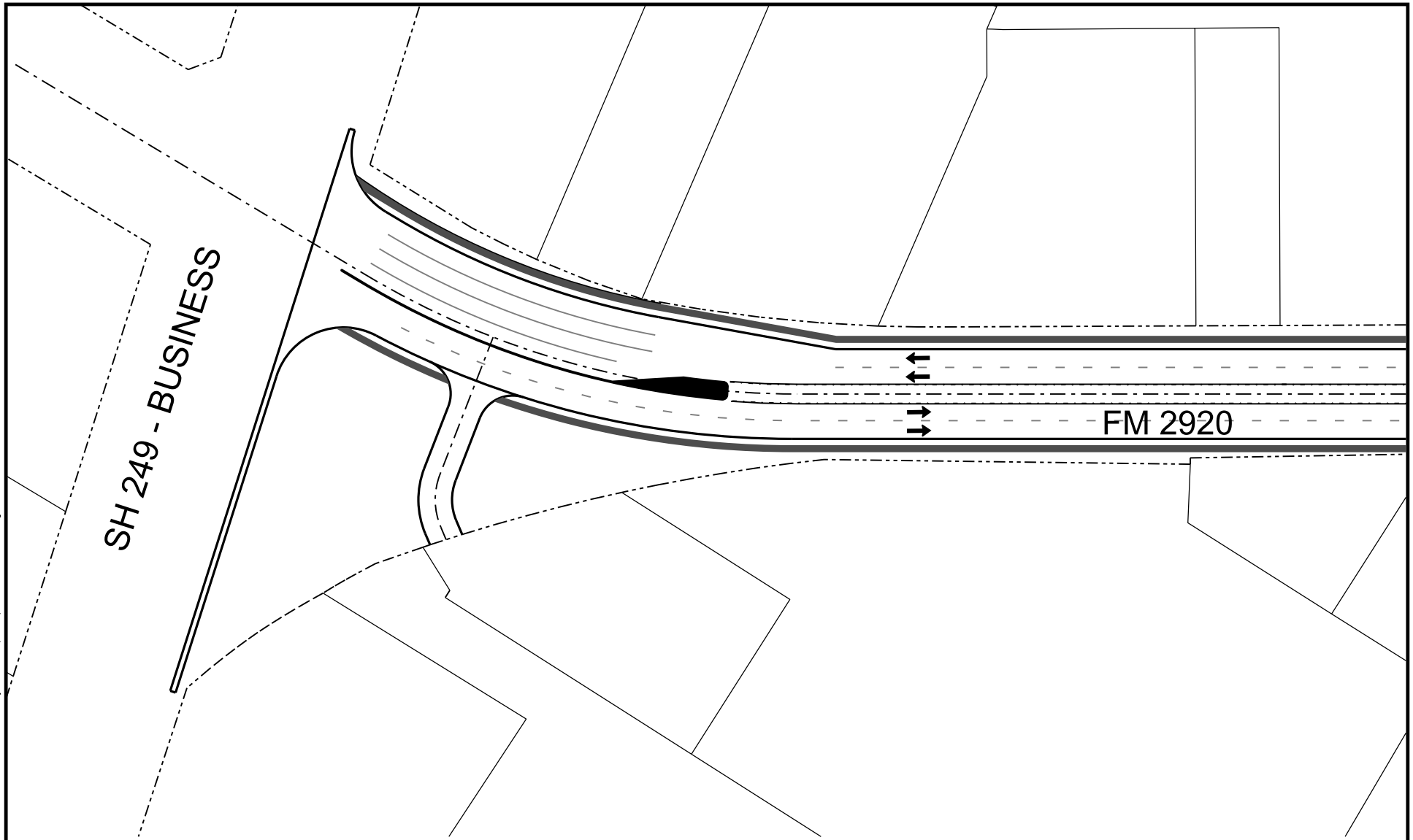


Additional Project Development

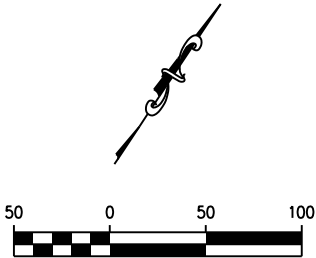
Section 1 of 4
Schematic Drawings
(10 Pages)

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PLAN LEGEND

- PROPOSED CENTERLINE
- EXISTING R.O.W.
- PROPOSED R.O.W.
- PROP EDGE OF PAVEMENT
- PROPOSED MEDIAN
- PROPOSED SIDEWALK
- YELLOW STRIPING
- WHITE STRIPING
- LANE STRIPING



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TBPE Registration Number: F-3531

PROJECT NAME:

FM 2920
BUS 249 TO
N WILLOW ST

SHEET TITLE:

PROPOSED
SCHEMATIC
DRAWING

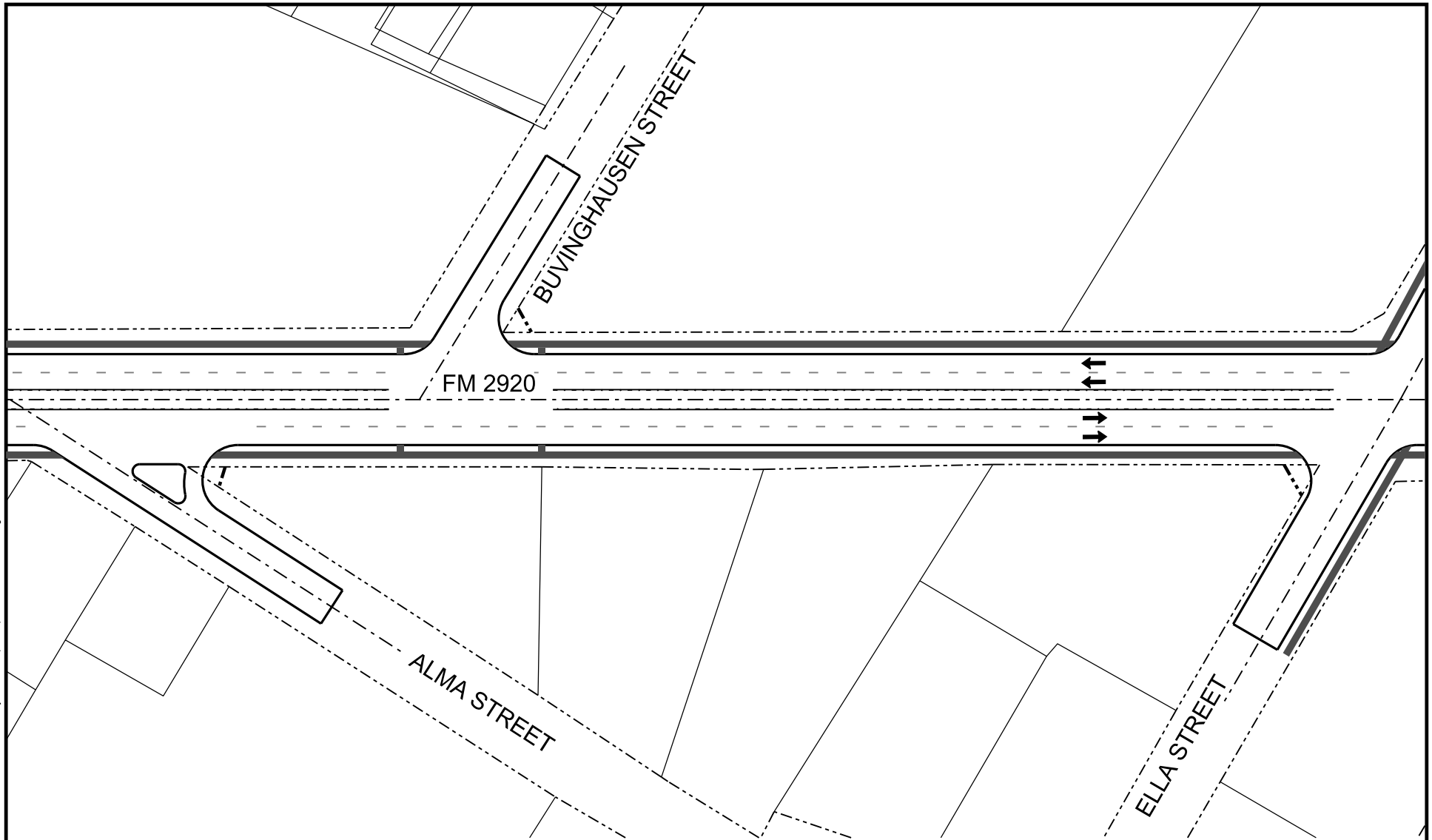
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14029-00

DATE:
JAN., 2015

SHEET NO.

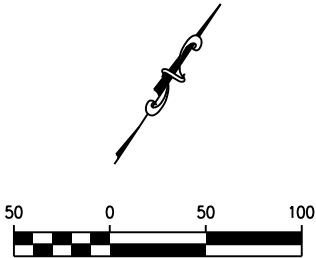
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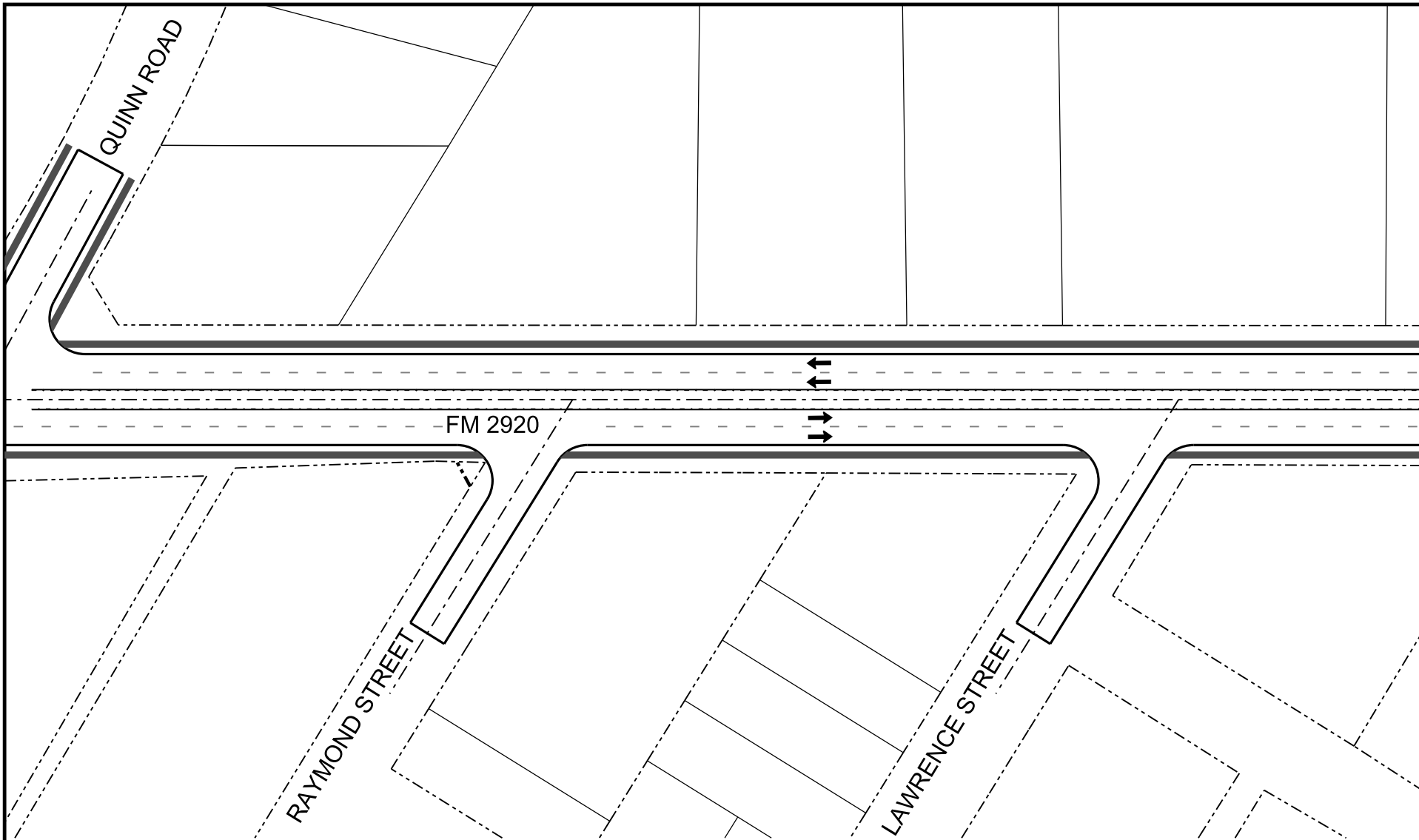
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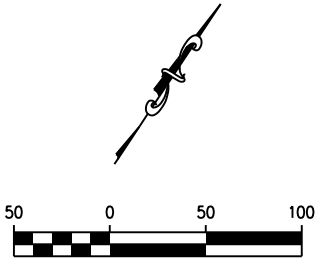
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GCI PROJ. NO.: 14029-00		SHEET NO. 2 OF 10	
DATE: JAN., 2015			

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PLAN LEGEND

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FM 2920
BUS 249 TO
N WILLOW ST

SHEET TITLE:

PROPOSED
SCHEMATIC
DRAWING

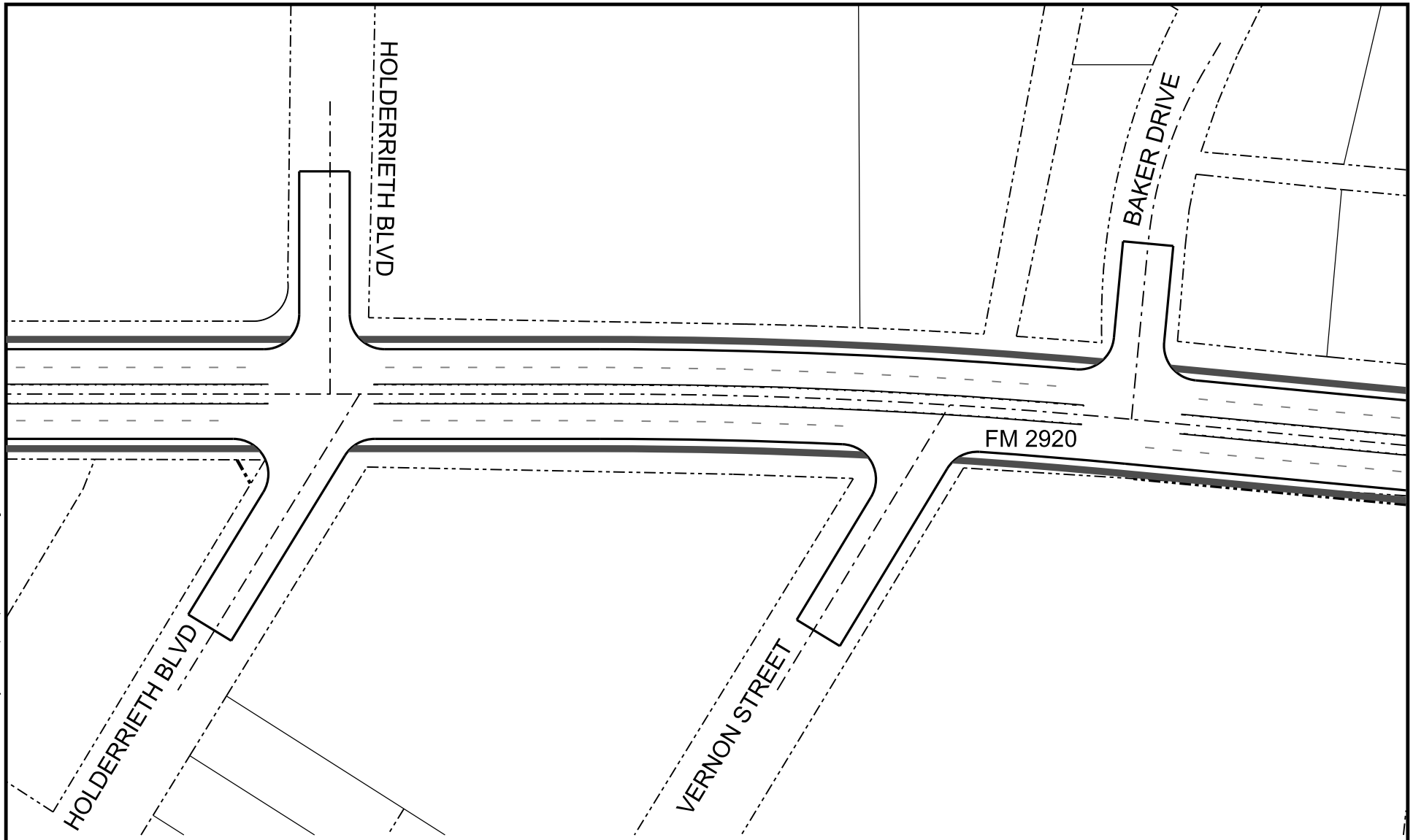
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DATE:
JAN., 2015

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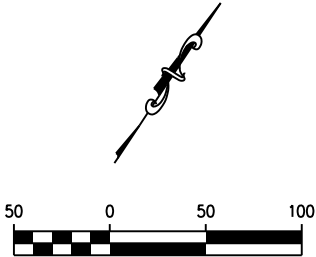
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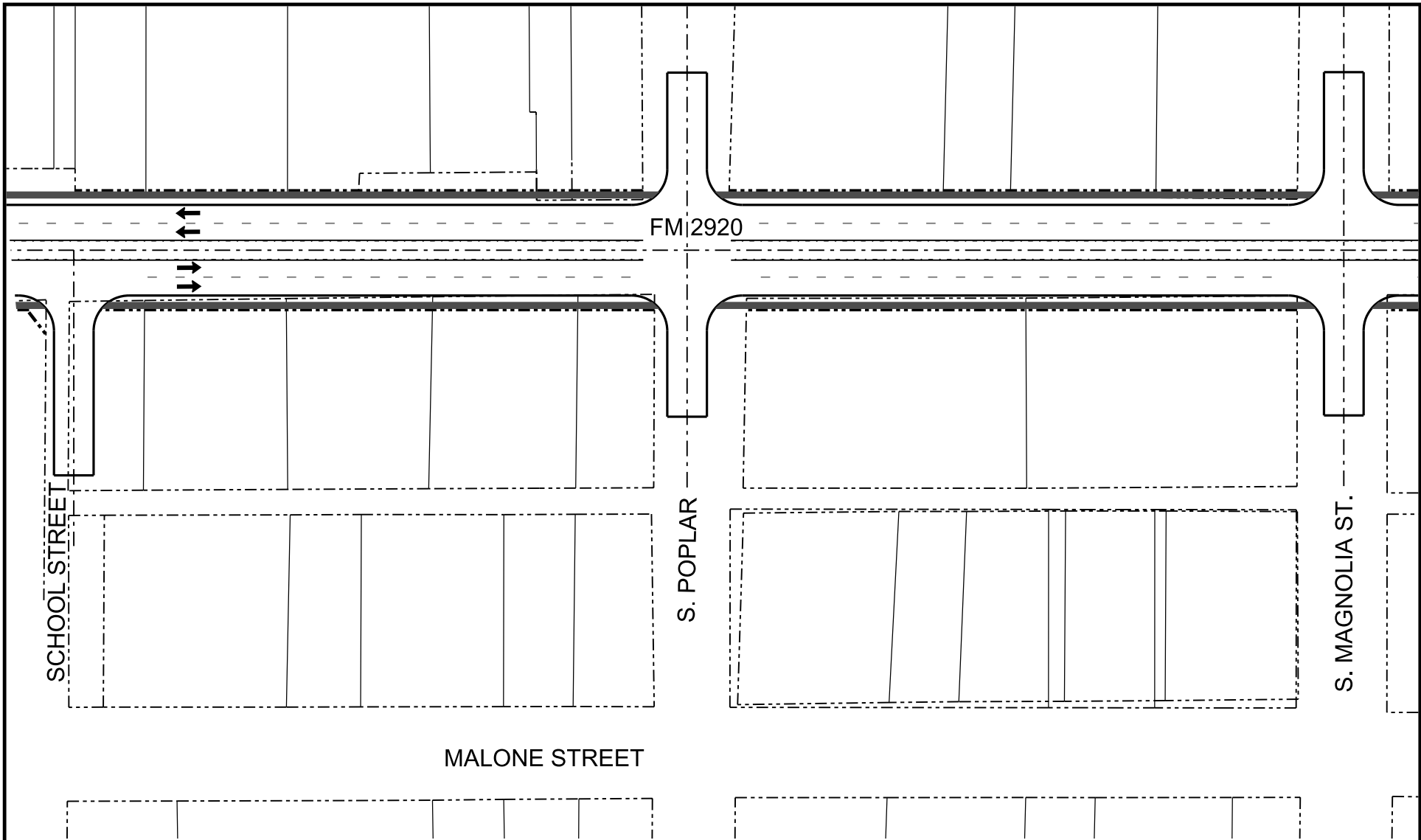
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DATE:
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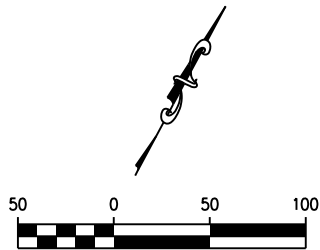
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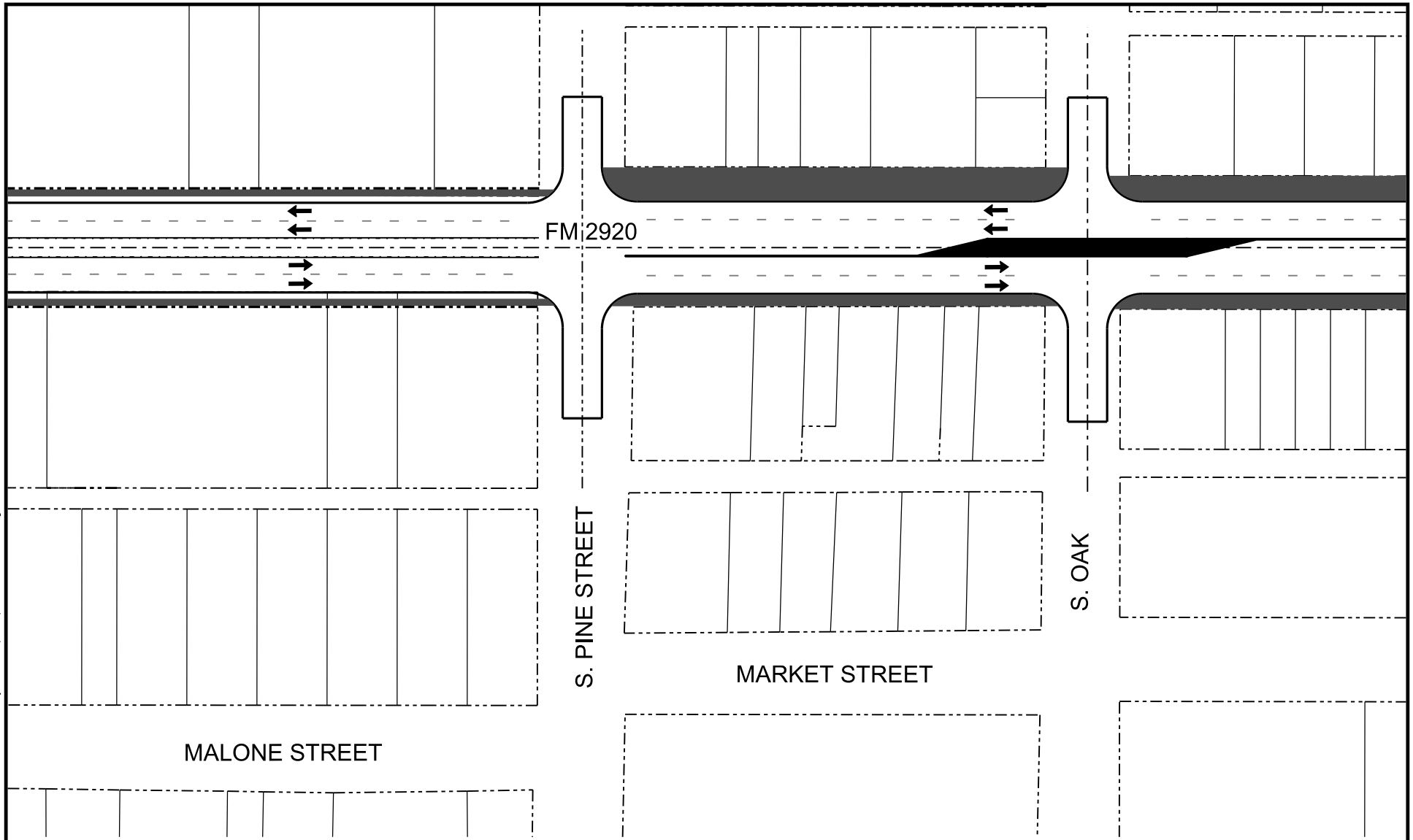
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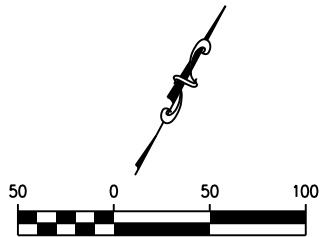
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PLAN LEGEND

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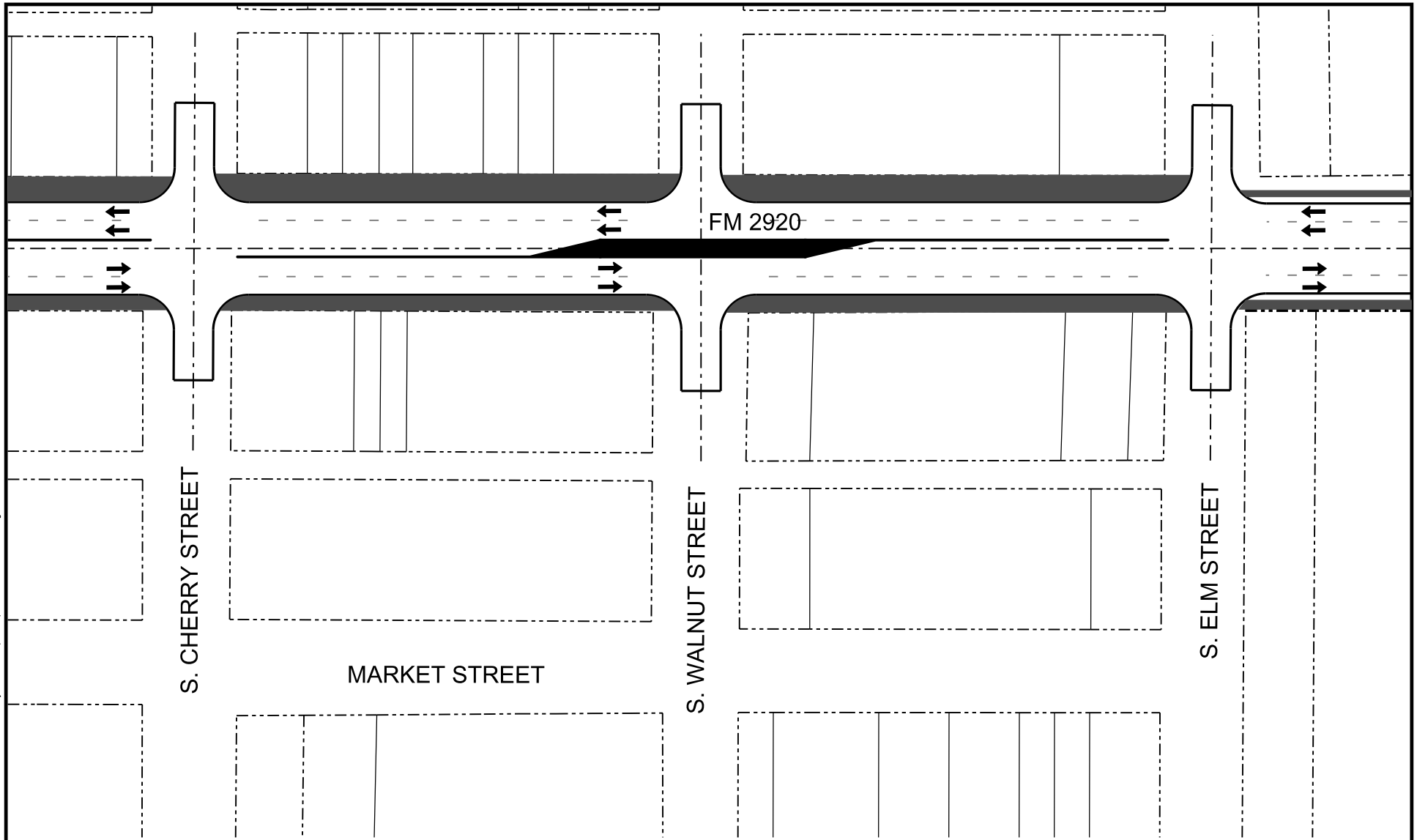
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JAN., 2015

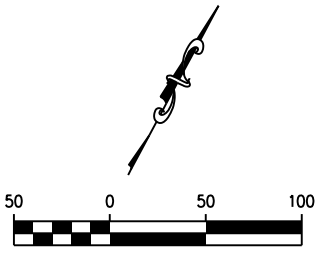
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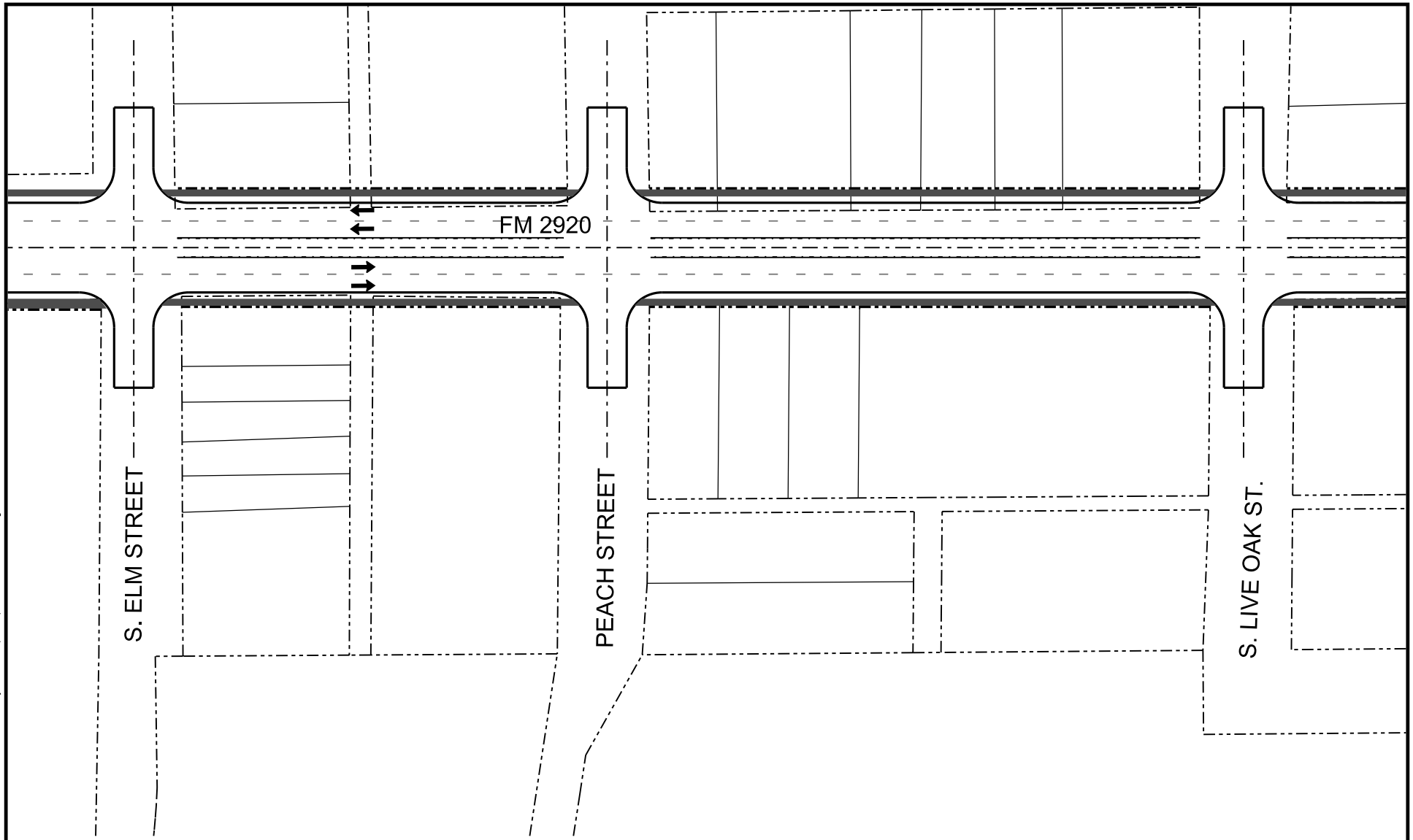
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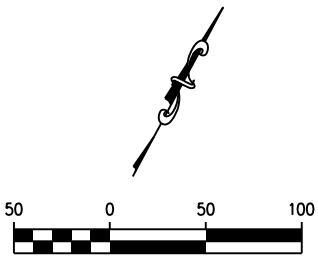
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PROJECT NAME: FM 2920 BUS 249 TO N WILLOW ST		SHEET TITLE: PROPOSED SCHEMATIC DRAWING	
GCI PROJ. NO.: 14029-00		SHEET NO. 7 OF 10	
DATE: JAN., 2015			



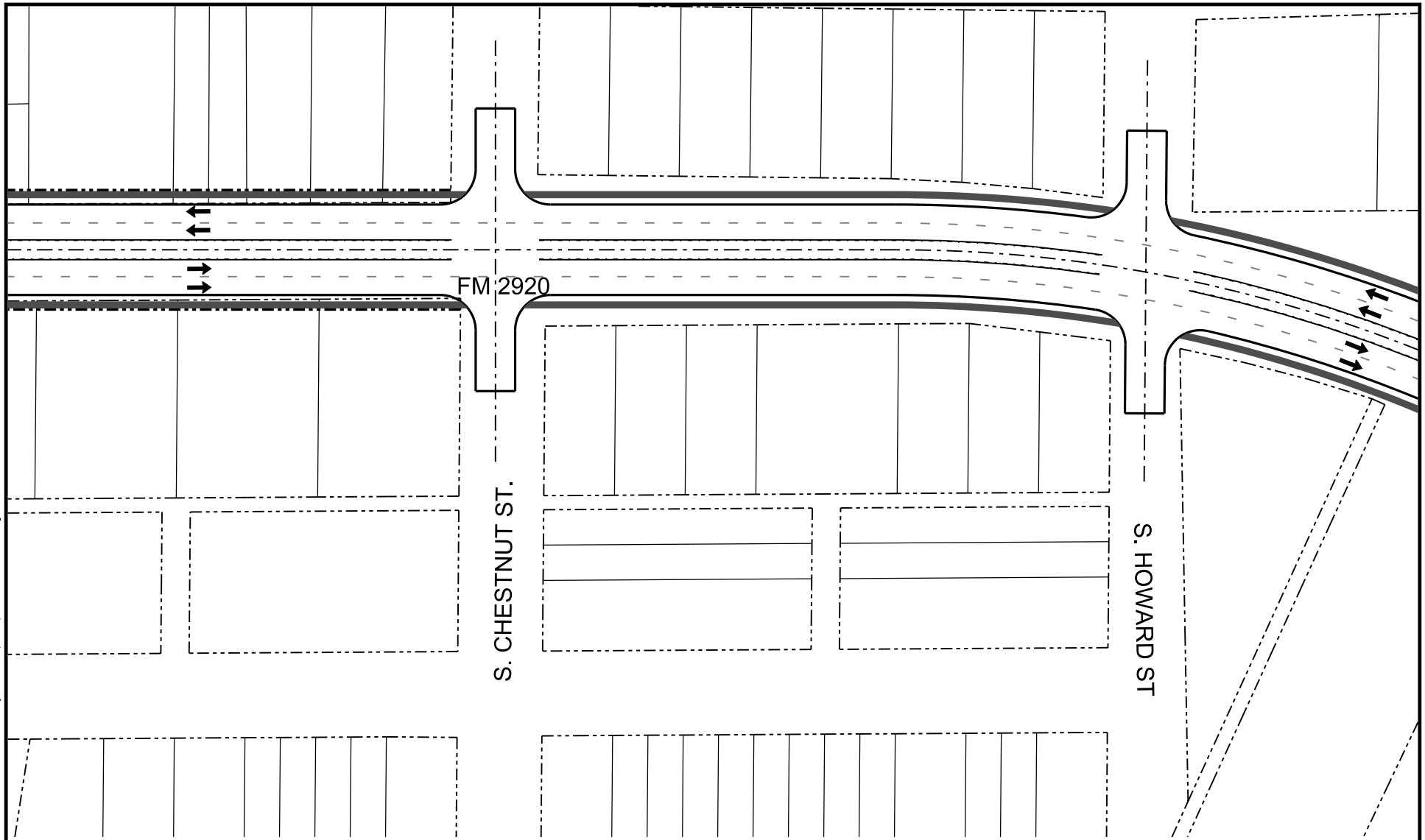
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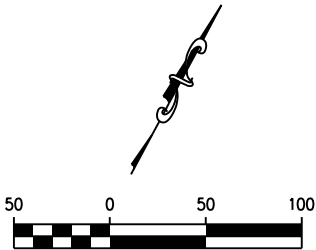
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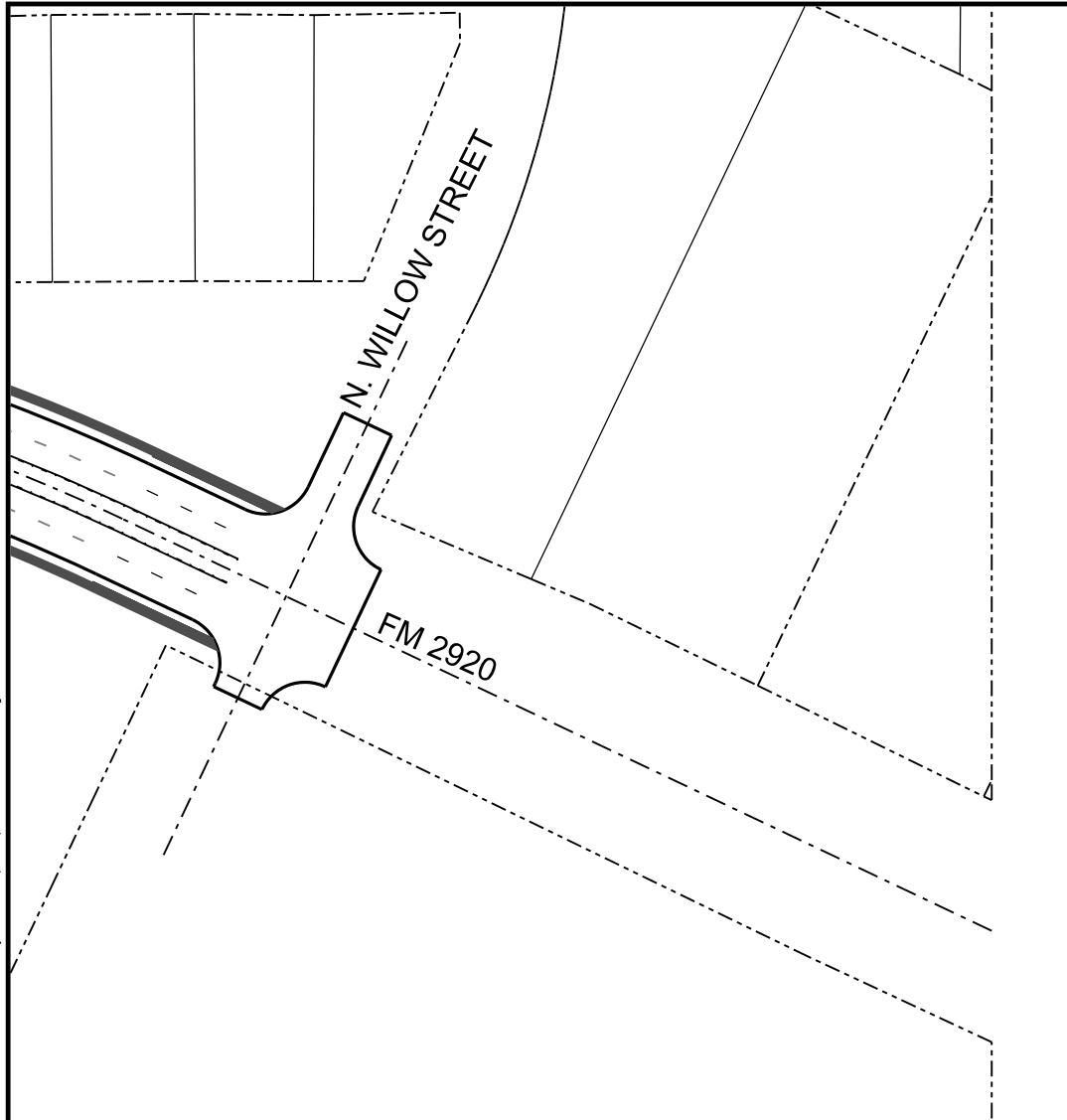
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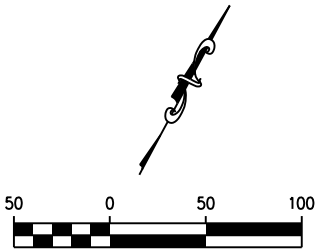
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GCI PROJ. NO.:
14029-00

DATE:
JAN., 2015

SHEET NO.

10 OF 10

Additional Project Development

Section 2 of 4
Detailed Cost Estimate
(2 Pages)

Conceptual Estimate of Probable Construction Costs

Project Location: FM 2920
Limits: SH 249 to Willow Road

BASE UNIT PRICE TABLE:

Item No.	Item Reference No. <small>Note 1</small>	Spec No.	Item Description	Unit Measure	Unit Quantity	Unit Price (this column controls)	Total in Figures
UNIT PRICES - PAVING ITEMS							
1	104	2015	REMOVING CONC (SIDEWALKS)	SY	14,000	\$6.00	\$84,000.00
2	104	2017	REMOVING CONC (DRIVEWAYS)	SY	9,100	\$7.50	\$68,250.00
3	104	2029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	18,000	\$3.00	\$54,000.00
4	105	2011	REMOVING STAB BASE AND ASPH PAV (2"-6")	SY	70,400	\$2.00	\$140,800.00
5	110	2001	EXCAVATION (ROADWAY)	CY	370	\$6.51	\$2,408.70
6	260	2079	LIME TRT (SUBGRADE)(6")	SY	25,000	\$2.00	\$50,000.00
7	260	2016	LIME (HYD, COM, OR QK(SLURRY))	TON	1,591	\$160.00	\$254,560.00
8	360	2026	CONC PAV (JOINT REINF)(10")	SY	72,600	\$100.00	\$7,260,000.00
9	529	2002	CONC CURB (TY II)	LF	21,100	\$9.00	\$189,900.00
10	530	2014	DRIVEWAYS (CONC)	SY	9,100	\$54.00	\$491,400.00
11	531	2010	CURB RAMPS (TY 7)	EA	100	\$1,465.00	\$146,500.00
12	531	2019	CONC SIDEWALKS (4.5")	SY	14,000	\$37.00	\$518,000.00
13	690	-	TRAFFIC SIGNALS (PER INTERSECTION)	EA	7	\$200,000.00	\$1,400,000.00
14	-	-	RAILROAD CROSSING REPLACEMENT	EA	1	\$500,000.00	\$500,000.00
15	-	-	RIGHT-OF-WAY ACQUISITION	SF	40,650	\$20.00	\$813,000.00
16	-	-	URBAN DESIGN	LS	1	\$275,000.00	\$275,000.00
			Ancillary items (20%)	LS	1	\$2,215,163.74	\$2,215,163.74
			SubTotal of Paving				\$14,462,982.44
			General Items (20% of Paving Subtotal)				\$2,892,596.49
TOTAL - PAVING ITEMS							\$17,355,578.93

Item No.	Item Reference No. <small>Note 1</small>	Spec No.	Item Description	Unit Measure	Unit Quantity	Unit Price (this column controls)	Total in Figures
UNIT PRICES - STORM SEWER ITEMS							
1	402	2001	TRENCH EXCAVATION PROTECTION	LF	8,990	\$1.25	\$11,237.50
2	464	2005	RC PIPE (CL III)(24 IN)	LF	1,300	\$53.00	\$68,900.00
3	464	2007	RC PIPE (CL III)(30 IN)	LF	560	\$65.00	\$36,400.00
4	464	2009	RC PIPE (CL III)(36 IN)	LF	2,370	\$80.00	\$189,600.00
5	464	2010	RC PIPE (CL III)(42 IN)	LF	2,760	\$137.00	\$378,120.00
6	464	2011	RC PIPE (CL III)(48 IN)	LF	1,200	\$128.00	\$153,600.00
7	464	2013	RC PIPE (CL III)(60 IN)	LF	800	\$187.00	\$149,600.00
8	465	2001	INLET (COMPL)(TY C)	EA	72	\$2,700.00	\$194,400.00
9	465	2167	MANHOLE (STAGE II)(TY A)	EA	21	\$3,500.00	\$73,500.00
10	496	2007	REMOV STR (PIPE)	LF	8,990	\$17.00	\$152,830.00
11	496	2002	REMOV STR (INLET)	EA	72	\$715.00	\$51,480.00
12	496	2003	REMOV STR (MANHOLE)	EA	21	\$620.00	\$13,020.00
			Ancillary items (20%)	LS	1	\$294,537.50	\$294,537.50
			SubTotal of Storm Sewer				\$1,767,225.00
			General Items (20% of Storm Sewer Subtotal)				\$353,445.00
TOTAL UNIT PRICES - STORM SEWER ITEMS							\$2,120,670.00

Item No.	Item Reference No. <small>Note 1</small>	Spec No.	Item Description	Unit Measure	Unit Quantity	Unit Price (this column controls)	Total in Figures
UNIT PRICES - WASTEWATER							
1	402	2001	TRENCH EXCAVATION PROTECTION	LF	1,200	\$1.25	\$1,500.00
2	496	2007	REMOV STR (PIPE)	LF	1,200	\$17.00	\$20,400.00
3	496	2003	REMOV STR (MANHOLE)	EA	5	\$620.00	\$3,100.00
4	5893	2010	SANITARY SEWER (PVC)(C900)(12IN)	LF	1,200	\$65.00	\$78,000.00
5	5893	2005	SERVICE CONNECTION (SANITARY SEWER)	EA	8	\$3,000.00	\$24,000.00
6	5893	2006	MANHOLE (SANITARY SEWER)(TYPE 1)	EA	5	\$3,500.00	\$17,500.00
			Ancillary Items (20%)	LS	1	\$28,900.00	\$28,900.00
			SubTotal of Wastewater				\$173,400.00
			General Items (20% of Wastewater Subtotal)				\$34,680.00
TOTAL UNIT PRICES - WASTEWATER							\$208,080.00

Conceptual Estimate of Probable Construction Costs

Project Location: FM 2920

Limits: SH 249 to Willow Road

Item No.	Item Reference No. <small>Note 1</small>	Spec No.	Item Description	Unit Measure	Unit Quantity	Unit Price (this column controls)	Total in Figures
UNIT PRICES - WATER							
1	402	2001	TRENCH EXCAVATION PROTECTION	LF	5,700	\$1.25	\$7,125.00
2	5969	2006	PVC PIPE (SCH 40)(12 IN)	LF	5,700	\$74.00	\$421,800.00
3	5969	2087	REMOVING AND SALVAGING FIRE HYDRANT	EA	17	\$357.00	\$6,069.00
4	5969	2041	CUT AND PLUG WATER MAIN (12IN)	EA	4	\$500.00	\$2,000.00
5	5969	2085	FIRE HYDRANT	EA	17	\$5,400.00	\$91,800.00
		-	Ancillary items (20%)	LS	1	\$105,758.80	\$105,758.80
			SubTotal				\$634,552.80
		-	General Items (20% of Water SubTotal)				\$126,910.56
TOTAL UNIT PRICES - WATER							\$761,463.36

Item No.	Item Reference No. <small>Note 1</small>	Spec No.	Item Description	Unit Measure	Unit Quantity	Unit Price (this column controls)	Total in Figures
UNIT PRICES - GAS							
1	402	2001	TRENCH EXCAVATION PROTECTION	LF	5,700	\$1.25	\$7,125.00
2	-	-	REMOVE AND REPLACE GAS MAIN	LF	5,700	\$55.00	\$313,500.00
		-	Ancillary items (20%)	LS	1	\$64,125.00	\$64,125.00
			SubTotal				\$384,750.00
		-	General Items (20% of Gas SubTotal)				\$76,950.00
TOTAL UNIT PRICES - GAS							\$461,700.00

TOTAL BASE UNIT PRICE:

\$20,907,492.29

Note:

1. The "Item Reference No." shall be designated for each item listed. The numbers serve as reference and will be used for the future cost updates.

Additional Project Development

Section 3 of 4
Preliminary Schedule
(1 Page)

Preliminary Schedule

Secure Design Services Contract	August, 2015
30% Design PS&E	February, 2016
Estimated Completion of ROW Acquisition	August, 2017
Estimated Completion of Bid Package/ROW/Permits/Environmental Clearance	August, 2018

The City of Tomball has already relocated on-street parking along this segment of FM 2920 and has built off-site parking lot as an initial effort according to the Access Management and Livable Center study findings in preparation to begin the design process for the proposed improvement. In addition, at this time the City of Tomball Council has committed \$3 million to begin the design effort and any other time sensitive activities as necessary. It is anticipated the City of Tomball will secure professional services contract by August, 2015. There after six months - February, 2016; 30% Design PS&E is anticipated to be completed, which will then trigger environmental clearance process and also right-of-way acquisitions efforts. It is anticipated that all permitting requirements, final PS&E will be completed and ready for bid by August, 2018.

Additional Project Development

Section 4 of 4
Technical Memo
(374 Pages)



GUNDA CORPORATION

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MEMORANDUM

Date: January 12, 2015
To: **Lori Lakatos**, City of Tomball
From: GUNDA Corporation
Re: FM 2920 – SH 249 Business to Willow Road – Traffic Analysis
Project No.: 14029-00

This memorandum presents the data collection procedures, analysis, and results of the existing and future conditions traffic analysis conducted for FM 2920, which is the primary roadway that provides regional access to City of Tomball. A Level of Service (LOS) analysis was conducted using existing, Year 2018, and Year 2040 traffic volumes. The list of roadway improvement projects which are required to be implemented in order to properly accommodate the future traffic volumes at an acceptable LOS are also presented in this memorandum. The crash analysis for the study intersections was also conducted and summarized in this memorandum. All these data are used to calculate benefit/cost analysis results used as part of the TIP application package.

1.0 Existing Condition

The study segment of FM 2920, also referred to as Waller-Tomball Road, is located within the City of Tomball, approximately thirty miles northwest of downtown Houston. The traffic study segment of FM 2920 from Park Road to Willow Street is three miles long. Access to the roadway is provided by State Highway 249, also referred to as Tomball Parkway.

1.0.1 Existing Roadway System

FM 2920 is an east-west directional roadway which commences at Business U.S. 290 to the west and ends at IH 45 to the east. In the study area, FM 2920 is a four lane roadway with a two-way left-turn lane (TWLTL) throughout the majority of the study area. The posted speed limit on FM 2920 is 45 miles per hour (MPH) from Park Road to Tomball Parkway, where it changes to 30 MPH. The speed limit remains 30 MPH until Willow Street, where it increases to 45 MPH. There are thirteen signalized intersections in the traffic study area.

1.1 Data Collection

A comprehensive field investigation was conducted at all the study intersections by observing traffic operations, during the weekday AM and PM peak periods. The existing roadway geometrics of the study intersections, including number of traffic lanes, intersection signal phasing etc. were observed. The existing signal timing data was obtained from the Texas Department of Transportation (TxDOT).

1.1.1 Turning Movement Counts & 24-Hour Traffic Counts

Gunda Corporation conducted peak period turning movement counts for the study intersections during the month of November 2014. The traffic count reports for all twelve of the study locations are provided in Appendix B of this memorandum. The locations of study intersections are presented in Figure 1.

Figure 1: FM 2920 Study Intersections



1.2 Summary of Field Observations

Field observations were made for each intersection in the study area.

In the study area, there are no existing bicycle or public transportation facilities.

- **FM 2920 & Park Road**
 - Existing pedestrian push buttons, crosswalks, signal heads, and ramps
 - No existing sidewalks
- **FM 2920 & Cascade Bay**
 - No pedestrian facilities provided
- **FM 2920 & SH 249 Southbound Frontage Road**
 - Existing pedestrian push buttons, crosswalks, signal heads, ramps, and sidewalks
- **FM 2920 & SH 249 Northbound Frontage Road**
 - Existing pedestrian push buttons, crosswalks, signal heads, ramps, and sidewalks
- **FM 2920 & Tomball Parkway**
 - Existing pedestrian push buttons, crosswalks, signal heads, ramps, and sidewalks
- **FM 2920 & Bovinghausen Lane**
 - Existing pedestrian push buttons, crosswalks, signal heads, ramps, and sidewalks on the south side of the roadway only
- **FM 2920 & Ella Street**
 - Existing pedestrian push buttons, crosswalks, signal heads, ramps, and sidewalks
- **FM 2920 & Holderrieth Boulevard**
 - Existing pedestrian push buttons, crosswalks, signal heads, ramps, and sidewalks on the north side of the roadway only
 - A school zone begins immediately to the east of this intersection

- **FM 2920 & Vernon Street**
 - Existing pedestrian push buttons, crosswalks, signal heads, ramps, and sidewalks on the north side of the roadway only
- **FM 2920 & Baker Drive**
 - Existing pedestrian push buttons, crosswalks, signal heads, ramps, and sidewalks on the north side of the roadway only
- **FM 2920 & Pine Street**
 - Existing crosswalks
 - Ramps on the northwest and southwest corners only
 - Existing pedestrian push buttons
- **FM 2920 & Willow Street**
 - Existing pedestrian push buttons and signal heads, and crosswalks except for the north/south direction on the east side of the intersection
 - No existing sidewalks
 - Existing pedestrian ramp located on the southwest corner of the intersection

1.3 Transportation System Analysis

PEDESTRIAN ACCESS

Sidewalks are present sporadically along FM 2920 from Park Road to Bovinghausen Street. Then, from Bovinghausen Street to Elm Street there are continuous sidewalks on the north side of the roadway. East of Elm Street, there are no sidewalks. Most signalized study intersections have pedestrian pushbuttons and pedestrian signal heads but are not ADA Accessible to current standards. Cascade Bay does not have pedestrian pushbuttons or signal heads.

BICYCLE ACCESS

It was observed that none of the major streets in the study area have bike routes.

TRANSIT SERVICE

The City of Tomball is not currently in the service area of the Metropolitan Transit Authority of Harris County (METRO) or any other transit service.

1.4 Existing Condition Traffic Analysis

Intersection level of service analyses were performed in accordance with the procedures set forth and recommended by the Transportation Research Board's Highway Capacity Manual (HCM) level of service methodologies for evaluation of signalized intersections. Traffic analysis software SYNCHRO, which incorporates HCM methodologies, was used to evaluate the operation of the study intersections. The Level of Service criteria for signalized and unsignalized intersections is based on average delay per vehicle and is listed below in Table 1. Level of Service "A" is considered as free flowing and "F" is considered as failing condition.

**Table 1: Level of Service (LOS) Criteria for Intersections
FM 2920 City of Tomball Traffic Study**

LOS	SIGNALIZED INTERSECCION	UNSIGNALIZED INTERSECCION
	DELAY (SEC/VEH)	DELAY (SEC/VEH)
A	0-10	0-10
B	>10-20	>10-15
C	>20-35	>15-25
D	>35-55	>25-35
E	>55-80	>35-50
F	>80	>50

PREPARED BY: GUNDA CORPORATION, 2014

Existing AM and PM weekday peak hour levels of service for the study intersections were evaluated based on existing traffic volumes, lane configuration, and timing. The existing AM and PM peak hour levels of service of the analysis intersections are summarized in Table 2, while detailed level of service analysis are included in Appendix A of this report. As presented in Table 2, several intersections are operating below level of service D during AM and PM peak hours, under the existing conditions.

**Table 2: Intersections Level of Service – Existing Condition
FM 2920 City of Tomball Traffic Study**

INTERSECTIONS	AM PEAK HOUR		PM PEAK HOUR	
	LOS	Delay ¹	LOS	Delay ¹
FM 2920 and Park Road	B	12.5	E	62.4
FM 2920 and Cascade Bay	F	110.7	A	4.6
FM 2920 and SH 249 – Southbound	C	23.1	C	33
FM 2920 and SH 249 – Northbound	C	21	E	79.5
FM 2920 and Tomball Parkway	F	102.2	D	53.9
FM 2920 and Buvinghausen Lane	B	17.3	F	Err
FM 2920 and Ella Street	B	11.1	B	14.9
FM 2920 and Holderrieth Blvd	C	24.8	D	44.9
FM 2920 and Vernon Street	A	4.9	B	13.9
FM 2920 and Baker Drive	A	7.4	B	11.8
FM 2920 and Pine Street	B	17.2	B	18.7
FM 2920 and Willow Street	D	45	A	9

NOTES:

LOS – LEVEL OF SERVICE

¹ DEALY IS PRESENTED IN SECONDS PER VEHICLE

PREPARED BY: GUNDA CORPORATION, LLC., 2015

1.5 Crash Experience

Crash data from 2009 to 2013 was obtained from the Houston Galveston Area Council (H-GAC) for the study area. These data came from TxDOT's Crash Records Information System (CRIS). The data came from police reports from crashes where the crash resulted in a fatality, injury, or at least \$1,000 in property damage. These crashes represent traffic accidents with a fatality, an injury or property damage with one or more vehicles having to be towed.

The crashes were selected using a set of streets located within the study area. The TIP application study area is comprised of the corridor of FM 2920 from Business 249 to Willow Street. Table 2 shows the list of intersections for which the crash data was queried, and Figure 2 shows crash intensity in graphical form.

Table 2 Intersections Analyzed for Crashes	
FM 2920 at	Alma
FM 2920 at	Baker
FM 2920 at	BS 249
FM 2920 at	Buvinghausen
FM 2920 at	Cherry
FM 2920 at	Chestnut
FM 2920 at	Ella
FM 2920 at	Elm
FM 2920 at	Holderreith
FM 2920 at	Howard
FM 2920 at	Lawrence
FM 2920 at	Live Oak
FM 2920 at	Magnolia
FM 2920 at	Oak
FM 2920 at	Peach
FM 2920 at	Pine
FM 2920 at	Poplar
FM 2920 at	Raymond
FM 2920 at	School
FM 2920 at	Sycamore
FM 2920 at	Tomball Pkwy
FM 2920 at	Vernon
FM 2920 at	Walnut
FM 2920 at	Willow St

**Figure 2: FM 2920
Crash Intensity Map**

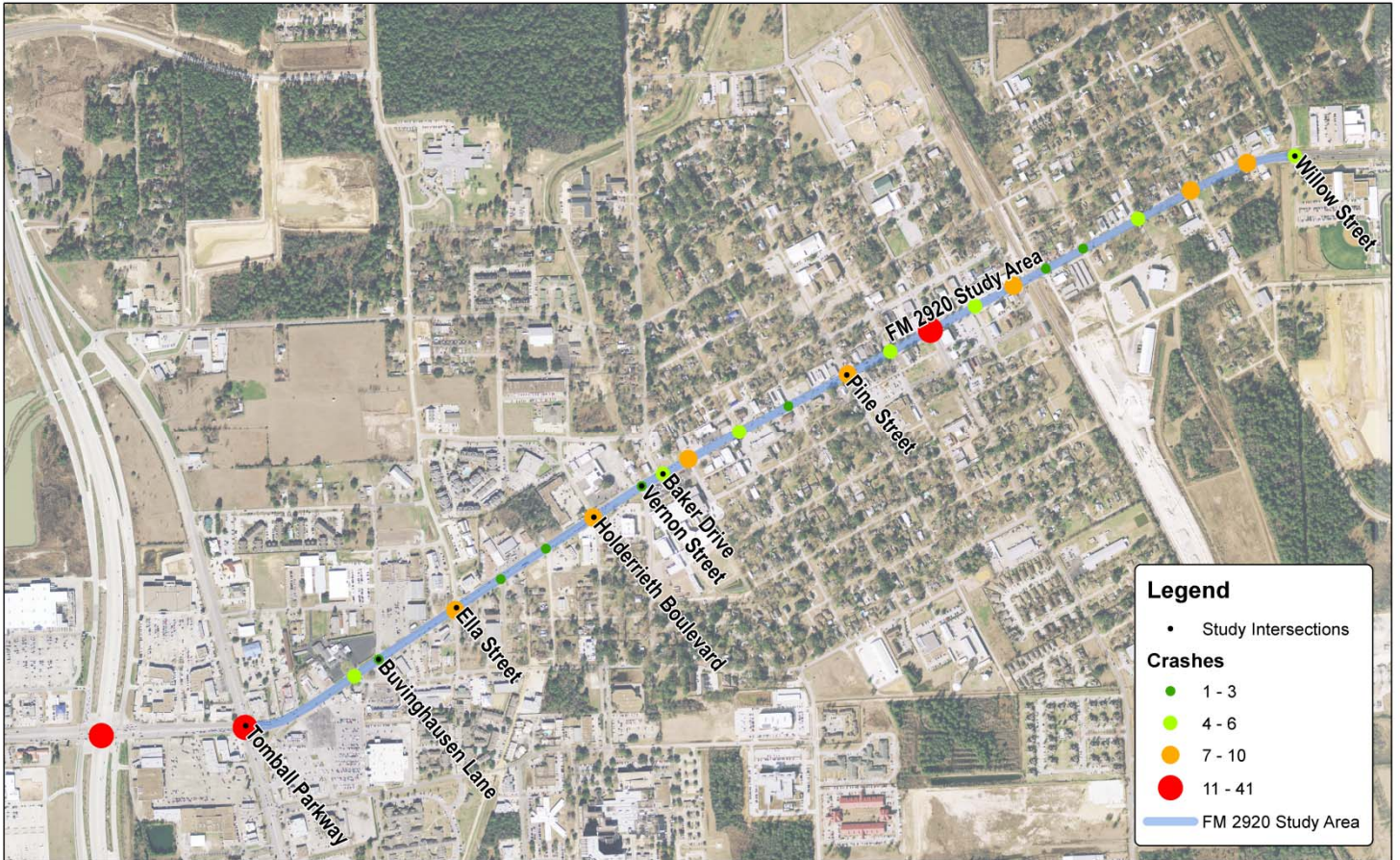


Table 3 presents the summary of crashes in the vicinity of intersections in the TIP application study area. The number of crashes in the table includes all the crashes within the limits of the study area for the years 2009 to 2013.

Table 3 Crash Data by Intersection 2009-2013		
Intersection		Crashes
FM 2920 at	Alma	5
FM 2920 at	Baker	6
FM 2920 at	BS 249	29
FM 2920 at	Buvinghausen	3
FM 2920 at	Cherry	30
FM 2920 at	Chestnut	8
FM 2920 at	Ella	9
FM 2920 at	Elm	10
FM 2920 at	Holderreith	10
FM 2920 at	Howard	9
FM 2920 at	Lawrence	2
FM 2920 at	Live Oak	4
FM 2920 at	Magnolia	2
FM 2920 at	Oak	6
FM 2920 at	Peach	7
FM 2920 at	Pine	9
FM 2920 at	Poplar	6
FM 2920 at	Raymond	1
FM 2920 at	School	9
FM 2920 at	Sycamore	3
FM 2920 at	SH 249	41
FM 2920 at	Vernon	2
FM 2920 at	Walnut	4
FM 2920 at	Willow St	5

Table 4 shows the total number of crashes within the TIP application study area for each year from 2009 to 2013.

Table 4 Crashes per Year	
Year	Number of Crashes in Study Area
2009	69
2010	38
2011	50
2012	31
2013	34
2009-2013 Total	222

1.5 Findings

Based on the results of the traffic analysis conducted to evaluate the traffic operations along FM 2920 in the study segment, the following observations have been made:

The following intersections are operating at LOS E or F during AM and/or PM peak hour traffic conditions:

- FM 2920 at Buvinghausen
- FM 2920 at Tomball Parkway
- FM 2920 at SH 249 Northbound Frontage Road
- FM 2920 at Cascade Bay
- FM 2920 at Park Road

2.0 Traffic Volume Projections

The existing traffic volumes at the study intersections along FM 2920 were projected to future years (FY) 2018 and 2040. The volume projections were provided by the Houston-Galveston Area Council (H-GAC) and are presented in Appendix C.

3.0 Future Conditions Traffic Analysis

The same procedure used to conduct the existing condition Level of Service analysis was used in the future conditions analysis. The following study area intersections were analyzed as a part of the Future Conditions Analysis.

1. FM 2920 and Park Road
2. FM 2920 and Cascade Bay
3. FM 2920 and SH 249 – Northbound
4. FM 2920 and SH 249 – Southbound
5. FM 2920 and Tomball Parkway
6. FM 2920 and Buvinghausen Lane
7. FM 2920 and Ella Street
8. FM 2920 and Holderrieth Blvd
9. FM 2920 and Vernon Street
10. FM 2920 and Baker Drive
11. FM 2920 and Pine Street
12. FM 2920 and Willow Street

3.1 Future Conditions Analysis

The existing traffic volumes were projected to Year 2018 and Year 2040 using the growth rates determined in the traffic volume projections. No Build conditions AM and PM weekday peak hour levels of service for the study intersections were evaluated based on projected traffic volumes, lane configuration, and signal timing. The future AM and PM peak hour levels of service of the analysis intersections are summarized in Appendix A.

As presented in Table 5 and detailed worksheets in Appendix A, with No Build and Build conditions, several intersections will operate at level of service E or F during AM and PM peak hours, under the 2018 future conditions. The following intersections are projected to operate at level of service E or F in 2018 future conditions:

1. Park Road
2. Cascade Bay
3. SH 249 Northbound Frontage Road
4. Tomball Parkway
5. Buvinghausen Lane

In addition to the intersections listed above for 2018, the following intersections are projected to operate at level of service E or F in 2040 under the No Build and Build future condition as shown in Table 6 and detailed in Appendix A:

1. SH 249 Southbound Frontage Road
2. SH 249 Northbound Frontage Road
3. Tomball Parkway
4. Buvinghausen Lane
5. Holderrieth Boulevard
6. Vernon Street
7. Baker Drive
8. Pine Street
9. Willow Street

The AM and PM peak hour levels of service for the study intersections were evaluated by projecting the existing volumes to the year 2018 and 2014. The level of service and delay information for all future scenario with and without improvements are presented in Tables 5 and 6 and Appendix A.

