CIVIL ENGINEERING / SURVEYING / UTILITIES

Traffic Impact Study

East Village

Lee's Summit, Missouri



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1.0 INTRODUCTION

This traffic impact study is for the East Village development in the southeast quadrant of the US-50 Highway (US-50) and M-291 Highway (M-291) interchange in Lee's Summit, Missouri. It is bounded on the west by M-291, a railroad on the east, and 16th Street to the south. The location of the development is shown in **Figure 1** in the **Appendix**.

The purpose of this study is to identify and address traffic and transportation impacts of the proposed development on the surrounding streets and intersections. The study has been prepared based on the City of Lee's Summit *Access Management Code* and the Missouri Department of Transportation (MoDOT) *Engineering Policy Guide*. The study consists of:

- Existing Conditions. Review of existing roadway characteristics and traffic volumes from July 2025
- Base Conditions. Incorporation of the full development traffic approved for the Oldham Village "West" Traffic Impact Study dated August 2024 as prepared by Kimley Horn.
- Trip generations based on the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 11th Edition* for the proposed development by development phases. With a supplemental trip generation recommendation provided by Kittelson and Associates for a Warehouse Retailer. Kittelson has evaluated more than 40 of this particular Warehouse Retailer locations to provide a more accurate number than ITE.
- Trip distributions and assignments by project phases including:
    - Phase 1 Oldham Parkway North
    - Phase 2 Bailey Road North
    - Phase 3 16th Street North = Full Development
- Analysis of impacts of the traffic generated by the proposed development on the street network, including peak period levels of service (LOS), delay times, and 95% queue lengths
- Review of site access points relative to the City's access management guidelines.
- Discussion of potential improvements and traffic management measures identified to mitigate operational concerns.
- Signal warrant analysis for Oldham Parkway and Intersection Node 6 which serves as the main access to the Warehouse Retailer and the development to the south
- Development of future year (2045) traffic volume projections.

2.0 EXISTING CONDITIONS

2.1 STUDY AREA

East Village is situated in the southeast quadrant of the US-50 Highway and M-291 Highway interchange in Lee's Summit, Missouri. The site is approximately 108 acres. The site is predominantly greenfield with the existence of the Zoetis Inc. building situated along Bailey Road at Pfizer Way. The existing parcels along the north side of 16th Street are not included in the development.

The site is bounded on the north by US-50. By the railroad to the east, SE 16th Street on the south, and M-291 on the west. The study area is shown in **Figure 1** in the **Appendix**.

Through discussion with City and MoDOT staff, the following intersections were included in the study for traffic analysis.

- M-291 & Oldham Parkway (Signalized) Study Node #1
- M-291 & Persels Road/Bailey Road (Signalized) Study Node #2
- M-291 & 16th Street (RIRO) Study Node #3
- M-291 & Scherer Road (Signalized) Study Node #4
- Bailey Road & Hamblen Road (Signalized) Study Node #5

MoDOT analyzed the US-50 & M-291 interchange in 2015. That analysis included the M-291 corridor with assumptions for major commercial developments to the east and west of the Highway along Oldham Parkway.

2.2 SURROUNDING STREET NETWORK

The existing street network within the study area includes US-50, M-291, Oldham Parkway, Bailey Road, 16th Street, and a new north-south collector street through the development. The following provides a summary of the existing street network within the study area.

US-50 is a four-lane divided east-west freeway with a posted speed limit of 60mph. The US-50 and M-291 interchange was reconstructed in 2018 as a diverging diamond. The crossover on the north side of US-50 is a roundabout intersection with the crossover on the south side being signalized.

M-291 is a north-south expressway that connects Lee's Summit to Harrisonville to the south with a posted speed of 45mph. M-291 is a six-lane divided roadway north of Persels/Bailey Road and a four-lane divided highway south of Persels/Bailey Road. M-291 has 12-foot travel lanes and 10-foot paved shoulders. Access is controlled along M-291 adjacent to the study area. There is a shared use path along the west side of M-291 extending south of the interchange to Oldham Parkway.

Oldham Parkway is a 35mph commercial collector that runs northwest-southeast that functions as a frontage road along the south side of US-50. Oldham Parkway is a two-lane undivided roadway with paved shoulders. At Jefferson Street, Oldham Parkway follows an east-west alignment to M-291 with two lanes in the westbound direction, a raised median, and four lanes in the eastbound direction with curbs and gutters and a shared use path along the south side.

Bailey Road is generally a two-lane east-west minor arterial street with a posted speed of 35mph that widens to three-lanes approximately 700' east of Pfizer Way. As Bailey Road approaches the signalized intersection of M-291, it widens to four-lanes. Bailey Road east of M-291 has an existing sidewalk along the south side of the road that continues over the railroad overpass to Hamblen Road.

16th Street is a two-lane east-west local street with a posted speed of 25mph. Within the study area, 16th Street has stop-controlled right-in right-out (RIRO) access control to northbound M-291.There are no existing sidewalks along 16th Street.

The new **north-south collector** between Oldham Parkway and Bailey Road is proposed as a median divided two-lane roadway with additional left-turn lanes at intersection approaches and sidewalks on each side. Between Bailey Road and 16th Street it is proposed with a 3-lane section with a center two-way left turn lane with sidewalks on each side.

2.3 DATA COLLECTION

Peak hour traffic counts were collected at the study intersections on Thursday July 10th, Saturday July 19th, and Tuesday July 22nd of 2025. The data collected is included in the **Appendix**. The AM peak hour occurred between 7:45 AM and 8:45 AM, the PM peak hour occurred between 4:30 PM and 5:30 PM, and the Saturday peak hour occurred between 12:00 PM and 1:00 PM. The existing conditions peak hour volumes are shown in **Figure 2**.

3.0 BASE CONDITIONS

A base condition was established for this study which consists of adding the existing traffic volumes to the full development traffic established for the Oldham Village “West” Traffic Impact Study.

3.1 OLDHAM VILLAGE “WEST” SITE PLAN

The Oldham Village “West” Traffic Impact Study dated August 2024 was prepared by Kimley Horn and includes approximately 45 acres of development area in the southwest corner of US-50 and M-291. The Oldham Village “West” study area can be seen in **Figure 3**.

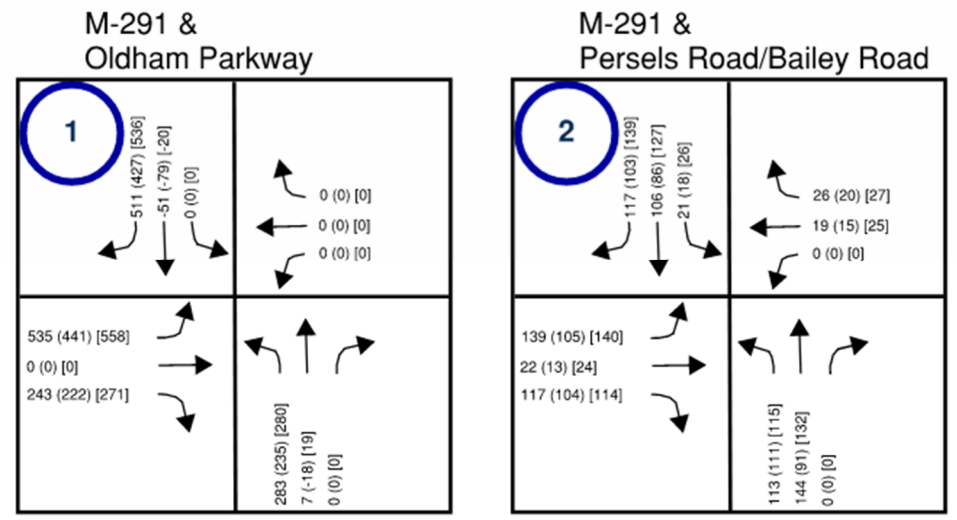
The estimated trips generated by that development were assigned to the street network based on the trip distribution summarized in **Table 1**. That distribution was based on existing traffic patterns, the surrounding street network, population density, and engineering judgement. The distributions were reported to generally follow what was used for MoDOT’s analysis for the US-50 & M-291 interchange.

TABLE 1: OLDHAM VILLAGE “WEST” TRIP DISTRIBUTION

Direction To/From	Percentage
North on M-291	50%
South on M-291	20%
East on Bailey Road	5%
West on Persels Road	10%
South on Ward Road	5%
South on Jefferson Street	5%
North on Ward Road	5%
Total	**100%**

3.2 OLDHAM VILLAGE "WEST" TRIP ASSIGNMENT

The proposed full development trip generation from the Oldham Village "West" study were reduced for pass-by trips and assigned to the street network based on the trip distribution in **Table 1**. The results from that study can be viewed in Exhibit 16 of that report (Existing + Full Development Peak Hour Traffic Volumes. When Exhibit 2 (Existing Conditions Peak Hour Traffic Volumes) from that study is subtracted from Exhibit 16 we are left with the resulting Oldham Village "West" new trip assignments for two of the East Village study intersections: Node 1: M-291 & Oldham Parkway and Node 2: M-291 & Persels/Bailey Road below:



These numbers represent the "Base" trip assignments added by the Oldham Village "West" development.

3.3 BASE CONDITIONS

For this traffic study, base conditions included the existing traffic counts conducted in July 2025 plus the Oldham Village "West" new trip assignments.

The resulting base condition peak hour volumes can be seen in **Figure 4**. The remainder of the traffic volume exhibits and analyses will be based on these volumes.

Figure 5 illustrates the base condition geometry lane uses and intersection control. **Figure 6** represents base condition 95% queue lengths.

4.0 PROPOSED CONDITIONS

4.1 EAST VILLAGE: OVERALL SITE PLAN

The proposed East Village development is proposed to have 20 individual lots and can be seen in **Figure 7**. The project is planned to be developed in three phases which are illustrated in **Figure 8**.

Phase 1 provides access to Lot 1 which consists of a Warehouse Retailer with fueling stations. Phase 1 includes the extension of a median divided and curbed Oldham Parkway east of M-291 with sidewalk along the south side. There are three proposed intersections on the Oldham Parkway extension, with the first being an eastbound right-in right-out (RIRO) approximately 300' east of M-291.

The second intersection is proposed to have signalized access for Oldham Parkway and a new north/south collector street (Warehouse Retailer entrance) to service the development area. With Phase 1, the intersection would be built to final configuration and signalized, with the south leg of the intersection to be constructed with Phase 2. The west leg of the intersection would be 4-lanes (2 EBL, 1 EBT, 1 EBR). The east leg of the intersection would be 3-lanes (1 WBL, 1 WBT, 1 WBR). The north leg of the intersection would also be 3-lanes. (1 SBL, 1 SBT, 1 SBR).

Approximately 430' east of the second intersection is the third intersection intended to provide access to fueling stations for the Warehouse Retailer. Oldham Parkway remains median divided through this section.

Phase 2 provides access for Lots 2-13 which include: two multifamily housing units totaling 540-units, units, six fine dining restaurants, two fast-food restaurants with drive-through windows, a 17,000 square foot strip retail plaza, and a 3.4-acre public park.

Phase 2 constructs a new north/south collector street between Oldham Parkway and Bailey Road. This collector street will be median divided with curb and sidewalks on both sides. It provides 1-lane in each direction with additional dedicated left-turn lanes at each intersection. There are three proposed intersections between Oldham Parkway and Bailey Road for internal circulation to the various lots. Phase 2 also includes two new east-west median divided internal streets with curb and sidewalk on both sides. These streets provide internal access from the new north/south collector street to Lots 2-3, and Lot 12-13.

With Phase 2, the new north/south collector will initially form a T-intersection with Bailey Road approximately 560' east of M-291. The south leg of the T-intersection would be constructed in Phase 3. The west leg of the intersection would be 3-lanes (1 EBL, 1 EBT, 1 EBR). The east leg of the intersection would be 2-lanes (1 WBLT, 1 WBR). The north leg of the intersection would also be 2-lanes (1 SBL, 1 SBTR).

A second intersection with Bailey Road would also occur with Phase 2, approximately 430' east of the new north/south collector. This intersection will initially form a T-intersection with Bailey Road with the south leg to be constructed in Phase 3. The west leg of the intersection would be 1-lanes (1 EBLTR).

The east leg of the intersection would be 2-lanes (1 WBL, 1 WBTR). The north leg of the intersection would be 2-lanes. (1 SBL, 1 SBTR).

Baley Road would be improved with Phase 2 from M-291 to the eastern project limit with an additional eastbound though lane between M-291 and the north/south collector. The existing sidewalk on the south side of Bailey Road would continue to be provided.

Phase 3 provides access for Lots 14-20 which include: four fast-food restaurants with drive-through windows, one fine dining restaurant, a 120,000 square foot shopping plaza, and 100-units of single family attached housing.

Phase 3 constructs a new north/south collector street between Bailey Road and 16th Street. There are three proposed intersections between Bailey Road and 16th Street for internal circulation to the various lots. This collector street will be median divided with curb and sidewalks on both sides. It provides 1-lane in each direction and is median divided between Bailey Road and the first intersection to the south. Between the first intersection and 16th Street, the north/south collector transitions to a 3-lane section with a center two-way left-turn lane.

With Phase 3, the new north/south collector will form a T-intersection with 16th Street approximately 290' east of M-291. The west leg of the intersection would be 1-lane (1 EBLTR). The east leg of the intersection would be 1-lane (1 WBLTR). The north leg of the intersection would be 2-lanes. (1 SBL, 1 SBR).

4.2 PHASE 1: OLDHAM PARKWAY NORTH

4.2.1 PHASE 1 SITE ACCESS

Phase 1 of the site will be accessed from 3-intersections on Oldham Parkway, see **Figure 9.** Three intersection nodes, summarized below, are included with Phase 1. All access spacing distances are measured between the centerline of streets or driveways.

- Node 9: Oldham Parkway & Eastbound RIRO
  This access is approximately 300' east of M-291.
- Node 6: Oldham Parkway & North/South Collector
  This access is proposed to be signalized as it functions as the primary entrance to the Warehouse Retailer to the north and to the future Oldham Village East development to the south. This access point is approximately 580' east of M-291.
- Node 10: Oldham Parkway & Fueling Stations
  This access is approximately 430' east of Node 6.

4.2.2 PHASE 1 TRIP GENERATION

Table 2 represents the trip generation estimate for Phase 1: Oldham Parkway North which consists of a single lot for a warehouse retailer.

As opposed to using the Institute of Transportation Engineers (ITE) land use code of 857 – Discount Club for the trip generation, the warehouse retailer provided a Trip Generation Technical Memorandum prepared by Kittelson Associates dated July 9, 2025. Kittelson maintains a transportation database for the warehouse retailer which is continually updated and was asked to provide a trip generation estimate for this proposed site. Their estimate, based on data from more than 40 similar sites, is included in **Table 2**.

TABLE 2: PHASE 1 PROPOSED TRIP GENERATION (OLDHAM PARKWAY NORTH)

#	ITE Land Use	ITE Code	Value/ Variable	Daily	AM Peak Hour			PM Peak Hour			SAT Peak Hour		
					Total	In	Out	Total	In	Out	Total	In	Out
	Phase 1 – Oldham Parkway North												
1	Warehouse Retailer	***	161k SF	11,074	322	179	143	1094	526	568	1527	758	769
	Phase 1 Trips (unreduced)			11,704	322	179	143	1094	526	568	1527	758	769
	Phase 1 Internal Capture			0	0	0	0	0	0	0	0	0	0
	Phase 1 Pass-By Trips			0	0	0	0	318	153	165	320	159	161
	Phase 1 Primary Trips			**11,704**	**322**	**179**	**143**	**776**	**373**	**404**	**1207**	**599**	**608**

***Note: Trip generation provided from Kittelson Associates. Their technical memorandum may be found in the Appendix.

ITE provided internal capture and pass-by rates were applied to the values in **Table 2**.

For trip generation comparison to ITE values, ITE Land Use 857 – Discount Club is provided below.

#	ITE Land Use	ITE Code	Value/ Variable	Daily	AM Peak Hour			PM Peak Hour			SAT Peak Hour		
					Total	In	Out	Total	In	Out	Total	In	Out
	Phase 1 – Oldham Parkway North												
1	Discount Club	857	161k SF	6,836	129	79	50	675	337	338	1026	503	523

The values in **Table 3** generate 4,868 more daily trips, 193 more AM peak hour trips, 101 more PM peak hour trips, and 181 more Saturday peak hour trips than estimated by ITE. The ITE values were not used for this Trip Generation.

4.2.3 PHASE 1 TRIP DISTRIBUTION AND ASSIGNMENT

For Phase 1, the estimated trips generated by the warehouse retailer were assigned to the street network based on the trip distribution summarized in **Table 3**. A review of existing patterns, the available surrounding street network, the previous study, and warehouse retailer market data were used for this distribution.

TABLE 3: PHASE 1 TRIP DISTRIBUTION

Direction To/From	Percentage
North on M-291	70%
South on M-291 south of Persels/Bailey	15%
South on M-291 and west on Persels	5%
South on M-291 and east on Bailey	10%
Total	**100%**

The Phase 1 street network, study intersections, and primary trip distribution may be seen in **Figure 9**.

The Phase 1 pass-by trip volumes from **Table 2** were applied to the Phase 1 intersections in **Figure 10**.

Figure 11 represents the total site trips generated and distributed with pass-by by Phase 1.

Figure 12 illustrates the Base Conditions plus Phase 1 peak hour traffic volumes. Figure 12 is the result of adding Figure 4 to Figure 11. The peak hour volumes in Figure 12 were used for all Base + Phase 1 analyses.

4.2.4 PHASE 1 LANE GEOMETRY AND QUEUES

The lane geometry and intersection controls for the Base + Phase 1 condition can be viewed in **Figure 13**.

The 95th percentile queue lengths by lane group, from the analyses performed later in this study, can be viewed for the Base + Phase 1 condition in **Figure 14**.

4.2.5 PHASE 1 SIGNAL WARRANT ANALYSIS

A peak hour traffic signal warrant analysis was performed for the new intersection of Oldham Parkway & N/S Collector. This intersection is referenced as Node #6 in the Figures. The peak hour volumes for Node #6 for the Base + Phase 1 condition may be seen in **Figure 12**. These traffic volumes were plotted on *Figure 4C-3, Warrant 3, Peak Hour* from the *Manual of Uniform Traffic Control Devices* (MUTCD) for the AM, PM, and Saturday peak hours. The plotted results may be seen on **Figure 15**.

Figure 15 illustrates that the Peak Hour Traffic Signal Warrant is met at Node 6 during the Base + Phase 1 condition.

4.3 PHASE 2 BAILEY ROAD NORTH

4.3.1 PHASE 2 SITE ACCESS

Phase 2 of the site will be accessed from Node 6 on Oldham Parkway, as well as Nodes 7 and 20 on Bailey Road, see **Figure 16**.

- Node 7: Bailey Road & North/South Collector
  This access is approximately 540’ east of M-291.
- Node 20: Bailey Road & Drive 8
  This access is approximately 430’ east of Node 7.
- Node 11: North/South Collector & Drive 1
  This access is approximately 340’ south of Node 6.
- Node 12: North/South Collector & North E/W Drive
  This access is approximately 310’ south of Node 11.
- Node 13: North E/W Drive & Drive 2
  This access is approximately 335’ east of Node 12.
- Node 14: North E/W Drive & Drive 3
  This access is approximately 300’ east of Node 13.
- Node 15: North E/W Drive & Drive 4
  This access is approximately 120’ east of Node 14, and is only access to parking lots.
- Node 16: North/South Collector & South E/W Drive
  This access is approximately 460’ south of Node 12.
- Node 17: South E/W Drive & Drive 5
  This access is approximately 240’ east of Node 16.
- Node 18: South E/W Drive & Drive 6
  This access is approximately 220’ east of Node 17.
- Node 19: Drive 7
  This access is approximately 270’ south of Node 18.

4.3.2 PHASE 2 TRIP GENERATION

Table 4 represents the trip generation estimate for Phase 2: Bailey Road North which consists of twelve lots. Appropriate ITE land use codes, average trip generation rates, internal capture and pass-by rates were utilized selected.

TABLE 4: PHASE 2 PROPOSED TRIP GENERATION (BAILEY ROAD NORTH)

#	ITE Land Use	ITE #	Units	Daily	AM Peak Hour			PM Peak Hour			SAT Peak Hour		
					Total	In	Out	Total	In	Out	Total	In	Out
	Phase 2 – Bailey Road North												
2	Multifamily Housing (Low-Rise)	220	300 Units	2022	120	29	91	153	96	57	123	62	61
3	Multifamily Housing (Low-Rise)	220	240 Units	1618	96	23	73	122	7	45	98	49	49
4 &5	Fine Dining Restaurant	931	14,040 SF	1177	10	5	5	110	73	37	150	88	62
6	Fine Dining Restaurant	931	8380 SF	703	6	3	3	65	44	21	89	53	36
7	Fast-Food with DTW	934	2700 SF	1262	120	61	59	89	46	43	149	76	73
8	Fine Dining Restaurant	931	7640 SF	641	6	3	3	60	40	20	82	48	34
9	Fast-Food with DTW	934	2700 SF	1262	120	61	59	89	46	43	149	76	73
10	Fine Dining Restaurant	931	7640 SF	641	6	3	3	60	40	20	82	48	34
11	Strip Retail Plaza (<40k)	822	17,000 SF	926	40	24	16	112	56	56	112	57	55
12	Fine Dining Restaurant	931	7640 SF	641	6	3	3	60	40	20	82	48	34
13	Public Park	411	3.42 Acres	3	0	0	0	0	0	0	1	1	0
	Phase 2 Trips (unreduced)			10,896	530	215	315	920	558	362	1117	606	511
	Phase 2 Internal Capture Reduce			0	66	34	32	130	83	47	0	0	0
	Phase 2 Pass-By Trips Reduce			0	122	62	60	255	155	100	0	0	0
	Phase 2 Primary Trips			**10,896**	342	119	223	535	320	215	1117	606	511

4.3.3 PHASE 2 TRIP DISTRIBUTION AND ASSIGNEMENT

For Phase 2, the trips generated were assigned to the street network based on the trip distribution summarized in **Table 5**. This distribution is based on a review of existing patterns, previous studies, and the availability of additional access to the site provided by the construction of a new N/S collector street between Oldham Parkway and Bailey Avenue.

The new N/S Collector provides access to Phase 2 of the site from both Oldham Parkway and Bailey Road. Which justifies the lowering of the traffic coming to/from M-291 from the north from 70% in Phase 1 to 55% in Phases 2 and 3.

TABLE 5: PHASE 2 TRIP DISTRIBUTION

Direction To/From	Percentage
North on M-291	55%
South on M-291 south of Persels/Bailey	30%
South on M-291 and west on Persels	5%
South on M-291 and east on Bailey	10%
Total	**100%**

The Phase 2 street network, study intersections, and primary trip distribution may be seen in **Figure 16**.

The Phase 2 pass-by trip volumes from **Table 4** were applied to the study intersections in **Figure 17**.

Figure 18 represents the total site trips generated and distributed with pass-by by Phase 2.

Figure 19 illustrates the Base Conditions plus Phase 1 and 2 peak hour traffic volumes. Figure 19 is the result of adding Figure 11 to Figure 18. The peak hour volumes in Figure 19 were used for all Base + Phase 2 analyses.

4.3.4 PHASE 2 LANE GEOMETRY AND QUEUES

The lane geometry and intersection controls for the Base + Phase 2 condition can be viewed in **Figure 20**.

The 95th percentile queue lengths by lane group, from the analyses performed later in this study, can be viewed for the Base + Phase 2 condition in **Figure 21**.

4.4 PHASE 3 16TH STREET NORTH

4.4.1 PHASE 3 SITE ACCESS

Phase 3 of the site will be accessed from Nodes 7 and 20 on Bailey Road, and Node 8 on 16th Street, see **Figure 22**.

- Node 21: North/South Collector & Drive 9
  This access is approximately 340' south of Node 7.
- Node 22: North/South Collector & Drive 10
  This access is approximately 290' south of Node 21.
- Node 23: North/South Collector & Drive 11
  This access is approximately 275' south of Node 22.
- Node 8: North/South Collector & 16th Street
  This access is approximately 420' south of Node 23.
- Node 24: 16th Street and Park Driveway
  This access is approximately 1170' east of Node 8.

4.4.2 PHASE 3 TRIP GENERATION

Table 6 represents the trip generation estimate for Phase 3: 16th Street North which consists of seven lots. Appropriate ITE land use codes, average trip generation rates, internal capture and pass-by rates were utilized selected.

TABLE 6: PHASE 3 PROPOSED TRIP GENERATION (16th STREET NORTH)

#	ITE Land Use	ITE #	Units	Daily	AM Peak Hour			PM Peak Hour			SAT Peak Hour		
					Total	In	Out	Total	In	Out	Total	In	Out
	Phase 3 – 16th Street North												
14	Fast-Food with DTW	934	3000 SF	1402	134	68	66	99	52	47	166	85	81
15	Fast-Food with DTW	934	3000 SF	1402	134	68	66	99	52	47	166	85	81
16	Fast-Food with DTW	934	2700 SF	1262	120	61	59	89	46	43	149	76	73
17	Fine Dining Restaurant	931	7640 SF	641	6	3	3	60	40	20	82	48	34
18	Fast-Food with DTW	934	2700 SF	1262	120	61	69	89	46	43	149	76	73
19	Shopping Plaza (40-150k)	821	120,000 SF	8102	208	129	79	623	305	318	746	388	358
20	Single Family Attached Housing	215	100 Units	720	48	12	36	57	34	23	57	27	30
	Phase 3 Trips (unreduced)			14,791	770	402	368	1116	575	541	1515	785	730
	Phase 3 Internal Capture Reduce			0	140	72	68	229	118	111	164	85	79
	Phase 3 Pass-By Trips Reduce			0	256	130	126	484	248	236	231	120	111
	Phase 3 Primary Trips			**14,791**	**374**	**200**	**174**	**403**	**209**	**194**	**1120**	**580**	**540**

4.4.3 PHASE 3 TRIP DISTRIBUTION AND ASSIGNMENT

For Phase 3, the trips generated were assigned to the street network based on the same trip distribution used for Phase 2 from **Table 5**.

The extension of the new N/S Collector in Phase 2 will continue from Bailey Road to 16th Street. After discussion with the developer a decision was made to change the proposed shared access for Lots 14-16, to just shared access to Lots 14-15. Lot 16 will have shared access with Lot 17 – this is not yet reflected in the Overall Site Plan, but has been modeled for this study.

The Phase 3 street network, study intersections, and primary trip distribution may be seen in **Figure 22**.

The Phase 3 pass-by trip volumes from **Table 6** were applied to the study intersections in **Figure 23**.

Figure 24 represents the total site trips generated and distributed with pass-by by Phase 3.

Figure 25 illustrates the Base Conditions plus Phase 1-3 peak hour traffic volumes and represents the East Village Full Development traffic. Figure 25 is the result of adding Figure 19 to Figure 24. The peak hour volumes in Figure 25 were used for all Base + Full Development analyses.

4.4.4 PHASE 3 LANE GEOMETRY AND QUEUES

The lane geometry and intersection controls for the Base + East Village Full Development condition can be viewed in **Figure 26**.

The 95th percentile queue lengths by lane group, from the analyses performed later in this study, can be viewed for the Base + East Village Full Development condition in **Figure 27**.

4.5 VILLAGE EAST: FULL DEVELOPMENT

4.5.1 TRIP GENERATION

TABLE 7: VILLAGE EAST: FULL DEVELOPMENT TRIP GENERATION

#	ITE Land Use	ITE #	Units	Daily	AM Peak Hour			PM Peak Hour			SAT Peak Hour		
					Total	In	Out	Total	In	Out	Total	In	Out
	Phase 1-3 Full Development												
1	Warehouse Retailer	***	155k SF	11,074	322	179	143	1094	526	568	1527	758	769
2	Multifamily Housing (Low-Rise)	220	300 Units	2022	120	29	91	153	96	57	123	62	61
3	Multifamily Housing (Low-Rise)	220	240 Units	1618	96	23	73	122	77	45	98	49	49
4 &5	Fine Dining Restaurant	931	14,040 SF	1177	10	5	5	110	73	37	150	88	62
6	Fine Dining Restaurant	931	8380 SF	703	6	3	3	65	44	21	89	53	36
7	Fast-Food with DTW	934	2700 SF	1262	120	61	59	89	46	43	149	76	73
8	Fine Dining Restaurant	931	7640 SF	641	6	3	3	60	40	20	82	48	34
9	Fast-Food with DTW	934	2700 SF	1262	120	61	59	89	46	43	149	76	73
10	Fine Dining Restaurant	931	7640 SF	641	6	3	3	60	40	20	82	48	34
11	Strip Retail Plaza (<40k)	822	17,000 SF	926	40	24	16	112	56	56	112	57	55
12	Fine Dining Restaurant	931	7640 SF	641	6	3	3	60	40	20	82	48	34
13	Public Park	411	3.42 Acres	3	0	0	0	0	0	0	1	1	0
14	Fast-Food with DTW	934	3000 SF	1402	134	68	66	99	52	47	166	85	81
15	Fast-Food with DTW	934	3000 SF	1402	134	68	66	99	52	47	166	85	81
16	Fast-Food with DTW	934	2700 SF	1262	120	61	59	89	46	43	149	76	73
17	Fine Dining Restaurant	931	7640 SF	641	6	3	3	60	40	20	82	48	34
18	Fast-Food with DTW	934	2700 SF	1262	120	61	59	89	46	43	149	76	73
19	Shopping Plaza (40-150k)	821	120,000 SF	8102	208	129	79	623	305	318	746	388	358
20	Single Family Attached Housing	215	100 Units	720	48	12	36	57	34	23	57	27	30
	Phase 1-3 Trips (unreduced)			37,391	1622	796	826	3130	1659	1471	4159	2149	2010
	Phase 1-3 Internal Capture Reduce			0	206	106	100	359	201	158	164	85	79
	Phase 1-3 Pass-By Trips Reduce			0	378	192	186	1057	556	501	551	279	272
	Phase 1-3 Primary Trips			**37,391**	**1038**	**498**	**540**	**1714**	**902**	**812**	**3444**	**1785**	**1659**

Table 7 represents the Village East Full Development trip generation. It is the compilation of **Tables 2,4, and 6**. With all ITE land use codes, average trip generation rates, internal capture and pass-by rates applied.

5.0 ACCESS MANAGEMENT

5.1 ACCESS SPACING

The City of Lee's Summit Access Management Code (AMC) provides criteria for minimum spacing between intersections depending upon street classification and the type of access. Along commercial collector streets such as Oldham Parkway and the new N/S Collector, the minimum spacing for full access is 300 feet, measured between centerlines.

The spacing criteria is met along Oldham Parkway from M-291 to the east, and for the N/S Collector from Oldham Parkway to Bailey Road.

The Oldham Parkway & RIRO driveway (Node 9) is located 300 feet east from M-291, which is in the functional area of the intersection.

Along the N/S Collector from Bailey Road to 16th Street, there are spacings that do not meet the 300' criteria. Efforts have been made to share access between the small lot sizes of the proposed development wherever possible. These lots do not have access from other directions. The City and Developer may want to consider classifying this segment to a private collector street.

Figure 29 illustrates collector street intersection spacing distances.

For driveways along Bailey Road, a minor arterial street, the minimum spacing is 400 feet. Node 20 is 430 feet from the intersection of Bailey Road and N/S Collector.

5.2 THROAT LENGTHS

The throat length requirements in the AMC are based on the number of trips generated by a development and the amount of stacking that will occur at the access drive. The provided and required throat lengths at each access point for the Ful Development condition are shown in **Table 8**.

TABLE 8: DRIVEWAY THROAT LENGTHS

Site Driveway		Approach	Peak Hour Trips			Provided Throat Length	Required Throat Length
			AM	PM	Sat		
9	Oldham Parkway & RIRO	SB	43	216	279	200’	100’
10	Oldham Parkway & Fuel Sta	NB	33	20	22	50’	50’
		SB	29	145	186	200’	100’
11	N/S Collector & Drive 1	EB	77	94	109	75’	100’
		WB	6	59	62	50’	75’
12	N/S Collector & North EW Drive	EB	80	130	141	100’	100’
13	North EW Drive & Drive 2	NB	0	0	0	50’	50’
		SB	4	2	2	70’	50’
14	North EW Drive & Drive 3	WB	35	21	22	70’	50’
15	North EW Drive & Drive 4	SB	4	2	2	55’	50’
16	N/S Collector & South EW Drive	EB	16	56	55	100’	75’
17	South EW Drive & Drive 5	NB	3	34	34	75’	50’
		SB	0	0	0	50’	50’
18	South EW Drive & Drive 6	WB	30	19	20	50’	50’
19	Drive 7	WB	30	19	20	195’	50’
20	Bailey Road & Drive 8	NB	62	188	205	100’	100’
21	N/S Collector & Drive 9	EB	164	134	162	50’	100’
		WB	18	55	63	90’	75’
22	N/S Collector & Drive 10	EB	68	81	107	50’	100’
		WB	18	55	63	75’	75’
23	N/S Collector & Drive 11	EB	74	61	73	50’	75’
		WB	18	92	99	150’	75’

Table 8 identifies five intersection approaches where the proposed site plan does not currently meet the AMC throat distance requirements. They are identified below:

N/S Collector & Drive 1 (Node 11): Both east and west throat distances are 25’ short of AMC

N/S Collector & Drive 9 (Node 21): The eastbound throat distance is 50’ short of AMC

N/S Collector & Drive 10 (Node 22): The eastbound throat distance is 50’ short of AMC

N/S Collector & Drive 11 (Node 23): The eastbound throat distance is 25’ short of AMC

5.3 TURN LANE ANALYSIS

Left-Turn Lanes

Per the City AMC, left-turn lanes are to be provided on collector streets at connections where the left-turn volume is at least 30 vehicles in an hour. The proposed plan provides left-turn lanes of at least 150 feet in length at all locations along N/S Collector.

N/S Collector has a median from Oldham Parkway to the first intersection (Node 21) south of Bailey Road, it then transitions to a TWLT from Node 21 to 16th Street.

Right Turn Lanes

Per the AMC, right-turn lanes are required on collector streets where the right-turn volume is at least 100 vehicles an hour, with a minimum length of 100 feet plus taper.

There are two intersections on N/S Collector that meet the volume criteria:

1) The southbound right-turn volume at N/S Collector & Drive 1 = 129 vph (Node 11)
2) The southbound right-turn volume at N/S Collector & Drive 9 = 170 vph (Node 21)

The proposed site plan does not currently provide right-turn lanes at these intersections. It is recommended that the development revisit their site plan to accommodate the AMC requirement based on the assigned traffic volumes.

Per the AMC, right-turn lanes are required on minor arterial streets where the right-turn volume is at least 60 vehicles per hour. The minimum right-turn length for an arterial at the intersection of a collector or other location is 150 feet plus taper.

There are three intersections on Bailey Road that meet the volume criteria:

1) The eastbound right-turn volume at Bailey Road & N/S Collector = 366 vph (Node 7)
2) The eastbound right-turn volume at Bailey Road & Drive 8 = 107 vph (Node 20)
3) The westbound right-turn volume at Bailey Road & N/S Collector = 109 vph (Node 7)

The proposed site plan accommodates right-turn lanes for eastbound and westbound Bailey Road & N/S Collector, but does not currently for eastbound Bailey Road & Drive 8. It is recommended that the development revisit their the site plan to accommodate the AMC requirement based on the assigned traffic volumes.

6.0 INTERSECTION CAPACITY ANALYSIS

6.1 LEVEL OF SERVICE OVERVIEW

Intersection capacity analyses were performed using the Highway Capacity Manual (HCM) 10th Edition Methodology provided in Synchro v11. The amount of delay is equated to a Level of Service (LOS) based on defined thresholds. A grade of A through F is assigned, with LOS A representing the best intersection operation. Error! Reference source not found. shows the LOS associated with intersection approach delays, in seconds per vehicle (sec/veh), for signalized and unsignalized intersection cases.

TABLE 9: LEVEL OF SERVICE

Level of Service (LOS)	Stop Control Approach Delay (sec/veh)	Signal Control Approach Delay (sec/veh)
A	≤ 10	≤ 10
B	> 10 and ≤ 15	> 10 and ≤ 20
C	> 15 and ≤ 25	> 20 and ≤ 35
D	> 25 and ≤ 35	> 35 and ≤ 55
E	> 35 and ≤ 50	> 55 and ≤ 80
F	> 50	> 80

Existing traffic signal timings were provided by MoDOT and the City of Lee's Summit. The timings were entered into the Synchro v11 program for the signalized intersection analyses.

Intersection capacity analyses were performed at the study intersections for the following scenarios:

- Base Conditions (existing traffic volumes + Oldham Village "West" assignment)
- Base + Phase 1 Conditions
- Base + Phase 1-2 Conditions
- Base + Full Development Conditions
- Future Year 2045 Conditions

The City of Lee's Summit has adopted LOS C as the minimum desirable LOS. However, LOS D and E may be considered acceptable for low to moderate traffic volumes, the availability of alternate routes, and the duration of activity resulting in lower LOS.

Traffic 95th percentile queues were also evaluated with the analyses and have been presented graphically within Figures throughout the study. These queues have been reviewed to ensure the analyses are reflective of the physical constraints of the study intersections and to identify if additional storage is needed for turn lanes.

6.2 BASE CONDITIONS ANALYSIS

Capacity analyses were conducted for existing traffic volumes plus the trip assignments from the full build out of the Oldham Village "West" study. The combination of these volumes represents the Base Condition. The analysis was performed for the weekday AM, PM, and Saturday peak hours and is based on the traffic volumes, lane configurations, and traffic controls shown on **Figures 4** and **5**. The 95th percentile queues for each movement are shown in **Figure 6**. The Synchro reports are provided in **Appendix D**.

Table 10 provides a summary of the analysis at the study intersections applicable to this condition.

TABLE 10: BASE CONDITION (LOS)

Intersection		Movement	Operational Analysis Results					
			AM Peak Hour		PM Peak Hour		Sat Peak Hour	
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
1	M-291 & Oldham Parkway	Signalized	30.7	C	18.1	B	26.2	C
2	M-291 & Persels/Bailey	Signalized	25.8	C	44.2	D	32.7	C
3	M-291 & 16th Street	WB	18.5	C	17.1	C	14.0	B
4	M-291 & Scherer	Signalized	21.5	C	41.3	D	13.8	B
5	Bailey Road & Hamblen Road	Signalized	13.7	B	14.2	B	14.3	B

The Base Condition delays and LOS for the M-291 intersections with Oldham and Persels/Bailey in **Table 10** are slightly different than the Existing + Full Development Peak Hour Conditions in the previous study. This is for two primary reasons. First, the existing traffic volumes were collected three years apart. Second, the long-term car storage land use west of Jefferson Street is now vacant. Some signal timing adjustments were made to optimize the intersections with the primary one being an adjustment to the Saturday cycle length from 100-seconds to 120-seconds along M-291.

The results in **Table 10** indicate that most of the study intersections are projected to operate at acceptable levels of service.

Intersections of interest:

M-291 & Oldham Parkway (Node 1)

This intersection is expected to operate at LOS C or better for all peak hours under Base Conditions.

M-291 & Persels/Bailey (Node 2)

During the PM peak hour, the intersection of M-291 & Persels/Bailey is projected to operate at LOS D. It is not uncommon for intersections on high volume roadways to operate at LOS D during peak periods. Highways. In the PM peak hour, the eastbound left turn movement at the intersection has a 95% queue length of 210' which will be less than the newly constructed eastbound left turn storage provided with the Oldham Village improvements. The southbound thru movement has a 95% queue length of 878', which is long, but space is available, and it clears within one cycle of the signal.

M-291 & Scherer (Node 4)

During the PM peak hour, the intersection of M-291 & Scherer is projected to operate at LOS D. The southbound thru movement has a 95% queue length of 974', which is long, but space is available, and the queue clears within one cycle length.

6.3 BASE + PHASE 1 CONDITIONS ANALYSIS

Capacity analyses were conducted for Base plus Phase 1 development conditions at the study intersections to determine the impact of the site generated traffic from Phase 1 of the proposed development. The cycle lengths were optimized for the study intersections for the analysis. The analysis was performed for the weekday AM, PM, and Saturday peak hours and is based on the traffic volumes, lane configurations, and traffic controls shown on **Figures 12** and **13**. The 95th percentile queues for each movement are shown in **Figure 14**. The Synchro reports are provided in **Appendix D**.

Table 11 provides a summary of the analysis at the study intersections applicable to this condition.

TABLE 11: BASE + PHASE 1 (LOS)

Intersection		Movement	Operational Analysis Results					
			AM Peak Hour		PM Peak Hour		Sat Peak Hour	
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
1	M-291 & Oldham Parkway	Signalized	25.3	C	46.5	D	39.6	D
2	M-291 & Persels/Bailey	Signalized	27.6	C	51.3	D	35.0	C
3	M-291 & 16th Street	WB	18.8	C	17.7	C	14.7	B
4	M-291 & Scherer	Signalized	22.1	C	48.0	D	14.6	B
5	Bailey Road & Hamblen Road	Signalized	13.9	B	24.2	C	15.9	B
6	Oldham Pkwy & N/S Collector	Signalized	10.1	B	15.1	B	18.8	B
9	Oldham Pkwy & RIRO	SB	8.8	A	12.4	B	15.5	C
10	Oldham Pkwy & Fuel Station	SB	0.0	A	0.0	A	0.0	A

The results in **Table 11** indicate that most of the intersections are projected to operate acceptably with the additional trips assigned by Phase 1 of the development.

Intersections of interest:

M-291 & Oldham Parkway (Node 1)

With Phase 1 added to this intersection, the PM peak hour increases to LOS D. The longest 95% queues identified in **Figure 14** for critical movements are as follows:

-	Northbound Left	171’	SAT peak	250’ of storage provided
-	Northbound Thru	403’	PM peak	1500’ of storage available
-	Southbound Left	315’	SAT peak	310’ of storage provided
-	Southbound Thru	424’	PM peak	500’ of storage available
-	Eastbound Left	332’	SAT peak	300’ of storage available
-	Westbound Left	183’	SAT peak	250’ of storage provided

The southbound left turn lane 95% queue is 5’ beyond the storage provided in the Base + Phase Condition. This condition will need evaluated in future phases.

M-291 & Persels/Bailey (Node 2)

As in the Base Conditions scenario, M-291 & Persels/Bailey is projected to operate at LOS D during the PM peak hour.

In the PM peak hour, the eastbound left turn movement at the intersection has a 95% queue length of 226’ which will be less than the newly constructed eastbound left turn storage provided with the Oldham Village improvements. Only the SAT The southbound thru movement has a 95% queue length of 911’, which is long, but space is available, and it clears within one cycle of the signal. Improvements to this intersection, potentially the addition of a third southbound thru lane, should be evaluated in future phases.

M-291 & Scherer (Node 4)

During the PM peak hour, the intersection of M-291 & Scherer is projected to operate at LOS D. The southbound thru movement has a 95% queue length of 1014’, which is long, but space is available, and the queue clears within one cycle length.

Oldham Parkway and N/S Collector (Node 6)

The new proposed signalized intersection of Oldham Parkway and N/S Collector met the MUTCD Peak Hour Warrant and is expected to operate at LOS B or better. A review of 95% queues for the T-intersection connected with this phase identifies that all approaches fit within the proposed storage lengths with the longest queue being eastbound left in the Saturday peak at 71 feet.

