the Mopac Southbound Frontage Road & Executive Center Drive intersection, and Mopac Southbound Frontage Road & Greystone Drive intersection, back and forth between 2016 and 2018 (Exhibit C). However, the exhibits provided didn't show how the improvements interact with each other, i.e. how the weaving, merging, diverging would occur along Mopac Southbound Frontage Road from Spicewood Springs to Greystone Drive. Please present / provide all these improvements in one conceptual figure / drawing, with existing and proposed right of way (ROW), dimension and scale (including the tapers; the tapers appeared to be deficient from cursory review) from Spicewood Springs to Greystone Drive.

Based on the cursory review of the proposed improvement concepts of southbound Mopac Service Road, from Spicewood Springs Road to Far West Boulevard, it appeared that there may be significant safety concerns with weaving, merging, diverging. It is recommended that a continuous additional lane be considered along Mopac Service Road from Spicewood Springs Road to Far West Boulevard.

Additionally, at the intersection of Executive Center Drive & Mopac Loop 1 SB Frontage Road: the 2016 improvements show 4 SB thru lanes approaching this intersection while only 3 receiving lanes currently exist.

Response: To the extent possible, an 8' sidewalk will be provided along Mopac Southbound Frontage Road. The improvements recommended along Mopac Southbound Frontage Road will be incorporated into a single exhibit. Any improvements at Mopac Frontage Road are subject to TxDOT approval. See ***Attachment***.

A continuous additional lane was considered along Mopac Service Road from Spicewood Springs Road to Far West Boulevard. This improvement was not incorporated into this analysis as it is not expected to be constructed in the foreseeable future.

A southbound right-turn deceleration lane is recommended as the 2016 (now 2018) improvement along Mopac Loop 1 SB Frontage Road at Executive Center Drive. The exhibit intends to show 3 SB thru lanes and 1 SB right-turn lane.

22. Intersection of Southbound Mopac & Spicewood Springs Road: The intersection of Southbound Mopac & Spicewood Springs Road was reported to fail under 2018 build scenario (e.g. PM peak: EST v/c 1.49, LOS F, queue length 1095 feet etc. and continue to deteriorate in the following phases). However, no discussion was included in the TIA report on the failing movements, and how the proposed development impacts these movements during the peak hour(s). No mitigation measures were recommended to address these failing movements and no discussion / justification was not provided. We recommend that Applicant review operations at this intersection and include a discussion of needed mitigation to address the failing conditions.

Also, in Table 11, at the intersection of Spicewood Springs & SB Mopac, it shows that during the AM peak hour, the EB approach improves from v/c of 1.52 & delay of 253 sec/veh under No-build Condition to v/c 1.27 & delay of 121 sec/veh under Build Condition (without mitigation). Please provide discussion / justification how additional site traffic would/could improve traffic operation (v/c, delay etc.) without any mitigation(s).

Additionally, the proposed improvements at Spicewood Springs Road/ Mopac /Loop 1 Service Road show 2-11' receiving lanes as part of the improvements at the intersection. We recommend that these receiving lanes be a minimum of 12'.

Response: Issues along Loop 1 are due to limited capacity. Regional improvements are required to achieve an acceptable LOS at the intersections along Loop 1. Applicant will ask TxDOT to provide any regional improvement plans for Mopac. Applicant requests that the City also seek any regional improvement plans for Mopac from TxDOT.

It was recommended the eastbound right-turn at Spicewood Springs onto Mopac SB Frontage Road be improved to function as a free movement in 2016. The 2018 Build analysis incorporates the improvements recommended in 2016, where the No Build analysis does not. This accounts for the better operations between scenarios in the AM peak hour.

To the extent possible, an 8' sidewalk will be provided along Mopac Southbound Frontage Road. Recommended lane widths along Mopac SB Frontage Road will be shown at a minimum of 12'. Any improvements at Mopac Frontage Road are subject to TxDOT approval.

23. Intersection of Northbound Mopac & Spicewood Springs Road: The intersection of Northbound Mopac & Spicewood Springs Road was reported to fail under 2018 build scenario (e.g. AM peak: NBL v/c 1.43, LOS F, queue length 609 feet etc. and continue to deteriorate in the following phases). However, no discussion was included in the TIA report on the failing movements, and how the proposed development impacts these movements during the peak hour(s). No mitigation measures were recommended to address these failing movements and no discussion / justification was not provided. We recommend that Applicant review operations at this intersection and include a discussion of needed mitigation to address the failing conditions

Response: Issues along Loop 1 are due to limited capacity. Regional improvements are required to achieve an acceptable LOS at the intersections along Loop 1. Applicant will ask TxDOT to provide any regional improvement plans for Mopac. Applicant requests that the City also seek any regional improvement plans for Mopac from TxDOT.