Table 5: FUTURE YEAR (2018) WITHOUT IMPROVEMENTS VS. WITH IMPROVEMENTS								
FM 2920 City of Tomball Traffic Study								
INTERSECTION	AM PEAK HOUR				PM PEAK HOUR			
	WITHOUT IMPROVEMENTS		WITH IMPROVEMENTS		WITHOUT IMPROVEMENTS		WITH IMPROVEMENTS	
	LOS	Delay (v/s)	LOS	Delay (v/s)	LOS	Delay (v/s)	LOS	Delay (v/s)
FM 2920 and Park Road	B	13.0	B	13.0	E	69.7	E	69.7
FM 2920 and Cascade Bay	F	121.7	F	121.7	A	4.8	A	4.8
FM 2920 and SH 249 – Southbound	C	23.7	C	23.7	D	37.1	D	37.1
FM 2920 and SH 249 – Northbound	C	21.2	C	21.2	F	87.3	D	54.6
FM 2920 and Tomball Parkway	F	108.7	D	44.2	E	57.4	E	57.4
FM 2920 and Bovinghausen Lane	B	17.6	B	17.6	F	Err	F	Err
FM 2920 and Ella Street	B	11.4	B	11.4	B	15.4	B	15.4
FM 2920 and Holderrieth Blvd	C	25.7	C	25.7	D	46.8	D	46.8
FM 2920 and Vernon Street	A	5.2	A	5.2	B	16.3	B	14.9
FM 2920 and Baker Drive	A	7.5	A	7.5	B	13.7	B	12.7
FM 2920 and Pine Street	B	17.8	B	17.8	B	19.9	B	19.7
FM 2920 and Willow Street	D	48.4	B	19.3	A	9.2	A	9.2

Table 6: FUTURE YEAR (2040) WITHOUT IMPROVEMENTS VS. WITH IMPROVEMENTS								
FM 2920 City of Tomball Traffic Study								
INTERSECTION	AM PEAK HOUR				PM PEAK HOUR			
	WITHOUT IMPROVEMENTS		WITH IMPROVEMENTS		WITHOUT IMPROVEMENTS		WITH IMPROVEMENTS	
	LOS	Delay (v/s)	LOS	Delay (v/s)	LOS	Delay (v/s)	LOS	Delay (v/s)
FM 2920 and Park Road	B	19.3	B	19.3	F	151.1	F	151.1
FM 2920 and Cascade Bay	F	244.5	D	35.5	A	8.9	A	8.9
FM 2920 and SH 249 – Southbound	C	30.9	C	30.9	E	55.8	E	55.8
FM 2920 and SH 249 – Northbound	C	24.8	C	24.8	F	173.3	F	173.3
FM 2920 and Tomball Parkway	F	178.8	E	178.8	F	105.6	F	105.6
FM 2920 and Buvinghausen Lane	C	21.6	E	21.6	F	Err	F	Err
FM 2920 and Ella Street	B	14.5	B	14.5	C	23.3	C	23.3
FM 2920 and Holderrieth Blvd	D	35.7	F	35.7	E	67.5	E	67.5
FM 2920 and Vernon Street	B	13.7	D	13.7	E	65.7	D	65.7
FM 2920 and Baker Drive	B	10.8	A	10.8	E	56.2	D	56.2
FM 2920 and Pine Street	D	54.5	E	54.5	F	117.8	E	117.8
FM 2920 and Willow Street	F	99.8	C	99.8	B	12.1	B	12.1

4.0 Benefit/Cost Analysis

In order to calculate the safety and mobility benefits of the proposed improvements the HGAC methodology to calculate crash and delay benefits template spreadsheets were utilized. The spreadsheets contain all standardized assumptions to determine present value benefits. The following sections summarize how the input data in the HGAC template spreadsheets were calculated.

The Texas Department of Transportation Highway Safety Improvement Program (HSIP) Work Codes Table shows several categories that fits the type of improvements proposed by this project. The following list summarizes the category numbers definition and reduction factors that are applicable to the proposed project.

- 111 Interconnect Signals - Provide a communication link between two or more adjacent signals in a corridor. Specify all signalized intersections to be included in the interconnection - Reduction Factor 10%
- 131 Improve Pedestrian Signals - Bring existing pedestrian signal units into conformance with current standards - Reduction Factor 10%
- 403 Install Pedestrian Crosswalk - Place pedestrian crosswalk markings where none existed previously - Reduction Factor 10%
- 407 Install Sidewalks - Install sidewalks where none existed previously - Reduction Factor 20%
- 509 Channelization - Install islands and/or pavement markings to control or prohibit vehicular movements Reduction Factor Varies
- 520 Lengthen Left Turn Lane - Provide additional length to an existing exclusive left turn lane. Affected intersection approaches must be specified - Reduction Factor 40%
- 524 Increase Turning Radius - Provide an increased turning radius at an existing intersection - Reduction Factor 10%

Since there are several safety items being proposed that will ultimately improve safety to pedestrians and vehicular traffic, a conservative 25% reduction factor was assumed to calculate the safety benefit/cost analysis. We believe the cumulative effect of all the improvements will have such an impact.

Similarly, using the delay outputs for AM and PM peak periods; a link travel time was obtained from the SYNCHRO model. Then a two hour Vehicle Hour Traveled (VHT) was calculated for each link using the peak-hour volumes used in the analysis. Then a K-factor for the peak periods was utilized to determine the daily VHT for each link, and the

total VHT for the 2018 build and no-build were completed. Then this total VHT was used in the benefit calculation template spreadsheets provided by HGAC. The output from the HGAC spreadsheet were used to calculate the benefit cost analysis. Table 7 shows the Benefit/Cost calculations with a construction cost estimate of \$19.5 million for the proposed project.

Table 7 Benefit/Cost Analysis				
	3%		7%	
	Benefit (\$)	B/C	Benefit (\$)	B/C
Mobility	\$ 11,380,000	0.58	\$ 7,322,000	0.38
Safety	\$ 13,349,000	0.68	\$ 8,103,000	0.42

APPENDIX A



Lane Group	SBL	SBR	NEL	NET	SWT	SWR
Lane Configurations						
Volume (vph)	30	119	48	1411	1017	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	175			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.892				0.998	
Flt Protected	0.990		0.950			
Satd. Flow (prot)	1645	0	1770	3539	3532	0
Flt Permitted	0.990		0.280			
Satd. Flow (perm)	1645	0	522	3539	3532	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	129				2	
Link Speed (mph)	30			30	30	
Link Distance (ft)	1322			554	2764	
Travel Time (s)	30.0			12.6	62.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	129	52	1534	1105	15
Shared Lane Traffic (%)						
Lane Group Flow (vph)	162	0	52	1534	1120	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane				Yes	Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	2	2	
Detector Template	Left		Left	Thru	Thru	
Leading Detector (ft)	20		20	100	100	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	20		20	6	6	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	NA		custom	NA	NA	
Protected Phases	4			6	2	
Permitted Phases			1			
Detector Phase	4		1	6	2	

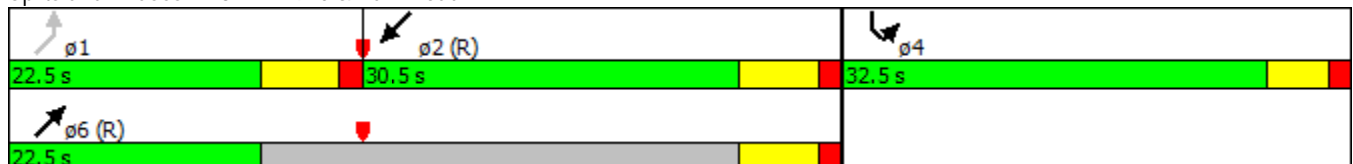


Lane Group	SBL	SBR	NEL	NET	SWT	SWR
Switch Phase						
Minimum Initial (s)	5.0		5.0	15.0	15.0	
Minimum Split (s)	32.5		22.5	22.5	30.5	
Total Split (s)	32.5		22.5	22.5	30.5	
Total Split (%)	38.0%		26.3%	26.3%	35.7%	
Maximum Green (s)	27.0		16.0	16.0	24.0	
Yellow Time (s)	4.0		5.0	5.0	5.0	
All-Red Time (s)	1.5		1.5	1.5	1.5	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	5.5		6.5	6.5	6.5	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	None		None	C-Max	C-Max	
Walk Time (s)	7.0				7.0	
Flash Dont Walk (s)	20.0				17.0	
Pedestrian Calls (#/hr)	0				0	
Act Effect Green (s)	8.2		15.7	65.3	45.7	
Actuated g/C Ratio	0.10		0.18	0.76	0.53	
v/c Ratio	0.59		0.55	0.57	0.59	
Control Delay	19.6		50.4	5.6	19.1	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	19.6		50.4	5.6	19.1	
LOS	B		D	A	B	
Approach Delay	19.6			7.1	19.1	
Approach LOS	B			A	B	

Intersection Summary

Area Type:	Other
Cycle Length:	85.5
Actuated Cycle Length:	85.5
Offset:	20 (23%), Referenced to phase 2:SWT and 6:NET, Start of Green
Natural Cycle:	90
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.59
Intersection Signal Delay:	12.5
Intersection LOS:	B
Intersection Capacity Utilization	58.0%
ICU Level of Service	B
Analysis Period (min)	15

Splits and Phases: 3: FM 2920 & Park Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1404	54	10	980	0	21	0	16	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994						0.943				
Flt Protected				0.950				0.972				
Satd. Flow (prot)	1863	3518	0	1770	3539	0	0	1707	0	0	1863	0
Flt Permitted				0.950				0.873				
Satd. Flow (perm)	1863	3518	0	1770	3539	0	0	1533	0	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7						168				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		2764			2506			534				543
Travel Time (s)		62.8			57.0			12.1				12.3
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
Adj. Flow (vph)	0	1526	59	11	1065	0	23	0	17	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1585	0	11	1065	0	0	40	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm		
Protected Phases	1	6		5	2			4				8
Permitted Phases							4			8		
Minimum Split (s)	11.0	26.0		11.0	26.0		21.5	21.5		21.5	21.5	
Total Split (s)	11.0	26.0		11.0	26.0		21.5	21.5		21.5	21.5	
Total Split (%)	18.8%	44.4%		18.8%	44.4%		36.8%	36.8%		36.8%	36.8%	
Maximum Green (s)	5.0	20.0		5.0	20.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			5.5			5.5	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Act Effect Green (s)		20.0		5.0	20.0			16.0				
Actuated g/C Ratio		0.34		0.09	0.34			0.27				
v/c Ratio		1.31		0.07	0.88			0.07				
Control Delay		169.0		25.9	29.0			0.3				
Queue Delay		0.0		0.0	0.0			0.0				
Total Delay		169.0		25.9	29.0			0.3				
LOS		F		C	C			A				

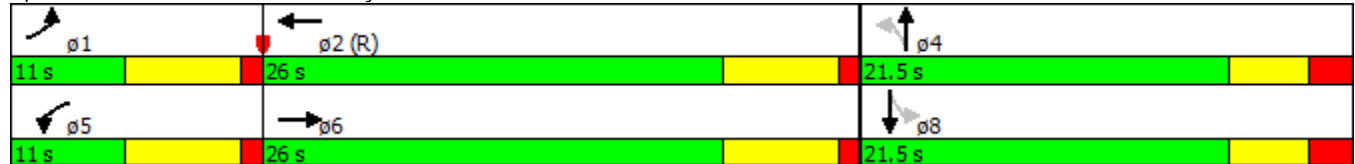


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		169.0			28.9			0.3				
Approach LOS		F			C			A				

Intersection Summary

Area Type:	Other
Cycle Length:	58.5
Actuated Cycle Length:	58.5
Offset:	0 (0%), Referenced to phase 2:WBT, Start of Green
Natural Cycle:	75
Control Type:	Pretimed
Maximum v/c Ratio:	1.31
Intersection Signal Delay:	110.7
Intersection LOS:	F
Intersection Capacity Utilization	54.3%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 5: Cascade Bay & FM 2920



FM 2920
2014 Base Model

AM Peak Hour
1/8/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	307	1194	0	0	633	36	270	86	35	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		80	0		0	0		0
Storage Lanes	1		0	0		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.86	0.86	1.00	1.00	0.86	0.86	0.91	0.91	0.95	1.00	1.00	1.00
Frt					0.992			0.979				
Flt Protected	0.950	0.999					0.950	0.974				
Satd. Flow (prot)	1522	4801	0	0	6357	0	1610	3233	0	0	0	0
Flt Permitted	0.950	0.940					0.950	0.974				
Satd. Flow (perm)	1522	4518	0	0	6357	0	1610	3233	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					8			13				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		270			350			173				201
Travel Time (s)		6.1			8.0			3.9				4.6
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
Adj. Flow (vph)	334	1298	0	0	688	39	293	93	38	0	0	0
Shared Lane Traffic (%)	10%						50%					
Lane Group Flow (vph)	301	1331	0	0	727	0	146	278	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2			2		1	2				
Detector Template	Left	Thru			Thru		Left	Thru				
Leading Detector (ft)	20	100			100		20	100				
Trailing Detector (ft)	0	0			0		0	0				
Detector 1 Position(ft)	0	0			0		0	0				
Detector 1 Size(ft)	20	6			6		20	6				
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex				
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0				
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		6			6			6				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	Prot	NA			NA		Perm	NA				
Protected Phases	1	1 2			2			3 4				
Permitted Phases							3 4					
Detector Phase	1	1 2			2		3 4	3 4				

Lane Group	ø3	ø4	ø5	ø6	ø7	ø8
Lane Configurations						
Volume (vph)						
Ideal Flow (vphpl)						
Storage Length (ft)						
Storage Lanes						
Taper Length (ft)						
Lane Util. Factor						
Frt						
Flt Protected						
Satd. Flow (prot)						
Flt Permitted						
Satd. Flow (perm)						
Right Turn on Red						
Satd. Flow (RTOR)						
Link Speed (mph)						
Link Distance (ft)						
Travel Time (s)						
Peak Hour Factor						
Adj. Flow (vph)						
Shared Lane Traffic (%)						
Lane Group Flow (vph)						
Enter Blocked Intersection						
Lane Alignment						
Median Width(ft)						
Link Offset(ft)						
Crosswalk Width(ft)						
Two way Left Turn Lane						
Headway Factor						
Turning Speed (mph)						
Number of Detectors						
Detector Template						
Leading Detector (ft)						
Trailing Detector (ft)						
Detector 1 Position(ft)						
Detector 1 Size(ft)						
Detector 1 Type						
Detector 1 Channel						
Detector 1 Extend (s)						
Detector 1 Queue (s)						
Detector 1 Delay (s)						
Detector 2 Position(ft)						
Detector 2 Size(ft)						
Detector 2 Type						
Detector 2 Channel						
Detector 2 Extend (s)						
Turn Type						
Protected Phases	3	4	5	6	7	8
Permitted Phases						
Detector Phase						

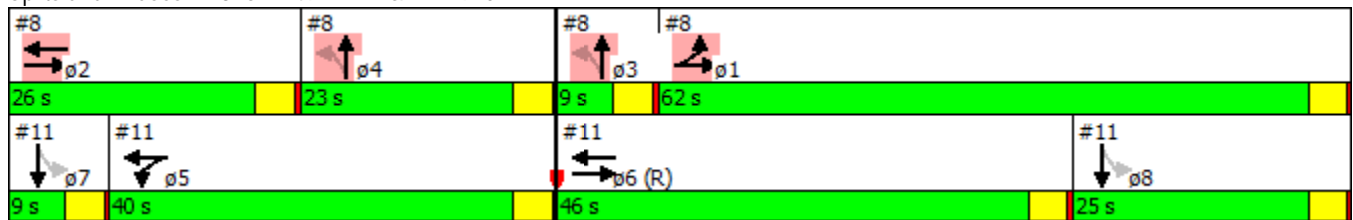


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0					4.0						
Minimum Split (s)	8.0					20.0						
Total Split (s)	62.0					26.0						
Total Split (%)	51.7%					21.7%						
Maximum Green (s)	58.0					22.0						
Yellow Time (s)	3.5					3.5						
All-Red Time (s)	0.5					0.5						
Lost Time Adjust (s)	0.0					0.0						
Total Lost Time (s)	4.0					4.0						
Lead/Lag	Lag					Lead						
Lead-Lag Optimize?	Yes					Yes						
Vehicle Extension (s)	3.0					3.0						
Recall Mode	None					None						
Walk Time (s)						5.0						
Flash Dont Walk (s)						11.0						
Pedestrian Calls (#/hr)						0						
Act Effct Green (s)	60.6	83.4			22.8		24.6	24.6				
Actuated g/C Ratio	0.50	0.70			0.19		0.20	0.20				
v/c Ratio	0.39	0.45			0.60		0.44	0.41				
Control Delay	8.1	2.6			46.5		45.5	40.8				
Queue Delay	1.4	0.2			0.1		0.0	0.0				
Total Delay	9.6	2.8			46.6		45.5	40.8				
LOS	A	A			D		D	D				
Approach Delay		4.0			46.6			42.4				
Approach LOS		A			D			D				

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 9 (8%), Referenced to phase 6:EBWB, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.71
 Intersection Signal Delay: 21.0
 Intersection LOS: C
 Intersection Capacity Utilization 41.4%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 8: SH 249 NBFR & FM 2920



Lane Group	ø3	ø4	ø5	ø6	ø7	ø8
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	8.0	20.0	20.0	20.0
Total Split (s)	9.0	23.0	40.0	46.0	9.0	25.0
Total Split (%)	8%	19%	33%	38%	8%	21%
Maximum Green (s)	5.0	19.0	36.0	42.0	5.0	21.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)						
Total Lost Time (s)						
Lead/Lag	Lead	Lag	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	C-Max	None	None
Walk Time (s)	5.0	5.0		5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0		0	0	0
Act Effct Green (s)						
Actuated g/C Ratio						
v/c Ratio						
Control Delay						
Queue Delay						
Total Delay						
LOS						
Approach Delay						
Approach LOS						
Intersection Summary						



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑↑		↔	↑↑↑					↔	↑↑	
Volume (vph)	0	1055	274	140	763	0	0	0	0	380	94	270
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.86	0.86	0.86	0.86	1.00	1.00	1.00	1.00	0.91	0.91	0.95
Frt		0.969										0.917
Flt Protected				0.950	0.999					0.950	0.988	
Satd. Flow (prot)	0	6209	0	1522	4801	0	0	0	0	1610	3072	0
Flt Permitted				0.950	0.933					0.950	0.988	
Satd. Flow (perm)	0	6209	0	1522	4484	0	0	0	0	1610	3072	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		60										231
Link Speed (mph)		30			30			30				30
Link Distance (ft)		291			270			179				204
Travel Time (s)		6.6			6.1			4.1				4.6
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
Adj. Flow (vph)	0	1147	298	152	829	0	0	0	0	413	102	293
Shared Lane Traffic (%)				10%						32%		
Lane Group Flow (vph)	0	1445	0	137	844	0	0	0	0	281	527	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2		1	2					1	2	
Detector Template		Thru		Left	Thru					Left	Thru	
Leading Detector (ft)		100		20	100					20	100	
Trailing Detector (ft)		0		0	0					0	0	
Detector 1 Position(ft)		0		0	0					0	0	
Detector 1 Size(ft)		6		20	6					20	6	
Detector 1 Type		Cl+Ex		Cl+Ex	Cl+Ex					Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0					0.0	0.0	
Detector 1 Queue (s)		0.0		0.0	0.0					0.0	0.0	
Detector 1 Delay (s)		0.0		0.0	0.0					0.0	0.0	
Detector 2 Position(ft)		94			94							94
Detector 2 Size(ft)		6			6							6
Detector 2 Type		Cl+Ex			Cl+Ex							Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							0.0
Turn Type		NA		Prot	NA					Perm	NA	
Protected Phases		6		5	5 6							7 8
Permitted Phases										7 8		
Detector Phase		6		5	5 6					7 8		7 8
Switch Phase												
Minimum Initial (s)		4.0			4.0							
Minimum Split (s)		20.0			8.0							

Lane Group	ø1	ø2	ø3	ø4	ø7	ø8
Lane Configurations						
Volume (vph)						
Ideal Flow (vphp)						
Lane Util. Factor						
Frt						
Flt Protected						
Satd. Flow (prot)						
Flt Permitted						
Satd. Flow (perm)						
Right Turn on Red						
Satd. Flow (RTOR)						
Link Speed (mph)						
Link Distance (ft)						
Travel Time (s)						
Peak Hour Factor						
Adj. Flow (vph)						
Shared Lane Traffic (%)						
Lane Group Flow (vph)						
Enter Blocked Intersection						
Lane Alignment						
Median Width(ft)						
Link Offset(ft)						
Crosswalk Width(ft)						
Two way Left Turn Lane						
Headway Factor						
Turning Speed (mph)						
Number of Detectors						
Detector Template						
Leading Detector (ft)						
Trailing Detector (ft)						
Detector 1 Position(ft)						
Detector 1 Size(ft)						
Detector 1 Type						
Detector 1 Channel						
Detector 1 Extend (s)						
Detector 1 Queue (s)						
Detector 1 Delay (s)						
Detector 2 Position(ft)						
Detector 2 Size(ft)						
Detector 2 Type						
Detector 2 Channel						
Detector 2 Extend (s)						
Turn Type						
Protected Phases	1	2	3	4	7	8
Permitted Phases						
Detector Phase						
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	20.0	20.0	20.0	20.0	20.0

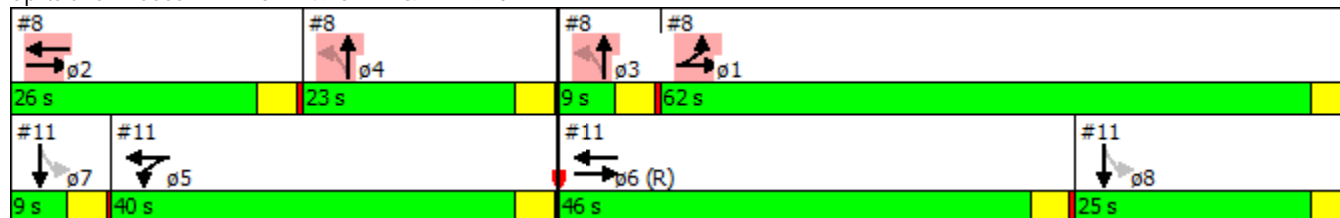


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)		46.0		40.0								
Total Split (%)		38.3%		33.3%								
Maximum Green (s)		42.0		36.0								
Yellow Time (s)		3.5		3.5								
All-Red Time (s)		0.5		0.5								
Lost Time Adjust (s)		0.0		0.0								
Total Lost Time (s)		4.0		4.0								
Lead/Lag		Lead		Lag								
Lead-Lag Optimize?		Yes		Yes								
Vehicle Extension (s)		3.0		3.0								
Recall Mode		C-Max		None								
Walk Time (s)		5.0										
Flash Dont Walk (s)		11.0										
Pedestrian Calls (#/hr)		0										
Act Effect Green (s)		46.0		32.5	78.4					29.6	29.6	
Actuated g/C Ratio		0.38		0.27	0.65					0.25	0.25	
v/c Ratio		0.60		0.33	0.36					0.71	0.57	
Control Delay		30.0		7.2	3.0					52.3	24.1	
Queue Delay		0.0		1.1	0.2					0.0	0.0	
Total Delay		30.0		8.2	3.2					52.3	24.1	
LOS		C		A	A					D	C	
Approach Delay		30.0			3.9						33.9	
Approach LOS		C			A						C	

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	120
Offset:	9 (8%), Referenced to phase 6:EBWB, Start of Green
Natural Cycle:	80
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.71
Intersection Signal Delay:	23.1
Intersection LOS:	C
Intersection Capacity Utilization:	41.4%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 11: SH 249 SBFR & FM 2920



Lane Group	ø1	ø2	ø3	ø4	ø7	ø8
Total Split (s)	62.0	26.0	9.0	23.0	9.0	25.0
Total Split (%)	52%	22%	8%	19%	8%	21%
Maximum Green (s)	58.0	22.0	5.0	19.0	5.0	21.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)						
Total Lost Time (s)						
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None
Walk Time (s)		5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)		11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0	0	0	0
Act Effect Green (s)						
Actuated g/C Ratio						
v/c Ratio						
Control Delay						
Queue Delay						
Total Delay						
LOS						
Approach Delay						
Approach LOS						
Intersection Summary						



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	793	377	216	565	140	93	186	4	39	76	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	110		0	180		250	180		0
Storage Lanes	1		1	1		0	2		1	2		0
Taper Length (ft)	25			25			25		25			
Lane Util. Factor	0.91	0.91	1.00	1.00	0.91	0.91	0.97	0.91	1.00	0.97	0.91	0.91
Frt			0.850		0.970				0.850		0.945	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1610	3390	1583	1770	4933	0	3433	5085	1583	3433	4806	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1610	3390	1583	1770	4933	0	3433	5085	1583	3433	4806	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			410		61				180		48	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		585			617			496			562	
Travel Time (s)		13.3			14.0			11.3			12.8	
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
Adj. Flow (vph)	65	862	410	235	614	152	101	202	4	42	83	48
Shared Lane Traffic (%)	10%											
Lane Group Flow (vph)	58	869	410	235	766	0	101	202	4	42	131	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Split	NA	Perm	Split	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	3	3		4	4		5	2		1	6	
Permitted Phases			3						2			
Detector Phase	3	3	3	4	4		5	2	2	1	6	

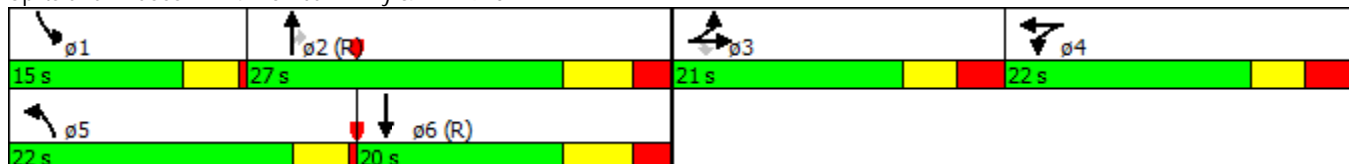


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		4.0	5.0	5.0	4.0	5.0	
Minimum Split (s)	41.5	41.5	41.5	40.5	40.5		8.0	36.0	36.0	8.0	40.0	
Total Split (s)	21.0	21.0	21.0	22.0	22.0		22.0	27.0	27.0	15.0	20.0	
Total Split (%)	24.7%	24.7%	24.7%	25.9%	25.9%		25.9%	31.8%	31.8%	17.6%	23.5%	
Maximum Green (s)	14.5	14.5	14.5	15.5	15.5		18.0	20.0	20.0	11.0	13.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	4.5	4.5	3.5	4.5	
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0		0.5	2.5	2.5	0.5	2.5	
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)	6.5	6.5	6.5	6.5	6.5		4.0	7.0	7.0	4.0	7.0	
Lead/Lag	Lead	Lead	Lead	Lag	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	None	C-Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0			7.0	7.0		7.0	
Flash Dont Walk (s)	28.0	28.0	28.0	27.0	27.0			22.0	22.0		26.0	
Pedestrian Calls (#/hr)	0	0	0	0	0			0	0		0	
Act Effect Green (s)	14.5	14.5	14.5	15.5	15.5		7.9	28.4	28.4	6.5	25.1	
Actuated g/C Ratio	0.17	0.17	0.17	0.18	0.18		0.09	0.33	0.33	0.08	0.30	
v/c Ratio	0.21	1.50	0.67	0.73	0.81		0.32	0.12	0.01	0.16	0.09	
Control Delay	32.7	264.4	9.7	47.7	38.4		38.2	21.5	0.0	37.7	15.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	32.7	264.4	9.7	47.7	38.4		38.2	21.5	0.0	37.7	15.7	
LOS	C	F	A	D	D		D	C	A	D	B	
Approach Delay		176.3			40.6			26.7			21.0	
Approach LOS		F			D			C			C	

Intersection Summary

Area Type: Other
 Cycle Length: 85
 Actuated Cycle Length: 85
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 130
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.50
 Intersection Signal Delay: 102.2 Intersection LOS: F
 Intersection Capacity Utilization 63.5% ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 14: Tomball Pkwy & FM 2920





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	29	936	1	3	803	11	0	0	1	10	0	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	90		0	70		0	0		0	80		0
Storage Lanes	1		0	1		0	0		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.998			0.865				0.850
Flt Protected	0.950			0.950						0.950		
Satd. Flow (prot)	1770	3539	0	1770	3532	0	0	1611	0	1770	0	1583
Flt Permitted	0.950			0.950						0.950		
Satd. Flow (perm)	1770	3539	0	1770	3532	0	0	1611	0	1770	0	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					2			368				138
Link Speed (mph)		30			30			30				30
Link Distance (ft)		524			664			247				407
Travel Time (s)		11.9			15.1			5.6				9.3
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
Adj. Flow (vph)	32	1017	1	3	873	12	0	0	1	11	0	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	32	1018	0	3	885	0	0	1	0	11	0	20
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1		1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left		Right
Leading Detector (ft)	20	100		20	100		20	100		20		20
Trailing Detector (ft)	0	0		0	0		0	0		0		0
Detector 1 Position(ft)	0	0		0	0		0	0		0		0
Detector 1 Size(ft)	20	6		20	6		20	6		20		20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0		0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0		0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0		0.0
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		6			6			6				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	Prot	NA		Prot	NA		Split	NA		Prot		custom
Protected Phases	1	6		5	2		8	8		4		
Permitted Phases												4
Detector Phase	1	6		5	2		8	8		4		4

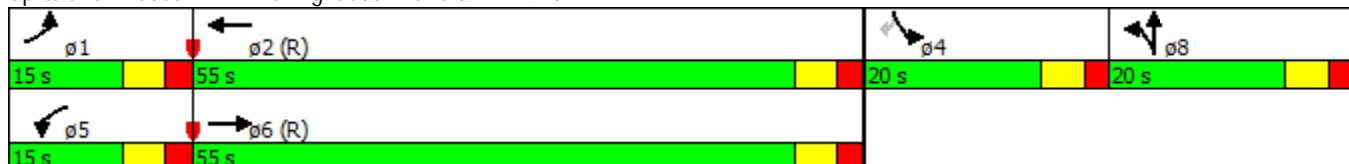


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0		5.0	5.0		5.0		5.0
Minimum Split (s)	21.7	22.7		21.7	27.7		27.5	27.5		27.5		27.5
Total Split (s)	15.0	55.0		15.0	55.0		20.0	20.0		20.0		20.0
Total Split (%)	13.6%	50.0%		13.6%	50.0%		18.2%	18.2%		18.2%		18.2%
Maximum Green (s)	9.3	49.3		9.3	49.3		14.5	14.5		14.5		14.5
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5		3.5
All-Red Time (s)	2.2	2.2		2.2	2.2		2.0	2.0		2.0		2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0		0.0
Total Lost Time (s)	5.7	5.7		5.7	5.7			5.5		5.5		5.5
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0		3.0
Recall Mode	None	C-Max		Max	C-Max		None	None		None		None
Walk Time (s)		5.0			5.0		5.0	5.0		5.0		5.0
Flash Dont Walk (s)		12.0			17.0		17.0	17.0		17.0		17.0
Pedestrian Calls (#/hr)		0			0		0	0		0		0
Act Effect Green (s)	7.5	49.3		39.7	88.4			5.5		6.3		6.3
Actuated g/C Ratio	0.07	0.45		0.36	0.80			0.05		0.06		0.06
v/c Ratio	0.26	0.64		0.00	0.31			0.00		0.11		0.09
Control Delay	53.4	25.8		29.3	6.2			0.0		51.1		0.8
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0		0.0
Total Delay	53.4	25.8		29.3	6.2			0.0		51.1		0.8
LOS	D	C		C	A			A		D		A
Approach Delay		26.7			6.3			0.0				
Approach LOS		C			A			A				

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 38 (35%), Referenced to phase 2:WBT and 6:EBT, Start of Green
 Natural Cycle: 115
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.64
 Intersection Signal Delay: 17.3
 Intersection LOS: B
 Intersection Capacity Utilization 44.8%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 17: Buvinghausen Lane & FM 2920





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	38	886	7	3	800	35	10	16	3	34	41	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	60		0	60		0	65		0	130		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999			0.994			0.977				0.907
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3536	0	1770	3518	0	1770	1820	0	1770	1690	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3536	0	1770	3518	0	1770	1820	0	1770	1690	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			6			3				73
Link Speed (mph)		30			30			30				30
Link Distance (ft)		664			1265			346				306
Travel Time (s)		15.1			28.8			7.9				7.0
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
Adj. Flow (vph)	41	963	8	3	870	38	11	17	3	37	45	73
Shared Lane Traffic (%)												
Lane Group Flow (vph)	41	971	0	3	908	0	11	20	0	37	118	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases												
Detector Phase	1	6		5	2		3	8		7	4	

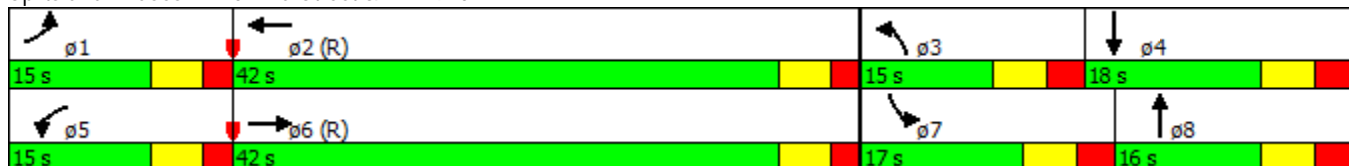


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	10.5	25.5		10.5	25.5		11.1	36.1		11.1	36.1	
Total Split (s)	15.0	42.0		15.0	42.0		15.0	16.0		17.0	18.0	
Total Split (%)	16.7%	46.7%		16.7%	46.7%		16.7%	17.8%		18.9%	20.0%	
Maximum Green (s)	9.5	36.5		9.5	36.5		8.9	9.9		10.9	11.9	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.6	3.6		3.6	3.6	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.5	5.5		5.5	5.5		6.1	6.1		6.1	6.1	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		5.0			5.0			5.0			5.0	
Flash Dont Walk (s)		15.0			15.0			25.0			25.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	7.6	62.7		5.8	56.6		6.2	7.0		7.5	10.7	
Actuated g/C Ratio	0.08	0.70		0.06	0.63		0.07	0.08		0.08	0.12	
v/c Ratio	0.28	0.39		0.03	0.41		0.09	0.14		0.25	0.45	
Control Delay	42.7	8.9		46.7	8.5		40.5	35.8		42.1	20.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	42.7	8.9		46.7	8.5		40.5	35.8		42.1	20.9	
LOS	D	A		D	A		D	D		D	C	
Approach Delay		10.3			8.6			37.5			26.0	
Approach LOS		B			A			D			C	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	48 (53%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Natural Cycle:	85
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.45
Intersection Signal Delay:	11.1
Intersection LOS:	B
Intersection Capacity Utilization:	49.8%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 20: Ella Street & FM 2920





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	19	858	12	79	826	19	22	21	47	28	40	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	65		0	60		0	0		50	0		50
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.997				0.850			0.850
Flt Protected	0.950			0.950				0.975			0.980	
Satd. Flow (prot)	1770	3532	0	1770	3529	0	0	1816	1583	0	1825	1583
Flt Permitted	0.952			0.238				0.252			0.845	
Satd. Flow (perm)	1773	3532	0	443	3529	0	0	469	1583	0	1574	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			3				109			109
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1265			442			534			293	
Travel Time (s)		28.8			10.0			12.1			6.7	
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
Adj. Flow (vph)	21	933	13	86	898	21	24	23	51	30	43	39
Shared Lane Traffic (%)												
Lane Group Flow (vph)	21	946	0	86	919	0	0	47	51	0	73	39
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	custom	NA		custom	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		6			2			3			4	
Permitted Phases	1			5			3		3	4		4
Detector Phase	1	6		5	2		3	3	3	4	4	4



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	15.0	40.0		17.0	42.0		16.0	16.0	16.0	17.0	17.0	17.0
Total Split (%)	16.7%	44.4%		18.9%	46.7%		17.8%	17.8%	17.8%	18.9%	18.9%	18.9%
Maximum Green (s)	11.0	36.0		13.0	38.0		12.0	12.0	12.0	13.0	13.0	13.0
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5	0.5	0.5	0.5	0.5
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)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max		Max	Max	Max	None	None	None
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effect Green (s)	8.2	37.7		16.8	52.7		12.0	12.0	12.0	9.4	9.4	9.4
Actuated g/C Ratio	0.09	0.42		0.19	0.59		0.13	0.13	0.13	0.10	0.10	0.10
v/c Ratio	0.13	0.64		1.05	0.44		0.76	0.17	0.17	0.45	0.15	0.15
Control Delay	41.2	23.6		155.6	10.1		101.6	1.2	1.2	45.7	1.2	1.2
Queue Delay	0.0	0.0		0.0	0.1		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.2	23.6		155.6	10.2		101.6	1.2	1.2	45.7	1.2	1.2
LOS	D	C		F	B		F	A	A	D	A	A
Approach Delay		23.9			22.6			49.3			30.2	
Approach LOS		C			C			D			C	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	88 (98%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Natural Cycle:	90
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	1.05
Intersection Signal Delay:	24.8
Intersection LOS:	C
Intersection Capacity Utilization:	48.8%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 23: Holderrieth Blvd & FM 2920





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↖	↑↑			↕			↕	
Volume (vph)	0	919	8	27	912	0	11	0	31	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	20		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt		0.999						0.900				
Flt Protected				0.950				0.987				
Satd. Flow (prot)	0	3536	0	1770	3539	0	0	1655	0	0	1863	0
Flt Permitted				0.950				0.946				
Satd. Flow (perm)	0	3536	0	1770	3539	0	0	1586	0	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1						104				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		442			131			513				186
Travel Time (s)		10.0			3.0			11.7				4.2
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
Adj. Flow (vph)	0	999	9	29	991	0	12	0	34	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1008	0	29	991	0	0	46	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2		1	2		1	2		1		2
Detector Template		Thru		Left	Thru		Left	Thru		Left		Thru
Leading Detector (ft)		100		20	100		20	100		20		100
Trailing Detector (ft)		0		0	0		0	0		0		0
Detector 1 Position(ft)		0		0	0		0	0		0		0
Detector 1 Size(ft)		6		20	6		20	6		20		6
Detector 1 Type		Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0		0.0	0.0		0.0		0.0
Detector 1 Queue (s)		0.0		0.0	0.0		0.0	0.0		0.0		0.0
Detector 1 Delay (s)		0.0		0.0	0.0		0.0	0.0		0.0		0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type		NA		Prot	NA		Perm	NA		Perm		
Protected Phases		6		4	2 4			3				3
Permitted Phases							3	3		3		
Detector Phase		6		4	2 4		3	3		3		3

Lane Group	ø2
Lane Configurations	
Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	2
Permitted Phases	
Detector Phase	

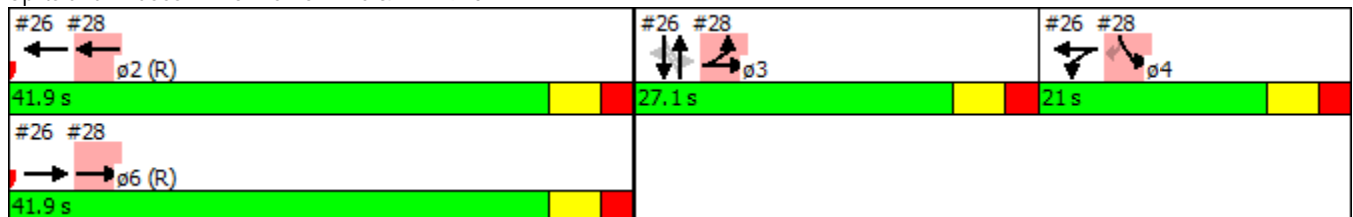


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)		15.0		5.0			5.0	5.0		5.0	5.0	
Minimum Split (s)		24.8		20.8			26.8	26.8		26.8	26.8	
Total Split (s)		41.9		21.0			27.1	27.1		27.1	27.1	
Total Split (%)		46.6%		23.3%			30.1%	30.1%		30.1%	30.1%	
Maximum Green (s)		36.1		15.2			21.3	21.3		21.3	21.3	
Yellow Time (s)		3.5		3.5			3.5	3.5		3.5	3.5	
All-Red Time (s)		2.3		2.3			2.3	2.3		2.3	2.3	
Lost Time Adjust (s)		0.0		0.0			0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.8		5.8			5.8	5.8		5.8	5.8	
Lead/Lag				Lag			Lead	Lead		Lead	Lead	
Lead-Lag Optimize?				Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)		3.0		3.0			3.0	3.0		3.0	3.0	
Recall Mode		C-Max		None			Max	Max		Max	Max	
Walk Time (s)		7.0		5.0			5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		12.0		10.0			16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)		0		0			0	0		0	0	
Act Effect Green (s)		36.1		15.2	57.1		21.3	21.3		21.3	21.3	
Actuated g/C Ratio		0.40		0.17	0.63		0.24	0.24		0.24	0.24	
v/c Ratio		0.71		0.10	0.44		0.10	0.10		0.10	0.10	
Control Delay		6.3		51.5	1.5		0.5	0.5		0.5	0.5	
Queue Delay		0.0		3.5	0.8		0.0	0.0		0.0	0.0	
Total Delay		6.3		55.0	2.3		0.5	0.5		0.5	0.5	
LOS		A		D	A		A	A		A	A	
Approach Delay		6.3			3.8		0.5	0.5		0.5	0.5	
Approach LOS		A			A		A	A		A	A	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.74
 Intersection Signal Delay: 4.9
 Intersection LOS: A
 Intersection Capacity Utilization 39.5%
 ICU Level of Service A
 Analysis Period (min) 15

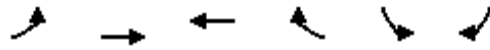
Splits and Phases: 26: Vernon Ave & FM 2920



Lane Group	ø2
Switch Phase	
Minimum Initial (s)	15.0
Minimum Split (s)	22.8
Total Split (s)	41.9
Total Split (%)	47%
Maximum Green (s)	36.1
Yellow Time (s)	3.5
All-Red Time (s)	2.3
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	C-Max
Walk Time (s)	7.0
Flash Dont Walk (s)	10.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	ø6
Lane Configurations							
Volume (vph)	32	929	902	64	116	42	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	20			0	0	90	
Storage Lanes	1			0	1	1	
Taper Length (ft)	25				25		
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00	
Frt			0.990			0.850	
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1770	3539	3504	0	1770	1583	
Flt Permitted	0.950				0.950		
Satd. Flow (perm)	1770	3539	3504	0	1770	1583	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)			10			46	
Link Speed (mph)		30	30		30		
Link Distance (ft)		131	272		349		
Travel Time (s)		3.0	6.2		7.9		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	35	1010	980	70	126	46	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	35	1010	1050	0	126	46	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Left	Left	Right	Left	Right	
Median Width(ft)		12	12		12		
Link Offset(ft)		0	0		0		
Crosswalk Width(ft)		16	16		16		
Two way Left Turn Lane		Yes	Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15			9	15	9	
Number of Detectors	1	2	2		1	1	
Detector Template	Left	Thru	Thru		Left	Right	
Leading Detector (ft)	20	100	100		20	20	
Trailing Detector (ft)	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0		0	0	
Detector 1 Size(ft)	20	6	6		20	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94	94				
Detector 2 Size(ft)		6	6				
Detector 2 Type		Cl+Ex	Cl+Ex				
Detector 2 Channel							
Detector 2 Extend (s)		0.0	0.0				
Turn Type	Prot	NA	NA		NA	Perm	
Protected Phases	3	3 6	2		4		6
Permitted Phases						4	
Detector Phase	3	3 6	2		4	4	

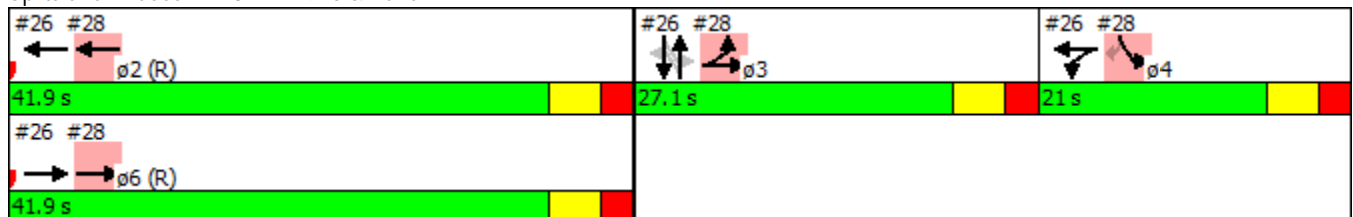


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	ø6
Switch Phase							
Minimum Initial (s)	5.0		15.0		5.0	5.0	15.0
Minimum Split (s)	26.8		22.8		20.8	20.8	24.8
Total Split (s)	27.1		41.9		21.0	21.0	41.9
Total Split (%)	30.1%		46.6%		23.3%	23.3%	47%
Maximum Green (s)	21.3		36.1		15.2	15.2	36.1
Yellow Time (s)	3.5		3.5		3.5	3.5	3.5
All-Red Time (s)	2.3		2.3		2.3	2.3	2.3
Lost Time Adjust (s)	0.0		0.0		0.0	0.0	
Total Lost Time (s)	5.8		5.8		5.8	5.8	
Lead/Lag	Lead				Lag		Lag
Lead-Lag Optimize?	Yes				Yes		Yes
Vehicle Extension (s)	3.0		3.0		3.0	3.0	3.0
Recall Mode	Max		C-Max		None	None	C-Max
Walk Time (s)	5.0		7.0		5.0	5.0	7.0
Flash Dont Walk (s)	16.0		10.0		10.0	10.0	12.0
Pedestrian Calls (#/hr)	0		0		0	0	0
Act Effect Green (s)	21.3	63.2	36.1		15.2	15.2	
Actuated g/C Ratio	0.24	0.70	0.40		0.17	0.17	
v/c Ratio	0.08	0.41	0.74		0.42	0.15	
Control Delay	22.3	0.5	9.0		38.5	11.5	
Queue Delay	4.8	0.5	0.0		0.0	0.0	
Total Delay	27.2	1.1	9.0		38.5	11.5	
LOS	C	A	A		D	B	
Approach Delay		1.9	9.0		31.3		
Approach LOS		A	A		C		

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Natural Cycle:	80
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.74
Intersection Signal Delay:	7.4
Intersection LOS:	A
Intersection Capacity Utilization:	43.1%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 28: FM 2920 & Baker Dr



FM 2920
2014 Base Model

AM Peak Hour
1/8/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕	↗		↕↕	
Volume (vph)	3	838	25	35	933	10	32	37	57	21	20	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		80	0		0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.996			0.998				0.850		0.966	
Flt Protected					0.998			0.977			0.981	
Satd. Flow (prot)	0	3525	0	0	3525	0	0	1820	1583	0	1765	0
Flt Permitted		0.952			0.882			0.611			0.866	
Satd. Flow (perm)	0	3356	0	0	3115	0	0	1138	1583	0	1558	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			2				107		15	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1317			3717			353			398	
Travel Time (s)		29.9			84.5			8.0			9.0	
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
Adj. Flow (vph)	3	911	27	38	1014	11	35	40	62	23	22	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	941	0	0	1063	0	0	75	62	0	60	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA	custom	Perm	NA	
Protected Phases		2			6			3			4	
Permitted Phases	2			6			3		2	4		
Detector Phase	2	2		6	6		3	3	2	4	4	

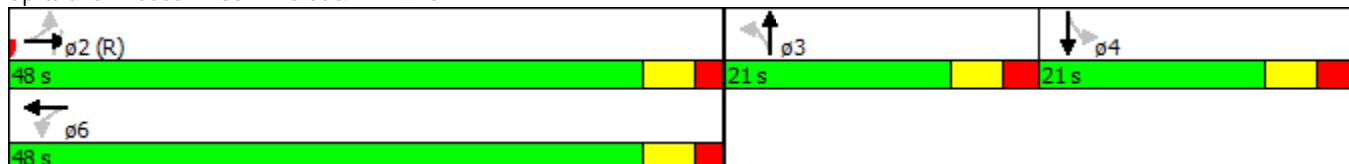


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		5.0	5.0	20.0	5.0	5.0	
Minimum Split (s)	25.5	25.5		25.5	25.5		28.9	28.9	25.5	28.9	28.9	
Total Split (s)	48.0	48.0		48.0	48.0		21.0	21.0	48.0	21.0	21.0	
Total Split (%)	53.3%	53.3%		53.3%	53.3%		23.3%	23.3%	53.3%	23.3%	23.3%	
Maximum Green (s)	42.5	42.5		42.5	42.5		15.1	15.1	42.5	15.1	15.1	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.4	2.4	2.0	2.4	2.4	
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	
Total Lost Time (s)		5.5			5.5			5.9	5.5		5.9	
Lead/Lag							Lead	Lead		Lag	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max		Max	Max		Max	Max	C-Max	Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	8.0	8.0		8.0	8.0		16.0	16.0	8.0	16.0	16.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effect Green (s)		42.5			42.5			15.1	42.5		15.1	
Actuated g/C Ratio		0.47			0.47			0.17	0.47		0.17	
v/c Ratio		0.59			0.72			0.39	0.08		0.22	
Control Delay		9.6			22.5			40.4	1.0		28.2	
Queue Delay		0.0			0.0			0.0	0.0		0.0	
Total Delay		9.6			22.5			40.4	1.0		28.2	
LOS		A			C			D	A		C	
Approach Delay		9.6			22.5			22.6			28.2	
Approach LOS		A			C			C			C	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 47 (52%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 95
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.72
 Intersection Signal Delay: 17.2
 Intersection Capacity Utilization 70.9%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service C

Splits and Phases: 30: Pine St & FM 2920





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	923	110	95	954	9	40	1	65	16	15	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	80		0	160		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.984			0.999			0.917				0.966
Flt Protected	0.950			0.950				0.982				0.981
Satd. Flow (prot)	1770	3483	0	1770	3536	0	0	1677	0	0	1765	0
Flt Permitted	0.950			0.950				0.891				0.901
Satd. Flow (perm)	1770	3483	0	1770	3536	0	0	1522	0	0	1621	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			1			71				11
Link Speed (mph)		30			30			30				30
Link Distance (ft)		3717			948			261				287
Travel Time (s)		84.5			21.5			5.9				6.5
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
Adj. Flow (vph)	4	1003	120	103	1037	10	43	1	71	17	16	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	4	1123	0	103	1047	0	0	115	0	0	44	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane				Yes								
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4				8
Permitted Phases							4			8		
Detector Phase	1	6		5	2		4	4		8		8

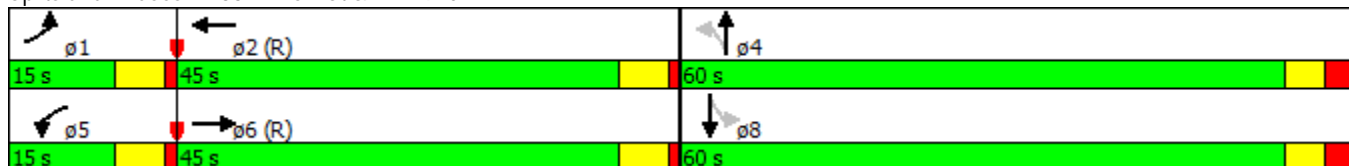


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	10.5	22.0		10.5	22.0		20.0	20.0		33.0	33.0	
Total Split (s)	15.0	45.0		15.0	45.0		60.0	60.0		60.0	60.0	
Total Split (%)	12.5%	37.5%		12.5%	37.5%		50.0%	50.0%		50.0%	50.0%	
Maximum Green (s)	9.5	39.5		9.5	39.5		54.0	54.0		54.0	54.0	
Yellow Time (s)	4.5	4.5		4.5	4.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	5.5	5.5		5.5	5.5			6.0			6.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		Max	Max		None	None	
Walk Time (s)		7.0			7.0					7.0	7.0	
Flash Dont Walk (s)		7.0			6.0					20.0	20.0	
Pedestrian Calls (#/hr)		0			0					0	0	
Act Effect Green (s)	5.9	39.8		9.2	52.1			54.0			54.0	
Actuated g/C Ratio	0.05	0.33		0.08	0.43			0.45			0.45	
v/c Ratio	0.05	0.97		0.76	0.68			0.16			0.06	
Control Delay	55.2	59.2		86.7	30.9			8.9			15.3	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	55.2	59.2		86.7	30.9			8.9			15.3	
LOS	E	E		F	C			A			B	
Approach Delay		59.2			35.9			8.9			15.3	
Approach LOS		E			D			A			B	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 5 (4%), Referenced to phase 2:WBT and 6:EBT, Start of Green
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.97
 Intersection Signal Delay: 45.0
 Intersection LOS: D
 Intersection Capacity Utilization 56.5%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 33: Willow St & FM 2920

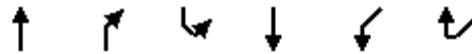




Lane Group	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Volume (vph)	54	86	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	180			0	0	0
Storage Lanes	1			0	0	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Fr						
Flt Protected	0.950					
Satd. Flow (prot)	1770	3539	0	0	0	0
Flt Permitted	0.950					
Satd. Flow (perm)	1770	3539	0	0	0	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		465	173		284	
Travel Time (s)		10.6	3.9		6.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	59	93	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	59	93	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	21.7%
Analysis Period (min)	15
	ICU Level of Service A



Lane Group	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations				↑↑	↘	
Volume (vph)	0	0	0	0	54	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	0	0	0	3539	1770	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	0	0	3539	1770	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	453			179	284	
Travel Time (s)	10.3			4.1	6.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	59	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	59	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Stop			Free	Yield	

Intersection Summary

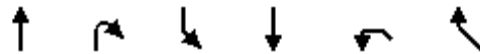
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	21.7%
ICU Level of Service	A
Analysis Period (min)	15



Lane Group	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations		↑↑			↘	
Volume (vph)	0	0	0	0	130	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	0	3539	0	0	1770	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	3539	0	0	1770	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		201	296		306	
Travel Time (s)		4.6	6.7		7.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	141	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	141	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Stop		Yield	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	23.3%
Analysis Period (min)	15
	ICU Level of Service A



Lane Group	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Volume (vph)	0	0	130	94	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	180		0	0
Storage Lanes		0	1		0	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt						
Flt Protected			0.950			
Satd. Flow (prot)	0	0	1770	3539	0	0
Flt Permitted			0.950			
Satd. Flow (perm)	0	0	1770	3539	0	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	204			261	306	
Travel Time (s)	4.6			5.9	7.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	141	102	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	141	102	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	23.3%
Analysis Period (min)	15
	ICU Level of Service A



Lane Group	SBL	SBR	NEL	NET	SWT	SWR
Lane Configurations						
Volume (vph)	44	84	146	1259	1781	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	175			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.912				0.995	
Flt Protected	0.983		0.950			
Satd. Flow (prot)	1670	0	1770	3539	3522	0
Flt Permitted	0.983		0.215			
Satd. Flow (perm)	1670	0	400	3539	3522	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	80				5	
Link Speed (mph)	30			30	30	
Link Distance (ft)	1322			554	2764	
Travel Time (s)	30.0			12.6	62.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	48	91	159	1368	1936	60
Shared Lane Traffic (%)						
Lane Group Flow (vph)	139	0	159	1368	1996	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane				Yes	Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	2	2	
Detector Template	Left		Left	Thru	Thru	
Leading Detector (ft)	20		20	100	100	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	20		20	6	6	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	NA		custom	NA	NA	
Protected Phases	4			6	2	
Permitted Phases			1			
Detector Phase	4		1	6	2	

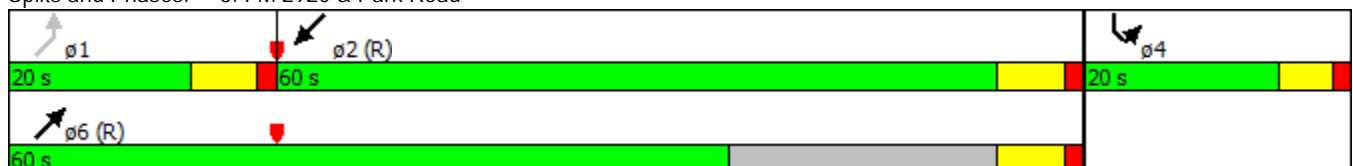


Lane Group	SBL	SBR	NEL	NET	SWT	SWR
Switch Phase						
Minimum Initial (s)	5.0		5.0	15.0	15.0	
Minimum Split (s)	32.5		22.5	22.5	30.5	
Total Split (s)	20.0		20.0	60.0	60.0	
Total Split (%)	20.0%		20.0%	60.0%	60.0%	
Maximum Green (s)	14.5		13.5	53.5	53.5	
Yellow Time (s)	4.0		5.0	5.0	5.0	
All-Red Time (s)	1.5		1.5	1.5	1.5	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	5.5		6.5	6.5	6.5	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	None		None	C-Max	C-Max	
Walk Time (s)	7.0				7.0	
Flash Dont Walk (s)	20.0				17.0	
Pedestrian Calls (#/hr)	0				0	
Act Effect Green (s)	9.4		18.6	78.6	53.5	
Actuated g/C Ratio	0.09		0.19	0.79	0.54	
v/c Ratio	0.60		2.15	0.49	1.06	
Control Delay	30.8		585.5	4.8	62.4	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	30.8		585.5	4.8	62.4	
LOS	C		F	A	E	
Approach Delay	30.8			65.3	62.4	
Approach LOS	C			E	E	

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 20 (20%), Referenced to phase 2:SWT and 6:NET, Start of Green
 Natural Cycle: 110
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 2.15
 Intersection Signal Delay: 62.4
 Intersection LOS: E
 Intersection Capacity Utilization 82.1%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 3: FM 2920 & Park Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1232	58	11	1641	0	69	0	31	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Fr't		0.993						0.958				
Flt Protected				0.950				0.967				
Satd. Flow (prot)	1863	3514	0	1770	3539	0	0	1726	0	0	1863	0
Flt Permitted				0.950				0.794				
Satd. Flow (perm)	1863	3514	0	1770	3539	0	0	1417	0	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6						149				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		2764			2506			534				543
Travel Time (s)		62.8			57.0			12.1				12.3
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
Adj. Flow (vph)	0	1339	63	12	1784	0	75	0	34	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1402	0	12	1784	0	0	109	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm		
Protected Phases	1	6		5	2			4				8
Permitted Phases							4			8		
Detector Phase	1	6		5	2		4	4		8		8



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	20.0		5.0	20.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	26.0		11.0	26.0		21.5	21.5		21.5	21.5	
Total Split (s)	10.0	60.0		25.0	60.0		25.0	25.0		10.0	10.0	
Total Split (%)	9.1%	54.5%		22.7%	54.5%		22.7%	22.7%		9.1%	9.1%	
Maximum Green (s)	4.0	54.0		19.0	54.0		19.5	19.5		4.5	4.5	
Yellow Time (s)	5.0	5.0		5.0	5.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			5.5			5.5	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	C-Max		None	None		None	None	
Act Effect Green (s)		89.6		6.4	92.4			6.1				
Actuated g/C Ratio		0.81		0.06	0.84			0.06				
v/c Ratio		0.49		0.12	0.60			0.50				
Control Delay		4.6		51.2	3.9			11.1				
Queue Delay		0.0		0.0	0.0			0.0				
Total Delay		4.6		51.2	3.9			11.1				
LOS		A		D	A			B				
Approach Delay		4.6			4.2			11.1				
Approach LOS		A			A			B				

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 0 (0%), Referenced to phase 2:WBT, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.60
 Intersection Signal Delay: 4.6
 Intersection LOS: A
 Intersection Capacity Utilization 60.7%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 5: Cascade Bay & FM 2920





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	470	1064	0	0	1397	68	483	264	58	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		80	0		0	0		0
Storage Lanes	1		0	0		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.86	0.86	1.00	1.00	0.86	0.86	0.91	0.91	0.95	1.00	1.00	1.00
Frt					0.993			0.984				
Flt Protected	0.950	0.996					0.950	0.980				
Satd. Flow (prot)	1522	4787	0	0	6363	0	1610	3269	0	0	0	0
Flt Permitted	0.950	0.678					0.950	0.980				
Satd. Flow (perm)	1522	3258	0	0	6363	0	1610	3269	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					7			10				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		270			350			173				201
Travel Time (s)		6.1			8.0			3.9				4.6
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
Adj. Flow (vph)	511	1157	0	0	1518	74	525	287	63	0	0	0
Shared Lane Traffic (%)	21%						45%					
Lane Group Flow (vph)	404	1264	0	0	1592	0	289	586	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2			2		1	2				
Detector Template	Left	Thru			Thru		Left	Thru				
Leading Detector (ft)	20	100			100		20	100				
Trailing Detector (ft)	0	0			0		0	0				
Detector 1 Position(ft)	0	0			0		0	0				
Detector 1 Size(ft)	20	6			6		20	6				
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex				
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0				
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		6			6			6				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	Prot	NA			NA		Perm	NA				
Protected Phases	1	1 2			2			3 4				
Permitted Phases							3 4					
Detector Phase	1	1 2			2		3 4	3 4				

Lane Group	ø3	ø4	ø5	ø6	ø7	ø8
Lane Configurations						
Volume (vph)						
Ideal Flow (vphpl)						
Storage Length (ft)						
Storage Lanes						
Taper Length (ft)						
Lane Util. Factor						
Frt						
Flt Protected						
Satd. Flow (prot)						
Flt Permitted						
Satd. Flow (perm)						
Right Turn on Red						
Satd. Flow (RTOR)						
Link Speed (mph)						
Link Distance (ft)						
Travel Time (s)						
Peak Hour Factor						
Adj. Flow (vph)						
Shared Lane Traffic (%)						
Lane Group Flow (vph)						
Enter Blocked Intersection						
Lane Alignment						
Median Width(ft)						
Link Offset(ft)						
Crosswalk Width(ft)						
Two way Left Turn Lane						
Headway Factor						
Turning Speed (mph)						
Number of Detectors						
Detector Template						
Leading Detector (ft)						
Trailing Detector (ft)						
Detector 1 Position(ft)						
Detector 1 Size(ft)						
Detector 1 Type						
Detector 1 Channel						
Detector 1 Extend (s)						
Detector 1 Queue (s)						
Detector 1 Delay (s)						
Detector 2 Position(ft)						
Detector 2 Size(ft)						
Detector 2 Type						
Detector 2 Channel						
Detector 2 Extend (s)						
Turn Type						
Protected Phases	3	4	5	6	7	8
Permitted Phases						
Detector Phase						

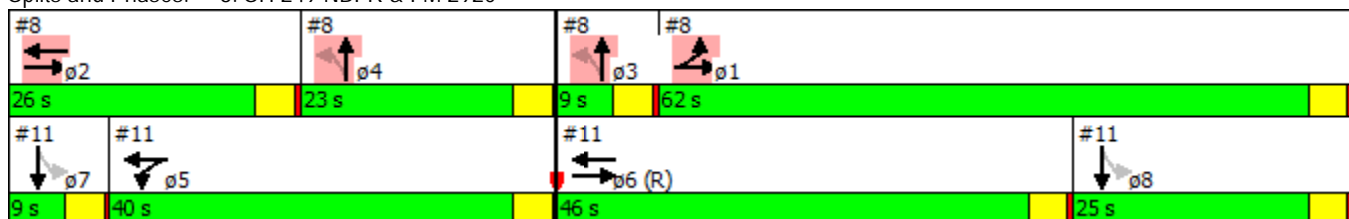


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0					4.0						
Minimum Split (s)	8.0					20.0						
Total Split (s)	62.0					26.0						
Total Split (%)	51.7%					21.7%						
Maximum Green (s)	58.0					22.0						
Yellow Time (s)	3.5					3.5						
All-Red Time (s)	0.5					0.5						
Lost Time Adjust (s)	0.0					0.0						
Total Lost Time (s)	4.0					4.0						
Lead/Lag	Lag					Lead						
Lead-Lag Optimize?	Yes					Yes						
Vehicle Extension (s)	3.0					3.0						
Recall Mode	None					None						
Walk Time (s)						5.0						
Flash Dont Walk (s)						11.0						
Pedestrian Calls (#/hr)						0						
Act Effct Green (s)	57.1	80.0			22.9		28.0	28.0				
Actuated g/C Ratio	0.48	0.67			0.19		0.23	0.23				
v/c Ratio	0.56	0.49			1.30		0.77	0.76				
Control Delay	9.1	1.5			172.0		58.0	49.5				
Queue Delay	2.4	0.4			1.4		0.0	0.0				
Total Delay	11.5	1.9			173.4		58.0	49.5				
LOS	B	A			F		E	D				
Approach Delay		4.2			173.4			52.3				
Approach LOS		A			F			D				

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	120
Offset:	9 (8%), Referenced to phase 6:EBWB, Start of Green
Natural Cycle:	90
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	1.30
Intersection Signal Delay:	79.5
Intersection LOS:	E
Intersection Capacity Utilization	47.6%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 8: SH 249 NBFR & FM 2920



Lane Group	ø3	ø4	ø5	ø6	ø7	ø8
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	8.0	20.0	20.0	20.0
Total Split (s)	9.0	23.0	40.0	46.0	9.0	25.0
Total Split (%)	8%	19%	33%	38%	8%	21%
Maximum Green (s)	5.0	19.0	36.0	42.0	5.0	21.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)						
Total Lost Time (s)						
Lead/Lag	Lead	Lag	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	C-Max	None	None
Walk Time (s)	5.0	5.0		5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0		0	0	0
Act Effct Green (s)						
Actuated g/C Ratio						
v/c Ratio						
Control Delay						
Queue Delay						
Total Delay						
LOS						
Approach Delay						
Approach LOS						
Intersection Summary						



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑↑		↔	↑↑↑↑					↔	↑↑	
Volume (vph)	0	1218	217	326	1493	0	0	0	0	372	153	202
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.86	0.86	0.86	0.86	1.00	1.00	1.00	1.00	0.91	0.91	0.95
Frt		0.977										0.936
Flt Protected				0.950	0.999					0.950	0.987	
Satd. Flow (prot)	0	6260	0	1522	4801	0	0	0	0	1610	3132	0
Flt Permitted				0.950	0.893					0.950	0.987	
Satd. Flow (perm)	0	6260	0	1522	4292	0	0	0	0	1610	3132	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		41										63
Link Speed (mph)		30			30			30				30
Link Distance (ft)		291			270			179				204
Travel Time (s)		6.6			6.1			4.1				4.6
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
Adj. Flow (vph)	0	1324	236	354	1623	0	0	0	0	404	166	220
Shared Lane Traffic (%)				10%						33%		
Lane Group Flow (vph)	0	1560	0	319	1658	0	0	0	0	271	519	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2		1	2					1	2	
Detector Template		Thru		Left	Thru					Left	Thru	
Leading Detector (ft)		100		20	100					20	100	
Trailing Detector (ft)		0		0	0					0	0	
Detector 1 Position(ft)		0		0	0					0	0	
Detector 1 Size(ft)		6		20	6					20	6	
Detector 1 Type		Cl+Ex		Cl+Ex	Cl+Ex					Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0					0.0	0.0	
Detector 1 Queue (s)		0.0		0.0	0.0					0.0	0.0	
Detector 1 Delay (s)		0.0		0.0	0.0					0.0	0.0	
Detector 2 Position(ft)		94			94							94
Detector 2 Size(ft)		6			6							6
Detector 2 Type		Cl+Ex			Cl+Ex							Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							0.0
Turn Type		NA		Prot	NA					Perm	NA	
Protected Phases		6		5	5 6							7 8
Permitted Phases										7 8		
Detector Phase		6		5	5 6					7 8		7 8
Switch Phase												
Minimum Initial (s)		4.0			4.0							
Minimum Split (s)		20.0			8.0							

Lane Group	ø1	ø2	ø3	ø4	ø7	ø8
Lane Configurations						
Volume (vph)						
Ideal Flow (vphp)						
Lane Util. Factor						
Frt						
Flt Protected						
Satd. Flow (prot)						
Flt Permitted						
Satd. Flow (perm)						
Right Turn on Red						
Satd. Flow (RTOR)						
Link Speed (mph)						
Link Distance (ft)						
Travel Time (s)						
Peak Hour Factor						
Adj. Flow (vph)						
Shared Lane Traffic (%)						
Lane Group Flow (vph)						
Enter Blocked Intersection						
Lane Alignment						
Median Width(ft)						
Link Offset(ft)						
Crosswalk Width(ft)						
Two way Left Turn Lane						
Headway Factor						
Turning Speed (mph)						
Number of Detectors						
Detector Template						
Leading Detector (ft)						
Trailing Detector (ft)						
Detector 1 Position(ft)						
Detector 1 Size(ft)						
Detector 1 Type						
Detector 1 Channel						
Detector 1 Extend (s)						
Detector 1 Queue (s)						
Detector 1 Delay (s)						
Detector 2 Position(ft)						
Detector 2 Size(ft)						
Detector 2 Type						
Detector 2 Channel						
Detector 2 Extend (s)						
Turn Type						
Protected Phases	1	2	3	4	7	8
Permitted Phases						
Detector Phase						
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	20.0	20.0	20.0	20.0	20.0