6.4 BASE + PHASE 1-2 CONDITIONS ANALYSIS

Capacity analyses were conducted for Base plus Phase 1-2 development conditions at the study intersections to determine the impact of the site generated traffic from Phase 2 of the proposed development. The cycle lengths were optimized for the study intersections for the analysis. The analysis was performed for the weekday AM, PM, and Saturday peak hours and is based on the traffic volumes, lane configurations, and traffic controls shown on **Figures 19** and **20**. The 95th percentile queues for each movement are shown in **Figure 21**. The Synchro reports are provided in **Appendix D**.

Table 12 provides a summary of the analysis at the study intersections applicable to this condition.

TABLE 12: BASE + PHASE 1-2 (LOS)

Intersection		Movement	Operational Analysis Results					
			AM Peak Hour		PM Peak Hour		Sat Peak Hour	
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
1	M-291 & Oldham Parkway	Signalized	41.4	D	49.1	D	51.8	D
2	M-291 & Persels/Bailey	Signalized	27.9	C	34.0	C	34.5	C
3	M-291 & 16th Street	WB	19.7	C	19.6	C	17.1	C
4	M-291 & Scherer	Signalized	23.8	C	46.9	D	17.6	B
5	Bailey Road & Hamblen Road	Signalized	13.9	B	27.7	C	18.4	B
6	Oldham Pkwy & N/S Collector	Signalized	12.4	B	17.3	B	24.1	C
7	Bailey Road & N/S Collector	SB	14.1	B	40.8	E	23.5	C
9	Oldham Pkwy & RIRO	SB	9.6	A	15.4	C	21.9	C
10	Oldham Pkwy & Fuel Station	NB	9.8	A	13.3	B	15.6	C
		SB	8.6	A	9.0	A	9.2	A
11	N/S Collector & Drive 1	EB	10.9	B	19.0	C	33.4	D
		WB	9.1	A	10.4	B	11.1	B
12	N/S Collector & North EW Drive	EB	9.7	A	12.4	B	14.2	B
		WB	8.5	A	8.8	A	8.9	A
13	North EW Drive & Drive 2	SB	8.7	A	8.7	A	8.7	A
14	North EW Drive & Drive 3	NB	8.5	A	8.6	A	8.5	A
15	North EW Drive & Drive 4	SB	0.0	A	0.0	A	0.0	A
16	N/S Collector & South EW Drive	EB	8.8	A	10.0	A	10.5	B
		WB	9.1	A	10.8	B	11.6	B
17	South EW Drive & Drive 5	NB	0.0	A	0.0	A	0.0	A
		WB	8.8	A	7.3	A	7.3	A
18	South EW Drive & Drive 6	EB	0.0	A	8.4	A	8.4	A
		WB	8.8	A	9.0	A	8.9	A
19	Drive 7	WB	9.0	A	9.2	A	9.1	A
20	Bailey Road & Drive 8	SB	11.6	B	18.9	C	14.4	B

There are several new internal site intersections to evaluate with the addition of Phase 2. The results in **Table 12** indicate that most of the intersections are projected to operate acceptably with the additional trips assigned by Phase 2 of the development.

Intersections of interest:

M-291 & Oldham Parkway (Node 1)

All three peak hours meet LOS D at this intersection with the additional trips associated with Phase 2. The longest 95% queues identified in **Figure 21** for critical movements are as follows:

-	Northbound Left	168’	AM peak	250’ of storage provided
-	Northbound Thru	417’	AM peak	1500’ of storage available
-	Southbound Left	426’	SAT peak	310’ of storage provided
-	Southbound Thru	413’	PM peak	500’ of storage available
-	Eastbound Left	358’	SAT peak	300’ of storage available
-	Westbound Left	290’	SAT peak	250’ of storage provided

With the 95% queue for the southbound left turn lanes exceeding its storage capacity, it is recommended that the double left-turn lane in this direction be lengthened to at least 430’ or as long as feasible by the constraints of M-291 Highway between the US-50 Interchange and Oldham Road.

The 95% queue for the westbound left turn lanes also exceeds its storage capacity by 40’. Consideration should be given to lengthening this storage length; however the estimated westbound thru 95% queues are notably low and below 100’.

M-291 & Persels/Bailey (Node 2)

With the additional Phase 2 traffic this intersection experienced noteworthy overall delays and queue problems under the lane geometrics in Phase 1. This was predominantly driven by the fact that the intersection currently only has two southbound-thru lanes, with three northbound-thru lanes. To improve this situation, it is recommended that a new third southbound lane be added to M-291 with Phase 2. fine. For the capacity analyses that follow, this additional thru-lane was added to the model.

With the additional third southbound-thru lane improves in Phase 2 to an overall LOS C for all three peak hours. There were notable improvements to the PM peak 95% queue length for the southbound thru movement from 911’ at Phase 1 to 323’ at Phase 2.

M-291 & Scherer (Node 4)

As identified in Phase 1, the intersection of M-291 & Scherer is projected to operate at LOS D during the PM peak. The southbound thru movement has a 95% queue of 1127’, which is long and approaching what can reasonably be cleared in a single traffic signal cycle.

Oldham Parkway and N/S Collector (Node 6)

With Phase 2, the proposed signalized intersection of Oldham Parkway and N/S Collector will have its southern approach opened to traffic and become a four-legged intersection. The eastbound right-turn volume in the Saturday peak hour is projected to be 404 vehicles, with a corresponding northbound left-turn peak hour projection of 334 vehicles. The capacity analysis indicates that the intersection will function well with an overall LOS C or better and that 95% queues will fit within the provided storage.

6.5 BASE + FULL DEVELOPMENT CONDITIONS ANALYSIS

Capacity analyses were conducted for Base plus Full Development conditions at the study intersections to determine the impact of the site generated traffic from Phase 3 of the proposed development. The cycle lengths were optimized for the study intersections for the analysis. The analysis was performed for the weekday AM, PM, and Saturday peak hours and is based on the traffic volumes, lane configurations, and traffic controls shown on **Figures 25** and **26**. The 95th percentile queues for each movement are shown in **Figure 27**. The Synchro reports are provided in **Appendix D**.

Table 13 provides a summary of the analysis at the study intersections applicable to this condition.

TABLE 13: BASE + FULL DEVELOPMENT (LOS)

Intersection		Movement	Operational Analysis Results					
			AM Peak Hour		PM Peak Hour		Sat Peak Hour	
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
1	M-291 & Oldham Parkway	Signalized	41.6	D	49.7	D	54.8	D
2	M-291 & Persels/Bailey	Signalized	29.7	C	34.9	C	39.2	D
3	M-291 & 16th Street	WB	22.5	C	25.5	D	24.5	C
4	M-291 & Scherer	Signalized	26.3	C	47.3	D	20.9	C
5	Bailey Road & Hamblen Road	Signalized	14.2	B	30.8	C	22.0	C
6	Oldham Pkwy & N/S Collector	Signalized	12.4	B	17.3	B	25.9	C
7	Bailey Road & N/S Collector	Signalized	19.6	B	29.2	C	26.7	C
8	N/S Collector & 16th Street	SB	8.7	A	9.0	A	8.9	A
9	Oldham Pkwy & RIRO	SB	9.6	A	15.4	C	21.9	C
10	Oldham Pkwy & Fuel Station	NB	9.8	A	13.2	B	15.6	C
		SB	8.6	A	9.0	A	9.2	A
11	N/S Collector & Drive 1	EB	10.9	B	19.0	C	33.4	D
		WB	9.1	A	10.4	B	11.1	B
12	N/S Collector & North EW Drive	EB	9.7	A	12.4	B	14.2	B
		WB	8.5	A	8.8	A	8.9	A
13	North EW Drive & Drive 2	SB	8.7	A	8.7	A	8.7	A
14	North EW Drive & Drive 3	NB	8.5	A	8.6	A	8.5	A
15	North EW Drive & Drive 4	SB	0.0	A	0.0	A	0.0	A
16	N/S Collector & South EW Drive	EB	8.8	A	10.0	A	10.5	B
		WB	9.1	A	10.8	B	11.6	B
17	South EW Drive & Drive 5	NB	8.5	A	0.0	A	0.0	A
18	South EW Drive & Drive 6	EB	0.0	A	8.4	A	8.4	A
		WB	8.8	A	9.0	A	9.0	A
19	Drive 7	WB	9.0	A	9.2	A	9.1	A
20	Bailey Road & Drive 8	NB	22.7	C	216.2	F	94.0	F
		SB	12.4	B	25.5	D	18.5	C
21	N/S Collector & Drive 9	EB	14.2	B	18.1	C	33.3	D
		WB	9.1	A	9.6	A	9.9	A
22	N/S Collector & Drive 10	EB	9.8	A	10.5	B	12.2	B
		WB	8.6	A	8.8	A	8.8	A
23	N/S Collector & Drive 11	EB	9.1	A	9.2	A	9.4	A
		WB	9.1	A	9.9	A	10.5	B
24	16th Street & Park Driveway	NB	8.8	A	8.8	A	8.7	A

There are several four new site intersections to evaluate with the addition of Phase 3. The results in **Table 13** indicate that most of the intersections are projected to operate acceptably with the additional trips assigned by Phase 2 of the development.

Intersections of interest:

M-291 & Oldham Parkway (Node 1)

All three peak hours meet or exceed LOS D at this intersection with the additional trips associated with Phase 3. The longest 95% queues identified in **Figure 27** for critical movements are as follows:

- Northbound Left 164' AM peak 250' of storage provided
- Northbound Thru 554' SAT peak 1500' of storage available
- Southbound Left 426' SAT peak 430' of storage provided by Phase 2
- Southbound Thru 459' PM peak 500' of storage available
- Eastbound Left 358' SAT peak 300' of storage available
- Westbound Left 290' SAT peak 250' of storage provided

As with Phase 2, the 95% queue for the southbound left-turn lanes is longer that what is provided in the base condition; however, it was previously recommended that the lanes be widened to a minimum of 430' length so that value is shown in the information above.

Also as with Phase 2, the 95% queue for the westbound left turn lanes also exceeds its storage capacity by 40'.

M-291 & Persels/Bailey (Node 2)

With the additional Phase 3 traffic, this intersection again experiences noteworthy challenges even after the addition of the 3rd southbound thru lane in Phase 2. The primary contributors to the challenges are the projected 381 new southbound left-turn vehicles and corresponding 289 new westbound right-turn vehicles during the Saturday peak hour. To improve this situation and for the capacity analyses that follow, two geometric improvement recommendations were made to the intersection: first, a second southbound left-turn lane was added, second, the westbound right-turn should be channelized with a more yield oriented free-flow movement.

With the improvements, the intersection maintains a LOS D or better in all peak hours. The PM Peak 95% queue length for the southbound thru movement was calculated at 584' which remains better than the Base Conditions.

M-291 & Scherer (Node 4)

As identified in Phases 1 and 2, the intersection of M-291 & Scherer is projected to operate at LOS D during the PM peak. With Phase 3 The southbound thru movement has a 95% queue of 1187', which is long and approaching what can reasonably be cleared in a single traffic signal cycle. This is not a significant increase from what was identified with Phase 2, and it is clear that Improvements to this intersection, likely consisting of widening M-291 to three lanes in both directions will be necessary at some point in the future.

Oldham Parkway and N/S Collector (Node 6)

With Phase 3, there were no additional trips assigned to this intersection, it will be expected to operate in a similar manner to Phase 2.

Bailey Road & N/S Collector (Node 7)

While not an issue as a southbound stop controlled, T-intersection in Phase 2, this intersection experienced significant two-way unsignalized delays (LOS F) and queues with the traffic assigned to it in Phase 3. A peak hour traffic signal warrant analysis was performed for the 4-legged intersection with the volumes assigned in Phase 3 (see **Figure 25**). These traffic volumes were plotted on *Figure 4C-3, Warrant 3, Peak Hour* from the *Manual of Uniform Traffic Control Devices* (MUTCD) for the AM, PM, and Saturday peak hours. The plotted results may be seen on **Figure 28**.

Figure 28 illustrates that the Peak Hour Traffic Signal Warrant is met at Node 7 during the Base + Full Development condition.

This intersection was reevaluated as a signalized intersection for the data provided in **Table 13**. The overall LOS for the signalized intersection was LOS C or better for all peak hours. It is recommended that the intersection become signalized and some point during the development of lots in Phase 3.

Bailey Road & Drive 8 (Node 20)

As with Node 7 above, this intersection had no issues as a southbound stop-controlled, T-intersection in Phase 2. With the addition of the south leg serving Lot 19 and the associated assigned trips found in **Figure 25**, (107 eastbound right-turns during Saturday peak and a corresponding 103 northbound right-turns) it is estimated to have LOS F in the PM and Saturday peak hour. Approximately 100’ of northbound throat distance is provided on the submitted site plans.

N/S Collector & Drive 9 (Node 21)

The first driveway south of Bailey Avenue with the new N/S Collector street provides shared access to Lots 14-15 to the west and Lot 19 to the east. During the Saturday peak hour the projected eastbound left-turn exiting volume is 162 vehicles with only a 50’ throat lane provided. Consideration should be given to increasing the throat length at this driveway to better accommodate potential peak hour queues at full build out.

N/S Collector & Drive 10 (Node 22)

The second driveway south of Bailey Avenue with the new N/S Collector street provides shared access to Lots 16-17 to the west and Lot 19 to the east. During the Saturday peak hour the projected eastbound left-turn exiting volume is 107 vehicles with only a 50’ throat lane provided. Consideration should be given to increasing the throat length at this driveway to better accommodate potential peak hour queues at full build out.

6.6 FUTURE YEAR 2045 CONDITIONS ANALYSIS

Capacity analyses were conducted for Future Year 2045 Base conditions at the study intersections to determine the impact of the site generated traffic in Year 2045. To estimate background traffic growth for this study, the existing through volumes on M-291 were assumed to increase at a rate of 1% per year to estimate conditions in 2045. The cycle lengths were optimized for the study intersections for the analysis. The analysis was performed for the weekday AM, PM, and Saturday peak hours and is based on the traffic volumes, lane configurations, and traffic controls shown on **Figures 30 and 31**. The 95th percentile queues for each movement are shown in **Figure 32**. The Synchro reports are provided in **Appendix D**.

Table 14 provides a summary of the analysis at the study intersections applicable to this condition.

TABLE 14: FUTURE YEAR 2045 (LOS)

Intersection		Movement	Operational Analysis Results					
			AM Peak Hour		PM Peak Hour		Sat Peak Hour	
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
1	M-291 & Oldham Parkway	Signalized	48.2	D	60.8	E	76.9	E
2	M-291 & Persels/Bailey	Signalized	29.1	C	40.8	D	44.5	D
3	M-291 & 16th Street	WB	31.5	D	37.8	E	33.4	D
4	M-291 & Scherer	Signalized	60.1	E	100.6	F	35.4	D

The results of the analysis in **Table 14** indicate that the signalized intersections along M-291 are projected to operate at LOS D-F in the future, with the intersection of M-291 and Scherer having the worst overall LOS.

Should these volumes be realized, the intersection of M-291 and Bailey would benefit from an additional eastbound and westbound lane, and an additional northbound left-turn lane. These improvements would be in addition to the improvements recommended in this study and would provide double-left turns in all directions, three north-south thru lanes and two east-west through lanes.

Should these volumes be realized, the intersection of M-291 and Scherer would also benefit from improvements. Particularly the extension of three north-sound thru lanes, and consideration for double-left turns.

7.0 CONCLUSIONS AND RECOMMENDATIONS

This traffic impact study for Village East has covered many items. It has collected existing traffic volumes and created a trip generation and distribution for 20 proposed lots of the development to be constructed over three development phases. It has performed analyses at 24 study intersections for the following conditions:

- Base Conditions
- Base + Phase 1 Conditions
- Base + Phase 1-2 Conditions
- Base + Phase 1-3 (Full Development Conditions)
- Future Year 2045 Conditions

The proposed development is projected to develop 37,391 trips daily trips, 1,622 AM peak hour trips , 3,130 PM peak hour trips, and 4,159 Saturday peak hour trips. These trips represent primary trips generated by the site, and do not include pass-by trips.

Several street or intersection improvement recommendations/considerations have been identified in this study to mitigate the additional traffic introduced by the development of Village East during its three Phases. The recommendations are as follows by Phase and intersection name and node number:

Base + Phase 1 Conditions

- M-291 & Oldham Parkway (Node 1)
  - Consider extending the existing southbound M-291 double left-turn lane from its current 310' length to a minimum length of 430' or as long as feasible with the existing M-291 geometrics. This improvement will be recommended in Phase 2.
- M-291 & Persels/Bailey (Node 2)
  - Prepare for the addition of a third southbound M-291 thru-lane from Oldham Parkway through this intersection. It is not required with Phase 1, but will become necessary as Phase 2 develops.
- Oldham Parkway & N/S Collector (Node 6)
  - ***Recommended:*** Installation of a new T-intersection traffic signal which will meet the Peak Hour Warrant at Phase 1. Build the south leg of the intersection to provide the sidewalk/crosswalk area and end at the curb radii.

Base Plus Phase 1-2 Conditions

- M-291 & Oldham Parkway (Node 1)
  - ***Recommended:*** Prior to any additional lots in Phase 2, extend the existing southbound M-291 double left-turn lane from its current 310' length to a minimum length of 430' or as long as feasible with the existing M-291 geometrics.
  - Consider lengthening the westbound left turn storage bay by 50' feet to meet anticipated 95% queues. With projected WB thru 95% queues of 98', this may not be necessary.

- M-291 & Persels/Bailey (Node 2)
  - Recommended: Construct an additional dedicated southbound M-291 thru-lane through this intersection. This M-291 widening would occur south of Oldham Parkway and be carried through the intersection of Persels/Bailey and terminate south of Persels in the southbound right-turn lane at 16th Street.
- M-291 & Scherer (Node 4)
  - Monitor growth rates along M-291 in addition to traffic generated by the Oldham Village "West" and Village East developments.
- NS Collector & Drive 1 (Node 11)
  - *Recommended*: With a projected southbound peak hour right-turn volume of 129vph a southbound right-tun lane (100 min plus taper) should be added to NS Collector.
  - *Recommended*: Developer reevaluate the configuration of the lot 4-5 and 6-7 layouts so that the eastbound and westbound intersection throat distances can better accommodate projected peak hour vehicle queues at this driveway.

Base Plus Phase 3 (Full Development) Conditions

- M-291 & Persels/Bailey (Node 2)
  - *Recommended:* Prior to any additional lots in Phase 3, construct an additional southbound left-turn lane with associated intersection improvements and road widening improvements along the south side of Bailey Avenue to accommodate the second left-turn lane.
  - *Recommended:* Prior to any additional lots in Phase 3, upgrade the existing westbound right-turn lane configuration to a better channelized right-turn lane design.
- M-291 & Scherer (Node 4)
  - Monitor growth rates along M-291 in addition to traffic generated by the Oldham Village "West" and Village East developments. The extension of the additional third southbound M-291 thru-lane as well as a third northbound lane could be in the Highway's future but not at the responsibility of this development.
- Bailey Road & N/S Collector (Node 7)
  - *Recommended:* Installation of a new four-leg intersection traffic signal which meets the Peak Hour Warrant sometime during Phase 3. City and developer may negotiate what the criteria trigger (number of lots or a certain trip distribution northbound left-turn volume at the intersection). A westbound right-turn lane should be constructed with these improvements.
- Bailey Road & Drive 8 (Node 20)
  - *Recommended*: Construct a westbound right-turn lane at this intersection.
- Phase 3: The City and Developer may be able to agree that the NS Collector from Bailey Road to 16th Street could be classified as a Private Street which could alleviate the noncompliance with the AMC for the intersections along this portion of the development.
- NS Collector & Drive 9 (Node 21)
  - *Recommended*: With a projected southbound peak hour right-turn volume of 170vph a southbound right-tun lane (100 min plus taper) should be added to NS Collector.
  - *Recommended*: Developer reevaluate the configuration of the lot 14-15 layout so that the eastbound intersection throat distance can better accommodate projected peak hour vehicle queues at this driveway.
- NS Collector & Drive 10 (Node 22)

- *Recommended*: Developer to update site plan with shared access to Lots 16 and 17. Also, reevaluate the configuration of the lot 16-17 layout so that the eastbound intersection throat distance can better accommodate projected peak hour vehicle queues at this driveway.

- N/S Collector & Drive 11 (Node 23)
  - *Recommended*: Developer reevaluate the configuration of the lot 18 layout so that the eastbound intersection throat distance can better accommodate projected peak hour vehicle queues at this driveway.

Future Year 2045 Conditions

Future conditions were also reviewed to identify the need for capacity improvements on M-291. The primary recommendation would be to provide for three northbound and southbound M-291 lanes from Scherer to US-50. At Bailey Road, the construction of an additional northbound left-turn lane and two eastbound/westbound thru lanes should be anticipated.

If realignment of Scherer to M-291 is planned, the intersection should evaluate the need for double-left turns as well as two eastbound/westbound thru lanes.

If there are any questions regarding this study, please contact me at your convenience at 816-898-0669 or mark.sherfy@ibhc.com.



Sincerely,
Mark Sherfy, PE, PTOE
Vice-President │ Development Group Director
BHC

APPENDICES

APPENDIX A - FIGURES

APPENDIX B – TRAFFIC COUNT DATA

APPENDIX C - ITE TRIP GENERATION REPORTS

APPENDIX D - CAPACITY AND QUEUING ANALYSES

APPENDIX E – KITTELSON and ASSOCIATES TRAFFIC MEMO

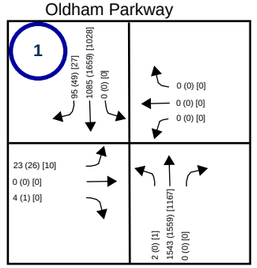
APPENDIX F – OLDHAM VILLAGE "WEST" TRAFFIC IMPACT STUDY

APPENDIX A
FIGURES

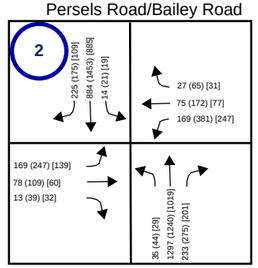
PROJECT LOCATION AND STUDY AREA



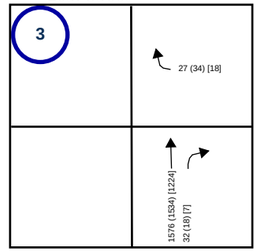
M-291 &
Oldham Parkway



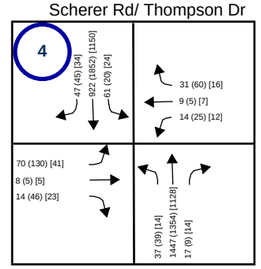
M-291 &
Persels Road/Bailey Road



M-291 &
16th Street



M-291 &
Scherer Rd/ Thompson Dr



Bailey Road &
Hamblen Road

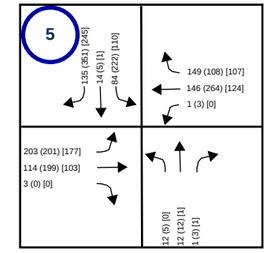
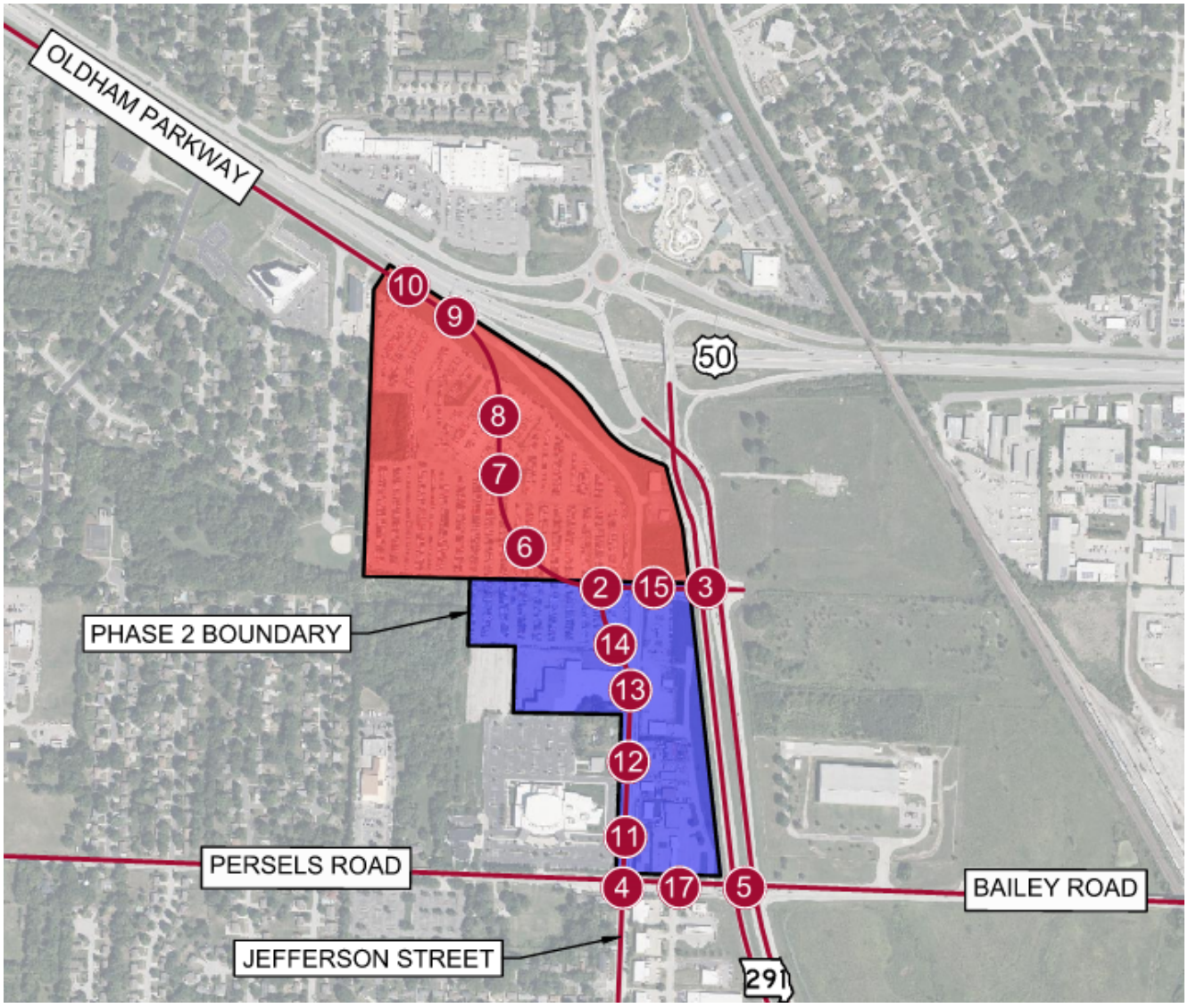


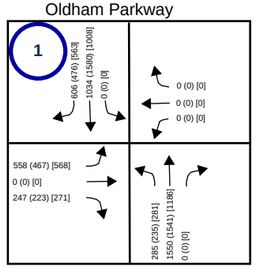


FIGURE 2

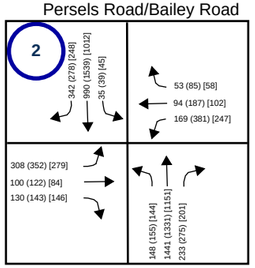
OLDHAM VILLAGE "WEST" STUDY AREA



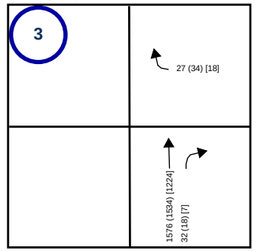
M-291 &
Oldham Parkway



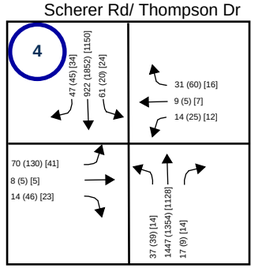
M-291 &
Persels Road/Bailey Road



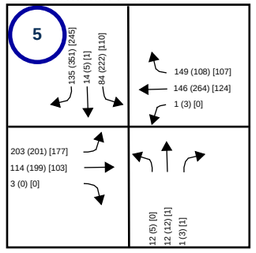
M-291 &
16th Street



M-291 &
Scherer Rd/ Thompson Dr



Bailey Road &
Hamblen Road



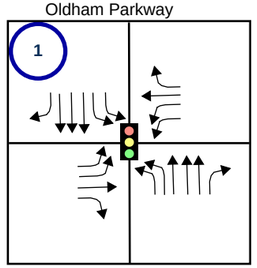
BASE CONDITION PEAK HOUR VOLUMES
EXISTING VOLUMES + OLDHAM VILLAGE "WEST" FULL DEVELOPMENT

AM Peak = 7:45-8:45
(PM) Peak = 4:30-5:30
[SAT] Peak = 12:00-1:00

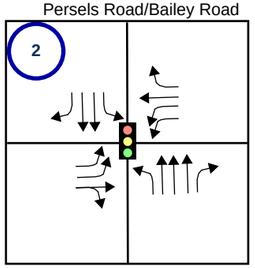


FIGURE 4

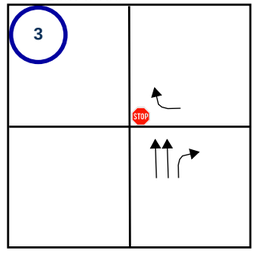
M-291 &
Oldham Parkway



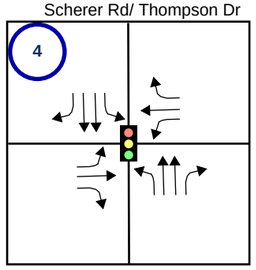
M-291 &
Persels Road/Bailey Road



M-291 &
16th Street



M-291 &
Scherer Rd/ Thompson Dr



Bailey Road &
Hamblen Road

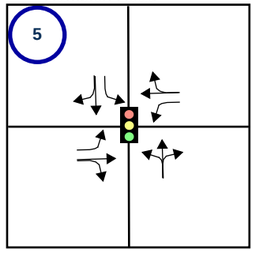
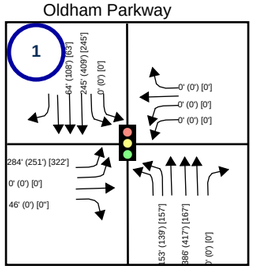


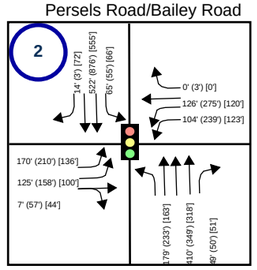


FIGURE 5

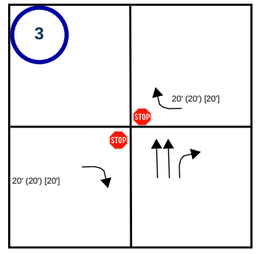
M-291 &
Oldham Parkway



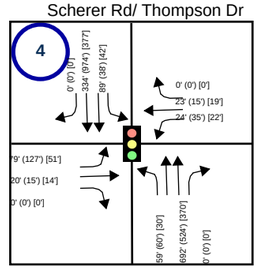
M-291 &
Persels Road/Bailey Road



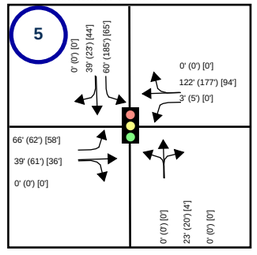
M-291 &
16th Street



M-291 &
Scherer Rd/ Thompson Dr



Bailey Road &
Hamblen Road



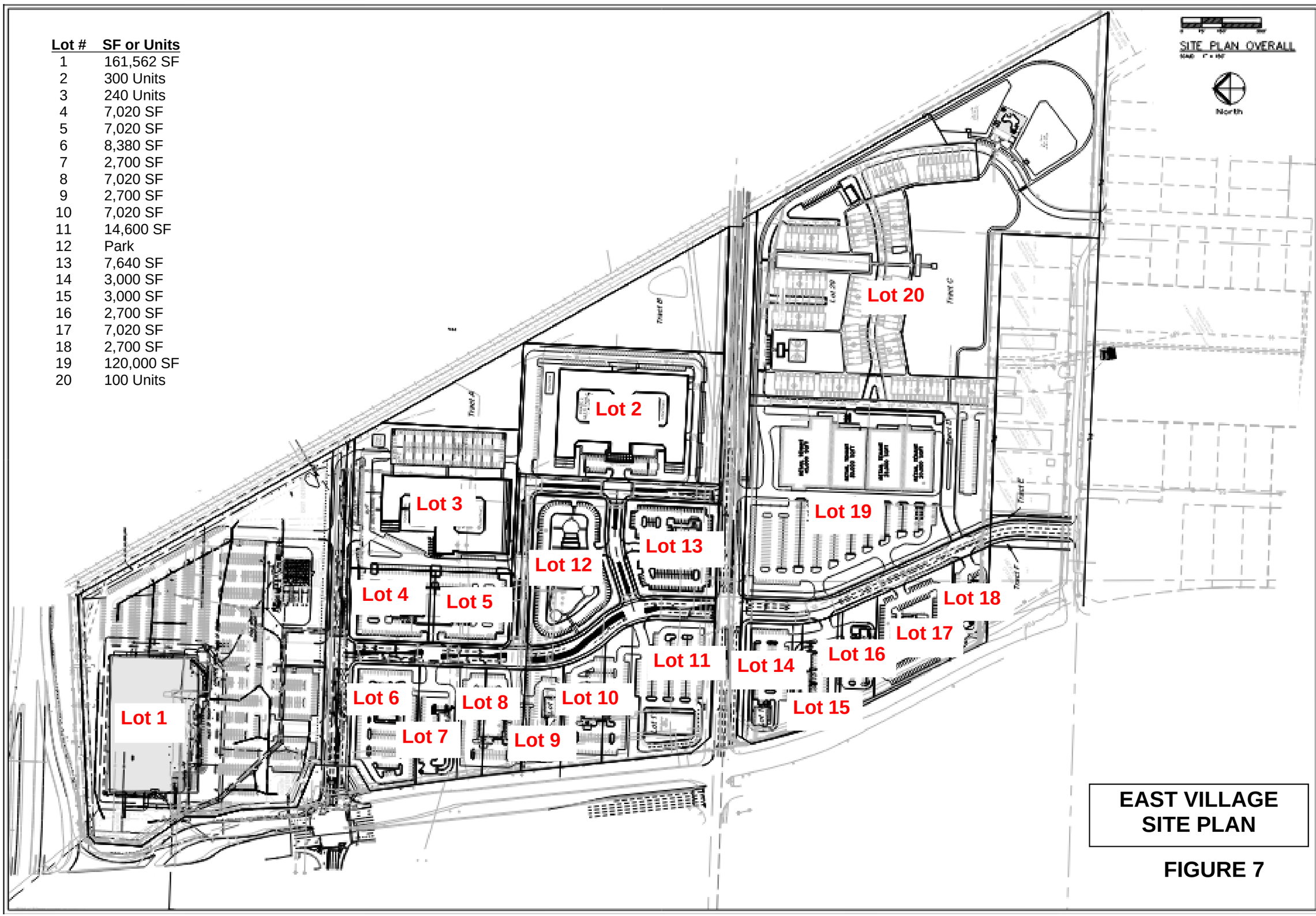
BASE CONDITIONS 95% QUEUE LENGTHS

AM(PM)[SAT] = 95% Queues in feet



FIGURE 6

Lot #	SF or Units
1	161,562 SF
2	300 Units
3	240 Units
4	7,020 SF
5	7,020 SF
6	8,380 SF
7	2,700 SF
8	7,020 SF
9	2,700 SF
10	7,020 SF
11	14,600 SF
12	Park
13	7,640 SF
14	3,000 SF
15	3,000 SF
16	2,700 SF
17	7,020 SF
18	2,700 SF
19	120,000 SF
20	100 Units



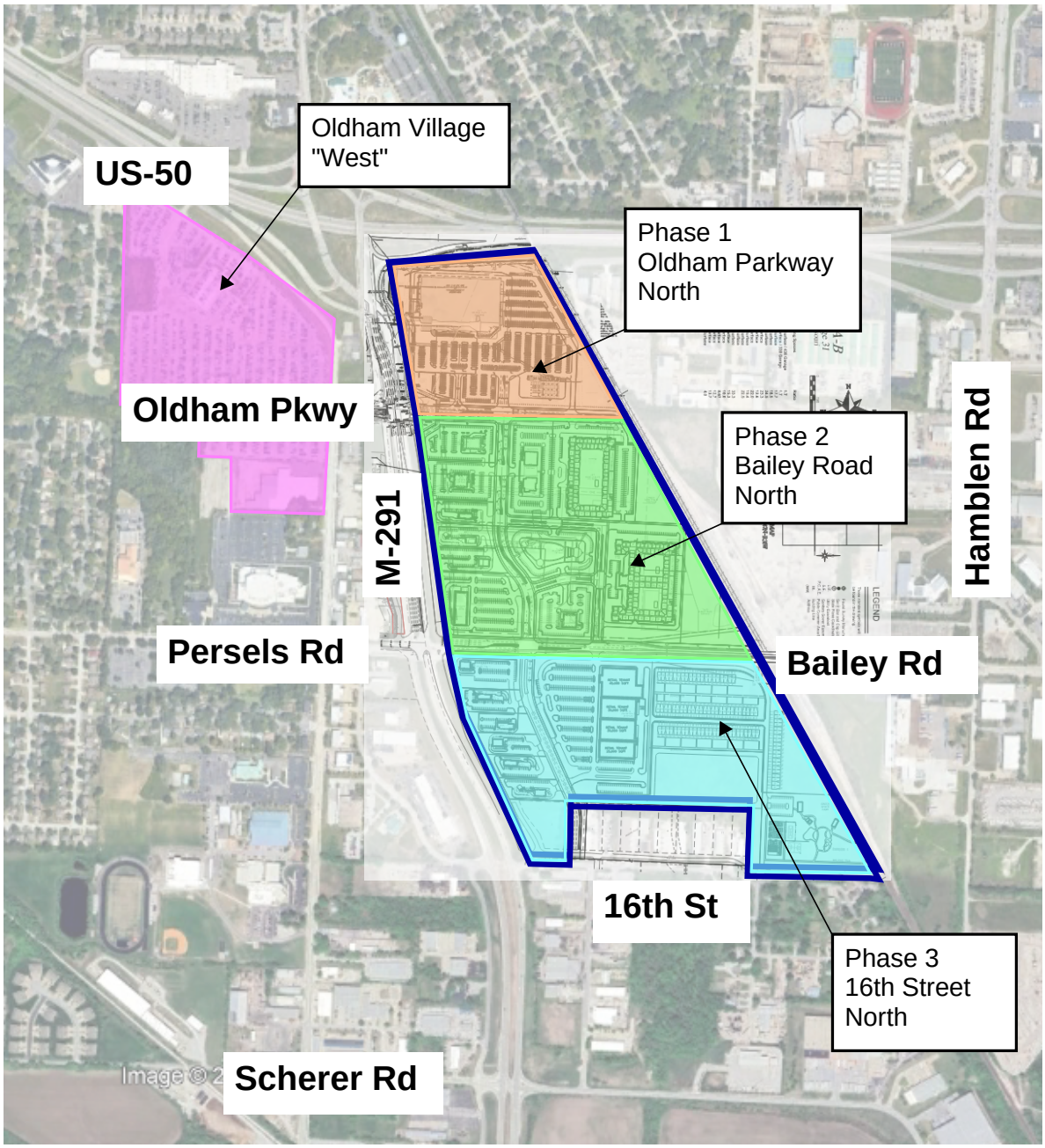
EAST VILLAGE SITE PLAN

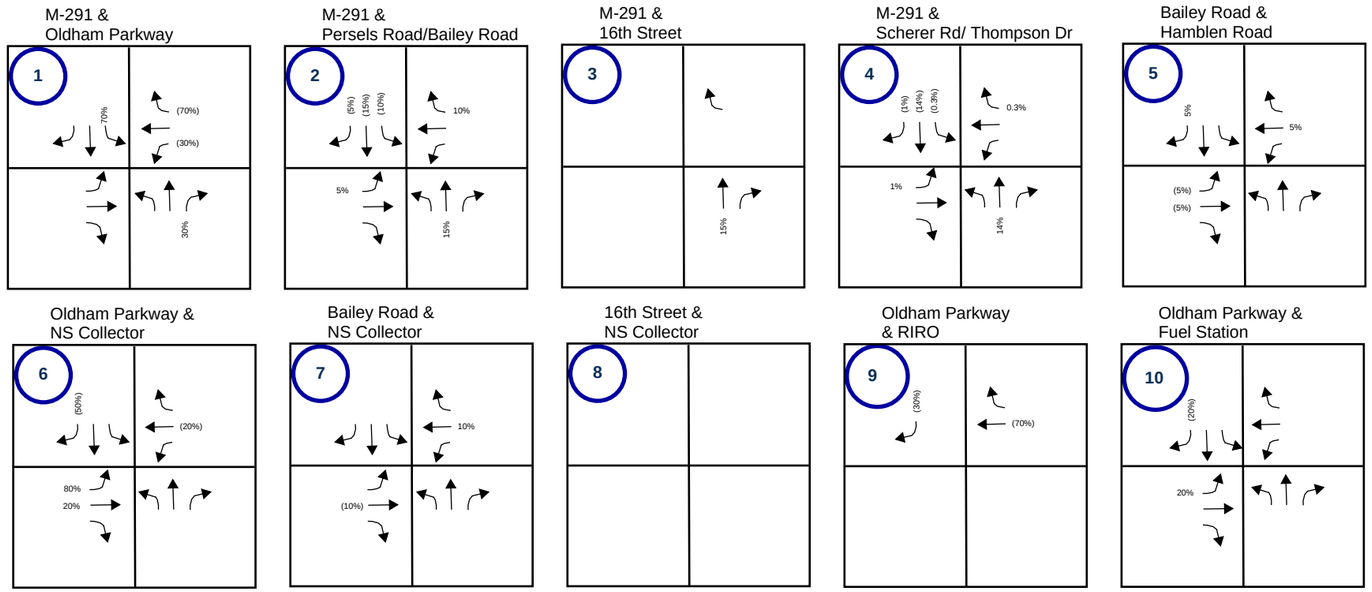
FIGURE 7

ENGINEERING SOLUTIONS

SITE PLAN
Preliminary Development Plans for:
East Village
Lee's Summit, Jackson County, Missouri

EAST VILLAGE PHASING







PHASE 1 OLDHAM PARKWAY NORTH PRIMARY TRIP DISTRIBUTION

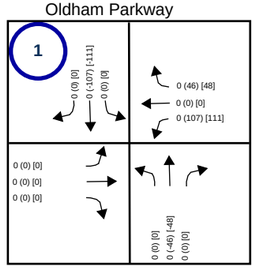
x% = Inbound Site Traffic
(x%) = Outbound Site Traffic