To the extent possible, an 8' sidewalk will be provided along Mopac Southbound Frontage Road. Any improvements at Mopac Frontage Road are subject to TxDOT approval.

24. Intersection of Greystone Drive & Southbound Mopac: The TIA report under the 2018 build condition identifies that the right-out movement fails at the intersection of Greystone Drive & Southbound Mopac due to lack of acceptable and safe gap in the southbound Mopac traffic stream (as reported in Section B 2018 Build Analysis Results). However, the TIA report didn't identify how to address / mitigate this safety and operational concern with the right-out movement at Greystone Drive. Please provide recommendations to address these concerns.

Response: To the extent possible, an 8' sidewalk will be provided along Mopac Southbound Frontage Road. Any improvements at Mopac Frontage Road are subject to TxDOT approval.

It was recommended a southbound deceleration lane be provided along Mopac Loop 1 SB Frontage Road at Greystone Drive in 2016. As a result, the intersection reports improved operations between no build and build scenarios.

25. Intersection of Hart Lane and Greystone Drive: The proposed improvement(s) / re- configuration at the intersection of Hart Lane & Greystone Drive as presented in Exhibit C 2024 Improvements, call(s) for removal of the bi-cycle lane from Hart Lane north of Greystone Drive. What alternative bicycle facility is being proposed to facilitate Bicycle movements on Hart Lane, north of Greystone Drive? Also, please provide dimensions on Greystone Drive at the intersection approaches, so that the reviewers can complete geometric review.

Response: At the north leg of the intersection of Hart Lane and Greystone Drive, bicycles and vehicles will share a lane. Because additional vehicle capacity is only needed at the intersection, Hart Lane north of the intersection will transition to a single-lane northbound. Similar to Mesa Drive at its intersection with Greystone Drive, the bike lane will remain approximately 250' north of the intersection. In Exhibit C 2024 Improvements, dimensions will be provided on Greystone Drive at the intersection approaches.

26. Intersection of Hart Lane and Executive Center Drive: The proposed improvement(s) / re-configuration at the intersection of Hart Lane & Executive Center Drive is presented in Exhibit A 2024 Improvements. However, the figure was not dimensioned on Hart Lane at the intersection approach. Based on the cursory review, it appears that the intersection approaches on Hart Lane may not work geometrically. The Northbound lane on Hart Lane was aligned with the opposing left-turn lane, leaving a full lane off-set with the northbound through receiving lane. Also, the northbound receiving lane appeared to have conflict between northbound vehicles and bicycles. Please provide revised recommendation(s)/figure(s) with proper intersection geometry.

Response: Exhibit A 2024 Improvements will be revised.

27. Intersection of Far West Boulevard and Hart Lane: The reviewer acknowledges recommended improvement(s)/reconfiguration at the intersection of Far West Boulevard & Hart Lane. However, the reviewer was unable to compare no-build and build scenario to assess the impact from additional traffic from the proposed development (as per the scope), as improvements were already assumed in the existing condition (2016). See previous comments regarding this. Exhibit (Exhibit F) was included in the Appendix; however, necessary dimensions (lane widths) were not provided to assess the feasibility, geometry, and need for additional ROW. Proposed sidewalk at the northbound approach was proposed as 4 feet, which is deficient. Please include minimum standard sidewalk on the northbound approach.

Response: The study's methodology assumes mitigation recommended in previous years is incorporated into build analyses of later years (see **Response 15**). Exhibit F A 2016 Improvements will be revised to include the minimum standard sidewalk on the northbound approach.

28. Intersection of Northbound Mopac Service Road & Far West Boulevard: The intersection of Northbound Mopac & Far West Boulevard was reported to fail under 2018 build scenario (e.g. PM peak: EBL v/c over 1, LOS F, queue length 879 feet etc. and continue to deteriorate in the following phases). However, no discussion was included in the TIA report on the failing movement, and how the proposed development impacts this movement during the peak hour(s). No mitigation measures were recommended to address this failing movement and no discussion / justification was provided. We recommend that Applicant review operations at this intersection and include a discussion of needed mitigation to address the failing conditions.