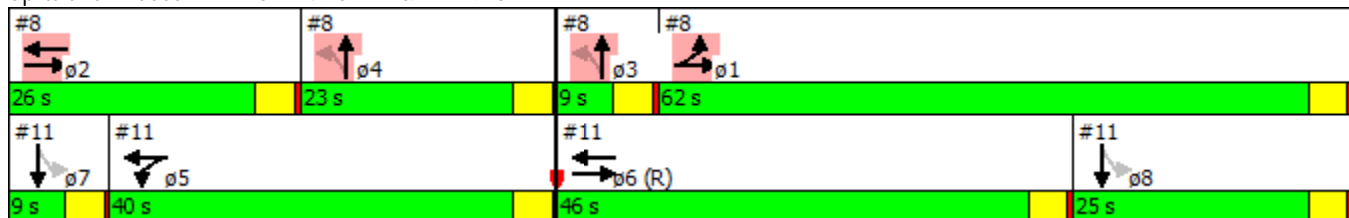


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)		46.0		40.0								
Total Split (%)		38.3%		33.3%								
Maximum Green (s)		42.0		36.0								
Yellow Time (s)		3.5		3.5								
All-Red Time (s)		0.5		0.5								
Lost Time Adjust (s)		0.0		0.0								
Total Lost Time (s)		4.0		4.0								
Lead/Lag		Lead		Lag								
Lead-Lag Optimize?		Yes		Yes								
Vehicle Extension (s)		3.0		3.0								
Recall Mode		C-Max		None								
Walk Time (s)		5.0										
Flash Dont Walk (s)		11.0										
Pedestrian Calls (#/hr)		0										
Act Effect Green (s)		42.0		36.5	78.5					29.5	29.5	
Actuated g/C Ratio		0.35		0.30	0.65					0.25	0.25	
v/c Ratio		0.70		0.69	0.71					0.69	0.64	
Control Delay		34.8		13.3	7.7					51.0	39.3	
Queue Delay		0.1		57.8	11.3					0.0	0.0	
Total Delay		34.8		71.1	18.9					51.0	39.3	
LOS		C		E	B					D	D	
Approach Delay		34.8			27.4						43.3	
Approach LOS		C			C						D	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 9 (8%), Referenced to phase 6:EBWB, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.30
 Intersection Signal Delay: 33.0
 Intersection LOS: C
 Intersection Capacity Utilization 47.6%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 11: SH 249 SBFR & FM 2920



Lane Group	ø1	ø2	ø3	ø4	ø7	ø8
Total Split (s)	62.0	26.0	9.0	23.0	9.0	25.0
Total Split (%)	52%	22%	8%	19%	8%	21%
Maximum Green (s)	58.0	22.0	5.0	19.0	5.0	21.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)						
Total Lost Time (s)						
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None
Walk Time (s)		5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)		11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0	0	0	0
Act Effect Green (s)						
Actuated g/C Ratio						
v/c Ratio						
Control Delay						
Queue Delay						
Total Delay						
LOS						
Approach Delay						
Approach LOS						
Intersection Summary						



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	99	696	334	258	907	144	373	489	3	72	157	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	110		0	180		250	180		0
Storage Lanes	1		1	1		0	2		1	2		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.91	0.91	1.00	1.00	0.91	0.91	0.97	0.91	1.00	0.97	0.91	0.91
Frt			0.850		0.979				0.850		0.924	
Flt Protected	0.950	0.999		0.950			0.950			0.950		
Satd. Flow (prot)	1610	3387	1583	1770	4979	0	3433	5085	1583	3433	4699	0
Flt Permitted	0.950	0.999		0.950			0.950			0.950		
Satd. Flow (perm)	1610	3387	1583	1770	4979	0	3433	5085	1583	3433	4699	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			363		23				127		171	
Link Speed (mph)		30		30			30		30		30	
Link Distance (ft)		585		617			496		562		562	
Travel Time (s)		13.3		14.0			11.3		12.8		12.8	
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
Adj. Flow (vph)	108	757	363	280	986	157	405	532	3	78	171	174
Shared Lane Traffic (%)	10%											
Lane Group Flow (vph)	97	768	363	280	1143	0	405	532	3	78	345	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12		12			24		24		24	
Link Offset(ft)		0		0			0		0		0	
Crosswalk Width(ft)		16		16			16		16		16	
Two way Left Turn Lane				Yes								
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94		94			94		94		94	
Detector 2 Size(ft)		6		6			6		6		6	
Detector 2 Type		Cl+Ex		Cl+Ex			Cl+Ex		Cl+Ex		Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0		0.0			0.0		0.0		0.0	
Turn Type	Split	NA	Perm	Split	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	3	3		4	4		5	2		1	6	
Permitted Phases			3						2			
Detector Phase	3	3	3	4	4		5	2	2	1	6	

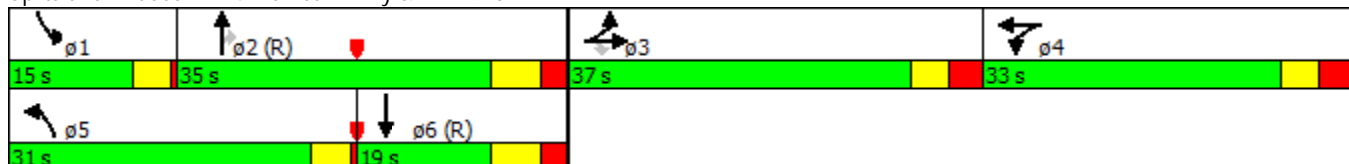


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		4.0	5.0	5.0	4.0	5.0	
Minimum Split (s)	41.5	41.5	41.5	40.5	40.5		8.0	36.0	36.0	8.0	40.0	
Total Split (s)	37.0	37.0	37.0	33.0	33.0		31.0	35.0	35.0	15.0	19.0	
Total Split (%)	30.8%	30.8%	30.8%	27.5%	27.5%		25.8%	29.2%	29.2%	12.5%	15.8%	
Maximum Green (s)	30.5	30.5	30.5	26.5	26.5		27.0	28.0	28.0	11.0	12.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	4.5	4.5	3.5	4.5	
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0		0.5	2.5	2.5	0.5	2.5	
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)	6.5	6.5	6.5	6.5	6.5		4.0	7.0	7.0	4.0	7.0	
Lead/Lag	Lead	Lead	Lead	Lag	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	None	C-Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0			7.0	7.0		7.0	
Flash Dont Walk (s)	28.0	28.0	28.0	27.0	27.0			22.0	22.0		26.0	
Pedestrian Calls (#/hr)	0	0	0	0	0			0	0		0	
Act Effct Green (s)	30.2	30.2	30.2	26.8	26.8		19.4	32.9	32.9	8.1	19.6	
Actuated g/C Ratio	0.25	0.25	0.25	0.22	0.22		0.16	0.27	0.27	0.07	0.16	
v/c Ratio	0.24	0.90	0.54	0.71	1.01		0.73	0.38	0.01	0.34	0.38	
Control Delay	48.5	64.7	16.2	54.2	75.1		55.7	37.2	0.0	56.9	24.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	48.5	64.7	16.2	54.2	75.1		55.7	37.2	0.0	56.9	24.2	
LOS	D	E	B	D	E		E	D	A	E	C	
Approach Delay		49.1			71.0			45.1			30.3	
Approach LOS		D			E			D			C	

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	120
Offset:	0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle:	140
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	1.01
Intersection Signal Delay:	53.9
Intersection LOS:	D
Intersection Capacity Utilization:	77.2%
ICU Level of Service:	D
Analysis Period (min):	15

Splits and Phases: 14: Tomball Pkwy & FM 2920





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	12	961	0	3	1305	16	2	0	4	14	4	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	90		0	70		0	0		0	80		0
Storage Lanes	1		0	1		0	0		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.998			0.910				0.850
Flt Protected	0.950			0.950				0.984		0.950		
Satd. Flow (prot)	1770	3539	0	1770	3532	0	0	1668	0	1770	0	1583
Flt Permitted	0.950			0.950				0.984		0.950		
Satd. Flow (perm)	1770	3539	0	1770	3532	0	0	1668	0	1770	0	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					1			138				138
Link Speed (mph)		30			30			30				30
Link Distance (ft)		524			664			247				407
Travel Time (s)		11.9			15.1			5.6				9.3
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
Adj. Flow (vph)	13	1045	0	3	1418	17	2	0	4	15	4	34
Shared Lane Traffic (%)												
Lane Group Flow (vph)	13	1045	0	3	1435	0	0	6	0	15	4	34
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	Perm
Protected Phases	1	6		5	2		8	8		4	4	
Permitted Phases												4
Detector Phase	1	6		5	2		8	8		4	4	4



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0		5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	21.7	22.7		21.7	27.7		27.5	27.5		27.5	27.5	27.5
Total Split (s)	15.0	55.0		15.0	55.0		20.0	20.0		20.0	20.0	20.0
Total Split (%)	13.6%	50.0%		13.6%	50.0%		18.2%	18.2%		18.2%	18.2%	18.2%
Maximum Green (s)	9.3	49.3		9.3	49.3		14.5	14.5		14.5	14.5	14.5
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	2.2	2.2		2.2	2.2		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0		0.0
Total Lost Time (s)	5.7	5.7		5.7	5.7			5.5		5.5		5.5
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max		Max	C-Max		None	None		None	None	None
Walk Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	5.0
Flash Dont Walk (s)		12.0			17.0		17.0	17.0		17.0	17.0	17.0
Pedestrian Calls (#/hr)		0			0		0	0		0	0	0
Act Effct Green (s)	6.4	49.3		35.1	87.2			5.5		10.9	0.0	10.9
Actuated g/C Ratio	0.06	0.45		0.32	0.79			0.05		0.10	0.00	0.10
v/c Ratio	0.13	0.66		0.01	0.51			0.03		0.09	no cap	0.12
Control Delay	51.3	26.3		35.0	9.5			0.2		43.4		0.9
Queue Delay	0.0	0.0		0.0	0.2			0.0		0.0		0.0
Total Delay	51.3	26.3		35.0	9.8			0.2		43.4	Error	0.9
LOS	D	C		C	A			A		D	F	A
Approach Delay		26.6			9.8			0.2			Err	
Approach LOS		C			A			A			F	

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 49 (45%), Referenced to phase 2:WBT and 6:EBT, Start of Green
 Natural Cycle: 135
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: Err
 Intersection Signal Delay: Err
 Intersection Capacity Utilization Err%
 Analysis Period (min) 15
 Intersection LOS: F
 ICU Level of Service H

Splits and Phases: 17: Buvinghausen Lane & FM 2920





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	56	950	7	12	1147	29	16	46	8	45	47	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	60		0	60		0	65		0	130		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999			0.996			0.977				0.906
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3536	0	1770	3525	0	1770	1820	0	1770	1688	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3536	0	1770	3525	0	1770	1820	0	1770	1688	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			3			8				76
Link Speed (mph)		30			30			30				30
Link Distance (ft)		664			1265			346				306
Travel Time (s)		15.1			28.8			7.9				7.0
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
Adj. Flow (vph)	61	1033	8	13	1247	32	17	50	9	49	51	85
Shared Lane Traffic (%)												
Lane Group Flow (vph)	61	1041	0	13	1279	0	17	59	0	49	136	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases												
Detector Phase	1	6		5	2		3	8		7	4	

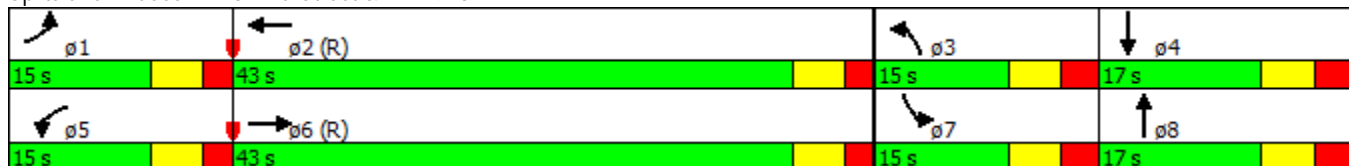


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	10.5	25.5		10.5	25.5		11.1	36.1		11.1	36.1	
Total Split (s)	15.0	43.0		15.0	43.0		15.0	17.0		15.0	17.0	
Total Split (%)	16.7%	47.8%		16.7%	47.8%		16.7%	18.9%		16.7%	18.9%	
Maximum Green (s)	9.5	37.5		9.5	37.5		8.9	10.9		8.9	10.9	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.6	3.6		3.6	3.6	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.5	5.5		5.5	5.5		6.1	6.1		6.1	6.1	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		5.0			5.0			5.0			5.0	
Flash Dont Walk (s)		15.0			15.0			25.0			25.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effect Green (s)	8.1	59.0		6.3	50.2		6.5	8.0		7.6	11.4	
Actuated g/C Ratio	0.09	0.66		0.07	0.56		0.07	0.09		0.08	0.13	
v/c Ratio	0.39	0.45		0.11	0.65		0.13	0.35		0.33	0.49	
Control Delay	45.2	11.1		53.8	12.7		41.0	39.3		44.4	23.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	45.2	11.1		53.8	12.7		41.0	39.3		44.4	23.4	
LOS	D	B		D	B		D	D		D	C	
Approach Delay		13.0			13.2			39.6			28.9	
Approach LOS		B			B			D			C	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	51 (57%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Natural Cycle:	95
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.65
Intersection Signal Delay:	14.9
Intersection LOS:	B
Intersection Capacity Utilization	64.3%
ICU Level of Service	C
Analysis Period (min)	15

Splits and Phases: 20: Ella Street & FM 2920





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	22	929	13	45	1148	31	45	73	118	28	19	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	65		0	60		0	0		50	0		50
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.996				0.850			0.850
Flt Protected	0.950			0.950				0.981			0.971	
Satd. Flow (prot)	1770	3532	0	1770	3525	0	0	1827	1583	0	1809	1583
Flt Permitted	0.833			0.354				0.198			0.747	
Satd. Flow (perm)	1552	3532	0	659	3525	0	0	369	1583	0	1391	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			3				128			109
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1265			442			534			293	
Travel Time (s)		28.8			10.0			12.1			6.7	
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
Adj. Flow (vph)	24	1010	14	49	1248	34	49	79	128	30	21	73
Shared Lane Traffic (%)												
Lane Group Flow (vph)	24	1024	0	49	1282	0	0	128	128	0	51	73
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	custom	NA		custom	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		6			2			3			4	
Permitted Phases	1			5			3		3	4		4
Detector Phase	1	6		5	2		3	3	3	4	4	4

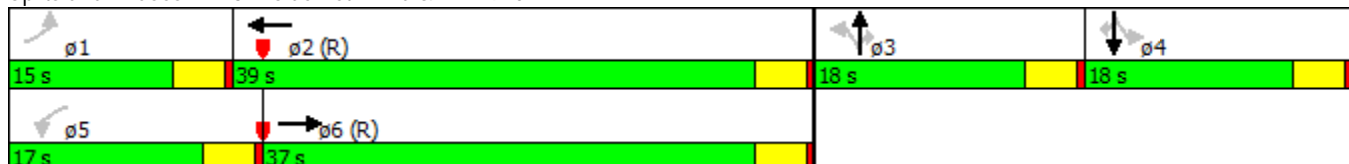


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	15.0	37.0		17.0	39.0		18.0	18.0	18.0	18.0	18.0	18.0
Total Split (%)	16.7%	41.1%		18.9%	43.3%		20.0%	20.0%	20.0%	20.0%	20.0%	20.0%
Maximum Green (s)	11.0	33.0		13.0	35.0		14.0	14.0	14.0	14.0	14.0	14.0
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max		Max	Max	Max	None	None	None
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effect Green (s)	8.9	42.9		12.6	51.0		14.0	14.0		8.5	8.5	8.5
Actuated g/C Ratio	0.10	0.48		0.14	0.57		0.16	0.16		0.09	0.09	0.09
v/c Ratio	0.16	0.61		0.53	0.64		2.25	0.36		0.39	0.29	0.29
Control Delay	36.1	22.1		64.6	9.1		635.2	9.7		46.0	6.1	6.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	36.1	22.1		64.6	9.1		635.2	9.7		46.0	6.1	6.1
LOS	D	C		E	A		F	A		D	A	A
Approach Delay		22.4			11.2		322.5			22.5		
Approach LOS		C			B		F			C		

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	8 (9%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Natural Cycle:	120
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	2.25
Intersection Signal Delay:	44.9
Intersection LOS:	D
Intersection Capacity Utilization:	57.1%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 23: Holderrieth Blvd & FM 2920





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↖	↑↑			↕			↕	
Volume (vph)	0	1073	0	27	1182	0	12	0	41	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	20		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt								0.895				
Flt Protected				0.950				0.989				
Satd. Flow (prot)	0	3539	0	1770	3539	0	0	1649	0	0	1863	0
Flt Permitted				0.950				0.952				
Satd. Flow (perm)	0	3539	0	1770	3539	0	0	1587	0	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)								104				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		442			131			513				186
Travel Time (s)		10.0			3.0			11.7				4.2
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
Adj. Flow (vph)	0	1166	0	29	1285	0	13	0	45	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1166	0	29	1285	0	0	58	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2		1	2		1	2		1		2
Detector Template		Thru		Left	Thru		Left	Thru		Left		Thru
Leading Detector (ft)		100		20	100		20	100		20		100
Trailing Detector (ft)		0		0	0		0	0		0		0
Detector 1 Position(ft)		0		0	0		0	0		0		0
Detector 1 Size(ft)		6		20	6		20	6		20		6
Detector 1 Type		Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0		0.0	0.0		0.0		0.0
Detector 1 Queue (s)		0.0		0.0	0.0		0.0	0.0		0.0		0.0
Detector 1 Delay (s)		0.0		0.0	0.0		0.0	0.0		0.0		0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type		NA		Prot	NA		Perm	NA		Perm		
Protected Phases		6		4	2 4			3				3
Permitted Phases							3	3		3		
Detector Phase		6		4	2 4		3	3		3		3

Lane Group	ø2
Lane Configurations	
Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	2
Permitted Phases	
Detector Phase	

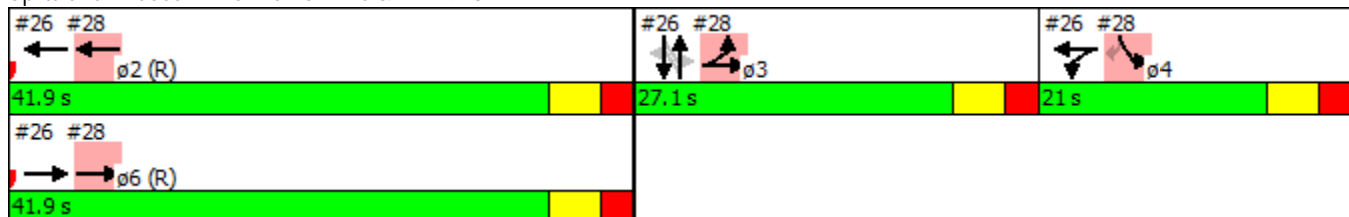


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)		15.0		5.0			5.0	5.0		5.0	5.0	
Minimum Split (s)		24.8		20.8			26.8	26.8		26.8	26.8	
Total Split (s)		41.9		21.0			27.1	27.1		27.1	27.1	
Total Split (%)		46.6%		23.3%			30.1%	30.1%		30.1%	30.1%	
Maximum Green (s)		36.1		15.2			21.3	21.3		21.3	21.3	
Yellow Time (s)		3.5		3.5			3.5	3.5		3.5	3.5	
All-Red Time (s)		2.3		2.3			2.3	2.3		2.3	2.3	
Lost Time Adjust (s)		0.0		0.0			0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.8		5.8			5.8	5.8		5.8	5.8	
Lead/Lag				Lag			Lead	Lead		Lead	Lead	
Lead-Lag Optimize?				Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)		3.0		3.0			3.0	3.0		3.0	3.0	
Recall Mode		C-Max		None			Max	Max		Max	Max	
Walk Time (s)		7.0		5.0			5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		12.0		10.0			16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)		0		0			0	0		0	0	
Act Effect Green (s)		36.1		15.2	57.1		21.3	21.3		21.3	21.3	
Actuated g/C Ratio		0.40		0.17	0.63		0.24	0.24		0.24	0.24	
v/c Ratio		0.82		0.10	0.57		0.13	0.13		0.13	0.13	
Control Delay		20.6		49.1	3.0		2.0	2.0		2.0	2.0	
Queue Delay		2.8		3.4	1.8		0.0	0.0		0.0	0.0	
Total Delay		23.5		52.4	4.8		2.0	2.0		2.0	2.0	
LOS		C		D	A		A	A		A	A	
Approach Delay		23.5		5.9	2.0		2.0	2.0		2.0	2.0	
Approach LOS		C		A	A		A	A		A	A	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Natural Cycle:	90
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.91
Intersection Signal Delay:	13.9
Intersection LOS:	B
Intersection Capacity Utilization:	46.5%
ICU Level of Service:	A
Analysis Period (min):	15

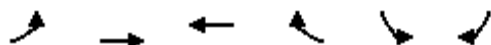
Splits and Phases: 26: Vernon Ave & FM 2920



Lane Group	ø2
Switch Phase	
Minimum Initial (s)	15.0
Minimum Split (s)	22.8
Total Split (s)	41.9
Total Split (%)	47%
Maximum Green (s)	36.1
Yellow Time (s)	3.5
All-Red Time (s)	2.3
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	C-Max
Walk Time (s)	7.0
Flash Dont Walk (s)	10.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	ø6
Lane Configurations							
Volume (vph)	82	1016	1141	38	46	70	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	20			0	0	90	
Storage Lanes	1			0	1	1	
Taper Length (ft)	25				25		
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00	
Frt			0.995			0.850	
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1770	3539	3522	0	1770	1583	
Flt Permitted	0.950				0.950		
Satd. Flow (perm)	1770	3539	3522	0	1770	1583	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)			4			76	
Link Speed (mph)		30	30		30		
Link Distance (ft)		131	272		349		
Travel Time (s)		3.0	6.2		7.9		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	89	1104	1240	41	50	76	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	89	1104	1281	0	50	76	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Left	Left	Right	Left	Right	
Median Width(ft)		12	12		12		
Link Offset(ft)		0	0		0		
Crosswalk Width(ft)		16	16		16		
Two way Left Turn Lane		Yes	Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15			9	15	9	
Number of Detectors	1	2	2		1	1	
Detector Template	Left	Thru	Thru		Left	Right	
Leading Detector (ft)	20	100	100		20	20	
Trailing Detector (ft)	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0		0	0	
Detector 1 Size(ft)	20	6	6		20	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94	94				
Detector 2 Size(ft)		6	6				
Detector 2 Type		Cl+Ex	Cl+Ex				
Detector 2 Channel							
Detector 2 Extend (s)		0.0	0.0				
Turn Type	Prot	NA	NA		NA	Perm	
Protected Phases	3	3 6	2		4		6
Permitted Phases						4	
Detector Phase	3	3 6	2		4	4	

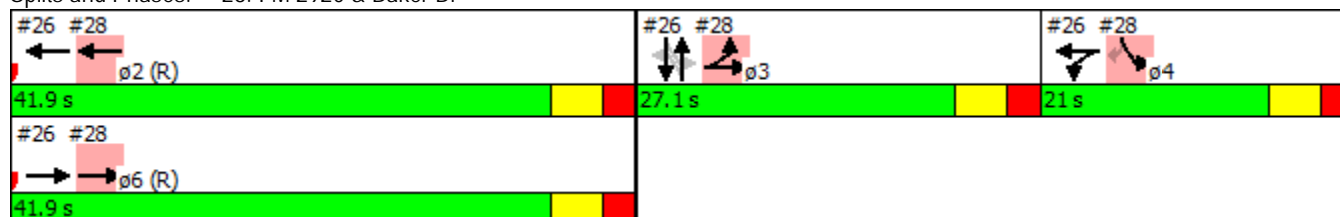


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	ø6
Switch Phase							
Minimum Initial (s)	5.0		15.0		5.0	5.0	15.0
Minimum Split (s)	26.8		22.8		20.8	20.8	24.8
Total Split (s)	27.1		41.9		21.0	21.0	41.9
Total Split (%)	30.1%		46.6%		23.3%	23.3%	47%
Maximum Green (s)	21.3		36.1		15.2	15.2	36.1
Yellow Time (s)	3.5		3.5		3.5	3.5	3.5
All-Red Time (s)	2.3		2.3		2.3	2.3	2.3
Lost Time Adjust (s)	0.0		0.0		0.0	0.0	
Total Lost Time (s)	5.8		5.8		5.8	5.8	
Lead/Lag	Lead				Lag		Lag
Lead-Lag Optimize?	Yes				Yes		Yes
Vehicle Extension (s)	3.0		3.0		3.0	3.0	3.0
Recall Mode	Max		C-Max		None	None	C-Max
Walk Time (s)	5.0		7.0		5.0	5.0	7.0
Flash Dont Walk (s)	16.0		10.0		10.0	10.0	12.0
Pedestrian Calls (#/hr)	0		0		0	0	0
Act Effect Green (s)	21.3	63.2	36.1		15.2	15.2	
Actuated g/C Ratio	0.24	0.70	0.40		0.17	0.17	
v/c Ratio	0.21	0.44	0.91		0.17	0.23	
Control Delay	24.7	0.5	14.0		33.7	10.1	
Queue Delay	70.0	0.9	0.3		0.0	0.1	
Total Delay	94.7	1.4	14.3		33.7	10.2	
LOS	F	A	B		C	B	
Approach Delay		8.3	14.3		19.5		
Approach LOS		A	B		B		

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.91
 Intersection Signal Delay: 11.8 Intersection LOS: B
 Intersection Capacity Utilization 56.0% ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 28: FM 2920 & Baker Dr





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕	↗		↕	
Volume (vph)	12	1018	9	12	1145	17	30	44	101	13	9	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		80	0		0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999			0.998				0.850		0.960	
Flt Protected		0.999			0.999			0.980			0.980	
Satd. Flow (prot)	0	3532	0	0	3529	0	0	1825	1583	0	1752	0
Flt Permitted		0.932			0.938			0.677			0.867	
Satd. Flow (perm)	0	3295	0	0	3313	0	0	1261	1583	0	1550	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			2				110		10	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1317			3717			353			398	
Travel Time (s)		29.9			84.5			8.0			9.0	
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
Adj. Flow (vph)	13	1107	10	13	1245	18	33	48	110	14	10	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1130	0	0	1276	0	0	81	110	0	34	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA	custom	Perm	NA	
Protected Phases		2			6			3			4	
Permitted Phases	2			6			3		2	4		
Detector Phase	2	2		6	6		3	3	2	4	4	

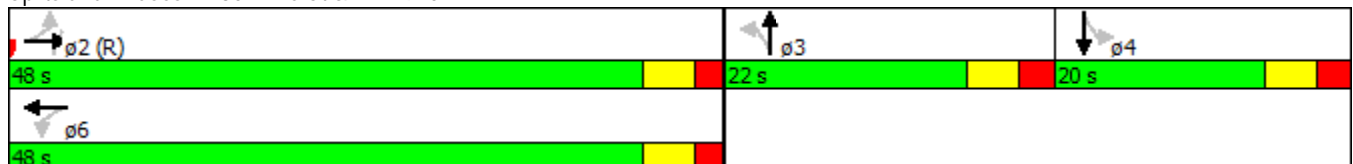


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		5.0	5.0	20.0	5.0	5.0	
Minimum Split (s)	25.5	25.5		25.5	25.5		28.9	28.9	25.5	28.9	28.9	
Total Split (s)	48.0	48.0		48.0	48.0		22.0	22.0	48.0	20.0	20.0	
Total Split (%)	53.3%	53.3%		53.3%	53.3%		24.4%	24.4%	53.3%	22.2%	22.2%	
Maximum Green (s)	42.5	42.5		42.5	42.5		16.1	16.1	42.5	14.1	14.1	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.4	2.4	2.0	2.4	2.4	
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	
Total Lost Time (s)		5.5			5.5			5.9	5.5		5.9	
Lead/Lag							Lead	Lead		Lag	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max		Max	Max		Max	Max	C-Max	Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	8.0	8.0		8.0	8.0		16.0	16.0	8.0	16.0	16.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effect Green (s)		42.5			42.5			16.1	42.5		14.1	
Actuated g/C Ratio		0.47			0.47			0.18	0.47		0.16	
v/c Ratio		0.73			0.82			0.36	0.14		0.14	
Control Delay		10.9			25.6			37.7	3.2		27.0	
Queue Delay		0.0			0.0			0.0	0.0		0.0	
Total Delay		10.9			25.6			37.7	3.2		27.0	
LOS		B			C			D	A		C	
Approach Delay		10.9			25.6			17.9			27.0	
Approach LOS		B			C			B			C	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 47 (52%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 105
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.82
 Intersection Signal Delay: 18.7
 Intersection Capacity Utilization 63.7%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service B

Splits and Phases: 30: Pine St & FM 2920





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	1174	19	6	1105	14	21	0	17	14	0	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	80		0	160		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.998			0.941				0.953
Flt Protected	0.950			0.950				0.973				0.968
Satd. Flow (prot)	1770	3532	0	1770	3532	0	0	1706	0	0	1718	0
Flt Permitted	0.950			0.950				0.847				0.840
Satd. Flow (perm)	1770	3532	0	1770	3532	0	0	1485	0	0	1491	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			2			58				58
Link Speed (mph)		30			30			30				30
Link Distance (ft)		3717			948			261				287
Travel Time (s)		84.5			21.5			5.9				6.5
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
Adj. Flow (vph)	9	1276	21	7	1201	15	23	0	18	15	0	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	9	1297	0	7	1216	0	0	41	0	0	23	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane				Yes								
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1		2
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left		Thru
Leading Detector (ft)	20	100		20	100		20	100		20		100
Trailing Detector (ft)	0	0		0	0		0	0		0		0
Detector 1 Position(ft)	0	0		0	0		0	0		0		0
Detector 1 Size(ft)	20	6		20	6		20	6		20		6
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0		0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0		0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0		0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm		NA
Protected Phases	1	6		5	2			4				8
Permitted Phases							4			8		
Detector Phase	1	6		5	2		4	4		8		8

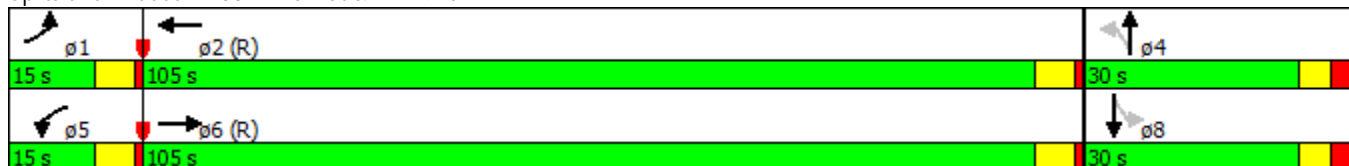


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	10.5	22.0		10.5	22.0		20.0	20.0		33.0	33.0	
Total Split (s)	15.0	105.0		15.0	105.0		30.0	30.0		30.0	30.0	
Total Split (%)	10.0%	70.0%		10.0%	70.0%		20.0%	20.0%		20.0%	20.0%	
Maximum Green (s)	9.5	99.5		9.5	99.5		24.0	24.0		24.0	24.0	
Yellow Time (s)	4.5	4.5		4.5	4.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	5.5	5.5		5.5	5.5			6.0			6.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		Max	Max		None	None	
Walk Time (s)		7.0			7.0					7.0	7.0	
Flash Dont Walk (s)		7.0			6.0					20.0	20.0	
Pedestrian Calls (#/hr)		0			0					0	0	
Act Effect Green (s)	6.4	111.9		6.2	111.8			24.0			24.0	
Actuated g/C Ratio	0.04	0.75		0.04	0.75			0.16			0.16	
v/c Ratio	0.12	0.49		0.10	0.46			0.14			0.08	
Control Delay	72.0	8.9		71.5	8.5			7.1			0.5	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	72.0	8.9		71.5	8.5			7.1			0.5	
LOS	E	A		E	A			A			A	
Approach Delay		9.3			8.9			7.1			0.5	
Approach LOS		A			A			A			A	

Intersection Summary

Area Type:	Other
Cycle Length:	150
Actuated Cycle Length:	150
Offset:	5 (3%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Natural Cycle:	80
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.49
Intersection Signal Delay:	9.0
Intersection LOS:	A
Intersection Capacity Utilization:	48.5%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 33: Willow St & FM 2920

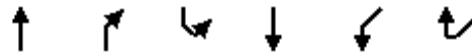




Lane Group	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Volume (vph)	166	264	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	180			0	0	0
Storage Lanes	1			0	0	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Frt						
Flt Protected	0.950					
Satd. Flow (prot)	1770	3539	0	0	0	0
Flt Permitted	0.950					
Satd. Flow (perm)	1770	3539	0	0	0	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		465	173		284	
Travel Time (s)		10.6	3.9		6.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	180	287	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	180	287	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	23.4%
Analysis Period (min)	15
	ICU Level of Service A



Lane Group	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations				↑↑	↘	
Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	0	0	0	3539	1863	0
Flt Permitted						
Satd. Flow (perm)	0	0	0	3539	1863	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	453			179	284	
Travel Time (s)	10.3			4.1	6.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	9		15		15	9
Sign Control	Stop			Free	Yield	

Intersection Summary

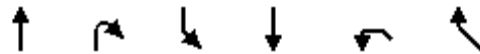
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	23.4%
ICU Level of Service	A
Analysis Period (min)	15



Lane Group	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations		↑↑			↘	
Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	0	3539	0	0	1863	0
Flt Permitted						
Satd. Flow (perm)	0	3539	0	0	1863	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		201	296		306	
Travel Time (s)		4.6	6.7		7.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Stop		Yield	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	23.3%
ICU Level of Service	A
Analysis Period (min)	15



Lane Group	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Volume (vph)	0	0	130	153	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	180		0	0
Storage Lanes		0	1		0	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt						
Flt Protected			0.950			
Satd. Flow (prot)	0	0	1770	3539	0	0
Flt Permitted			0.950			
Satd. Flow (perm)	0	0	1770	3539	0	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	204			261	306	
Travel Time (s)	4.6			5.9	7.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	141	166	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	141	166	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	23.3%
Analysis Period (min)	15
	ICU Level of Service A



Lane Group	SBL	SBR	NEL	NET	SWT	SWR
Lane Configurations						
Volume (vph)	30	119	48	1411	1017	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	175			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.892				0.998	
Flt Protected	0.990		0.950			
Satd. Flow (prot)	1645	0	1770	3539	3532	0
Flt Permitted	0.990		0.272			
Satd. Flow (perm)	1645	0	507	3539	3532	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	133				2	
Link Speed (mph)	30			30	30	
Link Distance (ft)	1322			554	2764	
Travel Time (s)	30.0			12.6	62.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	103%	103%	103%	103%	103%	103%
Adj. Flow (vph)	34	133	54	1580	1139	16
Shared Lane Traffic (%)						
Lane Group Flow (vph)	167	0	54	1580	1155	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane				Yes	Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	2	2	
Detector Template	Left		Left	Thru	Thru	
Leading Detector (ft)	20		20	100	100	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	20		20	6	6	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	NA		custom	NA	NA	
Protected Phases	4			6	2	
Permitted Phases			1			

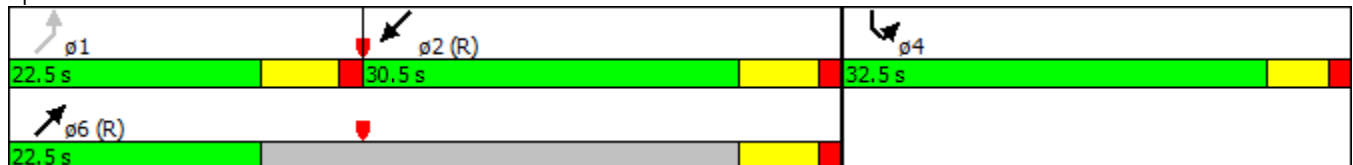


Lane Group	SBL	SBR	NEL	NET	SWT	SWR
Detector Phase	4		1	6	2	
Switch Phase						
Minimum Initial (s)	5.0		5.0	15.0	15.0	
Minimum Split (s)	32.5		22.5	22.5	30.5	
Total Split (s)	32.5		22.5	22.5	30.5	
Total Split (%)	38.0%		26.3%	26.3%	35.7%	
Maximum Green (s)	27.0		16.0	16.0	24.0	
Yellow Time (s)	4.0		5.0	5.0	5.0	
All-Red Time (s)	1.5		1.5	1.5	1.5	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	5.5		6.5	6.5	6.5	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	None		None	C-Max	C-Max	
Walk Time (s)	7.0				7.0	
Flash Dont Walk (s)	20.0				17.0	
Pedestrian Calls (#/hr)	0				0	
Act Effect Green (s)	8.3		16.0	65.2	45.3	
Actuated g/C Ratio	0.10		0.19	0.76	0.53	
v/c Ratio	0.60		0.57	0.59	0.62	
Control Delay	19.6		52.2	5.8	20.0	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	19.6		52.2	5.8	20.0	
LOS	B		D	A	C	
Approach Delay	19.6			7.4	20.0	
Approach LOS	B			A	C	

Intersection Summary

Area Type: Other
 Cycle Length: 85.5
 Actuated Cycle Length: 85.5
 Offset: 20 (23%), Referenced to phase 2:SWT and 6:NET, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.62
 Intersection Signal Delay: 13.0
 Intersection Capacity Utilization 59.4%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service B

Splits and Phases: 3: FM 2920 & Park Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1404	54	10	980	0	21	0	16	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994						0.942				
Flt Protected				0.950				0.972				
Satd. Flow (prot)	1863	3518	0	1770	3539	0	0	1706	0	0	1863	0
Flt Permitted				0.950				0.872				
Satd. Flow (perm)	1863	3518	0	1770	3539	0	0	1530	0	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7						168				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		2764			2506			534				543
Travel Time (s)		62.8			57.0			12.1				12.3
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
Growth Factor	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%
Adj. Flow (vph)	0	1572	60	11	1097	0	24	0	18	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1632	0	11	1097	0	0	42	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm		
Protected Phases	1	6		5	2			4				8
Permitted Phases							4			8		
Minimum Split (s)	11.0	26.0		11.0	26.0		21.5	21.5		21.5	21.5	
Total Split (s)	11.0	26.0		11.0	26.0		21.5	21.5		21.5	21.5	
Total Split (%)	18.8%	44.4%		18.8%	44.4%		36.8%	36.8%		36.8%	36.8%	
Maximum Green (s)	5.0	20.0		5.0	20.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			5.5			5.5	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Act Effect Green (s)		20.0		5.0	20.0			16.0				
Actuated g/C Ratio		0.34		0.09	0.34			0.27				
v/c Ratio		1.35		0.07	0.91			0.08				
Control Delay		186.0		25.9	31.5			0.3				
Queue Delay		0.0		0.0	0.0			0.0				
Total Delay		186.0		25.9	31.5			0.3				

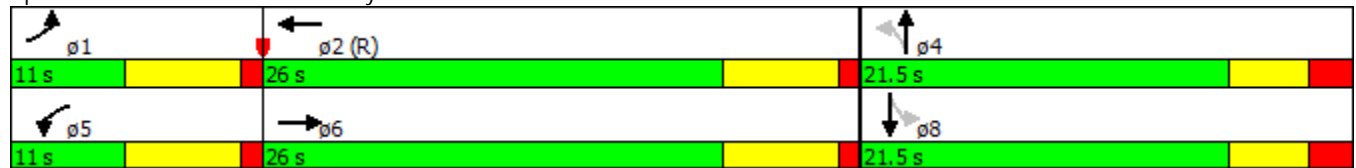


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		F		C	C			A				
Approach Delay		186.0			31.5			0.3				
Approach LOS		F			C			A				

Intersection Summary

Area Type:	Other
Cycle Length:	58.5
Actuated Cycle Length:	58.5
Offset:	0 (0%), Referenced to phase 2:WBT, Start of Green
Natural Cycle:	75
Control Type:	Pretimed
Maximum v/c Ratio:	1.35
Intersection Signal Delay:	121.7
Intersection LOS:	F
Intersection Capacity Utilization	55.5%
ICU Level of Service	B
Analysis Period (min)	15

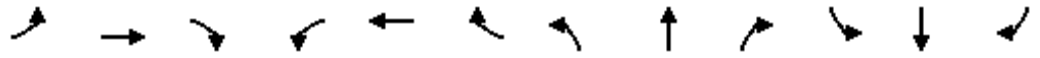
Splits and Phases: 5: Cascade Bay & FM 2920





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	307	1194	0	0	633	36	270	86	35	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		80	0		0	0		0
Storage Lanes	1		0	0		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.86	0.86	1.00	1.00	0.86	0.86	0.91	0.91	0.95	1.00	1.00	1.00
Fr _t					0.992			0.980				
Fl _t Protected	0.950	0.999					0.950	0.974				
Satd. Flow (prot)	1522	4801	0	0	6357	0	1610	3236	0	0	0	0
Fl _t Permitted	0.950	0.940					0.950	0.974				
Satd. Flow (perm)	1522	4518	0	0	6357	0	1610	3236	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					8			13				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		270			350			173				201
Travel Time (s)		6.1			8.0			3.9				4.6
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
Growth Factor	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%
Adj. Flow (vph)	344	1337	0	0	709	40	302	96	39	0	0	0
Shared Lane Traffic (%)	10%						50%					
Lane Group Flow (vph)	310	1371	0	0	749	0	151	286	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2			2		1	2				
Detector Template	Left	Thru			Thru		Left	Thru				
Leading Detector (ft)	20	100			100		20	100				
Trailing Detector (ft)	0	0			0		0	0				
Detector 1 Position(ft)	0	0			0		0	0				
Detector 1 Size(ft)	20	6			6		20	6				
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex				
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0				
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		6			6			6				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	Prot	NA			NA		Perm	NA				
Protected Phases	1	1 2			2			3 4				
Permitted Phases							3 4					

Lane Group	ø3	ø4	ø5	ø6	ø7	ø8
Lane Configurations						
Volume (vph)						
Ideal Flow (vphpl)						
Storage Length (ft)						
Storage Lanes						
Taper Length (ft)						
Lane Util. Factor						
Frt						
Flt Protected						
Satd. Flow (prot)						
Flt Permitted						
Satd. Flow (perm)						
Right Turn on Red						
Satd. Flow (RTOR)						
Link Speed (mph)						
Link Distance (ft)						
Travel Time (s)						
Peak Hour Factor						
Growth Factor						
Adj. Flow (vph)						
Shared Lane Traffic (%)						
Lane Group Flow (vph)						
Enter Blocked Intersection						
Lane Alignment						
Median Width(ft)						
Link Offset(ft)						
Crosswalk Width(ft)						
Two way Left Turn Lane						
Headway Factor						
Turning Speed (mph)						
Number of Detectors						
Detector Template						
Leading Detector (ft)						
Trailing Detector (ft)						
Detector 1 Position(ft)						
Detector 1 Size(ft)						
Detector 1 Type						
Detector 1 Channel						
Detector 1 Extend (s)						
Detector 1 Queue (s)						
Detector 1 Delay (s)						
Detector 2 Position(ft)						
Detector 2 Size(ft)						
Detector 2 Type						
Detector 2 Channel						
Detector 2 Extend (s)						
Turn Type						
Protected Phases	3	4	5	6	7	8
Permitted Phases						

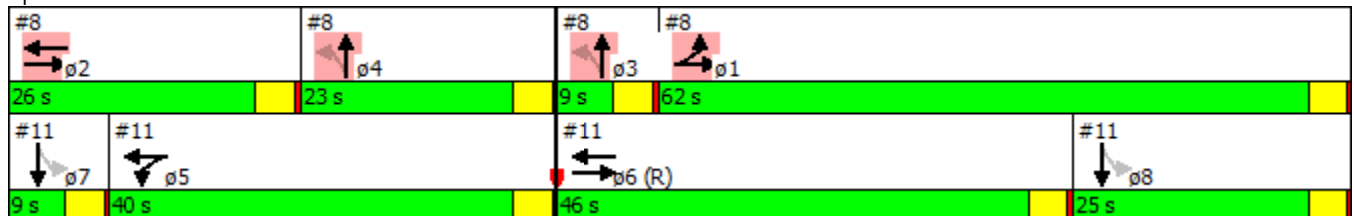


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	1 2			2		3 4	3 4				
Switch Phase												
Minimum Initial (s)	4.0				4.0							
Minimum Split (s)	8.0				20.0							
Total Split (s)	62.0				26.0							
Total Split (%)	51.7%				21.7%							
Maximum Green (s)	58.0				22.0							
Yellow Time (s)	3.5				3.5							
All-Red Time (s)	0.5				0.5							
Lost Time Adjust (s)	0.0				0.0							
Total Lost Time (s)	4.0				4.0							
Lead/Lag	Lag				Lead							
Lead-Lag Optimize?	Yes				Yes							
Vehicle Extension (s)	3.0				3.0							
Recall Mode	None				None							
Walk Time (s)					5.0							
Flash Dont Walk (s)					11.0							
Pedestrian Calls (#/hr)					0							
Act Effct Green (s)	60.4	83.1			22.7		24.9	24.9				
Actuated g/C Ratio	0.50	0.69			0.19		0.21	0.21				
v/c Ratio	0.40	0.47			0.62		0.45	0.42				
Control Delay	8.3	2.6			47.0		45.7	40.8				
Queue Delay	1.6	0.2			0.1		0.0	0.0				
Total Delay	9.9	2.8			47.1		45.7	40.8				
LOS	A	A			D		D	D				
Approach Delay		4.1			47.1			42.5				
Approach LOS		A			D			D				

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	120
Offset:	9 (8%), Referenced to phase 6:EBWB, Start of Green
Natural Cycle:	80
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.73
Intersection Signal Delay:	21.2
Intersection LOS:	C
Intersection Capacity Utilization:	42.5%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 8: SH 249 NBFR & FM 2920



Lane Group	ø3	ø4	ø5	ø6	ø7	ø8
Detector Phase						
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	8.0	20.0	20.0	20.0
Total Split (s)	9.0	23.0	40.0	46.0	9.0	25.0
Total Split (%)	8%	19%	33%	38%	8%	21%
Maximum Green (s)	5.0	19.0	36.0	42.0	5.0	21.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)						
Total Lost Time (s)						
Lead/Lag	Lead	Lag	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	C-Max	None	None
Walk Time (s)	5.0	5.0		5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0		0	0	0
Act Effect Green (s)						
Actuated g/C Ratio						
v/c Ratio						
Control Delay						
Queue Delay						
Total Delay						
LOS						
Approach Delay						
Approach LOS						
Intersection Summary						

Lane Group	ø1	ø2	ø3	ø4	ø7	ø8
Lane Configurations						
Volume (vph)						
Ideal Flow (vphpl)						
Lane Util. Factor						
Frt						
Flt Protected						
Satd. Flow (prot)						
Flt Permitted						
Satd. Flow (perm)						
Right Turn on Red						
Satd. Flow (RTOR)						
Link Speed (mph)						
Link Distance (ft)						
Travel Time (s)						
Peak Hour Factor						
Growth Factor						
Adj. Flow (vph)						
Shared Lane Traffic (%)						
Lane Group Flow (vph)						
Enter Blocked Intersection						
Lane Alignment						
Median Width(ft)						
Link Offset(ft)						
Crosswalk Width(ft)						
Two way Left Turn Lane						
Headway Factor						
Turning Speed (mph)						
Number of Detectors						
Detector Template						
Leading Detector (ft)						
Trailing Detector (ft)						
Detector 1 Position(ft)						
Detector 1 Size(ft)						
Detector 1 Type						
Detector 1 Channel						
Detector 1 Extend (s)						
Detector 1 Queue (s)						
Detector 1 Delay (s)						
Detector 2 Position(ft)						
Detector 2 Size(ft)						
Detector 2 Type						
Detector 2 Channel						
Detector 2 Extend (s)						
Turn Type						
Protected Phases	1	2	3	4	7	8
Permitted Phases						
Detector Phase						
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0

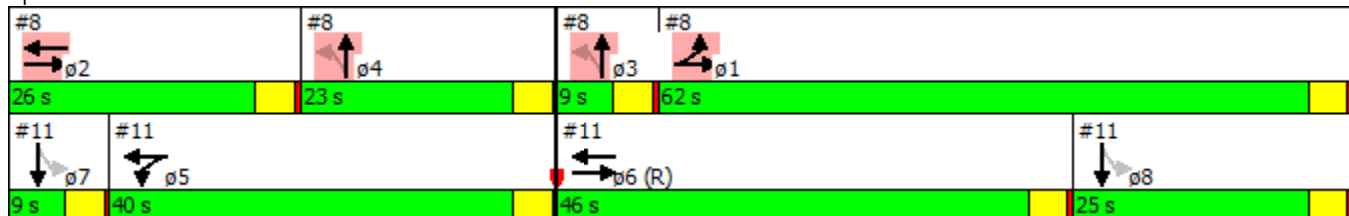


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)		20.0		8.0								
Total Split (s)		46.0		40.0								
Total Split (%)		38.3%		33.3%								
Maximum Green (s)		42.0		36.0								
Yellow Time (s)		3.5		3.5								
All-Red Time (s)		0.5		0.5								
Lost Time Adjust (s)		0.0		0.0								
Total Lost Time (s)		4.0		4.0								
Lead/Lag		Lead		Lag								
Lead-Lag Optimize?		Yes		Yes								
Vehicle Extension (s)		3.0		3.0								
Recall Mode		C-Max		None								
Walk Time (s)		5.0										
Flash Dont Walk (s)		11.0										
Pedestrian Calls (#/hr)		0										
Act Effect Green (s)		45.7		32.6	78.3					29.7	29.7	
Actuated g/C Ratio		0.38		0.27	0.65					0.25	0.25	
v/c Ratio		0.62		0.34	0.38					0.73	0.59	
Control Delay		30.6		7.1	3.0					53.1	25.7	
Queue Delay		0.0		1.1	0.2					0.0	0.0	
Total Delay		30.6		8.3	3.3					53.1	25.7	
LOS		C		A	A					D	C	
Approach Delay		30.6			4.0							35.3
Approach LOS		C			A							D

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	120
Offset:	9 (8%), Referenced to phase 6:EBWB, Start of Green
Natural Cycle:	80
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.73
Intersection Signal Delay:	23.7
Intersection LOS:	C
Intersection Capacity Utilization:	42.5%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 11: SH 249 SBFR & FM 2920



Lane Group	ø1	ø2	ø3	ø4	ø7	ø8
Minimum Split (s)	8.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	62.0	26.0	9.0	23.0	9.0	25.0
Total Split (%)	52%	22%	8%	19%	8%	21%
Maximum Green (s)	58.0	22.0	5.0	19.0	5.0	21.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)						
Total Lost Time (s)						
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None
Walk Time (s)		5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)		11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0	0	0	0
Act Effct Green (s)						
Actuated g/C Ratio						
v/c Ratio						
Control Delay						
Queue Delay						
Total Delay						
LOS						
Approach Delay						
Approach LOS						
Intersection Summary						



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	793	377	216	565	140	93	186	4	39	76	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	110		0	180		250	180		0
Storage Lanes	1		1	1		0	2		1	2		0
Taper Length (ft)	25			25			25		25			
Lane Util. Factor	0.91	0.91	1.00	1.00	0.91	0.91	0.97	0.91	1.00	0.97	0.91	0.91
Frt			0.850		0.970				0.850		0.945	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1610	3390	1583	1770	4933	0	3433	5085	1583	3433	4806	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1610	3390	1583	1770	4933	0	3433	5085	1583	3433	4806	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			422		62				180		49	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		585			617			496			562	
Travel Time (s)		13.3			14.0			11.3			12.8	
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
Growth Factor	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%
Adj. Flow (vph)	67	888	422	242	633	157	104	208	4	44	85	49
Shared Lane Traffic (%)	10%											
Lane Group Flow (vph)	60	895	422	242	790	0	104	208	4	44	134	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Split	NA	Perm	Split	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	3	3		4	4		5	2		1	6	
Permitted Phases			3						2			

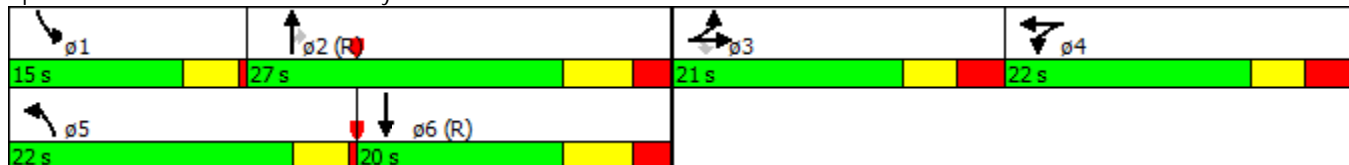


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	3	3	3	4	4		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		4.0	5.0	5.0	4.0	5.0	
Minimum Split (s)	41.5	41.5	41.5	40.5	40.5		8.0	36.0	36.0	8.0	40.0	
Total Split (s)	21.0	21.0	21.0	22.0	22.0		22.0	27.0	27.0	15.0	20.0	
Total Split (%)	24.7%	24.7%	24.7%	25.9%	25.9%		25.9%	31.8%	31.8%	17.6%	23.5%	
Maximum Green (s)	14.5	14.5	14.5	15.5	15.5		18.0	20.0	20.0	11.0	13.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	4.5	4.5	3.5	4.5	
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0		0.5	2.5	2.5	0.5	2.5	
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)	6.5	6.5	6.5	6.5	6.5		4.0	7.0	7.0	4.0	7.0	
Lead/Lag	Lead	Lead	Lead	Lag	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	None	C-Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0			7.0	7.0		7.0	
Flash Dont Walk (s)	28.0	28.0	28.0	27.0	27.0			22.0	22.0		26.0	
Pedestrian Calls (#/hr)	0	0	0	0	0			0	0		0	
Act Effect Green (s)	14.5	14.5	14.5	15.5	15.5		7.9	28.3	28.3	6.6	25.0	
Actuated g/C Ratio	0.17	0.17	0.17	0.18	0.18		0.09	0.33	0.33	0.08	0.29	
v/c Ratio	0.22	1.55	0.68	0.75	0.83		0.33	0.12	0.01	0.17	0.09	
Control Delay	32.8	283.7	9.8	49.3	39.8		38.3	21.5	0.0	37.7	15.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	32.8	283.7	9.8	49.3	39.8		38.3	21.5	0.0	37.7	15.8	
LOS	C	F	A	D	D		D	C	A	D	B	
Approach Delay		188.8			42.0			26.8			21.2	
Approach LOS		F			D			C			C	

Intersection Summary

Area Type: Other
 Cycle Length: 85
 Actuated Cycle Length: 85
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 130
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.55
 Intersection Signal Delay: 108.7
 Intersection LOS: F
 Intersection Capacity Utilization 64.5%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 14: Tomball Pkwy & FM 2920





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6		5	2		8	8		4		4
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0		5.0	5.0		5.0		5.0
Minimum Split (s)	21.7	22.7		21.7	27.7		27.5	27.5		27.5		27.5
Total Split (s)	15.0	55.0		15.0	55.0		20.0	20.0		20.0		20.0
Total Split (%)	13.6%	50.0%		13.6%	50.0%		18.2%	18.2%		18.2%		18.2%
Maximum Green (s)	9.3	49.3		9.3	49.3		14.5	14.5		14.5		14.5
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5		3.5
All-Red Time (s)	2.2	2.2		2.2	2.2		2.0	2.0		2.0		2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0		0.0
Total Lost Time (s)	5.7	5.7		5.7	5.7			5.5		5.5		5.5
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0		3.0
Recall Mode	None	C-Max		Max	C-Max		None	None		None		None
Walk Time (s)		5.0			5.0		5.0	5.0		5.0		5.0
Flash Dont Walk (s)		12.0			17.0		17.0	17.0		17.0		17.0
Pedestrian Calls (#/hr)		0			0		0	0		0		0
Act Effect Green (s)	7.5	49.3		39.7	88.4			5.5		6.3		6.3
Actuated g/C Ratio	0.07	0.45		0.36	0.80			0.05		0.06		0.06
v/c Ratio	0.26	0.66		0.00	0.32			0.00		0.11		0.09
Control Delay	53.4	26.3		29.3	6.3			0.0		51.1		0.8
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0		0.0
Total Delay	53.4	26.3		29.3	6.3			0.0		51.1		0.8
LOS	D	C		C	A			A		D		A
Approach Delay		27.1			6.3			0.0				
Approach LOS		C			A			A				

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 38 (35%), Referenced to phase 2:WBT and 6:EBT, Start of Green
 Natural Cycle: 115
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.66
 Intersection Signal Delay: 17.6
 Intersection LOS: B
 Intersection Capacity Utilization 45.5%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 17: Buvinghausen Lane & FM 2920



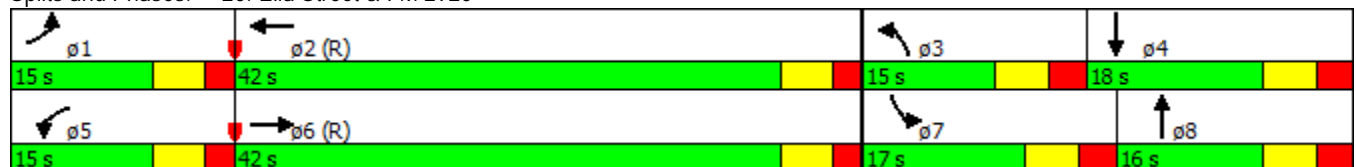


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6		5	2		3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	10.5	25.5		10.5	25.5		11.1	36.1		11.1	36.1	
Total Split (s)	15.0	42.0		15.0	42.0		15.0	16.0		17.0	18.0	
Total Split (%)	16.7%	46.7%		16.7%	46.7%		16.7%	17.8%		18.9%	20.0%	
Maximum Green (s)	9.5	36.5		9.5	36.5		8.9	9.9		10.9	11.9	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.6	3.6		3.6	3.6	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.5	5.5		5.5	5.5		6.1	6.1		6.1	6.1	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		5.0			5.0			5.0			5.0	
Flash Dont Walk (s)		15.0			15.0			25.0			25.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	7.7	62.7		5.8	56.5		6.2	7.0		7.6	10.7	
Actuated g/C Ratio	0.09	0.70		0.06	0.63		0.07	0.08		0.08	0.12	
v/c Ratio	0.28	0.41		0.03	0.42		0.09	0.15		0.26	0.45	
Control Delay	42.7	9.0		45.3	9.0		40.5	36.2		42.2	20.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	42.7	9.0		45.3	9.0		40.5	36.2		42.2	20.9	
LOS	D	A		D	A		D	D		D	C	
Approach Delay		10.4			9.1			37.7			26.0	
Approach LOS		B			A			D			C	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 48 (53%), Referenced to phase 2:WBT and 6:EBT, Start of Green
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.45
 Intersection Signal Delay: 11.4
 Intersection LOS: B
 Intersection Capacity Utilization 50.8%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 20: Ella Street & FM 2920





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	19	858	12	79	826	19	22	21	47	28	40	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	65		0	60		0	0		50	0		50
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.997				0.850			0.850
Flt Protected	0.950			0.950				0.975			0.980	
Satd. Flow (prot)	1770	3532	0	1770	3529	0	0	1816	1583	0	1825	1583
Flt Permitted	0.952			0.234				0.252			0.845	
Satd. Flow (perm)	1773	3532	0	436	3529	0	0	469	1583	0	1574	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			3				109			109
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1265			442			534			293	
Travel Time (s)		28.8			10.0			12.1			6.7	
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
Growth Factor	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%
Adj. Flow (vph)	21	961	13	88	925	21	25	24	53	31	45	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	21	974	0	88	946	0	0	49	53	0	76	40
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	custom	NA		custom	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		6			2			3			4	
Permitted Phases	1			5			3		3	4		4

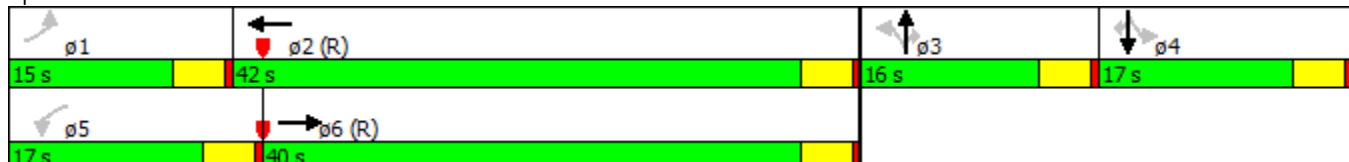


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6		5	2		3	3	3	4	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	15.0	40.0		17.0	42.0		16.0	16.0	16.0	17.0	17.0	17.0
Total Split (%)	16.7%	44.4%		18.9%	46.7%		17.8%	17.8%	17.8%	18.9%	18.9%	18.9%
Maximum Green (s)	11.0	36.0		13.0	38.0		12.0	12.0	12.0	13.0	13.0	13.0
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5	0.5	0.5	0.5	0.5
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)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max		Max	Max	Max	None	None	None
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effect Green (s)	8.2	37.4		17.1	52.7		12.0	12.0	12.0	9.5	9.5	9.5
Actuated g/C Ratio	0.09	0.42		0.19	0.59		0.13	0.13	0.13	0.11	0.11	0.11
v/c Ratio	0.13	0.66		1.07	0.46		0.79	0.17	0.17	0.46	0.15	0.15
Control Delay	41.4	24.2		163.0	10.6		107.7	1.6	1.6	46.1	1.2	1.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.4	24.2		163.0	10.7		107.7	1.6	1.6	46.1	1.2	1.2
LOS	D	C		F	B		F	A	A	D	A	A
Approach Delay		24.5			23.6			52.6			30.6	
Approach LOS		C			C			D			C	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 88 (98%), Referenced to phase 2:WBT and 6:EBT, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.07
 Intersection Signal Delay: 25.7 Intersection LOS: C
 Intersection Capacity Utilization 49.8% ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 23: Holderrieth Blvd & FM 2920





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↖	↑↑			↕			↕	
Volume (vph)	0	919	8	27	912	0	11	0	31	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	20		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999						0.899				
Flt Protected				0.950				0.987				
Satd. Flow (prot)	0	3536	0	1770	3539	0	0	1653	0	0	1863	0
Flt Permitted				0.950				0.947				
Satd. Flow (perm)	0	3536	0	1770	3539	0	0	1586	0	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1						104				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		442			131			513				186
Travel Time (s)		10.0			3.0			11.7				4.2
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
Growth Factor	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%
Adj. Flow (vph)	0	1029	9	30	1021	0	12	0	35	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1038	0	30	1021	0	0	47	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2		1	2		1	2		1		2
Detector Template		Thru		Left	Thru		Left	Thru		Left		Thru
Leading Detector (ft)		100		20	100		20	100		20		100
Trailing Detector (ft)		0		0	0		0	0		0		0
Detector 1 Position(ft)		0		0	0		0	0		0		0
Detector 1 Size(ft)		6		20	6		20	6		20		6
Detector 1 Type		Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0		0.0	0.0		0.0		0.0
Detector 1 Queue (s)		0.0		0.0	0.0		0.0	0.0		0.0		0.0
Detector 1 Delay (s)		0.0		0.0	0.0		0.0	0.0		0.0		0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type		NA		Prot	NA		Perm	NA		Perm		
Protected Phases		6		4	2 4			3				3
Permitted Phases							3	3		3		

Lane Group	ø2
Lane Configurations	
Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Growth Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	2
Permitted Phases	

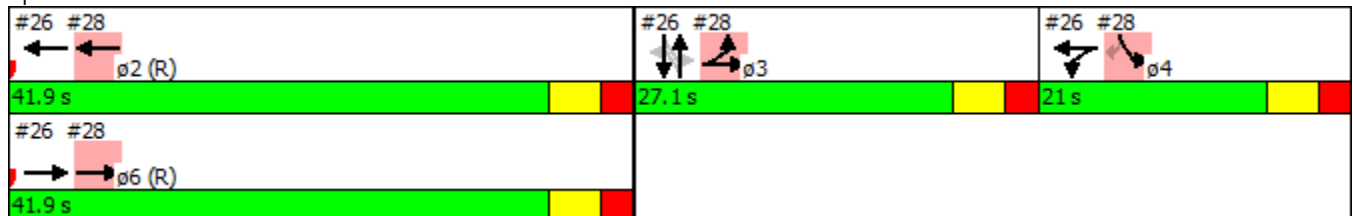


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase		6		4	2 4		3	3		3	3	
Switch Phase												
Minimum Initial (s)		15.0		5.0			5.0	5.0		5.0	5.0	
Minimum Split (s)		24.8		20.8			26.8	26.8		26.8	26.8	
Total Split (s)		41.9		21.0			27.1	27.1		27.1	27.1	
Total Split (%)		46.6%		23.3%			30.1%	30.1%		30.1%	30.1%	
Maximum Green (s)		36.1		15.2			21.3	21.3		21.3	21.3	
Yellow Time (s)		3.5		3.5			3.5	3.5		3.5	3.5	
All-Red Time (s)		2.3		2.3			2.3	2.3		2.3	2.3	
Lost Time Adjust (s)		0.0		0.0				0.0			0.0	
Total Lost Time (s)		5.8		5.8				5.8			5.8	
Lead/Lag				Lag			Lead	Lead		Lead	Lead	
Lead-Lag Optimize?				Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)		3.0		3.0			3.0	3.0		3.0	3.0	
Recall Mode		C-Max		None			Max	Max		Max	Max	
Walk Time (s)		7.0		5.0			5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		12.0		10.0			16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)		0		0			0	0		0	0	
Act Effct Green (s)		36.1		15.2	57.1			21.3				
Actuated g/C Ratio		0.40		0.17	0.63			0.24				
v/c Ratio		0.73		0.10	0.45			0.10				
Control Delay		6.7		51.1	1.6			0.5				
Queue Delay		0.0		3.5	0.8			0.0				
Total Delay		6.7		54.6	2.5			0.5				
LOS		A		D	A			A				
Approach Delay		6.7			4.0			0.5				
Approach LOS		A			A			A				

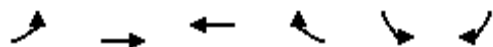
Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.77
 Intersection Signal Delay: 5.2
 Intersection Capacity Utilization 40.3%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 26: Vernon Ave & FM 2920



Lane Group	ø2
Detector Phase	
Switch Phase	
Minimum Initial (s)	15.0
Minimum Split (s)	22.8
Total Split (s)	41.9
Total Split (%)	47%
Maximum Green (s)	36.1
Yellow Time (s)	3.5
All-Red Time (s)	2.3
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	C-Max
Walk Time (s)	7.0
Flash Dont Walk (s)	10.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	ø6
Lane Configurations							
Volume (vph)	32	929	902	64	116	42	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	20			0	0	90	
Storage Lanes	1			0	1	1	
Taper Length (ft)	25				25		
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00	
Frt			0.990			0.850	
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1770	3539	3504	0	1770	1583	
Flt Permitted	0.950				0.950		
Satd. Flow (perm)	1770	3539	3504	0	1770	1583	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)			10			47	
Link Speed (mph)		30	30		30		
Link Distance (ft)		131	272		349		
Travel Time (s)		3.0	6.2		7.9		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Growth Factor	103%	103%	103%	103%	103%	103%	
Adj. Flow (vph)	36	1040	1010	72	130	47	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	36	1040	1082	0	130	47	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Left	Left	Right	Left	Right	
Median Width(ft)		12	12		12		
Link Offset(ft)		0	0		0		
Crosswalk Width(ft)		16	16		16		
Two way Left Turn Lane		Yes	Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15			9	15	9	
Number of Detectors	1	2	2		1	1	
Detector Template	Left	Thru	Thru		Left	Right	
Leading Detector (ft)	20	100	100		20	20	
Trailing Detector (ft)	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0		0	0	
Detector 1 Size(ft)	20	6	6		20	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94	94				
Detector 2 Size(ft)		6	6				
Detector 2 Type		Cl+Ex	Cl+Ex				
Detector 2 Channel							
Detector 2 Extend (s)		0.0	0.0				
Turn Type	Prot	NA	NA		NA	Perm	
Protected Phases	3	3 6	2		4		6
Permitted Phases						4	