FIGURE 9

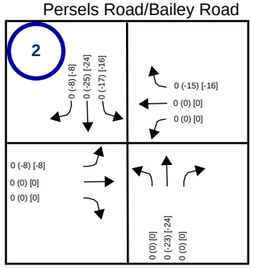
PHASE 1 OLDHAM PARKWAY NORTH PASS-BY TRIP VOLUMES

AM(PM)[SAT] Traffic Volumes

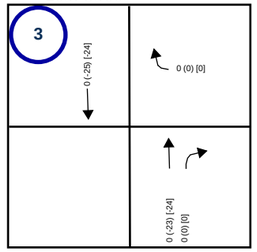
M-291 & Oldham Parkway



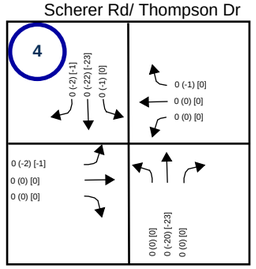
M-291 & Persels Road/Bailey Road



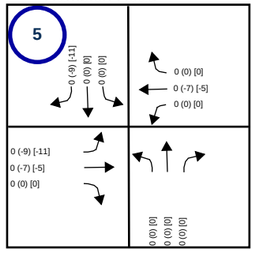
M-291 & 16th Street



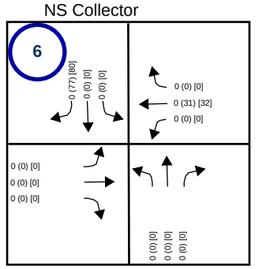
M-291 & Scherer Rd/ Thompson Dr



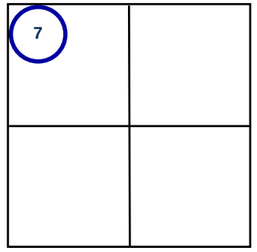
Bailey Road & Hamblen Road



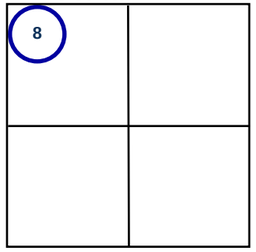
Oldham Parkway & NS Collector



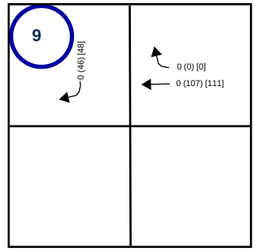
Bailey Road & NS Collector



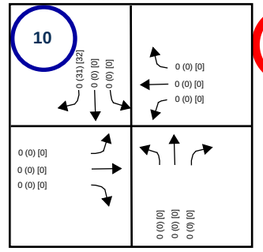
16th Street & NS Collector



Oldham Parkway & RIRO



Oldham Parkway & Fuel Station



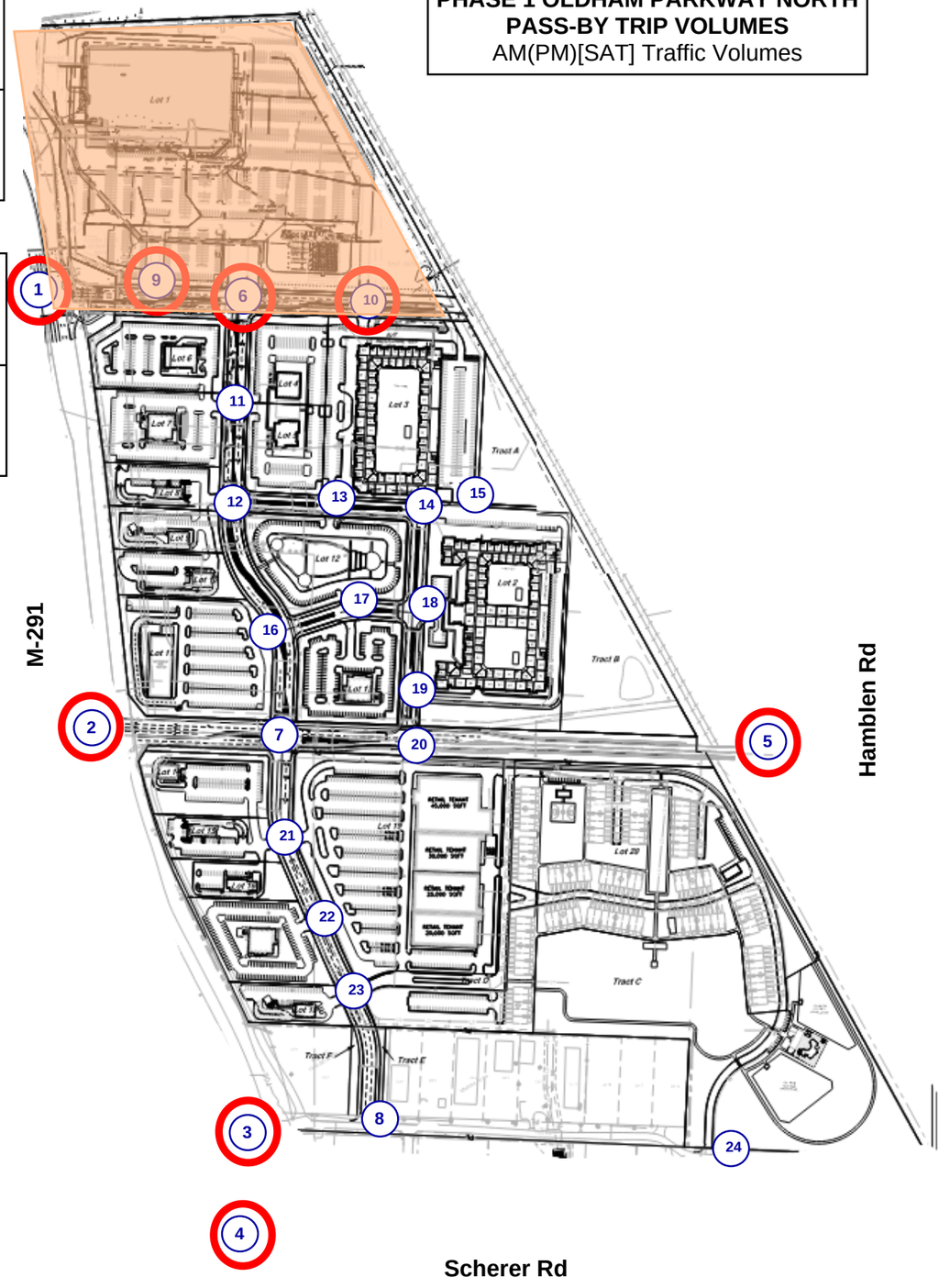
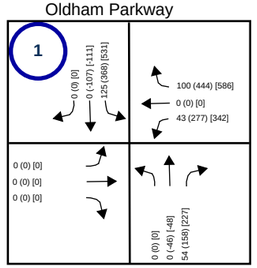


FIGURE 10

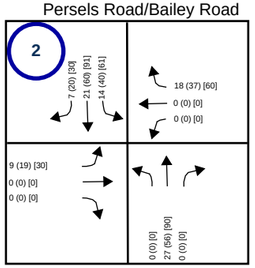
PHASE 1 OLDHAM PARKWAY NORTH TOTAL SITE TRIPS

AM(PM)[SAT] Traffic Volumes

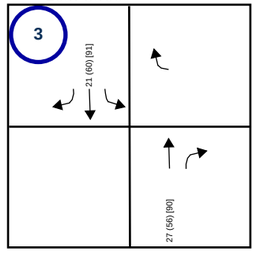
M-291 & Oldham Parkway



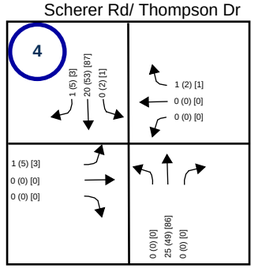
M-291 & Persels Road/Bailey Road



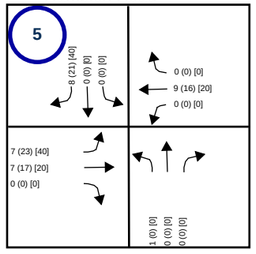
M-291 & 16th Street



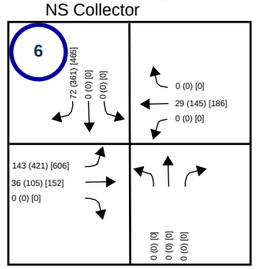
M-291 & Scherer Rd/ Thompson Dr



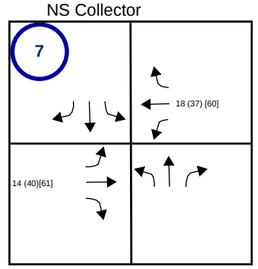
Bailey Road & Hamblen Road



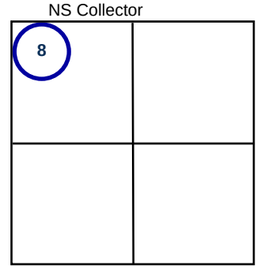
Oldham Parkway & NS Collector



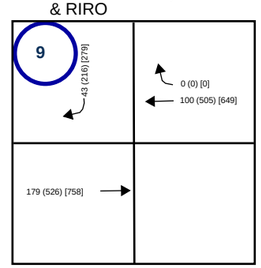
Bailey Road & NS Collector



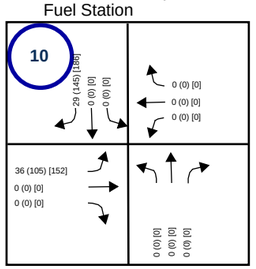
16th Street & NS Collector



Oldham Parkway & RIRO



Oldham Parkway & Fuel Station



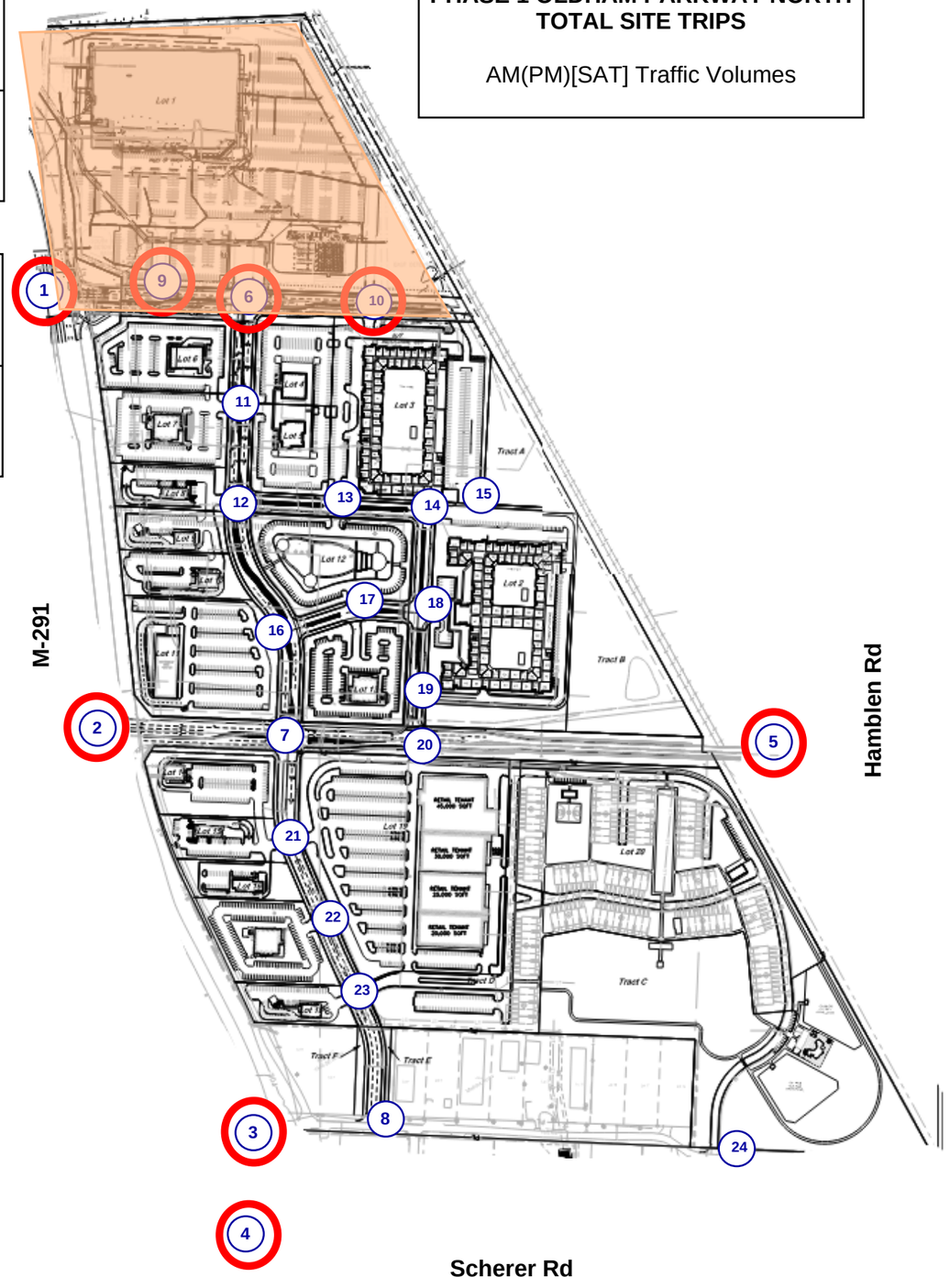
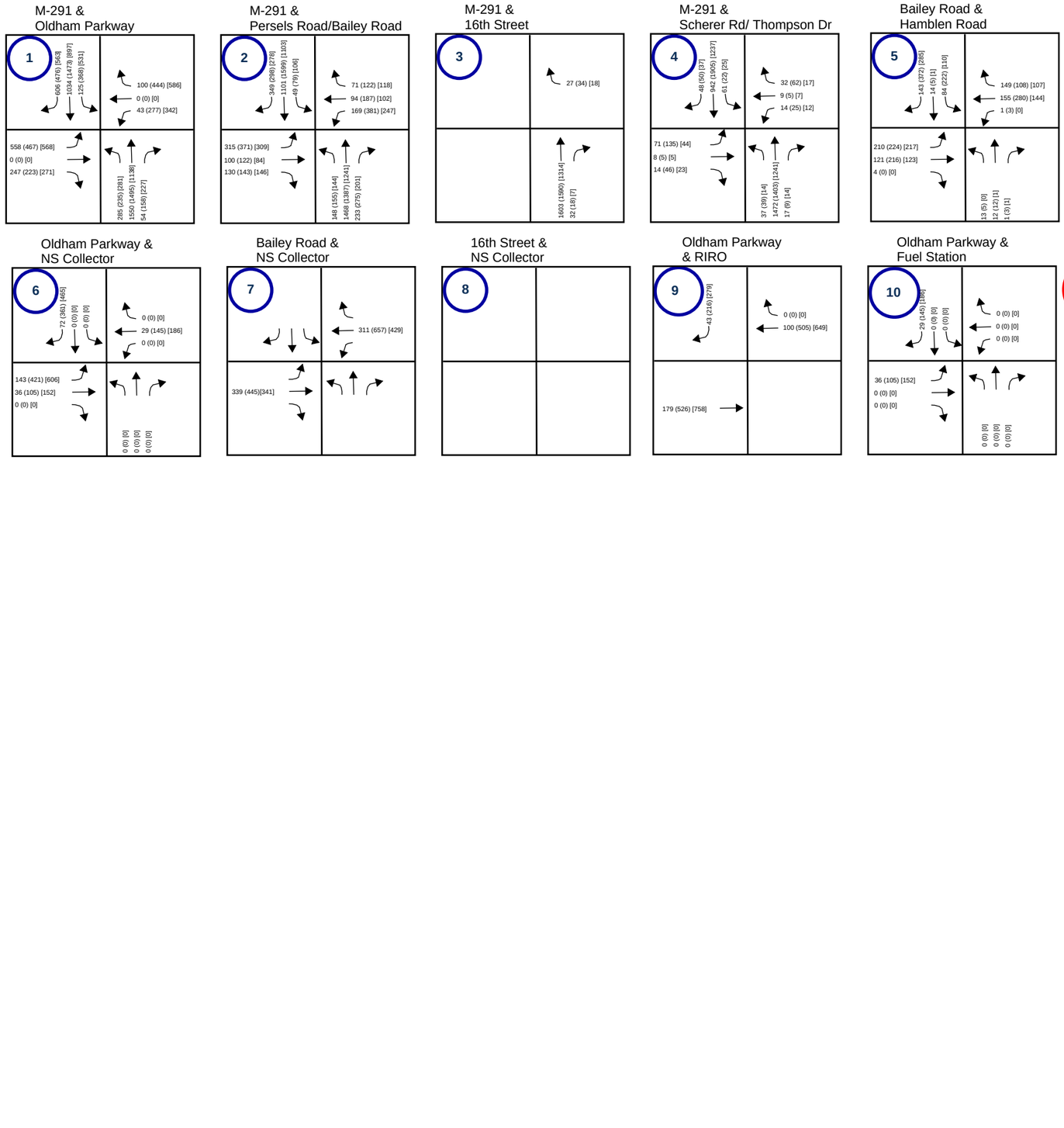
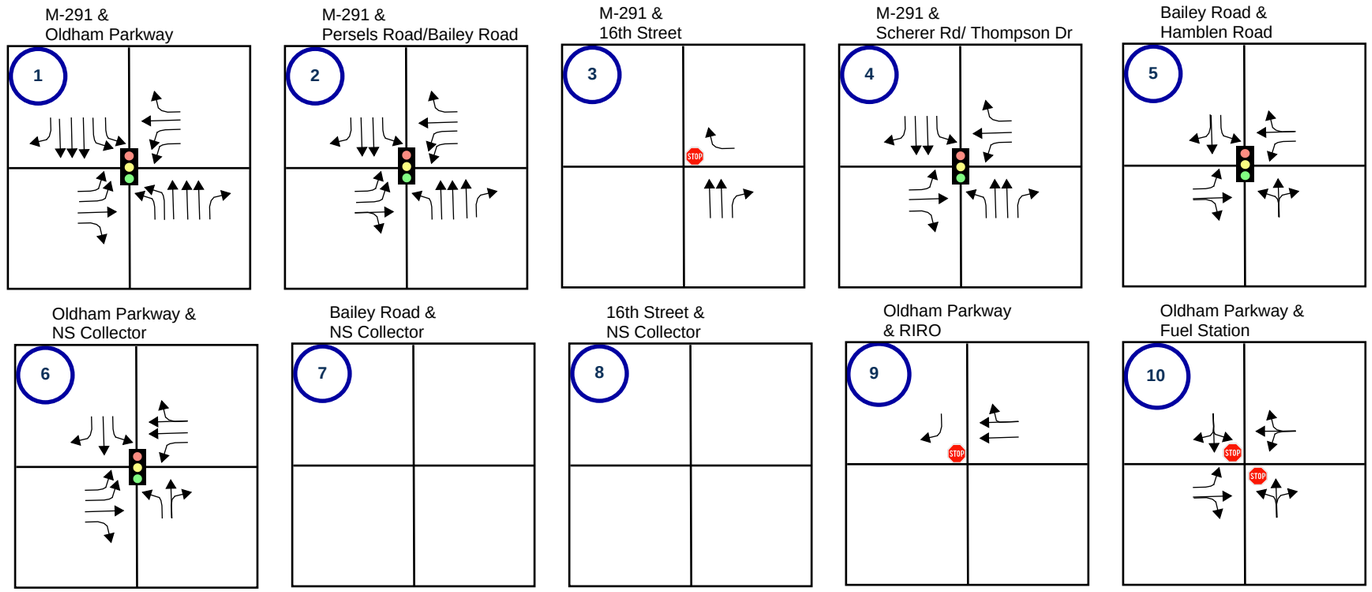


FIGURE 11


M-291 &
Oldham Parkway
1
606 (470) [554]
1034 (1473) [897]
125 (368) [531]
100 (444) [586]
0 (0) [0]
43 (277) [342]
558 (467) [568]
0 (0) [0]
247 (223) [271]
285 (235) [281]
1550 (1495) [1138]
54 (158) [227]
M-291 &
Persels Road/Bailey Road
2
349 (298) [278]
1101 (1599) [1103]
49 (79) [106]
71 (122) [118]
94 (187) [102]
169 (381) [247]
315 (371) [309]
100 (122) [84]
130 (143) [146]
148 (155) [144]
1469 (1387) [1241]
233 (275) [201]
M-291 &
16th Street
3
27 (34) [18]
1609 (1590) [1314]
32 (18) [7]
M-291 &
Scherer Rd/ Thompson Dr
4
48 (50) [37]
942 (1905) [1237]
61 (23) [25]
32 (62) [17]
9 (5) [7]
14 (25) [12]
71 (135) [44]
8 (5) [5]
14 (46) [23]
37 (39) [14]
1472 (1483) [1241]
17 (9) [14]
Bailey Road &
Hamblen Road
5
143 (372) [285]
14 (5) [1]
84 (222) [110]
149 (108) [107]
155 (280) [144]
1 (3) [0]
210 (224) [217]
121 (216) [123]
4 (0) [0]
13 (6) [0]
12 (12) [1]
1 (3) [1]
Oldham Parkway &
NS Collector
6
72 (361) [465]
0 (0) [0]
0 (0) [0]
0 (0) [0]
29 (145) [186]
0 (0) [0]
143 (421) [606]
36 (105) [152]
0 (0) [0]
0 (0) [0]
0 (0) [0]
0 (0) [0]
Bailey Road &
NS Collector
7
311 (657) [429]
339 (445)[341]
16th Street &
NS Collector
8
Oldham Parkway
& RIRO
9
43 (216) [279]
0 (0) [0]
100 (505) [649]
179 (526) [758]
Oldham Parkway &
Fuel Station
10
29 (145) [186]
0 (0) [0]
0 (0) [0]
0 (0) [0]
0 (0) [0]
0 (0) [0]
36 (105) [152]
0 (0) [0]
0 (0) [0]
0 (0) [0]
0 (0) [0]
0 (0) [0]
BASE + PHASE 1
PEAK HOUR VOLUMES
AM(PM)[SAT] Traffic Volumes
M-291
Hamblen Rd
Scherer Rd
Lot 1
Lot 2
Lot 3
Lot 4
Lot 5
Lot 6
Lot 7
Lot 8
Lot 9
Lot 10
Lot 11
Lot 12
Lot 13
Lot 14
Lot 15
Lot 16
Lot 17
Lot 18
Lot 19
Lot 20
Tract A
Tract B
Tract C
Tract D
Tract E
Tract F


M-291 &
Oldham Parkway
1
M-291 &
Persels Road/Bailey Road
2
M-291 &
16th Street
3
M-291 &
Scherer Rd/ Thompson Dr
4
Bailey Road &
Hamblen Road
5
Oldham Parkway &
NS Collector
6
Bailey Road &
NS Collector
7
16th Street &
NS Collector
8
Oldham Parkway
& RIRO
9
Oldham Parkway &
Fuel Station
10

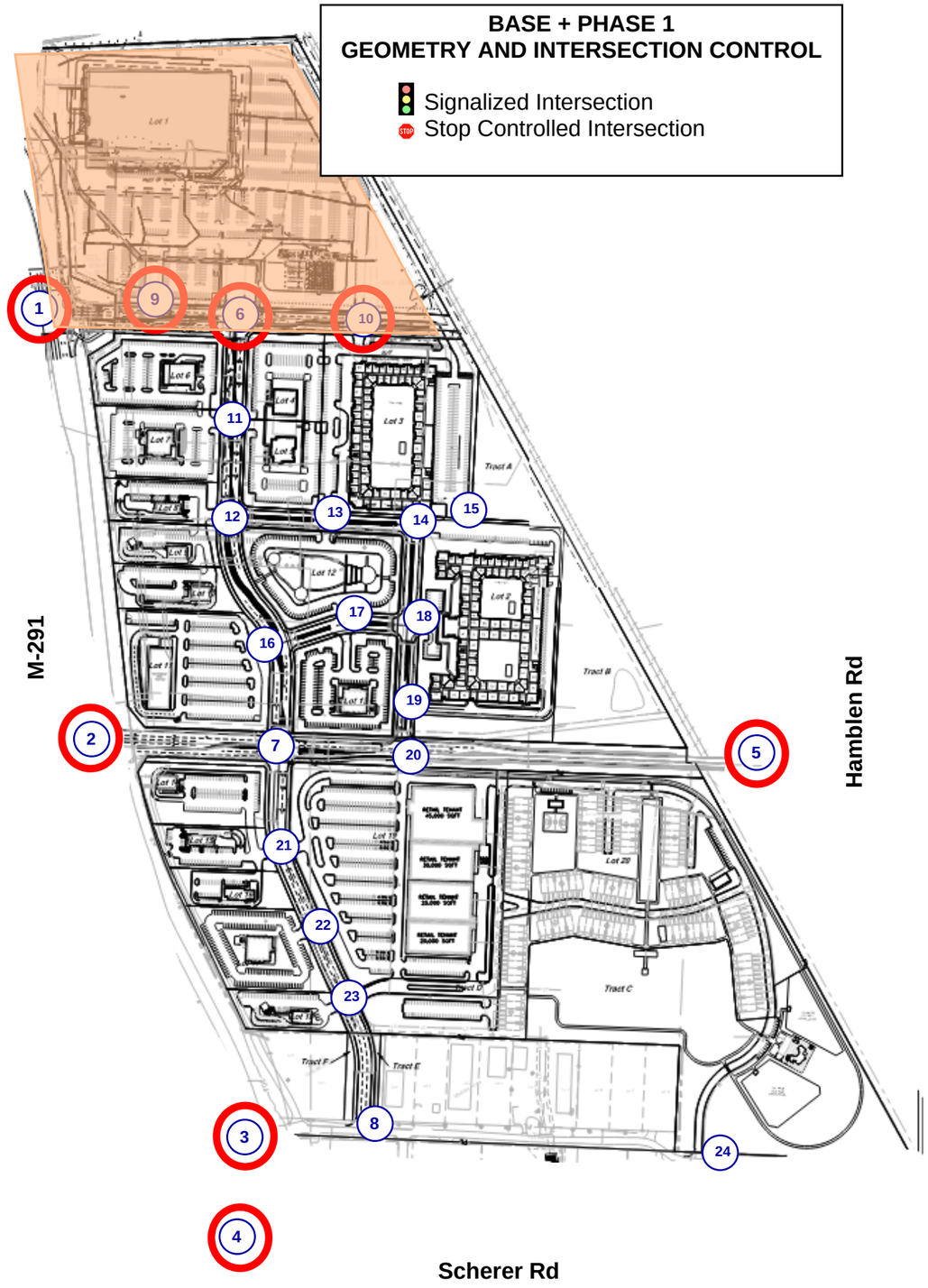
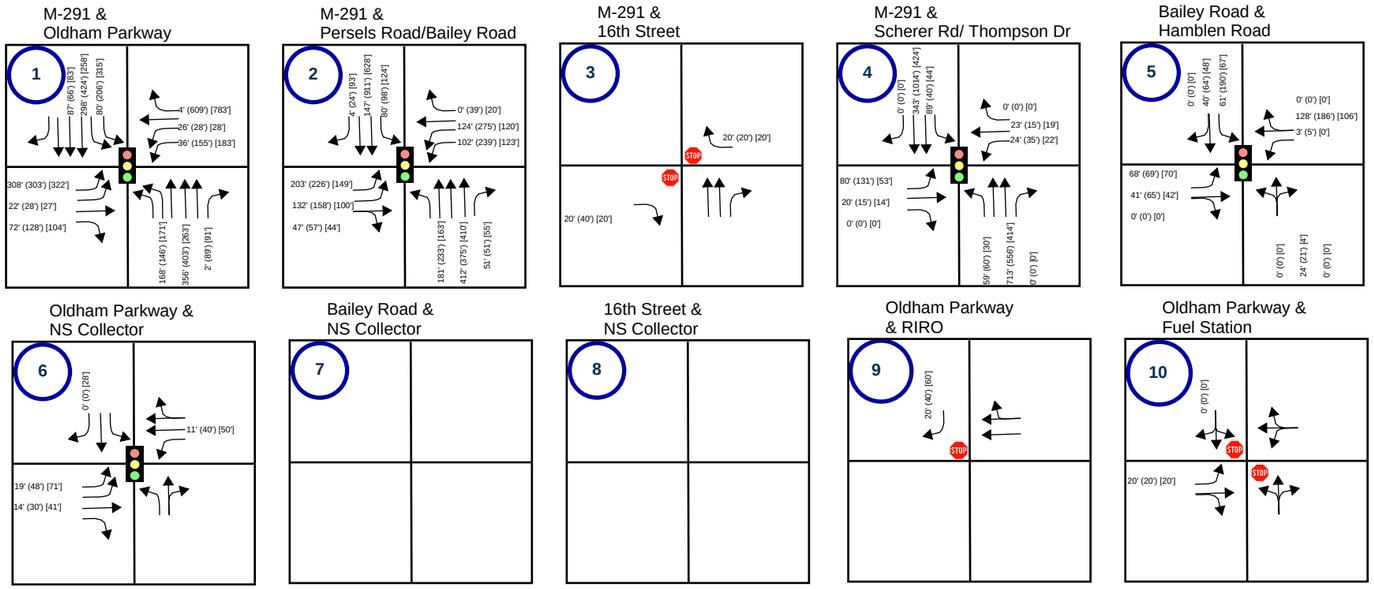

BASE + PHASE 1
GEOMETRY AND INTERSECTION CONTROL
Signalized Intersection
Stop Controlled Intersection
M-291
Hamblen Rd
Scherer Rd
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
Tract A
Tract B
Tract C
Tract E
Tract F

FIGURE 13


M-291 &
Oldham Parkway
1
87' (66') [83']
298' (424') [258']
80' (206') [315']
4' (609') [783']
26' (28') [28]
36' (155') [183']
308' (303') [322']
22' (28') [27']
72' (128') [104']
168' (146') [171']
356' (403') [263']
2' (89') [91']
M-291 &
Persels Road/Bailey Road
2
4' (24') [93']
147' (811') [628']
80' (98') [124']
0' (39') [20']
124' (275') [120']
102' (239') [123']
203' (226') [149']
132' (158') [100']
47' (57') [44']
181' (233') [183']
412' (375') [410']
51' (51') [55']
M-291 &
16th Street
3
20' (20') [20']
STOP
20' (40') [20']
M-291 &
Scherer Rd/ Thompson Dr
4
0' (0') [0']
343' (1034') [424']
89' (40') [41']
0' (0') [0']
23' (15') [19']
24' (35') [22']
80' (131') [53']
20' (15') [14']
0' (0') [0']
59' (60') [30']
713' (556') [414']
0' (0') [0']
Bailey Road &
Hamblen Road
5
0' (0') [0']
40' (64') [48']
19' (190') [67']
0' (0') [0']
128' (186') [106']
3' (5') [0']
68' (69') [70']
41' (65') [42']
0' (0') [0']
0' (0') [0']
24' (21') [4']
0' (0') [0']
Oldham Parkway &
NS Collector
6
0' (0') [28']
11' (40') [50']
19' (48') [71']
14' (30') [41']
Bailey Road &
NS Collector
7
16th Street &
NS Collector
8
Oldham Parkway
& RIRO
9
20' (40') [60']
STOP
Oldham Parkway &
Fuel Station
10
0' (0') [0']
STOP
20' (20') [20']
STOP

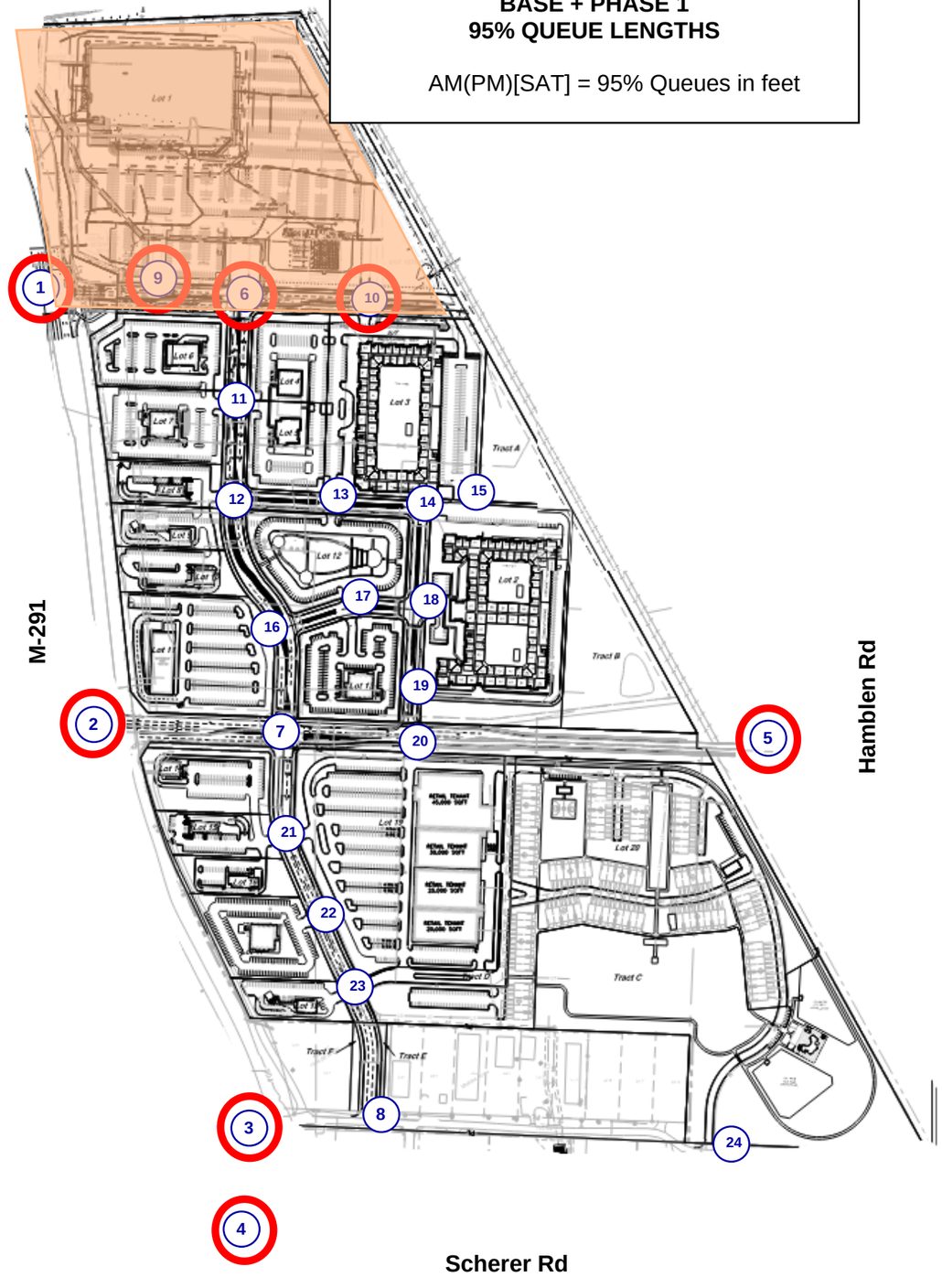
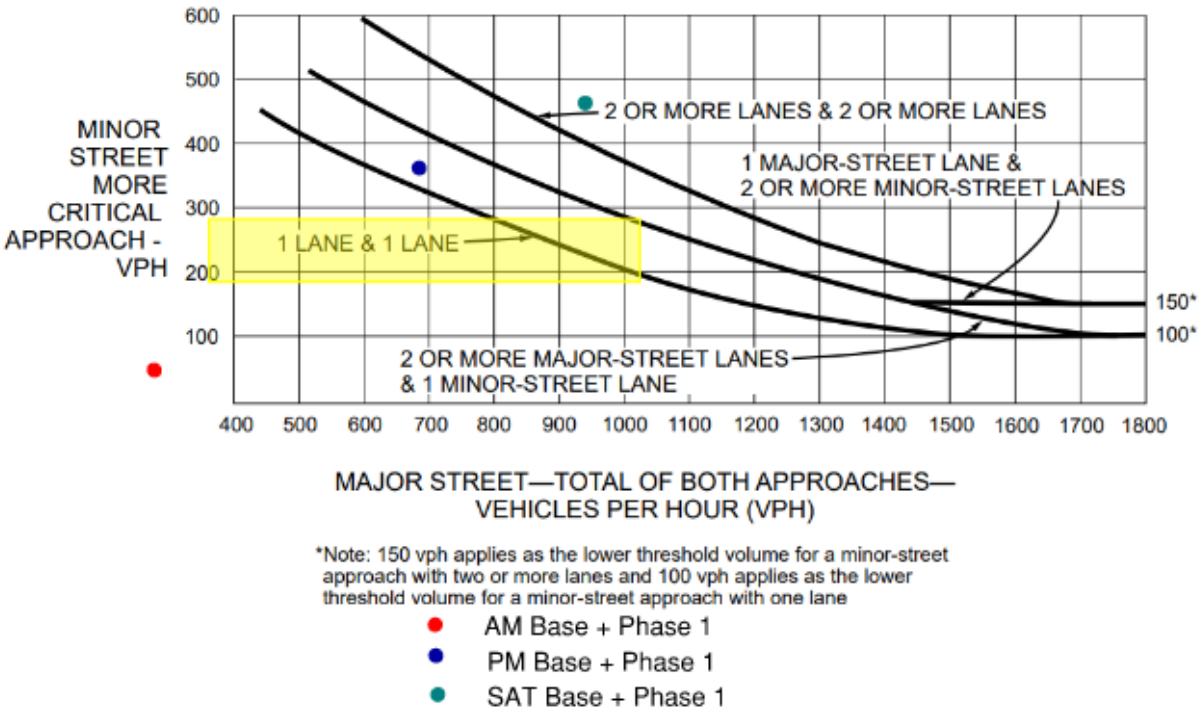

BASE + PHASE 1
95% QUEUE LENGTHS
AM(PM)[SAT] = 95% Queues in feet
M-291
Hamblen Rd
Scherer Rd
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
Lot 1
Lot 2
Lot 3
Lot 4
Lot 5
Lot 6
Lot 7
Lot 8
Lot 9
Lot 10
Lot 11
Lot 12
Lot 13
Lot 14
Lot 15
Lot 16
Lot 17
Lot 18
Lot 19
Lot 20
Tract A
Tract B
Tract C
Tract D
Tract E
Tract F
RETAIL TENANT
40,000 SQFT
RETAIL TENANT
20,000 SQFT
RETAIL TENANT
20,000 SQFT
RETAIL TENANT
20,000 SQFT

FIGURE 14

TRAFFIC SIGNAL WARRANT ANALYSIS
NODE #6: OLDHAM PAKWAY AND NS COLLECTOR

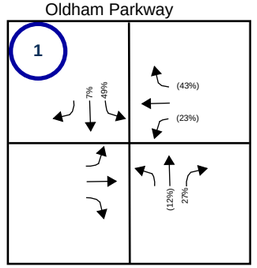
Figure 4C-3. Warrant 3, Peak Hour



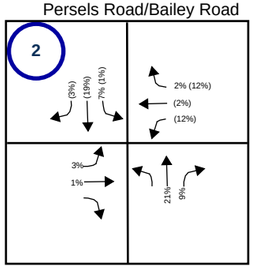
*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane

- AM Base + Phase 1
- PM Base + Phase 1
- SAT Base + Phase 1

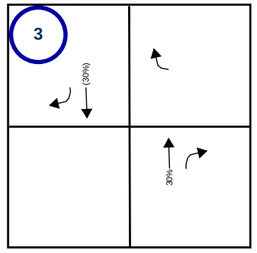
M-291 &
Oldham Parkway



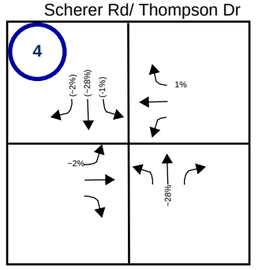
M-291 &
Persels Road/Bailey Road



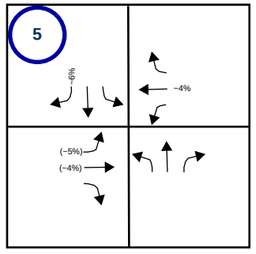
M-291 &
16th Street



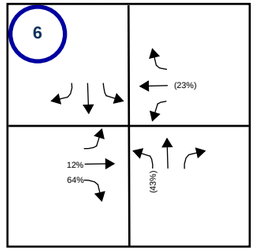
M-291 &
Scherer Rd/ Thompson Dr



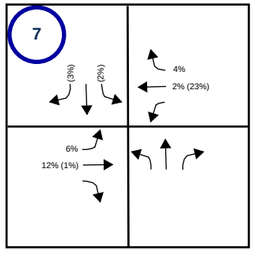
Bailey Road &
Hamblen Road



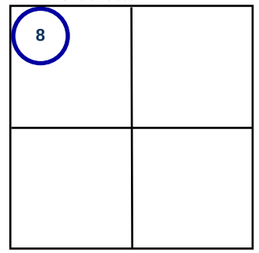
Oldham Parkway &
NS Collector



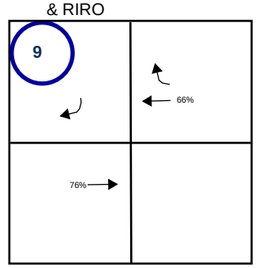
Bailey Road &
NS Collector



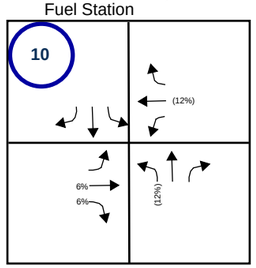
16th Street &
NS Collector



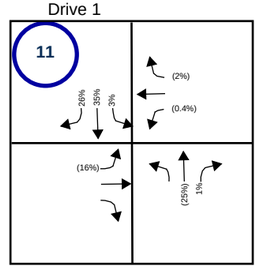
Oldham Parkway
& RIRO



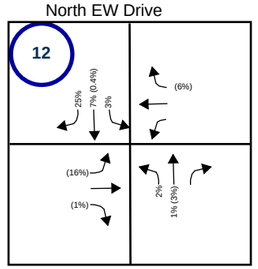
Oldham Parkway &
Fuel Station



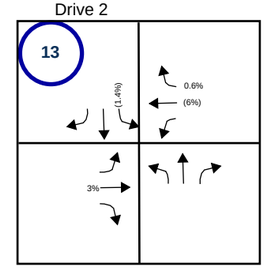
NS Collector &
Drive 1



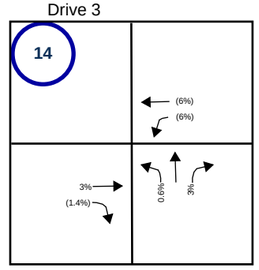
NS Collector &
North EW Drive



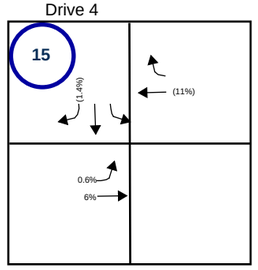
North EW Drive &
Drive 2



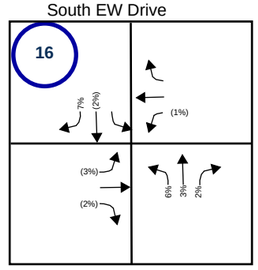
North EW Drive &
Drive 3



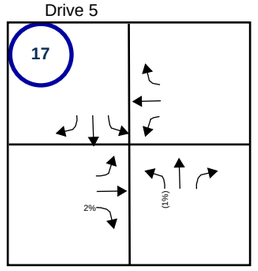
North EW Drive &
Drive 4



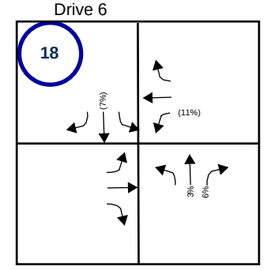
NS Collector &
South EW Drive



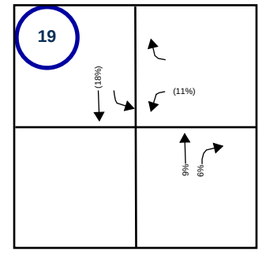
South EW Drive &
Drive 5



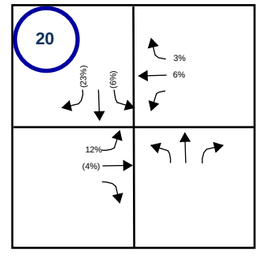
South EW Drive &
Drive 6



Drive 7



Bailey Road &
Drive 8



PHASE 2 BAILEY ROAD NORTH
PRIMARY TRIP DISTRIBUTION

x% = Inbound Site Traffic
(x%) = Outbound Site Traffic

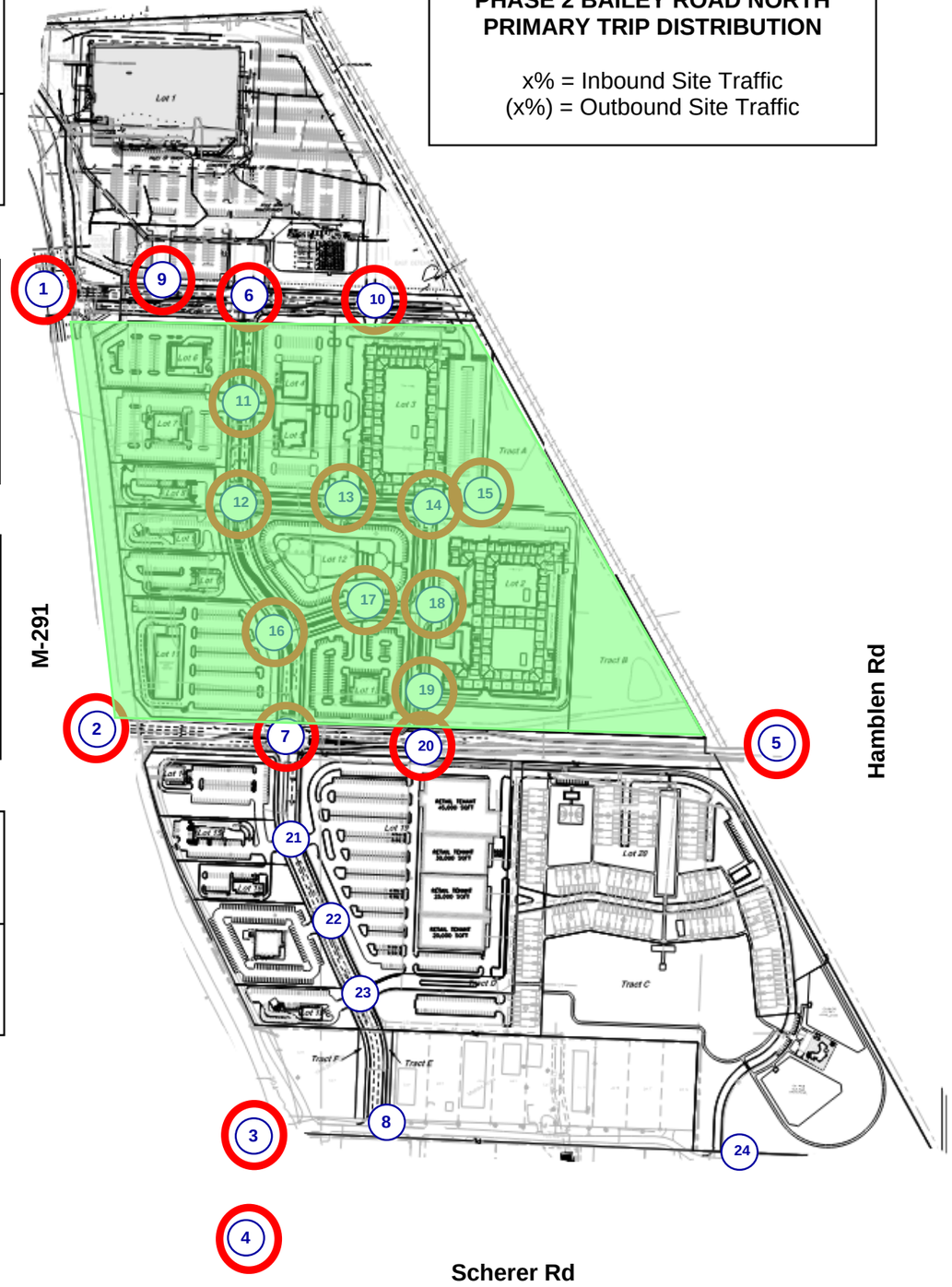
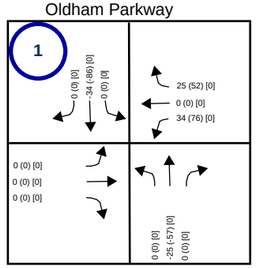


FIGURE 16

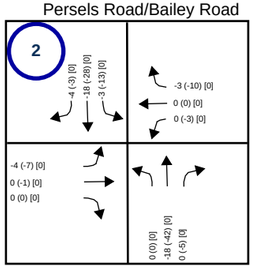
PHASE 2 BAILEY ROAD NORTH PASS-BY TRIP VOLUMES

AM(PM)[SAT] Traffic Volumes

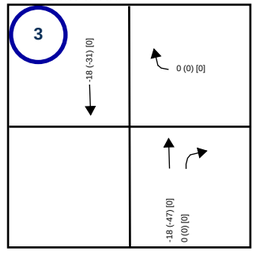
M-291 & Oldham Parkway



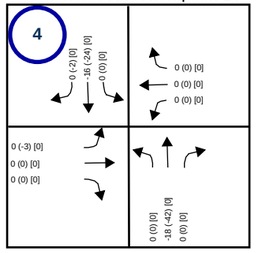
M-291 & Persels Road/Bailey Road



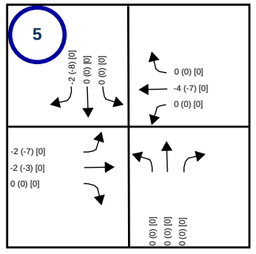
M-291 & 16th Street



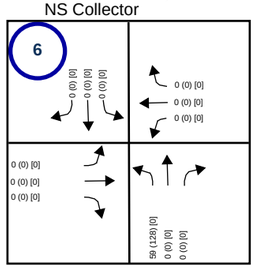
M-291 & Scherer Rd/ Thompson Dr



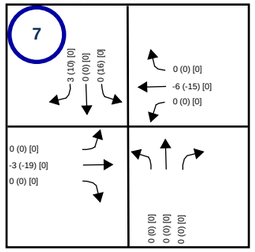
Bailey Road & Hamblen Road



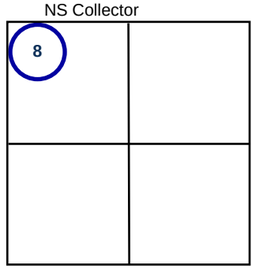
Oldham Parkway & NS Collector



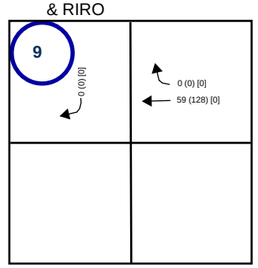
Bailey Road & NS Collector



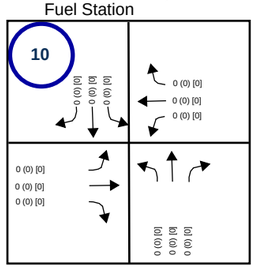
16th Street & NS Collector



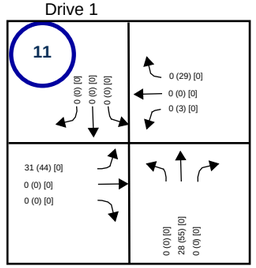
Oldham Parkway & RIRO



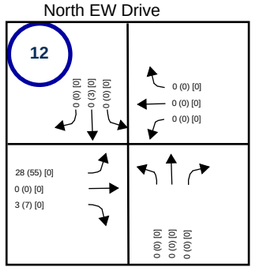
Oldham Parkway & Fuel Station



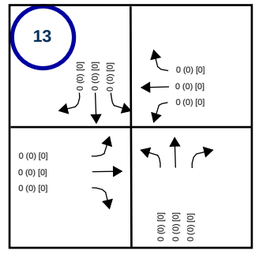
NS Collector & Drive 1



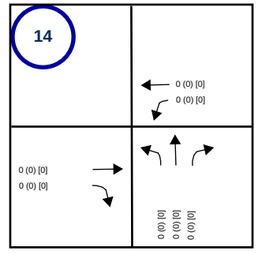
NS Collector & North EW Drive



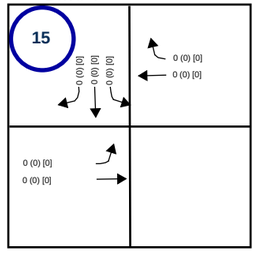
North EW Drive & Drive 2



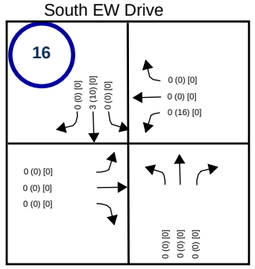
North EW Drive & Drive 3



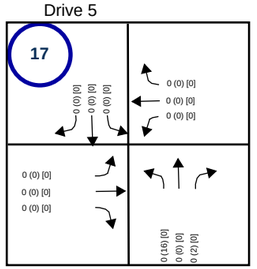
North EW Drive & Drive 4



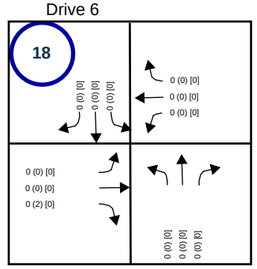
NS Collector & South EW Drive



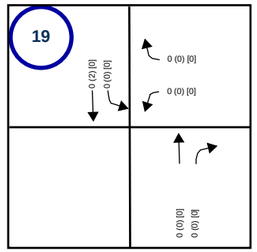
South EW Drive & Drive 5



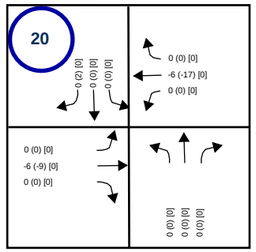
South EW Drive & Drive 6



Drive 7



Bailey Road & Drive 8



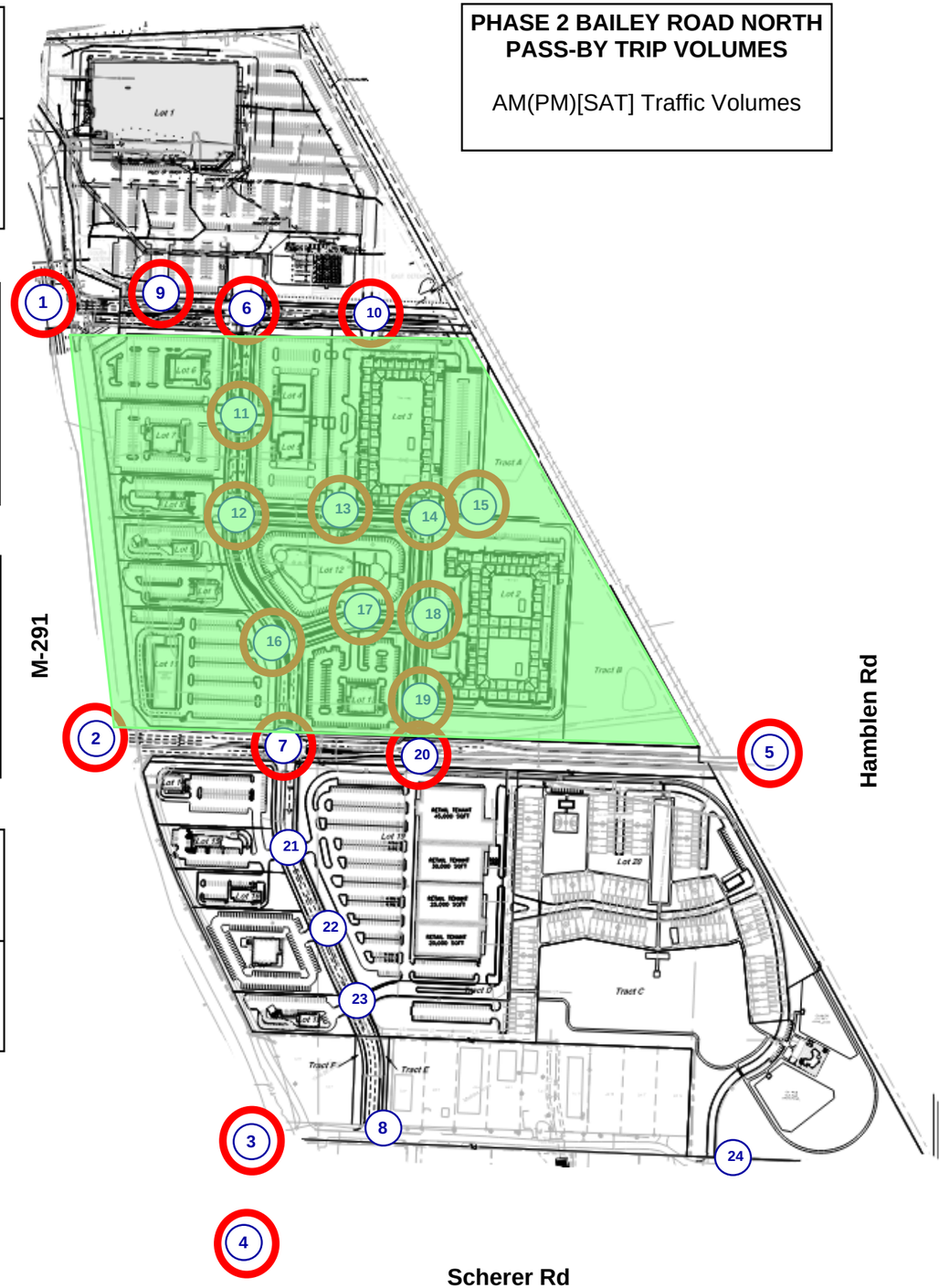
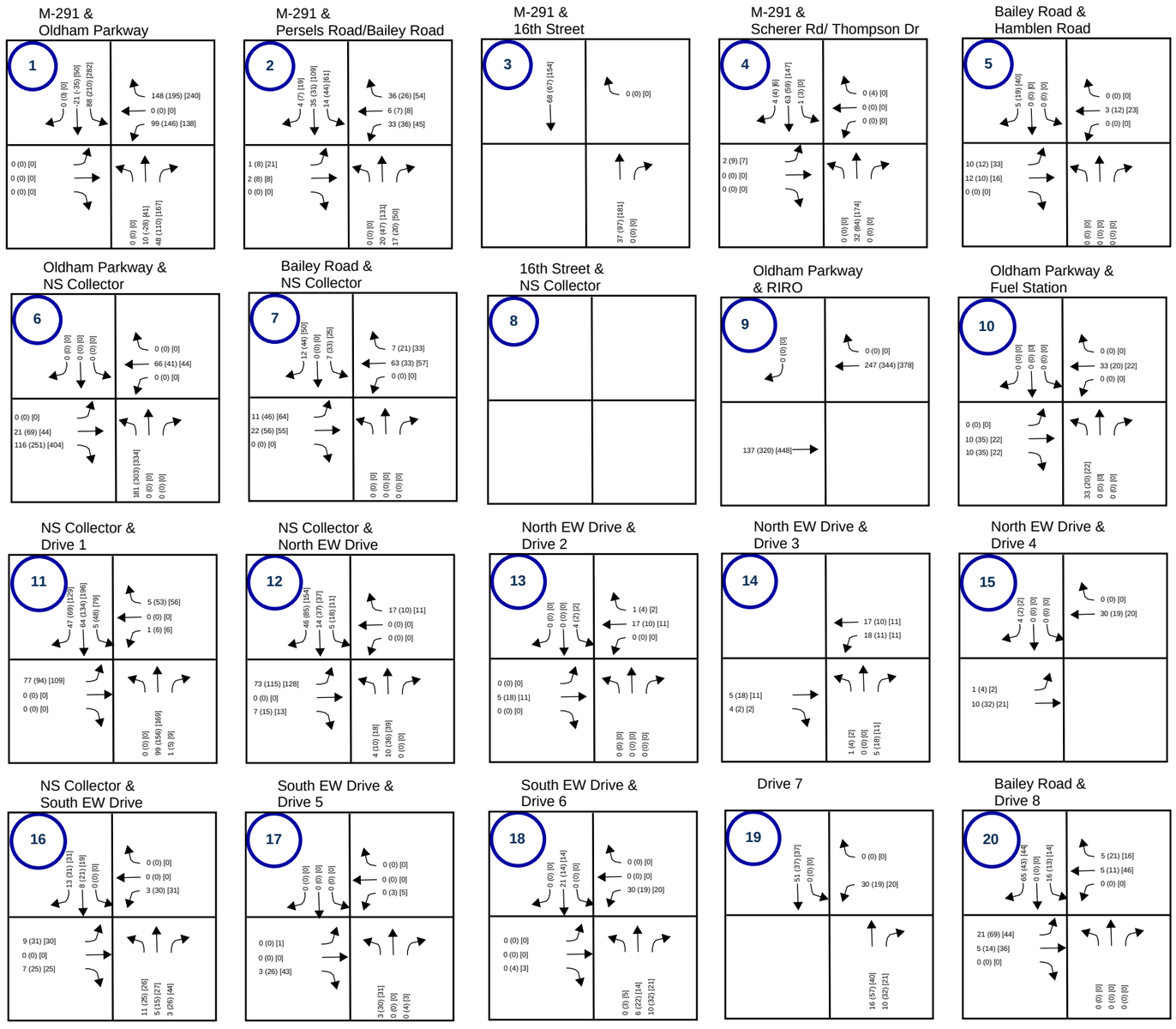


FIGURE 17

EAST VILLAGE TIS

CIVIL ENGINEERING / SURVEYING / UTILITIES



PHASE 2 BAILEY ROAD NORTH
TOTAL SITE TRIPS

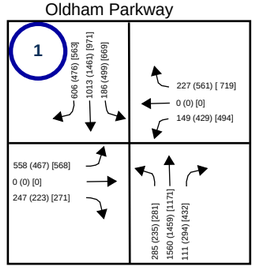
AM(PM)[SAT] Traffic Volumes

FIGURE 18

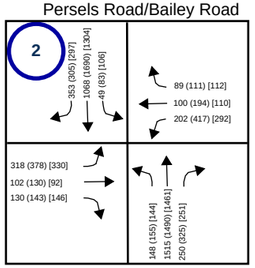
BASE + PHASE 1-2
PEAK HOUR VOLUMES

AM(PM)[SAT] Traffic Volumes

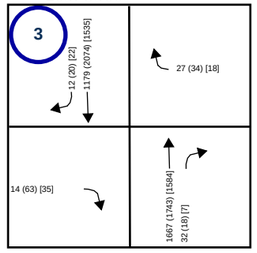
M-291 &
Oldham Parkway



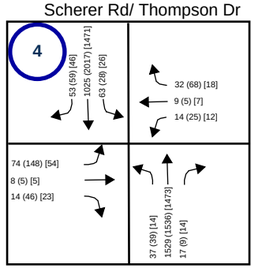
M-291 &
Persels Road/Bailey Road



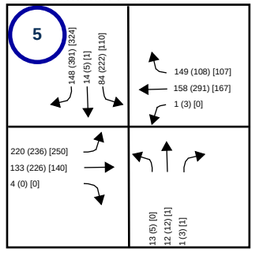
M-291 &
16th Street



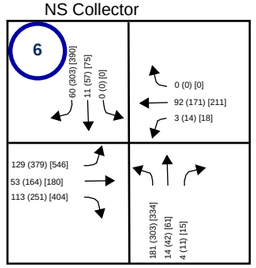
M-291 &
Scherer Rd/ Thompson Dr



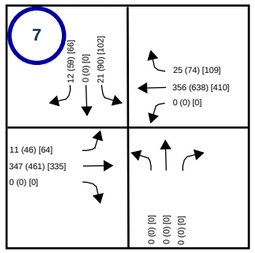
Bailey Road &
Hamblen Road



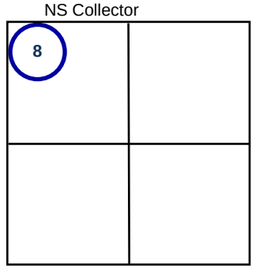
Oldham Parkway &
NS Collector



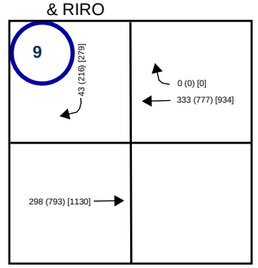
Bailey Road &
NS Collector



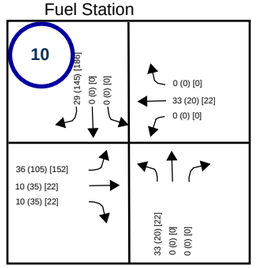
16th Street &
NS Collector



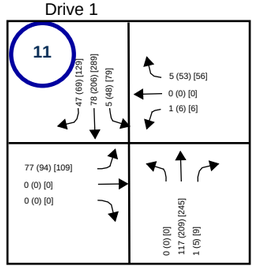
Oldham Parkway
& RIRO



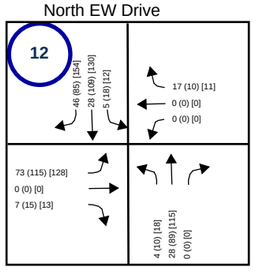
Oldham Parkway &
Fuel Station



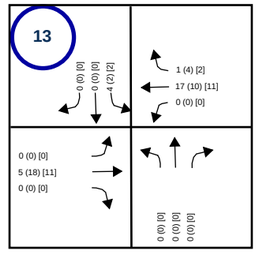
NS Collector &
Drive 1



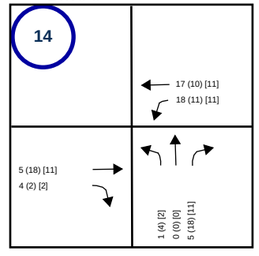
NS Collector &
North EW Drive



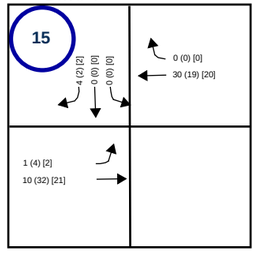
North EW Drive &
Drive 2



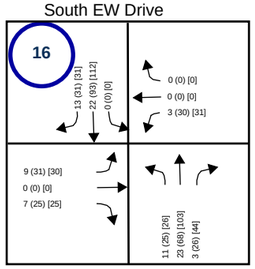
North EW Drive &
Drive 3



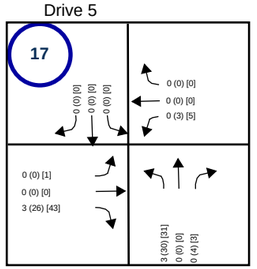
North EW Drive &
Drive 4



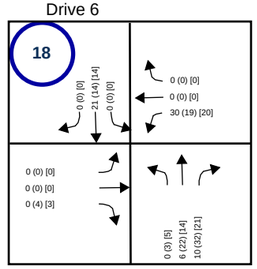
NS Collector &
South EW Drive



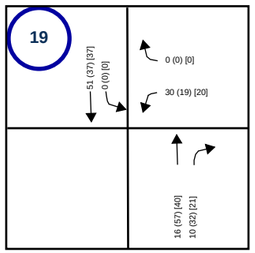
South EW Drive &
Drive 5



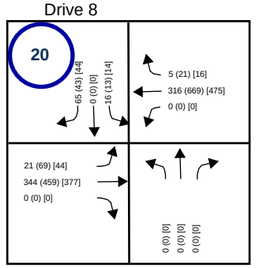
South EW Drive &
Drive 6



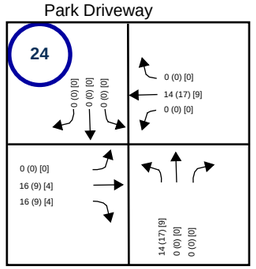
Drive 7



Bailey Road &
Drive 8



16th Street &
Park Driveway



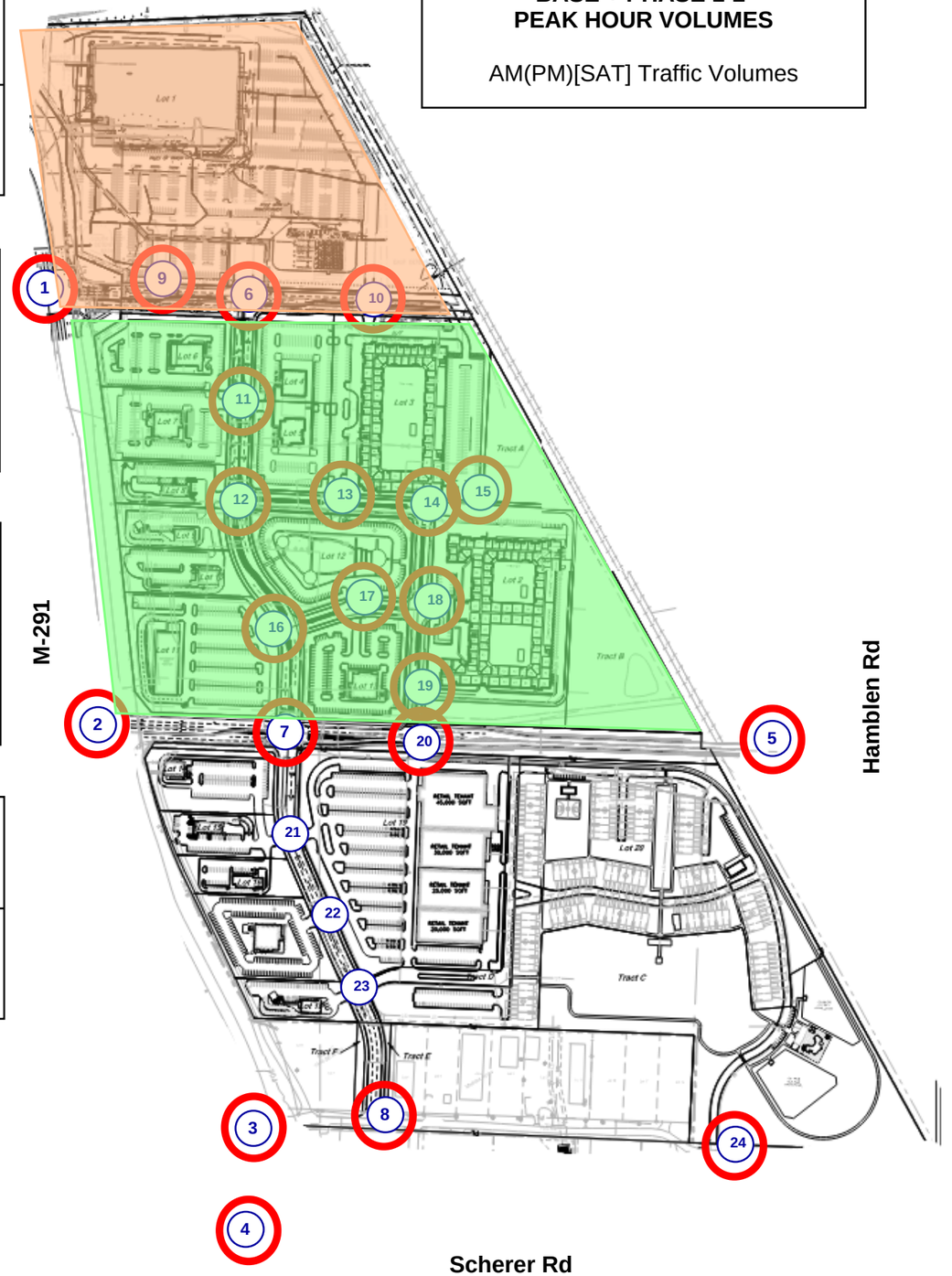
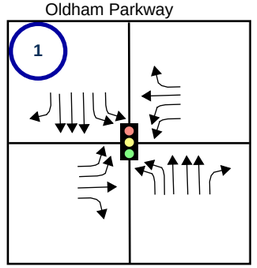


FIGURE 19

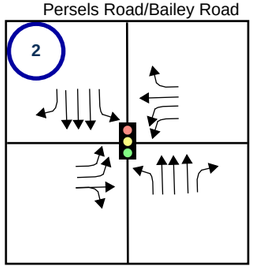
EAST VILLAGE TIS

CIVIL ENGINEERING / SURVEYING / UTILITIES

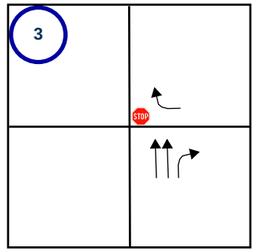
M-291 &
Oldham Parkway



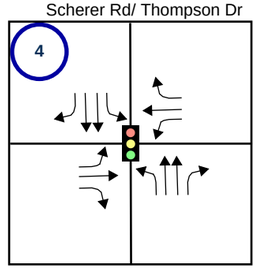
M-291 &
Persels Road/Bailey Road



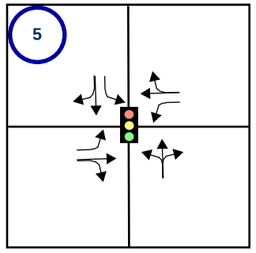
M-291 &
16th Street



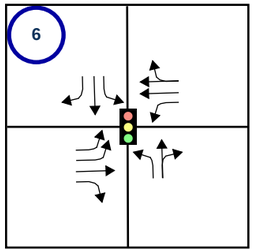
M-291 &
Scherer Rd/ Thompson Dr



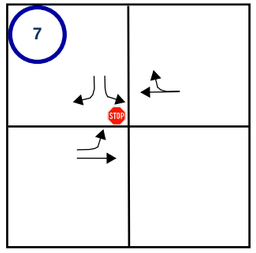
Bailey Road &
Hamblen Road



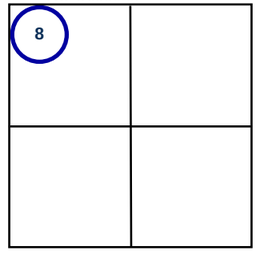
Oldham Parkway &
NS Collector



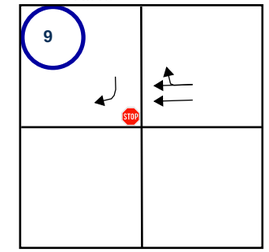
Bailey Road &
NS Collector



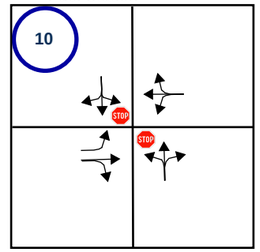
16th Street &
NS Collector



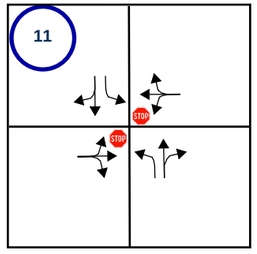
Oldham Parkway
& RIRO



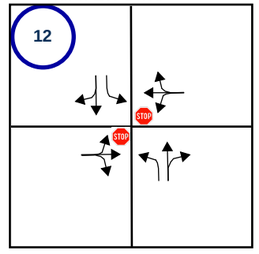
Oldham Parkway &
Fuel Station



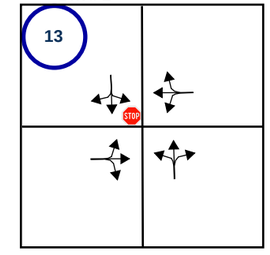
NS Collector &
Drive 1



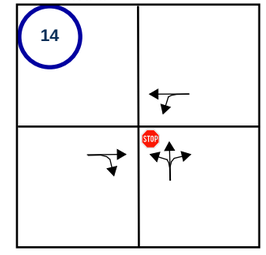
NS Collector &
North EW Drive



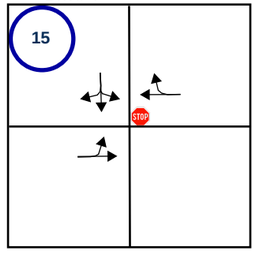
North EW Drive &
Drive 2



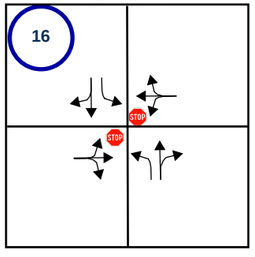
North EW Drive &
Drive 3



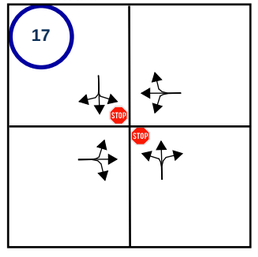
North EW Drive &
Drive 4



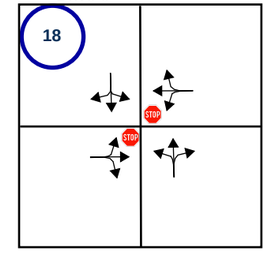
NS Collector &
South EW Drive



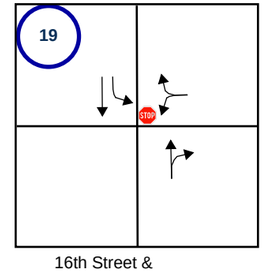
South EW Drive &
Drive 5



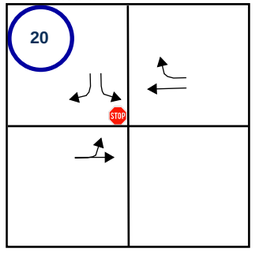
South EW Drive &
Drive 6



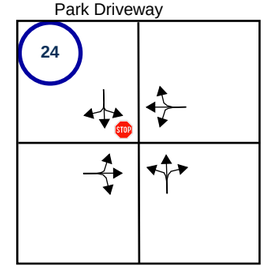
Drive 7



Bailey Road &
Drive 8



16th Street &
Park Driveway



BASE + PHASE 1-2
GEOMETRY AND INTERSECTION CONTROL

Signalized Intersection
Stop Controlled Intersection

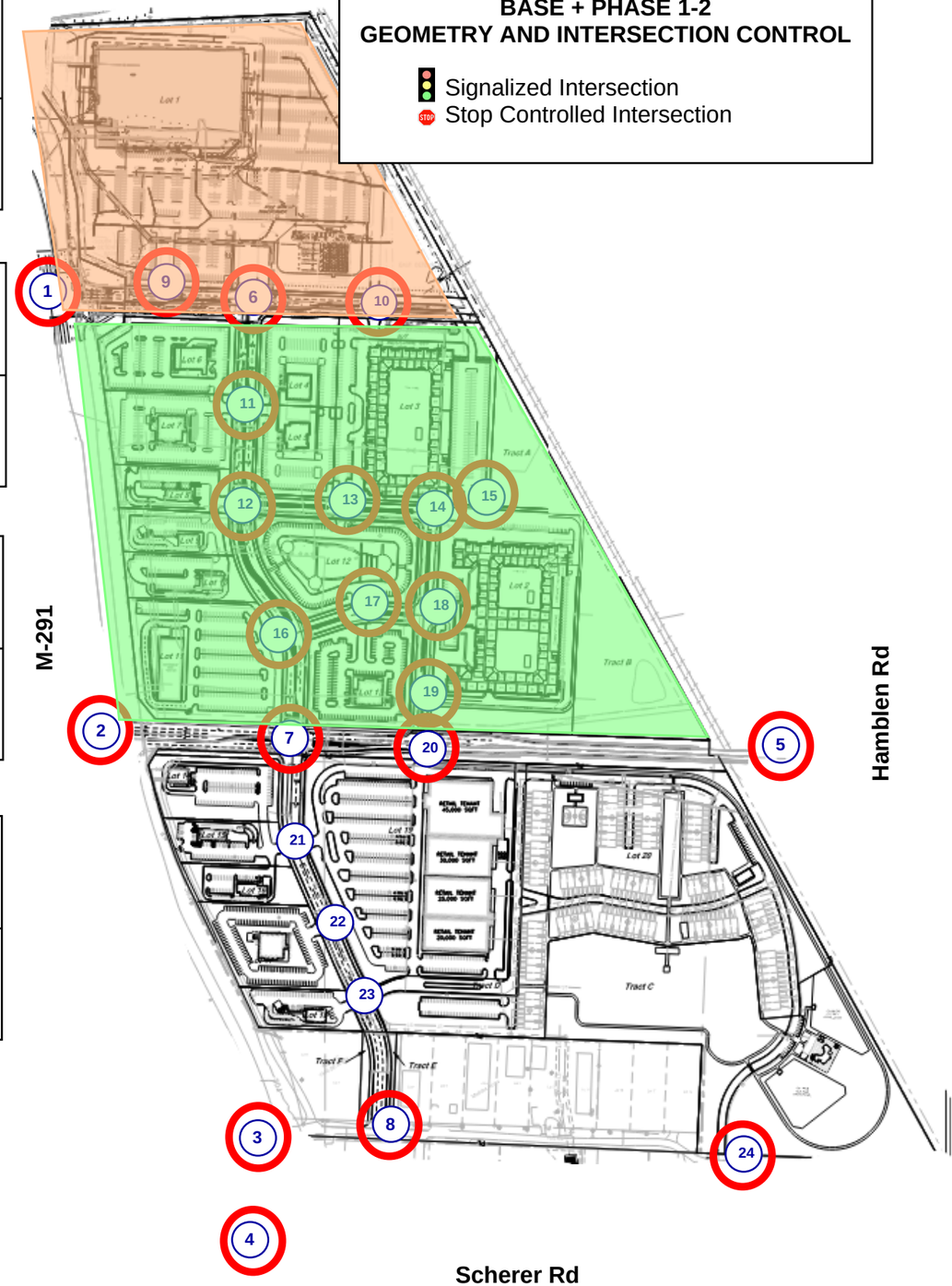
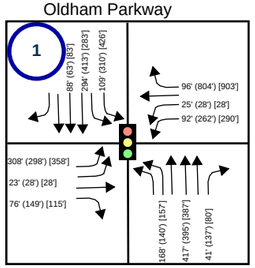