Response: Issues along Loop 1 are due to limited capacity. Regional improvements are required to achieve an acceptable LOS at the intersections along Loop 1.

29. There may be additional comments based on the review of any additional addendum / analysis / revision submitted.

Response: Acknowledged.

30. TxDOT Review: The Applicant should be aware that TxDOT also needs to approve and review all proposed improvements along their roadways.

Response: Acknowledged. A TIA was submitted to TxDOT.

Please contact me at 817-335-6511 if additional information is required.

Sincerely,

KIMLEY-HORN AND ASSOCIATES, INC.

Jeff Whitacre, P.E., AICP, PTP
Transportation Engineer

Comment Response Attachment – Additional Documentation

Response 2: Supporting calculations for using the 2014 counts:

The 2014 counts were compared to the 2016 24-hour counts and the percent difference (actual-expected)/expected) was calculated. The table below shows the data for this comparison.

Roadway	24-Hour	TMC	% Difference
Executive Center Dr	176	190	8%
Far West Blvd	4418	5142	16%
Hart Lane	939	1020	9%
Spicewood Springs Rd	4174	4791	15%
Wood Hollow Dr	1013	1148	13%

Note: The 24-hour volume shown is the sum of the 2016 AM and PM peak hour bi-directional volume along the designated roadway. The TMC volume shown is the corresponding approach volumes used for the Existing conditions analysis (2014 TMCs grown at 2% and adjusted for volume balancing).

The results of the comparison show the TMCs to be within an acceptable margin of error when compared to the 24-hour counts. Furthermore, in all cases the TMCs were shown to be greater than the 24-hour counts at the same location.

Response 8: Supporting calculations for background growth:

Background Traffic—Annual growth rate of 2% will be assumed. This rate will be verified in comparison with surrounding development data. The table below shows historic AADT on roadways in the vicinity of the proposed development provided by the TxDOT Statewide Planning Map. The average annual growth rate for the total AADT between 2007 and 2013 is approximately 2.1%.

Year	Volume				Annual Growth Rate	Average Annual Growth Rate
	SH 360	US 183	Loop 1	Total		
2013	47,881	188,725	172,032	408,638	1.40%	2.1%
2012	46,000	186,000	171,000	403,000	4.40%	
2011	44,000	178,000	164,000	386,000	-4.93%	
2010	45,000	187,000	174,000	406,000	5.73%	
2009	49,000	167,000	168,000	384,000	-1.29%	
2008	52,000	165,000	172,000	389,000	7.46%	
2007	55,000	141,000	166,000	362,000		

Response 9: Local distribution information:

% Of Total Development Site Trips		**Analysis Year**			
		2024	2022	2020	2018
Phase	Phase I	20%	30%	60%	100%
	Phase II	15%	20%	40%	
	Phase III	40%	50%		
	Phase IV	25%			

The table above shows the breakdown (by phase) of total site traffic for each analysis year. ie. Phase II generates approximately 40% of total site traffic in year 2020 and 20% in year 2022. Driveways which provide access to each phase were assigned trips accordingly.

Response 15: Revised Mitigation OPCC

The Opinion of Probable Cost Summary (Tables 22 and 23) have been updated to reflect changes to mitigation. Namely, no improvements recommended in year 2016 and recommendations at the intersection of Executive Center Drive and Wood Hollow Drive, prior to the roundabout being recommended in year 2024.