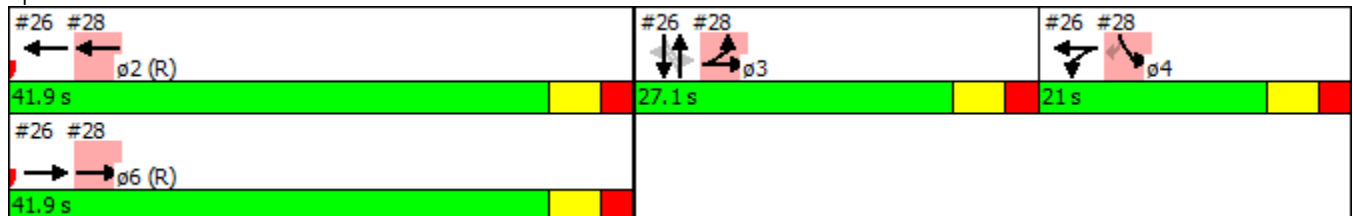


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	ø6
Detector Phase	3	3 6	2		4	4	
Switch Phase							
Minimum Initial (s)	5.0		15.0		5.0	5.0	15.0
Minimum Split (s)	26.8		22.8		20.8	20.8	24.8
Total Split (s)	27.1		41.9		21.0	21.0	41.9
Total Split (%)	30.1%		46.6%		23.3%	23.3%	47%
Maximum Green (s)	21.3		36.1		15.2	15.2	36.1
Yellow Time (s)	3.5		3.5		3.5	3.5	3.5
All-Red Time (s)	2.3		2.3		2.3	2.3	2.3
Lost Time Adjust (s)	0.0		0.0		0.0	0.0	
Total Lost Time (s)	5.8		5.8		5.8	5.8	
Lead/Lag	Lead				Lag	Lag	
Lead-Lag Optimize?	Yes				Yes	Yes	
Vehicle Extension (s)	3.0		3.0		3.0	3.0	3.0
Recall Mode	Max		C-Max		None	None	C-Max
Walk Time (s)	5.0		7.0		5.0	5.0	7.0
Flash Dont Walk (s)	16.0		10.0		10.0	10.0	12.0
Pedestrian Calls (#/hr)	0		0		0	0	0
Act Effect Green (s)	21.3	63.2	36.1		15.2	15.2	
Actuated g/C Ratio	0.24	0.70	0.40		0.17	0.17	
v/c Ratio	0.09	0.42	0.77		0.44	0.15	
Control Delay	22.4	0.5	9.1		38.8	11.4	
Queue Delay	5.1	0.6	0.0		0.0	0.0	
Total Delay	27.5	1.1	9.1		38.8	11.4	
LOS	C	A	A		D	B	
Approach Delay		2.0	9.1		31.5		
Approach LOS		A	A		C		

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.77
 Intersection Signal Delay: 7.5
 Intersection Capacity Utilization 44.1%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 28: FM 2920 & Baker Dr





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕	↕			↕↕
Volume (vph)	3	838	25	35	933	10	32	37	57	21	20	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		80	0		0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.996			0.998				0.850			0.965
Flt Protected					0.998			0.977				0.981
Satd. Flow (prot)	0	3525	0	0	3525	0	0	1820	1583	0	1763	0
Flt Permitted		0.952			0.870			0.610				0.863
Satd. Flow (perm)	0	3356	0	0	3073	0	0	1136	1583	0	1551	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			1				107			16
Link Speed (mph)		30			30			30				30
Link Distance (ft)		1317			3717			353				398
Travel Time (s)		29.9			84.5			8.0				9.0
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
Growth Factor	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%
Adj. Flow (vph)	3	938	28	39	1045	11	36	41	64	24	22	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	969	0	0	1095	0	0	77	64	0	62	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1		2
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left		Thru
Leading Detector (ft)	20	100		20	100		20	100	20	20		100
Trailing Detector (ft)	0	0		0	0		0	0	0	0		0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0		0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20		6
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0		0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0		0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0		0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA		Perm	NA		Perm	NA	custom	Perm		NA
Protected Phases		2			6			3				4
Permitted Phases	2			6			3		2	4		

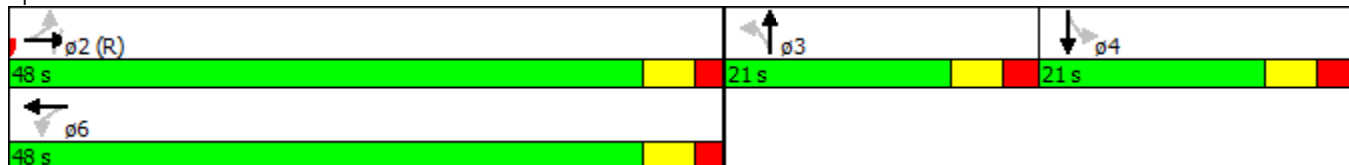


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	2	2		6	6		3	3	2	4	4	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		5.0	5.0	20.0	5.0	5.0	
Minimum Split (s)	25.5	25.5		25.5	25.5		28.9	28.9	25.5	28.9	28.9	
Total Split (s)	48.0	48.0		48.0	48.0		21.0	21.0	48.0	21.0	21.0	
Total Split (%)	53.3%	53.3%		53.3%	53.3%		23.3%	23.3%	53.3%	23.3%	23.3%	
Maximum Green (s)	42.5	42.5		42.5	42.5		15.1	15.1	42.5	15.1	15.1	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.4	2.4	2.0	2.4	2.4	
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	
Total Lost Time (s)		5.5			5.5			5.9	5.5		5.9	
Lead/Lag							Lead	Lead		Lag	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max		Max	Max		Max	Max	C-Max	Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	8.0	8.0		8.0	8.0		16.0	16.0	8.0	16.0	16.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effct Green (s)		42.5			42.5			15.1	42.5		15.1	
Actuated g/C Ratio		0.47			0.47			0.17	0.47		0.17	
v/c Ratio		0.61			0.75			0.41	0.08		0.23	
Control Delay		10.0			23.6			40.8	1.1		28.1	
Queue Delay		0.0			0.0			0.0	0.0		0.0	
Total Delay		10.0			23.6			40.8	1.1		28.1	
LOS		A			C			D	A		C	
Approach Delay		10.0			23.6			22.8			28.1	
Approach LOS		A			C			C			C	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 47 (52%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 105
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.75
 Intersection Signal Delay: 17.8
 Intersection Capacity Utilization 72.5%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service C

Splits and Phases: 30: Pine St & FM 2920





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	923	110	95	954	9	40	1	65	16	15	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	80		0	160		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.984			0.999			0.917			0.968	
Flt Protected	0.950			0.950				0.981			0.981	
Satd. Flow (prot)	1770	3483	0	1770	3536	0	0	1676	0	0	1769	0
Flt Permitted	0.950			0.950				0.888			0.897	
Satd. Flow (perm)	1770	3483	0	1770	3536	0	0	1517	0	0	1617	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			1			73			11	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		3717			948			261			287	
Travel Time (s)		84.5			21.5			5.9			6.5	
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
Growth Factor	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%
Adj. Flow (vph)	4	1033	123	106	1068	10	45	1	73	18	17	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	4	1156	0	106	1078	0	0	119	0	0	46	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		

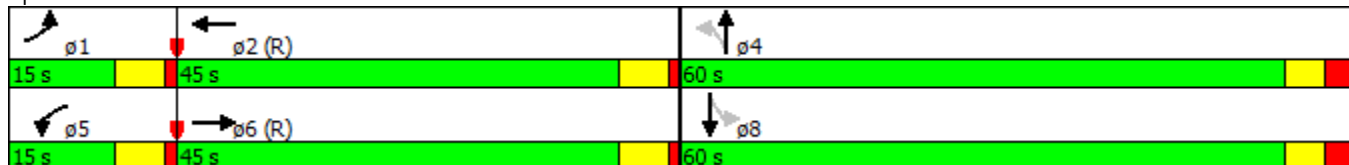


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	10.5	22.0		10.5	22.0		20.0	20.0		33.0	33.0	
Total Split (s)	15.0	45.0		15.0	45.0		60.0	60.0		60.0	60.0	
Total Split (%)	12.5%	37.5%		12.5%	37.5%		50.0%	50.0%		50.0%	50.0%	
Maximum Green (s)	9.5	39.5		9.5	39.5		54.0	54.0		54.0	54.0	
Yellow Time (s)	4.5	4.5		4.5	4.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	5.5	5.5		5.5	5.5			6.0			6.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		Max	Max		None	None	
Walk Time (s)		7.0			7.0					7.0	7.0	
Flash Dont Walk (s)		7.0			6.0					20.0	20.0	
Pedestrian Calls (#/hr)		0			0					0	0	
Act Effect Green (s)	5.9	39.7		9.3	52.1			54.0			54.0	
Actuated g/C Ratio	0.05	0.33		0.08	0.43			0.45			0.45	
v/c Ratio	0.05	1.00		0.77	0.70			0.16			0.06	
Control Delay	55.2	65.9		88.6	31.5			9.0			15.4	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	55.2	65.9		88.6	31.5			9.0			15.4	
LOS	E	E		F	C			A			B	
Approach Delay		65.8			36.6			9.0			15.4	
Approach LOS		E			D			A			B	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 5 (4%), Referenced to phase 2:WBT and 6:EBT, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.00
 Intersection Signal Delay: 48.4
 Intersection LOS: D
 Intersection Capacity Utilization 57.7%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 33: Willow St & FM 2920

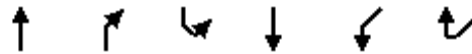




Lane Group	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Volume (vph)	54	86	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	180			0	0	0
Storage Lanes	1			0	0	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Fr						
Flt Protected	0.950					
Satd. Flow (prot)	1770	3539	0	0	0	0
Flt Permitted	0.950					
Satd. Flow (perm)	1770	3539	0	0	0	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		465	173		284	
Travel Time (s)		10.6	3.9		6.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	103%	103%	103%	103%	103%	103%
Adj. Flow (vph)	60	96	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	60	96	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Free	

Intersection Summary

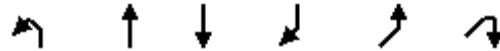
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	21.7%
	ICU Level of Service A
Analysis Period (min)	15



Lane Group	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations				↑↑	↘	
Volume (vph)	0	0	0	0	54	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	0	0	0	3539	1770	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	0	0	3539	1770	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	453			179	284	
Travel Time (s)	10.3			4.1	6.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	103%	103%	103%	103%	103%	103%
Adj. Flow (vph)	0	0	0	0	60	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	60	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Stop			Free	Yield	

Intersection Summary

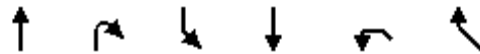
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	21.7%
Analysis Period (min)	15
	ICU Level of Service A



Lane Group	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations		↑↑			↘	
Volume (vph)	0	0	0	0	130	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	0	3539	0	0	1770	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	3539	0	0	1770	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		201	296		306	
Travel Time (s)		4.6	6.7		7.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	103%	103%	103%	103%	103%	103%
Adj. Flow (vph)	0	0	0	0	146	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	146	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Stop		Yield	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	23.3%
Analysis Period (min)	15
	ICU Level of Service A



Lane Group	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Volume (vph)	0	0	130	94	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	180		0	0
Storage Lanes		0	1		0	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt						
Flt Protected			0.950			
Satd. Flow (prot)	0	0	1770	3539	0	0
Flt Permitted			0.950			
Satd. Flow (perm)	0	0	1770	3539	0	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	204			261	306	
Travel Time (s)	4.6			5.9	7.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	103%	103%	103%	103%	103%	103%
Adj. Flow (vph)	0	0	146	105	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	146	105	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	23.3%
	ICU Level of Service A
Analysis Period (min)	15



Lane Group	SBL	SBR	NEL	NET	SWT	SWR
Lane Configurations						
Volume (vph)	44	84	146	1259	1781	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	175			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.911				0.995	
Flt Protected	0.983		0.950			
Satd. Flow (prot)	1668	0	1770	3539	3522	0
Flt Permitted	0.983		0.217			
Satd. Flow (perm)	1668	0	404	3539	3522	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	81				5	
Link Speed (mph)	30			30	30	
Link Distance (ft)	1322			554	2764	
Travel Time (s)	30.0			12.6	62.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	103%	103%	103%	103%	103%	103%
Adj. Flow (vph)	49	94	163	1410	1994	62
Shared Lane Traffic (%)						
Lane Group Flow (vph)	143	0	163	1410	2056	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane				Yes	Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	2	2	
Detector Template	Left		Left	Thru	Thru	
Leading Detector (ft)	20		20	100	100	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	20		20	6	6	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	NA		custom	NA	NA	
Protected Phases	4			6	2	
Permitted Phases			1			

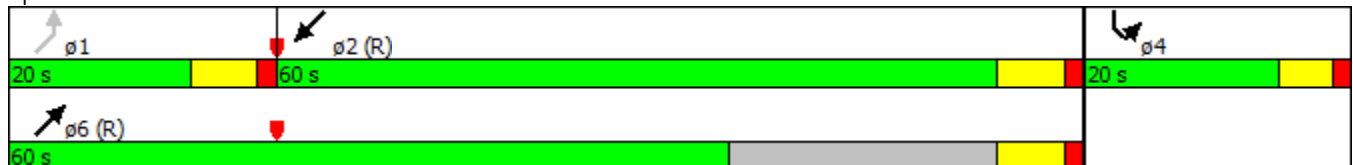


Lane Group	SBL	SBR	NEL	NET	SWT	SWR
Detector Phase	4		1	6	2	
Switch Phase						
Minimum Initial (s)	5.0		5.0	15.0	15.0	
Minimum Split (s)	32.5		22.5	22.5	30.5	
Total Split (s)	20.0		20.0	60.0	60.0	
Total Split (%)	20.0%		20.0%	60.0%	60.0%	
Maximum Green (s)	14.5		13.5	53.5	53.5	
Yellow Time (s)	4.0		5.0	5.0	5.0	
All-Red Time (s)	1.5		1.5	1.5	1.5	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	5.5		6.5	6.5	6.5	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	None		None	C-Max	C-Max	
Walk Time (s)	7.0				7.0	
Flash Dont Walk (s)	20.0				17.0	
Pedestrian Calls (#/hr)	0				0	
Act Effect Green (s)	9.6		18.4	78.4	53.5	
Actuated g/C Ratio	0.10		0.18	0.78	0.54	
v/c Ratio	0.62		2.20	0.51	1.09	
Control Delay	31.3		606.0	5.0	74.2	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	31.3		606.0	5.0	74.2	
LOS	C		F	A	E	
Approach Delay	31.3			67.3	74.2	
Approach LOS	C			E	E	

Intersection Summary

Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	100
Offset:	20 (20%), Referenced to phase 2:SWT and 6:NET, Start of Green
Natural Cycle:	100
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	2.20
Intersection Signal Delay:	69.7
Intersection LOS:	E
Intersection Capacity Utilization	84.1%
ICU Level of Service	E
Analysis Period (min)	15

Splits and Phases: 3: FM 2920 & Park Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1232	58	11	1641	0	69	0	31	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t		0.993						0.958				
Fl _t Protected				0.950				0.967				
Satd. Flow (prot)	1863	3514	0	1770	3539	0	0	1726	0	0	1863	0
Fl _t Permitted				0.950				0.794				
Satd. Flow (perm)	1863	3514	0	1770	3539	0	0	1417	0	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6						149				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2764			2506			534			543	
Travel Time (s)		62.8			57.0			12.1			12.3	
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
Growth Factor	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%
Adj. Flow (vph)	0	1379	65	12	1837	0	77	0	35	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1444	0	12	1837	0	0	112	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm		
Protected Phases	1	6		5	2			4				8
Permitted Phases							4			8		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	20.0		5.0	20.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	26.0		11.0	26.0		21.5	21.5		21.5	21.5	
Total Split (s)	10.0	60.0		25.0	60.0		25.0	25.0		10.0	10.0	
Total Split (%)	9.1%	54.5%		22.7%	54.5%		22.7%	22.7%		9.1%	9.1%	
Maximum Green (s)	4.0	54.0		19.0	54.0		19.5	19.5		4.5	4.5	
Yellow Time (s)	5.0	5.0		5.0	5.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			5.5			5.5	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	C-Max		None	None		None	None	
Act Effect Green (s)		89.6		6.4	92.3			6.2				
Actuated g/C Ratio		0.81		0.06	0.84			0.06				
v/c Ratio		0.50		0.12	0.62			0.51				
Control Delay		4.7		51.2	4.1			11.7				
Queue Delay		0.0		0.0	0.0			0.0				
Total Delay		4.7		51.2	4.1			11.7				
LOS		A		D	A			B				
Approach Delay		4.7			4.4			11.7				
Approach LOS		A			A			B				

Intersection Summary

Area Type:	Other
Cycle Length:	110
Actuated Cycle Length:	110
Offset:	0 (0%), Referenced to phase 2:WBT, Start of Green
Natural Cycle:	80
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.62
Intersection Signal Delay:	4.8
Intersection LOS:	A
Intersection Capacity Utilization:	62.2%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 5: Cascade Bay & FM 2920





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↶↶↶			↷↷↷		↵	↶↶				
Volume (vph)	470	1064	0	0	1397	68	483	264	58	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		80	0		0	0		0
Storage Lanes	1		0	0		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.86	0.86	1.00	1.00	0.86	0.86	0.91	0.91	0.95	1.00	1.00	1.00
Fr _t					0.993			0.984				
Fl _t Protected	0.950	0.996					0.950	0.980				
Satd. Flow (prot)	1522	4787	0	0	6363	0	1610	3269	0	0	0	0
Fl _t Permitted	0.950	0.673					0.950	0.980				
Satd. Flow (perm)	1522	3234	0	0	6363	0	1610	3269	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					7			10				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		270			350			173				201
Travel Time (s)		6.1			8.0			3.9				4.6
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
Growth Factor	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%
Adj. Flow (vph)	526	1191	0	0	1564	76	541	296	65	0	0	0
Shared Lane Traffic (%)	21%						45%					
Lane Group Flow (vph)	416	1301	0	0	1640	0	298	604	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2			2		1	2				
Detector Template	Left	Thru			Thru		Left	Thru				
Leading Detector (ft)	20	100			100		20	100				
Trailing Detector (ft)	0	0			0		0	0				
Detector 1 Position(ft)	0	0			0		0	0				
Detector 1 Size(ft)	20	6			6		20	6				
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex				
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0				
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		6			6			6				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	Prot	NA			NA		Perm	NA				
Protected Phases	1	1 2			2			3 4				
Permitted Phases							3 4					

Lane Group	ø3	ø4	ø5	ø6	ø7	ø8
Lane Configurations						
Volume (vph)						
Ideal Flow (vphpl)						
Storage Length (ft)						
Storage Lanes						
Taper Length (ft)						
Lane Util. Factor						
Frt						
Flt Protected						
Satd. Flow (prot)						
Flt Permitted						
Satd. Flow (perm)						
Right Turn on Red						
Satd. Flow (RTOR)						
Link Speed (mph)						
Link Distance (ft)						
Travel Time (s)						
Peak Hour Factor						
Growth Factor						
Adj. Flow (vph)						
Shared Lane Traffic (%)						
Lane Group Flow (vph)						
Enter Blocked Intersection						
Lane Alignment						
Median Width(ft)						
Link Offset(ft)						
Crosswalk Width(ft)						
Two way Left Turn Lane						
Headway Factor						
Turning Speed (mph)						
Number of Detectors						
Detector Template						
Leading Detector (ft)						
Trailing Detector (ft)						
Detector 1 Position(ft)						
Detector 1 Size(ft)						
Detector 1 Type						
Detector 1 Channel						
Detector 1 Extend (s)						
Detector 1 Queue (s)						
Detector 1 Delay (s)						
Detector 2 Position(ft)						
Detector 2 Size(ft)						
Detector 2 Type						
Detector 2 Channel						
Detector 2 Extend (s)						
Turn Type						
Protected Phases	3	4	5	6	7	8
Permitted Phases						

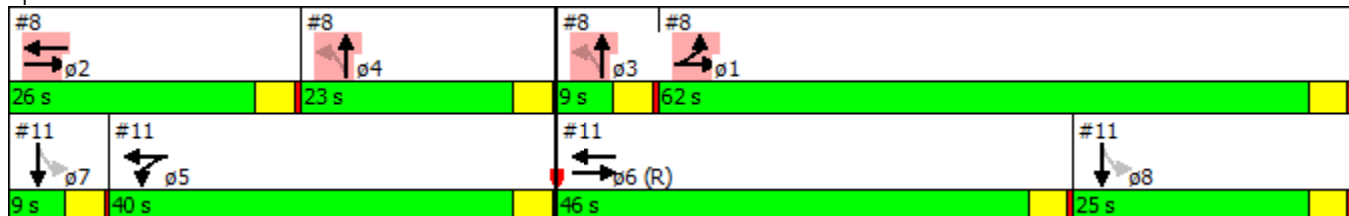


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	1 2			2		3 4	3 4				
Switch Phase												
Minimum Initial (s)	4.0				4.0							
Minimum Split (s)	8.0				20.0							
Total Split (s)	62.0				26.0							
Total Split (%)	51.7%				21.7%							
Maximum Green (s)	58.0				22.0							
Yellow Time (s)	3.5				3.5							
All-Red Time (s)	0.5				0.5							
Lost Time Adjust (s)	0.0				0.0							
Total Lost Time (s)	4.0				4.0							
Lead/Lag	Lag				Lead							
Lead-Lag Optimize?	Yes				Yes							
Vehicle Extension (s)	3.0				3.0							
Recall Mode	None				None							
Walk Time (s)					5.0							
Flash Dont Walk (s)					11.0							
Pedestrian Calls (#/hr)					0							
Act Effct Green (s)	57.2	80.0			22.8		28.0	28.0				
Actuated g/C Ratio	0.48	0.67			0.19		0.23	0.23				
v/c Ratio	0.57	0.51			1.35		0.79	0.78				
Control Delay	9.4	1.5			191.1		60.0	50.7				
Queue Delay	2.8	0.4			1.5		0.0	0.0				
Total Delay	12.2	2.0			192.5		60.0	50.7				
LOS	B	A			F		E	D				
Approach Delay		4.4			192.5			53.8				
Approach LOS		A			F			D				

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	120
Offset:	9 (8%), Referenced to phase 6:EBWB, Start of Green
Natural Cycle:	100
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	1.35
Intersection Signal Delay:	87.3
Intersection LOS:	F
Intersection Capacity Utilization	48.8%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 8: SH 249 NBFR & FM 2920



Lane Group	ø3	ø4	ø5	ø6	ø7	ø8
Detector Phase						
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	8.0	20.0	20.0	20.0
Total Split (s)	9.0	23.0	40.0	46.0	9.0	25.0
Total Split (%)	8%	19%	33%	38%	8%	21%
Maximum Green (s)	5.0	19.0	36.0	42.0	5.0	21.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)						
Total Lost Time (s)						
Lead/Lag	Lead	Lag	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	C-Max	None	None
Walk Time (s)	5.0	5.0		5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0		0	0	0
Act Effect Green (s)						
Actuated g/C Ratio						
v/c Ratio						
Control Delay						
Queue Delay						
Total Delay						
LOS						
Approach Delay						
Approach LOS						
Intersection Summary						



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑↑		↖	↖↖↖					↖	↖↖	
Volume (vph)	0	1218	217	326	1493	0	0	0	0	372	153	202
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.86	0.86	0.86	0.86	1.00	1.00	1.00	1.00	0.91	0.91	0.95
Frt		0.977										0.937
Flt Protected				0.950	0.999					0.950	0.987	
Satd. Flow (prot)	0	6260	0	1522	4801	0	0	0	0	1610	3135	0
Flt Permitted				0.950	0.886					0.950	0.987	
Satd. Flow (perm)	0	6260	0	1522	4258	0	0	0	0	1610	3135	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		41										60
Link Speed (mph)		30			30			30				30
Link Distance (ft)		291			270			179				204
Travel Time (s)		6.6			6.1			4.1				4.6
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
Growth Factor	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%
Adj. Flow (vph)	0	1364	243	365	1672	0	0	0	0	416	171	226
Shared Lane Traffic (%)				10%						33%		
Lane Group Flow (vph)	0	1607	0	328	1709	0	0	0	0	279	534	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2		1	2					1		2
Detector Template		Thru		Left	Thru					Left		Thru
Leading Detector (ft)		100		20	100					20		100
Trailing Detector (ft)		0		0	0					0		0
Detector 1 Position(ft)		0		0	0					0		0
Detector 1 Size(ft)		6		20	6					20		6
Detector 1 Type		Cl+Ex		Cl+Ex	Cl+Ex					Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0					0.0		0.0
Detector 1 Queue (s)		0.0		0.0	0.0					0.0		0.0
Detector 1 Delay (s)		0.0		0.0	0.0					0.0		0.0
Detector 2 Position(ft)		94			94							94
Detector 2 Size(ft)		6			6							6
Detector 2 Type		Cl+Ex			Cl+Ex							Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							0.0
Turn Type		NA		Prot	NA					Perm		NA
Protected Phases		6		5	5 6							7 8
Permitted Phases										7 8		
Detector Phase		6		5	5 6					7 8		7 8
Switch Phase												
Minimum Initial (s)		4.0			4.0							

Lane Group	ø1	ø2	ø3	ø4	ø7	ø8
Lane Configurations						
Volume (vph)						
Ideal Flow (vphpl)						
Lane Util. Factor						
Frt						
Flt Protected						
Satd. Flow (prot)						
Flt Permitted						
Satd. Flow (perm)						
Right Turn on Red						
Satd. Flow (RTOR)						
Link Speed (mph)						
Link Distance (ft)						
Travel Time (s)						
Peak Hour Factor						
Growth Factor						
Adj. Flow (vph)						
Shared Lane Traffic (%)						
Lane Group Flow (vph)						
Enter Blocked Intersection						
Lane Alignment						
Median Width(ft)						
Link Offset(ft)						
Crosswalk Width(ft)						
Two way Left Turn Lane						
Headway Factor						
Turning Speed (mph)						
Number of Detectors						
Detector Template						
Leading Detector (ft)						
Trailing Detector (ft)						
Detector 1 Position(ft)						
Detector 1 Size(ft)						
Detector 1 Type						
Detector 1 Channel						
Detector 1 Extend (s)						
Detector 1 Queue (s)						
Detector 1 Delay (s)						
Detector 2 Position(ft)						
Detector 2 Size(ft)						
Detector 2 Type						
Detector 2 Channel						
Detector 2 Extend (s)						
Turn Type						
Protected Phases	1	2	3	4	7	8
Permitted Phases						
Detector Phase						
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0

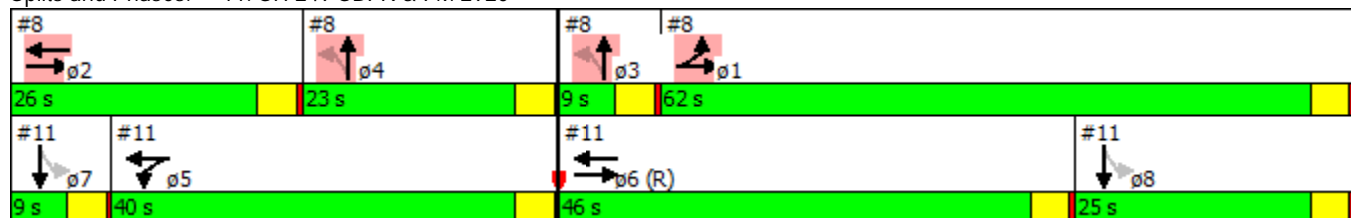


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)		20.0		8.0								
Total Split (s)		46.0		40.0								
Total Split (%)		38.3%		33.3%								
Maximum Green (s)		42.0		36.0								
Yellow Time (s)		3.5		3.5								
All-Red Time (s)		0.5		0.5								
Lost Time Adjust (s)		0.0		0.0								
Total Lost Time (s)		4.0		4.0								
Lead/Lag		Lead		Lag								
Lead-Lag Optimize?		Yes		Yes								
Vehicle Extension (s)		3.0		3.0								
Recall Mode		C-Max		None								
Walk Time (s)		5.0										
Flash Dont Walk (s)		11.0										
Pedestrian Calls (#/hr)		0										
Act Effect Green (s)		42.0		36.4	78.4					29.6	29.6	
Actuated g/C Ratio		0.35		0.30	0.65					0.25	0.25	
v/c Ratio		0.72		0.71	0.74					0.70	0.65	
Control Delay		35.3		13.9	8.4					52.0	40.1	
Queue Delay		0.1		57.7	20.4					0.0	0.0	
Total Delay		35.4		71.6	28.8					52.0	40.1	
LOS		D		E	C					D	D	
Approach Delay		35.4			35.7							44.2
Approach LOS		D			D							D

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	120
Offset:	9 (8%), Referenced to phase 6:EBWB, Start of Green
Natural Cycle:	100
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	1.35
Intersection Signal Delay:	37.1
Intersection LOS:	D
Intersection Capacity Utilization	48.8%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 11: SH 249 SBFR & FM 2920



Lane Group	ø1	ø2	ø3	ø4	ø7	ø8
Minimum Split (s)	8.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	62.0	26.0	9.0	23.0	9.0	25.0
Total Split (%)	52%	22%	8%	19%	8%	21%
Maximum Green (s)	58.0	22.0	5.0	19.0	5.0	21.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)						
Total Lost Time (s)						
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None
Walk Time (s)		5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)		11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0	0	0	0
Act Effct Green (s)						
Actuated g/C Ratio						
v/c Ratio						
Control Delay						
Queue Delay						
Total Delay						
LOS						
Approach Delay						
Approach LOS						
Intersection Summary						



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↔	↗	↘	↔		↘	↔	↗	↘	↔	↗
Volume (vph)	99	696	334	258	907	144	373	489	3	72	157	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	110		0	180		250	180		0
Storage Lanes	1		1	1		0	2		1	2		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.91	0.91	1.00	1.00	0.91	0.91	0.97	0.91	1.00	0.97	0.91	0.91
Frt			0.850		0.979				0.850		0.924	
Flt Protected	0.950	0.999		0.950			0.950			0.950		
Satd. Flow (prot)	1610	3387	1583	1770	4979	0	3433	5085	1583	3433	4699	0
Flt Permitted	0.950	0.999		0.950			0.950			0.950		
Satd. Flow (perm)	1610	3387	1583	1770	4979	0	3433	5085	1583	3433	4699	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			374		23				127		170	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		585			617			496			562	
Travel Time (s)		13.3			14.0			11.3			12.8	
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
Growth Factor	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%
Adj. Flow (vph)	111	779	374	289	1015	161	418	547	3	81	176	179
Shared Lane Traffic (%)	10%											
Lane Group Flow (vph)	100	790	374	289	1176	0	418	547	3	81	355	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Split	NA	Perm	Split	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	3	3		4	4		5	2		1	6	
Permitted Phases			3						2			

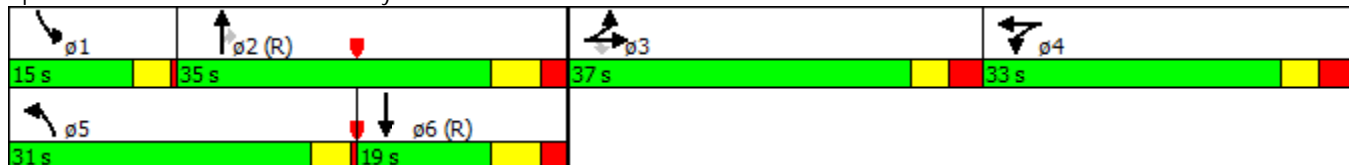


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	3	3	3	4	4		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		4.0	5.0	5.0	4.0	5.0	
Minimum Split (s)	41.5	41.5	41.5	40.5	40.5		8.0	36.0	36.0	8.0	40.0	
Total Split (s)	37.0	37.0	37.0	33.0	33.0		31.0	35.0	35.0	15.0	19.0	
Total Split (%)	30.8%	30.8%	30.8%	27.5%	27.5%		25.8%	29.2%	29.2%	12.5%	15.8%	
Maximum Green (s)	30.5	30.5	30.5	26.5	26.5		27.0	28.0	28.0	11.0	12.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	4.5	4.5	3.5	4.5	
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0		0.5	2.5	2.5	0.5	2.5	
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)	6.5	6.5	6.5	6.5	6.5		4.0	7.0	7.0	4.0	7.0	
Lead/Lag	Lead	Lead	Lead	Lag	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	None	C-Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0			7.0	7.0		7.0	
Flash Dont Walk (s)	28.0	28.0	28.0	27.0	27.0			22.0	22.0		26.0	
Pedestrian Calls (#/hr)	0	0	0	0	0			0	0		0	
Act Effect Green (s)	30.4	30.4	30.4	26.6	26.6		19.8	32.8	32.8	8.2	19.2	
Actuated g/C Ratio	0.25	0.25	0.25	0.22	0.22		0.16	0.27	0.27	0.07	0.16	
v/c Ratio	0.25	0.92	0.55	0.74	1.05		0.74	0.39	0.01	0.34	0.40	
Control Delay	48.8	66.5	16.4	56.1	85.2		55.6	37.4	0.0	56.9	25.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	48.8	66.5	16.4	56.1	85.2		55.6	37.4	0.0	56.9	25.4	
LOS	D	E	B	E	F		E	D	A	E	C	
Approach Delay		50.3			79.5			45.2			31.2	
Approach LOS		D			E			D			C	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 140
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.05
 Intersection Signal Delay: 57.4
 Intersection LOS: E
 Intersection Capacity Utilization 79.0%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 14: Tomball Pkwy & FM 2920





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6		5	2		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0		5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	21.7	22.7		21.7	27.7		27.5	27.5		27.5	27.5	27.5
Total Split (s)	15.0	55.0		15.0	55.0		20.0	20.0		20.0	20.0	20.0
Total Split (%)	13.6%	50.0%		13.6%	50.0%		18.2%	18.2%		18.2%	18.2%	18.2%
Maximum Green (s)	9.3	49.3		9.3	49.3		14.5	14.5		14.5	14.5	14.5
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	2.2	2.2		2.2	2.2		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.7	5.7		5.7	5.7		5.5	5.5		5.5	5.5	5.5
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max		Max	C-Max		None	None		None	None	None
Walk Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	5.0
Flash Dont Walk (s)		12.0			17.0		17.0	17.0		17.0	17.0	17.0
Pedestrian Calls (#/hr)		0			0		0	0		0	0	0
Act Effect Green (s)	6.4	49.3		35.1	87.2			5.5		10.9	0.0	10.9
Actuated g/C Ratio	0.06	0.45		0.32	0.79			0.05		0.10	0.00	0.10
v/c Ratio	0.13	0.68		0.01	0.53			0.03		0.09	no cap	0.12
Control Delay	51.3	26.8		35.0	9.8			0.2		43.6		0.9
Queue Delay	0.0	0.0		0.0	0.2			0.0		0.0		0.0
Total Delay	51.3	26.8		35.0	10.0			0.2		43.6	Error	0.9
LOS	D	C		C	B			A		D	F	A
Approach Delay		27.1			10.1			0.2			Err	
Approach LOS		C			B			A			F	

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 49 (45%), Referenced to phase 2:WBT and 6:EBT, Start of Green
 Natural Cycle: 135
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: Err
 Intersection Signal Delay: Err
 Intersection Capacity Utilization Err%
 Analysis Period (min) 15
 Intersection LOS: F
 ICU Level of Service H

Splits and Phases: 17: Bovinghausen Lane & FM 2920





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6		5	2		3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	10.5	25.5		10.5	25.5		11.1	36.1		11.1	36.1	
Total Split (s)	15.0	43.0		15.0	43.0		15.0	17.0		15.0	17.0	
Total Split (%)	16.7%	47.8%		16.7%	47.8%		16.7%	18.9%		16.7%	18.9%	
Maximum Green (s)	9.5	37.5		9.5	37.5		8.9	10.9		8.9	10.9	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.6	3.6		3.6	3.6	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.5	5.5		5.5	5.5		6.1	6.1		6.1	6.1	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		5.0			5.0			5.0			5.0	
Flash Dont Walk (s)		15.0			15.0			25.0			25.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	8.1	58.9		6.3	50.1		6.5	8.1		7.6	11.5	
Actuated g/C Ratio	0.09	0.65		0.07	0.56		0.07	0.09		0.08	0.13	
v/c Ratio	0.39	0.46		0.11	0.67		0.14	0.36		0.34	0.50	
Control Delay	45.5	11.3		53.6	13.5		41.1	39.6		44.5	24.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	45.5	11.3		53.6	13.5		41.1	39.6		44.5	24.3	
LOS	D	B		D	B		D	D		D	C	
Approach Delay		13.2			13.9			39.9			29.7	
Approach LOS		B			B			D			C	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 51 (57%), Referenced to phase 2:WBT and 6:EBT, Start of Green
 Natural Cycle: 95
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.67
 Intersection Signal Delay: 15.4
 Intersection LOS: B
 Intersection Capacity Utilization 65.7%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 20: Ella Street & FM 2920



FM 2920
2018 Existing

PM Peak Hour
1/8/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	22	929	13	45	1148	31	45	73	118	28	19	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	65		0	60		0	0		50	0		50
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.996				0.850			0.850
Flt Protected	0.950			0.950				0.981			0.971	
Satd. Flow (prot)	1770	3532	0	1770	3525	0	0	1827	1583	0	1809	1583
Flt Permitted	0.833			0.354				0.197			0.742	
Satd. Flow (perm)	1552	3532	0	659	3525	0	0	367	1583	0	1382	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			3				132			109
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1265			442			534			293	
Travel Time (s)		28.8			10.0			12.1			6.7	
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
Growth Factor	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%
Adj. Flow (vph)	25	1040	15	50	1285	35	50	82	132	31	21	75
Shared Lane Traffic (%)												
Lane Group Flow (vph)	25	1055	0	50	1320	0	0	132	132	0	52	75
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	custom	NA		custom	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		6			2			3			4	
Permitted Phases	1			5			3		3	4		4

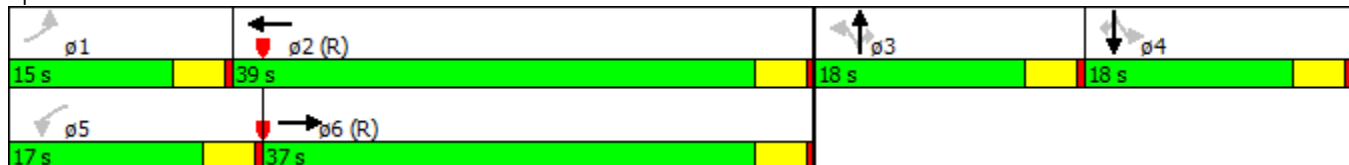


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6		5	2		3	3	3	4	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	15.0	37.0		17.0	39.0		18.0	18.0	18.0	18.0	18.0	18.0
Total Split (%)	16.7%	41.1%		18.9%	43.3%		20.0%	20.0%	20.0%	20.0%	20.0%	20.0%
Maximum Green (s)	11.0	33.0		13.0	35.0		14.0	14.0	14.0	14.0	14.0	14.0
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max		Max	Max	Max	None	None	None
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effect Green (s)	8.9	42.8		12.6	50.9		14.0	14.0		8.6	8.6	8.6
Actuated g/C Ratio	0.10	0.48		0.14	0.57		0.16	0.16		0.10	0.10	0.10
v/c Ratio	0.16	0.63		0.54	0.66		2.32	0.37		0.40	0.30	0.30
Control Delay	36.3	22.6		64.2	9.8		665.3	9.7		46.3	6.4	6.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	36.3	22.7		64.2	9.8		665.3	9.7		46.3	6.4	6.4
LOS	D	C		E	A		F	A		D	A	A
Approach Delay		23.0			11.8			337.5			22.7	
Approach LOS		C			B			F			C	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 8 (9%), Referenced to phase 2:WBT and 6:EBT, Start of Green
 Natural Cycle: 150
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 2.32
 Intersection Signal Delay: 46.8
 Intersection LOS: D
 Intersection Capacity Utilization 58.4%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 23: Holderrieth Blvd & FM 2920





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↔	↑↑			↔			↔	
Volume (vph)	0	1073	0	27	1182	0	12	0	41	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	20		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t								0.895				
Fl _t Protected				0.950				0.989				
Satd. Flow (prot)	0	3539	0	1770	3539	0	0	1649	0	0	1863	0
Fl _t Permitted				0.950				0.953				
Satd. Flow (perm)	0	3539	0	1770	3539	0	0	1589	0	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)								104				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		442			131			513				186
Travel Time (s)		10.0			3.0			11.7				4.2
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
Growth Factor	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%
Adj. Flow (vph)	0	1201	0	30	1323	0	13	0	46	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1201	0	30	1323	0	0	59	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2		1	2		1	2		1	2	
Detector Template		Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)		100		20	100		20	100		20	100	
Trailing Detector (ft)		0		0	0		0	0		0	0	
Detector 1 Position(ft)		0		0	0		0	0		0	0	
Detector 1 Size(ft)		6		20	6		20	6		20	6	
Detector 1 Type		Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type		NA		Prot	NA		Perm	NA		Perm		
Protected Phases		6		4	2 4			3				3
Permitted Phases							3	3		3		

Lane Group	ø2
Lane Configurations	
Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Growth Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	2
Permitted Phases	

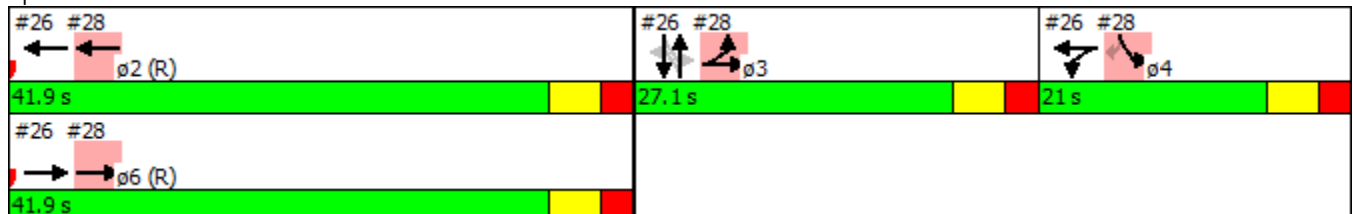


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase		6		4	2 4		3	3		3	3	
Switch Phase												
Minimum Initial (s)		15.0		5.0			5.0	5.0		5.0	5.0	
Minimum Split (s)		24.8		20.8			26.8	26.8		26.8	26.8	
Total Split (s)		41.9		21.0			27.1	27.1		27.1	27.1	
Total Split (%)		46.6%		23.3%			30.1%	30.1%		30.1%	30.1%	
Maximum Green (s)		36.1		15.2			21.3	21.3		21.3	21.3	
Yellow Time (s)		3.5		3.5			3.5	3.5		3.5	3.5	
All-Red Time (s)		2.3		2.3			2.3	2.3		2.3	2.3	
Lost Time Adjust (s)		0.0		0.0				0.0			0.0	
Total Lost Time (s)		5.8		5.8				5.8			5.8	
Lead/Lag				Lag			Lead	Lead		Lead	Lead	
Lead-Lag Optimize?				Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)		3.0		3.0			3.0	3.0		3.0	3.0	
Recall Mode		C-Max		None			Max	Max		Max	Max	
Walk Time (s)		7.0		5.0			5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		12.0		10.0			16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)		0		0			0	0		0	0	
Act Effct Green (s)		36.1		15.2	57.1			21.3				
Actuated g/C Ratio		0.40		0.17	0.63			0.24				
v/c Ratio		0.85		0.10	0.59			0.13				
Control Delay		22.2		49.1	3.4			2.1				
Queue Delay		5.6		3.5	2.2			0.0				
Total Delay		27.8		52.7	5.6			2.1				
LOS		C		D	A			A				
Approach Delay		27.8			6.7			2.1				
Approach LOS		C			A			A				

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.93
 Intersection Signal Delay: 16.3
 Intersection LOS: B
 Intersection Capacity Utilization 47.5%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 26: Vernon Ave & FM 2920



Lane Group	ø2
Detector Phase	
Switch Phase	
Minimum Initial (s)	15.0
Minimum Split (s)	22.8
Total Split (s)	41.9
Total Split (%)	47%
Maximum Green (s)	36.1
Yellow Time (s)	3.5
All-Red Time (s)	2.3
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	C-Max
Walk Time (s)	7.0
Flash Dont Walk (s)	10.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	ø6
Lane Configurations							
Volume (vph)	82	1016	1141	38	46	70	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	20			0	0	90	
Storage Lanes	1			0	1	1	
Taper Length (ft)	25				25		
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00	
Frt			0.995			0.850	
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1770	3539	3522	0	1770	1583	
Flt Permitted	0.950				0.950		
Satd. Flow (perm)	1770	3539	3522	0	1770	1583	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)			4			78	
Link Speed (mph)		30	30		30		
Link Distance (ft)		131	272		349		
Travel Time (s)		3.0	6.2		7.9		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Growth Factor	103%	103%	103%	103%	103%	103%	
Adj. Flow (vph)	92	1137	1277	43	52	78	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	92	1137	1320	0	52	78	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Left	Left	Right	Left	Right	
Median Width(ft)		12	12		12		
Link Offset(ft)		0	0		0		
Crosswalk Width(ft)		16	16		16		
Two way Left Turn Lane		Yes	Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15			9	15	9	
Number of Detectors	1	2	2		1	1	
Detector Template	Left	Thru	Thru		Left	Right	
Leading Detector (ft)	20	100	100		20	20	
Trailing Detector (ft)	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0		0	0	
Detector 1 Size(ft)	20	6	6		20	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94	94				
Detector 2 Size(ft)		6	6				
Detector 2 Type		Cl+Ex	Cl+Ex				
Detector 2 Channel							
Detector 2 Extend (s)		0.0	0.0				
Turn Type	Prot	NA	NA		NA	Perm	
Protected Phases	3	3 6	2		4		6
Permitted Phases						4	

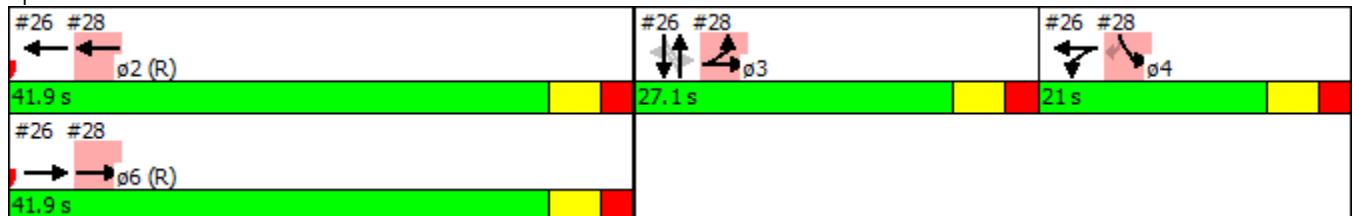


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	ø6
Detector Phase	3	3 6	2		4	4	
Switch Phase							
Minimum Initial (s)	5.0		15.0		5.0	5.0	15.0
Minimum Split (s)	26.8		22.8		20.8	20.8	24.8
Total Split (s)	27.1		41.9		21.0	21.0	41.9
Total Split (%)	30.1%		46.6%		23.3%	23.3%	47%
Maximum Green (s)	21.3		36.1		15.2	15.2	36.1
Yellow Time (s)	3.5		3.5		3.5	3.5	3.5
All-Red Time (s)	2.3		2.3		2.3	2.3	2.3
Lost Time Adjust (s)	0.0		0.0		0.0	0.0	
Total Lost Time (s)	5.8		5.8		5.8	5.8	
Lead/Lag	Lead				Lag	Lag	
Lead-Lag Optimize?	Yes				Yes	Yes	
Vehicle Extension (s)	3.0		3.0		3.0	3.0	3.0
Recall Mode	Max		C-Max		None	None	C-Max
Walk Time (s)	5.0		7.0		5.0	5.0	7.0
Flash Dont Walk (s)	16.0		10.0		10.0	10.0	12.0
Pedestrian Calls (#/hr)	0		0		0	0	0
Act Effect Green (s)	21.3	63.2	36.1		15.2	15.2	
Actuated g/C Ratio	0.24	0.70	0.40		0.17	0.17	
v/c Ratio	0.22	0.46	0.93		0.17	0.23	
Control Delay	24.8	0.5	16.0		33.8	10.0	
Queue Delay	81.3	1.0	1.2		0.0	0.1	
Total Delay	106.1	1.5	17.3		33.8	10.1	
LOS	F	A	B		C	B	
Approach Delay		9.3	17.3		19.6		
Approach LOS		A	B		B		

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.93
 Intersection Signal Delay: 13.7
 Intersection LOS: B
 Intersection Capacity Utilization 57.1%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 28: FM 2920 & Baker Dr





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕	↗		↕↕	
Volume (vph)	12	1018	9	12	1145	17	30	44	101	13	9	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		80	0		0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999			0.998				0.850		0.961	
Flt Protected		0.999						0.980			0.979	
Satd. Flow (prot)	0	3532	0	0	3532	0	0	1825	1583	0	1753	0
Flt Permitted		0.921			0.937			0.686			0.860	
Satd. Flow (perm)	0	3256	0	0	3310	0	0	1278	1583	0	1539	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			2				113		10	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1317			3717			353			398	
Travel Time (s)		29.9			84.5			8.0			9.0	
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
Growth Factor	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%
Adj. Flow (vph)	13	1140	10	13	1282	19	34	49	113	15	10	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1163	0	0	1314	0	0	83	113	0	35	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA	custom	Perm	NA	
Protected Phases		2			6			3			4	
Permitted Phases	2			6			3		2	4		

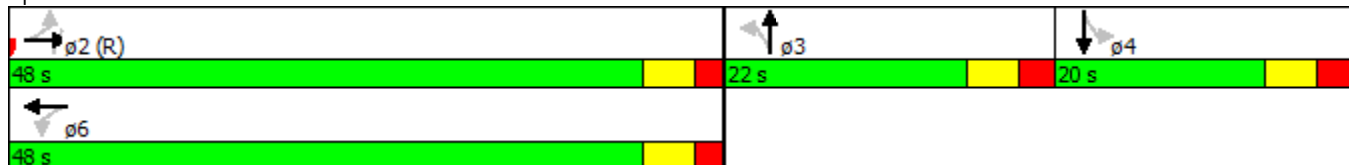


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	2	2		6	6		3	3	2	4	4	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		5.0	5.0	20.0	5.0	5.0	
Minimum Split (s)	25.5	25.5		25.5	25.5		28.9	28.9	25.5	28.9	28.9	
Total Split (s)	48.0	48.0		48.0	48.0		22.0	22.0	48.0	20.0	20.0	
Total Split (%)	53.3%	53.3%		53.3%	53.3%		24.4%	24.4%	53.3%	22.2%	22.2%	
Maximum Green (s)	42.5	42.5		42.5	42.5		16.1	16.1	42.5	14.1	14.1	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.4	2.4	2.0	2.4	2.4	
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	
Total Lost Time (s)		5.5			5.5			5.9	5.5		5.9	
Lead/Lag							Lead	Lead		Lag	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max		Max	Max		Max	Max	C-Max	Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	8.0	8.0		8.0	8.0		16.0	16.0	8.0	16.0	16.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effct Green (s)		42.5			42.5			16.1	42.5		14.1	
Actuated g/C Ratio		0.47			0.47			0.18	0.47		0.16	
v/c Ratio		0.76			0.84			0.36	0.14		0.14	
Control Delay		11.9			27.0			37.8	3.2		27.3	
Queue Delay		0.0			0.0			0.0	0.0		0.0	
Total Delay		11.9			27.0			37.8	3.2		27.3	
LOS		B			C			D	A		C	
Approach Delay		11.9			27.0			17.8			27.3	
Approach LOS		B			C			B			C	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 47 (52%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 105
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.84
 Intersection Signal Delay: 19.9
 Intersection LOS: B
 Intersection Capacity Utilization 64.6%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 30: Pine St & FM 2920



FM 2920
2018 Existing

PM Peak Hour
1/8/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	1174	19	6	1105	14	21	0	17	14	0	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	80		0	160		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.998			0.940				0.955
Flt Protected	0.950			0.950				0.973				0.968
Satd. Flow (prot)	1770	3532	0	1770	3532	0	0	1704	0	0	1722	0
Flt Permitted	0.950			0.950				0.846				0.833
Satd. Flow (perm)	1770	3532	0	1770	3532	0	0	1481	0	0	1482	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			2			58				58
Link Speed (mph)		30			30			30				30
Link Distance (ft)		3717			948			261				287
Travel Time (s)		84.5			21.5			5.9				6.5
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
Growth Factor	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%
Adj. Flow (vph)	9	1314	21	7	1237	16	24	0	19	16	0	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	9	1335	0	7	1253	0	0	43	0	0	24	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4				8
Permitted Phases							4			8		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	10.5	22.0		10.5	22.0		20.0	20.0		33.0	33.0	
Total Split (s)	15.0	105.0		15.0	105.0		30.0	30.0		30.0	30.0	
Total Split (%)	10.0%	70.0%		10.0%	70.0%		20.0%	20.0%		20.0%	20.0%	
Maximum Green (s)	9.5	99.5		9.5	99.5		24.0	24.0		24.0	24.0	
Yellow Time (s)	4.5	4.5		4.5	4.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	5.5	5.5		5.5	5.5			6.0			6.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		Max	Max		None	None	
Walk Time (s)		7.0			7.0					7.0	7.0	
Flash Dont Walk (s)		7.0			6.0					20.0	20.0	
Pedestrian Calls (#/hr)		0			0					0	0	
Act Effect Green (s)	6.4	111.9		6.2	111.8			24.0			24.0	
Actuated g/C Ratio	0.04	0.75		0.04	0.75			0.16			0.16	
v/c Ratio	0.12	0.51		0.10	0.48			0.15			0.08	
Control Delay	72.0	9.0		71.5	8.7			8.1			0.6	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	72.0	9.0		71.5	8.7			8.1			0.6	
LOS	E	A		E	A			A			A	
Approach Delay		9.5			9.0			8.1			0.6	
Approach LOS		A			A			A			A	

Intersection Summary

Area Type: Other
 Cycle Length: 150
 Actuated Cycle Length: 150
 Offset: 5 (3%), Referenced to phase 2:WBT and 6:EBT, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.51
 Intersection Signal Delay: 9.2
 Intersection Capacity Utilization 49.5%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 33: Willow St & FM 2920

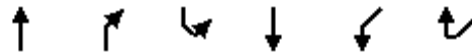




Lane Group	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Volume (vph)	166	264	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	180			0	0	0
Storage Lanes	1			0	0	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Fr						
Flt Protected	0.950					
Satd. Flow (prot)	1770	3539	0	0	0	0
Flt Permitted	0.950					
Satd. Flow (perm)	1770	3539	0	0	0	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		465	173		284	
Travel Time (s)		10.6	3.9		6.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	103%	103%	103%	103%	103%	103%
Adj. Flow (vph)	186	296	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	186	296	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	23.6%
ICU Level of Service	A
Analysis Period (min)	15



Lane Group	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations				↑↑	↘	
Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	0	0	0	3539	1863	0
Flt Permitted						
Satd. Flow (perm)	0	0	0	3539	1863	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	453			179	284	
Travel Time (s)	10.3			4.1	6.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	103%	103%	103%	103%	103%	103%
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	9		15	15		9
Sign Control	Stop			Free	Yield	

Intersection Summary

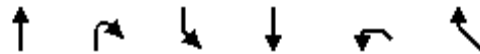
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	23.6%
Analysis Period (min)	15
	ICU Level of Service A



Lane Group	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations		↑↑			↘	
Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	0	3539	0	0	1863	0
Flt Permitted						
Satd. Flow (perm)	0	3539	0	0	1863	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		201	296		306	
Travel Time (s)		4.6	6.7		7.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	103%	103%	103%	103%	103%	103%
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Stop		Yield	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	23.3%
Analysis Period (min)	15
	ICU Level of Service A



Lane Group	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Volume (vph)	0	0	130	153	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	180		0	0
Storage Lanes		0	1		0	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt						
Flt Protected			0.950			
Satd. Flow (prot)	0	0	1770	3539	0	0
Flt Permitted			0.950			
Satd. Flow (perm)	0	0	1770	3539	0	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	204			261	306	
Travel Time (s)	4.6			5.9	7.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	103%	103%	103%	103%	103%	103%
Adj. Flow (vph)	0	0	146	171	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	146	171	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	23.3%
ICU Level of Service	A
Analysis Period (min)	15



Lane Group	SBL	SBR	NEL	NET	SWT	SWR
Lane Configurations						
Volume (vph)	30	119	48	1411	1017	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	175			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.892				0.998	
Flt Protected	0.990		0.950			
Satd. Flow (prot)	1645	0	1770	3539	3532	0
Flt Permitted	0.990		0.272			
Satd. Flow (perm)	1645	0	507	3539	3532	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	133				2	
Link Speed (mph)	30			30	30	
Link Distance (ft)	1322			554	2764	
Travel Time (s)	30.0			12.6	62.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	103%	103%	103%	103%	103%	103%
Adj. Flow (vph)	34	133	54	1580	1139	16
Shared Lane Traffic (%)						
Lane Group Flow (vph)	167	0	54	1580	1155	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane				Yes	Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	2	2	
Detector Template	Left		Left	Thru	Thru	
Leading Detector (ft)	20		20	100	100	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	20		20	6	6	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	NA		custom	NA	NA	
Protected Phases	4			6	2	
Permitted Phases			1			

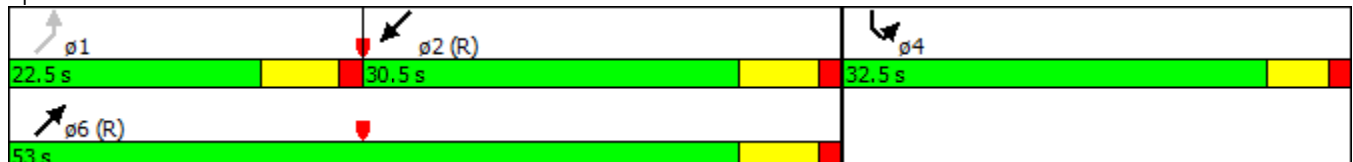


Lane Group	SBL	SBR	NEL	NET	SWT	SWR
Detector Phase	4		1	6	2	
Switch Phase						
Minimum Initial (s)	5.0		5.0	15.0	15.0	
Minimum Split (s)	32.5		22.5	22.5	30.5	
Total Split (s)	32.5		22.5	53.0	30.5	
Total Split (%)	38.0%		26.3%	62.0%	35.7%	
Maximum Green (s)	27.0		16.0	46.5	24.0	
Yellow Time (s)	4.0		5.0	5.0	5.0	
All-Red Time (s)	1.5		1.5	1.5	1.5	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	5.5		6.5	6.5	6.5	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	None		None	C-Max	C-Max	
Walk Time (s)	7.0				7.0	
Flash Dont Walk (s)	20.0				17.0	
Pedestrian Calls (#/hr)	0				0	
Act Effect Green (s)	8.3		16.0	65.2	45.3	
Actuated g/C Ratio	0.10		0.19	0.76	0.53	
v/c Ratio	0.60		0.57	0.59	0.62	
Control Delay	19.6		52.2	5.8	20.0	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	19.6		52.2	5.8	20.0	
LOS	B		D	A	C	
Approach Delay	19.6			7.4	20.0	
Approach LOS	B			A	C	

Intersection Summary

Area Type: Other
 Cycle Length: 85.5
 Actuated Cycle Length: 85.5
 Offset: 20 (23%), Referenced to phase 2:SWT and 6:NET, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.62
 Intersection Signal Delay: 13.0
 Intersection Capacity Utilization 59.4%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service B

Splits and Phases: 3: FM 2920 & Park Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1404	54	10	980	0	21	0	16	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994						0.942				
Flt Protected				0.950				0.972				
Satd. Flow (prot)	1863	3518	0	1770	3539	0	0	1706	0	0	1863	0
Flt Permitted				0.950				0.872				
Satd. Flow (perm)	1863	3518	0	1770	3539	0	0	1530	0	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7						168				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		2764			2506			534				543
Travel Time (s)		62.8			57.0			12.1				12.3
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
Growth Factor	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%
Adj. Flow (vph)	0	1572	60	11	1097	0	24	0	18	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1632	0	11	1097	0	0	42	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm		
Protected Phases	1	6		5	2			4				8
Permitted Phases							4			8		
Minimum Split (s)	11.0	26.0		11.0	26.0		21.5	21.5		21.5	21.5	
Total Split (s)	11.0	26.0		11.0	26.0		21.5	21.5		21.5	21.5	
Total Split (%)	18.8%	44.4%		18.8%	44.4%		36.8%	36.8%		36.8%	36.8%	
Maximum Green (s)	5.0	20.0		5.0	20.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			5.5			5.5	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Act Effect Green (s)		20.0		5.0	20.0			16.0				
Actuated g/C Ratio		0.34		0.09	0.34			0.27				
v/c Ratio		1.35		0.07	0.91			0.08				
Control Delay		186.0		25.9	31.5			0.3				
Queue Delay		0.0		0.0	0.0			0.0				
Total Delay		186.0		25.9	31.5			0.3				

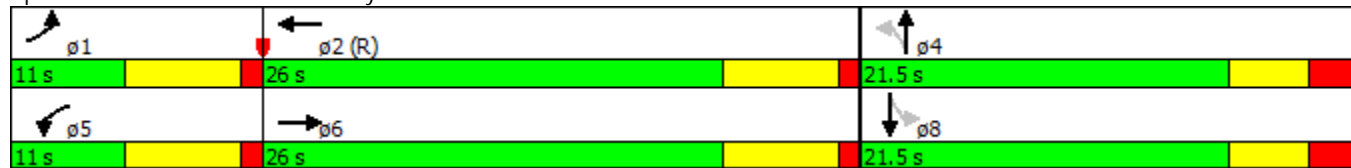


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		F		C	C			A				
Approach Delay		186.0			31.5			0.3				
Approach LOS		F			C			A				

Intersection Summary

Area Type:	Other
Cycle Length:	58.5
Actuated Cycle Length:	58.5
Offset:	0 (0%), Referenced to phase 2:WBT, Start of Green
Natural Cycle:	75
Control Type:	Pretimed
Maximum v/c Ratio:	1.35
Intersection Signal Delay:	121.7
Intersection LOS:	F
Intersection Capacity Utilization	55.5%
ICU Level of Service	B
Analysis Period (min)	15

Splits and Phases: 5: Cascade Bay & FM 2920





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	307	1194	0	0	633	36	270	86	35	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		80	0		0	0		0
Storage Lanes	1		0	0		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.86	0.86	1.00	1.00	0.86	0.86	0.91	0.91	0.95	1.00	1.00	1.00
Fr _t					0.992			0.980				
Fl _t Protected	0.950	0.999					0.950	0.974				
Satd. Flow (prot)	1522	4801	0	0	6357	0	1610	3236	0	0	0	0
Fl _t Permitted	0.950	0.940					0.950	0.974				
Satd. Flow (perm)	1522	4518	0	0	6357	0	1610	3236	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					8			13				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		270			350			173				201
Travel Time (s)		6.1			8.0			3.9				4.6
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
Growth Factor	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%
Adj. Flow (vph)	344	1337	0	0	709	40	302	96	39	0	0	0
Shared Lane Traffic (%)	10%						50%					
Lane Group Flow (vph)	310	1371	0	0	749	0	151	286	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2			2		1	2				
Detector Template	Left	Thru			Thru		Left	Thru				
Leading Detector (ft)	20	100			100		20	100				
Trailing Detector (ft)	0	0			0		0	0				
Detector 1 Position(ft)	0	0			0		0	0				
Detector 1 Size(ft)	20	6			6		20	6				
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex				
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0				
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		6			6			6				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	Prot	NA			NA		Perm	NA				
Protected Phases	1	1 2			2			3 4				
Permitted Phases							3 4					

Lane Group	ø3	ø4	ø5	ø6	ø7	ø8
Lane Configurations						
Volume (vph)						
Ideal Flow (vphpl)						
Storage Length (ft)						
Storage Lanes						
Taper Length (ft)						
Lane Util. Factor						
Frt						
Flt Protected						
Satd. Flow (prot)						
Flt Permitted						
Satd. Flow (perm)						
Right Turn on Red						
Satd. Flow (RTOR)						
Link Speed (mph)						
Link Distance (ft)						
Travel Time (s)						
Peak Hour Factor						
Growth Factor						
Adj. Flow (vph)						
Shared Lane Traffic (%)						
Lane Group Flow (vph)						
Enter Blocked Intersection						
Lane Alignment						
Median Width(ft)						
Link Offset(ft)						
Crosswalk Width(ft)						
Two way Left Turn Lane						
Headway Factor						
Turning Speed (mph)						
Number of Detectors						
Detector Template						
Leading Detector (ft)						
Trailing Detector (ft)						
Detector 1 Position(ft)						
Detector 1 Size(ft)						
Detector 1 Type						
Detector 1 Channel						
Detector 1 Extend (s)						
Detector 1 Queue (s)						
Detector 1 Delay (s)						
Detector 2 Position(ft)						
Detector 2 Size(ft)						
Detector 2 Type						
Detector 2 Channel						
Detector 2 Extend (s)						
Turn Type						
Protected Phases	3	4	5	6	7	8
Permitted Phases						

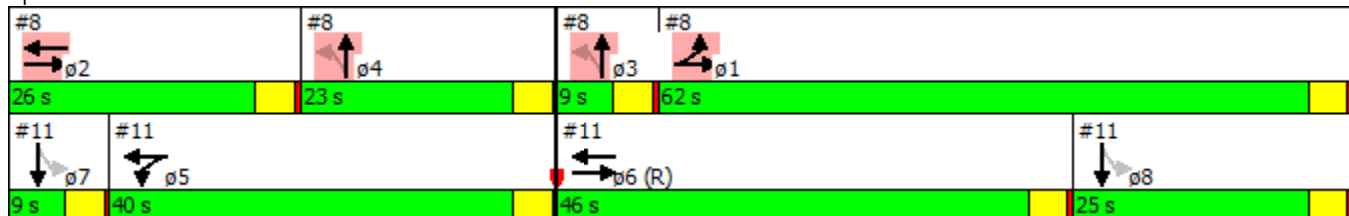


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	1 2			2		3 4	3 4				
Switch Phase												
Minimum Initial (s)	4.0				4.0							
Minimum Split (s)	8.0				20.0							
Total Split (s)	62.0				26.0							
Total Split (%)	51.7%				21.7%							
Maximum Green (s)	58.0				22.0							
Yellow Time (s)	3.5				3.5							
All-Red Time (s)	0.5				0.5							
Lost Time Adjust (s)	0.0				0.0							
Total Lost Time (s)	4.0				4.0							
Lead/Lag	Lag				Lead							
Lead-Lag Optimize?	Yes				Yes							
Vehicle Extension (s)	3.0				3.0							
Recall Mode	None				None							
Walk Time (s)					5.0							
Flash Dont Walk (s)					11.0							
Pedestrian Calls (#/hr)					0							
Act Effct Green (s)	60.4	83.1			22.7		24.9	24.9				
Actuated g/C Ratio	0.50	0.69			0.19		0.21	0.21				
v/c Ratio	0.40	0.47			0.62		0.45	0.42				
Control Delay	8.3	2.6			47.0		45.7	40.8				
Queue Delay	1.6	0.2			0.1		0.0	0.0				
Total Delay	9.9	2.8			47.1		45.7	40.8				
LOS	A	A			D		D	D				
Approach Delay		4.1			47.1			42.5				
Approach LOS		A			D			D				