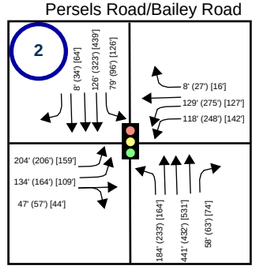
FIGURE 20

EAST VILLAGE TIS

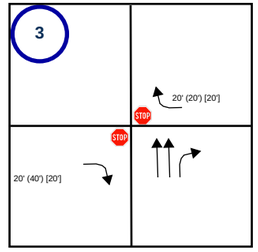
M-291 &
Oldham Parkway



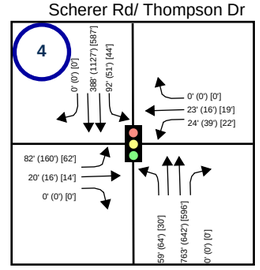
M-291 &
Persels Road/Bailey Road



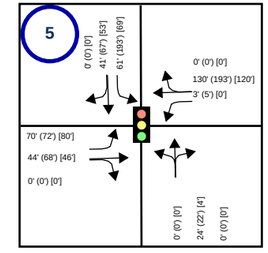
M-291 &
16th Street



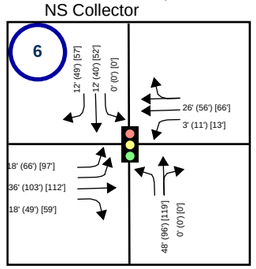
M-291 &
Scherer Rd/ Thompson Dr



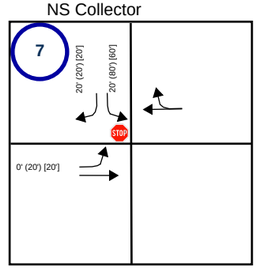
Bailey Road &
Hamblen Road



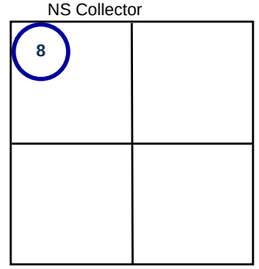
Oldham Parkway &
NS Collector



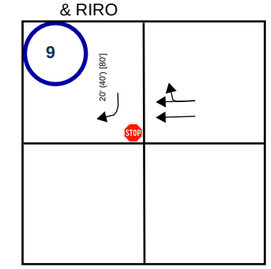
Bailey Road &
NS Collector



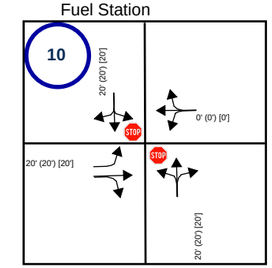
16th Street &
NS Collector



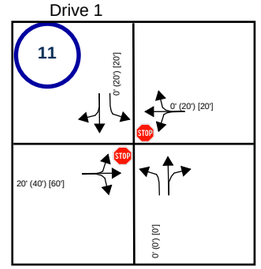
Oldham Parkway
& RIRO



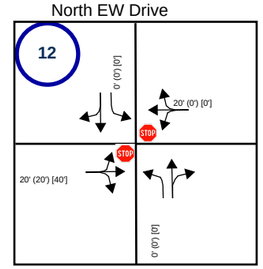
Oldham Parkway &
Fuel Station



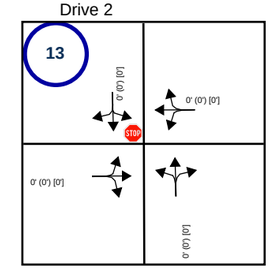
NS Collector &
Drive 1



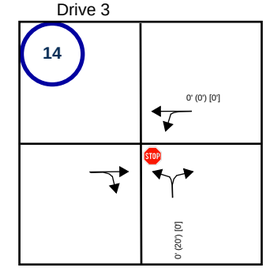
NS Collector &
North EW Drive



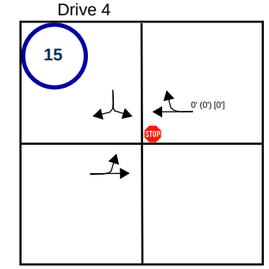
North EW Drive &
Drive 2



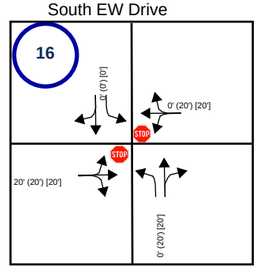
North EW Drive &
Drive 3



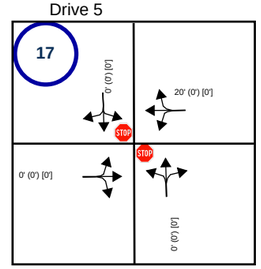
North EW Drive &
Drive 4



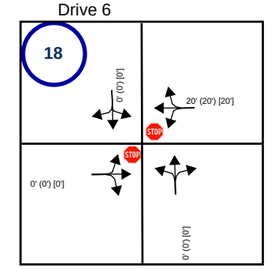
NS Collector &
South EW Drive



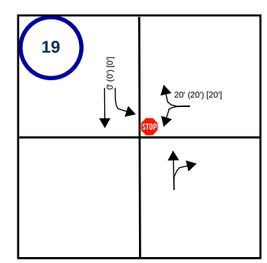
South EW Drive &
Drive 5



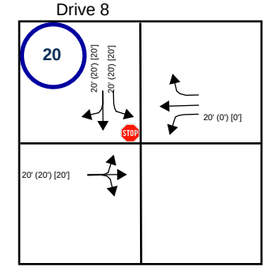
South EW Drive &
Drive 6



Drive 7



Bailey Road &
Drive 8



BASE + PHASE 1-2
95% QUEUE LENGTHS

AM(PM)[SAT] = 95% Queues in feet

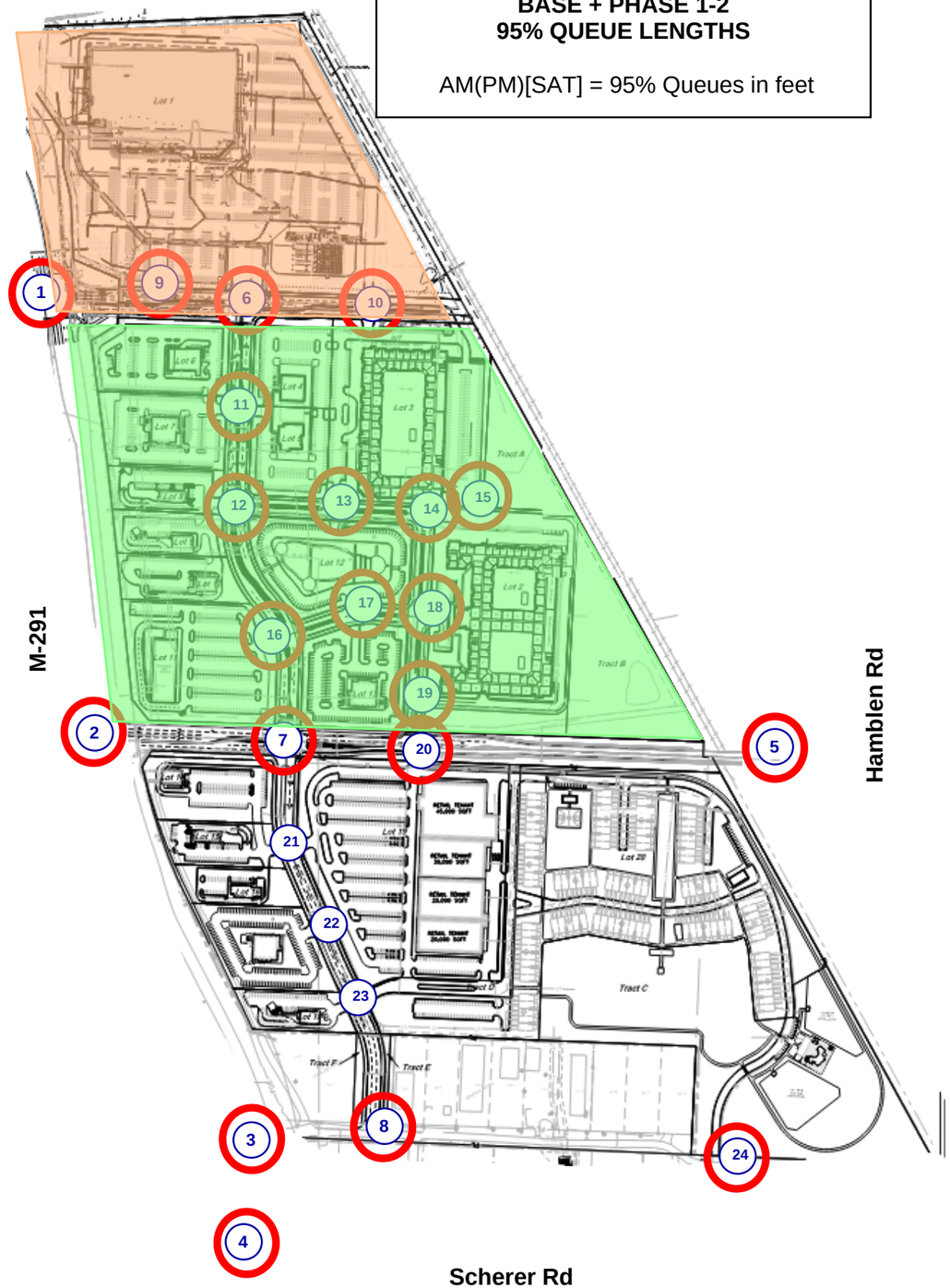
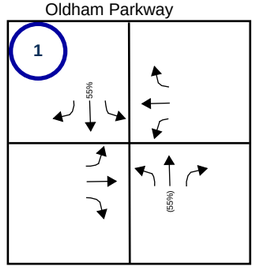


FIGURE 21

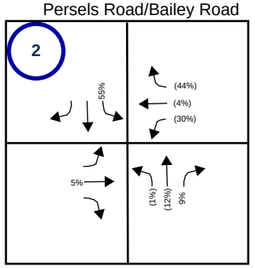
CIVIL ENGINEERING / SURVEYING / UTILITIES

EAST VILLAGE TIS

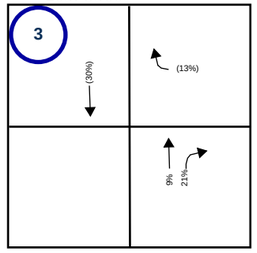
M-291 &
Oldham Parkway



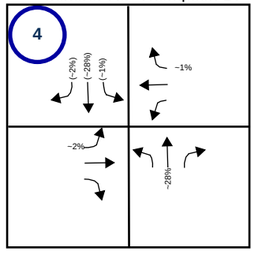
M-291 &
Persels Road/Bailey Road



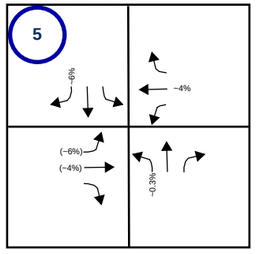
M-291 &
16th Street



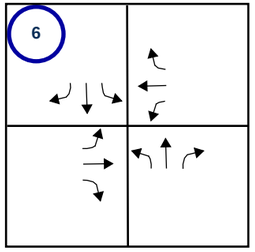
M-291 &
Scherer Rd/ Thompson Dr



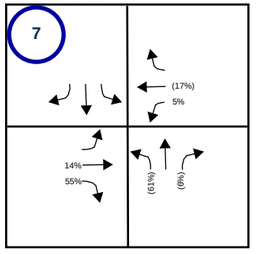
Bailey Road &
Hamblen Road



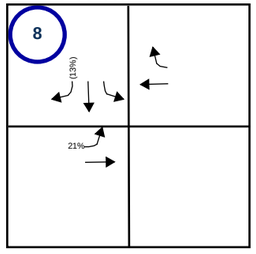
Oldham Parkway &
NS Collector



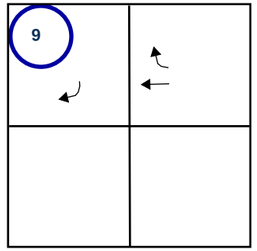
Bailey Road &
NS Collector



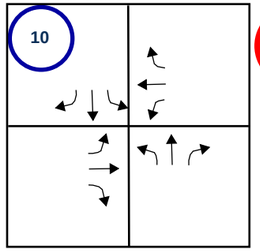
16th Street &
NS Collector



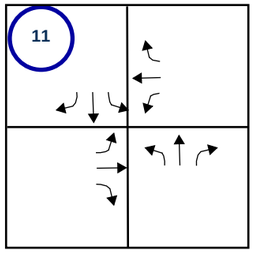
Oldham Parkway
& RIRO



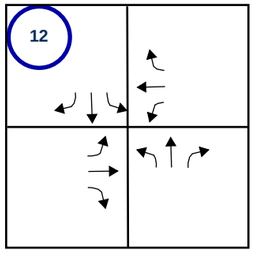
Oldham Parkway &
Fuel Station



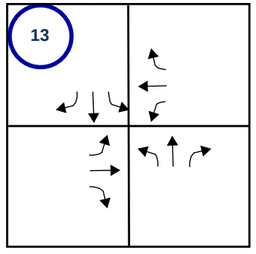
NS Collector &
Drive 1



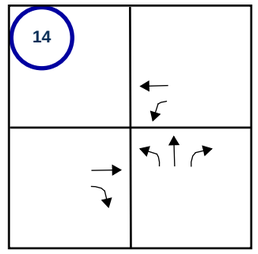
NS Collector &
North EW Drive



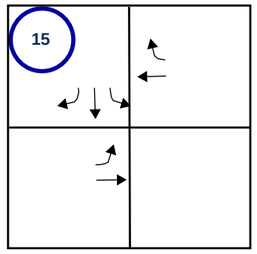
North EW Drive &
Drive 2



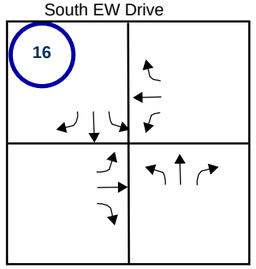
North EW Drive &
Drive 3



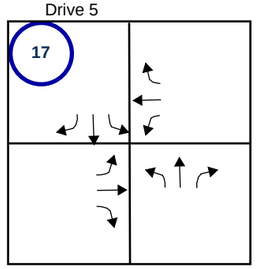
North EW Drive &
Drive 4



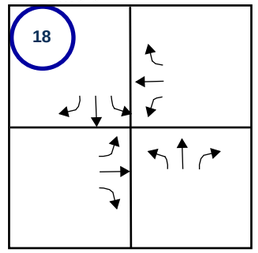
NS Collector &
South EW Drive



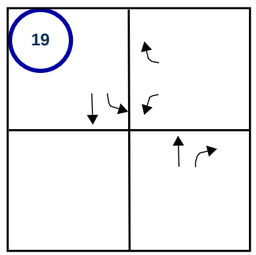
South EW Drive &
Drive 5



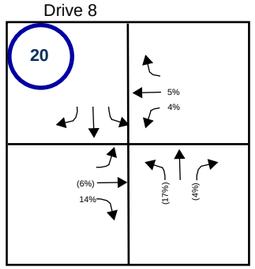
South EW Drive &
Drive 6



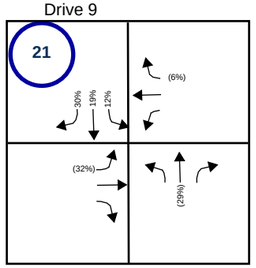
Drive 7



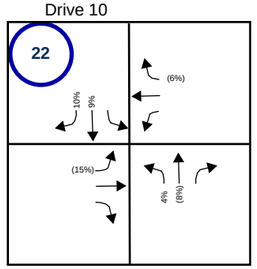
Bailey Road &
Drive 8



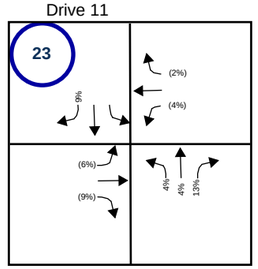
NS Collector &
Drive 9



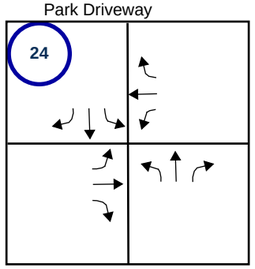
NS Collector &
Drive 10



NS Collector &
Drive 11



16th Street &
Park Driveway



PHASE 3 16th STREET NORTH
PRIMARY TRIP DISTRIBUTION

x% = Inbound Site Traffic
(x%) = Outbound Site Traffic

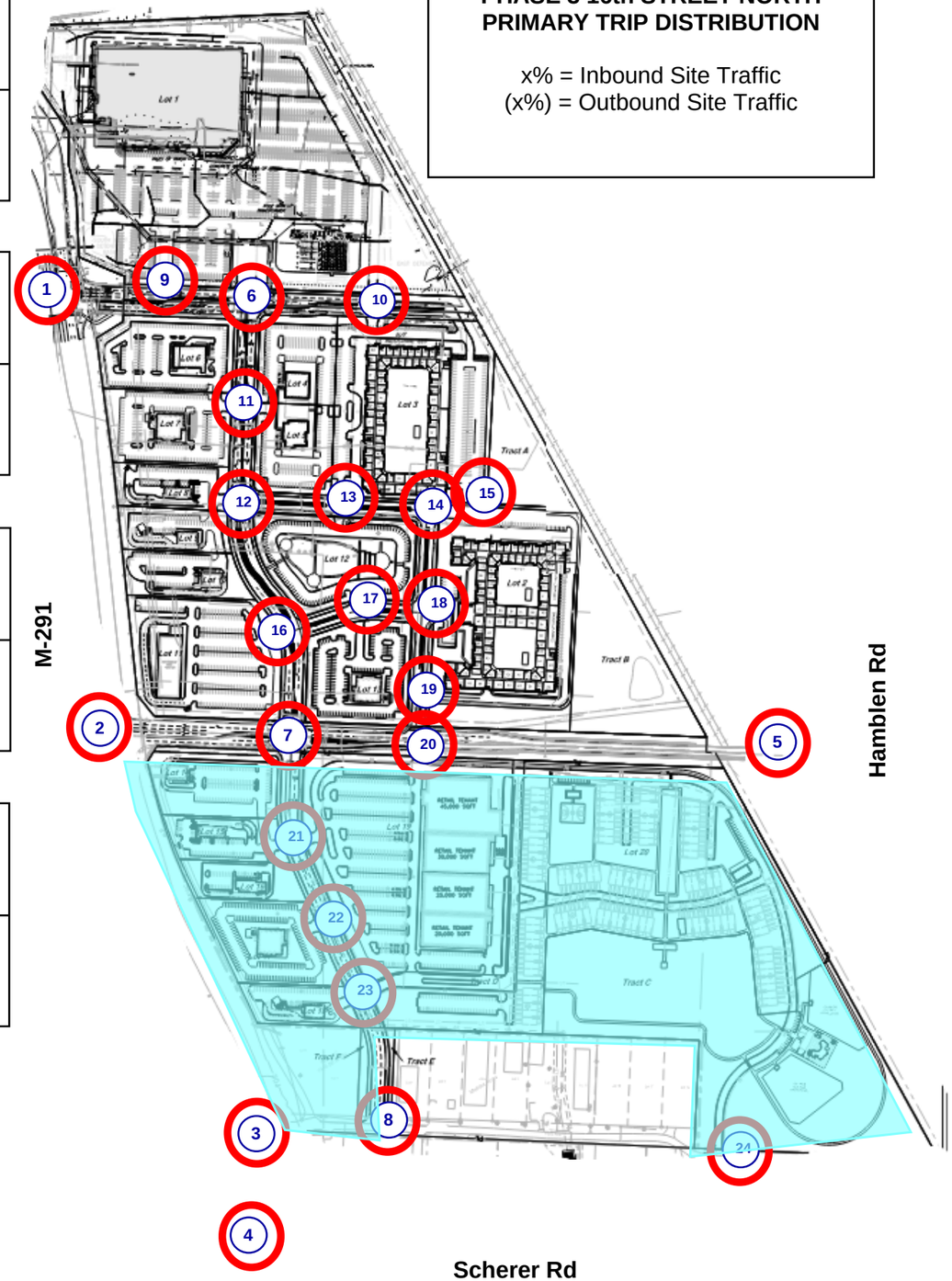


FIGURE 22

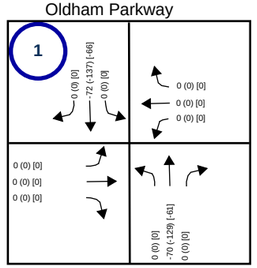
PHC
CIVIL ENGINEERING / SURVEYING / UTILITIES

EAST VILLAGE TIS

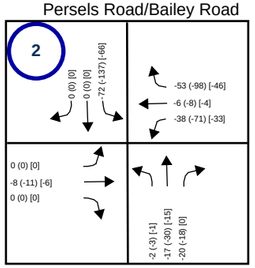
PHASE 3 16th STREET NORTH PASS-BY TRIP VOLUMES

AM(PM)[SAT] Traffic Volumes

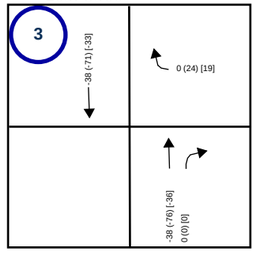
M-291 & Oldham Parkway



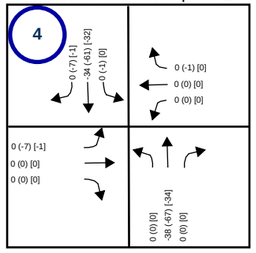
M-291 & Persels Road/Bailey Road



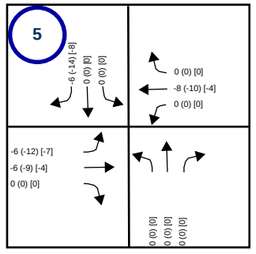
M-291 & 16th Street



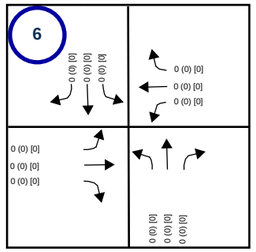
M-291 & Scherer Rd/ Thompson Dr



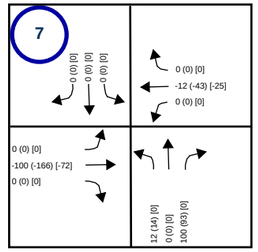
Bailey Road & Hamblen Road



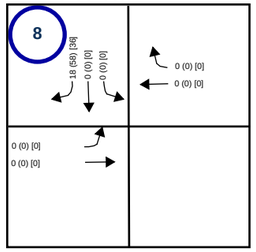
Oldham Parkway & NS Collector



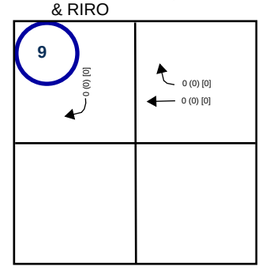
Bailey Road & NS Collector



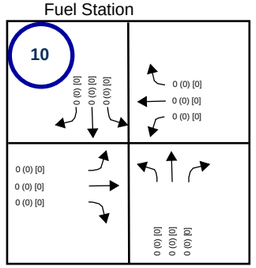
16th Street & NS Collector



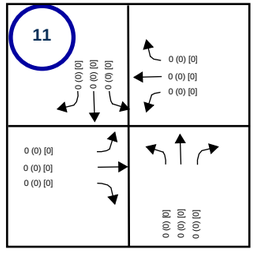
Oldham Parkway & RIRO



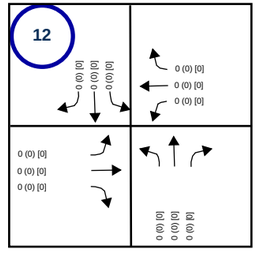
Oldham Parkway & Fuel Station



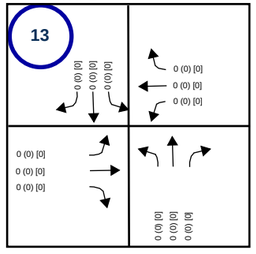
NS Collector & Drive 1



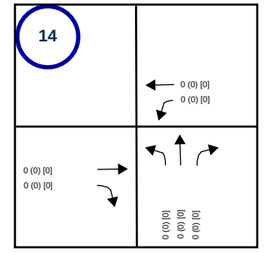
NS Collector & North EW Drive



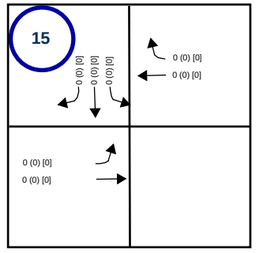
North EW Drive & Drive 2



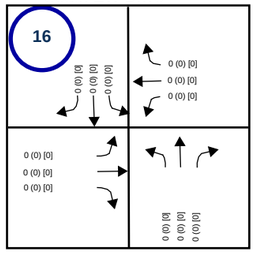
North EW Drive & Drive 3



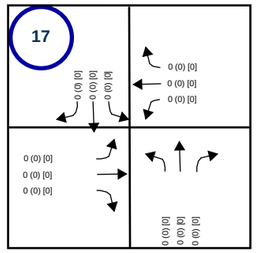
North EW Drive & Drive 4



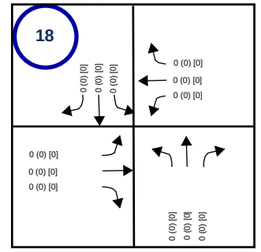
NS Collector & South EW Drive



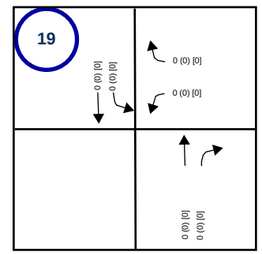
South EW Drive & Drive 5



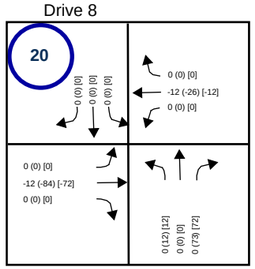
South EW Drive & Drive 6



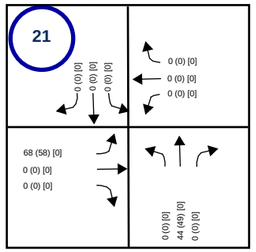
Drive 7



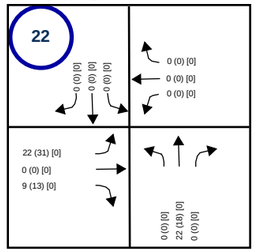
Bailey Road & Drive 8



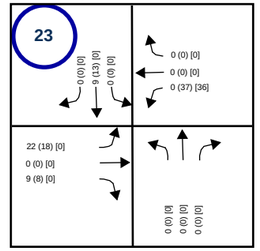
NS Collector & Drive 9



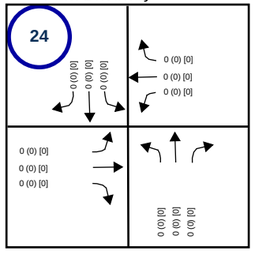
NS Collector & Drive 10



NS Collector & Drive 11



16th Street & Park Driveway



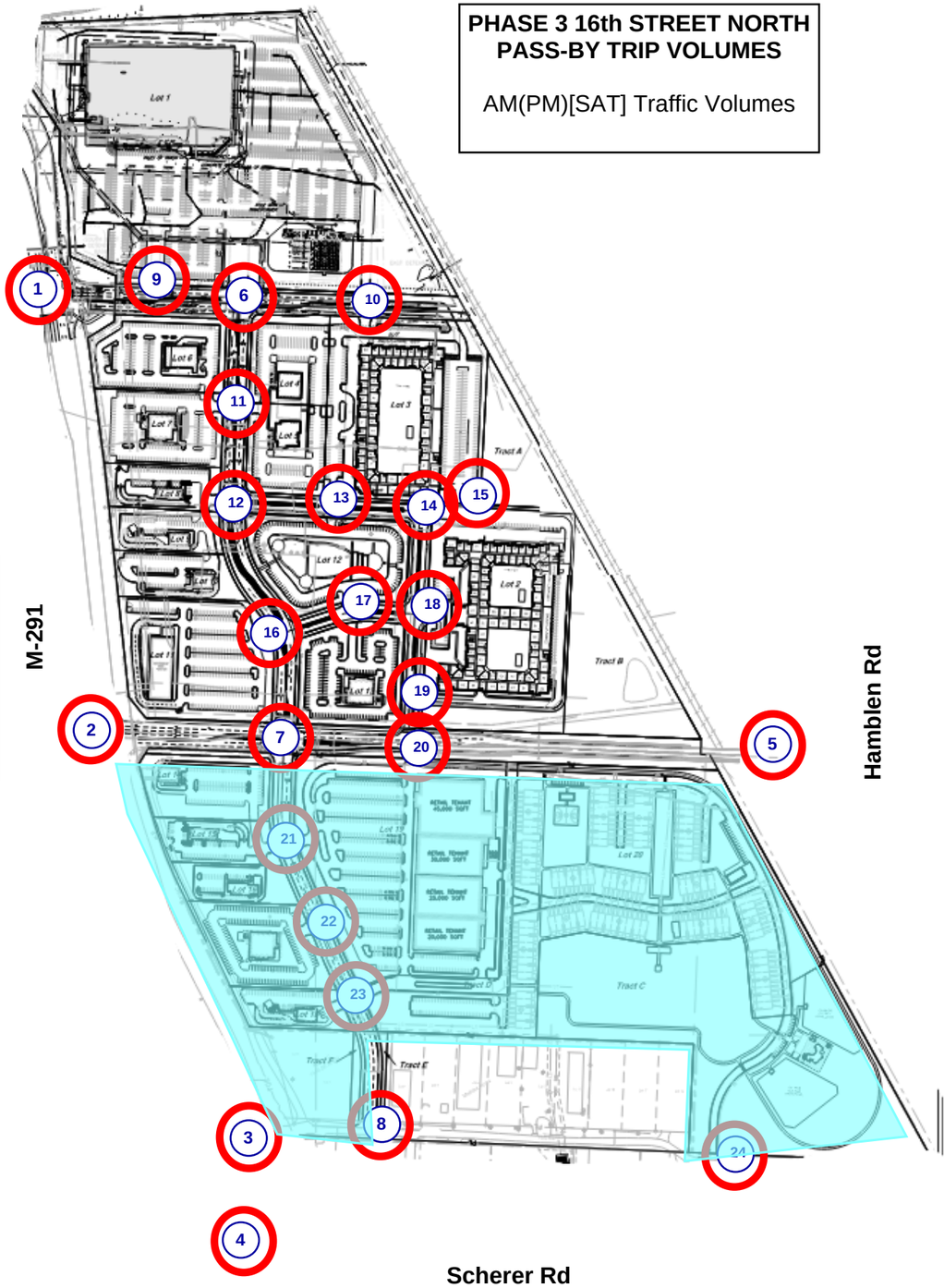
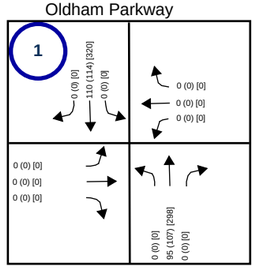


FIGURE 23

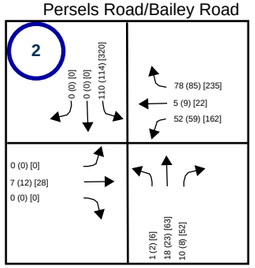
EAST VILLAGE TIS

CIVIL ENGINEERING / SURVEYING / UTILITIES

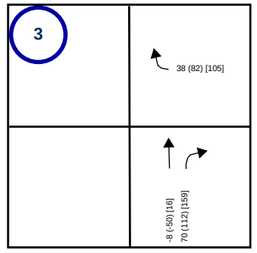
M-291 &
Oldham Parkway



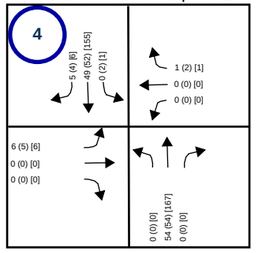
M-291 &
Persels Road/Bailey Road



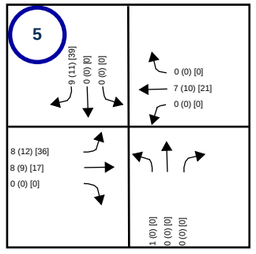
M-291 &
16th Street



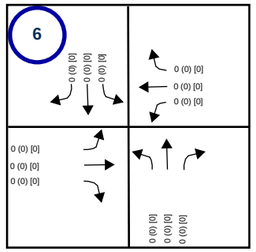
M-291 &
Scherer Rd/ Thompson Dr



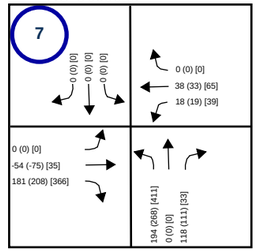
Bailey Road &
Hamblen Road



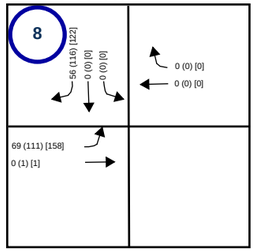
Oldham Parkway &
NS Collector



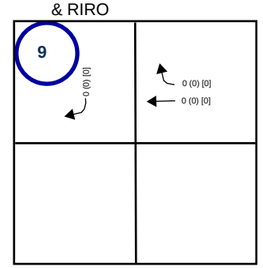
Bailey Road &
NS Collector



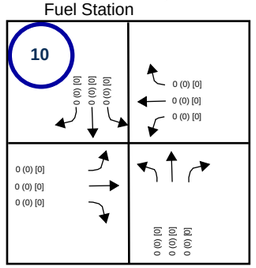
16th Street &
NS Collector



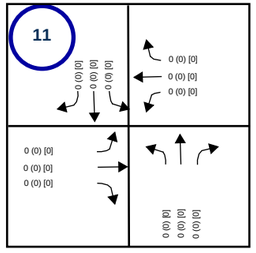
Oldham Parkway
& RIRO



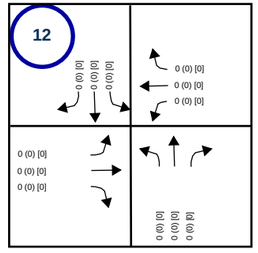
Oldham Parkway &
Fuel Station



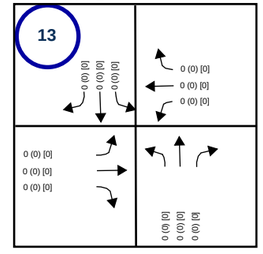
NS Collector &
Drive 1



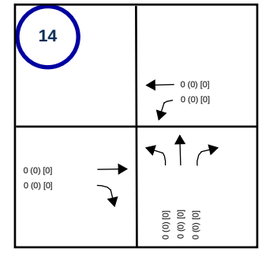
NS Collector &
North EW Drive



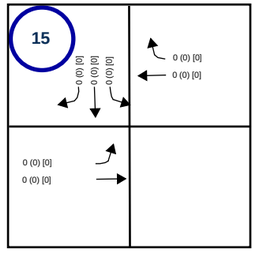
North EW Drive &
Drive 2



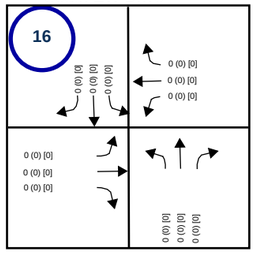
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Drive 3



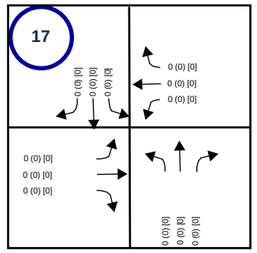
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Drive 4



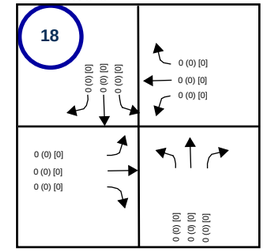
NS Collector &
South EW Drive



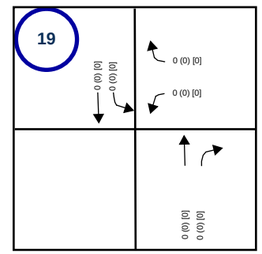
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Drive 5



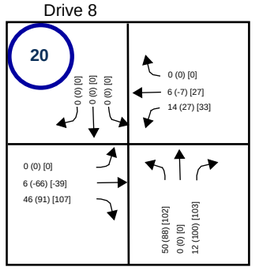
South EW Drive &
Drive 6



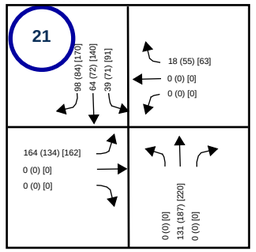
Drive 7



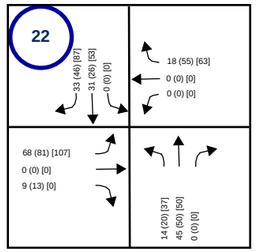
Bailey Road &
Drive 8



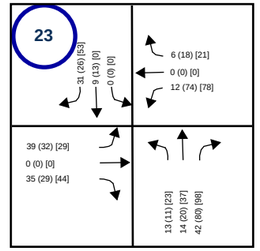
NS Collector &
Drive 9



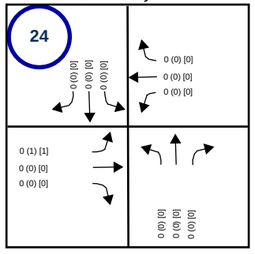
NS Collector &
Drive 10



NS Collector &
Drive 11



16th Street &
Park Driveway



PHASE 3 16th STREET NORTH
TOTAL SITE TRIPS

AM(PM)[SAT] Traffic Volumes

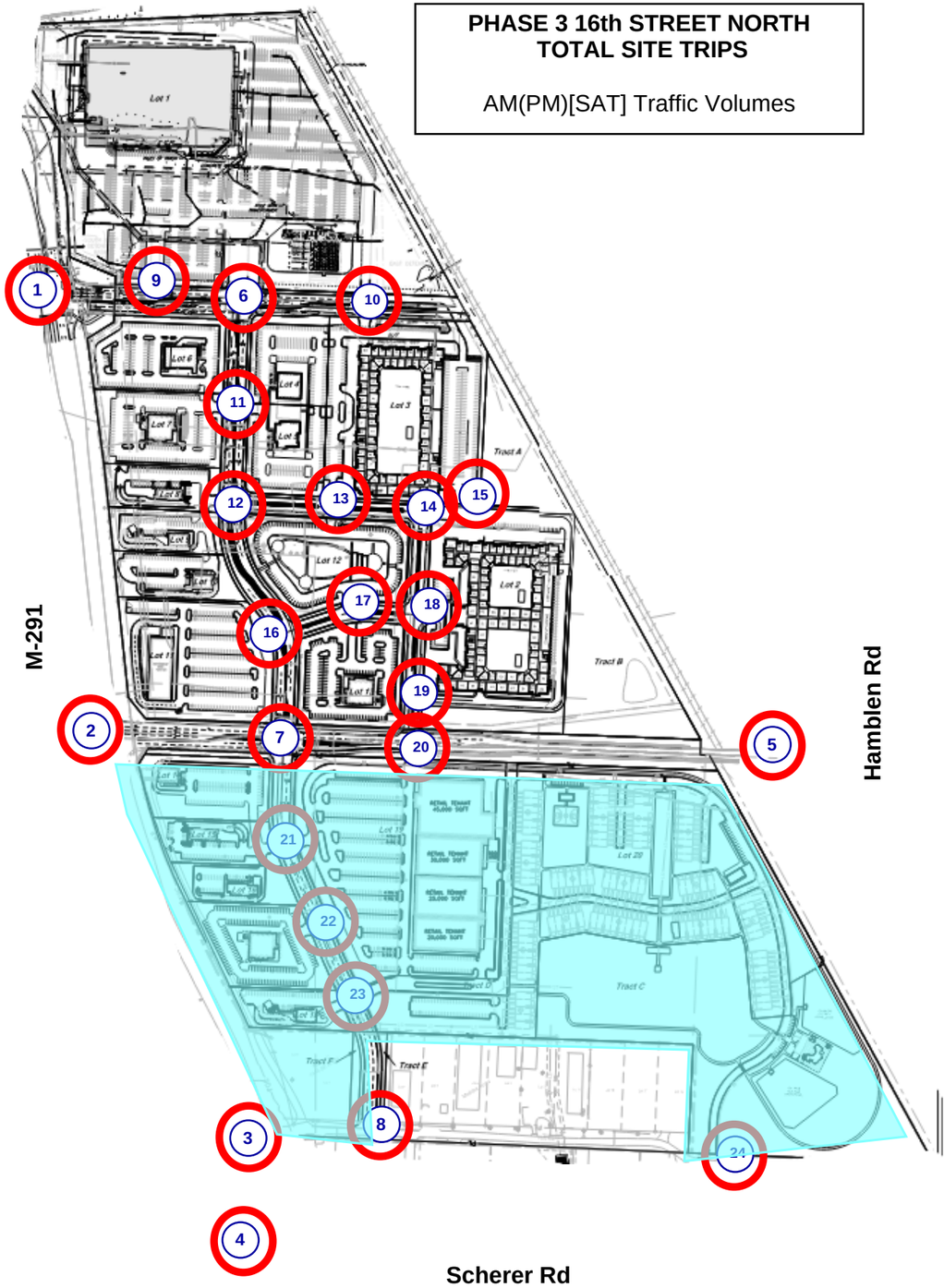
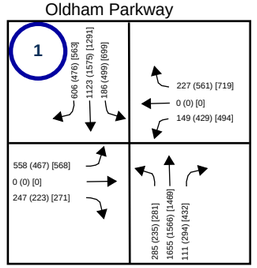


FIGURE 24

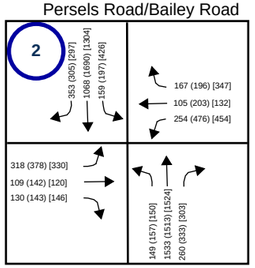
CIVIL ENGINEERING / SURVEYING / UTILITIES

EAST VILLAGE TIS

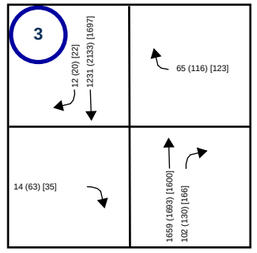
M-291 &
Oldham Parkway



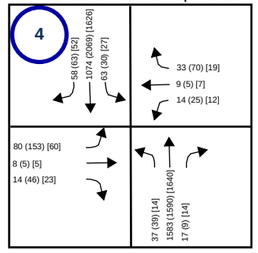
M-291 &
Persels Road/Bailey Road



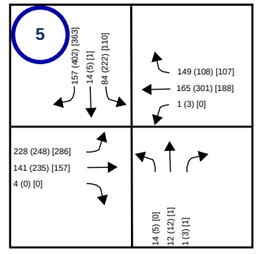
M-291 &
16th Street



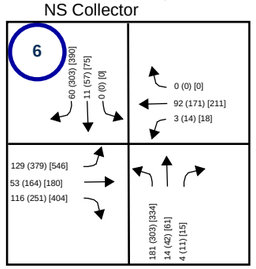
M-291 &
Scherer Rd/ Thompson Dr



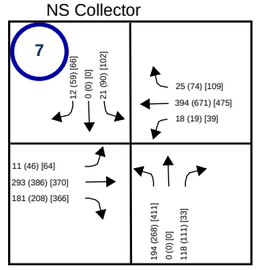
Bailey Road &
Hamblen Road



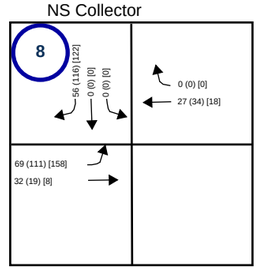
Oldham Parkway &
NS Collector



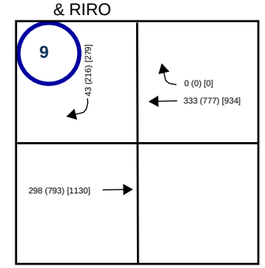
Bailey Road &
NS Collector



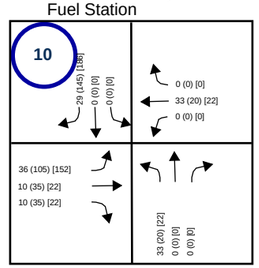
16th Street &
NS Collector



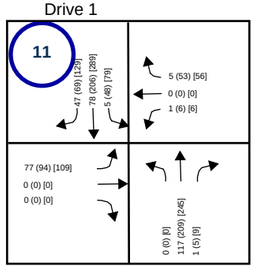
Oldham Parkway
& RIRO



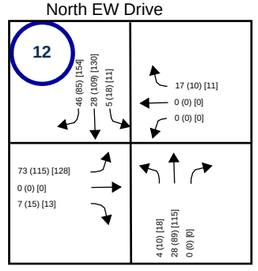
Oldham Parkway &
Fuel Station



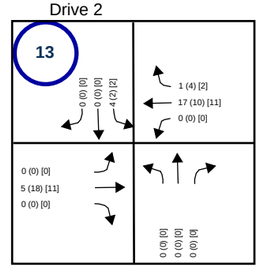
NS Collector &
Drive 1



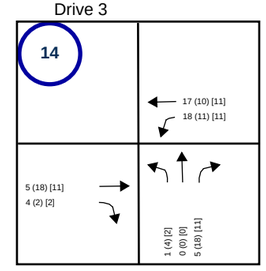
NS Collector &
North EW Drive



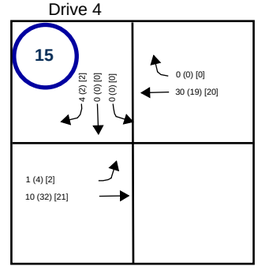
North EW Drive &
Drive 2



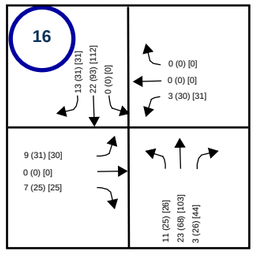
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Drive 3