The Opinion Of Probable Cost Summary – 2018 Improvements

Improvement Name	Improvement Description	Opinion of Probable Cost ($)	Site Traffic (%)	Pro-Rata Cost Share ($)
1. Spicewood Springs Road & Hart Lane (2018)	Install a fully actuated traffic signal at the intersection of Spicewood Springs Road and Hart Lane.	$ 420,000	11.0%	$ 46,200
2. Spicewood Springs Road & Wood Hollow Drive (2018)	Extend the westbound left-turn bay of Spicewood Springs Road to Wood Hollow Drive.	$ 50,000	42.5%	$ 21,250
3. Spicewood Springs Road & Wood Hollow Drive (2018)	Provide a right-turn overlap operation at the northbound right-turn movement of Wood Hollow Drive to Spicewood Springs Road.	$ 10,000	29.3%	$ 2,930
4. Spicewood Springs Road & Loop 1 SBFR (2018)	Provide a FREE eastbound right-turn movement from Spicewood Springs Road to Loop 1 SBFR	$ 25,000	0.0%	$ -
5. Executive Center Drive & Loop 1 SBFR (2018)	Construct a southbound right-turn deceleration lane on Loop 1 SBFR (upstream of Executive Center Drive).	$ 150,000	77.5%	$ 116,250
6. Greystone Drive & Loop 1 SBFR (2018)	Construct a southbound right-turn deceleration lane on Loop 1 SBFR (upstream of Greystone Drive).	$ 150,000	39.5%	$ 59,250
7. Far West Boulevard & Hart Lane (2018)	Widen the northbound approach and restripe the southbound approach of Hart Lane at the intersection of Far West Boulevard.	$ 95,000	8.6%	$ 8,170
8. Far West Boulevard & Wood Hollow Drive (2018)	Provide a right-turn overlap operation at the northbound right-turn movement from Wood Hollow Drive to Far West Boulevard.	$ 20,000	0.0%	$ -
9. Far West Boulevard & Loop 1 SBFR (2018)	Provide a FREE, channelized operation at the southbound right-turn movement from Loop 1 SBFR to Far West Boulevard (westbound)	$ 150,000	7.5%	$ 11,250
10. Spicewood Springs Road & Wood Hollow Drive (2018)	Adjust signal timing at the intersection of Spicewood Springs Road and Wood Hollow Drive.	$ 10,000	14.2%	$ 1,420
11. Executive Center Drive & Wood Hollow Drive (2018)	Provide stop-control at the northbound and southbound approaches of Wood Hollow Drive.	$ 10,000	52.6%	$ 5,500
12. Executive Center Drive & Wood Hollow Drive (2018)	Restripe Wood Hollow Drive between Executive Center Drive and Spicewood Springs Road.	$ 20,000	40.1%	$ 8,020
13. Executive Center Drive & Loop 1 SBFR (2018)	Construct a southbound accceleration lane on Loop 1 SBFR (downstream of Executive Center Drive).	$ 120,000	85.6%	$ 102,720
14. Far West Boulevard & Wood Hollow Drive (2018)	Adjust signal timing at the intersection of Far West Boulevard and Wood Hollow Drive.	$ 10,000	5.6%	$ 560
	2018 Improvements Subtotal	**$ 1,240,000**	**-**	**$ 383,520**

The Opinion Of Probable Cost Summary – 2020, 2022, 2024 Improvements

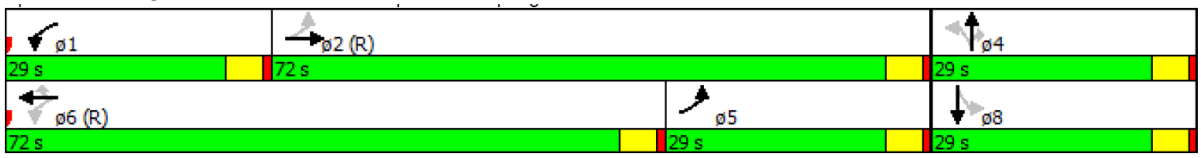
Improvement Name	Improvement Description	Opinion of Probable Cost ($)	Site Traffic (%)	Pro-Rata Cost Share ($)
2020 improvements				
1. Executive Center Drive & Wood Hollow Drive (2020)	Widen Wood Hollow Drive to include a four-lane cross-section at the northbound and southbound approaches	$ 20,000	52.6%	$ 10,500
2. Far West Boulevard & Wood Hollow Drive (2020)	Adjust signal timing at the intersection of Far West Boulevard and Wood Hollow Drive.	$ 10,000	5.6%	$ 560
2022 improvements				
1. Executive Center Drive & Wood Hollow Drive (2022)	Widen Executive Center Drive to include a four-lane cross-section at eastbound and westbound approaches	$ 20,000	52.6%	$ 10,500
2. Far West Boulevard & Wood Hollow Drive (2022)	Restripe the eastbound approach of Far West Boulevard at Wood Hollow Drive.	$ 10,000	3.0%	$ 300
2024 improvements				
1. Executive Center Drive & Hart Lane (2024)	Restripe the westbound approach of Executive Center Drive at Hart Lane (1a) and restripe Hart Lane between Executive Center Drive and Spicewood Springs Road (1b).	$ 20,000	79.1%	$ 15,820
2. Executive Center Drive & Wood Hollow Drive (2024)	Construct a multi-lane roundabout at intersection of Executive Center Drive and Wood Hollow Drive.	$ 2,000,000	52.6%	$ 1,052,000
3. Greystone Drive & Hart Lane (2024)	Restripe the southbound approach of Hart Lane at Greystone Drive.	$ 20,000	9.7%	$ 1,940
4. Greystone Drive & Wood Hollow Drive (2024)	Restripe the northbound approach of Wood Hollow Drive at Greystone Drive.	$ 20,000	40.2%	$ 8,040
5. Far West Boulevard & Wood Hollow Drive (2024)	Adjust signal timing at the intersection of Spicewood Springs Road and Wood Hollow Drive.	$ 10,000	5.6%	$ 560
	Future Improvements Subtotal	**$ 2,130,000**	**-**	**$ 1,100,220**