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 9 (8%), Referenced to phase 6:EBWB, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.73
 Intersection Signal Delay: 21.2
 Intersection LOS: C
 Intersection Capacity Utilization 42.5%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 8: SH 249 NBFR & FM 2920



Lane Group	ø3	ø4	ø5	ø6	ø7	ø8
Detector Phase						
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	8.0	20.0	20.0	20.0
Total Split (s)	9.0	23.0	40.0	46.0	9.0	25.0
Total Split (%)	8%	19%	33%	38%	8%	21%
Maximum Green (s)	5.0	19.0	36.0	42.0	5.0	21.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)						
Total Lost Time (s)						
Lead/Lag	Lead	Lag	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	C-Max	None	None
Walk Time (s)	5.0	5.0		5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0		0	0	0
Act Effect Green (s)						
Actuated g/C Ratio						
v/c Ratio						
Control Delay						
Queue Delay						
Total Delay						
LOS						
Approach Delay						
Approach LOS						
Intersection Summary						

Lane Group	ø1	ø2	ø3	ø4	ø7	ø8
Lane Configurations						
Volume (vph)						
Ideal Flow (vphpl)						
Lane Util. Factor						
Frt						
Flt Protected						
Satd. Flow (prot)						
Flt Permitted						
Satd. Flow (perm)						
Right Turn on Red						
Satd. Flow (RTOR)						
Link Speed (mph)						
Link Distance (ft)						
Travel Time (s)						
Peak Hour Factor						
Growth Factor						
Adj. Flow (vph)						
Shared Lane Traffic (%)						
Lane Group Flow (vph)						
Enter Blocked Intersection						
Lane Alignment						
Median Width(ft)						
Link Offset(ft)						
Crosswalk Width(ft)						
Two way Left Turn Lane						
Headway Factor						
Turning Speed (mph)						
Number of Detectors						
Detector Template						
Leading Detector (ft)						
Trailing Detector (ft)						
Detector 1 Position(ft)						
Detector 1 Size(ft)						
Detector 1 Type						
Detector 1 Channel						
Detector 1 Extend (s)						
Detector 1 Queue (s)						
Detector 1 Delay (s)						
Detector 2 Position(ft)						
Detector 2 Size(ft)						
Detector 2 Type						
Detector 2 Channel						
Detector 2 Extend (s)						
Turn Type						
Protected Phases	1	2	3	4	7	8
Permitted Phases						
Detector Phase						
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0

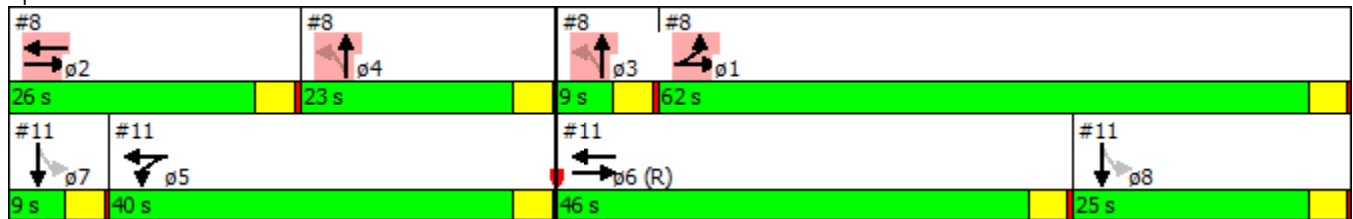


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)		20.0		8.0								
Total Split (s)		46.0		40.0								
Total Split (%)		38.3%		33.3%								
Maximum Green (s)		42.0		36.0								
Yellow Time (s)		3.5		3.5								
All-Red Time (s)		0.5		0.5								
Lost Time Adjust (s)		0.0		0.0								
Total Lost Time (s)		4.0		4.0								
Lead/Lag		Lead		Lag								
Lead-Lag Optimize?		Yes		Yes								
Vehicle Extension (s)		3.0		3.0								
Recall Mode		C-Max		None								
Walk Time (s)		5.0										
Flash Dont Walk (s)		11.0										
Pedestrian Calls (#/hr)		0										
Act Effect Green (s)		45.7		32.6	78.3					29.7	29.7	
Actuated g/C Ratio		0.38		0.27	0.65					0.25	0.25	
v/c Ratio		0.62		0.34	0.38					0.73	0.59	
Control Delay		30.6		7.1	3.0					53.1	25.7	
Queue Delay		0.0		1.1	0.2					0.0	0.0	
Total Delay		30.6		8.3	3.3					53.1	25.7	
LOS		C		A	A					D	C	
Approach Delay		30.6			4.0							35.3
Approach LOS		C			A							D

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 9 (8%), Referenced to phase 6:EBWB, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.73
 Intersection Signal Delay: 23.7
 Intersection Capacity Utilization 42.5%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service A

Splits and Phases: 11: SH 249 SBFR & FM 2920



Lane Group	ø1	ø2	ø3	ø4	ø7	ø8
Minimum Split (s)	8.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	62.0	26.0	9.0	23.0	9.0	25.0
Total Split (%)	52%	22%	8%	19%	8%	21%
Maximum Green (s)	58.0	22.0	5.0	19.0	5.0	21.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)						
Total Lost Time (s)						
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None
Walk Time (s)		5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)		11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0	0	0	0
Act Effct Green (s)						
Actuated g/C Ratio						
v/c Ratio						
Control Delay						
Queue Delay						
Total Delay						
LOS						
Approach Delay						
Approach LOS						
Intersection Summary						



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↔	↗	↘	↔		↘	↔	↗	↘	↔	↗
Volume (vph)	60	793	377	216	565	140	93	186	4	39	76	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	110		0	180		250	180		0
Storage Lanes	1		1	1		0	2		1	2		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.91	0.91	1.00	1.00	0.91	0.91	0.97	0.91	1.00	0.97	0.91	0.91
Frt			0.850		0.970				0.850		0.945	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1610	3390	1583	1770	4933	0	3433	5085	1583	3433	4806	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1610	3390	1583	1770	4933	0	3433	5085	1583	3433	4806	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			422		66				96		49	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		585			617			496			562	
Travel Time (s)		13.3			14.0			11.3			12.8	
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
Growth Factor	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%
Adj. Flow (vph)	67	888	422	242	633	157	104	208	4	44	85	49
Shared Lane Traffic (%)	10%											
Lane Group Flow (vph)	60	895	422	242	790	0	104	208	4	44	134	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Split	NA	Perm	Split	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	3	3		4	4		5	2		1	6	
Permitted Phases			3						2			

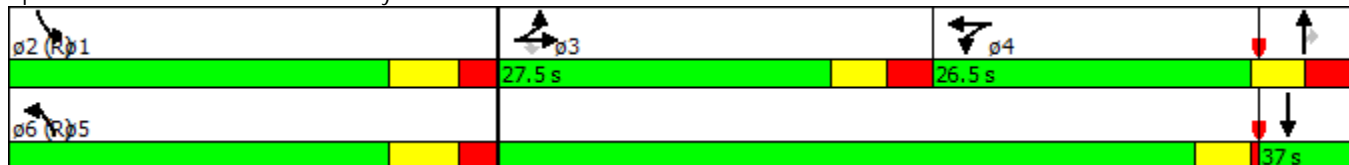


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	3	3	3	4	4		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		4.0	5.0	5.0	4.0	5.0	
Minimum Split (s)	41.5	41.5	41.5	40.5	40.5		8.0	36.0	36.0	8.0	40.0	
Total Split (s)	27.5	27.5	27.5	26.5	26.5		-6.0	37.0	37.0	-6.0	37.0	
Total Split (%)	32.4%	32.4%	32.4%	31.2%	31.2%		-7.1%	43.5%	43.5%	-7.1%	43.5%	
Maximum Green (s)	21.0	21.0	21.0	20.0	20.0		-10.0	30.0	30.0	-10.0	30.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	4.5	4.5	3.5	4.5	
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0		0.5	2.5	2.5	0.5	2.5	
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)	6.5	6.5	6.5	6.5	6.5		4.0	7.0	7.0	4.0	7.0	
Lead/Lag	Lead	Lead	Lead	Lag	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	None	C-Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0			7.0	7.0		7.0	
Flash Dont Walk (s)	28.0	28.0	28.0	27.0	27.0			22.0	22.0		26.0	
Pedestrian Calls (#/hr)	0	0	0	0	0			0	0		0	
Act Effect Green (s)	21.0	21.0	21.0	18.8	18.8		12.2	12.5	12.5	8.6	8.9	
Actuated g/C Ratio	0.25	0.25	0.25	0.22	0.22		0.14	0.15	0.15	0.10	0.10	
v/c Ratio	0.15	1.07	0.60	0.62	0.69		0.21	0.28	0.01	0.13	0.24	
Control Delay	26.3	83.9	6.8	37.1	31.1		34.8	33.5	0.0	36.5	23.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	26.3	83.9	6.8	37.1	31.1		34.8	33.5	0.0	36.5	23.3	
LOS	C	F	A	D	C		C	C	A	D	C	
Approach Delay		57.8			32.5			33.5			26.6	
Approach LOS		E			C			C			C	

Intersection Summary

Area Type: Other
 Cycle Length: 85
 Actuated Cycle Length: 85
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 130
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.07
 Intersection Signal Delay: 44.2
 Intersection LOS: D
 Intersection Capacity Utilization 64.5%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 14: Tomball Pkwy & FM 2920





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6		5	2		8	8		4		4
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0		5.0	5.0		5.0		5.0
Minimum Split (s)	21.7	22.7		21.7	27.7		27.5	27.5		27.5		27.5
Total Split (s)	15.0	55.0		15.0	55.0		20.0	20.0		20.0		20.0
Total Split (%)	13.6%	50.0%		13.6%	50.0%		18.2%	18.2%		18.2%		18.2%
Maximum Green (s)	9.3	49.3		9.3	49.3		14.5	14.5		14.5		14.5
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5		3.5
All-Red Time (s)	2.2	2.2		2.2	2.2		2.0	2.0		2.0		2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0		0.0
Total Lost Time (s)	5.7	5.7		5.7	5.7		5.5	5.5		5.5		5.5
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0		3.0
Recall Mode	None	C-Max		Max	C-Max		None	None		None		None
Walk Time (s)		5.0			5.0		5.0	5.0		5.0		5.0
Flash Dont Walk (s)		12.0			17.0		17.0	17.0		17.0		17.0
Pedestrian Calls (#/hr)		0			0		0	0		0		0
Act Effect Green (s)	7.5	49.3		39.7	88.4		5.5	5.5		6.3		6.3
Actuated g/C Ratio	0.07	0.45		0.36	0.80		0.05	0.05		0.06		0.06
v/c Ratio	0.26	0.66		0.00	0.32		0.00	0.00		0.11		0.09
Control Delay	53.4	26.3		29.3	6.3		0.0	0.0		51.1		0.8
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0		0.0
Total Delay	53.4	26.3		29.3	6.3		0.0	0.0		51.1		0.8
LOS	D	C		C	A		A	A		D		A
Approach Delay		27.1			6.3		0.0	0.0				
Approach LOS		C			A		A	A				

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 38 (35%), Referenced to phase 2:WBT and 6:EBT, Start of Green
 Natural Cycle: 115
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.66
 Intersection Signal Delay: 17.6
 Intersection Capacity Utilization 45.5%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service A

Splits and Phases: 17: Buvinghausen Lane & FM 2920





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6		5	2		3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	10.5	25.5		10.5	25.5		11.1	36.1		11.1	36.1	
Total Split (s)	15.0	42.0		15.0	42.0		15.0	16.0		17.0	18.0	
Total Split (%)	16.7%	46.7%		16.7%	46.7%		16.7%	17.8%		18.9%	20.0%	
Maximum Green (s)	9.5	36.5		9.5	36.5		8.9	9.9		10.9	11.9	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.6	3.6		3.6	3.6	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.5	5.5		5.5	5.5		6.1	6.1		6.1	6.1	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		5.0			5.0			5.0			5.0	
Flash Dont Walk (s)		15.0			15.0			25.0			25.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	7.7	62.7		5.8	56.5		6.2	7.0		7.6	10.7	
Actuated g/C Ratio	0.09	0.70		0.06	0.63		0.07	0.08		0.08	0.12	
v/c Ratio	0.28	0.41		0.03	0.42		0.09	0.15		0.26	0.45	
Control Delay	42.7	9.0		45.3	9.0		40.5	36.2		42.2	20.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	42.7	9.0		45.3	9.0		40.5	36.2		42.2	20.9	
LOS	D	A		D	A		D	D		D	C	
Approach Delay		10.4			9.1			37.7			26.0	
Approach LOS		B			A			D			C	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 48 (53%), Referenced to phase 2:WBT and 6:EBT, Start of Green
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.45
 Intersection Signal Delay: 11.4
 Intersection LOS: B
 Intersection Capacity Utilization 50.8%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 20: Ella Street & FM 2920





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	19	858	12	79	826	19	22	21	47	28	40	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	65		0	60		0	0		50	0		50
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.997				0.850			0.850
Flt Protected	0.950			0.950				0.975			0.980	
Satd. Flow (prot)	1770	3532	0	1770	3529	0	0	1816	1583	0	1825	1583
Flt Permitted	0.952			0.234				0.252			0.845	
Satd. Flow (perm)	1773	3532	0	436	3529	0	0	469	1583	0	1574	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			3				109			109
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1265			442			534			293	
Travel Time (s)		28.8			10.0			12.1			6.7	
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
Growth Factor	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%
Adj. Flow (vph)	21	961	13	88	925	21	25	24	53	31	45	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	21	974	0	88	946	0	0	49	53	0	76	40
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	custom	NA		custom	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		6			2			3			4	
Permitted Phases	1			5			3		3	4		4



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6		5	2		3	3	3	4	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	15.0	40.0		17.0	42.0		16.0	16.0	16.0	17.0	17.0	17.0
Total Split (%)	16.7%	44.4%		18.9%	46.7%		17.8%	17.8%	17.8%	18.9%	18.9%	18.9%
Maximum Green (s)	11.0	36.0		13.0	38.0		12.0	12.0	12.0	13.0	13.0	13.0
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5	0.5	0.5	0.5	0.5
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)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max		Max	Max	Max	None	None	None
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effect Green (s)	8.2	37.4		17.1	52.7		12.0	12.0	12.0	9.5	9.5	9.5
Actuated g/C Ratio	0.09	0.42		0.19	0.59		0.13	0.13	0.13	0.11	0.11	0.11
v/c Ratio	0.13	0.66		1.07	0.46		0.79	0.17	0.17	0.46	0.15	0.15
Control Delay	41.4	24.2		163.0	10.6		107.7	1.6	1.6	46.1	1.2	1.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.4	24.2		163.0	10.7		107.7	1.6	1.6	46.1	1.2	1.2
LOS	D	C		F	B		F	A	A	D	A	A
Approach Delay		24.5			23.6			52.6			30.6	
Approach LOS		C			C			D			C	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 88 (98%), Referenced to phase 2:WBT and 6:EBT, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.07
 Intersection Signal Delay: 25.7
 Intersection LOS: C
 Intersection Capacity Utilization 49.8%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 23: Holderrieth Blvd & FM 2920





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↖	↑↑			↕			↕	
Volume (vph)	0	919	8	27	912	0	11	0	31	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	20		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999						0.899				
Flt Protected				0.950				0.987				
Satd. Flow (prot)	0	3536	0	1770	3539	0	0	1653	0	0	1863	0
Flt Permitted				0.950				0.947				
Satd. Flow (perm)	0	3536	0	1770	3539	0	0	1586	0	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1						104				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		442			131			513				186
Travel Time (s)		10.0			3.0			11.7				4.2
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
Growth Factor	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%
Adj. Flow (vph)	0	1029	9	30	1021	0	12	0	35	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1038	0	30	1021	0	0	47	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2		1	2		1	2		1		2
Detector Template		Thru		Left	Thru		Left	Thru		Left		Thru
Leading Detector (ft)		100		20	100		20	100		20		100
Trailing Detector (ft)		0		0	0		0	0		0		0
Detector 1 Position(ft)		0		0	0		0	0		0		0
Detector 1 Size(ft)		6		20	6		20	6		20		6
Detector 1 Type		Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0		0.0	0.0		0.0		0.0
Detector 1 Queue (s)		0.0		0.0	0.0		0.0	0.0		0.0		0.0
Detector 1 Delay (s)		0.0		0.0	0.0		0.0	0.0		0.0		0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type		NA		Prot	NA		Perm	NA		Perm		
Protected Phases		6		4	2 4			3				3
Permitted Phases							3	3		3		

Lane Group	ø2
Lane Configurations	
Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Growth Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	2
Permitted Phases	

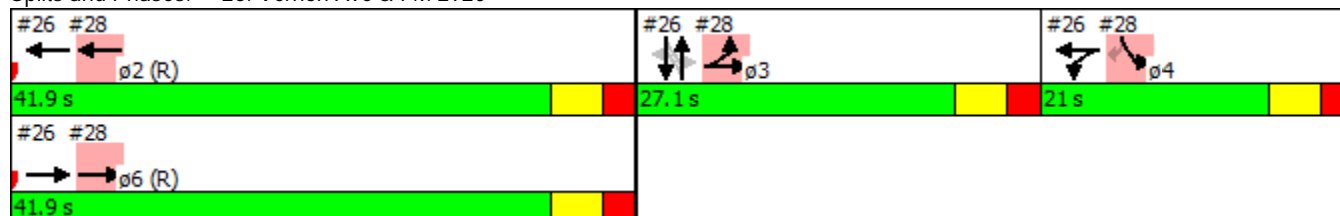


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase		6		4	2 4		3	3		3	3	
Switch Phase												
Minimum Initial (s)		15.0		5.0			5.0	5.0		5.0	5.0	
Minimum Split (s)		24.8		20.8			26.8	26.8		26.8	26.8	
Total Split (s)		41.9		21.0			27.1	27.1		27.1	27.1	
Total Split (%)		46.6%		23.3%			30.1%	30.1%		30.1%	30.1%	
Maximum Green (s)		36.1		15.2			21.3	21.3		21.3	21.3	
Yellow Time (s)		3.5		3.5			3.5	3.5		3.5	3.5	
All-Red Time (s)		2.3		2.3			2.3	2.3		2.3	2.3	
Lost Time Adjust (s)		0.0		0.0				0.0			0.0	
Total Lost Time (s)		5.8		5.8				5.8			5.8	
Lead/Lag				Lag			Lead	Lead		Lead	Lead	
Lead-Lag Optimize?				Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)		3.0		3.0			3.0	3.0		3.0	3.0	
Recall Mode		C-Max		None			Max	Max		Max	Max	
Walk Time (s)		7.0		5.0			5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		12.0		10.0			16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)		0		0			0	0		0	0	
Act Effct Green (s)		36.1		15.2	57.1			21.3				
Actuated g/C Ratio		0.40		0.17	0.63			0.24				
v/c Ratio		0.73		0.10	0.45			0.10				
Control Delay		6.7		51.1	1.6			0.5				
Queue Delay		0.0		3.5	0.8			0.0				
Total Delay		6.7		54.6	2.5			0.5				
LOS		A		D	A			A				
Approach Delay		6.7			4.0			0.5				
Approach LOS		A			A			A				

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.77
 Intersection Signal Delay: 5.2
 Intersection LOS: A
 Intersection Capacity Utilization 40.3%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 26: Vernon Ave & FM 2920



Lane Group	ø2
Detector Phase	
Switch Phase	
Minimum Initial (s)	15.0
Minimum Split (s)	22.8
Total Split (s)	41.9
Total Split (%)	47%
Maximum Green (s)	36.1
Yellow Time (s)	3.5
All-Red Time (s)	2.3
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	C-Max
Walk Time (s)	7.0
Flash Dont Walk (s)	10.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	ø6
Lane Configurations							
Volume (vph)	32	929	902	64	116	42	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	20			0	0	90	
Storage Lanes	1			0	1	1	
Taper Length (ft)	25				25		
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00	
Frt			0.990			0.850	
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1770	3539	3504	0	1770	1583	
Flt Permitted	0.950				0.950		
Satd. Flow (perm)	1770	3539	3504	0	1770	1583	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)			10			47	
Link Speed (mph)		30	30		30		
Link Distance (ft)		131	272		349		
Travel Time (s)		3.0	6.2		7.9		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Growth Factor	103%	103%	103%	103%	103%	103%	
Adj. Flow (vph)	36	1040	1010	72	130	47	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	36	1040	1082	0	130	47	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Left	Left	Right	Left	Right	
Median Width(ft)		12	12		12		
Link Offset(ft)		0	0		0		
Crosswalk Width(ft)		16	16		16		
Two way Left Turn Lane		Yes	Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15			9	15	9	
Number of Detectors	1	2	2		1	1	
Detector Template	Left	Thru	Thru		Left	Right	
Leading Detector (ft)	20	100	100		20	20	
Trailing Detector (ft)	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0		0	0	
Detector 1 Size(ft)	20	6	6		20	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94	94				
Detector 2 Size(ft)		6	6				
Detector 2 Type		Cl+Ex	Cl+Ex				
Detector 2 Channel							
Detector 2 Extend (s)		0.0	0.0				
Turn Type	Prot	NA	NA		NA	Perm	
Protected Phases	3	3 6	2		4		6
Permitted Phases						4	

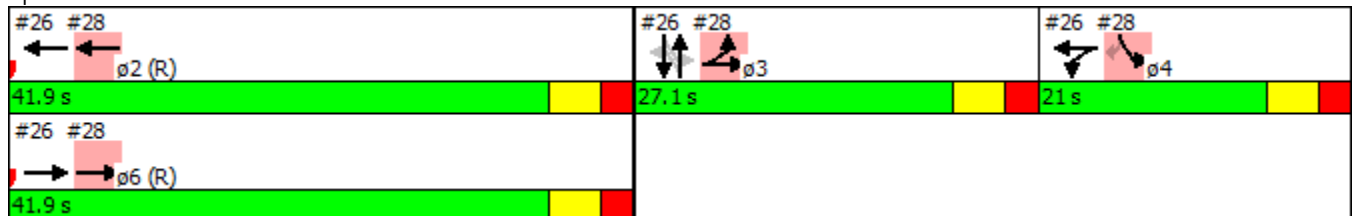


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	ø6
Detector Phase	3	3 6	2		4	4	
Switch Phase							
Minimum Initial (s)	5.0		15.0		5.0	5.0	15.0
Minimum Split (s)	26.8		22.8		20.8	20.8	24.8
Total Split (s)	27.1		41.9		21.0	21.0	41.9
Total Split (%)	30.1%		46.6%		23.3%	23.3%	47%
Maximum Green (s)	21.3		36.1		15.2	15.2	36.1
Yellow Time (s)	3.5		3.5		3.5	3.5	3.5
All-Red Time (s)	2.3		2.3		2.3	2.3	2.3
Lost Time Adjust (s)	0.0		0.0		0.0	0.0	
Total Lost Time (s)	5.8		5.8		5.8	5.8	
Lead/Lag	Lead				Lag	Lag	
Lead-Lag Optimize?	Yes				Yes	Yes	
Vehicle Extension (s)	3.0		3.0		3.0	3.0	3.0
Recall Mode	Max		C-Max		None	None	C-Max
Walk Time (s)	5.0		7.0		5.0	5.0	7.0
Flash Dont Walk (s)	16.0		10.0		10.0	10.0	12.0
Pedestrian Calls (#/hr)	0		0		0	0	0
Act Effect Green (s)	21.3	63.2	36.1		15.2	15.2	
Actuated g/C Ratio	0.24	0.70	0.40		0.17	0.17	
v/c Ratio	0.09	0.42	0.77		0.44	0.15	
Control Delay	22.4	0.5	9.1		38.8	11.4	
Queue Delay	5.1	0.6	0.0		0.0	0.0	
Total Delay	27.5	1.1	9.1		38.8	11.4	
LOS	C	A	A		D	B	
Approach Delay		2.0	9.1		31.5		
Approach LOS		A	A		C		

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.77
 Intersection Signal Delay: 7.5
 Intersection Capacity Utilization 44.1%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 28: FM 2920 & Baker Dr





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕	↕			↕↕
Volume (vph)	3	838	25	35	933	10	32	37	57	21	20	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		80	0		0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.996			0.998				0.850			0.965
Flt Protected					0.998			0.977				0.981
Satd. Flow (prot)	0	3525	0	0	3525	0	0	1820	1583	0	1763	0
Flt Permitted		0.952			0.870			0.610				0.863
Satd. Flow (perm)	0	3356	0	0	3073	0	0	1136	1583	0	1551	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			1				107			16
Link Speed (mph)		30			30			30				30
Link Distance (ft)		1317			3717			353				398
Travel Time (s)		29.9			84.5			8.0				9.0
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
Growth Factor	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%
Adj. Flow (vph)	3	938	28	39	1045	11	36	41	64	24	22	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	969	0	0	1095	0	0	77	64	0	62	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1		2
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left		Thru
Leading Detector (ft)	20	100		20	100		20	100	20	20		100
Trailing Detector (ft)	0	0		0	0		0	0	0	0		0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0		0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20		6
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0		0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0		0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0		0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA		Perm	NA		Perm	NA	custom	Perm		NA
Protected Phases		2			6			3				4
Permitted Phases	2			6			3		2	4		

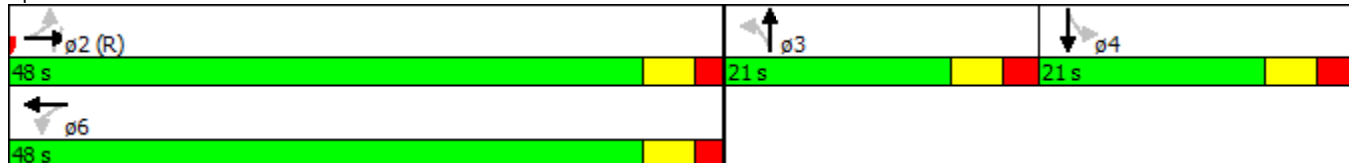


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	2	2		6	6		3	3	2	4	4	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		5.0	5.0	20.0	5.0	5.0	
Minimum Split (s)	25.5	25.5		25.5	25.5		28.9	28.9	25.5	28.9	28.9	
Total Split (s)	48.0	48.0		48.0	48.0		21.0	21.0	48.0	21.0	21.0	
Total Split (%)	53.3%	53.3%		53.3%	53.3%		23.3%	23.3%	53.3%	23.3%	23.3%	
Maximum Green (s)	42.5	42.5		42.5	42.5		15.1	15.1	42.5	15.1	15.1	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.4	2.4	2.0	2.4	2.4	
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	
Total Lost Time (s)		5.5			5.5			5.9	5.5		5.9	
Lead/Lag							Lead	Lead		Lag	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max		Max	Max		Max	Max	C-Max	Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	8.0	8.0		8.0	8.0		16.0	16.0	8.0	16.0	16.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effct Green (s)		42.5			42.5			15.1	42.5		15.1	
Actuated g/C Ratio		0.47			0.47			0.17	0.47		0.17	
v/c Ratio		0.61			0.75			0.41	0.08		0.23	
Control Delay		10.0			23.6			40.8	1.1		28.1	
Queue Delay		0.0			0.0			0.0	0.0		0.0	
Total Delay		10.0			23.6			40.8	1.1		28.1	
LOS		A			C			D	A		C	
Approach Delay		10.0			23.6			22.8			28.1	
Approach LOS		A			C			C			C	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 47 (52%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 105
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.75
 Intersection Signal Delay: 17.8
 Intersection Capacity Utilization 72.5%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service C

Splits and Phases: 30: Pine St & FM 2920





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	923	110	95	954	9	40	1	65	16	15	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	80		0	160		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.984			0.999			0.917			0.968	
Flt Protected	0.950			0.950				0.981			0.981	
Satd. Flow (prot)	1770	3483	0	1770	3536	0	0	1676	0	0	1769	0
Flt Permitted	0.950			0.950				0.872			0.877	
Satd. Flow (perm)	1770	3483	0	1770	3536	0	0	1489	0	0	1581	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15			1			61			11	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		3717			948			261			287	
Travel Time (s)		84.5			21.5			5.9			6.5	
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
Growth Factor	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%
Adj. Flow (vph)	4	1033	123	106	1068	10	45	1	73	18	17	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	4	1156	0	106	1078	0	0	119	0	0	46	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		

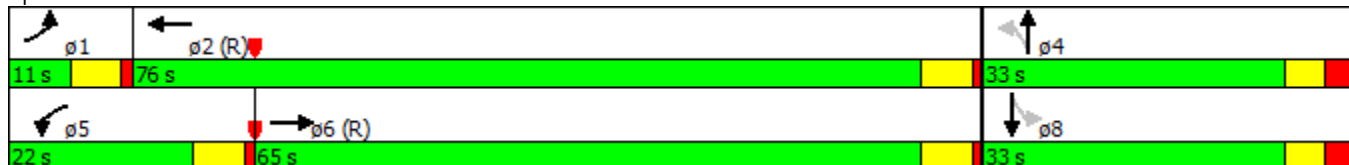


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	10.5	22.0		10.5	22.0		20.0	20.0		33.0	33.0	
Total Split (s)	11.0	65.0		22.0	76.0		33.0	33.0		33.0	33.0	
Total Split (%)	9.2%	54.2%		18.3%	63.3%		27.5%	27.5%		27.5%	27.5%	
Maximum Green (s)	5.5	59.5		16.5	70.5		27.0	27.0		27.0	27.0	
Yellow Time (s)	4.5	4.5		4.5	4.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.5	5.5		5.5	5.5		6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		Max	Max		None	None	
Walk Time (s)		7.0			7.0					7.0	7.0	
Flash Dont Walk (s)		7.0			6.0					20.0	20.0	
Pedestrian Calls (#/hr)		0			0					0	0	
Act Effect Green (s)	5.5	63.7		12.3	79.3			27.0			27.0	
Actuated g/C Ratio	0.05	0.53		0.10	0.66			0.22			0.22	
v/c Ratio	0.05	0.62		0.59	0.46			0.31			0.13	
Control Delay	56.2	21.8		63.7	11.2			22.2			31.1	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	56.2	21.8		63.7	11.2			22.2			31.1	
LOS	E	C		E	B			C			C	
Approach Delay		22.0			15.9			22.2			31.1	
Approach LOS		C			B			C			C	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 5 (4%), Referenced to phase 2:WBT and 6:EBT, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.62
 Intersection Signal Delay: 19.3
 Intersection LOS: B
 Intersection Capacity Utilization 57.7%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 33: Willow St & FM 2920

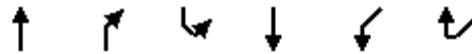




Lane Group	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Volume (vph)	54	86	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	180			0	0	0
Storage Lanes	1			0	0	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Fr						
Flt Protected	0.950					
Satd. Flow (prot)	1770	3539	0	0	0	0
Flt Permitted	0.950					
Satd. Flow (perm)	1770	3539	0	0	0	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		465	173		284	
Travel Time (s)		10.6	3.9		6.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	103%	103%	103%	103%	103%	103%
Adj. Flow (vph)	60	96	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	60	96	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	21.7%
ICU Level of Service	A
Analysis Period (min)	15



Lane Group	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations				↑↑	↘	
Volume (vph)	0	0	0	0	54	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	0	0	0	3539	1770	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	0	0	3539	1770	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	453			179	284	
Travel Time (s)	10.3			4.1	6.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	103%	103%	103%	103%	103%	103%
Adj. Flow (vph)	0	0	0	0	60	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	60	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Stop			Free	Yield	

Intersection Summary

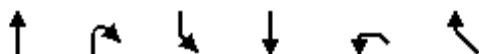
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	21.7%
Analysis Period (min)	15
	ICU Level of Service A



Lane Group	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations		↑↑			↘	
Volume (vph)	0	0	0	0	130	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	0	3539	0	0	1770	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	3539	0	0	1770	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		201	296		306	
Travel Time (s)		4.6	6.7		7.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	103%	103%	103%	103%	103%	103%
Adj. Flow (vph)	0	0	0	0	146	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	146	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Stop		Yield	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	23.3%
Analysis Period (min)	15
	ICU Level of Service A



Lane Group	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Volume (vph)	0	0	130	94	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	180		0	0
Storage Lanes		0	1		0	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt						
Flt Protected			0.950			
Satd. Flow (prot)	0	0	1770	3539	0	0
Flt Permitted			0.950			
Satd. Flow (perm)	0	0	1770	3539	0	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	204			261	306	
Travel Time (s)	4.6			5.9	7.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	103%	103%	103%	103%	103%	103%
Adj. Flow (vph)	0	0	146	105	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	146	105	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	23.3%
	ICU Level of Service A
Analysis Period (min)	15



Lane Group	SBL	SBR	NEL	NET	SWT	SWR
Lane Configurations						
Volume (vph)	44	84	146	1259	1781	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	175			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.911				0.995	
Flt Protected	0.983		0.950			
Satd. Flow (prot)	1668	0	1770	3539	3522	0
Flt Permitted	0.983		0.217			
Satd. Flow (perm)	1668	0	404	3539	3522	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	81				5	
Link Speed (mph)	30			30	30	
Link Distance (ft)	1322			554	2764	
Travel Time (s)	30.0			12.6	62.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	103%	103%	103%	103%	103%	103%
Adj. Flow (vph)	49	94	163	1410	1994	62
Shared Lane Traffic (%)						
Lane Group Flow (vph)	143	0	163	1410	2056	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane				Yes	Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	2	2	
Detector Template	Left		Left	Thru	Thru	
Leading Detector (ft)	20		20	100	100	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	20		20	6	6	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	NA		custom	NA	NA	
Protected Phases	4			6	2	
Permitted Phases			1			

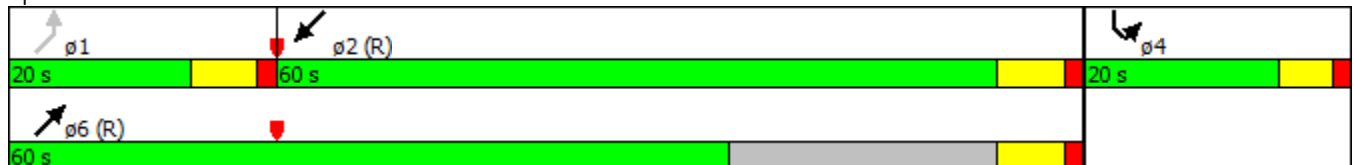


Lane Group	SBL	SBR	NEL	NET	SWT	SWR
Detector Phase	4		1	6	2	
Switch Phase						
Minimum Initial (s)	5.0		5.0	15.0	15.0	
Minimum Split (s)	32.5		22.5	22.5	30.5	
Total Split (s)	20.0		20.0	60.0	60.0	
Total Split (%)	20.0%		20.0%	60.0%	60.0%	
Maximum Green (s)	14.5		13.5	53.5	53.5	
Yellow Time (s)	4.0		5.0	5.0	5.0	
All-Red Time (s)	1.5		1.5	1.5	1.5	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	5.5		6.5	6.5	6.5	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	None		None	C-Max	C-Max	
Walk Time (s)	7.0				7.0	
Flash Dont Walk (s)	20.0				17.0	
Pedestrian Calls (#/hr)	0				0	
Act Effect Green (s)	9.6		18.4	78.4	53.5	
Actuated g/C Ratio	0.10		0.18	0.78	0.54	
v/c Ratio	0.62		2.20	0.51	1.09	
Control Delay	31.3		606.0	5.0	74.2	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	31.3		606.0	5.0	74.2	
LOS	C		F	A	E	
Approach Delay	31.3			67.3	74.2	
Approach LOS	C			E	E	

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 20 (20%), Referenced to phase 2:SWT and 6:NET, Start of Green
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 2.20
 Intersection Signal Delay: 69.7
 Intersection LOS: E
 Intersection Capacity Utilization 84.1%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 3: FM 2920 & Park Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1232	58	11	1641	0	69	0	31	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t		0.993						0.958				
Fl _t Protected				0.950				0.967				
Satd. Flow (prot)	1863	3514	0	1770	3539	0	0	1726	0	0	1863	0
Fl _t Permitted				0.950				0.794				
Satd. Flow (perm)	1863	3514	0	1770	3539	0	0	1417	0	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6						149				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		2764			2506			534				543
Travel Time (s)		62.8			57.0			12.1				12.3
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
Growth Factor	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%
Adj. Flow (vph)	0	1379	65	12	1837	0	77	0	35	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1444	0	12	1837	0	0	112	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm		
Protected Phases	1	6		5	2			4				8
Permitted Phases							4			8		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	20.0		5.0	20.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	26.0		11.0	26.0		21.5	21.5		21.5	21.5	
Total Split (s)	10.0	60.0		25.0	60.0		25.0	25.0		10.0	10.0	
Total Split (%)	9.1%	54.5%		22.7%	54.5%		22.7%	22.7%		9.1%	9.1%	
Maximum Green (s)	4.0	54.0		19.0	54.0		19.5	19.5		4.5	4.5	
Yellow Time (s)	5.0	5.0		5.0	5.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		5.5	5.5		5.5	5.5	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	C-Max		None	None		None	None	
Act Effect Green (s)		89.6		6.4	92.3			6.2				
Actuated g/C Ratio		0.81		0.06	0.84			0.06				
v/c Ratio		0.50		0.12	0.62			0.51				
Control Delay		4.7		51.2	4.1			11.7				
Queue Delay		0.0		0.0	0.0			0.0				
Total Delay		4.7		51.2	4.1			11.7				
LOS		A		D	A			B				
Approach Delay		4.7			4.4			11.7				
Approach LOS		A			A			B				

Intersection Summary

Area Type:	Other
Cycle Length:	110
Actuated Cycle Length:	110
Offset:	0 (0%), Referenced to phase 2:WBT, Start of Green
Natural Cycle:	80
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.62
Intersection Signal Delay:	4.8
Intersection LOS:	A
Intersection Capacity Utilization:	62.2%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 5: Cascade Bay & FM 2920





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	470	1064	0	0	1397	68	483	264	58	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		80	0		0	0		0
Storage Lanes	1		0	0		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.86	0.86	1.00	1.00	0.86	0.86	0.91	0.91	0.95	1.00	1.00	1.00
Frt					0.993			0.984				
Flt Protected	0.950	0.996					0.950	0.980				
Satd. Flow (prot)	1522	4787	0	0	6363	0	1610	3269	0	0	0	0
Flt Permitted	0.950	0.673					0.950	0.980				
Satd. Flow (perm)	1522	3234	0	0	6363	0	1610	3269	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					7			10				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		270			350			173				201
Travel Time (s)		6.1			8.0			3.9				4.6
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
Growth Factor	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%
Adj. Flow (vph)	526	1191	0	0	1564	76	541	296	65	0	0	0
Shared Lane Traffic (%)	21%						45%					
Lane Group Flow (vph)	416	1301	0	0	1640	0	298	604	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2			2		1	2				
Detector Template	Left	Thru			Thru		Left	Thru				
Leading Detector (ft)	20	100			100		20	100				
Trailing Detector (ft)	0	0			0		0	0				
Detector 1 Position(ft)	0	0			0		0	0				
Detector 1 Size(ft)	20	6			6		20	6				
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex				
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0				
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		6			6			6				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	Prot	NA			NA		Perm	NA				
Protected Phases	1	1 2			2			3 4				
Permitted Phases							3 4					

Lane Group	ø3	ø4	ø5	ø6	ø7	ø8
Lane Configurations						
Volume (vph)						
Ideal Flow (vphpl)						
Storage Length (ft)						
Storage Lanes						
Taper Length (ft)						
Lane Util. Factor						
Frt						
Flt Protected						
Satd. Flow (prot)						
Flt Permitted						
Satd. Flow (perm)						
Right Turn on Red						
Satd. Flow (RTOR)						
Link Speed (mph)						
Link Distance (ft)						
Travel Time (s)						
Peak Hour Factor						
Growth Factor						
Adj. Flow (vph)						
Shared Lane Traffic (%)						
Lane Group Flow (vph)						
Enter Blocked Intersection						
Lane Alignment						
Median Width(ft)						
Link Offset(ft)						
Crosswalk Width(ft)						
Two way Left Turn Lane						
Headway Factor						
Turning Speed (mph)						
Number of Detectors						
Detector Template						
Leading Detector (ft)						
Trailing Detector (ft)						
Detector 1 Position(ft)						
Detector 1 Size(ft)						
Detector 1 Type						
Detector 1 Channel						
Detector 1 Extend (s)						
Detector 1 Queue (s)						
Detector 1 Delay (s)						
Detector 2 Position(ft)						
Detector 2 Size(ft)						
Detector 2 Type						
Detector 2 Channel						
Detector 2 Extend (s)						
Turn Type						
Protected Phases	3	4	5	6	7	8
Permitted Phases						

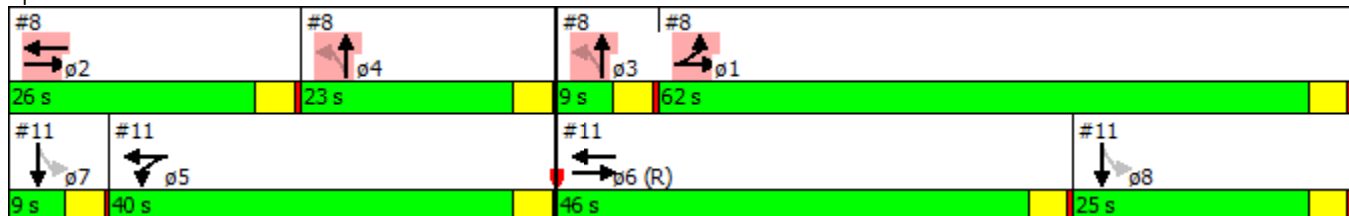


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	1 2			2		3 4	3 4				
Switch Phase												
Minimum Initial (s)	4.0				4.0							
Minimum Split (s)	8.0				20.0							
Total Split (s)	62.0				26.0							
Total Split (%)	51.7%				21.7%							
Maximum Green (s)	58.0				22.0							
Yellow Time (s)	3.5				3.5							
All-Red Time (s)	0.5				0.5							
Lost Time Adjust (s)	0.0				0.0							
Total Lost Time (s)	4.0				4.0							
Lead/Lag	Lag				Lead							
Lead-Lag Optimize?	Yes				Yes							
Vehicle Extension (s)	3.0				3.0							
Recall Mode	None				None							
Walk Time (s)					5.0							
Flash Dont Walk (s)					11.0							
Pedestrian Calls (#/hr)					0							
Act Effct Green (s)	57.2	80.0			22.8		28.0	28.0				
Actuated g/C Ratio	0.48	0.67			0.19		0.23	0.23				
v/c Ratio	0.57	0.51			1.35		0.79	0.78				
Control Delay	9.4	1.5			191.1		60.0	50.7				
Queue Delay	2.8	0.4			1.5		0.0	0.0				
Total Delay	12.2	2.0			192.5		60.0	50.7				
LOS	B	A			F		E	D				
Approach Delay		4.4			192.5			53.8				
Approach LOS		A			F			D				

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 9 (8%), Referenced to phase 6:EBWB, Start of Green
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.35
 Intersection Signal Delay: 87.3
 Intersection LOS: F
 Intersection Capacity Utilization 48.8%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 8: SH 249 NBFR & FM 2920



Lane Group	ø3	ø4	ø5	ø6	ø7	ø8
Detector Phase						
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	8.0	20.0	20.0	20.0
Total Split (s)	9.0	23.0	40.0	46.0	9.0	25.0
Total Split (%)	8%	19%	33%	38%	8%	21%
Maximum Green (s)	5.0	19.0	36.0	42.0	5.0	21.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)						
Total Lost Time (s)						
Lead/Lag	Lead	Lag	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	C-Max	None	None
Walk Time (s)	5.0	5.0		5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0		0	0	0
Act Effect Green (s)						
Actuated g/C Ratio						
v/c Ratio						
Control Delay						
Queue Delay						
Total Delay						
LOS						
Approach Delay						
Approach LOS						
Intersection Summary						

Lane Group	ø1	ø2	ø3	ø4	ø7	ø8
Lane Configurations						
Volume (vph)						
Ideal Flow (vphpl)						
Lane Util. Factor						
Frt						
Flt Protected						
Satd. Flow (prot)						
Flt Permitted						
Satd. Flow (perm)						
Right Turn on Red						
Satd. Flow (RTOR)						
Link Speed (mph)						
Link Distance (ft)						
Travel Time (s)						
Peak Hour Factor						
Growth Factor						
Adj. Flow (vph)						
Shared Lane Traffic (%)						
Lane Group Flow (vph)						
Enter Blocked Intersection						
Lane Alignment						
Median Width(ft)						
Link Offset(ft)						
Crosswalk Width(ft)						
Two way Left Turn Lane						
Headway Factor						
Turning Speed (mph)						
Number of Detectors						
Detector Template						
Leading Detector (ft)						
Trailing Detector (ft)						
Detector 1 Position(ft)						
Detector 1 Size(ft)						
Detector 1 Type						
Detector 1 Channel						
Detector 1 Extend (s)						
Detector 1 Queue (s)						
Detector 1 Delay (s)						
Detector 2 Position(ft)						
Detector 2 Size(ft)						
Detector 2 Type						
Detector 2 Channel						
Detector 2 Extend (s)						
Turn Type						
Protected Phases	1	2	3	4	7	8
Permitted Phases						
Detector Phase						
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0

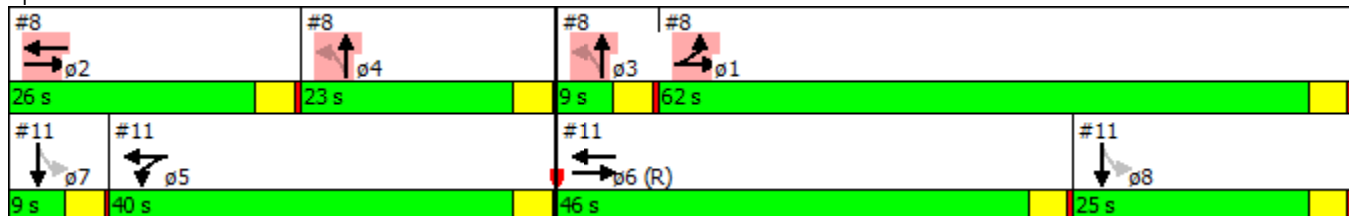


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)		20.0		8.0								
Total Split (s)		46.0		40.0								
Total Split (%)		38.3%		33.3%								
Maximum Green (s)		42.0		36.0								
Yellow Time (s)		3.5		3.5								
All-Red Time (s)		0.5		0.5								
Lost Time Adjust (s)		0.0		0.0								
Total Lost Time (s)		4.0		4.0								
Lead/Lag		Lead		Lag								
Lead-Lag Optimize?		Yes		Yes								
Vehicle Extension (s)		3.0		3.0								
Recall Mode		C-Max		None								
Walk Time (s)		5.0										
Flash Dont Walk (s)		11.0										
Pedestrian Calls (#/hr)		0										
Act Effect Green (s)		42.0		36.4	78.4					29.6	29.6	
Actuated g/C Ratio		0.35		0.30	0.65					0.25	0.25	
v/c Ratio		0.72		0.71	0.74					0.70	0.65	
Control Delay		35.3		13.9	8.4					52.0	40.1	
Queue Delay		0.1		57.7	20.4					0.0	0.0	
Total Delay		35.4		71.6	28.8					52.0	40.1	
LOS		D		E	C					D	D	
Approach Delay		35.4			35.7							44.2
Approach LOS		D			D							D

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	120
Offset:	9 (8%), Referenced to phase 6:EBWB, Start of Green
Natural Cycle:	100
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	1.35
Intersection Signal Delay:	37.1
Intersection LOS:	D
Intersection Capacity Utilization	48.8%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 11: SH 249 SBFR & FM 2920



Lane Group	ø1	ø2	ø3	ø4	ø7	ø8
Minimum Split (s)	8.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	62.0	26.0	9.0	23.0	9.0	25.0
Total Split (%)	52%	22%	8%	19%	8%	21%
Maximum Green (s)	58.0	22.0	5.0	19.0	5.0	21.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)						
Total Lost Time (s)						
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None
Walk Time (s)		5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)		11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0	0	0	0
Act Effct Green (s)						
Actuated g/C Ratio						
v/c Ratio						
Control Delay						
Queue Delay						
Total Delay						
LOS						
Approach Delay						
Approach LOS						
Intersection Summary						



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	99	696	334	258	907	144	373	489	3	72	157	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	110		0	180		250	180		0
Storage Lanes	1		1	1		0	2		1	2		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.91	0.91	1.00	1.00	0.91	0.91	0.97	0.91	1.00	0.97	0.91	0.91
Frt			0.850		0.979				0.850		0.924	
Flt Protected	0.950	0.999		0.950			0.950			0.950		
Satd. Flow (prot)	1610	3387	1583	1770	4979	0	3433	5085	1583	3433	4699	0
Flt Permitted	0.950	0.999		0.950			0.950			0.950		
Satd. Flow (perm)	1610	3387	1583	1770	4979	0	3433	5085	1583	3433	4699	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			374		23				127		170	
Link Speed (mph)		30		30			30		30		30	
Link Distance (ft)		585		617			496		562		562	
Travel Time (s)		13.3		14.0			11.3		12.8		12.8	
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
Growth Factor	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%
Adj. Flow (vph)	111	779	374	289	1015	161	418	547	3	81	176	179
Shared Lane Traffic (%)	10%											
Lane Group Flow (vph)	100	790	374	289	1176	0	418	547	3	81	355	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12		12			24		24		24	
Link Offset(ft)		0		0			0		0		0	
Crosswalk Width(ft)		16		16			16		16		16	
Two way Left Turn Lane				Yes								
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94		94			94		94		94	
Detector 2 Size(ft)		6		6			6		6		6	
Detector 2 Type		Cl+Ex		Cl+Ex			Cl+Ex		Cl+Ex		Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0		0.0			0.0		0.0		0.0	
Turn Type	Split	NA	Perm	Split	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	3	3		4	4		5	2		1	6	
Permitted Phases			3						2			

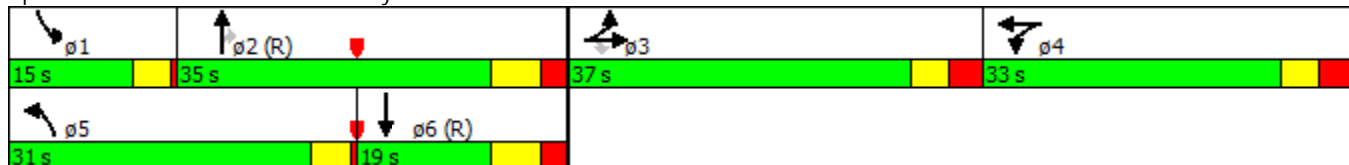


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	3	3	3	4	4		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		4.0	5.0	5.0	4.0	5.0	
Minimum Split (s)	41.5	41.5	41.5	40.5	40.5		8.0	36.0	36.0	8.0	40.0	
Total Split (s)	37.0	37.0	37.0	33.0	33.0		31.0	35.0	35.0	15.0	19.0	
Total Split (%)	30.8%	30.8%	30.8%	27.5%	27.5%		25.8%	29.2%	29.2%	12.5%	15.8%	
Maximum Green (s)	30.5	30.5	30.5	26.5	26.5		27.0	28.0	28.0	11.0	12.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	4.5	4.5	3.5	4.5	
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0		0.5	2.5	2.5	0.5	2.5	
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)	6.5	6.5	6.5	6.5	6.5		4.0	7.0	7.0	4.0	7.0	
Lead/Lag	Lead	Lead	Lead	Lag	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	None	C-Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0			7.0	7.0		7.0	
Flash Dont Walk (s)	28.0	28.0	28.0	27.0	27.0			22.0	22.0		26.0	
Pedestrian Calls (#/hr)	0	0	0	0	0			0	0		0	
Act Effect Green (s)	30.4	30.4	30.4	26.6	26.6		19.8	32.8	32.8	8.2	19.2	
Actuated g/C Ratio	0.25	0.25	0.25	0.22	0.22		0.16	0.27	0.27	0.07	0.16	
v/c Ratio	0.25	0.92	0.55	0.74	1.05		0.74	0.39	0.01	0.34	0.40	
Control Delay	48.8	66.5	16.4	56.1	85.2		55.6	37.4	0.0	56.9	25.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	48.8	66.5	16.4	56.1	85.2		55.6	37.4	0.0	56.9	25.4	
LOS	D	E	B	E	F		E	D	A	E	C	
Approach Delay		50.3			79.5			45.2			31.2	
Approach LOS		D			E			D			C	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 140
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.05
 Intersection Signal Delay: 57.4
 Intersection LOS: E
 Intersection Capacity Utilization 79.0%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 14: Tomball Pkwy & FM 2920



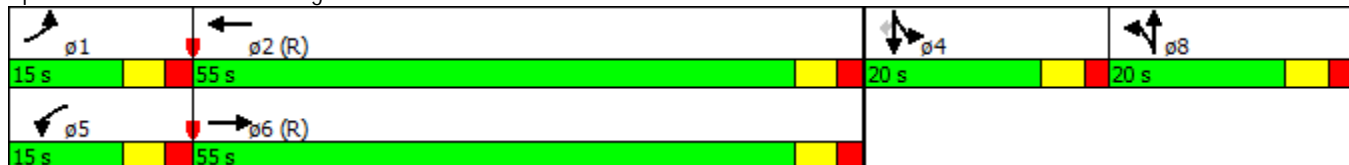


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6		5	2		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0		5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	21.7	22.7		21.7	27.7		27.5	27.5		27.5	27.5	27.5
Total Split (s)	15.0	55.0		15.0	55.0		20.0	20.0		20.0	20.0	20.0
Total Split (%)	13.6%	50.0%		13.6%	50.0%		18.2%	18.2%		18.2%	18.2%	18.2%
Maximum Green (s)	9.3	49.3		9.3	49.3		14.5	14.5		14.5	14.5	14.5
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	2.2	2.2		2.2	2.2		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.7	5.7		5.7	5.7		5.5	5.5		5.5	5.5	5.5
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max		Max	C-Max		None	None		None	None	None
Walk Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	5.0
Flash Dont Walk (s)		12.0			17.0		17.0	17.0		17.0	17.0	17.0
Pedestrian Calls (#/hr)		0			0		0	0		0	0	0
Act Effect Green (s)	6.4	49.3		35.1	87.2			5.5		10.9	0.0	10.9
Actuated g/C Ratio	0.06	0.45		0.32	0.79			0.05		0.10	0.00	0.10
v/c Ratio	0.13	0.68		0.01	0.53			0.03		0.09	no cap	0.12
Control Delay	51.3	26.8		35.0	9.8			0.2		43.6		0.9
Queue Delay	0.0	0.0		0.0	0.2			0.0		0.0		0.0
Total Delay	51.3	26.8		35.0	10.0			0.2		43.6	Error	0.9
LOS	D	C		C	B			A		D	F	A
Approach Delay		27.1			10.1			0.2			Err	
Approach LOS		C			B			A			F	

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 49 (45%), Referenced to phase 2:WBT and 6:EBT, Start of Green
 Natural Cycle: 135
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: Err
 Intersection Signal Delay: Err
 Intersection Capacity Utilization Err%
 Analysis Period (min) 15
 Intersection LOS: F
 ICU Level of Service H

Splits and Phases: 17: Buvinghausen Lane & FM 2920





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	22	929	13	45	1148	31	45	73	118	28	19	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	65		0	60		0	0		50	0		50
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.996				0.850			0.850
Flt Protected	0.950			0.950				0.981			0.971	
Satd. Flow (prot)	1770	3532	0	1770	3525	0	0	1827	1583	0	1809	1583
Flt Permitted	0.833			0.354				0.197			0.742	
Satd. Flow (perm)	1552	3532	0	659	3525	0	0	367	1583	0	1382	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			3				132			109
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1265			442			534			293	
Travel Time (s)		28.8			10.0			12.1			6.7	
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
Growth Factor	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%
Adj. Flow (vph)	25	1040	15	50	1285	35	50	82	132	31	21	75
Shared Lane Traffic (%)												
Lane Group Flow (vph)	25	1055	0	50	1320	0	0	132	132	0	52	75
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	custom	NA		custom	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		6			2			3			4	
Permitted Phases	1			5			3		3	4		4

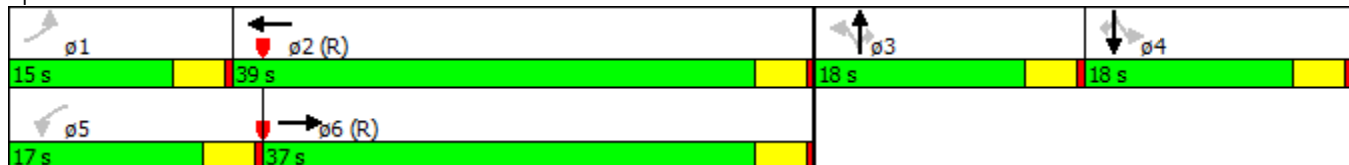


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6		5	2		3	3	3	4	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	15.0	37.0		17.0	39.0		18.0	18.0	18.0	18.0	18.0	18.0
Total Split (%)	16.7%	41.1%		18.9%	43.3%		20.0%	20.0%	20.0%	20.0%	20.0%	20.0%
Maximum Green (s)	11.0	33.0		13.0	35.0		14.0	14.0	14.0	14.0	14.0	14.0
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5	0.5	0.5	0.5	0.5
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)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max		Max	Max	Max	None	None	None
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effect Green (s)	8.9	42.8		12.6	50.9		14.0	14.0	14.0	8.6	8.6	8.6
Actuated g/C Ratio	0.10	0.48		0.14	0.57		0.16	0.16	0.16	0.10	0.10	0.10
v/c Ratio	0.16	0.63		0.54	0.66		2.32	0.37	0.37	0.40	0.30	0.30
Control Delay	36.3	22.6		64.5	10.1		665.3	9.7	9.7	46.3	6.4	6.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.3	22.6		64.5	10.1		665.3	9.7	9.7	46.3	6.4	6.4
LOS	D	C		E	B		F	A	A	D	A	A
Approach Delay		23.0			12.1			337.5			22.7	
Approach LOS		C			B			F			C	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 8 (9%), Referenced to phase 2:WBT and 6:EBT, Start of Green
 Natural Cycle: 150
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 2.32
 Intersection Signal Delay: 46.9
 Intersection LOS: D
 Intersection Capacity Utilization 58.4%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 23: Holderrieth Blvd & FM 2920





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↖	↑↑			↕			↕	
Volume (vph)	0	1073	0	27	1182	0	12	0	41	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	20		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t								0.895				
Fl _t Protected				0.950				0.989				
Satd. Flow (prot)	0	3539	0	1770	3539	0	0	1649	0	0	1863	0
Fl _t Permitted				0.950				0.952				
Satd. Flow (perm)	0	3539	0	1770	3539	0	0	1587	0	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)								104				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		442			131			513				186
Travel Time (s)		10.0			3.0			11.7				4.2
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
Growth Factor	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%
Adj. Flow (vph)	0	1201	0	30	1323	0	13	0	46	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1201	0	30	1323	0	0	59	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2		1	2		1	2		1		2
Detector Template		Thru		Left	Thru		Left	Thru		Left		Thru
Leading Detector (ft)		100		20	100		20	100		20		100
Trailing Detector (ft)		0		0	0		0	0		0		0
Detector 1 Position(ft)		0		0	0		0	0		0		0
Detector 1 Size(ft)		6		20	6		20	6		20		6
Detector 1 Type		Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0		0.0	0.0		0.0		0.0
Detector 1 Queue (s)		0.0		0.0	0.0		0.0	0.0		0.0		0.0
Detector 1 Delay (s)		0.0		0.0	0.0		0.0	0.0		0.0		0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type		NA		Prot	NA		Perm	NA		Perm		
Protected Phases		6		4	2 4			3				3
Permitted Phases							3	3		3		

Lane Group	ø2
Lane Configurations	
Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Growth Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	2
Permitted Phases	

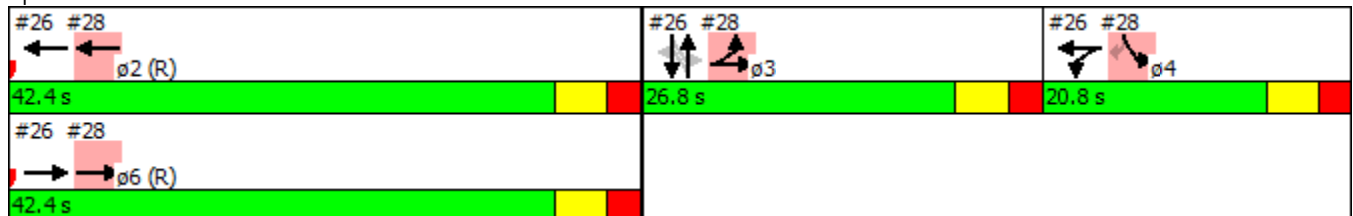


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase		6		4	2 4		3	3		3	3	
Switch Phase												
Minimum Initial (s)		15.0		5.0			5.0	5.0		5.0	5.0	
Minimum Split (s)		24.8		20.8			26.8	26.8		26.8	26.8	
Total Split (s)		42.4		20.8			26.8	26.8		26.8	26.8	
Total Split (%)		47.1%		23.1%			29.8%	29.8%		29.8%	29.8%	
Maximum Green (s)		36.6		15.0			21.0	21.0		21.0	21.0	
Yellow Time (s)		3.5		3.5			3.5	3.5		3.5	3.5	
All-Red Time (s)		2.3		2.3			2.3	2.3		2.3	2.3	
Lost Time Adjust (s)		0.0		0.0			0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.8		5.8			5.8	5.8		5.8	5.8	
Lead/Lag				Lag			Lead	Lead		Lead	Lead	
Lead-Lag Optimize?				Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)		3.0		3.0			3.0	3.0		3.0	3.0	
Recall Mode		C-Max		None			Max	Max		Max	Max	
Walk Time (s)		7.0		5.0			5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		12.0		10.0			16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)		0		0			0	0		0	0	
Act Effect Green (s)		36.6		15.0	57.4		21.0	21.0		21.0	21.0	
Actuated g/C Ratio		0.41		0.17	0.64		0.23	0.23		0.23	0.23	
v/c Ratio		0.83		0.10	0.59		0.13	0.13		0.13	0.13	
Control Delay		20.9		49.1	3.1		2.1	2.1		2.1	2.1	
Queue Delay		4.4		3.4	2.0		0.0	0.0		0.0	0.0	
Total Delay		25.3		52.5	5.1		2.1	2.1		2.1	2.1	
LOS		C		D	A		A	A		A	A	
Approach Delay		25.3		6.2	2.1		2.1	2.1		2.1	2.1	
Approach LOS		C		A	A		A	A		A	A	

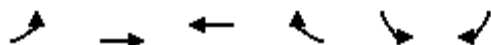
Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.92
 Intersection Signal Delay: 14.9
 Intersection LOS: B
 Intersection Capacity Utilization 47.5%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 26: Vernon Ave & FM 2920



Lane Group	ø2
Detector Phase	
Switch Phase	
Minimum Initial (s)	15.0
Minimum Split (s)	22.8
Total Split (s)	42.4
Total Split (%)	47%
Maximum Green (s)	36.6
Yellow Time (s)	3.5
All-Red Time (s)	2.3
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	C-Max
Walk Time (s)	7.0
Flash Dont Walk (s)	10.0
Pedestrian Calls (#/hr)	0
Act Effect Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	ø6
Lane Configurations							
Volume (vph)	82	1016	1141	38	46	70	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	20			0	0	90	
Storage Lanes	1			0	1	1	
Taper Length (ft)	25				25		
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00	
Frt			0.995			0.850	
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1770	3539	3522	0	1770	1583	
Flt Permitted	0.950				0.950		
Satd. Flow (perm)	1770	3539	3522	0	1770	1583	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)			4			78	
Link Speed (mph)		30	30		30		
Link Distance (ft)		131	272		349		
Travel Time (s)		3.0	6.2		7.9		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Growth Factor	103%	103%	103%	103%	103%	103%	
Adj. Flow (vph)	92	1137	1277	43	52	78	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	92	1137	1320	0	52	78	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Left	Left	Right	Left	Right	
Median Width(ft)		12	12		12		
Link Offset(ft)		0	0		0		
Crosswalk Width(ft)		16	16		16		
Two way Left Turn Lane		Yes	Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15			9	15	9	
Number of Detectors	1	2	2		1	1	
Detector Template	Left	Thru	Thru		Left	Right	
Leading Detector (ft)	20	100	100		20	20	
Trailing Detector (ft)	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0		0	0	
Detector 1 Size(ft)	20	6	6		20	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94	94				
Detector 2 Size(ft)		6	6				
Detector 2 Type		Cl+Ex	Cl+Ex				
Detector 2 Channel							
Detector 2 Extend (s)		0.0	0.0				
Turn Type	Prot	NA	NA		NA	Perm	
Protected Phases	3	3 6	2		4		6
Permitted Phases						4	

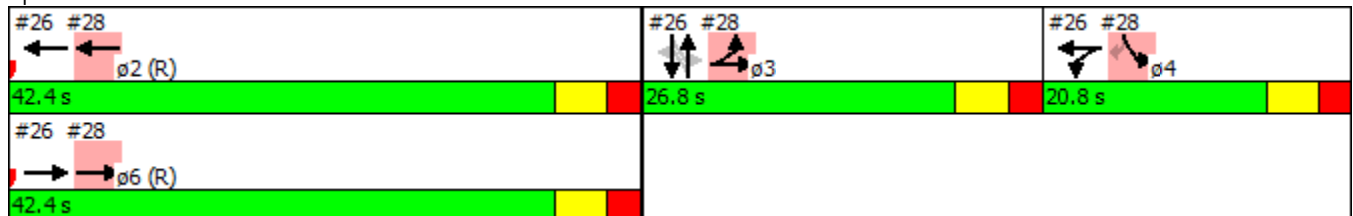


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	ø6
Detector Phase	3	3 6	2		4	4	
Switch Phase							
Minimum Initial (s)	5.0		15.0		5.0	5.0	15.0
Minimum Split (s)	26.8		22.8		20.8	20.8	24.8
Total Split (s)	26.8		42.4		20.8	20.8	42.4
Total Split (%)	29.8%		47.1%		23.1%	23.1%	47%
Maximum Green (s)	21.0		36.6		15.0	15.0	36.6
Yellow Time (s)	3.5		3.5		3.5	3.5	3.5
All-Red Time (s)	2.3		2.3		2.3	2.3	2.3
Lost Time Adjust (s)	0.0		0.0		0.0	0.0	
Total Lost Time (s)	5.8		5.8		5.8	5.8	
Lead/Lag	Lead				Lag	Lag	
Lead-Lag Optimize?	Yes				Yes	Yes	
Vehicle Extension (s)	3.0		3.0		3.0	3.0	3.0
Recall Mode	Max		C-Max		None	None	C-Max
Walk Time (s)	5.0		7.0		5.0	5.0	7.0
Flash Dont Walk (s)	16.0		10.0		10.0	10.0	12.0
Pedestrian Calls (#/hr)	0		0		0	0	0
Act Effect Green (s)	21.0	63.4	36.6		15.0	15.0	
Actuated g/C Ratio	0.23	0.70	0.41		0.17	0.17	
v/c Ratio	0.22	0.46	0.92		0.18	0.24	
Control Delay	25.0	0.5	14.8		34.0	10.1	
Queue Delay	76.8	1.0	0.7		0.0	0.1	
Total Delay	101.8	1.4	15.5		34.0	10.2	
LOS	F	A	B		C	B	
Approach Delay		8.9	15.5		19.7		
Approach LOS		A	B		B		

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.92
 Intersection Signal Delay: 12.7
 Intersection LOS: B
 Intersection Capacity Utilization 57.1%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 28: FM 2920 & Baker Dr