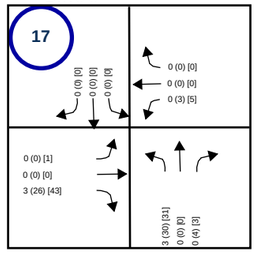
North EW Drive &
Drive 4



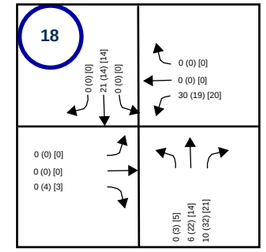
NS Collector &
South EW Drive



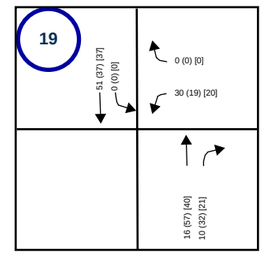
South EW Drive &
Drive 5



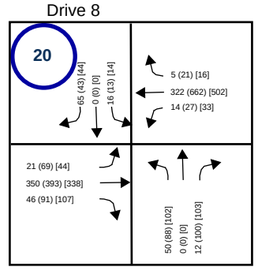
South EW Drive &
Drive 6



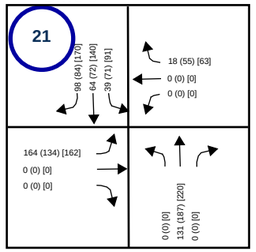
Drive 7



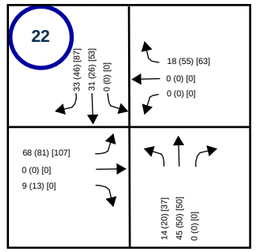
Bailey Road &
Drive 8



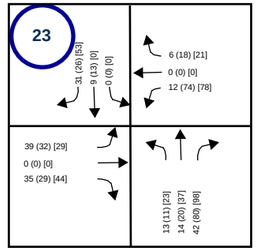
NS Collector &
Drive 9



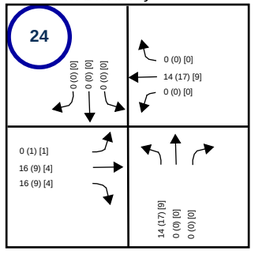
NS Collector &
Drive 10



NS Collector &
Drive 11



16th Street &
Park Driveway



BASE + FULL DEVELOPMENT
PEAK HOUR VOLUMES

AM(PM)[SAT] Traffic Volumes

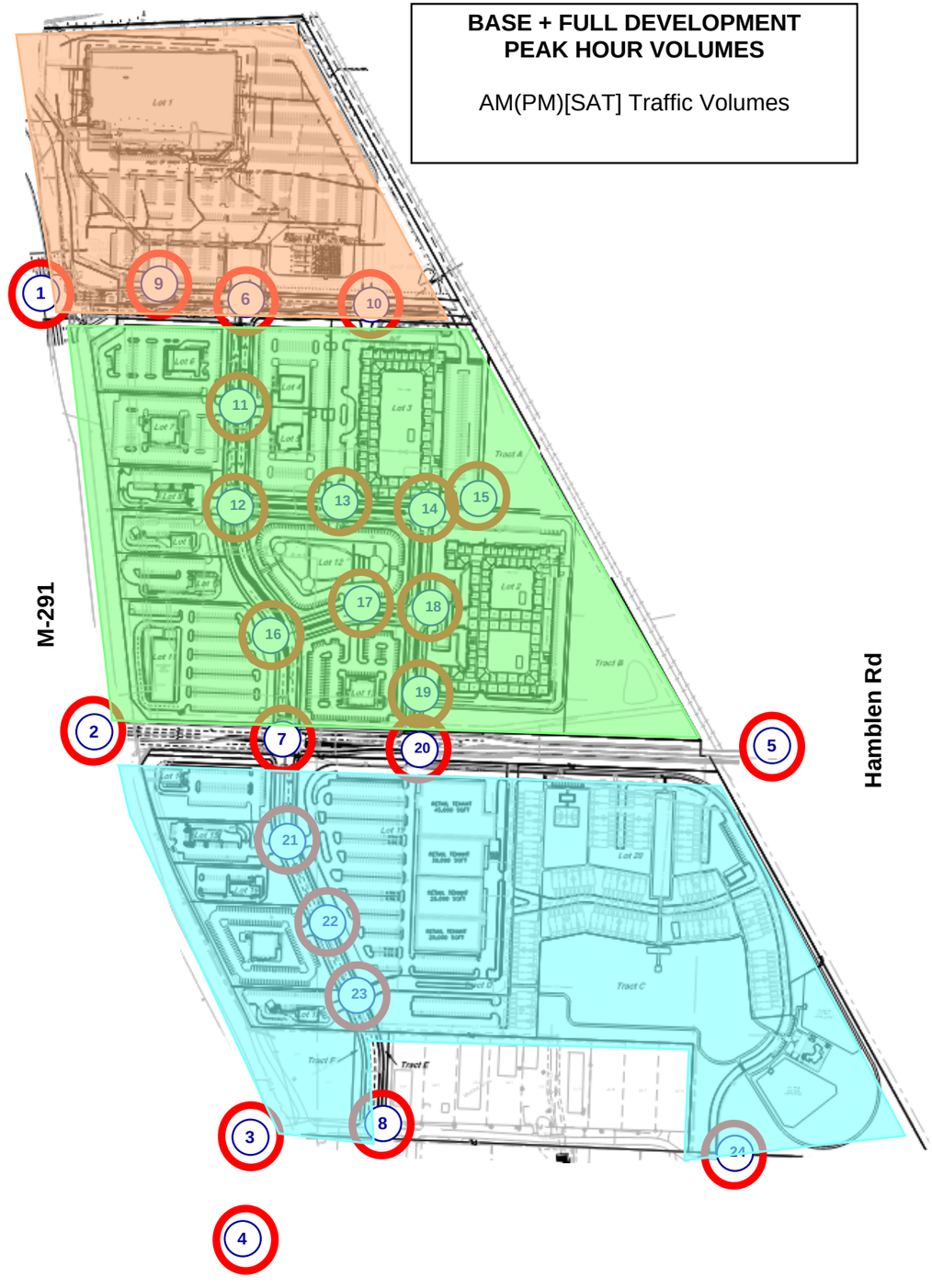
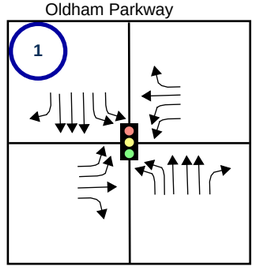


FIGURE 25

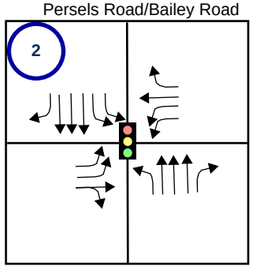
EAST VILLAGE TIS

CIVIL ENGINEERING / SURVEYING / UTILITIES

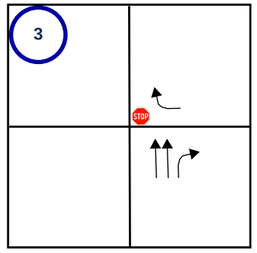
M-291 &
Oldham Parkway



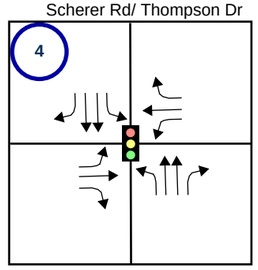
M-291 &
Persels Road/Bailey Road



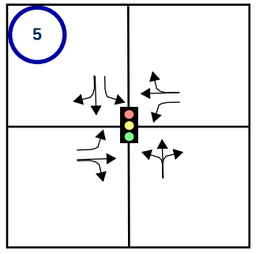
M-291 &
16th Street



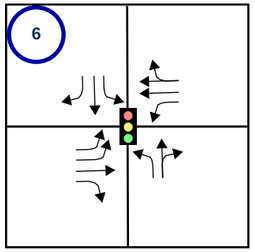
M-291 &
Scherer Rd/ Thompson Dr



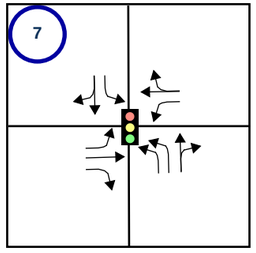
Bailey Road &
Hamblen Road



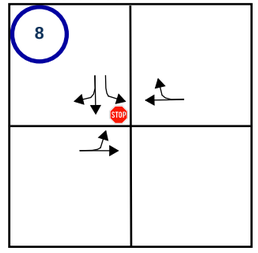
Oldham Parkway &
NS Collector



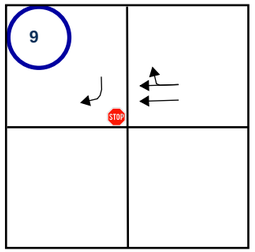
Bailey Road &
NS Collector



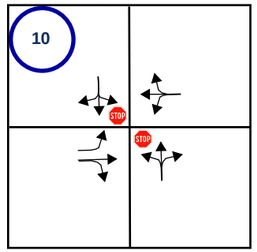
16th Street &
NS Collector



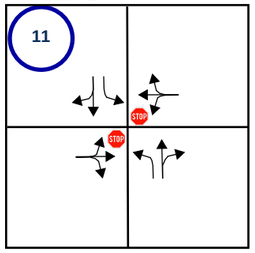
Oldham Parkway
& RIRO



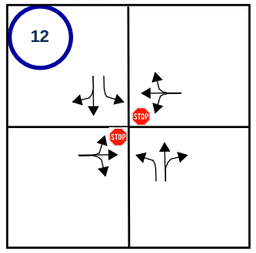
Oldham Parkway &
Fuel Station



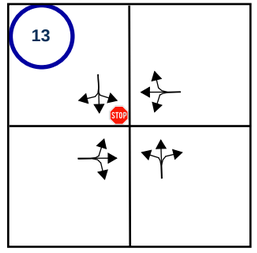
NS Collector &
Drive 1



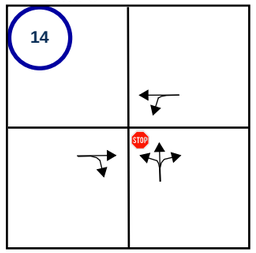
NS Collector &
North EW Drive



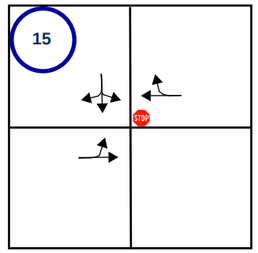
North EW Drive &
Drive 2



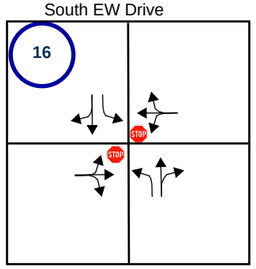
North EW Drive &
Drive 3



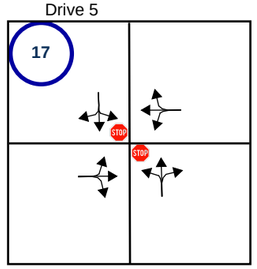
North EW Drive &
Drive 4



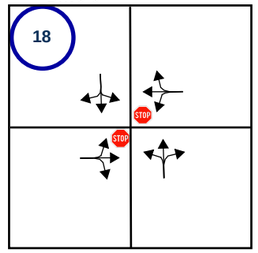
NS Collector &
South EW Drive



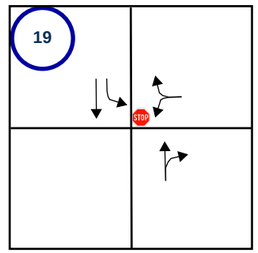
South EW Drive &
Drive 5



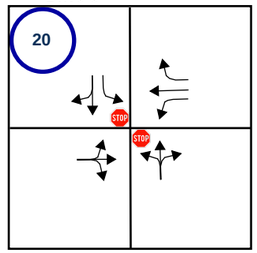
South EW Drive &
Drive 6



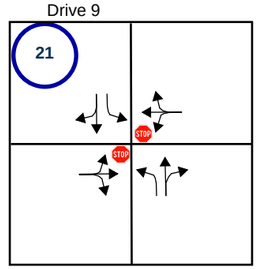
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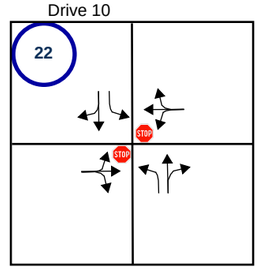
Bailey Road &
Drive 8



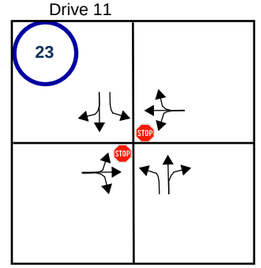
NS Collector &
Drive 9



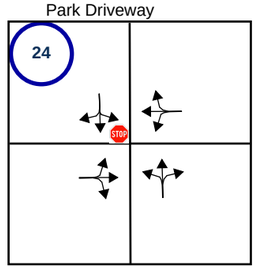
NS Collector &
Drive 10



NS Collector &
Drive 11

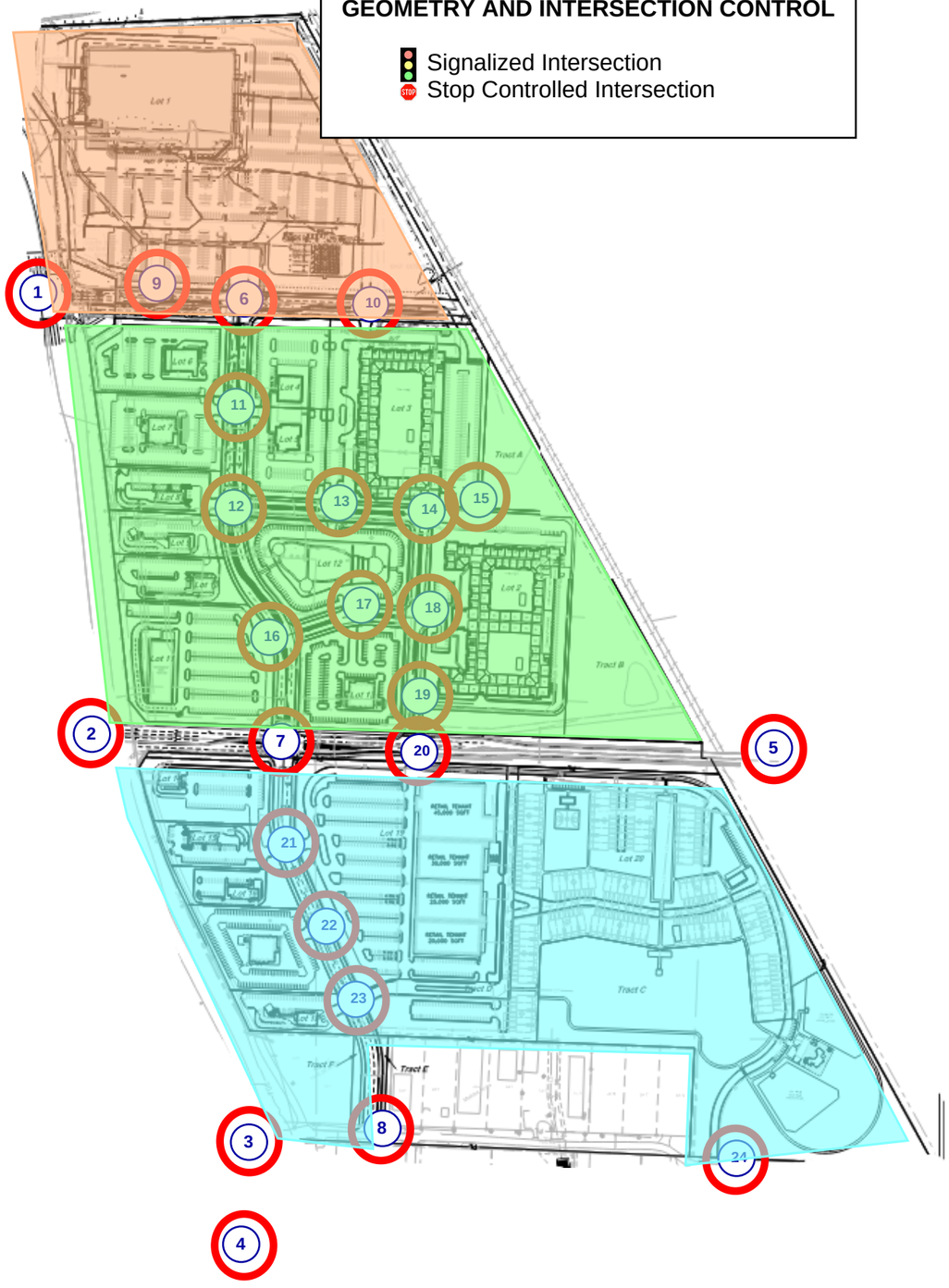


16th Street &
Park Driveway



BASE + FULL DEVELOPMENT GEOMETRY AND INTERSECTION CONTROL

Signalized Intersection
Stop Controlled Intersection

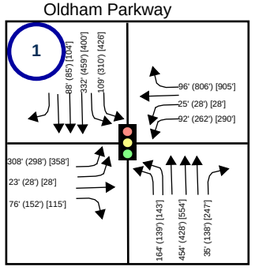


CIVIL ENGINEERING / SURVEYING / UTILITIES

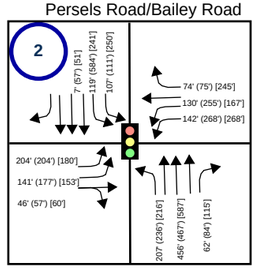
EAST VILLAGE TIS

FIGURE 26

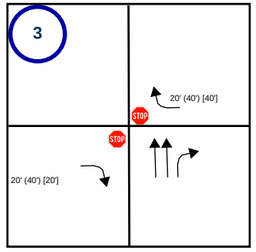
M-291 &
Oldham Parkway



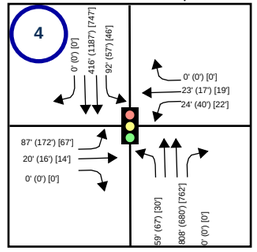
M-291 &
Persels Road/Bailey Road



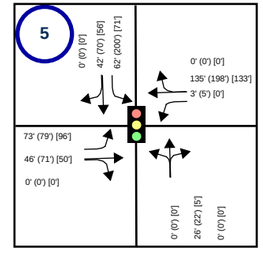
M-291 &
16th Street



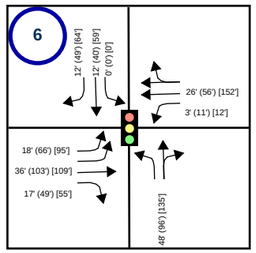
M-291 &
Scherer Rd/ Thompson Dr



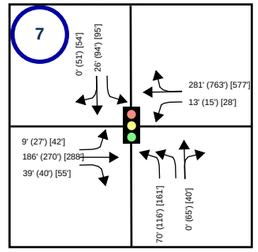
Bailey Road &
Hamblen Road



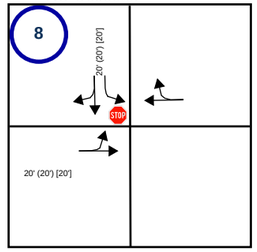
Oldham Parkway &
NS Collector



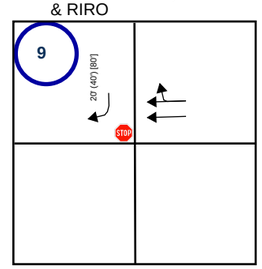
Bailey Road &
NS Collector



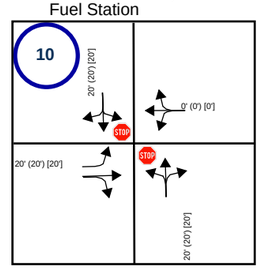
16th Street &
NS Collector



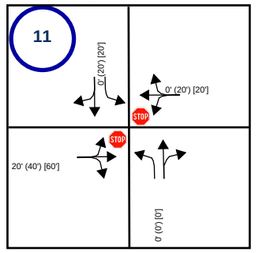
Oldham Parkway
& RIRO



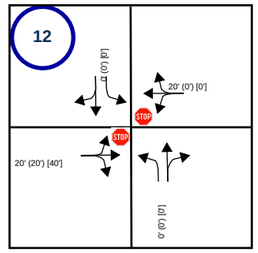
Oldham Parkway &
Fuel Station



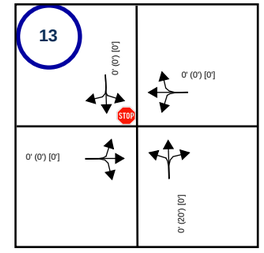
NS Collector &
Drive 1



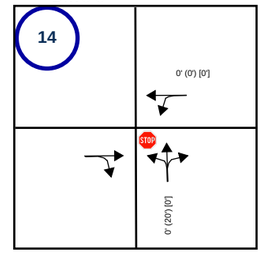
NS Collector &
North EW Drive



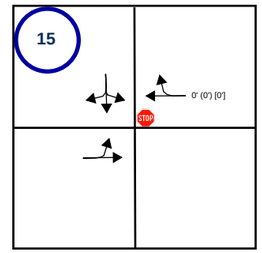
North EW Drive &
Drive 2



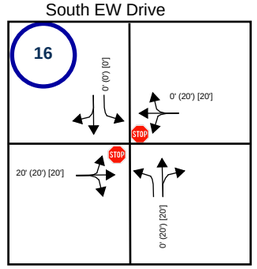
North EW Drive &
Drive 3



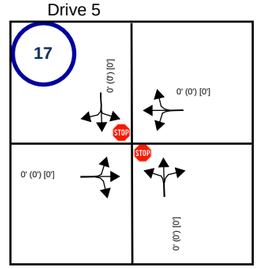
North EW Drive &
Drive 4



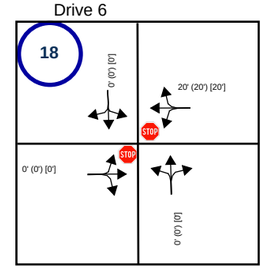
NS Collector &
South EW Drive



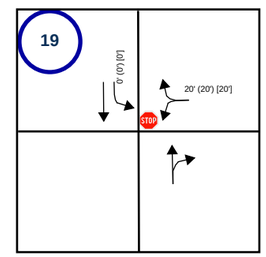
South EW Drive &
Drive 5



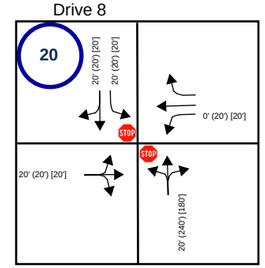
South EW Drive &
Drive 6



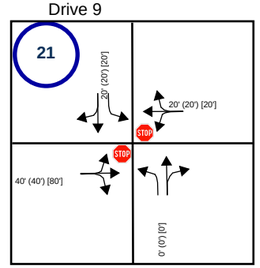
Drive 7



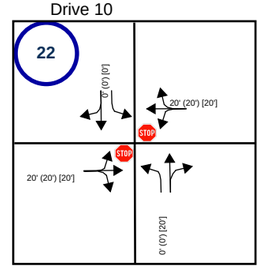
Bailey Road &
Drive 8



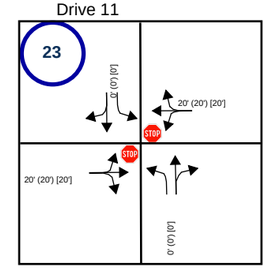
NS Collector &
Drive 9



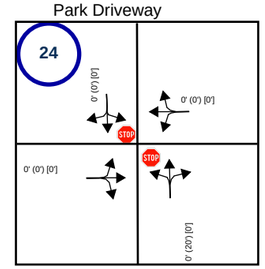
NS Collector &
Drive 10



NS Collector &
Drive 11



16th Street &
Park Driveway



BASE + FULL DEVELOPMENT 95% QUEUE LENGTHS

AM(PM)[SAT] = 95% Queues in feet

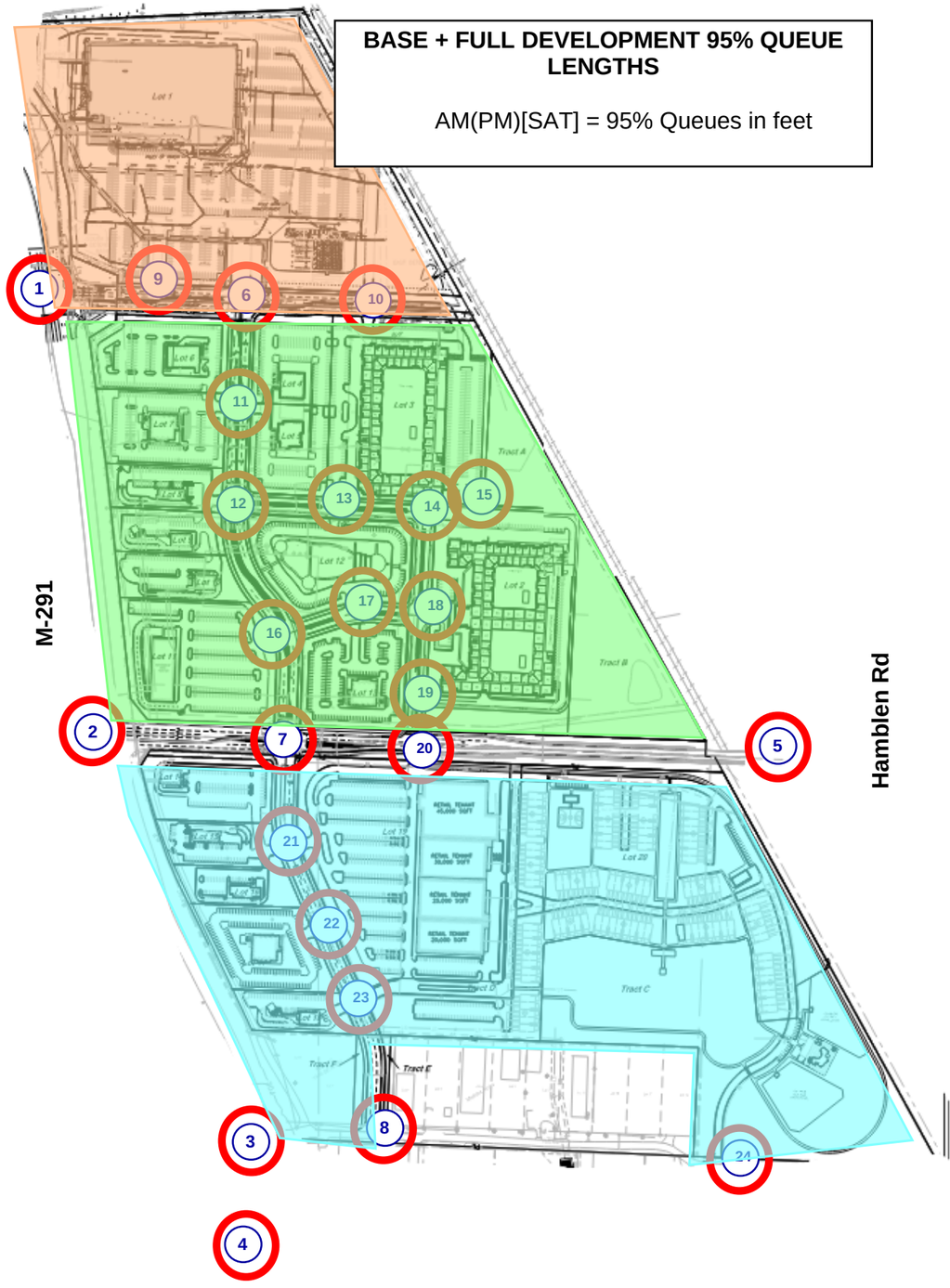


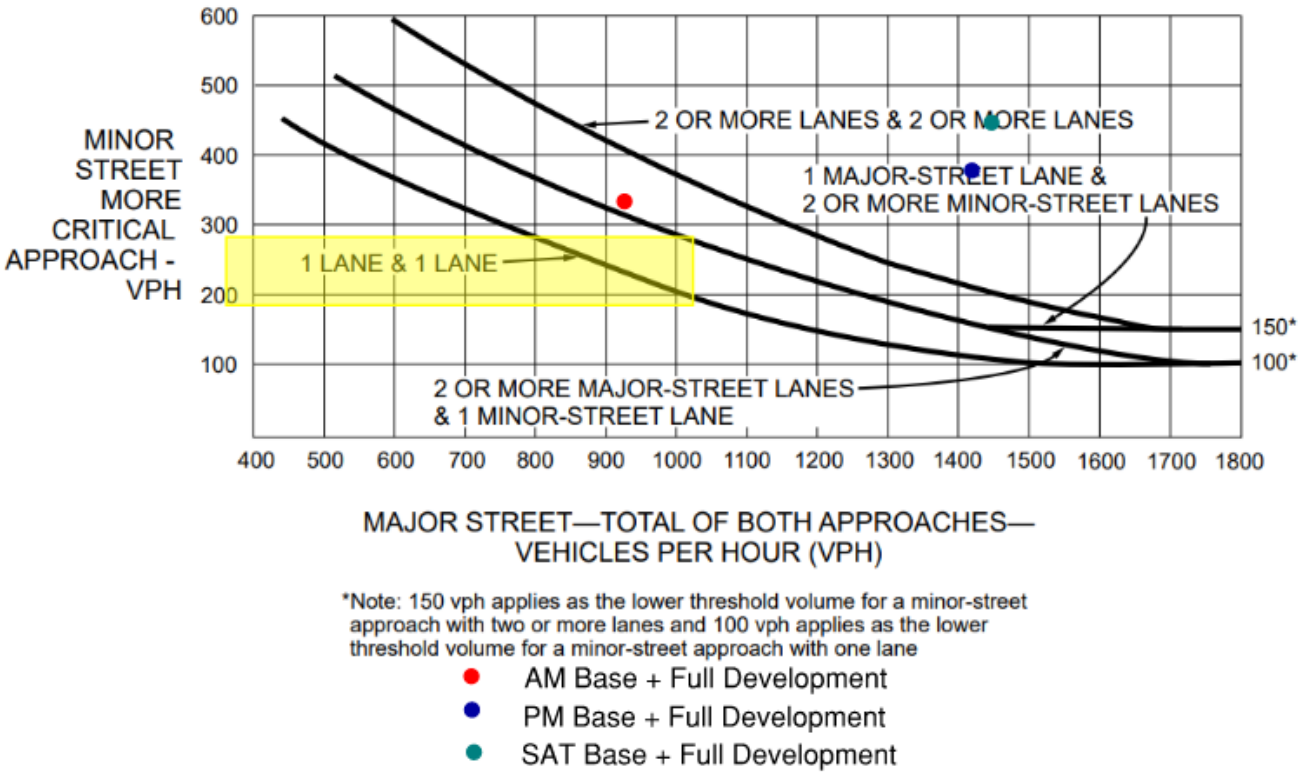
FIGURE 27

CIVIL ENGINEERING / SURVEYING / UTILITIES

OLDHAM VILLAGE EAST TIS

TRAFFIC SIGNAL WARRANT ANALYSIS
NODE #7: BAILEY ROAD AND NS COLLECTOR

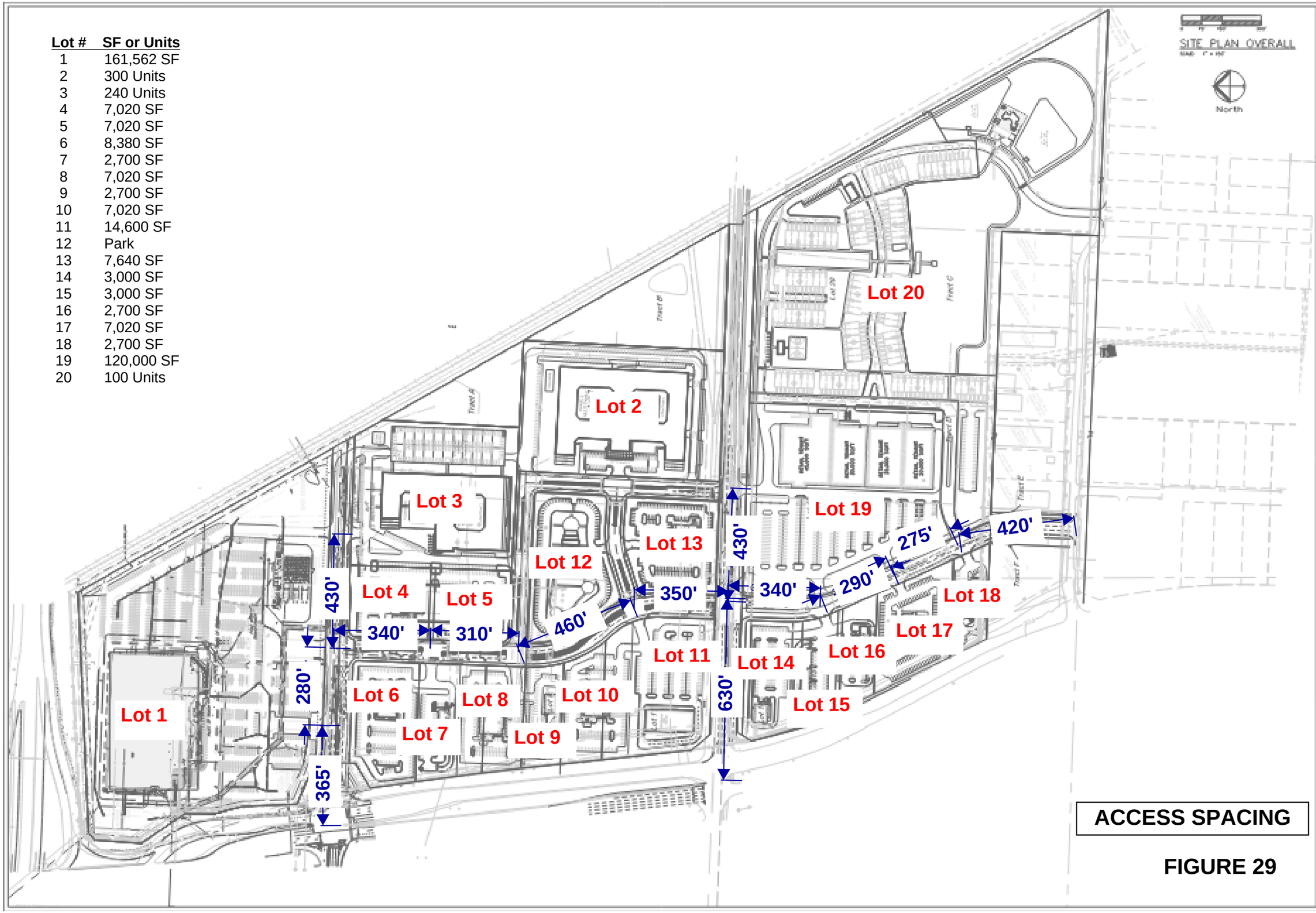
Figure 4C-3. Warrant 3, Peak Hour



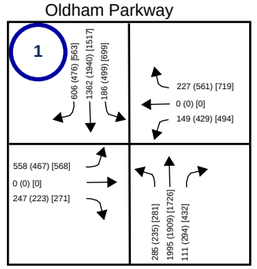
*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane

- AM Base + Full Development
- PM Base + Full Development
- SAT Base + Full Development

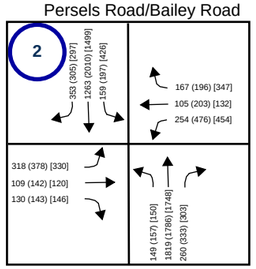
Lot #	SF or Units
1	161,562 SF
2	300 Units
3	240 Units
4	7,020 SF
5	7,020 SF
6	8,380 SF
7	2,700 SF
8	7,020 SF
9	2,700 SF
10	7,020 SF
11	14,600 SF
12	Park
13	7,640 SF
14	3,000 SF
15	3,000 SF
16	2,700 SF
17	7,020 SF
18	2,700 SF
19	120,000 SF
20	100 Units