Response 19: Signal timing plan for the intersection of Spicewood Springs & Wood Hollow Drive:

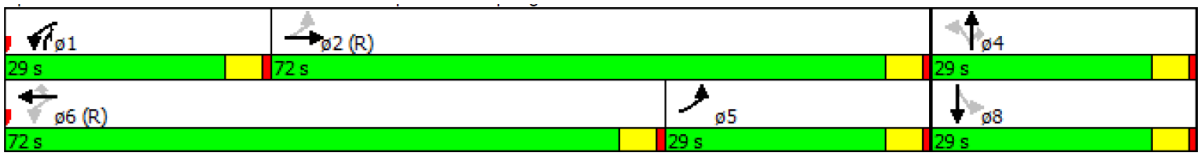
Signal timing adjustments were made to the AM and PM peak hours in years 2016 and 2018. The suggested signal timing plans for the intersection of Spicewood Springs & Wood Hollow Drive are shown in the following graphics:

AM Peak Hour

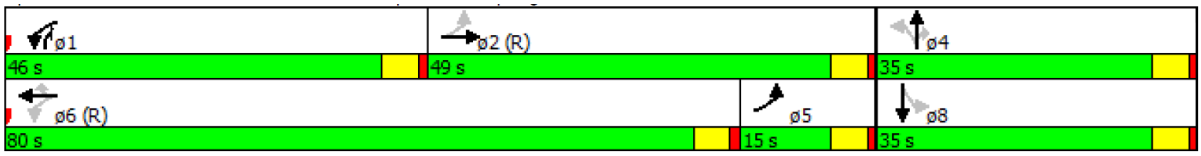
2016 Existing:



2016 Mitigated:

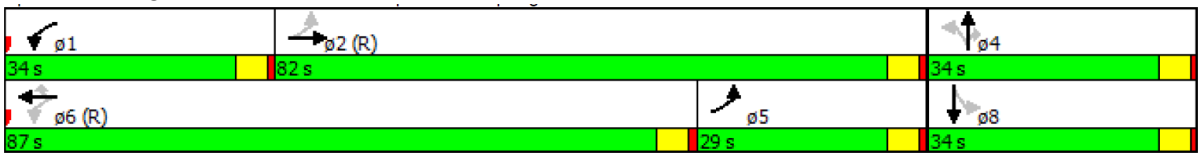


2018 Mitigated:

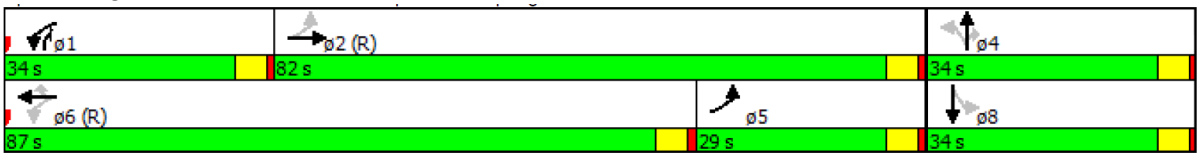


PM Peak Hour

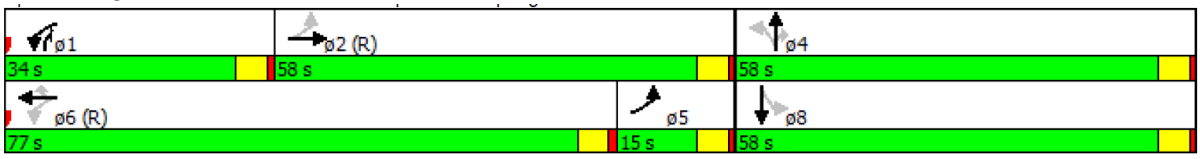
2016 Existing:



2016 Mitigated:



2018 Mitigated:



Response 20: All-way stop controlled (alternative mitigation) analyses at Executive Center & Wood Hollow Drive.