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕	↗		↕↕	
Volume (vph)	12	1018	9	12	1145	17	30	44	101	13	9	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		80	0		0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999			0.998				0.850		0.961	
Flt Protected		0.999						0.980			0.979	
Satd. Flow (prot)	0	3532	0	0	3532	0	0	1825	1583	0	1753	0
Flt Permitted		0.921			0.937			0.686			0.860	
Satd. Flow (perm)	0	3256	0	0	3310	0	0	1278	1583	0	1539	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			2				113		10	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1317			3717			353			398	
Travel Time (s)		29.9			84.5			8.0			9.0	
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
Growth Factor	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%
Adj. Flow (vph)	13	1140	10	13	1282	19	34	49	113	15	10	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1163	0	0	1314	0	0	83	113	0	35	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA	custom	Perm	NA	
Protected Phases		2			6			3			4	
Permitted Phases	2			6			3		2	4		

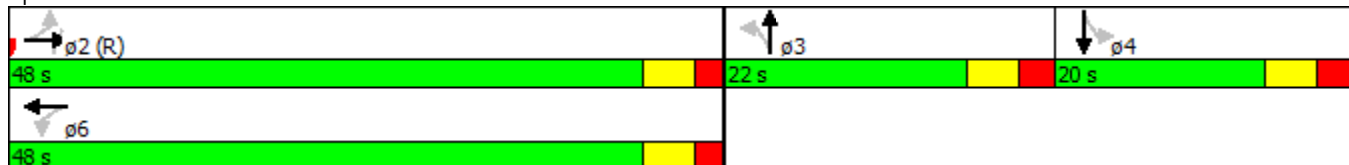


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	2	2		6	6		3	3	2	4	4	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		5.0	5.0	20.0	5.0	5.0	
Minimum Split (s)	25.5	25.5		25.5	25.5		28.9	28.9	25.5	28.9	28.9	
Total Split (s)	48.0	48.0		48.0	48.0		22.0	22.0	48.0	20.0	20.0	
Total Split (%)	53.3%	53.3%		53.3%	53.3%		24.4%	24.4%	53.3%	22.2%	22.2%	
Maximum Green (s)	42.5	42.5		42.5	42.5		16.1	16.1	42.5	14.1	14.1	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.4	2.4	2.0	2.4	2.4	
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	
Total Lost Time (s)		5.5			5.5			5.9	5.5		5.9	
Lead/Lag							Lead	Lead		Lag	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max		Max	Max		Max	Max	C-Max	Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	8.0	8.0		8.0	8.0		16.0	16.0	8.0	16.0	16.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effct Green (s)		42.5			42.5			16.1	42.5		14.1	
Actuated g/C Ratio		0.47			0.47			0.18	0.47		0.16	
v/c Ratio		0.76			0.84			0.36	0.14		0.14	
Control Delay		11.7			27.0			37.8	3.2		27.3	
Queue Delay		0.0			0.0			0.0	0.0		0.0	
Total Delay		11.7			27.0			37.8	3.2		27.3	
LOS		B			C			D	A		C	
Approach Delay		11.7			27.0			17.8			27.3	
Approach LOS		B			C			B			C	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 47 (52%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 105
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.84
 Intersection Signal Delay: 19.7
 Intersection LOS: B
 Intersection Capacity Utilization 64.6%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 30: Pine St & FM 2920





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	1174	19	6	1105	14	21	0	17	14	0	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	80		0	160		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.998			0.940				0.955
Flt Protected	0.950			0.950				0.973				0.968
Satd. Flow (prot)	1770	3532	0	1770	3532	0	0	1704	0	0	1722	0
Flt Permitted	0.950			0.950				0.846				0.833
Satd. Flow (perm)	1770	3532	0	1770	3532	0	0	1481	0	0	1482	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			2			58				58
Link Speed (mph)		30			30			30				30
Link Distance (ft)		3717			948			261				287
Travel Time (s)		84.5			21.5			5.9				6.5
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
Growth Factor	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%	103%
Adj. Flow (vph)	9	1314	21	7	1237	16	24	0	19	16	0	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	9	1335	0	7	1253	0	0	43	0	0	24	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4				8
Permitted Phases							4			8		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	10.5	22.0		10.5	22.0		20.0	20.0		33.0	33.0	
Total Split (s)	15.0	105.0		15.0	105.0		30.0	30.0		30.0	30.0	
Total Split (%)	10.0%	70.0%		10.0%	70.0%		20.0%	20.0%		20.0%	20.0%	
Maximum Green (s)	9.5	99.5		9.5	99.5		24.0	24.0		24.0	24.0	
Yellow Time (s)	4.5	4.5		4.5	4.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	5.5	5.5		5.5	5.5			6.0			6.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		Max	Max		None	None	
Walk Time (s)		7.0			7.0					7.0	7.0	
Flash Dont Walk (s)		7.0			6.0					20.0	20.0	
Pedestrian Calls (#/hr)		0			0					0	0	
Act Effect Green (s)	6.4	111.9		6.2	111.8			24.0			24.0	
Actuated g/C Ratio	0.04	0.75		0.04	0.75			0.16			0.16	
v/c Ratio	0.12	0.51		0.10	0.48			0.15			0.08	
Control Delay	72.0	9.0		71.5	8.7			8.1			0.6	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	72.0	9.0		71.5	8.7			8.1			0.6	
LOS	E	A		E	A			A			A	
Approach Delay		9.5			9.0			8.1			0.6	
Approach LOS		A			A			A			A	

Intersection Summary

Area Type: Other
 Cycle Length: 150
 Actuated Cycle Length: 150
 Offset: 5 (3%), Referenced to phase 2:WBT and 6:EBT, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.51
 Intersection Signal Delay: 9.2
 Intersection Capacity Utilization 49.5%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 33: Willow St & FM 2920

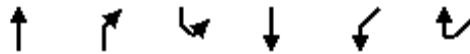




Lane Group	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Volume (vph)	166	264	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	180			0	0	0
Storage Lanes	1			0	0	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Fr						
Flt Protected	0.950					
Satd. Flow (prot)	1770	3539	0	0	0	0
Flt Permitted	0.950					
Satd. Flow (perm)	1770	3539	0	0	0	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		465	173		284	
Travel Time (s)		10.6	3.9		6.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	103%	103%	103%	103%	103%	103%
Adj. Flow (vph)	186	296	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	186	296	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	23.6%
Analysis Period (min)	15
	ICU Level of Service A



Lane Group	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations				↑↑	↘	
Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	0	0	0	3539	1863	0
Flt Permitted						
Satd. Flow (perm)	0	0	0	3539	1863	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	453			179	284	
Travel Time (s)	10.3			4.1	6.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	103%	103%	103%	103%	103%	103%
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	9		15	15		9
Sign Control	Stop			Free	Yield	

Intersection Summary

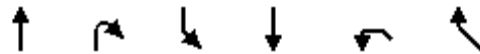
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	23.6%
Analysis Period (min)	15
	ICU Level of Service A



Lane Group	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations		↑↑			↘	
Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	0	3539	0	0	1863	0
Flt Permitted						
Satd. Flow (perm)	0	3539	0	0	1863	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		201	296		306	
Travel Time (s)		4.6	6.7		7.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	103%	103%	103%	103%	103%	103%
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Stop		Yield	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	23.3%
Analysis Period (min)	15
	ICU Level of Service A



Lane Group	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Volume (vph)	0	0	130	153	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	180		0	0
Storage Lanes		0	1		0	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Fr						
Flt Protected			0.950			
Satd. Flow (prot)	0	0	1770	3539	0	0
Flt Permitted			0.950			
Satd. Flow (perm)	0	0	1770	3539	0	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	204			261	306	
Travel Time (s)	4.6			5.9	7.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	103%	103%	103%	103%	103%	103%
Adj. Flow (vph)	0	0	146	171	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	146	171	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	23.3%
	ICU Level of Service A
Analysis Period (min)	15



Lane Group	SBL	SBR	NEL	NET	SWT	SWR
Lane Configurations						
Volume (vph)	30	119	48	1411	1017	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	175			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.892				0.998	
Flt Protected	0.990		0.950			
Satd. Flow (prot)	1645	0	1770	3539	3532	0
Flt Permitted	0.990		0.223			
Satd. Flow (perm)	1645	0	415	3539	3532	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	169				2	
Link Speed (mph)	30			30	30	
Link Distance (ft)	1322			554	2764	
Travel Time (s)	30.0			12.6	62.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	131%	131%	131%	131%	131%	131%
Adj. Flow (vph)	43	169	68	2009	1448	20
Shared Lane Traffic (%)						
Lane Group Flow (vph)	212	0	68	2009	1468	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane				Yes	Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	2	2	
Detector Template	Left		Left	Thru	Thru	
Leading Detector (ft)	20		20	100	100	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	20		20	6	6	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	NA		custom	NA	NA	
Protected Phases	4			6	2	
Permitted Phases			1			

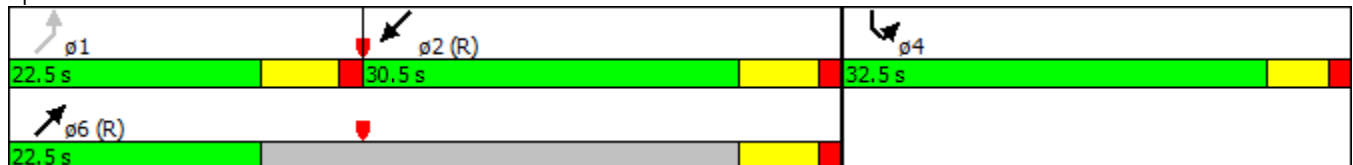


Lane Group	SBL	SBR	NEL	NET	SWT	SWR
Detector Phase	4		1	6	2	
Switch Phase						
Minimum Initial (s)	5.0		5.0	15.0	15.0	
Minimum Split (s)	32.5		22.5	22.5	30.5	
Total Split (s)	32.5		22.5	22.5	30.5	
Total Split (%)	38.0%		26.3%	26.3%	35.7%	
Maximum Green (s)	27.0		16.0	16.0	24.0	
Yellow Time (s)	4.0		5.0	5.0	5.0	
All-Red Time (s)	1.5		1.5	1.5	1.5	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	5.5		6.5	6.5	6.5	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	None		None	C-Max	C-Max	
Walk Time (s)	7.0				7.0	
Flash Dont Walk (s)	20.0				17.0	
Pedestrian Calls (#/hr)	0				0	
Act Effect Green (s)	8.9		19.7	64.6	41.5	
Actuated g/C Ratio	0.10		0.23	0.76	0.49	
v/c Ratio	0.66		0.72	0.75	0.86	
Control Delay	19.8		65.8	9.0	31.1	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	19.8		65.8	9.0	31.1	
LOS	B		E	A	C	
Approach Delay	19.8			10.9	31.1	
Approach LOS	B			B	C	

Intersection Summary

Area Type: Other
 Cycle Length: 85.5
 Actuated Cycle Length: 85.5
 Offset: 20 (23%), Referenced to phase 2:SWT and 6:NET, Start of Green
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.86
 Intersection Signal Delay: 19.3
 Intersection LOS: B
 Intersection Capacity Utilization 72.9%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 3: FM 2920 & Park Road



FM 2920
2040 No Build

AM Peak Hour
1/8/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗			↕			↕	
Volume (vph)	0	1404	54	10	980	0	21	0	16	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994						0.941				
Flt Protected				0.950				0.972				
Satd. Flow (prot)	1863	3518	0	1770	3539	0	0	1704	0	0	1863	0
Flt Permitted				0.950				0.866				
Satd. Flow (perm)	1863	3518	0	1770	3539	0	0	1518	0	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7						168				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		2764			2506			534				543
Travel Time (s)		62.8			57.0			12.1				12.3
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
Growth Factor	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%
Adj. Flow (vph)	0	1999	77	14	1395	0	30	0	23	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	2076	0	14	1395	0	0	53	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm		
Protected Phases	1	6		5	2			4				8
Permitted Phases							4			8		
Minimum Split (s)	11.0	26.0		11.0	26.0		21.5	21.5		21.5	21.5	
Total Split (s)	11.0	26.0		11.0	26.0		21.5	21.5		21.5	21.5	
Total Split (%)	18.8%	44.4%		18.8%	44.4%		36.8%	36.8%		36.8%	36.8%	
Maximum Green (s)	5.0	20.0		5.0	20.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			5.5			5.5	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Act Effect Green (s)		20.0		5.0	20.0			16.0				
Actuated g/C Ratio		0.34		0.09	0.34			0.27				
v/c Ratio		1.72		0.09	1.15			0.10				
Control Delay		348.6		26.2	101.2			0.4				
Queue Delay		0.0		0.0	0.0			0.0				
Total Delay		348.6		26.2	101.2			0.4				

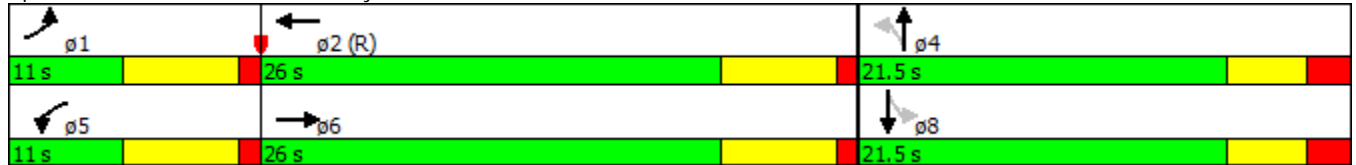


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		F		C	F			A				
Approach Delay		348.6			100.4			0.4				
Approach LOS		F			F			A				

Intersection Summary

Area Type:	Other
Cycle Length:	58.5
Actuated Cycle Length:	58.5
Offset:	0 (0%), Referenced to phase 2:WBT, Start of Green
Natural Cycle:	90
Control Type:	Pretimed
Maximum v/c Ratio:	1.72
Intersection Signal Delay:	244.5
Intersection LOS:	F
Intersection Capacity Utilization	66.8%
ICU Level of Service	C
Analysis Period (min)	15

Splits and Phases: 5: Cascade Bay & FM 2920





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	307	1194	0	0	633	36	270	86	35	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		80	0		0	0		0
Storage Lanes	1		0	0		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.86	0.86	1.00	1.00	0.86	0.86	0.91	0.91	0.95	1.00	1.00	1.00
Frt					0.992			0.979				
Flt Protected	0.950	0.999					0.950	0.974				
Satd. Flow (prot)	1522	4801	0	0	6357	0	1610	3233	0	0	0	0
Flt Permitted	0.950	0.939					0.950	0.974				
Satd. Flow (perm)	1522	4513	0	0	6357	0	1610	3233	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					8			13				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		270			350			173				201
Travel Time (s)		6.1			8.0			3.9				4.6
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
Growth Factor	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%
Adj. Flow (vph)	437	1700	0	0	901	51	384	122	50	0	0	0
Shared Lane Traffic (%)	10%						50%					
Lane Group Flow (vph)	393	1744	0	0	952	0	192	364	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2			2		1	2				
Detector Template	Left	Thru			Thru		Left	Thru				
Leading Detector (ft)	20	100			100		20	100				
Trailing Detector (ft)	0	0			0		0	0				
Detector 1 Position(ft)	0	0			0		0	0				
Detector 1 Size(ft)	20	6			6		20	6				
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex				
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0				
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		6			6			6				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	Prot	NA			NA		Perm	NA				
Protected Phases	1	1 2			2			3 4				
Permitted Phases							3 4					

Lane Group	ø3	ø4	ø5	ø6	ø7	ø8
Lane Configurations						
Volume (vph)						
Ideal Flow (vphpl)						
Storage Length (ft)						
Storage Lanes						
Taper Length (ft)						
Lane Util. Factor						
Frt						
Flt Protected						
Satd. Flow (prot)						
Flt Permitted						
Satd. Flow (perm)						
Right Turn on Red						
Satd. Flow (RTOR)						
Link Speed (mph)						
Link Distance (ft)						
Travel Time (s)						
Peak Hour Factor						
Growth Factor						
Adj. Flow (vph)						
Shared Lane Traffic (%)						
Lane Group Flow (vph)						
Enter Blocked Intersection						
Lane Alignment						
Median Width(ft)						
Link Offset(ft)						
Crosswalk Width(ft)						
Two way Left Turn Lane						
Headway Factor						
Turning Speed (mph)						
Number of Detectors						
Detector Template						
Leading Detector (ft)						
Trailing Detector (ft)						
Detector 1 Position(ft)						
Detector 1 Size(ft)						
Detector 1 Type						
Detector 1 Channel						
Detector 1 Extend (s)						
Detector 1 Queue (s)						
Detector 1 Delay (s)						
Detector 2 Position(ft)						
Detector 2 Size(ft)						
Detector 2 Type						
Detector 2 Channel						
Detector 2 Extend (s)						
Turn Type						
Protected Phases	3	4	5	6	7	8
Permitted Phases						

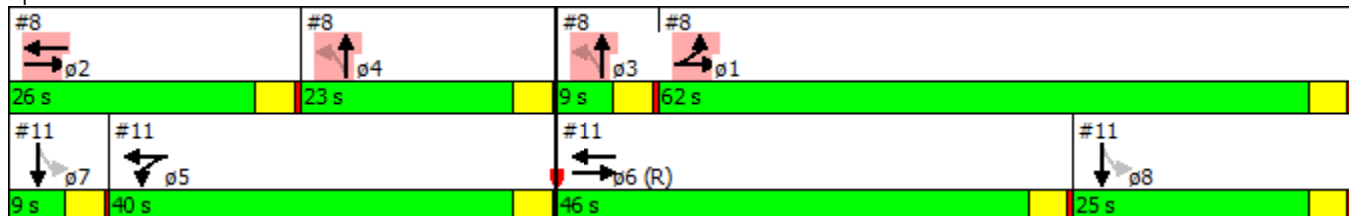


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	1 2			2		3 4	3 4				
Switch Phase												
Minimum Initial (s)	4.0				4.0							
Minimum Split (s)	8.0				20.0							
Total Split (s)	62.0				26.0							
Total Split (%)	51.7%				21.7%							
Maximum Green (s)	58.0				22.0							
Yellow Time (s)	3.5				3.5							
All-Red Time (s)	0.5				0.5							
Lost Time Adjust (s)	0.0				0.0							
Total Lost Time (s)	4.0				4.0							
Lead/Lag	Lag				Lead							
Lead-Lag Optimize?	Yes				Yes							
Vehicle Extension (s)	3.0				3.0							
Recall Mode	None				None							
Walk Time (s)					5.0							
Flash Dont Walk (s)					11.0							
Pedestrian Calls (#/hr)					0							
Act Effct Green (s)	59.7	81.7			22.0		26.3	26.3				
Actuated g/C Ratio	0.50	0.68			0.18		0.22	0.22				
v/c Ratio	0.52	0.60			0.81		0.54	0.51				
Control Delay	10.0	2.4			53.1		47.5	42.0				
Queue Delay	4.3	0.5			4.8		0.0	0.0				
Total Delay	14.4	3.0			57.8		47.5	42.0				
LOS	B	A			E		D	D				
Approach Delay		5.1			57.8			43.9				
Approach LOS		A			E			D				

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	120
Offset:	9 (8%), Referenced to phase 6:EBWB, Start of Green
Natural Cycle:	90
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.92
Intersection Signal Delay:	24.8
Intersection LOS:	C
Intersection Capacity Utilization	52.2%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 8: SH 249 NBFR & FM 2920



Lane Group	ø3	ø4	ø5	ø6	ø7	ø8
Detector Phase						
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	8.0	20.0	20.0	20.0
Total Split (s)	9.0	23.0	40.0	46.0	9.0	25.0
Total Split (%)	8%	19%	33%	38%	8%	21%
Maximum Green (s)	5.0	19.0	36.0	42.0	5.0	21.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)						
Total Lost Time (s)						
Lead/Lag	Lead	Lag	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	C-Max	None	None
Walk Time (s)	5.0	5.0		5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0		0	0	0
Act Effect Green (s)						
Actuated g/C Ratio						
v/c Ratio						
Control Delay						
Queue Delay						
Total Delay						
LOS						
Approach Delay						
Approach LOS						
Intersection Summary						

Lane Group	ø1	ø2	ø3	ø4	ø7	ø8
Lane Configurations						
Volume (vph)						
Ideal Flow (vphpl)						
Lane Util. Factor						
Frt						
Flt Protected						
Satd. Flow (prot)						
Flt Permitted						
Satd. Flow (perm)						
Right Turn on Red						
Satd. Flow (RTOR)						
Link Speed (mph)						
Link Distance (ft)						
Travel Time (s)						
Peak Hour Factor						
Growth Factor						
Adj. Flow (vph)						
Shared Lane Traffic (%)						
Lane Group Flow (vph)						
Enter Blocked Intersection						
Lane Alignment						
Median Width(ft)						
Link Offset(ft)						
Crosswalk Width(ft)						
Two way Left Turn Lane						
Headway Factor						
Turning Speed (mph)						
Number of Detectors						
Detector Template						
Leading Detector (ft)						
Trailing Detector (ft)						
Detector 1 Position(ft)						
Detector 1 Size(ft)						
Detector 1 Type						
Detector 1 Channel						
Detector 1 Extend (s)						
Detector 1 Queue (s)						
Detector 1 Delay (s)						
Detector 2 Position(ft)						
Detector 2 Size(ft)						
Detector 2 Type						
Detector 2 Channel						
Detector 2 Extend (s)						
Turn Type						
Protected Phases	1	2	3	4	7	8
Permitted Phases						
Detector Phase						
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0

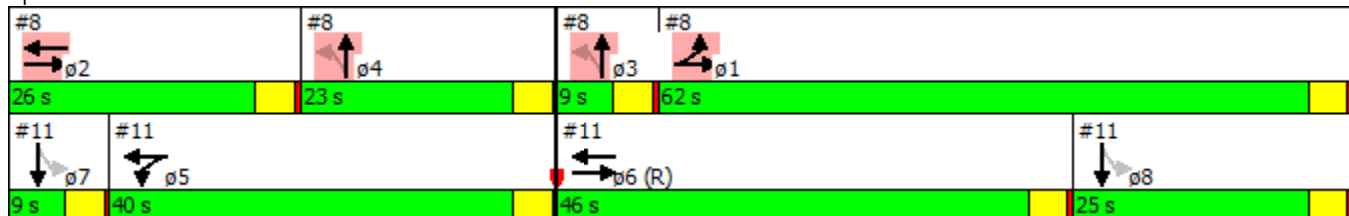


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)		20.0		8.0								
Total Split (s)		46.0		40.0								
Total Split (%)		38.3%		33.3%								
Maximum Green (s)		42.0		36.0								
Yellow Time (s)		3.5		3.5								
All-Red Time (s)		0.5		0.5								
Lost Time Adjust (s)		0.0		0.0								
Total Lost Time (s)		4.0		4.0								
Lead/Lag		Lead		Lag								
Lead-Lag Optimize?		Yes		Yes								
Vehicle Extension (s)		3.0		3.0								
Recall Mode		C-Max		None								
Walk Time (s)		5.0										
Flash Dont Walk (s)		11.0										
Pedestrian Calls (#/hr)		0										
Act Effect Green (s)		44.0		34.0	78.0					30.0	30.0	
Actuated g/C Ratio		0.37		0.28	0.65					0.25	0.25	
v/c Ratio		0.82		0.42	0.48					0.92	0.79	
Control Delay		37.1		8.3	3.2					72.4	40.1	
Queue Delay		0.2		2.6	0.4					0.0	0.0	
Total Delay		37.3		11.0	3.6					72.4	40.1	
LOS		D		B	A					E	D	
Approach Delay		37.3			4.6						51.3	
Approach LOS		D			A						D	

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	120
Offset:	9 (8%), Referenced to phase 6:EBWB, Start of Green
Natural Cycle:	90
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.92
Intersection Signal Delay:	30.9
Intersection LOS:	C
Intersection Capacity Utilization	52.2%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 11: SH 249 SBFR & FM 2920



Lane Group	ø1	ø2	ø3	ø4	ø7	ø8
Minimum Split (s)	8.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	62.0	26.0	9.0	23.0	9.0	25.0
Total Split (%)	52%	22%	8%	19%	8%	21%
Maximum Green (s)	58.0	22.0	5.0	19.0	5.0	21.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)						
Total Lost Time (s)						
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None
Walk Time (s)		5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)		11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0	0	0	0
Act Effct Green (s)						
Actuated g/C Ratio						
v/c Ratio						
Control Delay						
Queue Delay						
Total Delay						
LOS						
Approach Delay						
Approach LOS						
Intersection Summary						



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↙↘	↗	↘	↙↘↗		↘↗	↙↘↗	↗	↘↗	↙↘↗	
Volume (vph)	60	793	377	216	565	140	93	186	4	39	76	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	110		0	180		250	180		0
Storage Lanes	1		1	1		0	2		1	2		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.91	0.91	1.00	1.00	0.91	0.91	0.97	0.91	1.00	0.97	0.91	0.91
Frt			0.850		0.970				0.850		0.945	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1610	3390	1583	1770	4933	0	3433	5085	1583	3433	4806	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1610	3390	1583	1770	4933	0	3433	5085	1583	3433	4806	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			483		61				180		63	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		585			617			496			562	
Travel Time (s)		13.3			14.0			11.3			12.8	
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
Growth Factor	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%
Adj. Flow (vph)	85	1129	537	308	805	199	132	265	6	56	108	63
Shared Lane Traffic (%)	10%											
Lane Group Flow (vph)	76	1138	537	308	1004	0	132	265	6	56	171	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Split	NA	Perm	Split	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	3	3		4	4		5	2		1	6	
Permitted Phases			3						2			

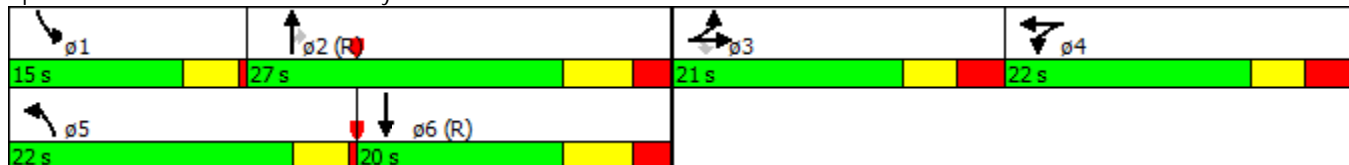


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	3	3	3	4	4		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		4.0	5.0	5.0	4.0	5.0	
Minimum Split (s)	41.5	41.5	41.5	40.5	40.5		8.0	36.0	36.0	8.0	40.0	
Total Split (s)	21.0	21.0	21.0	22.0	22.0		22.0	27.0	27.0	15.0	20.0	
Total Split (%)	24.7%	24.7%	24.7%	25.9%	25.9%		25.9%	31.8%	31.8%	17.6%	23.5%	
Maximum Green (s)	14.5	14.5	14.5	15.5	15.5		18.0	20.0	20.0	11.0	13.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	4.5	4.5	3.5	4.5	
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0		0.5	2.5	2.5	0.5	2.5	
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)	6.5	6.5	6.5	6.5	6.5		4.0	7.0	7.0	4.0	7.0	
Lead/Lag	Lead	Lead	Lead	Lag	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	None	C-Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0			7.0	7.0		7.0	
Flash Dont Walk (s)	28.0	28.0	28.0	27.0	27.0			22.0	22.0		26.0	
Pedestrian Calls (#/hr)	0	0	0	0	0			0	0		0	
Act Effect Green (s)	14.5	14.5	14.5	15.5	15.5		8.6	28.1	28.1	6.8	22.4	
Actuated g/C Ratio	0.17	0.17	0.17	0.18	0.18		0.10	0.33	0.33	0.08	0.26	
v/c Ratio	0.28	1.97	0.80	0.96	1.06		0.38	0.16	0.01	0.20	0.13	
Control Delay	33.8	466.3	15.8	77.2	78.9		38.4	21.9	0.0	37.8	15.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	33.8	466.3	15.8	77.2	78.9		38.4	21.9	0.0	37.8	15.8	
LOS	C	F	B	E	E		D	C	A	D	B	
Approach Delay		309.4			78.5			27.0			21.3	
Approach LOS		F			E			C			C	

Intersection Summary

Area Type: Other
 Cycle Length: 85
 Actuated Cycle Length: 85
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 140
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.97
 Intersection Signal Delay: 178.8
 Intersection LOS: F
 Intersection Capacity Utilization 75.1%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 14: Tomball Pkwy & FM 2920



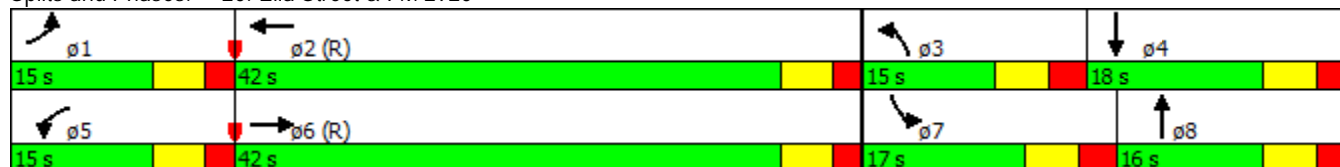


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6		5	2		3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	10.5	25.5		10.5	25.5		11.1	36.1		11.1	36.1	
Total Split (s)	15.0	42.0		15.0	42.0		15.0	16.0		17.0	18.0	
Total Split (%)	16.7%	46.7%		16.7%	46.7%		16.7%	17.8%		18.9%	20.0%	
Maximum Green (s)	9.5	36.5		9.5	36.5		8.9	9.9		10.9	11.9	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.6	3.6		3.6	3.6	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.5	5.5		5.5	5.5		6.1	6.1		6.1	6.1	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		5.0			5.0			5.0			5.0	
Flash Dont Walk (s)		15.0			15.0			25.0			25.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	7.9	61.7		5.8	52.9		6.3	7.4		8.3	11.6	
Actuated g/C Ratio	0.09	0.69		0.06	0.59		0.07	0.08		0.09	0.13	
v/c Ratio	0.35	0.53		0.04	0.57		0.11	0.18		0.30	0.54	
Control Delay	44.5	11.0		47.5	13.4		40.8	36.2		42.2	25.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	44.5	11.0		47.5	13.4		40.8	36.2		42.2	25.5	
LOS	D	B		D	B		D	D		D	C	
Approach Delay		12.4			13.6			37.8			29.5	
Approach LOS		B			B			D			C	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 48 (53%), Referenced to phase 2:WBT and 6:EBT, Start of Green
 Natural Cycle: 95
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.57
 Intersection Signal Delay: 14.5 Intersection LOS: B
 Intersection Capacity Utilization 61.7% ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 20: Ella Street & FM 2920





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	19	858	12	79	826	19	22	21	47	28	40	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	65		0	60		0	0		50	0		50
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.997				0.850			0.850
Flt Protected	0.950			0.950				0.975			0.980	
Satd. Flow (prot)	1770	3532	0	1770	3529	0	0	1816	1583	0	1825	1583
Flt Permitted	0.909			0.225				0.251			0.838	
Satd. Flow (perm)	1693	3532	0	419	3529	0	0	468	1583	0	1561	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			3				109			109
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1265			442			534			293	
Travel Time (s)		28.8			10.0			12.1			6.7	
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
Growth Factor	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%
Adj. Flow (vph)	27	1222	17	112	1176	27	31	30	67	40	57	51
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	1239	0	112	1203	0	0	61	67	0	97	51
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	custom	NA		custom	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		6			2			3			4	
Permitted Phases	1			5			3		3	4		4

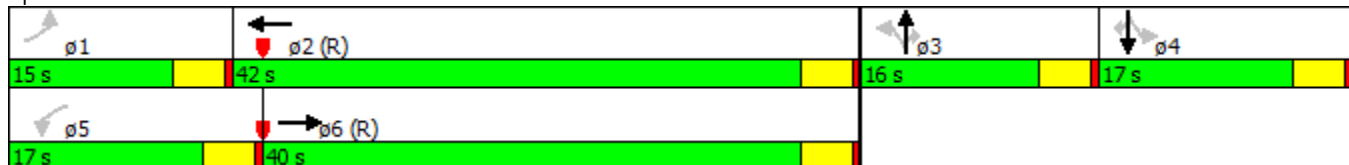


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6		5	2		3	3	3	4	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	15.0	40.0		17.0	42.0		16.0	16.0	16.0	17.0	17.0	17.0
Total Split (%)	16.7%	44.4%		18.9%	46.7%		17.8%	17.8%	17.8%	18.9%	18.9%	18.9%
Maximum Green (s)	11.0	36.0		13.0	38.0		12.0	12.0	12.0	13.0	13.0	13.0
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5	0.5	0.5	0.5	0.5
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)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max		Max	Max	Max	None	None	None
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effct Green (s)	8.6	36.0		17.8	51.8		12.0	12.0	12.0	10.3	10.3	10.3
Actuated g/C Ratio	0.10	0.40		0.20	0.58		0.13	0.13	0.13	0.11	0.11	0.11
v/c Ratio	0.17	0.88		1.37	0.59		0.98	0.22	0.22	0.54	0.18	0.18
Control Delay	42.1	32.0		251.8	14.2		154.4	4.1	4.1	48.6	1.5	1.5
Queue Delay	0.0	1.1		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.1	33.1		251.8	14.2		154.4	4.1	4.1	48.6	1.5	1.5
LOS	D	C		F	B		F	A	A	D	A	A
Approach Delay		33.3			34.4			75.7			32.3	
Approach LOS		C			C			E			C	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	88 (98%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Natural Cycle:	100
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	1.37
Intersection Signal Delay:	35.7
Intersection LOS:	D
Intersection Capacity Utilization:	58.8%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 23: Holderrieth Blvd & FM 2920



FM 2920
2040 No Build

AM Peak Hour
1/8/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↖	↑↑			↕			↕	
Volume (vph)	0	919	8	27	912	0	11	0	31	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	20		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999						0.901				
Flt Protected				0.950				0.987				
Satd. Flow (prot)	0	3536	0	1770	3539	0	0	1657	0	0	1863	0
Flt Permitted				0.950				0.940				
Satd. Flow (perm)	0	3536	0	1770	3539	0	0	1578	0	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1						104				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		442			131			513				186
Travel Time (s)		10.0			3.0			11.7				4.2
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
Growth Factor	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%
Adj. Flow (vph)	0	1309	11	38	1299	0	16	0	44	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1320	0	38	1299	0	0	60	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2		1	2		1	2		1		2
Detector Template		Thru		Left	Thru		Left	Thru		Left		Thru
Leading Detector (ft)		100		20	100		20	100		20		100
Trailing Detector (ft)		0		0	0		0	0		0		0
Detector 1 Position(ft)		0		0	0		0	0		0		0
Detector 1 Size(ft)		6		20	6		20	6		20		6
Detector 1 Type		Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0		0.0	0.0		0.0		0.0
Detector 1 Queue (s)		0.0		0.0	0.0		0.0	0.0		0.0		0.0
Detector 1 Delay (s)		0.0		0.0	0.0		0.0	0.0		0.0		0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type		NA		Prot	NA		Perm	NA		Perm		
Protected Phases		6		4	2 4			3				3
Permitted Phases							3	3		3		

Lane Group	ø2
Lane Configurations	
Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Growth Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	2
Permitted Phases	

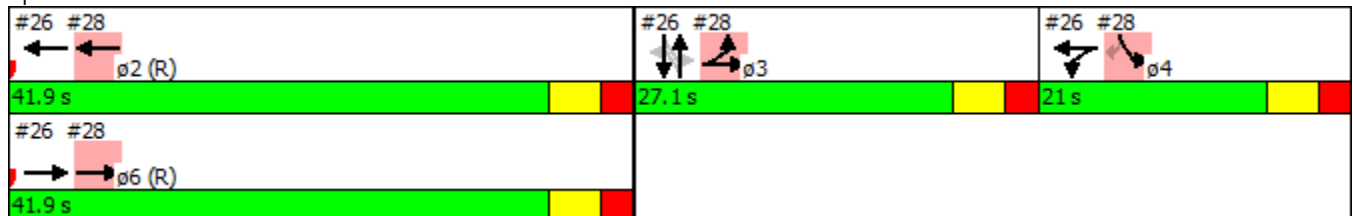


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase		6		4	2 4		3	3		3	3	
Switch Phase												
Minimum Initial (s)		15.0		5.0			5.0	5.0		5.0	5.0	
Minimum Split (s)		24.8		20.8			26.8	26.8		26.8	26.8	
Total Split (s)		41.9		21.0			27.1	27.1		27.1	27.1	
Total Split (%)		46.6%		23.3%			30.1%	30.1%		30.1%	30.1%	
Maximum Green (s)		36.1		15.2			21.3	21.3		21.3	21.3	
Yellow Time (s)		3.5		3.5			3.5	3.5		3.5	3.5	
All-Red Time (s)		2.3		2.3			2.3	2.3		2.3	2.3	
Lost Time Adjust (s)		0.0		0.0				0.0			0.0	
Total Lost Time (s)		5.8		5.8				5.8			5.8	
Lead/Lag				Lag			Lead	Lead		Lead	Lead	
Lead-Lag Optimize?				Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)		3.0		3.0			3.0	3.0		3.0	3.0	
Recall Mode		C-Max		None			Max	Max		Max	Max	
Walk Time (s)		7.0		5.0			5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		12.0		10.0			16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)		0		0			0	0		0	0	
Act Effct Green (s)		36.1		15.2	57.1			21.3				
Actuated g/C Ratio		0.40		0.17	0.63			0.24				
v/c Ratio		0.93		0.13	0.58			0.13				
Control Delay		17.0		49.0	3.5			2.3				
Queue Delay		2.7		5.3	3.5			0.0				
Total Delay		19.7		54.3	7.1			2.3				
LOS		B		D	A			A				
Approach Delay		19.7			8.4			2.3				
Approach LOS		B			A			A				

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.97
 Intersection Signal Delay: 13.7
 Intersection LOS: B
 Intersection Capacity Utilization 47.4%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 26: Vernon Ave & FM 2920



Lane Group	ø2
Detector Phase	
Switch Phase	
Minimum Initial (s)	15.0
Minimum Split (s)	22.8
Total Split (s)	41.9
Total Split (%)	47%
Maximum Green (s)	36.1
Yellow Time (s)	3.5
All-Red Time (s)	2.3
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	C-Max
Walk Time (s)	7.0
Flash Dont Walk (s)	10.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	ø6
Lane Configurations							
Volume (vph)	32	929	902	64	116	42	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	20			0	0	90	
Storage Lanes	1			0	1	1	
Taper Length (ft)	25				25		
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00	
Frt			0.990			0.850	
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1770	3539	3504	0	1770	1583	
Flt Permitted	0.950				0.950		
Satd. Flow (perm)	1770	3539	3504	0	1770	1583	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)			10			60	
Link Speed (mph)		30	30		30		
Link Distance (ft)		131	272		349		
Travel Time (s)		3.0	6.2		7.9		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Growth Factor	131%	131%	131%	131%	131%	131%	
Adj. Flow (vph)	46	1323	1284	91	165	60	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	46	1323	1375	0	165	60	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Left	Left	Right	Left	Right	
Median Width(ft)		12	12		12		
Link Offset(ft)		0	0		0		
Crosswalk Width(ft)		16	16		16		
Two way Left Turn Lane		Yes	Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15			9	15	9	
Number of Detectors	1	2	2		1	1	
Detector Template	Left	Thru	Thru		Left	Right	
Leading Detector (ft)	20	100	100		20	20	
Trailing Detector (ft)	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0		0	0	
Detector 1 Size(ft)	20	6	6		20	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94	94				
Detector 2 Size(ft)		6	6				
Detector 2 Type		Cl+Ex	Cl+Ex				
Detector 2 Channel							
Detector 2 Extend (s)		0.0	0.0				
Turn Type	Prot	NA	NA		NA	Perm	
Protected Phases	3	3 6	2		4		6
Permitted Phases						4	

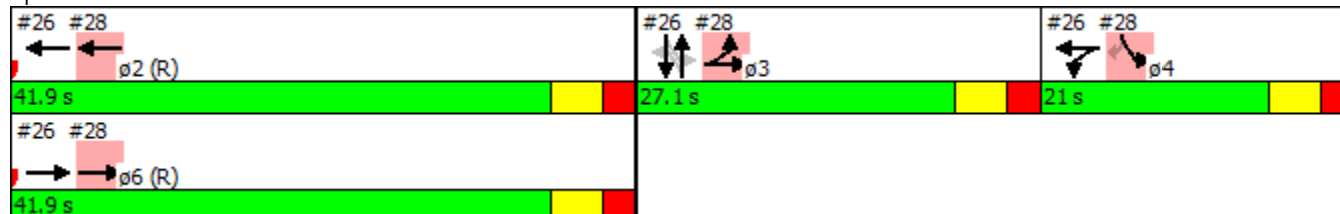


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	ø6
Detector Phase	3	3 6	2		4	4	
Switch Phase							
Minimum Initial (s)	5.0		15.0		5.0	5.0	15.0
Minimum Split (s)	26.8		22.8		20.8	20.8	24.8
Total Split (s)	27.1		41.9		21.0	21.0	41.9
Total Split (%)	30.1%		46.6%		23.3%	23.3%	47%
Maximum Green (s)	21.3		36.1		15.2	15.2	36.1
Yellow Time (s)	3.5		3.5		3.5	3.5	3.5
All-Red Time (s)	2.3		2.3		2.3	2.3	2.3
Lost Time Adjust (s)	0.0		0.0		0.0	0.0	
Total Lost Time (s)	5.8		5.8		5.8	5.8	
Lead/Lag	Lead				Lag	Lag	
Lead-Lag Optimize?	Yes				Yes	Yes	
Vehicle Extension (s)	3.0		3.0		3.0	3.0	3.0
Recall Mode	Max		C-Max		None	None	C-Max
Walk Time (s)	5.0		7.0		5.0	5.0	7.0
Flash Dont Walk (s)	16.0		10.0		10.0	10.0	12.0
Pedestrian Calls (#/hr)	0		0		0	0	0
Act Effect Green (s)	21.3	63.2	36.1		15.2	15.2	
Actuated g/C Ratio	0.24	0.70	0.40		0.17	0.17	
v/c Ratio	0.11	0.53	0.97		0.55	0.19	
Control Delay	23.0	1.0	11.5		42.2	10.8	
Queue Delay	7.9	1.7	2.7		0.0	0.0	
Total Delay	30.9	2.7	14.2		42.2	10.8	
LOS	C	A	B		D	B	
Approach Delay		3.7	14.2		33.8		
Approach LOS		A	B		C		

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Natural Cycle:	90
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.97
Intersection Signal Delay:	10.8
Intersection LOS:	B
Intersection Capacity Utilization	53.4%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 28: FM 2920 & Baker Dr





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕	↕			↕↕
Volume (vph)	3	838	25	35	933	10	32	37	57	21	20	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		80	0		0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.996			0.998				0.850			0.965
Flt Protected					0.998			0.977				0.981
Satd. Flow (prot)	0	3525	0	0	3525	0	0	1820	1583	0	1763	0
Flt Permitted		0.950			0.737			0.584				0.848
Satd. Flow (perm)	0	3349	0	0	2603	0	0	1088	1583	0	1524	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			1				107			17
Link Speed (mph)		30			30			30				30
Link Distance (ft)		1317			3717			353				398
Travel Time (s)		29.9			84.5			8.0				9.0
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
Growth Factor	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%
Adj. Flow (vph)	4	1193	36	50	1329	14	46	53	81	30	28	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1233	0	0	1393	0	0	99	81	0	78	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1		2
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left		Thru
Leading Detector (ft)	20	100		20	100		20	100	20	20		100
Trailing Detector (ft)	0	0		0	0		0	0	0	0		0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0		0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20		6
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0		0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0		0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0		0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA		Perm	NA		Perm	NA	custom	Perm		NA
Protected Phases		2			6			3				4
Permitted Phases	2			6			3		2	4		

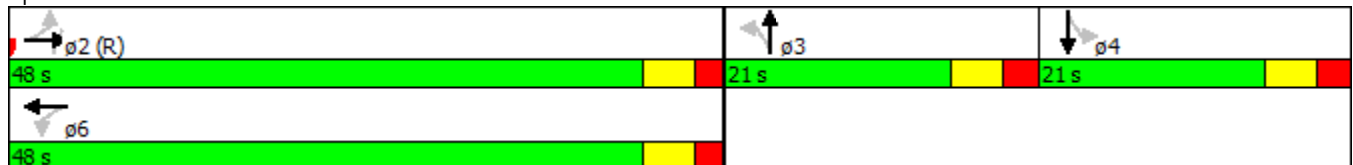


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	2	2		6	6		3	3	2	4	4	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		5.0	5.0	20.0	5.0	5.0	
Minimum Split (s)	25.5	25.5		25.5	25.5		28.9	28.9	25.5	28.9	28.9	
Total Split (s)	48.0	48.0		48.0	48.0		21.0	21.0	48.0	21.0	21.0	
Total Split (%)	53.3%	53.3%		53.3%	53.3%		23.3%	23.3%	53.3%	23.3%	23.3%	
Maximum Green (s)	42.5	42.5		42.5	42.5		15.1	15.1	42.5	15.1	15.1	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.4	2.4	2.0	2.4	2.4	
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	
Total Lost Time (s)		5.5			5.5			5.9	5.5		5.9	
Lead/Lag							Lead	Lead		Lag	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max		Max	Max		Max	Max	C-Max	Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	8.0	8.0		8.0	8.0		16.0	16.0	8.0	16.0	16.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effct Green (s)		42.5			42.5			15.1	42.5		15.1	
Actuated g/C Ratio		0.47			0.47			0.17	0.47		0.17	
v/c Ratio		0.78			1.13			0.54	0.10		0.29	
Control Delay		13.6			95.6			46.6	1.9		29.7	
Queue Delay		0.0			0.0			0.0	0.0		0.0	
Total Delay		13.6			95.6			46.6	1.9		29.7	
LOS		B			F			D	A		C	
Approach Delay		13.6			95.6			26.5			29.7	
Approach LOS		B			F			C			C	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 47 (52%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 135
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.13
 Intersection Signal Delay: 54.5
 Intersection LOS: D
 Intersection Capacity Utilization 87.9%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 30: Pine St & FM 2920





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	923	110	95	954	9	40	1	65	16	15	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	80		0	160		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.984			0.999			0.917			0.967	
Flt Protected	0.950			0.950				0.981			0.981	
Satd. Flow (prot)	1770	3483	0	1770	3536	0	0	1676	0	0	1767	0
Flt Permitted	0.950			0.950				0.876			0.877	
Satd. Flow (perm)	1770	3483	0	1770	3536	0	0	1496	0	0	1580	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			1			87			14	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		3717			948			261			287	
Travel Time (s)		84.5			21.5			5.9			6.5	
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
Growth Factor	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%
Adj. Flow (vph)	6	1314	157	135	1358	13	57	1	93	23	21	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	6	1471	0	135	1371	0	0	151	0	0	58	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		

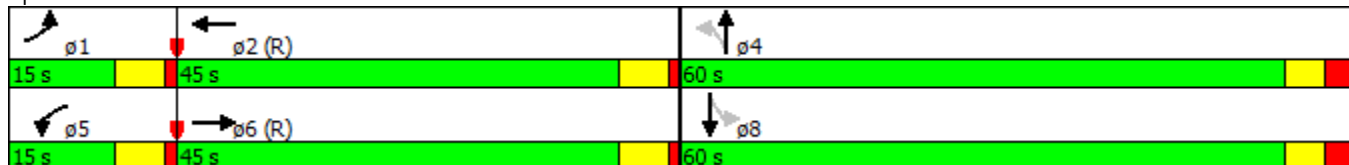


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	10.5	22.0		10.5	22.0		20.0	20.0		33.0	33.0	
Total Split (s)	15.0	45.0		15.0	45.0		60.0	60.0		60.0	60.0	
Total Split (%)	12.5%	37.5%		12.5%	37.5%		50.0%	50.0%		50.0%	50.0%	
Maximum Green (s)	9.5	39.5		9.5	39.5		54.0	54.0		54.0	54.0	
Yellow Time (s)	4.5	4.5		4.5	4.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	5.5	5.5		5.5	5.5			6.0			6.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		Max	Max		None	None	
Walk Time (s)		7.0			7.0					7.0	7.0	
Flash Dont Walk (s)		7.0			6.0					20.0	20.0	
Pedestrian Calls (#/hr)		0			0					0	0	
Act Effect Green (s)	6.0	39.5		9.5	52.0			54.0			54.0	
Actuated g/C Ratio	0.05	0.33		0.08	0.43			0.45			0.45	
v/c Ratio	0.07	1.28		0.96	0.89			0.21			0.08	
Control Delay	55.5	165.6		122.6	40.7			9.6			15.2	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	55.5	165.6		122.6	40.7			9.6			15.2	
LOS	E	F		F	D			A			B	
Approach Delay		165.1			48.1			9.6			15.2	
Approach LOS		F			D			A			B	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 5 (4%), Referenced to phase 2:WBT and 6:EBT, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.28
 Intersection Signal Delay: 99.8
 Intersection LOS: F
 Intersection Capacity Utilization 69.6%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 33: Willow St & FM 2920

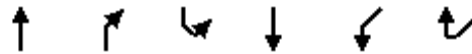




Lane Group	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Volume (vph)	54	86	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	180			0	0	0
Storage Lanes	1			0	0	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Fr						
Flt Protected	0.950					
Satd. Flow (prot)	1770	3539	0	0	0	0
Flt Permitted	0.950					
Satd. Flow (perm)	1770	3539	0	0	0	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		465	173		284	
Travel Time (s)		10.6	3.9		6.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	131%	131%	131%	131%	131%	131%
Adj. Flow (vph)	77	122	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	77	122	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Free	

Intersection Summary

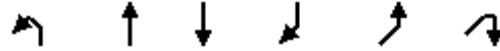
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	21.7%
ICU Level of Service	A
Analysis Period (min)	15



Lane Group	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations				↑↑	↘	
Volume (vph)	0	0	0	0	54	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	0	0	0	3539	1770	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	0	0	3539	1770	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	453			179	284	
Travel Time (s)	10.3			4.1	6.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	131%	131%	131%	131%	131%	131%
Adj. Flow (vph)	0	0	0	0	77	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	77	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Stop			Free	Yield	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	21.7%
Analysis Period (min)	15
	ICU Level of Service A



Lane Group	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations		↑↑			↘	
Volume (vph)	0	0	0	0	130	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	0	3539	0	0	1770	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	3539	0	0	1770	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		201	296		306	
Travel Time (s)		4.6	6.7		7.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	131%	131%	131%	131%	131%	131%
Adj. Flow (vph)	0	0	0	0	185	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	185	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Stop		Yield	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	24.4%
Analysis Period (min)	15
	ICU Level of Service A



Lane Group	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Volume (vph)	0	0	130	94	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	180		0	0
Storage Lanes		0	1		0	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frts						
Flt Protected			0.950			
Satd. Flow (prot)	0	0	1770	3539	0	0
Flt Permitted			0.950			
Satd. Flow (perm)	0	0	1770	3539	0	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	204			261	306	
Travel Time (s)	4.6			5.9	7.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	131%	131%	131%	131%	131%	131%
Adj. Flow (vph)	0	0	185	134	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	185	134	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	24.4%
ICU Level of Service	A
Analysis Period (min)	15



Lane Group	SBL	SBR	NEL	NET	SWT	SWR
Lane Configurations						
Volume (vph)	44	84	146	1259	1781	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	175			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.911				0.996	
Flt Protected	0.983		0.950			
Satd. Flow (prot)	1668	0	1770	3539	3525	0
Flt Permitted	0.983		0.237			
Satd. Flow (perm)	1668	0	441	3539	3525	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	80				5	
Link Speed (mph)	30			30	30	
Link Distance (ft)	1322			554	2764	
Travel Time (s)	30.0			12.6	62.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	131%	131%	131%	131%	131%	131%
Adj. Flow (vph)	63	120	208	1793	2536	78
Shared Lane Traffic (%)						
Lane Group Flow (vph)	183	0	208	1793	2614	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane				Yes	Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	2	2	
Detector Template	Left		Left	Thru	Thru	
Leading Detector (ft)	20		20	100	100	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	20		20	6	6	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	NA		custom	NA	NA	
Protected Phases	4			6	2	
Permitted Phases			1			

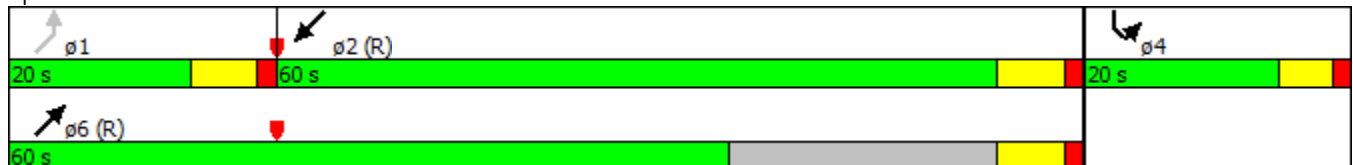


Lane Group	SBL	SBR	NEL	NET	SWT	SWR
Detector Phase	4		1	6	2	
Switch Phase						
Minimum Initial (s)	5.0		5.0	15.0	15.0	
Minimum Split (s)	32.5		22.5	22.5	30.5	
Total Split (s)	20.0		20.0	60.0	60.0	
Total Split (%)	20.0%		20.0%	60.0%	60.0%	
Maximum Green (s)	14.5		13.5	53.5	53.5	
Yellow Time (s)	4.0		5.0	5.0	5.0	
All-Red Time (s)	1.5		1.5	1.5	1.5	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	5.5		6.5	6.5	6.5	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	None		None	C-Max	C-Max	
Walk Time (s)	7.0				7.0	
Flash Dont Walk (s)	20.0				17.0	
Pedestrian Calls (#/hr)	0				0	
Act Effect Green (s)	11.1		16.9	76.9	53.5	
Actuated g/C Ratio	0.11		0.17	0.77	0.54	
v/c Ratio	0.72		2.81	0.66	1.38	
Control Delay	39.3		866.6	7.3	200.5	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	39.3		866.6	7.3	200.5	
LOS	D		F	A	F	
Approach Delay	39.3			96.6	200.5	
Approach LOS	D			F	F	

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 20 (20%), Referenced to phase 2:SWT and 6:NET, Start of Green
 Natural Cycle: 150
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 2.81
 Intersection Signal Delay: 151.1
 Intersection Capacity Utilization 102.8%
 Analysis Period (min) 15
 Intersection LOS: F
 ICU Level of Service G

Splits and Phases: 3: FM 2920 & Park Road



FM 2920
2040 No Build

PM Peak Hour
1/8/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1232	58	11	1641	0	69	0	31	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t		0.993						0.958				
Fl _t Protected				0.950				0.967				
Satd. Flow (prot)	1863	3514	0	1770	3539	0	0	1726	0	0	1863	0
Fl _t Permitted				0.950				0.794				
Satd. Flow (perm)	1863	3514	0	1770	3539	0	0	1417	0	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6						149				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		2764			2506			534				543
Travel Time (s)		62.8			57.0			12.1				12.3
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
Growth Factor	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%
Adj. Flow (vph)	0	1754	83	16	2337	0	98	0	44	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1837	0	16	2337	0	0	142	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm		
Protected Phases	1	6		5	2			4				8
Permitted Phases							4			8		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	20.0		5.0	20.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	26.0		11.0	26.0		21.5	21.5		21.5	21.5	
Total Split (s)	10.0	60.0		25.0	60.0		25.0	25.0		10.0	10.0	
Total Split (%)	9.1%	54.5%		22.7%	54.5%		22.7%	22.7%		9.1%	9.1%	
Maximum Green (s)	4.0	54.0		19.0	54.0		19.5	19.5		4.5	4.5	
Yellow Time (s)	5.0	5.0		5.0	5.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			5.5			5.5	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	C-Max		None	None		None	None	
Act Effect Green (s)		85.7		6.6	91.2			7.3				
Actuated g/C Ratio		0.78		0.06	0.83			0.07				
v/c Ratio		0.67		0.15	0.80			0.61				
Control Delay		9.0		51.7	7.9			18.5				
Queue Delay		0.0		0.0	0.0			0.0				
Total Delay		9.0		51.7	7.9			18.5				
LOS		A		D	A			B				
Approach Delay		9.0			8.2			18.5				
Approach LOS		A			A			B				

Intersection Summary

Area Type:	Other
Cycle Length:	110
Actuated Cycle Length:	110
Offset:	0 (0%), Referenced to phase 2:WBT, Start of Green
Natural Cycle:	110
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.80
Intersection Signal Delay:	8.9
Intersection LOS:	A
Intersection Capacity Utilization	76.5%
ICU Level of Service	D
Analysis Period (min)	15

Splits and Phases: 5: Cascade Bay & FM 2920



FM 2920
2040 No Build

PM Peak Hour
1/8/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	470	1064	0	0	1397	68	483	264	58	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		80	0		0	0		0
Storage Lanes	1		0	0		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.86	0.86	1.00	1.00	0.86	0.86	0.91	0.91	0.95	1.00	1.00	1.00
Fr _t					0.993			0.984				
Fl _t Protected	0.950	0.996					0.950	0.980				
Satd. Flow (prot)	1522	4787	0	0	6363	0	1610	3269	0	0	0	0
Fl _t Permitted	0.950	0.659					0.950	0.980				
Satd. Flow (perm)	1522	3167	0	0	6363	0	1610	3269	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					7			10				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		270			350			173				201
Travel Time (s)		6.1			8.0			3.9				4.6
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
Growth Factor	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%
Adj. Flow (vph)	669	1515	0	0	1989	97	688	376	83	0	0	0
Shared Lane Traffic (%)	21%						45%					
Lane Group Flow (vph)	529	1655	0	0	2086	0	378	769	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2			2		1	2				
Detector Template	Left	Thru			Thru		Left	Thru				
Leading Detector (ft)	20	100			100		20	100				
Trailing Detector (ft)	0	0			0		0	0				
Detector 1 Position(ft)	0	0			0		0	0				
Detector 1 Size(ft)	20	6			6		20	6				
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex				
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0				
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		6			6			6				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	Prot	NA			NA		Perm	NA				
Protected Phases	1	1 2			2			3 4				
Permitted Phases							3 4					

Lane Group	ø3	ø4	ø5	ø6	ø7	ø8
Lane Configurations						
Volume (vph)						
Ideal Flow (vphpl)						
Storage Length (ft)						
Storage Lanes						
Taper Length (ft)						
Lane Util. Factor						
Frt						
Flt Protected						
Satd. Flow (prot)						
Flt Permitted						
Satd. Flow (perm)						
Right Turn on Red						
Satd. Flow (RTOR)						
Link Speed (mph)						
Link Distance (ft)						
Travel Time (s)						
Peak Hour Factor						
Growth Factor						
Adj. Flow (vph)						
Shared Lane Traffic (%)						
Lane Group Flow (vph)						
Enter Blocked Intersection						
Lane Alignment						
Median Width(ft)						
Link Offset(ft)						
Crosswalk Width(ft)						
Two way Left Turn Lane						
Headway Factor						
Turning Speed (mph)						
Number of Detectors						
Detector Template						
Leading Detector (ft)						
Trailing Detector (ft)						
Detector 1 Position(ft)						
Detector 1 Size(ft)						
Detector 1 Type						
Detector 1 Channel						
Detector 1 Extend (s)						
Detector 1 Queue (s)						
Detector 1 Delay (s)						
Detector 2 Position(ft)						
Detector 2 Size(ft)						
Detector 2 Type						
Detector 2 Channel						
Detector 2 Extend (s)						
Turn Type						
Protected Phases	3	4	5	6	7	8
Permitted Phases						

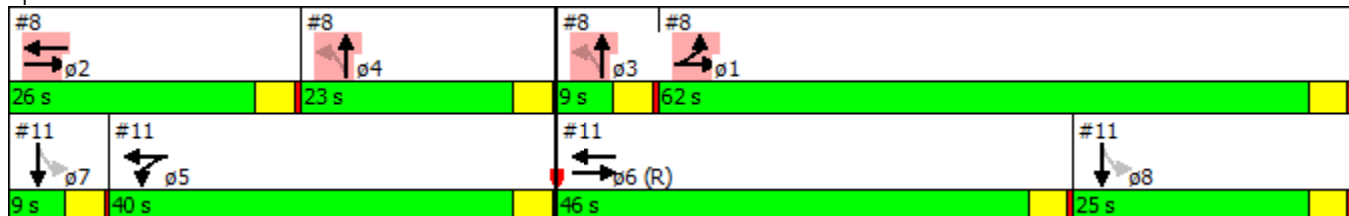


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	1 2			2		3 4	3 4				
Switch Phase												
Minimum Initial (s)	4.0				4.0							
Minimum Split (s)	8.0				20.0							
Total Split (s)	62.0				26.0							
Total Split (%)	51.7%				21.7%							
Maximum Green (s)	58.0				22.0							
Yellow Time (s)	3.5				3.5							
All-Red Time (s)	0.5				0.5							
Lost Time Adjust (s)	0.0				0.0							
Total Lost Time (s)	4.0				4.0							
Lead/Lag	Lag				Lead							
Lead-Lag Optimize?	Yes				Yes							
Vehicle Extension (s)	3.0				3.0							
Recall Mode	None				None							
Walk Time (s)					5.0							
Flash Dont Walk (s)					11.0							
Pedestrian Calls (#/hr)					0							
Act Effct Green (s)	58.0	80.0			22.0		28.0	28.0				
Actuated g/C Ratio	0.48	0.67			0.18		0.23	0.23				
v/c Ratio	0.72	0.65			1.78		1.01	1.00				
Control Delay	12.0	1.7			377.4		94.7	77.7				
Queue Delay	22.0	1.9			2.2		31.0	20.6				
Total Delay	34.1	3.6			379.6		125.7	98.3				
LOS	C	A			F		F	F				
Approach Delay		11.0			379.6			107.3				
Approach LOS		B			F			F				

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 9 (8%), Referenced to phase 6:EBWB, Start of Green
 Natural Cycle: 140
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.78
 Intersection Signal Delay: 173.3
 Intersection LOS: F
 Intersection Capacity Utilization 98.1%
 ICU Level of Service F
 Analysis Period (min) 15

Splits and Phases: 8: SH 249 NBFR & FM 2920



Lane Group	ø3	ø4	ø5	ø6	ø7	ø8
Detector Phase						
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	8.0	20.0	20.0	20.0
Total Split (s)	9.0	23.0	40.0	46.0	9.0	25.0
Total Split (%)	8%	19%	33%	38%	8%	21%
Maximum Green (s)	5.0	19.0	36.0	42.0	5.0	21.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)						
Total Lost Time (s)						
Lead/Lag	Lead	Lag	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	C-Max	None	None
Walk Time (s)	5.0	5.0		5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0		0	0	0
Act Effect Green (s)						
Actuated g/C Ratio						
v/c Ratio						
Control Delay						
Queue Delay						
Total Delay						
LOS						
Approach Delay						
Approach LOS						
Intersection Summary						

Lane Group	ø1	ø2	ø3	ø4	ø7	ø8
Lane Configurations						
Volume (vph)						
Ideal Flow (vphpl)						
Lane Util. Factor						
Frt						
Flt Protected						
Satd. Flow (prot)						
Flt Permitted						
Satd. Flow (perm)						
Right Turn on Red						
Satd. Flow (RTOR)						
Link Speed (mph)						
Link Distance (ft)						
Travel Time (s)						
Peak Hour Factor						
Growth Factor						
Adj. Flow (vph)						
Shared Lane Traffic (%)						
Lane Group Flow (vph)						
Enter Blocked Intersection						
Lane Alignment						
Median Width(ft)						
Link Offset(ft)						
Crosswalk Width(ft)						
Two way Left Turn Lane						
Headway Factor						
Turning Speed (mph)						
Number of Detectors						
Detector Template						
Leading Detector (ft)						
Trailing Detector (ft)						
Detector 1 Position(ft)						
Detector 1 Size(ft)						
Detector 1 Type						
Detector 1 Channel						
Detector 1 Extend (s)						
Detector 1 Queue (s)						
Detector 1 Delay (s)						
Detector 2 Position(ft)						
Detector 2 Size(ft)						
Detector 2 Type						
Detector 2 Channel						
Detector 2 Extend (s)						
Turn Type						
Protected Phases	1	2	3	4	7	8
Permitted Phases						
Detector Phase						
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0

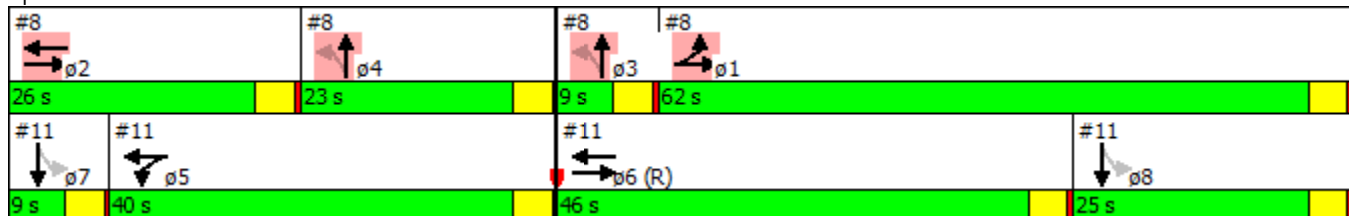


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)		20.0		8.0								
Total Split (s)		46.0		40.0								
Total Split (%)		38.3%		33.3%								
Maximum Green (s)		42.0		36.0								
Yellow Time (s)		3.5		3.5								
All-Red Time (s)		0.5		0.5								
Lost Time Adjust (s)		0.0		0.0								
Total Lost Time (s)		4.0		4.0								
Lead/Lag		Lead		Lag								
Lead-Lag Optimize?		Yes		Yes								
Vehicle Extension (s)		3.0		3.0								
Recall Mode		C-Max		None								
Walk Time (s)		5.0										
Flash Dont Walk (s)		11.0										
Pedestrian Calls (#/hr)		0										
Act Effect Green (s)		42.0		36.0	78.0					30.0	30.0	
Actuated g/C Ratio		0.35		0.30	0.65					0.25	0.25	
v/c Ratio		0.92		0.92	1.02					0.88	0.83	
Control Delay		44.7		22.7	27.8					67.5	50.1	
Queue Delay		1.9		50.4	33.3					0.0	0.0	
Total Delay		46.6		73.1	61.1					67.5	50.1	
LOS		D		E	E					E	D	
Approach Delay		46.6			63.1							56.1
Approach LOS		D			E							E

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	120
Offset:	9 (8%), Referenced to phase 6:EBWB, Start of Green
Natural Cycle:	140
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	1.78
Intersection Signal Delay:	55.8
Intersection LOS:	E
Intersection Capacity Utilization:	98.1%
ICU Level of Service:	F
Analysis Period (min):	15

Splits and Phases: 11: SH 249 SBFR & FM 2920



Lane Group	ø1	ø2	ø3	ø4	ø7	ø8
Minimum Split (s)	8.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	62.0	26.0	9.0	23.0	9.0	25.0
Total Split (%)	52%	22%	8%	19%	8%	21%
Maximum Green (s)	58.0	22.0	5.0	19.0	5.0	21.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)						
Total Lost Time (s)						
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None
Walk Time (s)		5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)		11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0	0	0	0
Act Effct Green (s)						
Actuated g/C Ratio						
v/c Ratio						
Control Delay						
Queue Delay						
Total Delay						
LOS						
Approach Delay						
Approach LOS						
Intersection Summary						



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↙↘	↗	↘	↙↘↗		↘↗	↙↘↗	↗	↘↗	↙↘↗	
Volume (vph)	99	696	334	258	907	144	373	489	3	72	157	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	110		0	180		250	180		0
Storage Lanes	1		1	1		0	2		1	2		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.91	0.91	1.00	1.00	0.91	0.91	0.97	0.91	1.00	0.97	0.91	0.91
Frt			0.850		0.979				0.850		0.924	
Flt Protected	0.950	0.999		0.950			0.950			0.950		
Satd. Flow (prot)	1610	3387	1583	1770	4979	0	3433	5085	1583	3433	4699	0
Flt Permitted	0.950	0.999		0.950			0.950			0.950		
Satd. Flow (perm)	1610	3387	1583	1770	4979	0	3433	5085	1583	3433	4699	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			382		23				127		173	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		585			617			496			562	
Travel Time (s)		13.3			14.0			11.3			12.8	
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
Growth Factor	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%
Adj. Flow (vph)	141	991	476	367	1291	205	531	696	4	103	224	228
Shared Lane Traffic (%)	10%											
Lane Group Flow (vph)	127	1005	476	367	1496	0	531	696	4	103	452	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Split	NA	Perm	Split	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	3	3		4	4		5	2		1	6	
Permitted Phases			3						2			

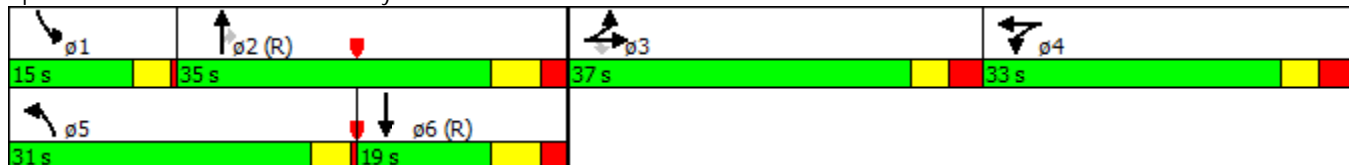


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	3	3	3	4	4		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		4.0	5.0	5.0	4.0	5.0	
Minimum Split (s)	41.5	41.5	41.5	40.5	40.5		8.0	36.0	36.0	8.0	40.0	
Total Split (s)	37.0	37.0	37.0	33.0	33.0		31.0	35.0	35.0	15.0	19.0	
Total Split (%)	30.8%	30.8%	30.8%	27.5%	27.5%		25.8%	29.2%	29.2%	12.5%	15.8%	
Maximum Green (s)	30.5	30.5	30.5	26.5	26.5		27.0	28.0	28.0	11.0	12.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	4.5	4.5	3.5	4.5	
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0		0.5	2.5	2.5	0.5	2.5	
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)	6.5	6.5	6.5	6.5	6.5		4.0	7.0	7.0	4.0	7.0	
Lead/Lag	Lead	Lead	Lead	Lag	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	None	C-Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0			7.0	7.0		7.0	
Flash Dont Walk (s)	28.0	28.0	28.0	27.0	27.0			22.0	22.0		26.0	
Pedestrian Calls (#/hr)	0	0	0	0	0			0	0		0	
Act Effect Green (s)	30.5	30.5	30.5	26.5	26.5		23.2	30.1	30.1	8.9	15.8	
Actuated g/C Ratio	0.25	0.25	0.25	0.22	0.22		0.19	0.25	0.25	0.07	0.13	
v/c Ratio	0.31	1.17	0.69	0.94	1.34		0.80	0.55	0.01	0.41	0.59	
Control Delay	52.2	133.9	26.0	79.5	195.7		55.7	41.2	0.0	57.4	34.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	52.2	133.9	26.0	79.5	195.7		55.7	41.2	0.0	57.4	34.0	
LOS	D	F	C	E	F		E	D	A	E	C	
Approach Delay		95.5			172.8			47.3			38.4	
Approach LOS		F			F			D			D	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 150
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.34
 Intersection Signal Delay: 105.6
 Intersection LOS: F
 Intersection Capacity Utilization 95.0%
 ICU Level of Service F
 Analysis Period (min) 15

Splits and Phases: 14: Tomball Pkwy & FM 2920



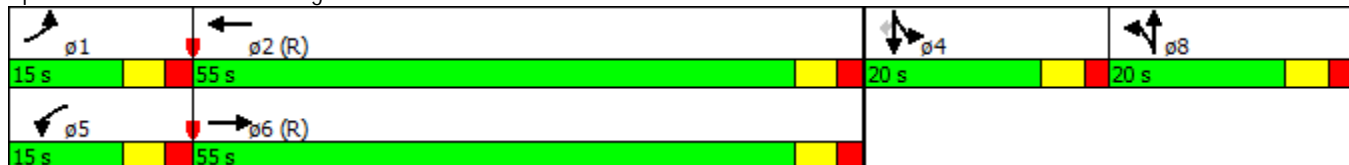


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6		5	2		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0		5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	21.7	22.7		21.7	27.7		27.5	27.5		27.5	27.5	27.5
Total Split (s)	15.0	55.0		15.0	55.0		20.0	20.0		20.0	20.0	20.0
Total Split (%)	13.6%	50.0%		13.6%	50.0%		18.2%	18.2%		18.2%	18.2%	18.2%
Maximum Green (s)	9.3	49.3		9.3	49.3		14.5	14.5		14.5	14.5	14.5
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	2.2	2.2		2.2	2.2		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.7	5.7		5.7	5.7		5.5	5.5		5.5	5.5	5.5
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max		Max	C-Max		None	None		None	None	None
Walk Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	5.0
Flash Dont Walk (s)		12.0			17.0		17.0	17.0		17.0	17.0	17.0
Pedestrian Calls (#/hr)		0			0		0	0		0	0	0
Act Effect Green (s)	6.7	49.3		32.8	83.6			5.5		11.0	0.0	11.0
Actuated g/C Ratio	0.06	0.45		0.30	0.76			0.05		0.10	0.00	0.10
v/c Ratio	0.16	0.86		0.01	0.70			0.04		0.11	no cap	0.16
Control Delay	51.8	34.3		34.8	13.7			0.4		44.2		1.2
Queue Delay	0.0	0.0		0.0	0.7			0.0		0.0		0.0
Total Delay	51.8	34.3		34.8	14.4			0.4		44.2	Error	1.2
LOS	D	C		C	B			A		D	F	A
Approach Delay		34.5			14.4			0.4			Err	
Approach LOS		C			B			A			F	

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 49 (45%), Referenced to phase 2:WBT and 6:EBT, Start of Green
 Natural Cycle: 145
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: Err
 Intersection Signal Delay: Err Intersection LOS: F
 Intersection Capacity Utilization Err% ICU Level of Service H
 Analysis Period (min) 15

Splits and Phases: 17: Buvinghausen Lane & FM 2920





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6		5	2		3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	10.5	25.5		10.5	25.5		11.1	36.1		11.1	36.1	
Total Split (s)	15.0	43.0		15.0	43.0		15.0	17.0		15.0	17.0	
Total Split (%)	16.7%	47.8%		16.7%	47.8%		16.7%	18.9%		16.7%	18.9%	
Maximum Green (s)	9.5	37.5		9.5	37.5		8.9	10.9		8.9	10.9	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.6	3.6		3.6	3.6	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.5	5.5		5.5	5.5		6.1	6.1		6.1	6.1	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		5.0			5.0			5.0			5.0	
Flash Dont Walk (s)		15.0			15.0			25.0			25.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	8.4	52.9		6.5	46.4		6.8	8.7		7.8	14.7	
Actuated g/C Ratio	0.09	0.59		0.07	0.52		0.08	0.10		0.09	0.16	
v/c Ratio	0.48	0.66		0.13	0.92		0.17	0.42		0.42	0.53	
Control Delay	48.5	17.9		51.9	23.9		41.4	40.8		46.9	26.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	48.5	17.9		51.9	23.9		41.4	40.8		46.9	26.2	
LOS	D	B		D	C		D	D		D	C	
Approach Delay		19.6			24.2			40.9			31.7	
Approach LOS		B			C			D			C	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 51 (57%), Referenced to phase 2:WBT and 6:EBT, Start of Green

Natural Cycle: 125

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.92

Intersection Signal Delay: 23.3

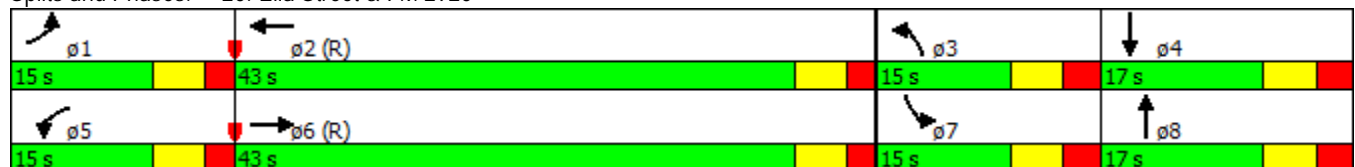
Intersection LOS: C

Intersection Capacity Utilization 78.6%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 20: Ella Street & FM 2920



FM 2920
2040 No Build

PM Peak Hour
1/8/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	22	929	13	45	1148	31	45	73	118	28	19	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	65		0	60		0	0		50	0		50
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.996				0.850			0.850
Flt Protected	0.950			0.950				0.981			0.971	
Satd. Flow (prot)	1770	3532	0	1770	3525	0	0	1827	1583	0	1809	1583
Flt Permitted	0.615			0.331				0.197			0.723	
Satd. Flow (perm)	1146	3532	0	617	3525	0	0	367	1583	0	1347	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			3				142			109
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1265			442			534			293	
Travel Time (s)		28.8			10.0			12.1			6.7	
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
Growth Factor	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%
Adj. Flow (vph)	31	1323	19	64	1635	44	64	104	168	40	27	95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	31	1342	0	64	1679	0	0	168	168	0	67	95
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	custom	NA		custom	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		6			2			3			4	
Permitted Phases	1			5			3		3	4		4

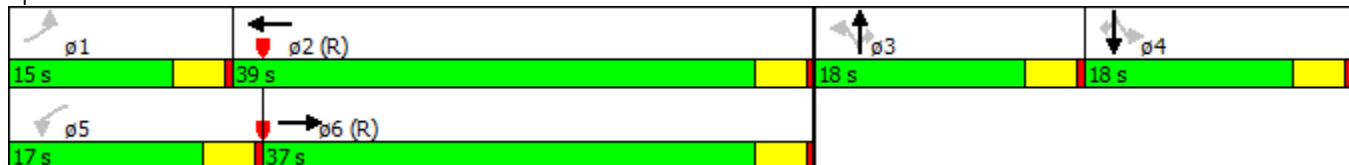


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6		5	2		3	3	3	4	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	15.0	37.0		17.0	39.0		18.0	18.0	18.0	18.0	18.0	18.0
Total Split (%)	16.7%	41.1%		18.9%	43.3%		20.0%	20.0%	20.0%	20.0%	20.0%	20.0%
Maximum Green (s)	11.0	33.0		13.0	35.0		14.0	14.0	14.0	14.0	14.0	14.0
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max		Max	Max	Max	None	None	None
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effect Green (s)	9.0	41.0		13.8	47.4		14.0	14.0		9.6	9.6	9.6
Actuated g/C Ratio	0.10	0.46		0.15	0.53		0.16	0.16		0.11	0.11	0.11
v/c Ratio	0.27	0.83		0.68	0.90		2.95	0.46		0.47	0.36	0.36
Control Delay	45.3	26.7		67.0	21.0		939.6	13.4		47.7	9.7	9.7
Queue Delay	0.0	2.1		0.0	0.1		0.0	0.1		0.0	0.0	0.0
Total Delay	45.3	28.8		67.0	21.1		939.6	13.4		47.7	9.7	9.7
LOS	D	C		E	C		F	B		D	A	A
Approach Delay		29.2			22.7		476.5			25.4		
Approach LOS		C			C		F			C		

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	8 (9%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Natural Cycle:	120
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	2.95
Intersection Signal Delay:	67.5
Intersection LOS:	E
Intersection Capacity Utilization:	70.6%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 23: Holderrieth Blvd & FM 2920



FM 2920
2040 No Build

PM Peak Hour
1/8/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↖	↑↑			↕			↕	
Volume (vph)	0	1073	0	27	1182	0	12	0	41	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	20		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t								0.896				
Fl _t Protected				0.950				0.989				
Satd. Flow (prot)	0	3539	0	1770	3539	0	0	1651	0	0	1863	0
Fl _t Permitted				0.950				0.948				
Satd. Flow (perm)	0	3539	0	1770	3539	0	0	1582	0	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)								104				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		442			131			513				186
Travel Time (s)		10.0			3.0			11.7				4.2
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
Growth Factor	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%
Adj. Flow (vph)	0	1528	0	38	1683	0	17	0	58	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1528	0	38	1683	0	0	75	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2		1	2		1	2		1		2
Detector Template		Thru		Left	Thru		Left	Thru		Left		Thru
Leading Detector (ft)		100		20	100		20	100		20		100
Trailing Detector (ft)		0		0	0		0	0		0		0
Detector 1 Position(ft)		0		0	0		0	0		0		0
Detector 1 Size(ft)		6		20	6		20	6		20		6
Detector 1 Type		Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0		0.0	0.0		0.0		0.0
Detector 1 Queue (s)		0.0		0.0	0.0		0.0	0.0		0.0		0.0
Detector 1 Delay (s)		0.0		0.0	0.0		0.0	0.0		0.0		0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type		NA		Prot	NA		Perm	NA		Perm		
Protected Phases		6		4	2 4			3				3
Permitted Phases							3	3		3		

Lane Group	ø2
Lane Configurations	
Volume (vph)	
Ideal Flow (vphp)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Growth Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	2
Permitted Phases	

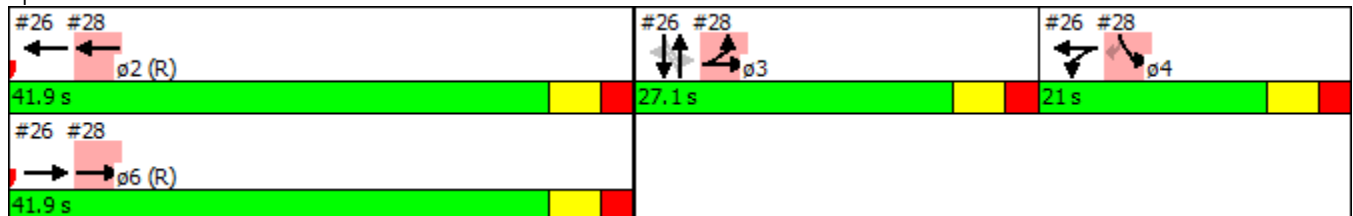


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase		6		4	2 4		3	3		3	3	
Switch Phase												
Minimum Initial (s)		15.0		5.0			5.0	5.0		5.0	5.0	
Minimum Split (s)		24.8		20.8			26.8	26.8		26.8	26.8	
Total Split (s)		41.9		21.0			27.1	27.1		27.1	27.1	
Total Split (%)		46.6%		23.3%			30.1%	30.1%		30.1%	30.1%	
Maximum Green (s)		36.1		15.2			21.3	21.3		21.3	21.3	
Yellow Time (s)		3.5		3.5			3.5	3.5		3.5	3.5	
All-Red Time (s)		2.3		2.3			2.3	2.3		2.3	2.3	
Lost Time Adjust (s)		0.0		0.0				0.0			0.0	
Total Lost Time (s)		5.8		5.8				5.8			5.8	
Lead/Lag				Lag			Lead	Lead		Lead	Lead	
Lead-Lag Optimize?				Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)		3.0		3.0			3.0	3.0		3.0	3.0	
Recall Mode		C-Max		None			Max	Max		Max	Max	
Walk Time (s)		7.0		5.0			5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		12.0		10.0			16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)		0		0			0	0		0	0	
Act Effct Green (s)		36.1		15.2	57.1			21.3				
Actuated g/C Ratio		0.40		0.17	0.63			0.24				
v/c Ratio		1.08		0.13	0.75			0.17				
Control Delay		67.2		48.7	10.0			3.7				
Queue Delay		10.5		5.1	47.9			0.0				
Total Delay		77.7		53.9	57.9			3.8				
LOS		E		D	E			A				
Approach Delay		77.7			57.8			3.8				
Approach LOS		E			E			A				

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of Green
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.19
 Intersection Signal Delay: 65.7
 Intersection LOS: E
 Intersection Capacity Utilization 56.7%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 26: Vernon Ave & FM 2920



Lane Group	ø2
Detector Phase	
Switch Phase	
Minimum Initial (s)	15.0
Minimum Split (s)	22.8
Total Split (s)	41.9
Total Split (%)	47%
Maximum Green (s)	36.1
Yellow Time (s)	3.5
All-Red Time (s)	2.3
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	C-Max
Walk Time (s)	7.0
Flash Dont Walk (s)	10.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	ø6
Lane Configurations							
Volume (vph)	82	1016	1141	38	46	70	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	20			0	0	90	
Storage Lanes	1			0	1	1	
Taper Length (ft)	25				25		
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00	
Frt			0.995			0.850	
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1770	3539	3522	0	1770	1583	
Flt Permitted	0.950				0.950		
Satd. Flow (perm)	1770	3539	3522	0	1770	1583	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)			4			100	
Link Speed (mph)		30	30		30		
Link Distance (ft)		131	272		349		
Travel Time (s)		3.0	6.2		7.9		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Growth Factor	131%	131%	131%	131%	131%	131%	
Adj. Flow (vph)	117	1447	1625	54	66	100	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	117	1447	1679	0	66	100	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Left	Left	Right	Left	Right	
Median Width(ft)		12	12		12		
Link Offset(ft)		0	0		0		
Crosswalk Width(ft)		16	16		16		
Two way Left Turn Lane		Yes	Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15			9	15	9	
Number of Detectors	1	2	2		1	1	
Detector Template	Left	Thru	Thru		Left	Right	
Leading Detector (ft)	20	100	100		20	20	
Trailing Detector (ft)	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0		0	0	
Detector 1 Size(ft)	20	6	6		20	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94	94				
Detector 2 Size(ft)		6	6				
Detector 2 Type		Cl+Ex	Cl+Ex				
Detector 2 Channel							
Detector 2 Extend (s)		0.0	0.0				
Turn Type	Prot	NA	NA		NA	Perm	
Protected Phases	3	3 6	2		4		6
Permitted Phases						4	

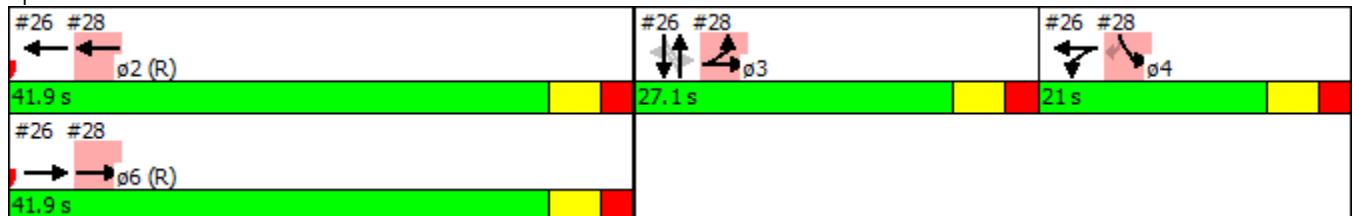


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	ø6
Detector Phase	3	3 6	2		4	4	
Switch Phase							
Minimum Initial (s)	5.0		15.0		5.0	5.0	15.0
Minimum Split (s)	26.8		22.8		20.8	20.8	24.8
Total Split (s)	27.1		41.9		21.0	21.0	41.9
Total Split (%)	30.1%		46.6%		23.3%	23.3%	47%
Maximum Green (s)	21.3		36.1		15.2	15.2	36.1
Yellow Time (s)	3.5		3.5		3.5	3.5	3.5
All-Red Time (s)	2.3		2.3		2.3	2.3	2.3
Lost Time Adjust (s)	0.0		0.0		0.0	0.0	
Total Lost Time (s)	5.8		5.8		5.8	5.8	
Lead/Lag	Lead				Lag	Lag	
Lead-Lag Optimize?	Yes				Yes	Yes	
Vehicle Extension (s)	3.0		3.0		3.0	3.0	3.0
Recall Mode	Max		C-Max		None	None	C-Max
Walk Time (s)	5.0		7.0		5.0	5.0	7.0
Flash Dont Walk (s)	16.0		10.0		10.0	10.0	12.0
Pedestrian Calls (#/hr)	0		0		0	0	0
Act Effect Green (s)	21.3	63.2	36.1		15.2	15.2	
Actuated g/C Ratio	0.24	0.70	0.40		0.17	0.17	
v/c Ratio	0.28	0.58	1.19		0.22	0.29	
Control Delay	25.0	1.4	96.8		34.6	9.5	
Queue Delay	82.4	6.9	0.6		0.0	0.4	
Total Delay	107.4	8.4	97.4		34.6	9.8	
LOS	F	A	F		C	A	
Approach Delay		15.8	97.4		19.7		
Approach LOS		B	F		B		

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of Green
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.19
 Intersection Signal Delay: 56.2
 Intersection LOS: E
 Intersection Capacity Utilization 67.5%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 28: FM 2920 & Baker Dr





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕	↕		↕↕	
Volume (vph)	12	1018	9	12	1145	17	30	44	101	13	9	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		80	0		0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999			0.998				0.850		0.961	
Flt Protected		0.999			0.999			0.980			0.979	
Satd. Flow (prot)	0	3532	0	0	3529	0	0	1825	1583	0	1753	0
Flt Permitted		0.726			0.822			0.663			0.845	
Satd. Flow (perm)	0	2567	0	0	2903	0	0	1235	1583	0	1513	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			2				144		13	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1317			3717			353			398	
Travel Time (s)		29.9			84.5			8.0			9.0	
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
Growth Factor	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%
Adj. Flow (vph)	17	1450	13	17	1630	24	43	63	144	19	13	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1480	0	0	1671	0	0	106	144	0	45	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA	custom	Perm	NA	
Protected Phases		2			6			3			4	
Permitted Phases	2			6			3		2	4		

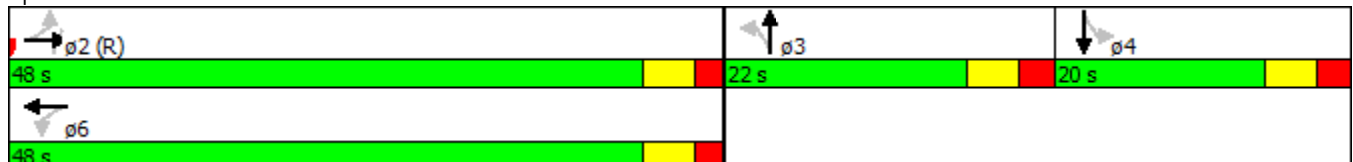


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	2	2		6	6		3	3	2	4	4	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		5.0	5.0	20.0	5.0	5.0	
Minimum Split (s)	25.5	25.5		25.5	25.5		28.9	28.9	25.5	28.9	28.9	
Total Split (s)	48.0	48.0		48.0	48.0		22.0	22.0	48.0	20.0	20.0	
Total Split (%)	53.3%	53.3%		53.3%	53.3%		24.4%	24.4%	53.3%	22.2%	22.2%	
Maximum Green (s)	42.5	42.5		42.5	42.5		16.1	16.1	42.5	14.1	14.1	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.4	2.4	2.0	2.4	2.4	
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	
Total Lost Time (s)		5.5			5.5			5.9	5.5		5.9	
Lead/Lag							Lead	Lead		Lag	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max		Max	Max		Max	Max	C-Max	Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	8.0	8.0		8.0	8.0		16.0	16.0	8.0	16.0	16.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effct Green (s)		42.5			42.5			16.1	42.5		14.1	
Actuated g/C Ratio		0.47			0.47			0.18	0.47		0.16	
v/c Ratio		1.22			1.22			0.48	0.17		0.18	
Control Delay		123.2			130.1			41.5	3.0		27.6	
Queue Delay		0.0			0.0			0.0	0.0		0.0	
Total Delay		123.2			130.1			41.5	3.0		27.6	
LOS		F			F			D	A		C	
Approach Delay		123.2			130.1			19.3			27.6	
Approach LOS		F			F			B			C	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 47 (52%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 135
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.22
 Intersection Signal Delay: 117.8
 Intersection Capacity Utilization 72.6%
 Analysis Period (min) 15
 Intersection LOS: F
 ICU Level of Service C

Splits and Phases: 30: Pine St & FM 2920





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	1174	19	6	1105	14	21	0	17	14	0	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	80		0	160		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.998			0.940				0.955
Flt Protected	0.950			0.950				0.973				0.968
Satd. Flow (prot)	1770	3532	0	1770	3532	0	0	1704	0	0	1722	0
Flt Permitted	0.950			0.950				0.834				0.817
Satd. Flow (perm)	1770	3532	0	1770	3532	0	0	1460	0	0	1453	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			2			58				58
Link Speed (mph)		30			30			30				30
Link Distance (ft)		3717			948			261				287
Travel Time (s)		84.5			21.5			5.9				6.5
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
Growth Factor	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%
Adj. Flow (vph)	11	1672	27	9	1573	20	30	0	24	20	0	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	11	1699	0	9	1593	0	0	54	0	0	30	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4				8
Permitted Phases							4			8		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	10.5	22.0		10.5	22.0		20.0	20.0		33.0	33.0	
Total Split (s)	15.0	105.0		15.0	105.0		30.0	30.0		30.0	30.0	
Total Split (%)	10.0%	70.0%		10.0%	70.0%		20.0%	20.0%		20.0%	20.0%	
Maximum Green (s)	9.5	99.5		9.5	99.5		24.0	24.0		24.0	24.0	
Yellow Time (s)	4.5	4.5		4.5	4.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	5.5	5.5		5.5	5.5			6.0			6.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		Max	Max		None	None	
Walk Time (s)		7.0			7.0					7.0	7.0	
Flash Dont Walk (s)		7.0			6.0					20.0	20.0	
Pedestrian Calls (#/hr)		0			0					0	0	
Act Effect Green (s)	6.5	111.8		6.4	109.3			24.0			24.0	
Actuated g/C Ratio	0.04	0.75		0.04	0.73			0.16			0.16	
v/c Ratio	0.14	0.65		0.12	0.62			0.19			0.11	
Control Delay	72.6	11.4		72.0	12.2			13.0			2.8	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	72.6	11.4		72.0	12.2			13.0			2.8	
LOS	E	B		E	B			B			A	
Approach Delay		11.8			12.5			13.0			2.8	
Approach LOS		B			B			B			A	

Intersection Summary

Area Type: Other
 Cycle Length: 150
 Actuated Cycle Length: 150
 Offset: 5 (3%), Referenced to phase 2:WBT and 6:EBT, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.65
 Intersection Signal Delay: 12.1
 Intersection LOS: B
 Intersection Capacity Utilization 58.7%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 33: Willow St & FM 2920

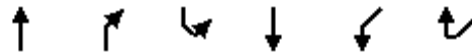




Lane Group	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Volume (vph)	166	264	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	180			0	0	0
Storage Lanes	1			0	0	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Fr						
Flt Protected	0.950					
Satd. Flow (prot)	1770	3539	0	0	0	0
Flt Permitted	0.950					
Satd. Flow (perm)	1770	3539	0	0	0	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		465	173		284	
Travel Time (s)		10.6	3.9		6.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	131%	131%	131%	131%	131%	131%
Adj. Flow (vph)	236	376	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	236	376	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	26.2%
Analysis Period (min)	15
	ICU Level of Service A



Lane Group	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations				↑↑	↘	
Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	0	0	0	3539	1863	0
Flt Permitted						
Satd. Flow (perm)	0	0	0	3539	1863	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	453			179	284	
Travel Time (s)	10.3			4.1	6.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	131%	131%	131%	131%	131%	131%
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	9		15	15		9
Sign Control	Stop			Free	Yield	

Intersection Summary

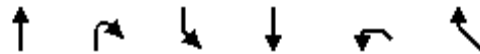
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	26.2%
Analysis Period (min)	15
	ICU Level of Service A



Lane Group	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations		↑↑			↘	
Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	0	3539	0	0	1863	0
Flt Permitted						
Satd. Flow (perm)	0	3539	0	0	1863	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		201	296		306	
Travel Time (s)		4.6	6.7		7.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	131%	131%	131%	131%	131%	131%
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Stop		Yield	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	24.4%
Analysis Period (min)	15
	ICU Level of Service A



Lane Group	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Volume (vph)	0	0	130	153	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	180		0	0
Storage Lanes		0	1		0	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt						
Flt Protected			0.950			
Satd. Flow (prot)	0	0	1770	3539	0	0
Flt Permitted			0.950			
Satd. Flow (perm)	0	0	1770	3539	0	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	204			261	306	
Travel Time (s)	4.6			5.9	7.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	131%	131%	131%	131%	131%	131%
Adj. Flow (vph)	0	0	185	218	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	185	218	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	24.4%
ICU Level of Service	A
Analysis Period (min)	15



Lane Group	SBL	SBR	NEL	NET	SWT	SWR
Lane Configurations						
Volume (vph)	30	119	48	1411	1017	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	175			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.892				0.998	
Flt Protected	0.990		0.950			
Satd. Flow (prot)	1645	0	1770	3539	3532	0
Flt Permitted	0.990		0.312			
Satd. Flow (perm)	1645	0	581	3539	3532	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	169				2	
Link Speed (mph)	30			30	30	
Link Distance (ft)	1322			554	2764	
Travel Time (s)	30.0			12.6	62.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	131%	131%	131%	131%	131%	131%
Adj. Flow (vph)	43	169	68	2009	1448	20
Shared Lane Traffic (%)						
Lane Group Flow (vph)	212	0	68	2009	1468	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane				Yes	Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	2	2	
Detector Template	Left		Left	Thru	Thru	
Leading Detector (ft)	20		20	100	100	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	20		20	6	6	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	NA		custom	NA	NA	
Protected Phases	4			6	2	
Permitted Phases			1			

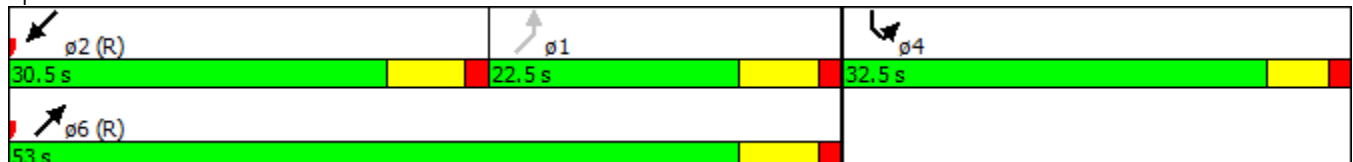


Lane Group	SBL	SBR	NEL	NET	SWT	SWR
Detector Phase	4		1	6	2	
Switch Phase						
Minimum Initial (s)	5.0		5.0	15.0	15.0	
Minimum Split (s)	32.5		22.5	22.5	30.5	
Total Split (s)	32.5		22.5	53.0	30.5	
Total Split (%)	38.0%		26.3%	62.0%	35.7%	
Maximum Green (s)	27.0		16.0	46.5	24.0	
Yellow Time (s)	4.0		5.0	5.0	5.0	
All-Red Time (s)	1.5		1.5	1.5	1.5	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	5.5		6.5	6.5	6.5	
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	None		None	C-Max	C-Max	
Walk Time (s)	7.0				7.0	
Flash Dont Walk (s)	20.0				17.0	
Pedestrian Calls (#/hr)	0				0	
Act Effect Green (s)	8.9		14.6	64.6	46.6	
Actuated g/C Ratio	0.10		0.17	0.76	0.55	
v/c Ratio	0.66		0.69	0.75	0.76	
Control Delay	19.8		68.4	9.0	21.8	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	19.8		68.4	9.0	21.8	
LOS	B		E	A	C	
Approach Delay	19.8			11.0	21.8	
Approach LOS	B			B	C	

Intersection Summary

Area Type: Other
 Cycle Length: 85.5
 Actuated Cycle Length: 85.5
 Offset: 63 (74%), Referenced to phase 2:SWT and 6:NET, Start of Green
 Natural Cycle: 120
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.76
 Intersection Signal Delay: 15.7
 Intersection Capacity Utilization 72.9%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service C

Splits and Phases: 3: FM 2920 & Park Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗			↕			↕	
Volume (vph)	0	1404	54	10	980	0	21	0	16	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994						0.941				
Flt Protected				0.950				0.972				
Satd. Flow (prot)	1863	3518	0	1770	3539	0	0	1704	0	0	1863	0
Flt Permitted				0.950				0.850				
Satd. Flow (perm)	1863	3518	0	1770	3539	0	0	1490	0	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7						109				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		2764			2506			534				543
Travel Time (s)		62.8			57.0			12.1				12.3
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
Growth Factor	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%
Adj. Flow (vph)	0	1999	77	14	1395	0	30	0	23	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	2076	0	14	1395	0	0	53	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm		
Protected Phases	1	6		5	2			4				8
Permitted Phases							4			8		
Minimum Split (s)	11.0	26.0		11.0	26.0		21.5	21.5		21.5	21.5	
Total Split (s)	11.0	57.4		11.0	57.4		21.6	21.6		21.6	21.6	
Total Split (%)	12.2%	63.8%		12.2%	63.8%		24.0%	24.0%		24.0%	24.0%	
Maximum Green (s)	5.0	51.4		5.0	51.4		16.1	16.1		16.1	16.1	
Yellow Time (s)	5.0	5.0		5.0	5.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			5.5			5.5	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Act Effect Green (s)		51.4		5.0	51.4			16.1				
Actuated g/C Ratio		0.57		0.06	0.57			0.18				
v/c Ratio		1.03		0.14	0.69			0.15				
Control Delay		49.4		43.9	15.9			1.2				
Queue Delay		0.0		0.0	0.0			0.0				
Total Delay		49.4		43.9	15.9			1.2				



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		D		D	B			A				
Approach Delay		49.4			16.2			1.2				
Approach LOS		D			B			A				

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	0 (0%), Referenced to phase 2:WBT, Start of Green
Natural Cycle:	90
Control Type:	Pretimed
Maximum v/c Ratio:	1.03
Intersection Signal Delay:	35.5
Intersection LOS:	D
Intersection Capacity Utilization	66.8%
ICU Level of Service	C
Analysis Period (min)	15

Splits and Phases: 5: Cascade Bay & FM 2920

11 s	57.4 s	21.6 s
11 s	57.4 s	21.6 s



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	307	1194	0	0	633	36	270	86	35	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		80	0		0	0		0
Storage Lanes	1		0	0		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.86	0.86	1.00	1.00	0.86	0.86	0.91	0.91	0.95	1.00	1.00	1.00
Frt					0.992			0.979				
Flt Protected	0.950	0.999					0.950	0.974				
Satd. Flow (prot)	1522	4801	0	0	6357	0	1610	3233	0	0	0	0
Flt Permitted	0.950	0.934					0.950	0.974				
Satd. Flow (perm)	1522	4489	0	0	6357	0	1610	3233	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					8			15				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		270			350			173				201
Travel Time (s)		6.1			8.0			3.9				4.6
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
Growth Factor	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%
Adj. Flow (vph)	437	1700	0	0	901	51	384	122	50	0	0	0
Shared Lane Traffic (%)	10%						50%					
Lane Group Flow (vph)	393	1744	0	0	952	0	192	364	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2			2		1	2				
Detector Template	Left	Thru			Thru		Left	Thru				
Leading Detector (ft)	20	100			100		20	100				
Trailing Detector (ft)	0	0			0		0	0				
Detector 1 Position(ft)	0	0			0		0	0				
Detector 1 Size(ft)	20	6			6		20	6				
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex				
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0				
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		6			6			6				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	Prot	NA			NA		Perm	NA				
Protected Phases	1	1 2			2			3 4				
Permitted Phases							3 4					

Lane Group	ø3	ø4	ø5	ø6	ø7	ø8
Lane Configurations						
Volume (vph)						
Ideal Flow (vphpl)						
Storage Length (ft)						
Storage Lanes						
Taper Length (ft)						
Lane Util. Factor						
Frt						
Flt Protected						
Satd. Flow (prot)						
Flt Permitted						
Satd. Flow (perm)						
Right Turn on Red						
Satd. Flow (RTOR)						
Link Speed (mph)						
Link Distance (ft)						
Travel Time (s)						
Peak Hour Factor						
Growth Factor						
Adj. Flow (vph)						
Shared Lane Traffic (%)						
Lane Group Flow (vph)						
Enter Blocked Intersection						
Lane Alignment						
Median Width(ft)						
Link Offset(ft)						
Crosswalk Width(ft)						
Two way Left Turn Lane						
Headway Factor						
Turning Speed (mph)						
Number of Detectors						
Detector Template						
Leading Detector (ft)						
Trailing Detector (ft)						
Detector 1 Position(ft)						
Detector 1 Size(ft)						
Detector 1 Type						
Detector 1 Channel						
Detector 1 Extend (s)						
Detector 1 Queue (s)						
Detector 1 Delay (s)						
Detector 2 Position(ft)						
Detector 2 Size(ft)						
Detector 2 Type						
Detector 2 Channel						
Detector 2 Extend (s)						
Turn Type						
Protected Phases	3	4	5	6	7	8
Permitted Phases						



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	1 2			2		3 4	3 4				
Switch Phase												
Minimum Initial (s)	4.0				4.0							
Minimum Split (s)	8.0				20.0							
Total Split (s)	49.0				27.0							
Total Split (%)	40.8%				22.5%							
Maximum Green (s)	45.0				23.0							
Yellow Time (s)	3.5				3.5							
All-Red Time (s)	0.5				0.5							
Lost Time Adjust (s)	0.0				0.0							
Total Lost Time (s)	4.0				4.0							
Lead/Lag	Lag				Lead							
Lead-Lag Optimize?	Yes				Yes							
Vehicle Extension (s)	3.0				3.0							
Recall Mode	None				None							
Walk Time (s)					5.0							
Flash Dont Walk (s)					11.0							
Pedestrian Calls (#/hr)					0							
Act Effct Green (s)	56.2	79.2			23.0		28.8	28.8				
Actuated g/C Ratio	0.47	0.66			0.19		0.24	0.24				
v/c Ratio	0.55	0.63			0.78		0.50	0.46				
Control Delay	15.0	4.2			50.8		43.3	38.7				
Queue Delay	5.0	0.6			37.8		0.2	0.1				
Total Delay	20.0	4.8			88.6		43.5	38.7				
LOS	C	A			F		D	D				
Approach Delay		7.6			88.6			40.4				
Approach LOS		A			F			D				

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	120
Offset:	0 (0%), Referenced to phase 6:EBWB, Start of Green
Natural Cycle:	90
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.79
Intersection Signal Delay:	33.8
Intersection LOS:	C
Intersection Capacity Utilization:	52.2%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 8: SH 249 NBFR & FM 2920

#8 ← ρ2 27 s	#8 ↑ ρ4 24 s	#8 ↑ ρ3 20 s	#8 ↗ ρ1 49 s
#11 ↓ ρ7 24 s	#11 ↖ ρ5 27 s	#11 ← ρ6 (R) 47 s	#11 ↓ ρ8 22 s

Lane Group	ø3	ø4	ø5	ø6	ø7	ø8
Detector Phase						
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	8.0	20.0	20.0	20.0
Total Split (s)	20.0	24.0	27.0	47.0	24.0	22.0
Total Split (%)	17%	20%	23%	39%	20%	18%
Maximum Green (s)	16.0	20.0	23.0	43.0	20.0	18.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)						
Total Lost Time (s)						
Lead/Lag	Lead	Lag	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	C-Max	None	None
Walk Time (s)	5.0	5.0		5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0		0	0	0
Act Effect Green (s)						
Actuated g/C Ratio						
v/c Ratio						
Control Delay						
Queue Delay						
Total Delay						
LOS						
Approach Delay						
Approach LOS						
Intersection Summary						

Lane Group	ø1	ø2	ø3	ø4	ø7	ø8
Lane Configurations						
Volume (vph)						
Ideal Flow (vphpl)						
Lane Util. Factor						
Frt						
Flt Protected						
Satd. Flow (prot)						
Flt Permitted						
Satd. Flow (perm)						
Right Turn on Red						
Satd. Flow (RTOR)						
Link Speed (mph)						
Link Distance (ft)						
Travel Time (s)						
Peak Hour Factor						
Growth Factor						
Adj. Flow (vph)						
Shared Lane Traffic (%)						
Lane Group Flow (vph)						
Enter Blocked Intersection						
Lane Alignment						
Median Width(ft)						
Link Offset(ft)						
Crosswalk Width(ft)						
Two way Left Turn Lane						
Headway Factor						
Turning Speed (mph)						
Number of Detectors						
Detector Template						
Leading Detector (ft)						
Trailing Detector (ft)						
Detector 1 Position(ft)						
Detector 1 Size(ft)						
Detector 1 Type						
Detector 1 Channel						
Detector 1 Extend (s)						
Detector 1 Queue (s)						
Detector 1 Delay (s)						
Detector 2 Position(ft)						
Detector 2 Size(ft)						
Detector 2 Type						
Detector 2 Channel						
Detector 2 Extend (s)						
Turn Type						
Protected Phases	1	2	3	4	7	8
Permitted Phases						
Detector Phase						
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)		20.0		8.0								
Total Split (s)		47.0		27.0								
Total Split (%)		39.2%		22.5%								
Maximum Green (s)		43.0		23.0								
Yellow Time (s)		3.5		3.5								
All-Red Time (s)		0.5		0.5								
Lost Time Adjust (s)		0.0		0.0								
Total Lost Time (s)		4.0		4.0								
Lead/Lag		Lead		Lag								
Lead-Lag Optimize?		Yes		Yes								
Vehicle Extension (s)		3.0		3.0								
Recall Mode		C-Max		None								
Walk Time (s)		5.0										
Flash Dont Walk (s)		11.0										
Pedestrian Calls (#/hr)		0										
Act Effect Green (s)		45.4		24.6	70.0					38.0	38.0	
Actuated g/C Ratio		0.38		0.20	0.58					0.32	0.32	
v/c Ratio		0.79		0.58	0.57					0.72	0.66	
Control Delay		35.4		20.5	14.1					44.7	32.4	
Queue Delay		0.6		3.8	0.7					0.0	0.0	
Total Delay		36.0		24.3	14.8					44.7	32.4	
LOS		D		C	B					D	C	
Approach Delay		36.0			16.1						36.7	
Approach LOS		D			B						D	

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	120
Offset:	0 (0%), Referenced to phase 6:EBWB, Start of Green
Natural Cycle:	90
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.79
Intersection Signal Delay:	30.1
Intersection LOS:	C
Intersection Capacity Utilization:	52.2%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 11: SH 249 SBFR & FM 2920

#8 ← ρ2 27 s	#8 ↑ ρ4 24 s	#8 ↑ ρ3 20 s	#8 ↗ ρ1 49 s
#11 ↓ ρ7 24 s	#11 ↖ ρ5 27 s	#11 ← ρ6 (R) 47 s	#11 ↓ ρ8 22 s

Lane Group	ø1	ø2	ø3	ø4	ø7	ø8
Minimum Split (s)	8.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	49.0	27.0	20.0	24.0	24.0	22.0
Total Split (%)	41%	23%	17%	20%	20%	18%
Maximum Green (s)	45.0	23.0	16.0	20.0	20.0	18.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)						
Total Lost Time (s)						
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None
Walk Time (s)		5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)		11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0	0	0	0
Act Effct Green (s)						
Actuated g/C Ratio						
v/c Ratio						
Control Delay						
Queue Delay						
Total Delay						
LOS						
Approach Delay						
Approach LOS						
Intersection Summary						



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↙↙	↘	↘	↙↙↙		↘↘	↙↙↙	↘	↘↘	↙↙↙	
Volume (vph)	60	793	377	216	565	140	93	186	4	39	76	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	110		0	180		250	180		0
Storage Lanes	1		1	1		0	2		1	2		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.91	0.91	1.00	1.00	0.91	0.91	0.97	0.91	1.00	0.97	0.91	0.91
Frt			0.850		0.970				0.850		0.945	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1610	3390	1583	1770	4933	0	3433	5085	1583	3433	4806	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1610	3390	1583	1770	4933	0	3433	5085	1583	3433	4806	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			353		40				109		63	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		585			617			496			562	
Travel Time (s)		13.3			14.0			11.3			12.8	
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
Growth Factor	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%
Adj. Flow (vph)	85	1129	537	308	805	199	132	265	6	56	108	63
Shared Lane Traffic (%)	10%											
Lane Group Flow (vph)	76	1138	537	308	1004	0	132	265	6	56	171	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Split	NA	Perm	Split	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	3	3		4	4		5	2		1	6	
Permitted Phases			3						2			

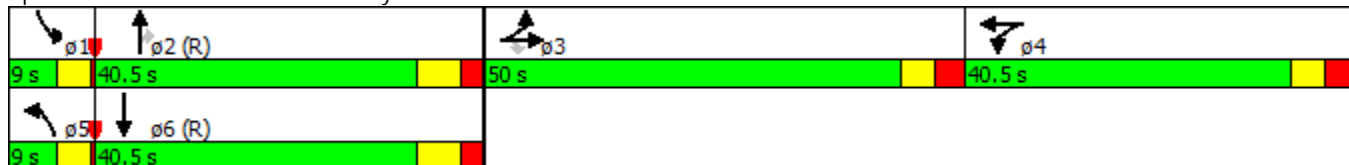


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	3	3	3	4	4		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		4.0	5.0	5.0	4.0	5.0	
Minimum Split (s)	41.5	41.5	41.5	40.5	40.5		8.0	36.0	36.0	8.0	40.0	
Total Split (s)	50.0	50.0	50.0	40.5	40.5		9.0	40.5	40.5	9.0	40.5	
Total Split (%)	35.7%	35.7%	35.7%	28.9%	28.9%		6.4%	28.9%	28.9%	6.4%	28.9%	
Maximum Green (s)	43.5	43.5	43.5	34.0	34.0		5.0	33.5	33.5	5.0	33.5	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	4.5	4.5	3.5	4.5	
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0		0.5	2.5	2.5	0.5	2.5	
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)	6.5	6.5	6.5	6.5	6.5		4.0	7.0	7.0	4.0	7.0	
Lead/Lag	Lead	Lead	Lead	Lag	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	None	C-Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0			7.0	7.0		7.0	
Flash Dont Walk (s)	28.0	28.0	28.0	27.0	27.0			22.0	22.0		26.0	
Pedestrian Calls (#/hr)	0	0	0	0	0			0	0		0	
Act Effect Green (s)	43.5	43.5	43.5	33.2	33.2		5.8	36.1	36.1	5.1	33.5	
Actuated g/C Ratio	0.31	0.31	0.31	0.24	0.24		0.04	0.26	0.26	0.04	0.24	
v/c Ratio	0.15	1.08	0.73	0.74	0.84		0.94	0.20	0.01	0.45	0.14	
Control Delay	36.0	97.5	20.6	60.7	55.8		126.5	42.1	0.0	77.6	26.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	36.0	97.5	20.6	60.7	55.8		126.5	42.1	0.0	77.6	26.6	
LOS	D	F	C	E	E		F	D	A	E	C	
Approach Delay		71.3			56.9			69.1			39.2	
Approach LOS		E			E			E			D	

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 140
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.08
 Intersection Signal Delay: 64.0
 Intersection LOS: E
 Intersection Capacity Utilization 75.1%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 14: Tomball Pkwy & FM 2920



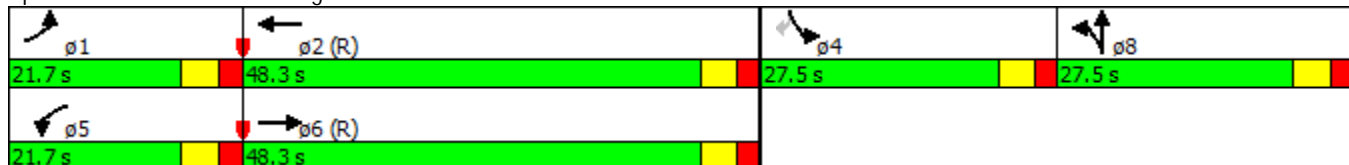


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6		5	2		8	8		4		4
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0		5.0	5.0		5.0		5.0
Minimum Split (s)	21.7	22.7		21.7	27.7		27.5	27.5		27.5		27.5
Total Split (s)	21.7	48.3		21.7	48.3		27.5	27.5		27.5		27.5
Total Split (%)	17.4%	38.6%		17.4%	38.6%		22.0%	22.0%		22.0%		22.0%
Maximum Green (s)	16.0	42.6		16.0	42.6		22.0	22.0		22.0		22.0
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5		3.5
All-Red Time (s)	2.2	2.2		2.2	2.2		2.0	2.0		2.0		2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0		0.0
Total Lost Time (s)	5.7	5.7		5.7	5.7			5.5		5.5		5.5
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0		3.0
Recall Mode	None	C-Max		Max	C-Max		None	None		None		None
Walk Time (s)		5.0			5.0		5.0	5.0		5.0		5.0
Flash Dont Walk (s)		12.0			17.0		17.0	17.0		17.0		17.0
Pedestrian Calls (#/hr)		0			0		0	0		0		0
Act Effect Green (s)	8.3	42.6		61.1	98.8			5.5		6.6		6.6
Actuated g/C Ratio	0.07	0.34		0.49	0.79			0.04		0.05		0.05
v/c Ratio	0.35	1.11		0.00	0.42			0.00		0.15		0.13
Control Delay	63.1	99.0		21.8	7.1			0.0		59.5		1.4
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0		0.0
Total Delay	63.1	99.0		21.8	7.1			0.0		59.5		1.4
LOS	E	F		C	A			A		E		A
Approach Delay		97.9			7.1			0.0				
Approach LOS		F			A			A				

Intersection Summary

Area Type: Other
 Cycle Length: 125
 Actuated Cycle Length: 125
 Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of Green
 Natural Cycle: 125
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.11
 Intersection Signal Delay: 55.8
 Intersection LOS: E
 Intersection Capacity Utilization 51.8%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 17: Buvinghausen Lane & FM 2920



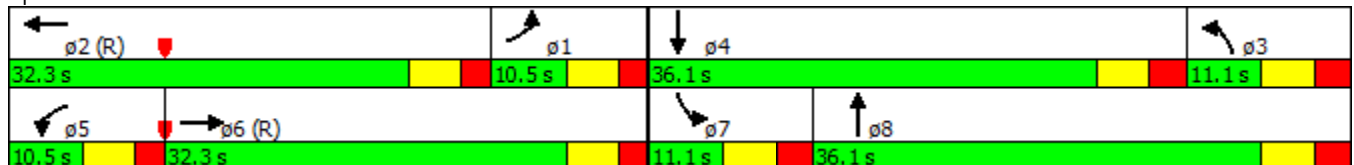


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6		5	2		3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	10.5	25.5		10.5	25.5		11.1	36.1		11.1	36.1	
Total Split (s)	10.5	32.3		10.5	32.3		11.1	36.1		11.1	36.1	
Total Split (%)	11.7%	35.9%		11.7%	35.9%		12.3%	40.1%		12.3%	40.1%	
Maximum Green (s)	5.0	26.8		5.0	26.8		5.0	30.0		5.0	30.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.6	3.6		3.6	3.6	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.5	5.5		5.5	5.5		6.1	6.1		6.1	6.1	
Lead/Lag	Lag	Lag		Lead	Lead		Lag	Lag		Lead	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		5.0			5.0			5.0			5.0	
Flash Dont Walk (s)		15.0			15.0			25.0			25.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effect Green (s)	5.0	62.6		5.8	56.6		6.3	8.6		5.7	10.7	
Actuated g/C Ratio	0.06	0.70		0.06	0.63		0.07	0.10		0.06	0.12	
v/c Ratio	0.55	0.52		0.04	0.54		0.11	0.15		0.43	0.54	
Control Delay	63.4	10.7		40.0	13.1		40.8	33.0		53.1	22.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	63.4	10.7		40.0	13.1		40.8	33.0		53.1	22.2	
LOS	E	B		D	B		D	C		D	C	
Approach Delay		12.8			13.1			35.7			29.6	
Approach LOS		B			B			D			C	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 8 (9%), Referenced to phase 2:WBT and 6:EBT, Start of Green
 Natural Cycle: 95
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.55
 Intersection Signal Delay: 14.5
 Intersection LOS: B
 Intersection Capacity Utilization 61.7%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 20: Ella Street & FM 2920





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	19	858	12	79	826	19	22	21	47	28	40	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	65		0	60		0	0		50	0		50
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.997				0.850			0.850
Flt Protected	0.950			0.950				0.975			0.980	
Satd. Flow (prot)	1770	3532	0	1770	3529	0	0	1816	1583	0	1825	1583
Flt Permitted	0.656			0.118				0.207			0.838	
Satd. Flow (perm)	1222	3532	0	220	3529	0	0	386	1583	0	1561	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			3				142			142
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1265			442			534			293	
Travel Time (s)		28.8			10.0			12.1			6.7	
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
Growth Factor	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%
Adj. Flow (vph)	27	1222	17	112	1176	27	31	30	67	40	57	51
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	1239	0	112	1203	0	0	61	67	0	97	51
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	custom	NA		custom	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		6			2			3			4	
Permitted Phases	1			5			3		3	4		4



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6		5	2		3	3	3	4	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	20.0	29.0		31.0	40.0		20.0	20.0	20.0	20.0	20.0	20.0
Total Split (%)	20.0%	29.0%		31.0%	40.0%		20.0%	20.0%	20.0%	20.0%	20.0%	20.0%
Maximum Green (s)	16.0	25.0		27.0	36.0		16.0	16.0	16.0	16.0	16.0	16.0
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max		Max	Max	Max	None	None	None
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effect Green (s)	11.0	25.0		33.8	55.1		16.0	16.0		11.3	11.3	
Actuated g/C Ratio	0.11	0.25		0.34	0.55		0.16	0.16		0.11	0.11	
v/c Ratio	0.20	1.40		1.51	0.62		1.00	0.18		0.55	0.17	
Control Delay	41.8	219.6		320.3	21.1		161.8	1.1		53.0	1.2	
Queue Delay	0.0	0.0		0.0	1.8		0.0	0.0		0.0	0.0	
Total Delay	41.8	219.6		320.3	23.0		161.8	1.1		53.0	1.2	
LOS	D	F		F	C		F	A		D	A	
Approach Delay		215.8			48.3			77.7			35.1	
Approach LOS		F			D			E			D	

Intersection Summary

Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	100
Offset:	0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Natural Cycle:	100
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	1.51
Intersection Signal Delay:	123.1
Intersection LOS:	F
Intersection Capacity Utilization:	58.8%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 23: Holderrieth Blvd & FM 2920





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↖	↑↑			↕			↕	
Volume (vph)	0	919	8	27	912	0	11	0	31	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	20		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999						0.901				
Flt Protected				0.950				0.987				
Satd. Flow (prot)	0	3536	0	1770	3539	0	0	1657	0	0	1863	0
Flt Permitted				0.950				0.940				
Satd. Flow (perm)	0	3536	0	1770	3539	0	0	1578	0	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1						104				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		442			131			513				186
Travel Time (s)		10.0			3.0			11.7				4.2
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
Growth Factor	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%
Adj. Flow (vph)	0	1309	11	38	1299	0	16	0	44	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1320	0	38	1299	0	0	60	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2		1	2		1	2		1		2
Detector Template		Thru		Left	Thru		Left	Thru		Left		Thru
Leading Detector (ft)		100		20	100		20	100		20		100
Trailing Detector (ft)		0		0	0		0	0		0		0
Detector 1 Position(ft)		0		0	0		0	0		0		0
Detector 1 Size(ft)		6		20	6		20	6		20		6
Detector 1 Type		Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0		0.0	0.0		0.0		0.0
Detector 1 Queue (s)		0.0		0.0	0.0		0.0	0.0		0.0		0.0
Detector 1 Delay (s)		0.0		0.0	0.0		0.0	0.0		0.0		0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type		NA		Prot	NA		Perm	NA		Perm		
Protected Phases		6		4	2 4			3				3
Permitted Phases							3	3		3		

Lane Group	ø2
Lane Configurations	
Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Growth Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	2
Permitted Phases	

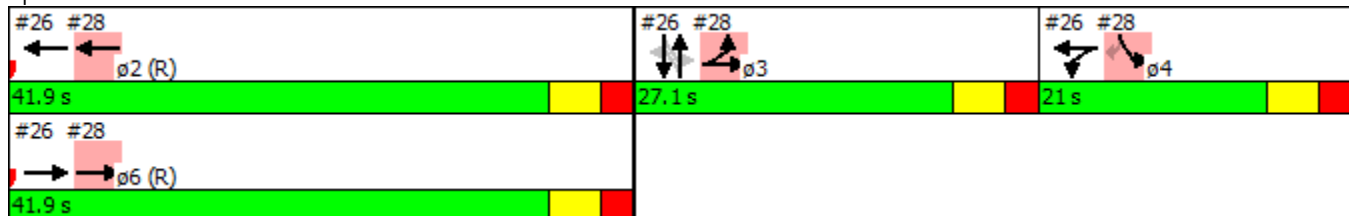


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase		6		4	2 4		3	3		3	3	
Switch Phase												
Minimum Initial (s)		15.0		5.0			5.0	5.0		5.0	5.0	
Minimum Split (s)		24.8		20.8			26.8	26.8		26.8	26.8	
Total Split (s)		41.9		21.0			27.1	27.1		27.1	27.1	
Total Split (%)		46.6%		23.3%			30.1%	30.1%		30.1%	30.1%	
Maximum Green (s)		36.1		15.2			21.3	21.3		21.3	21.3	
Yellow Time (s)		3.5		3.5			3.5	3.5		3.5	3.5	
All-Red Time (s)		2.3		2.3			2.3	2.3		2.3	2.3	
Lost Time Adjust (s)		0.0		0.0			0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.8		5.8			5.8	5.8		5.8	5.8	
Lead/Lag				Lag			Lead	Lead		Lead	Lead	
Lead-Lag Optimize?				Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)		3.0		3.0			3.0	3.0		3.0	3.0	
Recall Mode		C-Max		None			Max	Max		Max	Max	
Walk Time (s)		7.0		5.0			5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		12.0		10.0			16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)		0		0			0	0		0	0	
Act Effct Green (s)		36.1		15.2	57.1		21.3	21.3		21.3	21.3	
Actuated g/C Ratio		0.40		0.17	0.63		0.24	0.24		0.24	0.24	
v/c Ratio		0.93		0.13	0.58		0.13	0.13		0.13	0.13	
Control Delay		38.9		48.9	3.4		2.3	2.3		2.3	2.3	
Queue Delay		30.8		5.3	3.5		0.0	0.0		0.0	0.0	
Total Delay		69.8		54.2	6.9		2.3	2.3		2.3	2.3	
LOS		E		D	A		A	A		A	A	
Approach Delay		69.8		8.3	2.3		2.3	2.3		2.3	2.3	
Approach LOS		E		A	A		A	A		A	A	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	44 (49%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Natural Cycle:	90
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.97
Intersection Signal Delay:	38.0
Intersection LOS:	D
Intersection Capacity Utilization:	47.4%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 26: Vernon Ave & FM 2920



Lane Group	ø2
Detector Phase	
Switch Phase	
Minimum Initial (s)	15.0
Minimum Split (s)	22.8
Total Split (s)	41.9
Total Split (%)	47%
Maximum Green (s)	36.1
Yellow Time (s)	3.5
All-Red Time (s)	2.3
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	C-Max
Walk Time (s)	7.0
Flash Dont Walk (s)	10.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	ø6
Lane Configurations							
Volume (vph)	32	929	902	64	116	42	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	20			0	0	90	
Storage Lanes	1			0	1	1	
Taper Length (ft)	25				25		
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00	
Frt			0.990			0.850	
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1770	3539	3504	0	1770	1583	
Flt Permitted	0.950				0.950		
Satd. Flow (perm)	1770	3539	3504	0	1770	1583	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)			10			60	
Link Speed (mph)		30	30		30		
Link Distance (ft)		131	272		349		
Travel Time (s)		3.0	6.2		7.9		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Growth Factor	131%	131%	131%	131%	131%	131%	
Adj. Flow (vph)	46	1323	1284	91	165	60	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	46	1323	1375	0	165	60	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Left	Left	Right	Left	Right	
Median Width(ft)		12	12		12		
Link Offset(ft)		0	0		0		
Crosswalk Width(ft)		16	16		16		
Two way Left Turn Lane		Yes	Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15			9	15	9	
Number of Detectors	1	2	2		1	1	
Detector Template	Left	Thru	Thru		Left	Right	
Leading Detector (ft)	20	100	100		20	20	
Trailing Detector (ft)	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0		0	0	
Detector 1 Size(ft)	20	6	6		20	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94	94				
Detector 2 Size(ft)		6	6				
Detector 2 Type		Cl+Ex	Cl+Ex				
Detector 2 Channel							
Detector 2 Extend (s)		0.0	0.0				
Turn Type	Prot	NA	NA		NA	Perm	
Protected Phases	3	3 6	2		4		6
Permitted Phases						4	

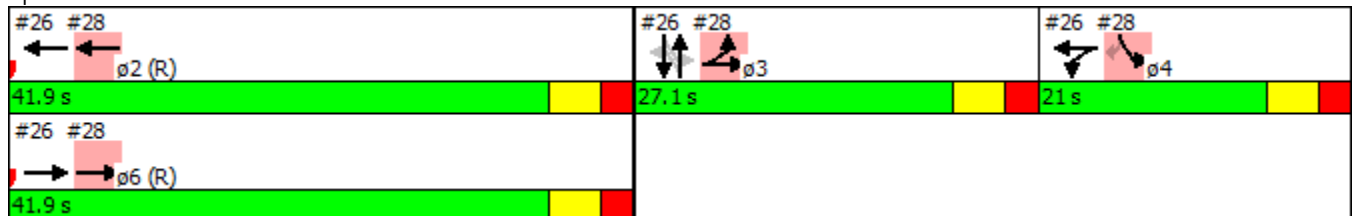


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	ø6
Detector Phase	3	3 6	2		4	4	
Switch Phase							
Minimum Initial (s)	5.0		15.0		5.0	5.0	15.0
Minimum Split (s)	26.8		22.8		20.8	20.8	24.8
Total Split (s)	27.1		41.9		21.0	21.0	41.9
Total Split (%)	30.1%		46.6%		23.3%	23.3%	47%
Maximum Green (s)	21.3		36.1		15.2	15.2	36.1
Yellow Time (s)	3.5		3.5		3.5	3.5	3.5
All-Red Time (s)	2.3		2.3		2.3	2.3	2.3
Lost Time Adjust (s)	0.0		0.0		0.0	0.0	
Total Lost Time (s)	5.8		5.8		5.8	5.8	
Lead/Lag	Lead				Lag	Lag	
Lead-Lag Optimize?	Yes				Yes	Yes	
Vehicle Extension (s)	3.0		3.0		3.0	3.0	3.0
Recall Mode	Max		C-Max		None	None	C-Max
Walk Time (s)	5.0		7.0		5.0	5.0	7.0
Flash Dont Walk (s)	16.0		10.0		10.0	10.0	12.0
Pedestrian Calls (#/hr)	0		0		0	0	0
Act Effct Green (s)	21.3	63.2	36.1		15.2	15.2	
Actuated g/C Ratio	0.24	0.70	0.40		0.17	0.17	
v/c Ratio	0.11	0.53	0.97		0.55	0.19	
Control Delay	23.7	1.0	46.0		42.2	10.8	
Queue Delay	7.9	1.7	2.7		0.0	0.0	
Total Delay	31.6	2.7	48.7		42.2	10.8	
LOS	C	A	D		D	B	
Approach Delay		3.7	48.7		33.8		
Approach LOS		A	D		C		

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 44 (49%), Referenced to phase 2:WBT and 6:EBT, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.97
 Intersection Signal Delay: 26.8
 Intersection LOS: C
 Intersection Capacity Utilization 53.4%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 28: FM 2920 & Baker Dr





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕	↕			↕↕
Volume (vph)	3	838	25	35	933	10	32	37	57	21	20	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		80	0		0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.996			0.998				0.850			0.965
Flt Protected					0.998			0.977				0.981
Satd. Flow (prot)	0	3525	0	0	3525	0	0	1820	1583	0	1763	0
Flt Permitted		0.950			0.711			0.818				0.177
Satd. Flow (perm)	0	3349	0	0	2511	0	0	1524	1583	0	318	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			1				81			11
Link Speed (mph)		30			30			30				30
Link Distance (ft)		1317			3717			353				398
Travel Time (s)		29.9			84.5			8.0				9.0
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
Growth Factor	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%
Adj. Flow (vph)	4	1193	36	50	1329	14	46	53	81	30	28	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1233	0	0	1393	0	0	99	81	0	78	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1		2
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left		Thru
Leading Detector (ft)	20	100		20	100		20	100	20	20		100
Trailing Detector (ft)	0	0		0	0		0	0	0	0		0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0		0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20		6
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0		0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0		0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0		0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA		Perm	NA		Perm	NA	custom	Perm		NA
Protected Phases		2			6			3				4
Permitted Phases	2			6			3		2	4		

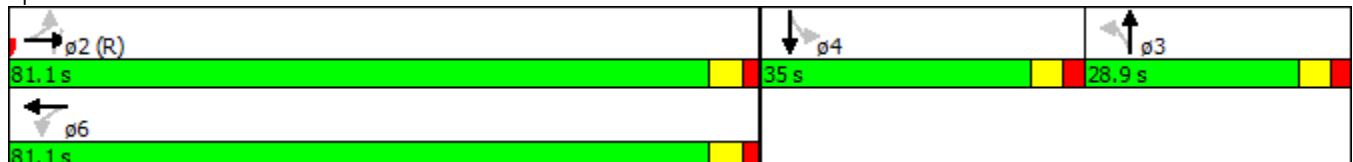


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	2	2		6	6		3	3	2	4	4	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		5.0	5.0	20.0	5.0	5.0	
Minimum Split (s)	25.5	25.5		25.5	25.5		28.9	28.9	25.5	28.9	28.9	
Total Split (s)	81.1	81.1		81.1	81.1		28.9	28.9	81.1	35.0	35.0	
Total Split (%)	55.9%	55.9%		55.9%	55.9%		19.9%	19.9%	55.9%	24.1%	24.1%	
Maximum Green (s)	75.6	75.6		75.6	75.6		23.0	23.0	75.6	29.1	29.1	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.4	2.4	2.0	2.4	2.4	
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	
Total Lost Time (s)		5.5			5.5			5.9	5.5		5.9	
Lead/Lag							Lag	Lag		Lead	Lead	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max		Max	Max		Max	Max	C-Max	Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	8.0	8.0		8.0	8.0		16.0	16.0	8.0	16.0	16.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effct Green (s)		75.6			75.6			23.0	75.6		29.1	
Actuated g/C Ratio		0.52			0.52			0.16	0.52		0.20	
v/c Ratio		0.71			1.06			0.41	0.09		1.08	
Control Delay		29.0			77.8			60.8	3.6		176.4	
Queue Delay		0.0			0.0			0.0	0.0		0.0	
Total Delay		29.0			77.8			60.8	3.6		176.4	
LOS		C			E			E	A		F	
Approach Delay		29.0			77.8			35.1			176.4	
Approach LOS		C			E			D			F	

Intersection Summary

Area Type: Other
 Cycle Length: 145
 Actuated Cycle Length: 145
 Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 145
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.08
 Intersection Signal Delay: 56.9
 Intersection Capacity Utilization 87.9%
 Analysis Period (min) 15
 Intersection LOS: E
 ICU Level of Service E