As an alternative to the multi-lane roundabout, all-way stop control can be implemented alongside roadway widening improvements to mitigate impacts of the proposed development. The table below is a summary of the assumptions used to analyze each of these alternative scenarios.

Scenario	Development	Roadway	Traffic Volume
2020 Build	Existing Conditions + Net Development (Phases I&II)	Widen Wood Hollow Drive to include a 4-lane cross-section at NB and SB approaches	2020 No Build Conditions + Net Development Volumes (Phases I&II)
2022 Build	Existing Conditions + Net Development (Phases I,II&III)	2020 Build Condition	2022 No Build Conditions + Net Development Volumes (Phases I,II&III)
2022 Mitigated	2022 Build Conditions	Widen Executive Center Drive to include a 4-lane cross-section at EB and WB approaches	2022 Build Conditions

The table below is a summary of the PM Peak Hour LOS analyses (only the PM peak hour is shown as it is the worst case scenario) for years 2020 and 2022.

PM PEAK HOUR LOS			2020 Build Condition		2022 Build Condition		2022 Mitigated Condition	
Intersection	**Traffic Control**	**Approach**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**
Executive Center Drive & Wood Hollow Drive	AWSC	EB	27.1	D	75.2	F	31.6	D
		WB	28.6	D	74.2	F	34	D
		NB	19.8	C	41.7	E	42	E
		SB	15.3	C	23.3	C	23.8	C
		INT	22.8	C	54	F	33.8	D

Response 21: See Exhibit A.

Nathan Wilkes comments regarding Conceptual Improvements received by phone 7/7/2016.

Comments were verbalized over the telephone and brief description of each comment is recorded below.

1. 2016 Exhibit A: Spicewood Springs Road & Hart Lane - Connect Bike Lane from Northbound Hart Lane to eastbound Spicewood Springs Road

Response: See ***Revised Exhibit***.

2. 2016 Exhibit B: Spicewood Springs Road & Wood Hollow Drive – None

3. 2016 Exhibit C: Spicewood Springs Road & Loop 1 SBFR – Provide 12' lanes along Mopac Southbound Frontage Road; provide 5' bike lane westbound along Spicewood Springs Road.

Response: Subject to TxDOT approval. See ***Revised Exhibit***.

4. 2016 Exhibit D: Executive Center Drive & Loop 1 SBFR – Provide 8' sidewalk along Mopac Southbound Frontage Road; show right-turn arrow to indicate direction of travel.

Response: Subject to TxDOT approval. See ***Revised Exhibit***.

5. 2016 Exhibit E: Greystone Drive & Loop 1 SBFR - Provide 8' sidewalk along Mopac Southbound Frontage Road; show right-turn arrow to indicate direction of travel.

Response: Subject to TxDOT approval. See ***Revised Exhibit***.

6. 2016 Exhibit F: Far West Boulevard & Hart Lane – Restripe the north-leg of the intersection to provide three 10' approach lanes and a single 14' receiving lane.

Response: See ***Revised Exhibit***.

7. 2016 Exhibit G: Far West Boulevard & Wood Hollow Drive – None

8. 2016 Exhibit H: Far West Boulevard & Loop 1 SBFR – Provide a concept which will accommodate the 5' bike lane that is planned along the north-side of Far West Boulevard.

Response: The proposed southbound channelized right-turn movement is intended to accommodate the planned bike lane. However, it remains unclear what further improvements will be necessary to accommodate the bike lane west of the intersection. See ***Revised Exhibit***.

9. 2018 Exhibit A: Executive Center Drive & Wood Hollow Drive – None

10. 2018 Exhibit B: Spicewood Springs Road & Wood Hollow Drive – None

11. 2018 Exhibit C: Executive Center Drive at Loop 1 SBFR - Provide 8' sidewalk along Mopac Southbound Frontage Road; show right-turn arrow to indicate direction of travel.

Response: Subject to TxDOT approval. See ***Attachment***.

12. 2022 Exhibit A: Far West Boulevard & Wood Hollow Drive – None13. 2024 Exhibit A: Executive Center Drive & Hart Lane – Provide lane alignment along Hart Lane through the intersection of Executive Center Drive' Provide bike lanes along Hart Land and Executive Center Drive.

Response: See ***Attachment***.

14. 2024 Exhibit B: Greystone Drive & Hart Lane – None

15. 2024 Exhibit C: Greystone Drive & Wood Hollow Drive – None

End.