Splits and Phases: 30: Pine St & FM 2920





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	923	110	95	954	9	40	1	65	16	15	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	80		0	160		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.984			0.999			0.917			0.967	
Flt Protected	0.950			0.950				0.981			0.981	
Satd. Flow (prot)	1770	3483	0	1770	3536	0	0	1676	0	0	1767	0
Flt Permitted	0.950			0.950				0.859			0.855	
Satd. Flow (perm)	1770	3483	0	1770	3536	0	0	1467	0	0	1540	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15			1			62			12	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		3717			948			261			287	
Travel Time (s)		84.5			21.5			5.9			6.5	
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
Growth Factor	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%
Adj. Flow (vph)	6	1314	157	135	1358	13	57	1	93	23	21	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	6	1471	0	135	1371	0	0	151	0	0	58	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	10.5	22.0		10.5	22.0		20.0	20.0		33.0	33.0	
Total Split (s)	10.8	66.0		21.0	76.2		33.0	33.0		33.0	33.0	
Total Split (%)	9.0%	55.0%		17.5%	63.5%		27.5%	27.5%		27.5%	27.5%	
Maximum Green (s)	5.3	60.5		15.5	70.7		27.0	27.0		27.0	27.0	
Yellow Time (s)	4.5	4.5		4.5	4.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.5	5.5		5.5	5.5		6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		Max	Max		None	None	
Walk Time (s)		7.0			7.0					7.0	7.0	
Flash Dont Walk (s)		7.0			6.0					20.0	20.0	
Pedestrian Calls (#/hr)		0			0					0	0	
Act Effect Green (s)	5.3	62.7		13.3	79.3			27.0			27.0	
Actuated g/C Ratio	0.04	0.52		0.11	0.66			0.22			0.22	
v/c Ratio	0.08	0.81		0.69	0.59			0.40			0.16	
Control Delay	57.3	28.2		69.2	13.1			26.5			31.9	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	57.3	28.2		69.2	13.1			26.5			31.9	
LOS	E	C		E	B			C			C	
Approach Delay		28.3			18.1			26.5			31.9	
Approach LOS		C			B			C			C	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.81
 Intersection Signal Delay: 23.5 Intersection LOS: C
 Intersection Capacity Utilization 69.6% ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 33: Willow St & FM 2920

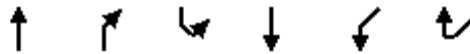




Lane Group	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Volume (vph)	54	86	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	180			0	0	0
Storage Lanes	1			0	0	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Fr						
Flt Protected	0.950					
Satd. Flow (prot)	1770	3539	0	0	0	0
Flt Permitted	0.950					
Satd. Flow (perm)	1770	3539	0	0	0	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		465	173		284	
Travel Time (s)		10.6	3.9		6.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	131%	131%	131%	131%	131%	131%
Adj. Flow (vph)	77	122	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	77	122	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	21.7%
	ICU Level of Service A
Analysis Period (min)	15



Lane Group	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations				↑↑	↘	
Volume (vph)	0	0	0	0	54	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	0	0	0	3539	1770	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	0	0	3539	1770	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	453			179	284	
Travel Time (s)	10.3			4.1	6.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	131%	131%	131%	131%	131%	131%
Adj. Flow (vph)	0	0	0	0	77	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	77	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Stop			Free	Yield	

Intersection Summary

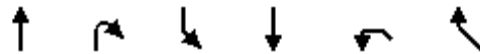
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	21.7%
Analysis Period (min)	15
	ICU Level of Service A



Lane Group	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations		↑↑			↘	
Volume (vph)	0	0	0	0	130	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	0	3539	0	0	1770	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	3539	0	0	1770	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		201	296		306	
Travel Time (s)		4.6	6.7		7.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	131%	131%	131%	131%	131%	131%
Adj. Flow (vph)	0	0	0	0	185	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	185	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Stop		Yield	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	24.4%
Analysis Period (min)	15
	ICU Level of Service A



Lane Group	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Volume (vph)	0	0	130	94	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	180		0	0
Storage Lanes		0	1		0	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Fr						
Flt Protected			0.950			
Satd. Flow (prot)	0	0	1770	3539	0	0
Flt Permitted			0.950			
Satd. Flow (perm)	0	0	1770	3539	0	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	204			261	306	
Travel Time (s)	4.6			5.9	7.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	131%	131%	131%	131%	131%	131%
Adj. Flow (vph)	0	0	185	134	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	185	134	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	24.4%
	ICU Level of Service A
Analysis Period (min)	15



Lane Group	SBL	SBR	NEL	NET	SWT	SWR
Lane Configurations						
Volume (vph)	44	84	146	1259	1781	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	175			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.911				0.996	
Flt Protected	0.983		0.950			
Satd. Flow (prot)	1668	0	1770	3539	3525	0
Flt Permitted	0.983		0.237			
Satd. Flow (perm)	1668	0	441	3539	3525	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	80				5	
Link Speed (mph)	30			30	30	
Link Distance (ft)	1322			554	2764	
Travel Time (s)	30.0			12.6	62.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	131%	131%	131%	131%	131%	131%
Adj. Flow (vph)	63	120	208	1793	2536	78
Shared Lane Traffic (%)						
Lane Group Flow (vph)	183	0	208	1793	2614	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane				Yes	Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	2	2	
Detector Template	Left		Left	Thru	Thru	
Leading Detector (ft)	20		20	100	100	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	20		20	6	6	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	NA		custom	NA	NA	
Protected Phases	4			6	2	
Permitted Phases			1			

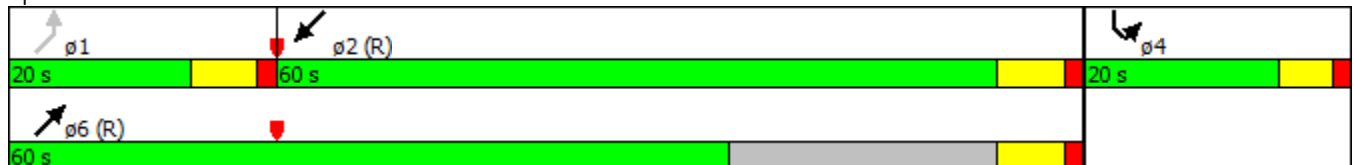


Lane Group	SBL	SBR	NEL	NET	SWT	SWR
Detector Phase	4		1	6	2	
Switch Phase						
Minimum Initial (s)	5.0		5.0	15.0	15.0	
Minimum Split (s)	32.5		22.5	22.5	30.5	
Total Split (s)	20.0		20.0	60.0	60.0	
Total Split (%)	20.0%		20.0%	60.0%	60.0%	
Maximum Green (s)	14.5		13.5	53.5	53.5	
Yellow Time (s)	4.0		5.0	5.0	5.0	
All-Red Time (s)	1.5		1.5	1.5	1.5	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	5.5		6.5	6.5	6.5	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	None		None	C-Max	C-Max	
Walk Time (s)	7.0				7.0	
Flash Dont Walk (s)	20.0				17.0	
Pedestrian Calls (#/hr)	0				0	
Act Effect Green (s)	11.1		16.9	76.9	53.5	
Actuated g/C Ratio	0.11		0.17	0.77	0.54	
v/c Ratio	0.72		2.81	0.66	1.38	
Control Delay	39.3		866.6	7.3	200.5	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	39.3		866.6	7.3	200.5	
LOS	D		F	A	F	
Approach Delay	39.3			96.6	200.5	
Approach LOS	D			F	F	

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 20 (20%), Referenced to phase 2:SWT and 6:NET, Start of Green
 Natural Cycle: 150
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 2.81
 Intersection Signal Delay: 151.1
 Intersection Capacity Utilization 102.8%
 Analysis Period (min) 15
 Intersection LOS: F
 ICU Level of Service G

Splits and Phases: 3: FM 2920 & Park Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1232	58	11	1641	0	69	0	31	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t		0.993						0.958				
Fl _t Protected				0.950				0.967				
Satd. Flow (prot)	1863	3514	0	1770	3539	0	0	1726	0	0	1863	0
Fl _t Permitted				0.950				0.794				
Satd. Flow (perm)	1863	3514	0	1770	3539	0	0	1417	0	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6						149				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		2764			2506			534				543
Travel Time (s)		62.8			57.0			12.1				12.3
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
Growth Factor	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%
Adj. Flow (vph)	0	1754	83	16	2337	0	98	0	44	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1837	0	16	2337	0	0	142	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm		
Protected Phases	1	6		5	2			4				8
Permitted Phases							4			8		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	20.0		5.0	20.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	26.0		11.0	26.0		21.5	21.5		21.5	21.5	
Total Split (s)	10.0	60.0		25.0	60.0		25.0	25.0		10.0	10.0	
Total Split (%)	9.1%	54.5%		22.7%	54.5%		22.7%	22.7%		9.1%	9.1%	
Maximum Green (s)	4.0	54.0		19.0	54.0		19.5	19.5		4.5	4.5	
Yellow Time (s)	5.0	5.0		5.0	5.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		5.5	5.5		5.5	5.5	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	C-Max		None	None		None	None	
Act Effect Green (s)		85.7		6.6	91.2			7.3				
Actuated g/C Ratio		0.78		0.06	0.83			0.07				
v/c Ratio		0.67		0.15	0.80			0.61				
Control Delay		9.0		51.7	7.9			18.5				
Queue Delay		0.0		0.0	0.0			0.0				
Total Delay		9.0		51.7	7.9			18.5				
LOS		A		D	A			B				
Approach Delay		9.0			8.2			18.5				
Approach LOS		A			A			B				

Intersection Summary

Area Type:	Other
Cycle Length:	110
Actuated Cycle Length:	110
Offset:	0 (0%), Referenced to phase 2:WBT, Start of Green
Natural Cycle:	110
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.80
Intersection Signal Delay:	8.9
Intersection LOS:	A
Intersection Capacity Utilization:	76.5%
ICU Level of Service:	D
Analysis Period (min):	15

Splits and Phases: 5: Cascade Bay & FM 2920





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	470	1064	0	0	1397	68	483	264	58	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		80	0		0	0		0
Storage Lanes	1		0	0		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.86	0.86	1.00	1.00	0.86	0.86	0.91	0.91	0.95	1.00	1.00	1.00
Fr _t					0.993			0.984				
Fl _t Protected	0.950	0.996					0.950	0.980				
Satd. Flow (prot)	1522	4787	0	0	6363	0	1610	3269	0	0	0	0
Fl _t Permitted	0.950	0.646					0.950	0.980				
Satd. Flow (perm)	1522	3105	0	0	6363	0	1610	3269	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					7			8				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		270			350			173				201
Travel Time (s)		6.1			8.0			3.9				4.6
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
Growth Factor	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%
Adj. Flow (vph)	669	1515	0	0	1989	97	688	376	83	0	0	0
Shared Lane Traffic (%)	21%						45%					
Lane Group Flow (vph)	529	1655	0	0	2086	0	378	769	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2			2		1	2				
Detector Template	Left	Thru			Thru		Left	Thru				
Leading Detector (ft)	20	100			100		20	100				
Trailing Detector (ft)	0	0			0		0	0				
Detector 1 Position(ft)	0	0			0		0	0				
Detector 1 Size(ft)	20	6			6		20	6				
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex				
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0				
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		6			6			6				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	Prot	NA			NA		Perm	NA				
Protected Phases	1	1 2			2			3 4				
Permitted Phases							3 4					

Lane Group	ø3	ø4	ø5	ø6	ø7	ø8
Lane Configurations						
Volume (vph)						
Ideal Flow (vphpl)						
Storage Length (ft)						
Storage Lanes						
Taper Length (ft)						
Lane Util. Factor						
Frt						
Flt Protected						
Satd. Flow (prot)						
Flt Permitted						
Satd. Flow (perm)						
Right Turn on Red						
Satd. Flow (RTOR)						
Link Speed (mph)						
Link Distance (ft)						
Travel Time (s)						
Peak Hour Factor						
Growth Factor						
Adj. Flow (vph)						
Shared Lane Traffic (%)						
Lane Group Flow (vph)						
Enter Blocked Intersection						
Lane Alignment						
Median Width(ft)						
Link Offset(ft)						
Crosswalk Width(ft)						
Two way Left Turn Lane						
Headway Factor						
Turning Speed (mph)						
Number of Detectors						
Detector Template						
Leading Detector (ft)						
Trailing Detector (ft)						
Detector 1 Position(ft)						
Detector 1 Size(ft)						
Detector 1 Type						
Detector 1 Channel						
Detector 1 Extend (s)						
Detector 1 Queue (s)						
Detector 1 Delay (s)						
Detector 2 Position(ft)						
Detector 2 Size(ft)						
Detector 2 Type						
Detector 2 Channel						
Detector 2 Extend (s)						
Turn Type						
Protected Phases	3	4	5	6	7	8
Permitted Phases						

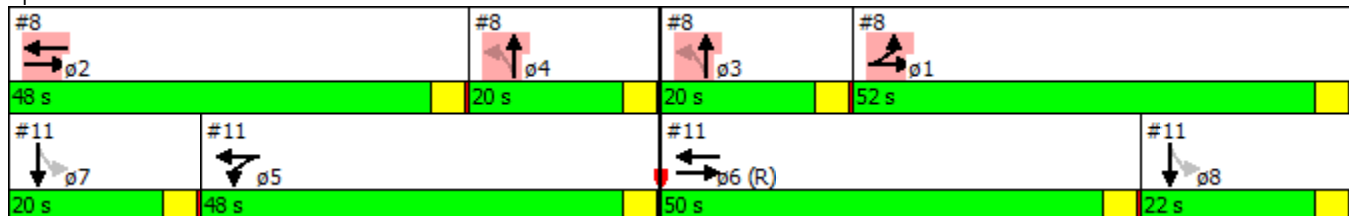


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	1 2			2		3 4	3 4				
Switch Phase												
Minimum Initial (s)	4.0				4.0							
Minimum Split (s)	8.0				20.0							
Total Split (s)	52.0				48.0							
Total Split (%)	37.1%				34.3%							
Maximum Green (s)	48.0				44.0							
Yellow Time (s)	3.5				3.5							
All-Red Time (s)	0.5				0.5							
Lost Time Adjust (s)	0.0				0.0							
Total Lost Time (s)	4.0				4.0							
Lead/Lag	Lag				Lead							
Lead-Lag Optimize?	Yes				Yes							
Vehicle Extension (s)	3.0				3.0							
Recall Mode	None				None							
Walk Time (s)					5.0							
Flash Dont Walk (s)					11.0							
Pedestrian Calls (#/hr)					0							
Act Effct Green (s)	48.0	92.0			44.0		36.0	36.0				
Actuated g/C Ratio	0.34	0.66			0.31		0.26	0.26				
v/c Ratio	1.02	0.81			1.04		0.91	0.91				
Control Delay	53.9	10.5			77.9		77.7	65.4				
Queue Delay	32.0	33.6			25.0		7.0	2.7				
Total Delay	85.9	44.1			102.9		84.7	68.2				
LOS	F	D			F		F	E				
Approach Delay		54.2			102.9			73.6				
Approach LOS		D			F			E				

Intersection Summary

Area Type:	Other
Cycle Length:	140
Actuated Cycle Length:	140
Offset:	0 (0%), Referenced to phase 6:EBWB, Start of Green
Natural Cycle:	140
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	1.04
Intersection Signal Delay:	77.1
Intersection LOS:	E
Intersection Capacity Utilization:	98.1%
ICU Level of Service:	F
Analysis Period (min):	15

Splits and Phases: 8: SH 249 NBFR & FM 2920



Lane Group	ø3	ø4	ø5	ø6	ø7	ø8
Detector Phase						
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	8.0	20.0	20.0	20.0
Total Split (s)	20.0	20.0	48.0	50.0	20.0	22.0
Total Split (%)	14%	14%	34%	36%	14%	16%
Maximum Green (s)	16.0	16.0	44.0	46.0	16.0	18.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)						
Total Lost Time (s)						
Lead/Lag	Lead	Lag	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	C-Max	None	None
Walk Time (s)	5.0	5.0		5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0		0	0	0
Act Effect Green (s)						
Actuated g/C Ratio						
v/c Ratio						
Control Delay						
Queue Delay						
Total Delay						
LOS						
Approach Delay						
Approach LOS						
Intersection Summary						

Lane Group	ø1	ø2	ø3	ø4	ø7	ø8
Lane Configurations						
Volume (vph)						
Ideal Flow (vphpl)						
Lane Util. Factor						
Frt						
Flt Protected						
Satd. Flow (prot)						
Flt Permitted						
Satd. Flow (perm)						
Right Turn on Red						
Satd. Flow (RTOR)						
Link Speed (mph)						
Link Distance (ft)						
Travel Time (s)						
Peak Hour Factor						
Growth Factor						
Adj. Flow (vph)						
Shared Lane Traffic (%)						
Lane Group Flow (vph)						
Enter Blocked Intersection						
Lane Alignment						
Median Width(ft)						
Link Offset(ft)						
Crosswalk Width(ft)						
Two way Left Turn Lane						
Headway Factor						
Turning Speed (mph)						
Number of Detectors						
Detector Template						
Leading Detector (ft)						
Trailing Detector (ft)						
Detector 1 Position(ft)						
Detector 1 Size(ft)						
Detector 1 Type						
Detector 1 Channel						
Detector 1 Extend (s)						
Detector 1 Queue (s)						
Detector 1 Delay (s)						
Detector 2 Position(ft)						
Detector 2 Size(ft)						
Detector 2 Type						
Detector 2 Channel						
Detector 2 Extend (s)						
Turn Type						
Protected Phases	1	2	3	4	7	8
Permitted Phases						
Detector Phase						
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0

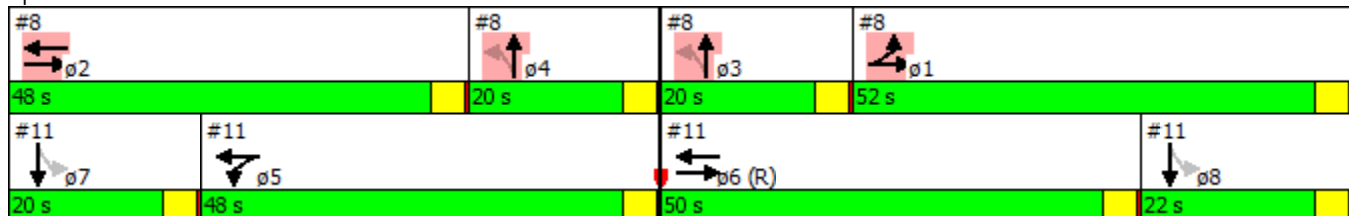


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)		20.0		8.0								
Total Split (s)		50.0		48.0								
Total Split (%)		35.7%		34.3%								
Maximum Green (s)		46.0		44.0								
Yellow Time (s)		3.5		3.5								
All-Red Time (s)		0.5		0.5								
Lost Time Adjust (s)		0.0		0.0								
Total Lost Time (s)		4.0		4.0								
Lead/Lag		Lead		Lag								
Lead-Lag Optimize?		Yes		Yes								
Vehicle Extension (s)		3.0		3.0								
Recall Mode		C-Max		None								
Walk Time (s)		5.0										
Flash Dont Walk (s)		11.0										
Pedestrian Calls (#/hr)		0										
Act Effect Green (s)		46.0		45.2	91.2					36.8	36.8	
Actuated g/C Ratio		0.33		0.32	0.65					0.26	0.26	
v/c Ratio		0.98		0.85	1.00					0.84	0.79	
Control Delay		61.7		28.1	24.1					66.8	52.2	
Queue Delay		40.7		53.3	36.5					0.0	0.0	
Total Delay		102.5		81.4	60.6					66.8	52.2	
LOS		F		F	E					E	D	
Approach Delay		102.5			64.0						57.2	
Approach LOS		F			E						E	

Intersection Summary

Area Type:	Other
Cycle Length:	140
Actuated Cycle Length:	140
Offset:	0 (0%), Referenced to phase 6:EBWB, Start of Green
Natural Cycle:	140
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	1.04
Intersection Signal Delay:	76.6
Intersection LOS:	E
Intersection Capacity Utilization:	98.1%
ICU Level of Service:	F
Analysis Period (min):	15

Splits and Phases: 11: SH 249 SBFR & FM 2920



Lane Group	ø1	ø2	ø3	ø4	ø7	ø8
Minimum Split (s)	8.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	52.0	48.0	20.0	20.0	20.0	22.0
Total Split (%)	37%	34%	14%	14%	14%	16%
Maximum Green (s)	48.0	44.0	16.0	16.0	16.0	18.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)						
Total Lost Time (s)						
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None
Walk Time (s)		5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)		11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0	0	0	0
Act Effct Green (s)						
Actuated g/C Ratio						
v/c Ratio						
Control Delay						
Queue Delay						
Total Delay						
LOS						
Approach Delay						
Approach LOS						
Intersection Summary						



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	99	696	334	258	907	144	373	489	3	72	157	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	110		0	180		250	180		0
Storage Lanes	1		1	1		0	2		1	2		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.91	0.91	1.00	1.00	0.91	0.91	0.97	0.91	1.00	0.97	0.91	0.91
Frt			0.850		0.979				0.850		0.924	
Flt Protected	0.950	0.999		0.950			0.950			0.950		
Satd. Flow (prot)	1610	3387	1583	1770	4979	0	3433	5085	1583	3433	4699	0
Flt Permitted	0.950	0.999		0.950			0.950			0.950		
Satd. Flow (perm)	1610	3387	1583	1770	4979	0	3433	5085	1583	3433	4699	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			382		23				127		173	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		585			617			496			562	
Travel Time (s)		13.3			14.0			11.3			12.8	
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
Growth Factor	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%
Adj. Flow (vph)	141	991	476	367	1291	205	531	696	4	103	224	228
Shared Lane Traffic (%)	10%											
Lane Group Flow (vph)	127	1005	476	367	1496	0	531	696	4	103	452	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Split	NA	Perm	Split	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	3	3		4	4		5	2		1	6	
Permitted Phases			3						2			

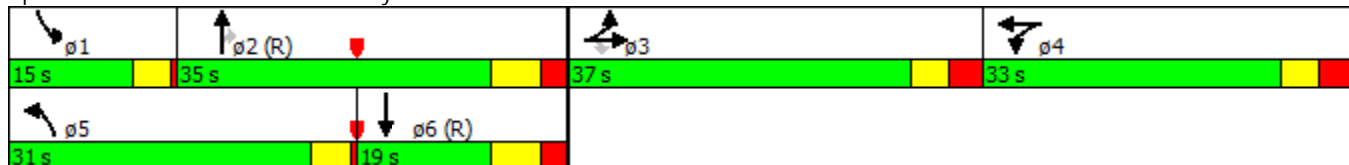


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	3	3	3	4	4		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		4.0	5.0	5.0	4.0	5.0	
Minimum Split (s)	41.5	41.5	41.5	40.5	40.5		8.0	36.0	36.0	8.0	40.0	
Total Split (s)	37.0	37.0	37.0	33.0	33.0		31.0	35.0	35.0	15.0	19.0	
Total Split (%)	30.8%	30.8%	30.8%	27.5%	27.5%		25.8%	29.2%	29.2%	12.5%	15.8%	
Maximum Green (s)	30.5	30.5	30.5	26.5	26.5		27.0	28.0	28.0	11.0	12.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	4.5	4.5	3.5	4.5	
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0		0.5	2.5	2.5	0.5	2.5	
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)	6.5	6.5	6.5	6.5	6.5		4.0	7.0	7.0	4.0	7.0	
Lead/Lag	Lead	Lead	Lead	Lag	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	None	C-Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0			7.0	7.0		7.0	
Flash Dont Walk (s)	28.0	28.0	28.0	27.0	27.0			22.0	22.0		26.0	
Pedestrian Calls (#/hr)	0	0	0	0	0			0	0		0	
Act Effect Green (s)	30.5	30.5	30.5	26.5	26.5		23.2	30.1	30.1	8.9	15.8	
Actuated g/C Ratio	0.25	0.25	0.25	0.22	0.22		0.19	0.25	0.25	0.07	0.13	
v/c Ratio	0.31	1.17	0.69	0.94	1.34		0.80	0.55	0.01	0.41	0.59	
Control Delay	38.8	128.5	14.4	79.5	195.7		55.7	41.2	0.0	57.4	34.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	38.8	128.5	14.4	79.5	195.7		55.7	41.2	0.0	57.4	34.0	
LOS	D	F	B	E	F		E	D	A	E	C	
Approach Delay		87.7			172.8			47.3			38.4	
Approach LOS		F			F			D			D	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 150
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.34
 Intersection Signal Delay: 103.2
 Intersection LOS: F
 Intersection Capacity Utilization 95.0%
 ICU Level of Service F
 Analysis Period (min) 15

Splits and Phases: 14: Tomball Pkwy & FM 2920





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6		5	2		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0		5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	21.7	22.7		21.7	27.7		27.5	27.5		27.5	27.5	27.5
Total Split (s)	21.7	68.3		21.7	68.3		27.5	27.5		27.5	27.5	27.5
Total Split (%)	15.0%	47.1%		15.0%	47.1%		19.0%	19.0%		19.0%	19.0%	19.0%
Maximum Green (s)	16.0	62.6		16.0	62.6		22.0	22.0		22.0	22.0	22.0
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	2.2	2.2		2.2	2.2		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.7	5.7		5.7	5.7		5.5	5.5		5.5	5.5	5.5
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max		Max	C-Max		None	None		None	None	None
Walk Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	5.0
Flash Dont Walk (s)		12.0			17.0		17.0	17.0		17.0	17.0	17.0
Pedestrian Calls (#/hr)		0			0		0	0		0	0	0
Act Effect Green (s)	7.0	62.6		50.0	113.8		5.5	5.5		15.5	0.0	15.5
Actuated g/C Ratio	0.05	0.43		0.34	0.78		0.04	0.04		0.11	0.00	0.11
v/c Ratio	0.20	0.90		0.01	0.68		0.05	0.05		0.11	no cap	0.17
Control Delay	71.2	47.1		40.5	13.9		0.6	0.6		55.4		1.4
Queue Delay	0.0	0.0		0.0	1.3		0.0	0.0		0.0		0.0
Total Delay	71.2	47.1		40.5	15.2		0.6	0.6		55.4	Error	1.4
LOS	E	D		D	B		A	A		E	F	A
Approach Delay		47.4			15.2		0.6	0.6			Err	
Approach LOS		D			B		A	A			F	

Intersection Summary

Area Type: Other
 Cycle Length: 145
 Actuated Cycle Length: 145
 Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of Green
 Natural Cycle: 145
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: Err
 Intersection Signal Delay: Err Intersection LOS: F
 Intersection Capacity Utilization Err% ICU Level of Service H
 Analysis Period (min) 15

Splits and Phases: 17: Bovinghausen Lane & FM 2920





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6		5	2		3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	10.5	25.5		10.5	25.5		11.1	36.1		11.1	36.1	
Total Split (s)	15.0	43.0		15.0	43.0		15.0	17.0		15.0	17.0	
Total Split (%)	16.7%	47.8%		16.7%	47.8%		16.7%	18.9%		16.7%	18.9%	
Maximum Green (s)	9.5	37.5		9.5	37.5		8.9	10.9		8.9	10.9	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.6	3.6		3.6	3.6	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.5	5.5		5.5	5.5		6.1	6.1		6.1	6.1	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		5.0			5.0			5.0			5.0	
Flash Dont Walk (s)		15.0			15.0			25.0			25.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effect Green (s)	8.4	52.9		6.5	46.4		6.8	8.7		7.8	14.7	
Actuated g/C Ratio	0.09	0.59		0.07	0.52		0.08	0.10		0.09	0.16	
v/c Ratio	0.48	0.66		0.13	0.92		0.17	0.42		0.42	0.53	
Control Delay	48.5	17.9		51.6	26.1		41.4	40.8		46.9	26.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	48.5	17.9		51.6	26.1		41.4	40.8		46.9	26.2	
LOS	D	B		D	C		D	D		D	C	
Approach Delay		19.6			26.3			40.9			31.7	
Approach LOS		B			C			D			C	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 51 (57%), Referenced to phase 2:WBT and 6:EBT, Start of Green
 Natural Cycle: 125
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.92
 Intersection Signal Delay: 24.3 Intersection LOS: C
 Intersection Capacity Utilization 78.6% ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 20: Ella Street & FM 2920





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	22	929	13	45	1148	31	45	73	118	28	19	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	65		0	60		0	0		50	0		50
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.996				0.850			0.850
Flt Protected	0.950			0.950				0.981			0.971	
Satd. Flow (prot)	1770	3532	0	1770	3525	0	0	1827	1583	0	1809	1583
Flt Permitted	0.615			0.331				0.197			0.723	
Satd. Flow (perm)	1146	3532	0	617	3525	0	0	367	1583	0	1347	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			3				142			109
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1265			442			534			293	
Travel Time (s)		28.8			10.0			12.1			6.7	
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
Growth Factor	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%
Adj. Flow (vph)	31	1323	19	64	1635	44	64	104	168	40	27	95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	31	1342	0	64	1679	0	0	168	168	0	67	95
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	custom	NA		custom	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		6			2			3			4	
Permitted Phases	1			5			3		3	4		4

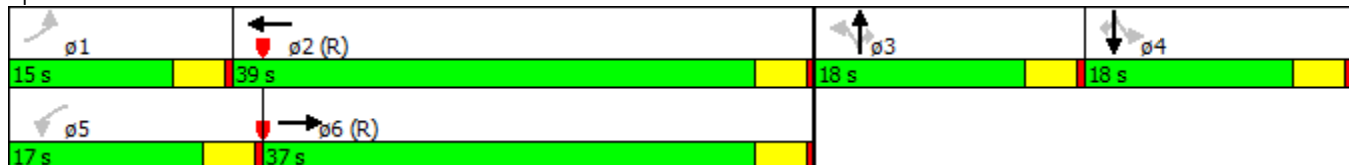


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6		5	2		3	3	3	4	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	15.0	37.0		17.0	39.0		18.0	18.0	18.0	18.0	18.0	18.0
Total Split (%)	16.7%	41.1%		18.9%	43.3%		20.0%	20.0%	20.0%	20.0%	20.0%	20.0%
Maximum Green (s)	11.0	33.0		13.0	35.0		14.0	14.0	14.0	14.0	14.0	14.0
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max		Max	Max	Max	None	None	None
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effect Green (s)	9.0	41.0		13.8	47.4		14.0	14.0		9.6	9.6	9.6
Actuated g/C Ratio	0.10	0.46		0.15	0.53		0.16	0.16		0.11	0.11	0.11
v/c Ratio	0.27	0.83		0.68	0.90		2.95	0.46		0.47	0.36	0.36
Control Delay	45.3	26.7		71.7	31.8		939.6	13.4		47.7	9.7	9.7
Queue Delay	0.0	0.0		0.0	13.7		0.0	0.0		0.0	0.0	0.0
Total Delay	45.3	26.7		71.7	45.5		939.6	13.4		47.7	9.7	9.7
LOS	D	C		E	D		F	B		D	A	A
Approach Delay		27.1			46.5			476.5			25.4	
Approach LOS		C			D			F			C	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 8 (9%), Referenced to phase 2:WBT and 6:EBT, Start of Green
 Natural Cycle: 120
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 2.95
 Intersection Signal Delay: 78.2
 Intersection LOS: E
 Intersection Capacity Utilization 70.6%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 23: Holderrieth Blvd & FM 2920





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↖	↑↑			↕			↕	
Volume (vph)	0	1073	0	27	1182	0	12	0	41	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	20		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t								0.896				
Fl _t Protected				0.950				0.989				
Satd. Flow (prot)	0	3539	0	1770	3539	0	0	1651	0	0	1863	0
Fl _t Permitted				0.950				0.946				
Satd. Flow (perm)	0	3539	0	1770	3539	0	0	1579	0	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)								94				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		442			131			513				186
Travel Time (s)		10.0			3.0			11.7				4.2
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
Growth Factor	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%
Adj. Flow (vph)	0	1528	0	38	1683	0	17	0	58	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1528	0	38	1683	0	0	75	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2		1	2		1	2		1		2
Detector Template		Thru		Left	Thru		Left	Thru		Left		Thru
Leading Detector (ft)		100		20	100		20	100		20		100
Trailing Detector (ft)		0		0	0		0	0		0		0
Detector 1 Position(ft)		0		0	0		0	0		0		0
Detector 1 Size(ft)		6		20	6		20	6		20		6
Detector 1 Type		Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0		0.0	0.0		0.0		0.0
Detector 1 Queue (s)		0.0		0.0	0.0		0.0	0.0		0.0		0.0
Detector 1 Delay (s)		0.0		0.0	0.0		0.0	0.0		0.0		0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type		NA		Prot	NA		Perm	NA		Perm		
Protected Phases		6		4	2 4			3				3
Permitted Phases							3	3		3		

Lane Group	ø2
Lane Configurations	
Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Growth Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	2
Permitted Phases	

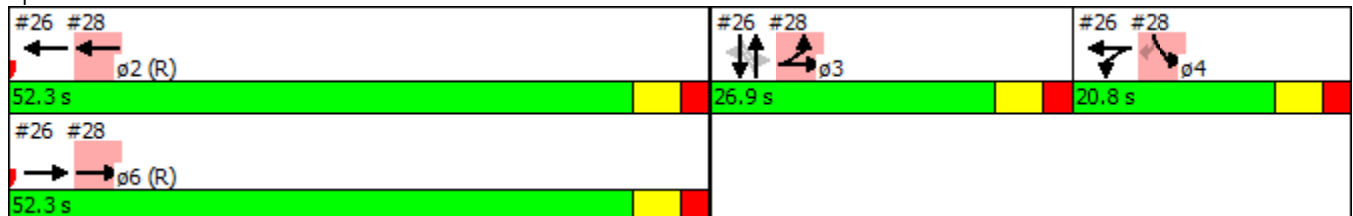


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase		6		4	2 4		3	3		3	3	
Switch Phase												
Minimum Initial (s)		15.0		5.0			5.0	5.0		5.0	5.0	
Minimum Split (s)		24.8		20.8			26.8	26.8		26.8	26.8	
Total Split (s)		52.3		20.8			26.9	26.9		26.9	26.9	
Total Split (%)		52.3%		20.8%			26.9%	26.9%		26.9%	26.9%	
Maximum Green (s)		46.5		15.0			21.1	21.1		21.1	21.1	
Yellow Time (s)		3.5		3.5			3.5	3.5		3.5	3.5	
All-Red Time (s)		2.3		2.3			2.3	2.3		2.3	2.3	
Lost Time Adjust (s)		0.0		0.0				0.0			0.0	
Total Lost Time (s)		5.8		5.8				5.8			5.8	
Lead/Lag				Lag			Lead	Lead		Lead	Lead	
Lead-Lag Optimize?				Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)		3.0		3.0			3.0	3.0		3.0	3.0	
Recall Mode		C-Max		None			Max	Max		Max	Max	
Walk Time (s)		7.0		5.0			5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		12.0		10.0			16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)		0		0			0	0		0	0	
Act Effect Green (s)		46.5		15.0	67.3			21.1				
Actuated g/C Ratio		0.46		0.15	0.67			0.21				
v/c Ratio		0.93		0.14	0.71			0.18				
Control Delay		36.6		53.8	4.9			5.8				
Queue Delay		45.5		6.8	6.0			0.0				
Total Delay		82.2		60.7	10.9			5.8				
LOS		F		E	B			A				
Approach Delay		82.2			12.0			5.8				
Approach LOS		F			B			A				

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of Green
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.02
 Intersection Signal Delay: 44.1 Intersection LOS: D
 Intersection Capacity Utilization 56.7% ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 26: Vernon Ave & FM 2920



Lane Group	ø2
Detector Phase	
Switch Phase	
Minimum Initial (s)	15.0
Minimum Split (s)	22.8
Total Split (s)	52.3
Total Split (%)	52%
Maximum Green (s)	46.5
Yellow Time (s)	3.5
All-Red Time (s)	2.3
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	C-Max
Walk Time (s)	7.0
Flash Dont Walk (s)	10.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	ø6
Lane Configurations							
Volume (vph)	82	1016	1141	38	46	70	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	20			0	0	90	
Storage Lanes	1			0	1	1	
Taper Length (ft)	25				25		
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00	
Frt			0.995			0.850	
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1770	3539	3522	0	1770	1583	
Flt Permitted	0.950				0.950		
Satd. Flow (perm)	1770	3539	3522	0	1770	1583	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)			4			100	
Link Speed (mph)		30	30		30		
Link Distance (ft)		131	272		349		
Travel Time (s)		3.0	6.2		7.9		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Growth Factor	131%	131%	131%	131%	131%	131%	
Adj. Flow (vph)	117	1447	1625	54	66	100	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	117	1447	1679	0	66	100	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Left	Left	Right	Left	Right	
Median Width(ft)		12	12		12		
Link Offset(ft)		0	0		0		
Crosswalk Width(ft)		16	16		16		
Two way Left Turn Lane		Yes	Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15			9	15	9	
Number of Detectors	1	2	2		1	1	
Detector Template	Left	Thru	Thru		Left	Right	
Leading Detector (ft)	20	100	100		20	20	
Trailing Detector (ft)	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0		0	0	
Detector 1 Size(ft)	20	6	6		20	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94	94				
Detector 2 Size(ft)		6	6				
Detector 2 Type		Cl+Ex	Cl+Ex				
Detector 2 Channel							
Detector 2 Extend (s)		0.0	0.0				
Turn Type	Prot	NA	NA		NA	Perm	
Protected Phases	3	3 6	2		4		6
Permitted Phases						4	

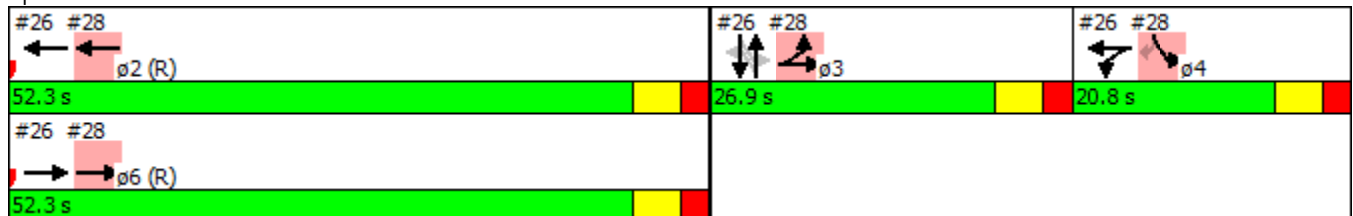


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	ø6
Detector Phase	3	3 6	2		4	4	
Switch Phase							
Minimum Initial (s)	5.0		15.0		5.0	5.0	15.0
Minimum Split (s)	26.8		22.8		20.8	20.8	24.8
Total Split (s)	26.9		52.3		20.8	20.8	52.3
Total Split (%)	26.9%		52.3%		20.8%	20.8%	52%
Maximum Green (s)	21.1		46.5		15.0	15.0	46.5
Yellow Time (s)	3.5		3.5		3.5	3.5	3.5
All-Red Time (s)	2.3		2.3		2.3	2.3	2.3
Lost Time Adjust (s)	0.0		0.0		0.0	0.0	
Total Lost Time (s)	5.8		5.8		5.8	5.8	
Lead/Lag	Lead				Lag	Lag	
Lead-Lag Optimize?	Yes				Yes	Yes	
Vehicle Extension (s)	3.0		3.0		3.0	3.0	3.0
Recall Mode	Max		C-Max		None	None	C-Max
Walk Time (s)	5.0		7.0		5.0	5.0	7.0
Flash Dont Walk (s)	16.0		10.0		10.0	10.0	12.0
Pedestrian Calls (#/hr)	0		0		0	0	0
Act Effect Green (s)	21.1	73.4	46.5		15.0	15.0	
Actuated g/C Ratio	0.21	0.73	0.46		0.15	0.15	
v/c Ratio	0.31	0.56	1.02		0.25	0.31	
Control Delay	32.1	0.6	56.1		40.4	10.7	
Queue Delay	84.6	1.6	15.8		0.0	0.1	
Total Delay	116.6	2.2	71.9		40.4	10.8	
LOS	F	A	E		D	B	
Approach Delay		10.8	71.9		22.5		
Approach LOS		B	E		C		

Intersection Summary

Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	100
Offset:	0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Natural Cycle:	100
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	1.02
Intersection Signal Delay:	41.5
Intersection LOS:	D
Intersection Capacity Utilization:	67.5%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 28: FM 2920 & Baker Dr





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	12	1018	9	12	1145	17	30	44	101	13	9	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		80	0		0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999			0.998				0.850		0.961	
Flt Protected		0.999			0.999			0.980			0.979	
Satd. Flow (prot)	0	3532	0	0	3529	0	0	1825	1583	0	1753	0
Flt Permitted		0.776			0.856			0.664			0.859	
Satd. Flow (perm)	0	2744	0	0	3024	0	0	1237	1583	0	1538	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			2				144		13	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1317			3717			353			398	
Travel Time (s)		29.9			84.5			8.0			9.0	
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
Growth Factor	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%
Adj. Flow (vph)	17	1450	13	17	1630	24	43	63	144	19	13	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1480	0	0	1671	0	0	106	144	0	45	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA	custom	Perm	NA	
Protected Phases		2			6			3			4	
Permitted Phases	2			6			3		2	4		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	2	2		6	6		3	3	2	4	4	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		5.0	5.0	20.0	5.0	5.0	
Minimum Split (s)	25.5	25.5		25.5	25.5		28.9	28.9	25.5	28.9	28.9	
Total Split (s)	77.2	77.2		77.2	77.2		28.9	28.9	77.2	28.9	28.9	
Total Split (%)	57.2%	57.2%		57.2%	57.2%		21.4%	21.4%	57.2%	21.4%	21.4%	
Maximum Green (s)	71.7	71.7		71.7	71.7		23.0	23.0	71.7	23.0	23.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.4	2.4	2.0	2.4	2.4	
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	
Total Lost Time (s)		5.5			5.5			5.9	5.5		5.9	
Lead/Lag							Lead	Lead		Lag	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max		Max	Max		Max	Max	C-Max	Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	8.0	8.0		8.0	8.0		16.0	16.0	8.0	16.0	16.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effct Green (s)		71.7			71.7			23.0	71.7		23.0	
Actuated g/C Ratio		0.53			0.53			0.17	0.53		0.17	
v/c Ratio		1.02			1.04			0.50	0.16		0.17	
Control Delay		59.2			65.0			60.2	2.8		38.1	
Queue Delay		0.0			0.0			0.0	0.0		0.0	
Total Delay		59.2			65.0			60.2	2.8		38.1	
LOS		E			E			E	A		D	
Approach Delay		59.2			65.0			27.1			38.1	
Approach LOS		E			E			C			D	

Intersection Summary

Area Type: Other
 Cycle Length: 135
 Actuated Cycle Length: 135
 Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 135
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.04
 Intersection Signal Delay: 59.4
 Intersection LOS: E
 Intersection Capacity Utilization 72.6%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 30: Pine St & FM 2920





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	1174	19	6	1105	14	21	0	17	14	0	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	80		0	160		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.998			0.940				0.955
Flt Protected	0.950			0.950				0.973				0.968
Satd. Flow (prot)	1770	3532	0	1770	3532	0	0	1704	0	0	1722	0
Flt Permitted	0.950			0.950				0.834				0.817
Satd. Flow (perm)	1770	3532	0	1770	3532	0	0	1460	0	0	1453	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			2			58				58
Link Speed (mph)		30			30			30				30
Link Distance (ft)		3717			948			261				287
Travel Time (s)		84.5			21.5			5.9				6.5
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
Growth Factor	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%	131%
Adj. Flow (vph)	11	1672	27	9	1573	20	30	0	24	20	0	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	11	1699	0	9	1593	0	0	54	0	0	30	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4				8
Permitted Phases							4			8		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	10.5	22.0		10.5	22.0		20.0	20.0		33.0	33.0	
Total Split (s)	15.0	105.0		15.0	105.0		30.0	30.0		30.0	30.0	
Total Split (%)	10.0%	70.0%		10.0%	70.0%		20.0%	20.0%		20.0%	20.0%	
Maximum Green (s)	9.5	99.5		9.5	99.5		24.0	24.0		24.0	24.0	
Yellow Time (s)	4.5	4.5		4.5	4.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	5.5	5.5		5.5	5.5			6.0			6.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		Max	Max		None	None	
Walk Time (s)		7.0			7.0					7.0	7.0	
Flash Dont Walk (s)		7.0			6.0					20.0	20.0	
Pedestrian Calls (#/hr)		0			0					0	0	
Act Effect Green (s)	6.5	111.8		6.4	109.3			24.0			24.0	
Actuated g/C Ratio	0.04	0.75		0.04	0.73			0.16			0.16	
v/c Ratio	0.14	0.65		0.12	0.62			0.19			0.11	
Control Delay	72.6	11.4		72.0	12.2			13.0			2.8	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	72.6	11.4		72.0	12.2			13.0			2.8	
LOS	E	B		E	B			B			A	
Approach Delay		11.8			12.5			13.0			2.8	
Approach LOS		B			B			B			A	

Intersection Summary

Area Type: Other
 Cycle Length: 150
 Actuated Cycle Length: 150
 Offset: 5 (3%), Referenced to phase 2:WBT and 6:EBT, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.65
 Intersection Signal Delay: 12.1
 Intersection LOS: B
 Intersection Capacity Utilization 58.7%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 33: Willow St & FM 2920

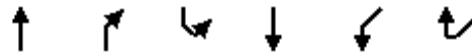




Lane Group	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Volume (vph)	166	264	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	180			0	0	0
Storage Lanes	1			0	0	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Fr						
Flt Protected	0.950					
Satd. Flow (prot)	1770	3539	0	0	0	0
Flt Permitted	0.950					
Satd. Flow (perm)	1770	3539	0	0	0	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		465	173		284	
Travel Time (s)		10.6	3.9		6.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	131%	131%	131%	131%	131%	131%
Adj. Flow (vph)	236	376	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	236	376	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	26.2%
ICU Level of Service	A
Analysis Period (min)	15



Lane Group	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations				↑↑	↘	
Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	0	0	0	3539	1863	0
Flt Permitted						
Satd. Flow (perm)	0	0	0	3539	1863	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	453			179	284	
Travel Time (s)	10.3			4.1	6.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	131%	131%	131%	131%	131%	131%
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	9		15	15		9
Sign Control	Stop			Free	Yield	

Intersection Summary

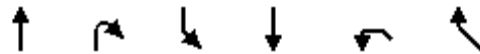
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	26.2%
Analysis Period (min)	15
	ICU Level of Service A



Lane Group	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations		↑↑			↘	
Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	0	3539	0	0	1863	0
Flt Permitted						
Satd. Flow (perm)	0	3539	0	0	1863	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		201	296		306	
Travel Time (s)		4.6	6.7		7.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	131%	131%	131%	131%	131%	131%
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Stop		Yield	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	24.4%
Analysis Period (min)	15
	ICU Level of Service A



Lane Group	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Volume (vph)	0	0	130	153	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	180		0	0
Storage Lanes		0	1		0	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt						
Flt Protected			0.950			
Satd. Flow (prot)	0	0	1770	3539	0	0
Flt Permitted			0.950			
Satd. Flow (perm)	0	0	1770	3539	0	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	204			261	306	
Travel Time (s)	4.6			5.9	7.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	131%	131%	131%	131%	131%	131%
Adj. Flow (vph)	0	0	185	218	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	185	218	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	24.4%
ICU Level of Service	A
Analysis Period (min)	15

APPENDIX B

Study Name FM 2920 at Park St
Start Date Thursday, November 13, 2014 7:00 AM
End Date Thursday, November 13, 2014 6:00 PM
Site Code 1

Report Summary

Time Period	Class.	Southbound					Westbound					Eastbound					Total		Crosswalk	
		L	R	U	I	O	T	R	U	I	O	L	T	U	I	O	SB	WB	pedestria	Total
Peak 1	cles (no classil	30	119	0	149	62	1017	14	0	1031	1441	48	1411	0	1459	1136	2639	SB	0	0
Specified Period	%	100%	100%	0%	100%	100%	100%	100%	0%	100%	100%	100%	100%	0%	100%	100%	100%		0%	
7:00 AM - 9:00 AM	Total	30	119	0	149	62	1017	14	0	1031	1441	48	1411	0	1459	1136	2639	WB	0	0
One Hour Peak	PHF	0.83	0.88	0	0.98	0.86	0.87	0.5	0	0.87	0.96	0.75	0.96	0	0.95	0.87	0.94		0%	
7:00 AM - 8:00 AM	Approach %				6%	2%				39%	55%				55%	43%		EB	0	0
																			0%	
																			0	0
Peak 2	cles (no classil	44	84	0	128	201	1781	55	0	1836	1303	146	1259	0	1405	1865	3369	SB	0	0
Specified Period	%	100%	100%	0%	100%	100%	100%	100%	0%	100%	100%	100%	100%	0%	100%	100%	100%		0%	
4:00 PM - 6:00 PM	Total	44	84	0	128	201	1781	55	0	1836	1303	146	1259	0	1405	1865	3369	WB	0	0
One Hour Peak	PHF	0.69	0.88	0	0.86	0.9	0.89	0.72	0	0.89	0.9	0.81	0.9	0	0.92	0.88	0.96		0%	
5:00 PM - 6:00 PM	Approach %				4%	6%				54%	39%				42%	55%		EB	0	0
																			0%	
																			0	0

Study Name FM 2920 at Cascade Bay
Start Date Thursday, November 13, 2014 7:00 AM
End Date Thursday, November 13, 2014 6:00 PM
Site Code 2

Report Summary

Time Period	Class.	Westbound					Northbound					Eastbound					Total		Crosswalk	
		L	T	U	I	O	L	R	U	I	O	T	R	U	I	O	WB	NB	pedestria	Total
Peak 1	cles (no classil	10	980	0	990	1420	21	16	0	37	64	1404	54	0	1458	1001	2485	WB	0	0
Specified Period	%	100%	100%	0%	100%	100%	100%	100%	0%	100%	100%	100%	100%	0%	100%	100%	100%		0%	
7:00 AM - 9:00 AM	Total	10	980	0	990	1420	21	16	0	37	64	1404	54	0	1458	1001	2485	NB	0	0
One Hour Peak	PHF	0.83	0.93	0	0.93	0.91	0.75	0.67	0	0.71	0.84	0.91	0.79	0	0.9	0.92	0.95		0%	
7:15 AM - 8:15 AM	Approach %				40%	57%				1%	3%				59%	40%		EB	0	0
																			0%	
																			0	0
Peak 2	cles (no classil	11	1641	0	1652	1263	69	31	0	100	69	1232	58	0	1290	1710	3042	WB	0	0
Specified Period	%	100%	100%	0%	100%	100%	100%	100%	0%	100%	100%	100%	100%	0%	100%	100%	100%		0%	
4:00 PM - 6:00 PM	Total	11	1641	0	1652	1263	69	31	0	100	69	1232	58	0	1290	1710	3042	NB	0	0
One Hour Peak	PHF	0.55	0.92	0	0.92	0.89	0.75	0.7	0	0.76	0.86	0.89	0.91	0	0.89	0.94	0.98		0%	
4:45 PM - 5:45 PM	Approach %				54%	42%				3%	2%				42%	56%		EB	0	0
																			0%	
																			0	0

Study Name FM 2920 at SH 249 SB
Start Date Thursday, November 13, 2014 7:00 AM
End Date Thursday, November 13, 2014 6:00 PM
Site Code 4

Report Summary

Time Period	Class.	Southbound						Westbound						Northbound						Eastbound						Crosswalk					
		L	T	R	U	I	O	L	T	R	U	I	O	L	T	R	U	I	O	L	T	R	U	I	O	Total	Pedestria	Total			
Peak 1	cles (no classif	380	94	270	130	874	130	140	763	0	1	904	1436	0	0	0	55	55	563	0	1055	274	0	1329	1033	3162	SB	0	0		
Specified Period	%	100%	100%	100%	100%	100%	100%	100%	100%	0%	100%	100%	100%	0%	0%	0%	100%	100%	100%	0%	100%	100%	0%	100%	100%	100%		0%			
7:00 AM - 9:00 AM	Total	380	94	270	130	874	130	140	763	0	1	904	1436	0	0	0	55	55	563	0	1055	274	0	1329	1033	3162	WB	0	0		
One Hour Peak	PHF	0.75	0.78	0.89	0.88	0.88	0.88	0.81	0.92	0	0.25	0.92	0.88	0	0	0	0.76	0.76	0.96	0	0.94	0.96	0	0.95	0.93	0.98		0%			
7:15 AM - 8:15 AM	Approach %					28%	4%					29%	45%					2%	18%					42%	33%		NB	0	0		
																											EB	1	1		
																												100%	1	1	
Peak 2	cles (no classif	372	153	202	273	1000	273	326	1493	0	3	1822	1593	0	0	0	183	183	879	0	1218	217	0	1435	1695	4440	SB	2	2		
Specified Period	%	100%	100%	100%	100%	100%	100%	100%	100%	0%	100%	100%	100%	0%	0%	0%	100%	100%	100%	0%	100%	100%	0%	100%	100%	100%		100%			
4:00 PM - 6:00 PM	Total	372	153	202	273	1000	273	326	1493	0	3	1822	1593	0	0	0	183	183	879	0	1218	217	0	1435	1695	4440	WB	0	0		
One Hour Peak	PHF	0.78	0.93	0.94	0.93	0.91	0.93	0.84	0.88	0	0.38	0.89	0.9	0	0	0	0.92	0.92	0.97	0	0.86	0.76	0	0.84	0.88	0.96		0%			
4:45 PM - 5:45 PM	Approach %					23%	6%					41%	36%					4%	20%					32%	38%		NB	1	1		
																												100%	1	1	
																													100%	4	4

Study Name FM 2920 at SH 249 NB
Start Date Thursday, November 13, 2014 7:00 AM
End Date Thursday, November 13, 2014 6:00 PM
Site Code 3

Report Summary

Time Period	Class.	Southbound						Westbound						Northbound						Eastbound						Crosswalk			
		L	T	R	U	I	O	L	T	R	U	I	O	L	T	R	U	I	O	L	T	R	U	I	O	Total	Pedestria	Total	
Peak 1	cles (no classif	0	0	0	135	135	564	0	633	36	0	669	1229	270	86	35	54	445	54	307	1194	0	0	1501	903	2750	SB	0	0
Specified Period	%	0%	0%	0%	100%	100%	100%	0%	100%	100%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%	100%	100%	100%	0%	0%	0%
7:00 AM - 9:00 AM	Total	0	0	0	135	135	564	0	633	36	0	669	1229	270	86	35	54	445	54	307	1194	0	0	1501	903	2750	WB	0	0
One Hour Peak	PHF	0	0	0	0.87	0.87	0.96	0	0.82	0.75	0	0.82	0.9	0.89	0.77	0.8	0.84	0.85	0.84	0.86	0.9	0	0	0.89	0.84	0.96	0%	0%	0%
7:30 AM - 8:30 AM	Approach %				5%	21%					24%	45%					16%	2%					55%	33%		NB	0	0	
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Study Name FM 2920 at Buvinghausen Lane
Start Date Thursday, November 13, 2014 7:00 AM
End Date Thursday, November 13, 2014 6:00 PM
Site Code 6

Report Summary

Time Period	Class.	Southbound				Westbound				Northbound				Eastbound				Crosswalk											
		L	T	R	U	I	O	L	T	R	U	I	O	L	T	R	U	I	O	Total	pedestria	Total							
Peak 1	cles (no classi	10	0	18	0	28	40	3	803	11	0	817	947	0	0	1	0	1	4	29	936	1	0	966	821	1812	SB	0	0
Specified Period	%	100%	0%	100%	0%	100%	100%	100%	100%	100%	0%	100%	100%	0%	0%	100%	0%	100%	100%	100%	100%	100%	0%	100%	100%	100%	0%	0%	0%
7:00 AM - 9:00 AM	Total	10	0	18	0	28	40	3	803	11	0	817	947	0	0	1	0	1	4	29	936	1	0	966	821	1812	WB	0	0
One Hour Peak	PHF	0.62	0	0.64	0	0.78	0.67	0.38	0.93	0.69	0	0.93	0.95	0	0	0.25	0	0.25	0.5	0.6	0.95	0.25	0	0.95	0.93	0.95	0%	0%	0%
7:15 AM - 8:15 AM	Approach %					2%	2%					45%	52%					0%	0%					53%	45%		NB	0	0
																											EB	0	0
																												0	0
Peak 2	cles (no classi	14	4	31	0	49	28	3	1305	16	0	1324	979	2	0	4	0	6	7	12	961	0	0	973	1338	2352	SB	0	0
Specified Period	%	100%	100%	100%	0%	100%	100%	100%	100%	100%	0%	100%	100%	100%	0%	100%	0%	100%	100%	100%	100%	0%	0%	100%	100%	100%	0%	0%	0%
4:00 PM - 6:00 PM	Total	14	4	31	0	49	28	3	1305	16	0	1324	979	2	0	4	0	6	7	12	961	0	0	973	1338	2352	WB	2	2
One Hour Peak	PHF	0.7	0.5	0.39	0	0.49	0.78	0.38	0.97	0.57	0	0.97	0.93	0.5	0	0.5	0	0.75	0.58	0.75	0.93	0	0	0.93	0.95	0.94	100%	100%	100%
4:30 PM - 5:30 PM	Approach %					2%	1%					56%	42%					0%	0%					41%	57%		NB	2	2
																												100%	100%
																											EB	0	0
																												0%	0%
																												4	4

Study Name FM 2920 at Vernon St
Start Date Thursday, November 13, 2014 7:00 AM
End Date Thursday, November 13, 2014 6:00 PM
Site Code 9

Report Summary

Time Period	Class.	Westbound					Northbound					Eastbound					Total		Crosswalk		
		L	T	U	I	O	L	R	U	I	O	T	R	U	I	O	pedestria	Total			
Peak 1	cles (no classil	27	912	0	939	950	11	31	0	42	35	919	8	0	927	923	1908	WB	0	0	
Specified Period	%	100%	100%	0%	100%	100%	100%	100%	0%	100%	100%	100%	100%	0%	100%	100%	100%		0%		
7:00 AM - 9:00 AM	Total	27	912	0	939	950	11	31	0	42	35	919	8	0	927	923	1908	NB	0	0	
One Hour Peak	PHF	0.75	0.95	0	0.95	0.91	0.69	0.78	0	0.81	0.8	0.92	0.67	0	0.92	0.95	0.97		0%		
7:15 AM - 8:15 AM	Approach %				49%	50%				2%	2%				49%	48%		EB	0	0	
																			0%	0	0
Peak 2	cles (no classil	27	1182	0	1209	1114	12	41	0	53	27	1073	0	0	1073	1194	2335	WB	0	0	
Specified Period	%	100%	100%	0%	100%	100%	100%	100%	0%	100%	100%	100%	0%	0%	100%	100%	100%		0%		
4:00 PM - 6:00 PM	Total	27	1182	0	1209	1114	12	41	0	53	27	1073	0	0	1073	1194	2335	NB	0	0	
One Hour Peak	PHF	0.68	0.92	0	0.93	0.97	0.5	0.68	0	0.63	0.68	0.97	0	0	0.97	0.93	0.96		0%		
4:30 PM - 5:30 PM	Approach %				52%	48%				2%	1%				46%	51%		EB	0	0	
																			0%	0	0

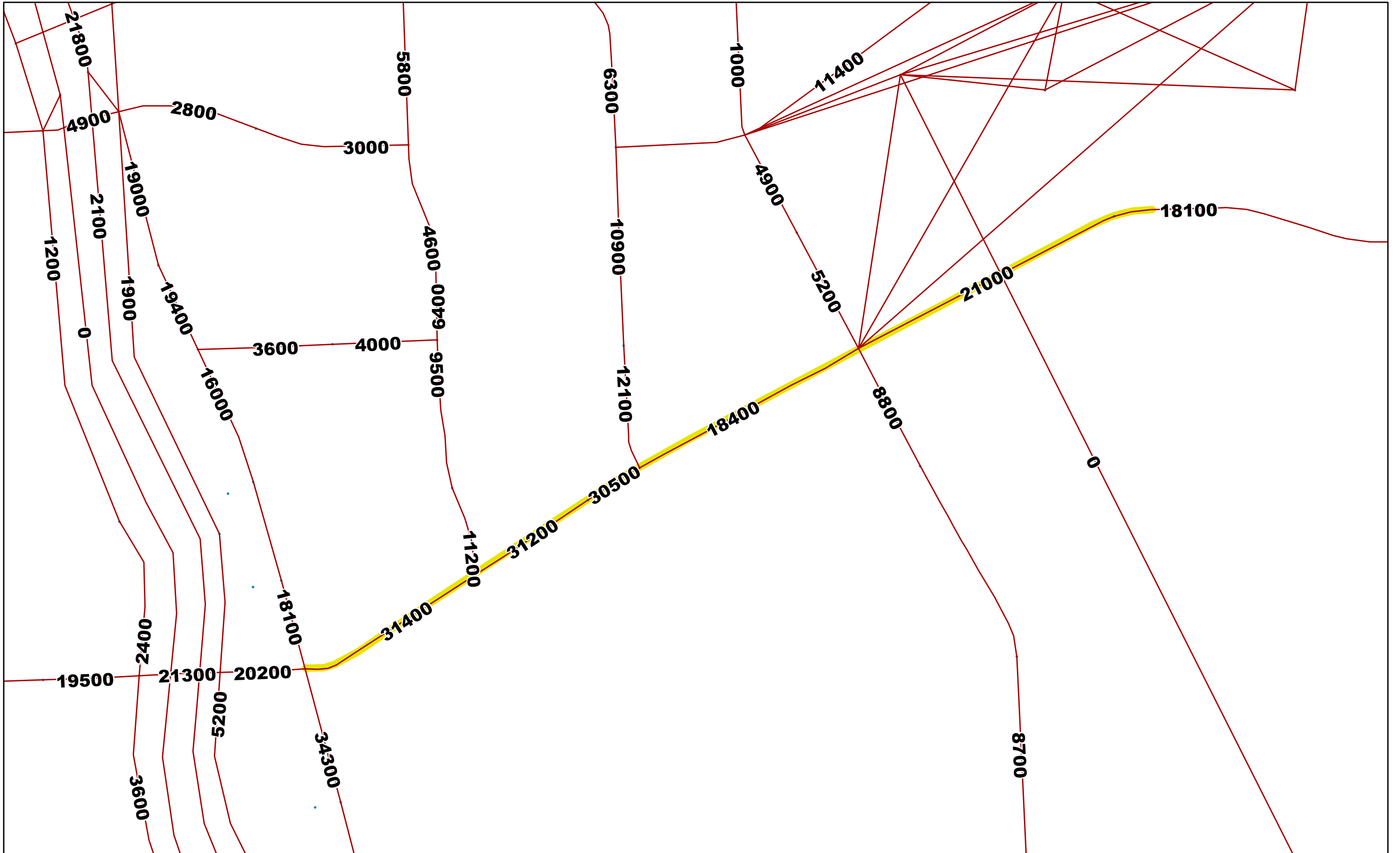
Study Name FM 2920 at Baker Dr
Start Date Thursday, November 13, 2014 7:00 AM
End Date Thursday, November 13, 2014 6:00 PM
Site Code 10

Report Summary

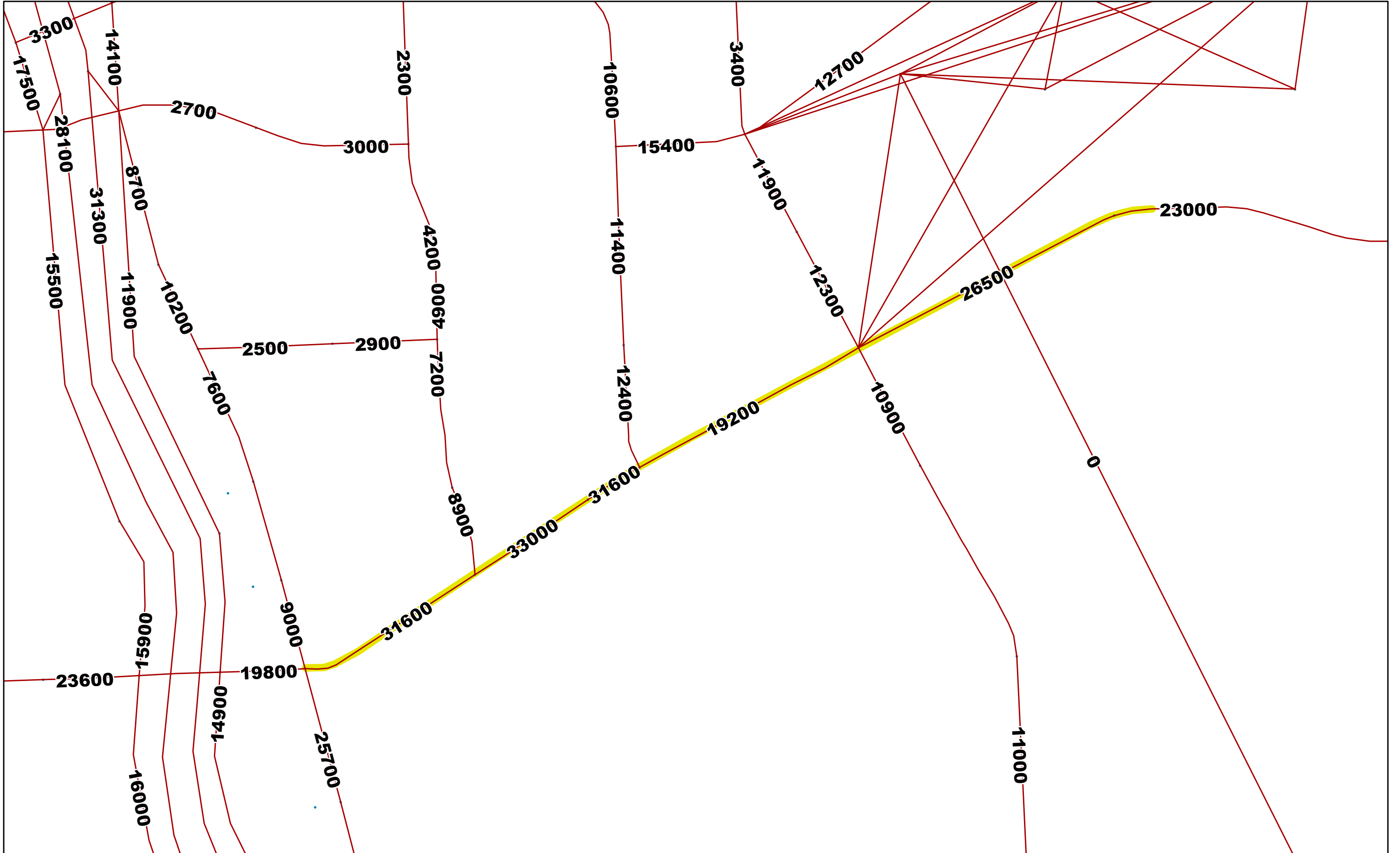
Time Period	Class.	Southbound					Westbound					Eastbound					Crosswalk			
		L	R	U	I	O	T	R	U	I	O	L	T	U	I	O	Total	pedestria	Total	
Peak 1	cles (no classil	116	42	0	158	96	902	64	0	966	1045	32	929	0	961	944	2085	SB	0	0
Specified Period	%	100%	100%	0%	100%	100%	100%	100%	0%	100%	100%	100%	100%	0%	100%	100%	100%		0%	
7:00 AM - 9:00 AM	Total	116	42	0	158	96	902	64	0	966	1045	32	929	0	961	944	2085	WB	0	0
One Hour Peak	PHF	0.51	0.81	0	0.56	0.86	0.92	0.84	0	0.93	0.85	0.53	0.93	0	0.94	0.92	0.92		0%	
7:00 AM - 8:00 AM	Approach %				8%	5%				46%	50%				46%	45%		EB	0	0
																			0%	
																			0	0
Peak 2	cles (no classil	46	70	0	116	120	1141	38	0	1179	1062	82	1016	0	1098	1211	2393	SB	0	0
Specified Period	%	100%	100%	0%	100%	100%	100%	100%	0%	100%	100%	100%	100%	0%	100%	100%	100%		0%	
4:00 PM - 6:00 PM	Total	46	70	0	116	120	1141	38	0	1179	1062	82	1016	0	1098	1211	2393	WB	0	0
One Hour Peak	PHF	0.88	0.83	0	0.85	0.79	0.91	0.95	0	0.91	0.93	0.73	0.92	0	0.95	0.92	0.93		0%	
4:30 PM - 5:30 PM	Approach %				5%	5%				49%	44%				46%	51%		EB	0	0
																			0%	
																			0	0

APPENDIX C

Volumes 2015



2025 Volumes



2040 Volumes