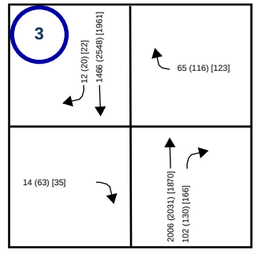
M-291 &
Oldham Parkway



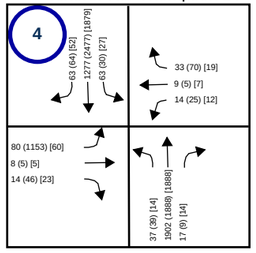
M-291 &
Persels Road/Bailey Road



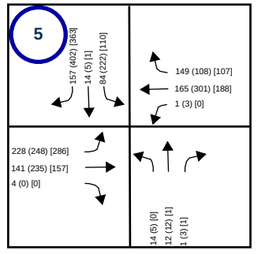
M-291 &
16th Street



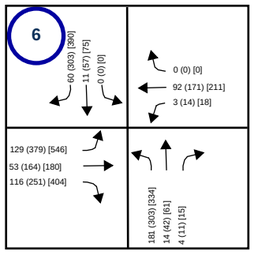
M-291 &
Scherer Rd/ Thompson Dr



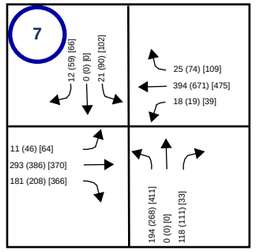
Bailey Road &
Hamblen Road



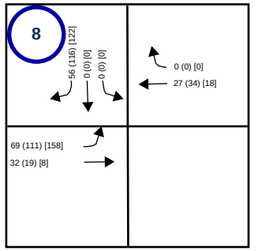
Oldham Parkway &
NS Collector



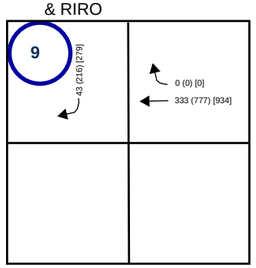
Bailey Road &
NS Collector



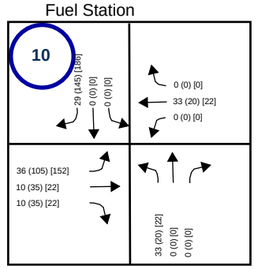
16th Street &
NS Collector



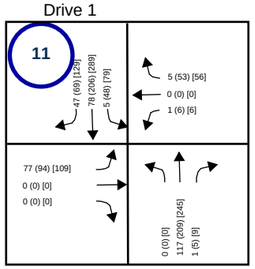
Oldham Parkway
& RIRO



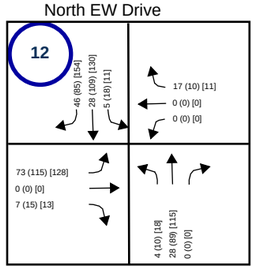
Oldham Parkway &
Fuel Station



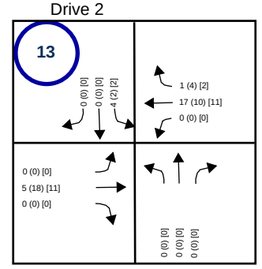
NS Collector &
Drive 1



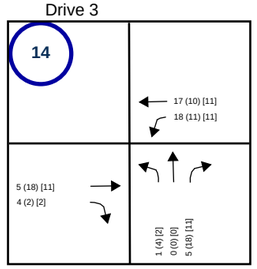
NS Collector &
North EW Drive



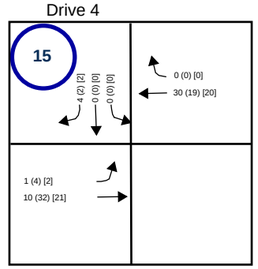
North EW Drive &
Drive 2



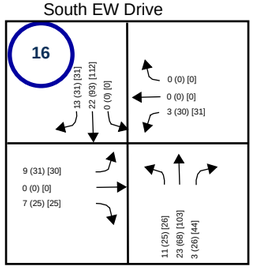
North EW Drive &
Drive 3



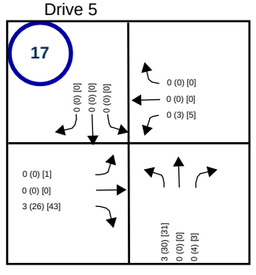
North EW Drive &
Drive 4



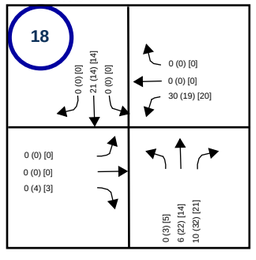
NS Collector &
South EW Drive



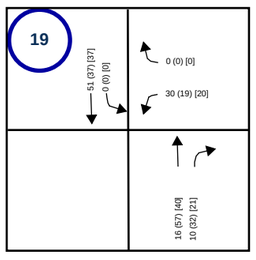
South EW Drive &
Drive 5



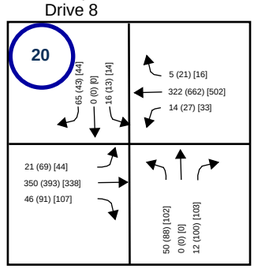
South EW Drive &
Drive 6



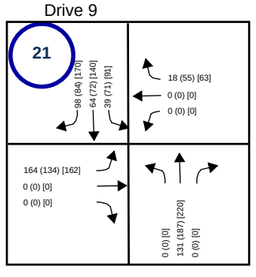
Drive 7



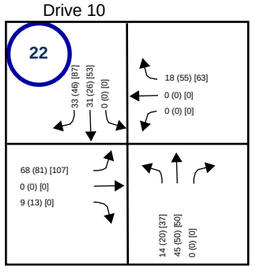
Bailey Road &
Drive 8



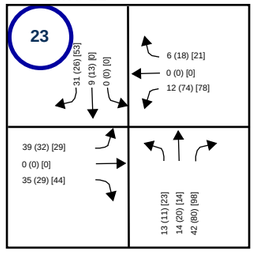
NS Collector &
Drive 9



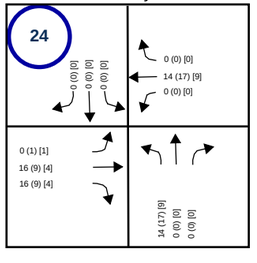
NS Collector &
Drive 10

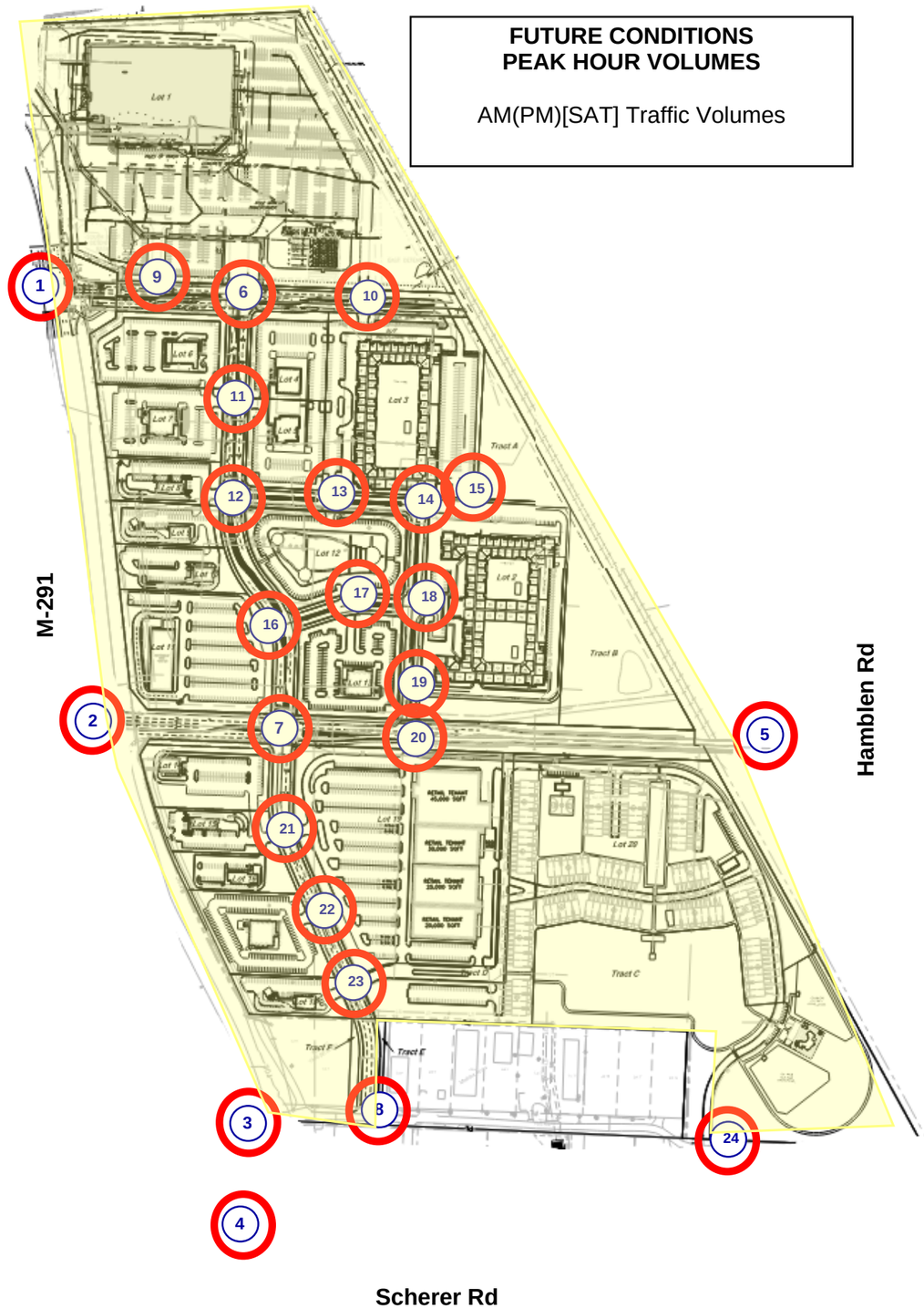


NS Collector &
Drive 11



16th Street &
Park Driveway





FUTURE CONDITIONS
PEAK HOUR VOLUMES

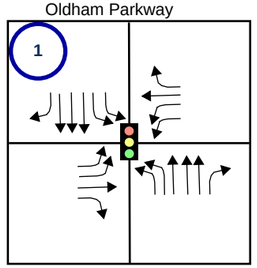
AM(PM)[SAT] Traffic Volumes

CIVIL ENGINEERING / SURVEYING / UTILITIES

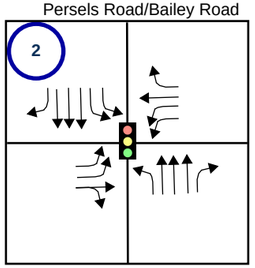
EAST VILLAGE TIS

FIGURE 30

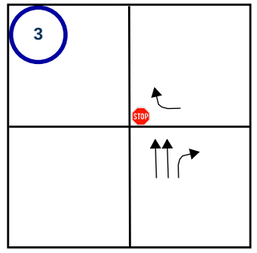
M-291 &
Oldham Parkway



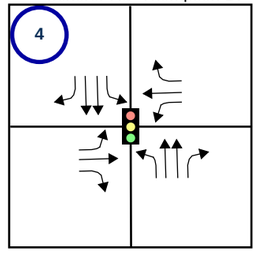
M-291 &
Persels Road/Bailey Road



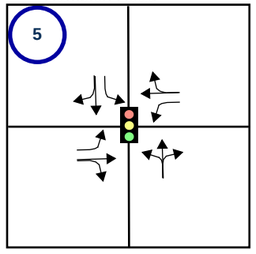
M-291 &
16th Street



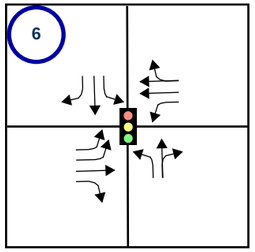
M-291 &
Scherer Rd/ Thompson Dr



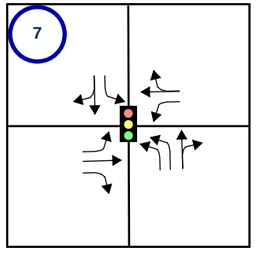
Bailey Road &
Hamblen Road



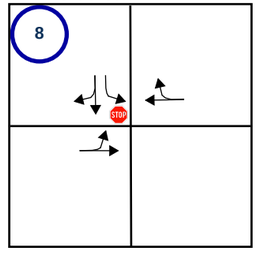
Oldham Parkway &
NS Collector



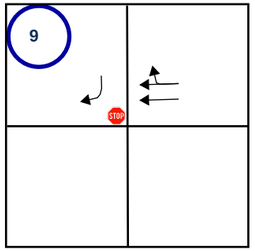
Bailey Road &
NS Collector



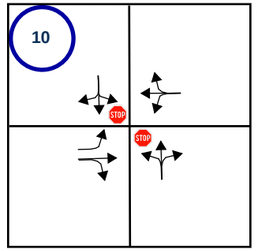
16th Street &
NS Collector



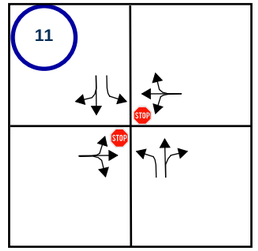
Oldham Parkway
& RIRO



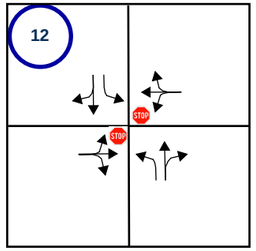
Oldham Parkway &
Fuel Station



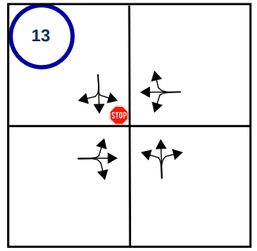
NS Collector &
Drive 1



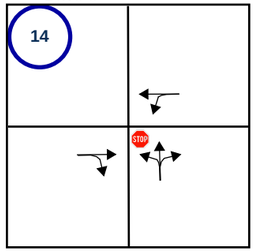
NS Collector &
North EW Drive



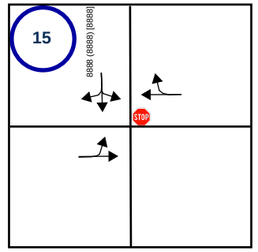
North EW Drive &
Drive 2



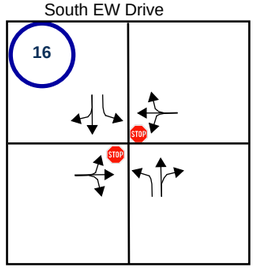
North EW Drive &
Drive 3



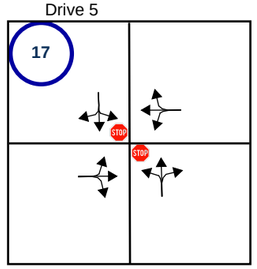
North EW Drive &
Drive 4



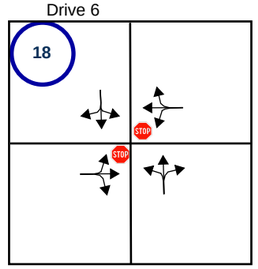
NS Collector &
South EW Drive



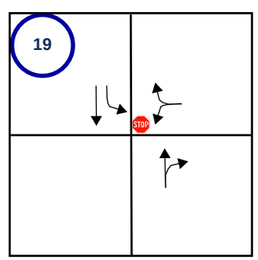
South EW Drive &
Drive 5



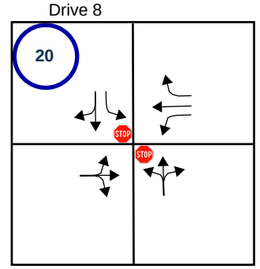
South EW Drive &
Drive 6



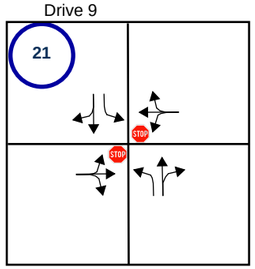
Drive 7



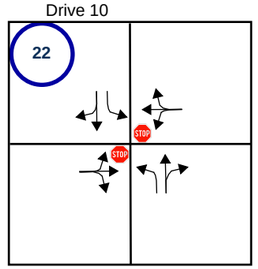
Bailey Road &
Drive 8



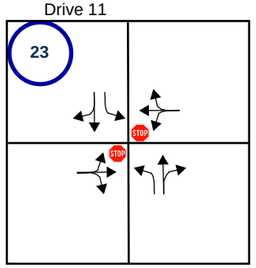
NS Collector &
Drive 9



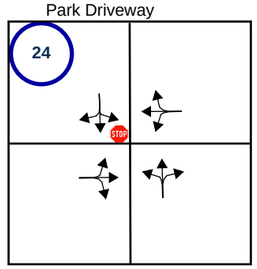
NS Collector &
Drive 10



NS Collector &
Drive 11

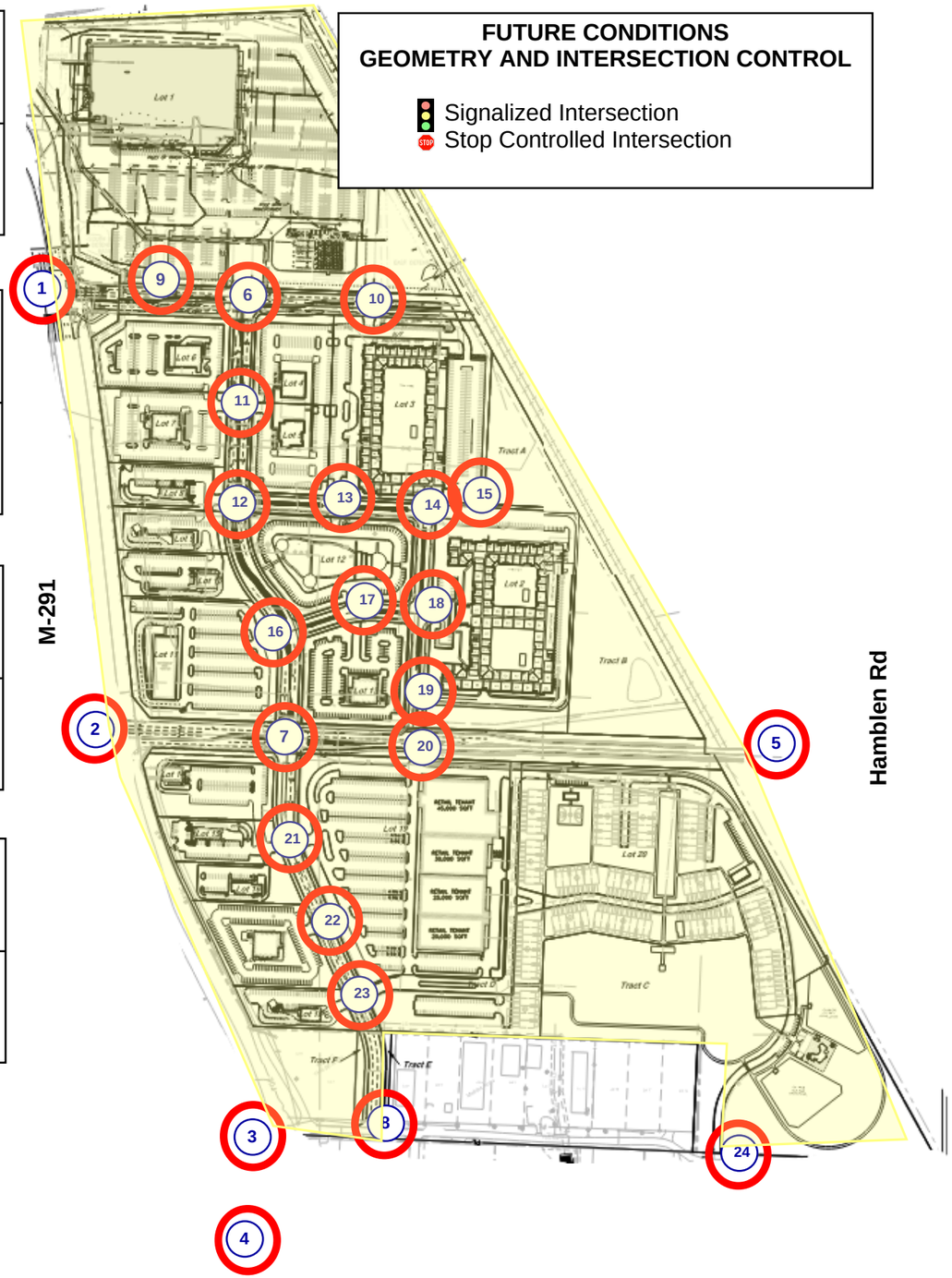


16th Street &
Park Driveway



FUTURE CONDITIONS
GEOMETRY AND INTERSECTION CONTROL

Signalized Intersection
Stop Controlled Intersection

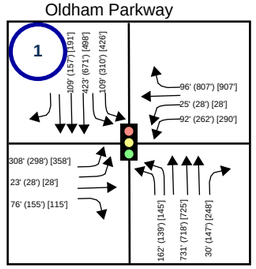


CIVIL ENGINEERING / SURVEYING / UTILITIES

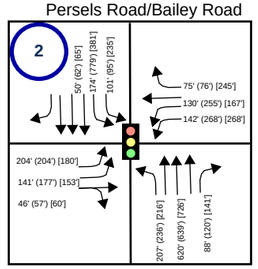
EAST VILLAGE TIS

FIGURE 31

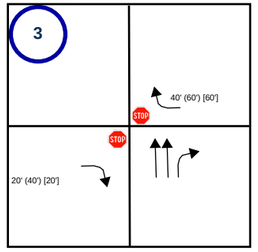
M-291 & Oldham Parkway



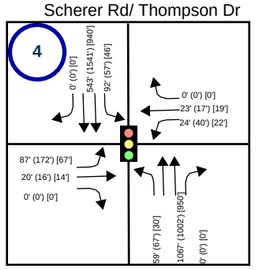
M-291 & Persels Road/Bailey Road



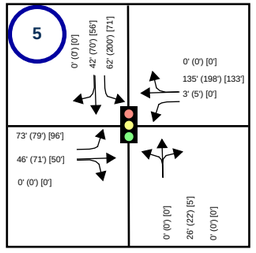
M-291 & 16th Street



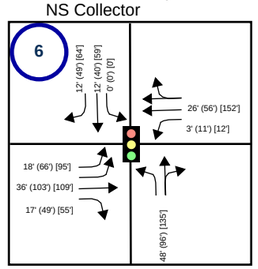
M-291 & Scherer Rd/ Thompson Dr



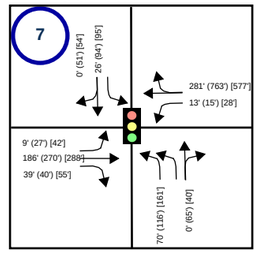
Bailey Road & Hamblen Road



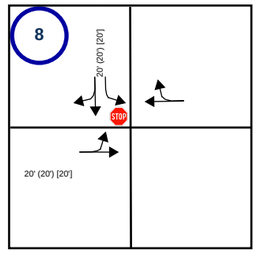
Oldham Parkway & NS Collector



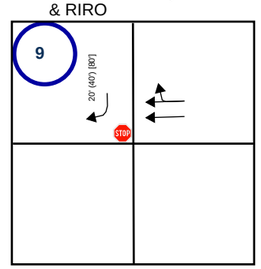
Bailey Road & NS Collector



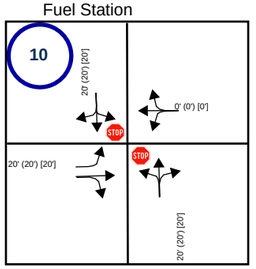
16th Street & NS Collector



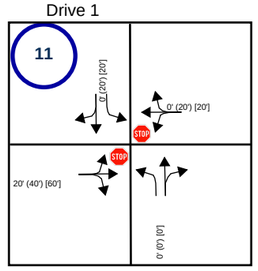
Oldham Parkway & RIRO



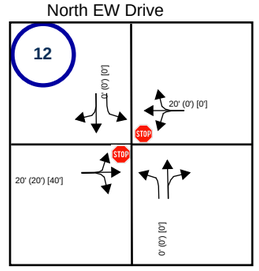
Oldham Parkway & Fuel Station



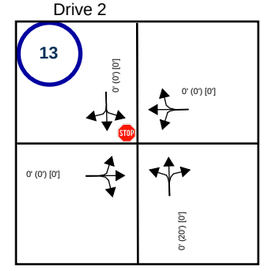
NS Collector & Drive 1



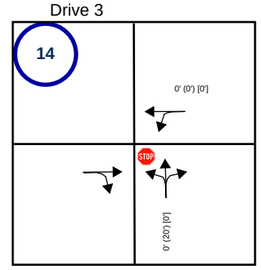
NS Collector & North EW Drive



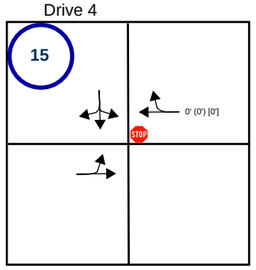
North EW Drive & Drive 2



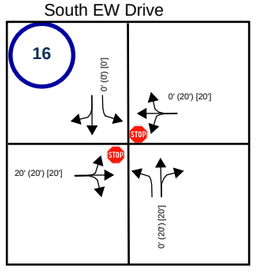
North EW Drive & Drive 3



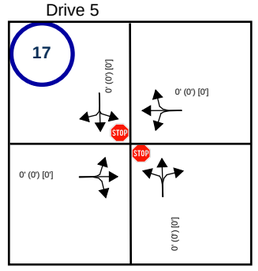
North EW Drive & Drive 4



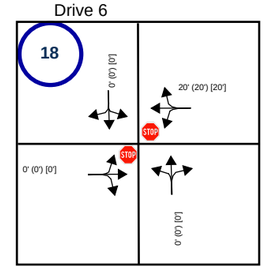
NS Collector & South EW Drive



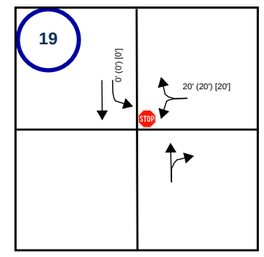
South EW Drive & Drive 5



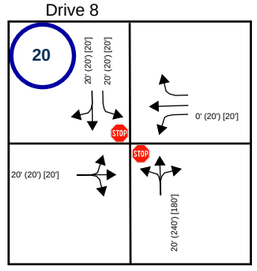
South EW Drive & Drive 6



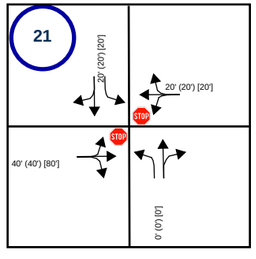
Drive 7



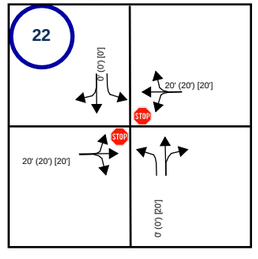
Bailey Road & Drive 8



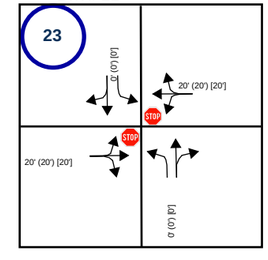
NS Collector & Drive 9



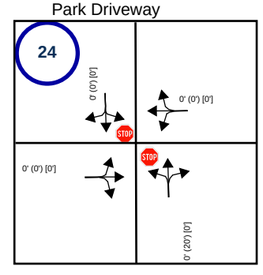
NS Collector & Drive 10

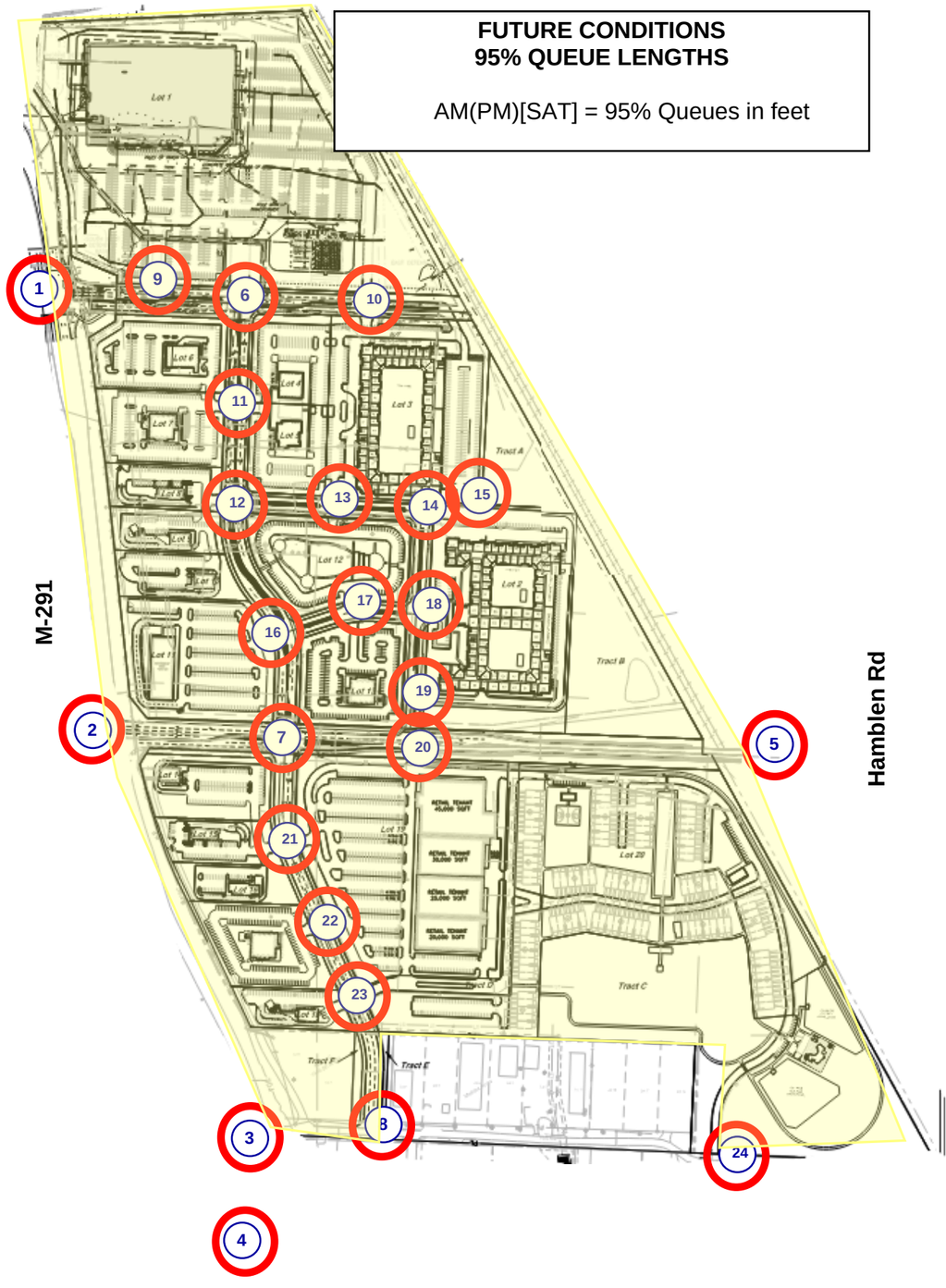


NS Collector & Drive 11



16th Street & Park Driveway





CIVIL ENGINEERING / SURVEYING / UTILITIES

EAST VILLAGE TIS

FIGURE 32

APPENDIX B
TRAFFIC COUNTS

TRAFFIC COUNTS
Route 291 &
Oldham Parkway

Route 291 & Oldham Parkway - Tuesday AM - TMC

Thu Jul 10, 2025
Full Length (7 AM-9 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1317908, Location: 38.900052, -94.375988

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	SR 291					Dead End					SR 291					Oldham Parkway					
Direction	Southbound					Westbound					Northbound					Eastbound					
Time	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	Int
2025-07-10 7:00AM	9	208	0	0	**217**	0	0	0	0	**0**	0	338	0	0	**338**	0	0	0	0	**0**	**555**
7:15AM	11	219	0	0	**230**	0	0	0	0	**0**	0	376	2	0	**378**	0	0	3	0	**3**	**611**
7:30AM	7	234	0	0	**241**	0	0	0	0	**0**	0	358	1	0	**359**	2	0	2	0	**4**	**604**
7:45AM	22	289	0	0	**311**	0	0	0	0	**0**	0	372	0	0	**372**	0	0	5	0	**5**	**688**
Hourly Total	49	950	0	0	**999**	0	0	0	0	**0**	0	1444	3	0	**1447**	2	0	10	0	**12**	**2458**
8:00AM	24	262	0	0	**286**	0	0	0	0	**0**	0	374	0	0	**374**	1	0	6	0	**7**	**667**
8:15AM	25	265	0	0	**290**	0	0	0	0	**0**	0	384	2	0	**386**	2	0	8	0	**10**	**686**
8:30AM	24	269	0	0	**293**	0	0	0	0	**0**	0	413	0	0	**413**	1	0	4	0	**5**	**711**
8:45AM	34	275	0	0	**309**	0	0	0	0	**0**	0	379	0	0	**379**	1	0	4	0	**5**	**693**
Hourly Total	107	1071	0	0	**1178**	0	0	0	0	**0**	0	1550	2	0	**1552**	5	0	22	0	**27**	**2757**
Total	156	2021	0	0	**2177**	0	0	0	0	**0**	0	2994	5	0	**2999**	7	0	32	0	**39**	**5215**
% Approach	7.2%	92.8%	0%	0%	**-**	0%	0%	0%	0%	**-**	0%	99.8%	0.2%	0%	**-**	17.9%	0%	82.1%	0%	**-**	-
% Total	3.0%	38.8%	0%	0%	**41.7%**	0%	0%	0%	0%	**0%**	0%	57.4%	0.1%	0%	**57.5%**	0.1%	0%	0.6%	0%	**0.7%**	-
Lights	149	1859	0	0	**2008**	0	0	0	0	**0**	0	2834	0	0	**2834**	1	0	28	0	**29**	4871
% Lights	95.5%	92.0%	0%	0%	**92.2%**	0%	0%	0%	0%	**-**	0%	94.7%	0%	0%	**94.5%**	14.3%	0%	87.5%	0%	**74.4%**	93.4%
Articulated Trucks	4	65	0	0	**69**	0	0	0	0	**0**	0	54	0	0	**54**	1	0	2	0	**3**	126
% Articulated Trucks	2.6%	3.2%	0%	0%	**3.2%**	0%	0%	0%	0%	**-**	0%	1.8%	0%	0%	**1.8%**	14.3%	0%	6.3%	0%	**7.7%**	2.4%
Buses and Single-Unit Trucks	3	97	0	0	**100**	0	0	0	0	**0**	0	106	5	0	**111**	5	0	2	0	**7**	218
% Buses and Single-Unit Trucks	1.9%	4.8%	0%	0%	**4.6%**	0%	0%	0%	0%	**-**	0%	3.5%	100%	0%	**3.7%**	71.4%	0%	6.3%	0%	**17.9%**	4.2%

*L: Left, R: Right, T: Thru, U: U-Turn

Route 291 & Oldham Parkway - Tuesday AM - TMC

Thu Jul 10, 2025
AM Peak (8 AM - 9 AM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1317908, Location: 38.900052, -94.375988

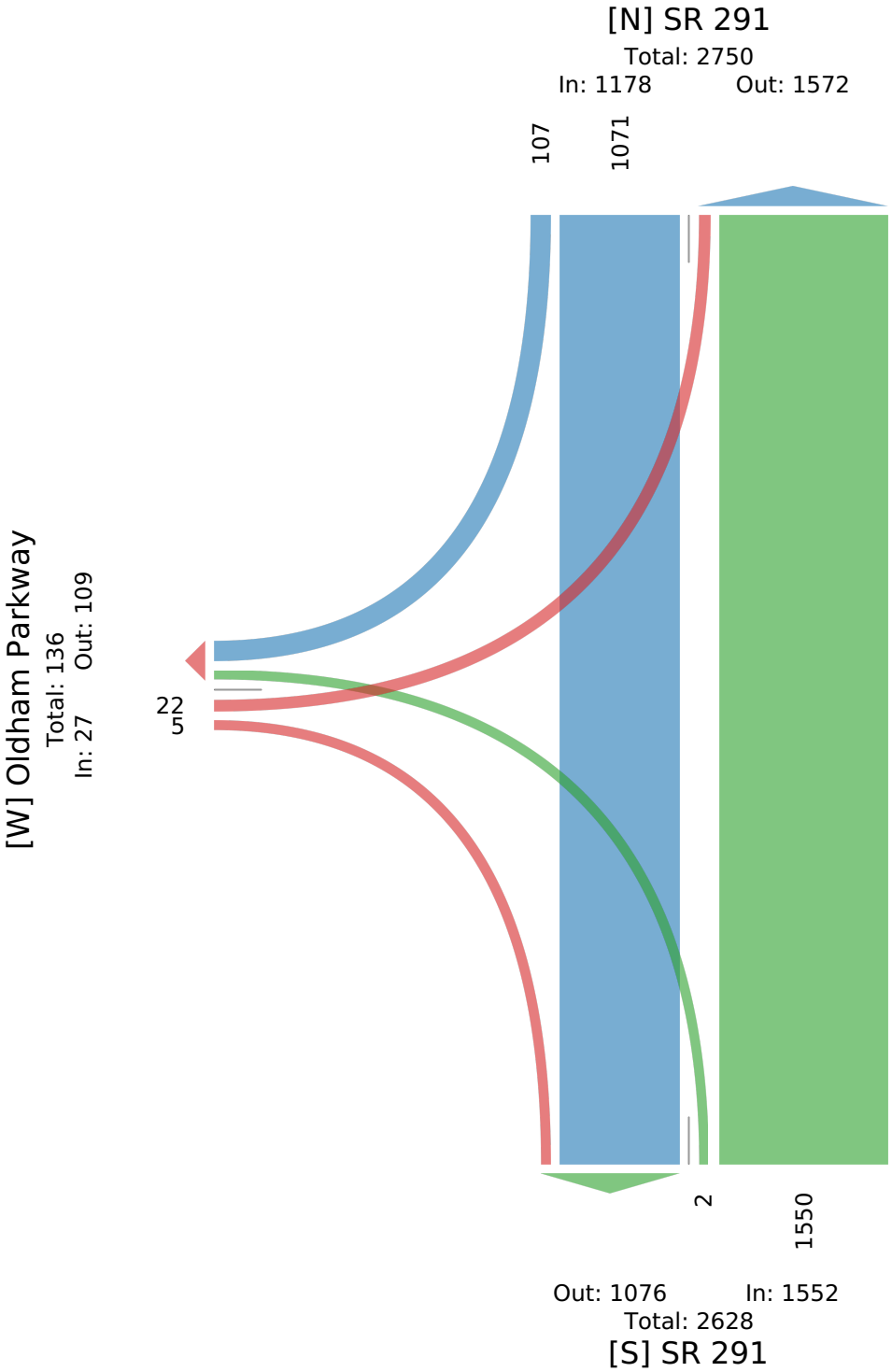
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	SR 291					Dead End					SR 291					Oldham Parkway					
Direction	Southbound					Westbound					Northbound					Eastbound					
Time	R	T	L	U	**App**	R	T	L	U	**App**	R	T	L	U	**App**	R	T	L	U	**App**	**Int**
2025-07-10 8:00AM	24	262	0	0	**286**	0	0	0	0	**0**	0	374	0	0	**374**	1	0	6	0	**7**	**667**
8:15AM	25	265	0	0	**290**	0	0	0	0	**0**	0	384	2	0	**386**	2	0	8	0	**10**	**686**
8:30AM	24	269	0	0	**293**	0	0	0	0	**0**	0	413	0	0	**413**	1	0	4	0	**5**	**711**
8:45AM	34	275	0	0	**309**	0	0	0	0	**0**	0	379	0	0	**379**	1	0	4	0	**5**	**693**
Total	107	1071	0	0	**1178**	0	0	0	0	**0**	0	1550	2	0	**1552**	5	0	22	0	**27**	**2757**
% Approach	9.1%	90.9%	0%	0%	**-**	0%	0%	0%	0%	**-**	0%	99.9%	0.1%	0%	**-**	18.5%	0%	81.5%	0%	**-**	-
% Total	3.9%	38.8%	0%	0%	**42.7%**	0%	0%	0%	0%	**0%**	0%	56.2%	0.1%	0%	**56.3%**	0.2%	0%	0.8%	0%	**1.0%**	-
PHF	0.787	0.974	-	-	**0.953**	-	-	-	-	**-**	-	0.938	0.250	-	**0.939**	0.625	-	0.688	-	**0.675**	0.969
Lights	102	980	0	0	**1082**	0	0	0	0	**0**	0	1476	0	0	**1476**	1	0	18	0	**19**	2577
% Lights	95.3%	91.5%	0%	0%	**91.9%**	0%	0%	0%	0%	**-**	0%	95.2%	0%	0%	**95.1%**	20.0%	0%	81.8%	0%	**70.4%**	93.5%
Articulated Trucks	2	33	0	0	**35**	0	0	0	0	**0**	0	29	0	0	**29**	1	0	2	0	**3**	67
% Articulated Trucks	1.9%	3.1%	0%	0%	**3.0%**	0%	0%	0%	0%	**-**	0%	1.9%	0%	0%	**1.9%**	20.0%	0%	9.1%	0%	**11.1%**	2.4%
Buses and Single-Unit Trucks	3	58	0	0	**61**	0	0	0	0	**0**	0	45	2	0	**47**	3	0	2	0	**5**	113
% Buses and Single-Unit Trucks	2.8%	5.4%	0%	0%	**5.2%**	0%	0%	0%	0%	**-**	0%	2.9%	100%	0%	**3.0%**	60.0%	0%	9.1%	0%	**18.5%**	4.1%

*L: Left, R: Right, T: Thru, U: U-Turn

Route 291 & Oldham Parkway - Tuesday AM - TMC
Thu Jul 10, 2025
AM Peak (8 AM - 9 AM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1317908, Location: 38.900052, -94.375988

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



Route 291 & Oldham Parkway - PM - TMC

Tue Jul 22, 2025
Full Length (4 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1320841, Location: 38.900052, -94.375988

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	SR 291					Dead End					SR 291					Oldham Parkway					
Direction	Southbound					Westbound					Northbound					Eastbound					
Time	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	Int
2025-07-22 4:00PM	8	447	0	0	**455**	0	0	0	0	**0**	0	407	2	0	**409**	0	0	4	0	**4**	**868**
4:15PM	14	433	0	0	**447**	0	0	0	0	**0**	0	366	2	0	**368**	0	0	8	0	**8**	**823**
4:30PM	17	436	0	0	**453**	0	0	0	0	**0**	0	424	0	0	**424**	0	0	7	0	**7**	**884**
4:45PM	12	404	0	0	**416**	0	0	0	0	**0**	0	347	0	0	**347**	0	0	3	0	**3**	**766**
Hourly Total	51	1720	0	0	**1771**	0	0	0	0	**0**	0	1544	4	0	**1548**	0	0	22	0	**22**	**3341**
5:00PM	7	445	0	1	**453**	0	0	0	0	**0**	0	425	0	0	**425**	1	0	13	0	**14**	**892**
5:15PM	13	374	0	0	**387**	0	0	0	0	**0**	0	363	0	0	**363**	0	0	3	0	**3**	**753**
5:30PM	11	368	0	1	**380**	0	0	0	0	**0**	0	331	0	0	**331**	0	0	2	0	**2**	**713**
5:45PM	20	353	0	0	**373**	0	0	0	0	**0**	0	286	0	1	**287**	0	0	6	0	**6**	**666**
Hourly Total	51	1540	0	2	**1593**	0	0	0	0	**0**	0	1405	0	1	**1406**	1	0	24	0	**25**	**3024**
Total	102	3260	0	2	**3364**	0	0	0	0	**0**	0	2949	4	1	**2954**	1	0	46	0	**47**	**6365**
% Approach	3.0%	96.9%	0%	0.1%	**-**	0%	0%	0%	0%	**-**	0%	99.8%	0.1%	0%	**-**	2.1%	0%	97.9%	0%	**-**	-
% Total	1.6%	51.2%	0%	0%	**52.9%**	0%	0%	0%	0%	**0%**	0%	46.3%	0.1%	0%	**46.4%**	0%	0%	0.7%	0%	**0.7%**	-
Lights	100	3177	0	2	**3279**	0	0	0	0	**0**	0	2896	4	1	**2901**	1	0	45	0	**46**	6226
% Lights	98.0%	97.5%	0%	100%	**97.5%**	0%	0%	0%	0%	**-**	0%	98.2%	100%	100%	**98.2%**	100%	0%	97.8%	0%	**97.9%**	97.8%
Articulated Trucks	1	34	0	0	**35**	0	0	0	0	**0**	0	22	0	0	**22**	0	0	0	0	**0**	57
% Articulated Trucks	1.0%	1.0%	0%	0%	**1.0%**	0%	0%	0%	0%	**-**	0%	0.7%	0%	0%	**0.7%**	0%	0%	0%	0%	**0%**	0.9%
Buses and Single-Unit Trucks	1	49	0	0	**50**	0	0	0	0	**0**	0	31	0	0	**31**	0	0	1	0	**1**	82
% Buses and Single-Unit Trucks	1.0%	1.5%	0%	0%	**1.5%**	0%	0%	0%	0%	**-**	0%	1.1%	0%	0%	**1.0%**	0%	0%	2.2%	0%	**2.1%**	1.3%

*L: Left, R: Right, T: Thru, U: U-Turn

Route 291 & Oldham Parkway - PM - TMC

Tue Jul 22, 2025
PM Peak (4:15 PM - 5:15 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1320841, Location: 38.900052, -94.375988

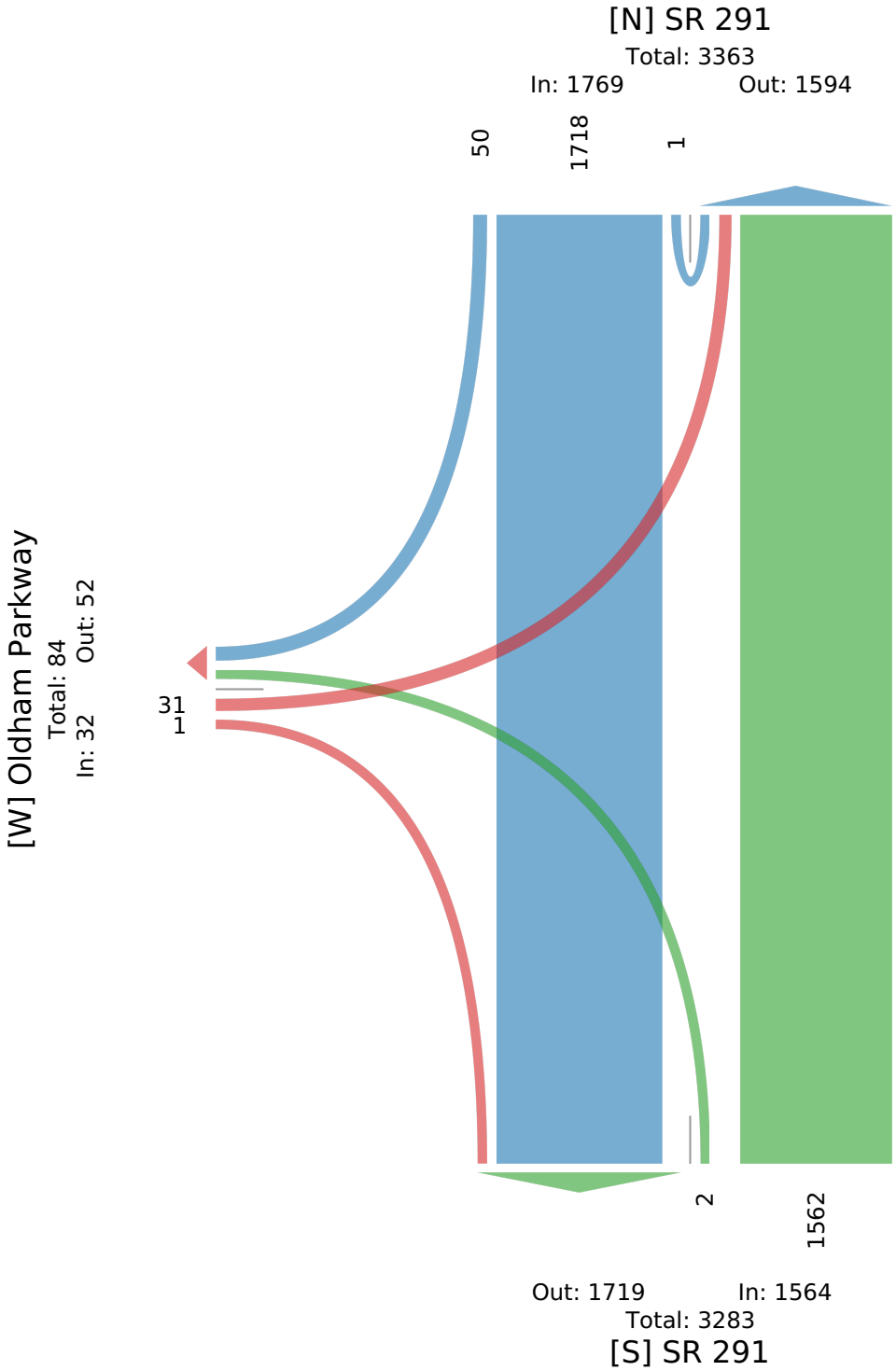
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	SR 291					Dead End					SR 291					Oldham Parkway					
Direction	Southbound					Westbound					Northbound					Eastbound					
Time	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	Int
2025-07-22 4:15PM	14	433	0	0	**447**	0	0	0	0	**0**	0	366	2	0	**368**	0	0	8	0	**8**	**823**
4:30PM	17	436	0	0	**453**	0	0	0	0	**0**	0	424	0	0	**424**	0	0	7	0	**7**	**884**
4:45PM	12	404	0	0	**416**	0	0	0	0	**0**	0	347	0	0	**347**	0	0	3	0	**3**	**766**
5:00PM	7	445	0	1	**453**	0	0	0	0	**0**	0	425	0	0	**425**	1	0	13	0	**14**	**892**
Total	50	1718	0	1	**1769**	0	0	0	0	**0**	0	1562	2	0	**1564**	1	0	31	0	**32**	**3365**
% Approach	2.8%	97.1%	0%	0.1%	**-**	0%	0%	0%	0%	**-**	0%	99.9%	0.1%	0%	**-**	3.1%	0%	96.9%	0%	**-**	-
% Total	1.5%	51.1%	0%	0%	**52.6%**	0%	0%	0%	0%	**0%**	0%	46.4%	0.1%	0%	**46.5%**	0%	0%	0.9%	0%	**1.0%**	-
PHF	0.735	0.965	-	0.250	**0.976**	-	-	-	-	**-**	-	0.919	0.250	-	**0.920**	0.250	-	0.596	-	**0.571**	0.943
Lights	48	1681	0	1	**1730**	0	0	0	0	**0**	0	1538	2	0	**1540**	1	0	31	0	**32**	3302
% Lights	96.0%	97.8%	0%	100%	**97.8%**	0%	0%	0%	0%	**-**	0%	98.5%	100%	0%	**98.5%**	100%	0%	100%	0%	**100%**	98.1%
Articulated Trucks	1	14	0	0	**15**	0	0	0	0	**0**	0	7	0	0	**7**	0	0	0	0	**0**	22
% Articulated Trucks	2.0%	0.8%	0%	0%	**0.8%**	0%	0%	0%	0%	**-**	0%	0.4%	0%	0%	**0.4%**	0%	0%	0%	0%	**0%**	0.7%
Buses and Single-Unit Trucks	1	23	0	0	**24**	0	0	0	0	**0**	0	17	0	0	**17**	0	0	0	0	**0**	41
% Buses and Single-Unit Trucks	2.0%	1.3%	0%	0%	**1.4%**	0%	0%	0%	0%	**-**	0%	1.1%	0%	0%	**1.1%**	0%	0%	0%	0%	**0%**	1.2%

*L: Left, R: Right, T: Thru, U: U-Turn

Route 291 & Oldham Parkway - PM - TMC
Tue Jul 22, 2025
PM Peak (4:15 PM - 5:15 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1320841, Location: 38.900052, -94.375988

GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



Route 291 & Oldham Parkway - Saturday - TMC

Sat Jul 19, 2025
Full Length (11:30 AM-1:30 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1320843, Location: 38.900052, -94.375988

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	SR 291					Dead End					SR 291					Oldham Parkway					
Direction	Southbound					Westbound					Northbound					Eastbound					
Time	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	Int
2025-07-19 11:30AM	3	264	0	0	**267**	0	0	0	0	**0**	0	290	2	0	**292**	1	0	5	0	**6**	**565**
11:45AM	7	205	0	0	**212**	0	0	0	0	**0**	0	299	0	0	**299**	1	0	2	0	**3**	**514**
Hourly Total	10	469	0	0	**479**	0	0	0	0	**0**	0	589	2	0	**591**	2	0	7	0	**9**	**1079**
12:00PM	9	253	0	0	**262**	0	0	0	0	**0**	0	301	0	0	**301**	0	0	1	0	**1**	**564**
12:15PM	3	248	0	1	**252**	0	0	0	0	**0**	0	272	1	0	**273**	0	0	2	0	**2**	**527**
12:30PM	7	245	0	1	**253**	0	0	0	0	**0**	0	290	0	0	**290**	0	0	4	0	**4**	**547**
12:45PM	8	282	0	0	**290**	0	0	0	0	**0**	0	304	0	0	**304**	0	0	3	0	**3**	**597**
Hourly Total	27	1028	0	2	**1057**	0	0	0	0	**0**	0	1167	1	0	**1168**	0	0	10	0	**10**	**2235**
1:00PM	7	273	0	1	**281**	0	0	0	0	**0**	0	254	0	0	**254**	0	0	0	0	**0**	**535**
1:15PM	3	240	0	0	**243**	0	0	0	0	**0**	0	279	0	0	**279**	0	0	1	0	**1**	**523**
Hourly Total	10	513	0	1	**524**	0	0	0	0	**0**	0	533	0	0	**533**	0	0	1	0	**1**	**1058**
Total	47	2010	0	3	**2060**	0	0	0	0	**0**	0	2289	3	0	**2292**	2	0	18	0	**20**	**4372**
% Approach	2.3%	97.6%	0%	0.1%	**-**	0%	0%	0%	0%	**-**	0%	99.9%	0.1%	0%	**-**	10.0%	0%	90.0%	0%	**-**	-
% Total	1.1%	46.0%	0%	0.1%	**47.1%**	0%	0%	0%	0%	**0%**	0%	52.4%	0.1%	0%	**52.4%**	0%	0%	0.4%	0%	**0.5%**	-
Lights	47	1970	0	3	**2020**	0	0	0	0	**0**	0	2259	3	0	**2262**	2	0	18	0	**20**	4302
% Lights	100%	98.0%	0%	100%	**98.1%**	0%	0%	0%	0%	**-**	0%	98.7%	100%	0%	**98.7%**	100%	0%	100%	0%	**100%**	98.4%
Articulated Trucks	0	17	0	0	**17**	0	0	0	0	**0**	0	14	0	0	**14**	0	0	0	0	**0**	31
% Articulated Trucks	0%	0.8%	0%	0%	**0.8%**	0%	0%	0%	0%	**-**	0%	0.6%	0%	0%	**0.6%**	0%	0%	0%	0%	**0%**	0.7%
Buses and Single-Unit Trucks	0	23	0	0	**23**	0	0	0	0	**0**	0	16	0	0	**16**	0	0	0	0	**0**	39
% Buses and Single-Unit Trucks	0%	1.1%	0%	0%	**1.1%**	0%	0%	0%	0%	**-**	0%	0.7%	0%	0%	**0.7%**	0%	0%	0%	0%	**0%**	0.9%

*L: Left, R: Right, T: Thru, U: U-Turn

Route 291 & Oldham Parkway - Saturday - TMC

Sat Jul 19, 2025
Midday Peak (WKND) (12 PM - 1 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1320843, Location: 38.900052, -94.375988

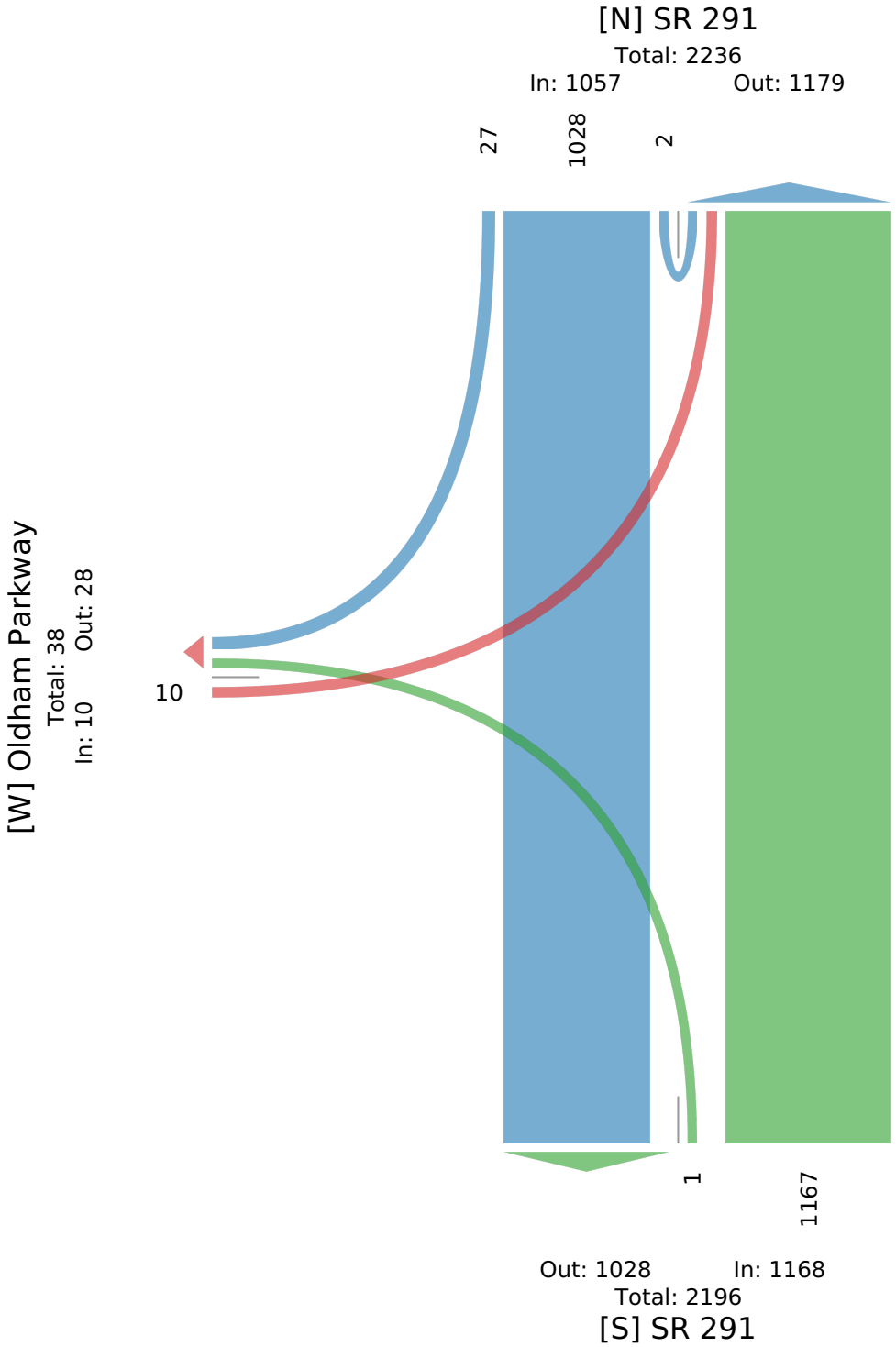
GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	SR 291					Dead End					SR 291					Oldham Parkway					
Direction	Southbound					Westbound					Northbound					Eastbound					
Time	R	T	L	U	**App**	R	T	L	U	**App**	R	T	L	U	**App**	R	T	L	U	**App**	**Int**
2025-07-19 12:00PM	9	253	0	0	**262**	0	0	0	0	**0**	0	301	0	0	**301**	0	0	1	0	**1**	**564**
12:15PM	3	248	0	1	**252**	0	0	0	0	**0**	0	272	1	0	**273**	0	0	2	0	**2**	**527**
12:30PM	7	245	0	1	**253**	0	0	0	0	**0**	0	290	0	0	**290**	0	0	4	0	**4**	**547**
12:45PM	8	282	0	0	**290**	0	0	0	0	**0**	0	304	0	0	**304**	0	0	3	0	**3**	**597**
Total	27	1028	0	2	**1057**	0	0	0	0	**0**	0	1167	1	0	**1168**	0	0	10	0	**10**	**2235**
% Approach	2.6%	97.3%	0%	0.2%	**-**	0%	0%	0%	0%	**-**	0%	99.9%	0.1%	0%	**-**	0%	0%	100%	0%	**-**	**-**
% Total	1.2%	46.0%	0%	0.1%	**47.3%**	0%	0%	0%	0%	**0%**	0%	52.2%	0%	0%	**52.3%**	0%	0%	0.4%	0%	**0.4%**	**-**
PHF	0.750	0.911	-	0.500	**0.911**	-	-	-	-	**-**	-	0.960	0.250	-	**0.961**	-	-	0.625	-	**0.625**	0.936
Lights	27	1008	0	2	**1037**	0	0	0	0	**0**	0	1151	1	0	**1152**	0	0	10	0	**10**	2199
% Lights	100%	98.1%	0%	100%	**98.1%**	0%	0%	0%	0%	**-**	0%	98.6%	100%	0%	**98.6%**	0%	0%	100%	0%	**100%**	98.4%
Articulated Trucks	0	10	0	0	**10**	0	0	0	0	**0**	0	7	0	0	**7**	0	0	0	0	**0**	17
% Articulated Trucks	0%	1.0%	0%	0%	**0.9%**	0%	0%	0%	0%	**-**	0%	0.6%	0%	0%	**0.6%**	0%	0%	0%	0%	**0%**	0.8%
Buses and Single-Unit Trucks	0	10	0	0	**10**	0	0	0	0	**0**	0	9	0	0	**9**	0	0	0	0	**0**	19
% Buses and Single-Unit Trucks	0%	1.0%	0%	0%	**0.9%**	0%	0%	0%	0%	**-**	0%	0.8%	0%	0%	**0.8%**	0%	0%	0%	0%	**0%**	0.9%

*L: Left, R: Right, T: Thru, U: U-Turn

Route 291 & Oldham Parkway - Saturday - TMC
Sat Jul 19, 2025
Midday Peak (WKND) (12 PM - 1 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1320843, Location: 38.900052, -94.375988

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



TRAFFIC COUNTS
Route 291 &
Persels/Bailey Road

Route 291 & Southwest Persels Road - Tuesday... - TMC

Thu Jul 10, 2025
Full Length (7 AM-9 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1317911, Location: 38.89606, -94.375421

GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	SR 291					Baily Rd					SR 291					Persels Road					
Direction	Southbound					Westbound					Northbound					Eastbound					
Time	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	Int
2025-07-10 7:00AM	35	161	4	0	**200**	7	9	28	0	**44**	47	295	4	0	**346**	4	15	27	0	**46**	**636**
7:15AM	28	184	1	0	**213**	9	17	39	0	**65**	66	333	13	0	**412**	3	22	34	0	**59**	**749**
7:30AM	29	217	2	0	**248**	7	17	31	0	**55**	54	309	11	1	**375**	3	12	31	0	**46**	**724**
7:45AM	61	212	4	0	**277**	9	16	52	0	**77**	82	335	9	0	**426**	2	20	39	0	**61**	**841**
Hourly Total	153	774	11	0	**938**	32	59	150	0	**241**	249	1272	37	1	**1559**	12	69	131	0	**212**	**2950**
8:00AM	66	217	4	1	**288**	6	19	35	0	**60**	51	288	6	0	**345**	4	24	45	0	**73**	**766**
8:15AM	60	196	3	0	**259**	6	21	40	0	**67**	56	337	10	0	**403**	4	17	45	0	**66**	**795**
8:30AM	38	259	3	0	**300**	6	19	42	1	**68**	44	337	10	0	**391**	3	17	40	0	**60**	**819**
8:45AM	64	196	2	0	**262**	4	18	54	0	**76**	66	325	5	2	**398**	7	28	49	0	**84**	**820**
Hourly Total	228	868	12	1	**1109**	22	77	171	1	**271**	217	1287	31	2	**1537**	18	86	179	0	**283**	**3200**
Total	381	1642	23	1	**2047**	54	136	321	1	**512**	466	2559	68	3	**3096**	30	155	310	0	**495**	**6150**
% Approach	18.6%	80.2%	1.1%	0%	**-**	10.5%	26.6%	62.7%	0.2%	**-**	15.1%	82.7%	2.2%	0.1%	**-**	6.1%	31.3%	62.6%	0%	**-**	-
% Total	6.2%	26.7%	0.4%	0%	**33.3%**	0.9%	2.2%	5.2%	0%	**8.3%**	7.6%	41.6%	1.1%	0%	**50.3%**	0.5%	2.5%	5.0%	0%	**8.0%**	-
Lights	374	1483	20	1	**1878**	48	121	279	1	**449**	440	2406	65	2	**2913**	27	144	304	0	**475**	5715
% Lights	98.2%	90.3%	87.0%	100%	**91.7%**	88.9%	89.0%	86.9%	100%	**87.7%**	94.4%	94.0%	95.6%	66.7%	**94.1%**	90.0%	92.9%	98.1%	0%	**96.0%**	92.9%
Articulated Trucks	2	55	2	0	**59**	2	7	7	0	**16**	0	52	1	0	**53**	0	6	2	0	**8**	136
% Articulated Trucks	0.5%	3.3%	8.7%	0%	**2.9%**	3.7%	5.1%	2.2%	0%	**3.1%**	0%	2.0%	1.5%	0%	**1.7%**	0%	3.9%	0.6%	0%	**1.6%**	2.2%
Buses and Single-Unit Trucks	5	104	1	0	**110**	4	8	35	0	**47**	26	101	2	1	**130**	3	5	4	0	**12**	299
% Buses and Single-Unit Trucks	1.3%	6.3%	4.3%	0%	**5.4%**	7.4%	5.9%	10.9%	0%	**9.2%**	5.6%	3.9%	2.9%	33.3%	**4.2%**	10.0%	3.2%	1.3%	0%	**2.4%**	4.9%

*L: Left, R: Right, T: Thru, U: U-Turn

Route 291 & Southwest Persels Road - Tuesday... - TMC

Thu Jul 10, 2025
AM Peak (7:45 AM - 8:45 AM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1317911, Location: 38.89606, -94.375421

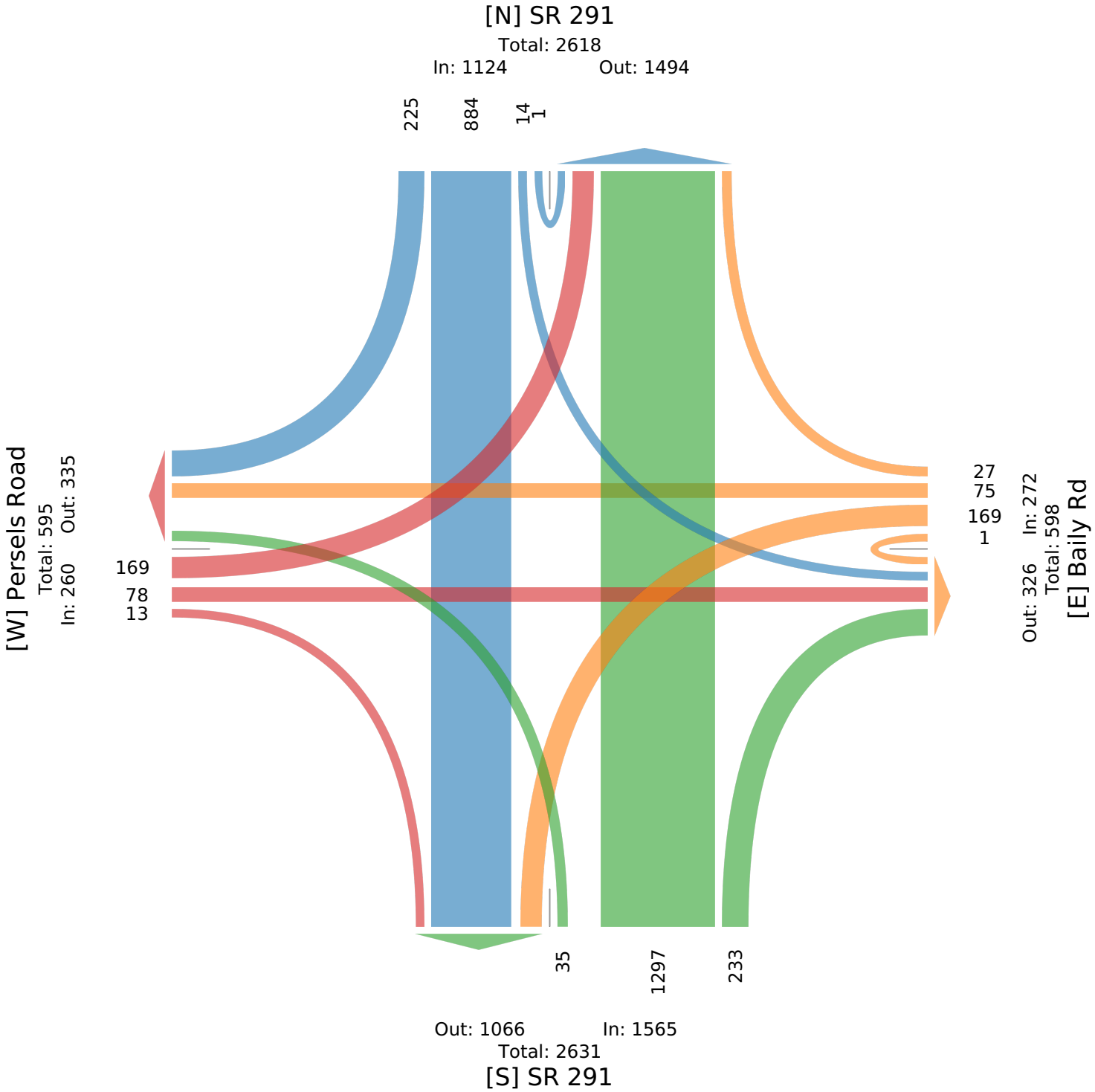
GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	SR 291					Baily Rd					SR 291					Persels Road					
Direction	Southbound					Westbound					Northbound					Eastbound					
Time	R	T	L	U	**App**	R	T	L	U	**App**	R	T	L	U	**App**	R	T	L	U	**App**	**Int**
2025-07-10 7:45AM	61	212	4	0	**277**	9	16	52	0	**77**	82	335	9	0	**426**	2	20	39	0	**61**	**841**
8:00AM	66	217	4	1	**288**	6	19	35	0	**60**	51	288	6	0	**345**	4	24	45	0	**73**	**766**
8:15AM	60	196	3	0	**259**	6	21	40	0	**67**	56	337	10	0	**403**	4	17	45	0	**66**	**795**
8:30AM	38	259	3	0	**300**	6	19	42	1	**68**	44	337	10	0	**391**	3	17	40	0	**60**	**819**
Total	225	884	14	1	**1124**	27	75	169	1	**272**	233	1297	35	0	**1565**	13	78	169	0	**260**	**3221**
% Approach	20.0%	78.6%	1.2%	0.1%	-	9.9%	27.6%	62.1%	0.4%	-	14.9%	82.9%	2.2%	0%	-	5.0%	30.0%	65.0%	0%	-	-
% Total	7.0%	27.4%	0.4%	0%	**34.9%**	0.8%	2.3%	5.2%	0%	**8.4%**	7.2%	40.3%	1.1%	0%	**48.6%**	0.4%	2.4%	5.2%	0%	**8.1%**	-
PHF	0.852	0.853	0.875	0.250	**0.937**	0.750	0.893	0.813	0.250	**0.883**	0.710	0.962	0.875	-	**0.918**	0.813	0.813	0.939	-	**0.890**	0.957
Lights	221	793	12	1	**1027**	22	67	151	1	**241**	219	1227	32	0	**1478**	11	74	165	0	**250**	2996
% Lights	98.2%	89.7%	85.7%	100%	**91.4%**	81.5%	89.3%	89.3%	100%	**88.6%**	94.0%	94.6%	91.4%	0%	**94.4%**	84.6%	94.9%	97.6%	0%	**96.2%**	93.0%
Articulated Trucks	0	29	1	0	**30**	2	4	3	0	**9**	0	33	1	0	**34**	0	3	2	0	**5**	78
% Articulated Trucks	0%	3.3%	7.1%	0%	**2.7%**	7.4%	5.3%	1.8%	0%	**3.3%**	0%	2.5%	2.9%	0%	**2.2%**	0%	3.8%	1.2%	0%	**1.9%**	2.4%
Buses and Single-Unit Trucks	4	62	1	0	**67**	3	4	15	0	**22**	14	37	2	0	**53**	2	1	2	0	**5**	147
% Buses and Single-Unit Trucks	1.8%	7.0%	7.1%	0%	**6.0%**	11.1%	5.3%	8.9%	0%	**8.1%**	6.0%	2.9%	5.7%	0%	**3.4%**	15.4%	1.3%	1.2%	0%	**1.9%**	4.6%

*L: Left, R: Right, T: Thru, U: U-Turn

Route 291 & Southwest Persels Road - Tuesday... - TMC
Thu Jul 10, 2025
AM Peak (7:45 AM - 8:45 AM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1317911, Location: 38.89606, -94.375421

GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



Route 291 & Southwest Persels/Bailey Road - ... - TMC

Tue Jul 22, 2025
Full Length (4 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1320851, Location: 38.89606, -94.375421

GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	SR 291					Bailey Rd					SR 291					Persels Rd					
Direction	Southbound					Westbound					Northbound					Eastbound					
Time	R	T	L	U	**App**	R	T	L	U	**App**	R	T	L	U	**App**	R	T	L	U	**App**	**Int**
2025-07-22 4:00PM	56	389	5	0	**450**	10	33	78	0	**121**	58	310	11	0	**379**	10	24	81	0	**115**	**1065**
4:15PM	58	367	2	2	**429**	11	38	96	0	**145**	63	297	6	0	**366**	11	38	79	0	**128**	**1068**
4:30PM	52	382	5	3	**442**	17	26	79	0	**122**	63	313	11	0	**387**	5	26	76	0	**107**	**1058**
4:45PM	61	328	6	1	**396**	12	53	107	0	**172**	73	295	14	0	**382**	9	28	70	0	**107**	**1057**
Hourly Total	227	1466	18	6	**1717**	50	150	360	0	**560**	257	1215	42	0	**1514**	35	116	306	0	**457**	**4248**
5:00PM	37	400	7	0	**444**	22	43	90	0	**155**	70	313	12	0	**395**	12	29	64	0	**105**	**1099**
5:15PM	25	343	3	0	**371**	14	50	105	0	**169**	69	319	7	0	**395**	13	26	37	0	**76**	**1011**
5:30PM	30	338	7	0	**375**	18	44	83	0	**145**	63	270	11	1	**345**	3	36	29	0	**68**	**933**
5:45PM	48	272	3	0	**323**	20	64	109	0	**193**	55	248	15	0	**318**	10	23	35	0	**68**	**902**
Hourly Total	140	1353	20	0	**1513**	74	201	387	0	**662**	257	1150	45	1	**1453**	38	114	165	0	**317**	**3945**
Total	367	2819	38	6	**3230**	124	351	747	0	**1222**	514	2365	87	1	**2967**	73	230	471	0	**774**	**8193**
% Approach	11.4%	87.3%	1.2%	0.2%	**-**	10.1%	28.7%	61.1%	0%	**-**	17.3%	79.7%	2.9%	0%	**-**	9.4%	29.7%	60.9%	0%	**-**	-
% Total	4.5%	34.4%	0.5%	0.1%	**39.4%**	1.5%	4.3%	9.1%	0%	**14.9%**	6.3%	28.9%	1.1%	0%	**36.2%**	0.9%	2.8%	5.7%	0%	**9.4%**	-
Lights	362	2742	36	6	**3146**	124	349	741	0	**1214**	509	2319	82	1	**2911**	71	229	467	0	**767**	8038
% Lights	98.6%	97.3%	94.7%	100%	**97.4%**	100%	99.4%	99.2%	0%	**99.3%**	99.0%	98.1%	94.3%	100%	**98.1%**	97.3%	99.6%	99.2%	0%	**99.1%**	98.1%
Articulated Trucks	0	27	1	0	**28**	0	0	1	0	**1**	3	18	0	0	**21**	0	0	0	0	**0**	50
% Articulated Trucks	0%	1.0%	2.6%	0%	**0.9%**	0%	0%	0.1%	0%	**0.1%**	0.6%	0.8%	0%	0%	**0.7%**	0%	0%	0%	0%	**0%**	0.6%
Buses and Single-Unit Trucks	5	50	1	0	**56**	0	2	5	0	**7**	2	28	5	0	**35**	2	1	4	0	**7**	105
% Buses and Single-Unit Trucks	1.4%	1.8%	2.6%	0%	**1.7%**	0%	0.6%	0.7%	0%	**0.6%**	0.4%	1.2%	5.7%	0%	**1.2%**	2.7%	0.4%	0.8%	0%	**0.9%**	1.3%

*L: Left, R: Right, T: Thru, U: U-Turn

Route 291 & Southwest Persels/Bailey Road - ... - TMC

Tue Jul 22, 2025
PM Peak (4:15 PM - 5:15 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1320851, Location: 38.89606, -94.375421

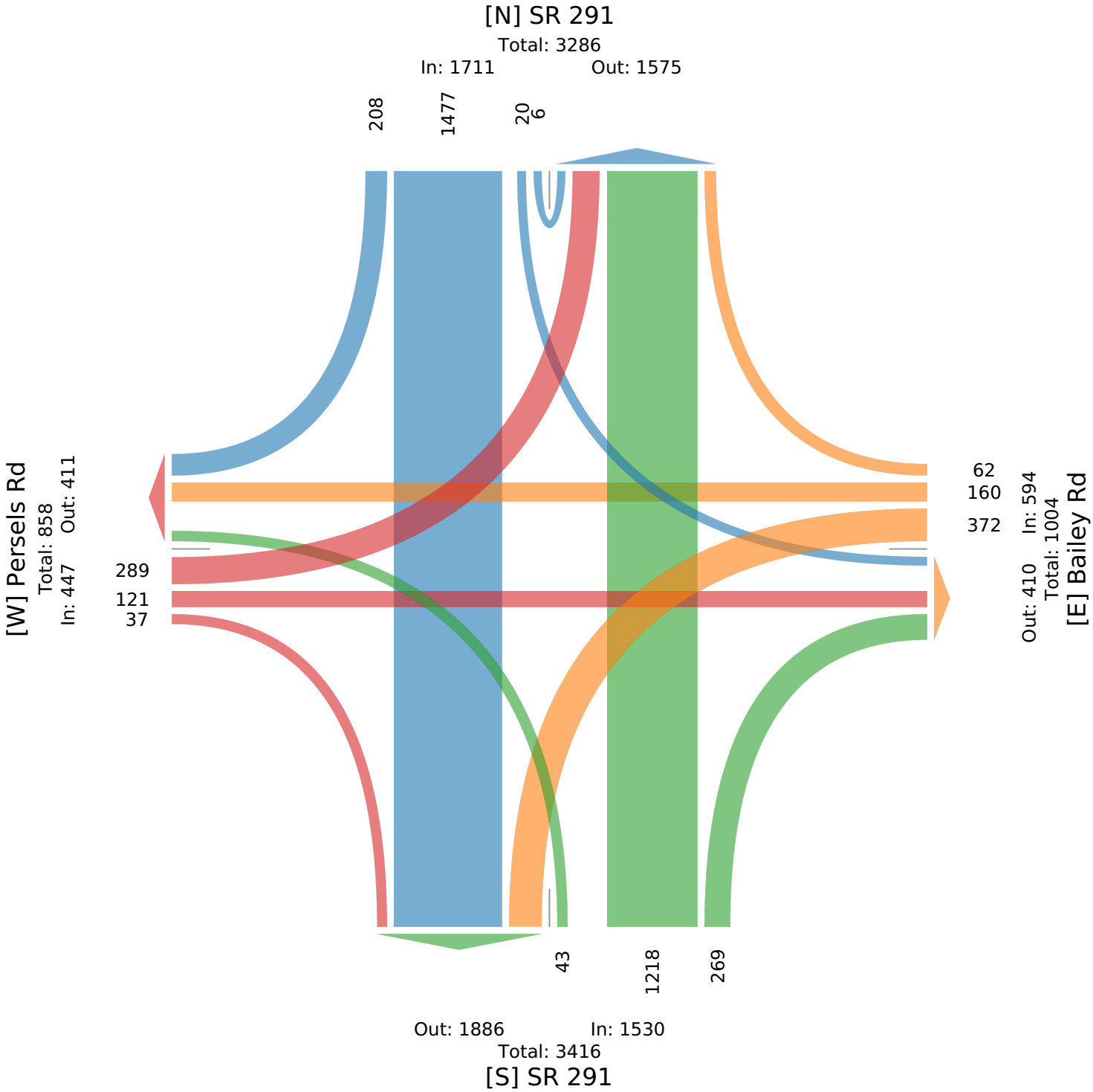
GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	SR 291					Bailey Rd					SR 291					Persels Rd					
Direction	Southbound					Westbound					Northbound					Eastbound					
Time	R	T	L	U	**App**	R	T	L	U	**App**	R	T	L	U	**App**	R	T	L	U	**App**	**Int**
2025-07-22 4:15PM	58	367	2	2	**429**	11	38	96	0	**145**	63	297	6	0	**366**	11	38	79	0	**128**	**1068**
4:30PM	52	382	5	3	**442**	17	26	79	0	**122**	63	313	11	0	**387**	5	26	76	0	**107**	**1058**
4:45PM	61	328	6	1	**396**	12	53	107	0	**172**	73	295	14	0	**382**	9	28	70	0	**107**	**1057**
5:00PM	37	400	7	0	**444**	22	43	90	0	**155**	70	313	12	0	**395**	12	29	64	0	**105**	**1099**
Total	208	1477	20	6	**1711**	62	160	372	0	**594**	269	1218	43	0	**1530**	37	121	289	0	**447**	**4282**
% Approach	12.2%	86.3%	1.2%	0.4%	**-**	10.4%	26.9%	62.6%	0%	**-**	17.6%	79.6%	2.8%	0%	**-**	8.3%	27.1%	64.7%	0%	**-**	-
% Total	4.9%	34.5%	0.5%	0.1%	**40.0%**	1.4%	3.7%	8.7%	0%	**13.9%**	6.3%	28.4%	1.0%	0%	**35.7%**	0.9%	2.8%	6.7%	0%	**10.4%**	-
PHF	0.852	0.923	0.714	0.500	**0.963**	0.705	0.755	0.869	-	**0.863**	0.921	0.973	0.768	-	**0.968**	0.771	0.796	0.915	-	**0.873**	0.974
Lights	207	1438	19	6	**1670**	62	159	370	0	**591**	267	1195	40	0	**1502**	36	120	288	0	**444**	4207
% Lights	99.5%	97.4%	95.0%	100%	**97.6%**	100%	99.4%	99.5%	0%	**99.5%**	99.3%	98.1%	93.0%	0%	**98.2%**	97.3%	99.2%	99.7%	0%	**99.3%**	98.2%
Articulated Trucks	0	12	1	0	**13**	0	0	0	0	**0**	1	6	0	0	**7**	0	0	0	0	**0**	20
% Articulated Trucks	0%	0.8%	5.0%	0%	**0.8%**	0%	0%	0%	0%	**0%**	0.4%	0.5%	0%	0%	**0.5%**	0%	0%	0%	0%	**0%**	0.5%
Buses and Single-Unit Trucks	1	27	0	0	**28**	0	1	2	0	**3**	1	17	3	0	**21**	1	1	1	0	**3**	55
% Buses and Single-Unit Trucks	0.5%	1.8%	0%	0%	**1.6%**	0%	0.6%	0.5%	0%	**0.5%**	0.4%	1.4%	7.0%	0%	**1.4%**	2.7%	0.8%	0.3%	0%	**0.7%**	1.3%

*L: Left, R: Right, T: Thru, U: U-Turn

Route 291 & Southwest Persels/Bailey Road - ... - TMC
Tue Jul 22, 2025
PM Peak (4:15 PM - 5:15 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1320851, Location: 38.89606, -94.375421

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



Route 291 & Southwest Persels/Bailey Road - ... - TMC

Sat Jul 19, 2025
Full Length (11:30 AM-1:30 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1320852, Location: 38.89606, -94.375421

GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	SR 291					Bailey Rd					SR 291					Persels Rd					
Direction	Southbound					Westbound					Northbound					Eastbound					
Time	R	T	L	U	**App**	R	T	L	U	**App**	R	T	L	U	**App**	R	T	L	U	**App**	**Int**
2025-07-19 11:30AM	34	211	4	2	**251**	5	20	54	0	**79**	43	263	12	0	**318**	3	28	30	0	**61**	**709**
11:45AM	26	184	4	1	**215**	4	16	44	0	**64**	54	278	7	0	**339**	8	24	23	0	**55**	**673**
Hourly Total	60	395	8	3	**466**	9	36	98	0	**143**	97	541	19	0	**657**	11	52	53	0	**116**	**1382**
12:00PM	22	225	5	1	**253**	9	19	70	0	**98**	45	242	11	1	**299**	5	19	49	0	**73**	**723**
12:15PM	28	226	1	2	**257**	4	27	67	0	**98**	49	235	5	0	**289**	8	19	28	0	**55**	**699**
12:30PM	30	194	7	1	**232**	8	17	55	0	**80**	47	257	9	2	**315**	11	9	33	0	**53**	**680**
12:45PM	29	240	6	0	**275**	10	14	55	0	**79**	60	285	4	1	**350**	8	13	29	0	**50**	**754**
Hourly Total	109	885	19	4	**1017**	31	77	247	0	**355**	201	1019	29	4	**1253**	32	60	139	0	**231**	**2856**
1:00PM	24	230	5	1	**260**	11	18	46	0	**75**	54	231	7	0	**292**	8	12	23	0	**43**	**670**
1:15PM	18	213	3	0	**234**	2	14	46	0	**62**	59	259	9	1	**328**	6	9	26	0	**41**	**665**
Hourly Total	42	443	8	1	**494**	13	32	92	0	**137**	113	490	16	1	**620**	14	21	49	0	**84**	**1335**
Total	211	1723	35	8	**1977**	53	145	437	0	**635**	411	2050	64	5	**2530**	57	133	241	0	**431**	**5573**
% Approach	10.7%	87.2%	1.8%	0.4%	**-**	8.3%	22.8%	68.8%	0%	**-**	16.2%	81.0%	2.5%	0.2%	**-**	13.2%	30.9%	55.9%	0%	**-**	**-**
% Total	3.8%	30.9%	0.6%	0.1%	**35.5%**	1.0%	2.6%	7.8%	0%	**11.4%**	7.4%	36.8%	1.1%	0.1%	**45.4%**	1.0%	2.4%	4.3%	0%	**7.7%**	**-**
Lights	209	1685	35	8	**1937**	51	145	436	0	**632**	409	2024	63	5	**2501**	57	133	241	0	**431**	5501
% Lights	99.1%	97.8%	100%	100%	**98.0%**	96.2%	100%	99.8%	0%	**99.5%**	99.5%	98.7%	98.4%	100%	**98.9%**	100%	100%	100%	0%	**100%**	98.7%
Articulated Trucks	0	17	0	0	**17**	0	0	0	0	**0**	0	14	0	0	**14**	0	0	0	0	**0**	31
% Articulated Trucks	0%	1.0%	0%	0%	**0.9%**	0%	0%	0%	0%	**0%**	0%	0.7%	0%	0%	**0.6%**	0%	0%	0%	0%	**0%**	0.6%
Buses and Single-Unit Trucks	2	21	0	0	**23**	2	0	1	0	**3**	2	12	1	0	**15**	0	0	0	0	**0**	41
% Buses and Single-Unit Trucks	0.9%	1.2%	0%	0%	**1.2%**	3.8%	0%	0.2%	0%	**0.5%**	0.5%	0.6%	1.6%	0%	**0.6%**	0%	0%	0%	0%	**0%**	0.7%

*L: Left, R: Right, T: Thru, U: U-Turn

Route 291 & Southwest Persels/Bailey Road - ... - TMC

Sat Jul 19, 2025
Midday Peak (WKND) (12 PM - 1 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1320852, Location: 38.89606, -94.375421

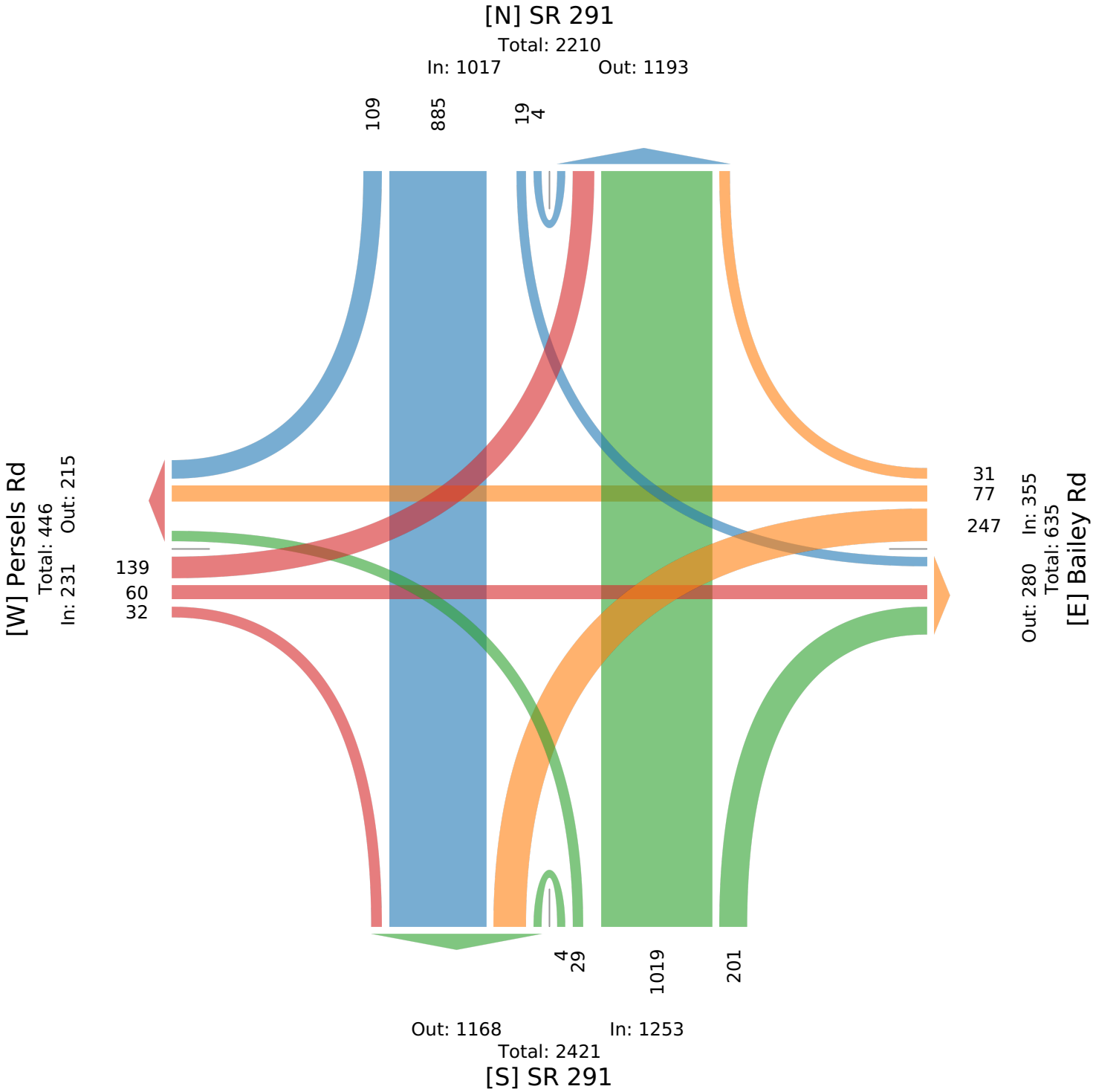
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	SR 291					Bailey Rd					SR 291					Persels Rd					
Direction	Southbound					Westbound					Northbound					Eastbound					
Time	R	T	L	U	**App**	R	T	L	U	**App**	R	T	L	U	**App**	R	T	L	U	**App**	**Int**
2025-07-19 12:00PM	22	225	5	1	**253**	9	19	70	0	**98**	45	242	11	1	**299**	5	19	49	0	**73**	**723**
12:15PM	28	226	1	2	**257**	4	27	67	0	**98**	49	235	5	0	**289**	8	19	28	0	**55**	**699**
12:30PM	30	194	7	1	**232**	8	17	55	0	**80**	47	257	9	2	**315**	11	9	33	0	**53**	**680**
12:45PM	29	240	6	0	**275**	10	14	55	0	**79**	60	285	4	1	**350**	8	13	29	0	**50**	**754**
Total	109	885	19	4	**1017**	31	77	247	0	**355**	201	1019	29	4	**1253**	32	60	139	0	**231**	**2856**
% Approach	10.7%	87.0%	1.9%	0.4%	-	8.7%	21.7%	69.6%	0%	-	16.0%	81.3%	2.3%	0.3%	-	13.9%	26.0%	60.2%	0%	-	-
% Total	3.8%	31.0%	0.7%	0.1%	**35.6%**	1.1%	2.7%	8.6%	0%	**12.4%**	7.0%	35.7%	1.0%	0.1%	**43.9%**	1.1%	2.1%	4.9%	0%	**8.1%**	-
PHF	0.908	0.922	0.679	0.500	**0.925**	0.775	0.713	0.882	-	**0.906**	0.838	0.894	0.659	0.500	**0.895**	0.727	0.789	0.709	-	**0.791**	0.947
Lights	109	865	19	4	**997**	30	77	246	0	**353**	201	1005	29	4	**1239**	32	60	139	0	**231**	2820
% Lights	100%	97.7%	100%	100%	**98.0%**	96.8%	100%	99.6%	0%	**99.4%**	100%	98.6%	100%	100%	**98.9%**	100%	100%	100%	0%	**100%**	98.7%
Articulated Trucks	0	10	0	0	**10**	0	0	0	0	**0**	0	7	0	0	**7**	0	0	0	0	**0**	17
% Articulated Trucks	0%	1.1%	0%	0%	**1.0%**	0%	0%	0%	0%	**0%**	0%	0.7%	0%	0%	**0.6%**	0%	0%	0%	0%	**0%**	0.6%
Buses and Single-Unit Trucks	0	10	0	0	**10**	1	0	1	0	**2**	0	7	0	0	**7**	0	0	0	0	**0**	19
% Buses and Single-Unit Trucks	0%	1.1%	0%	0%	**1.0%**	3.2%	0%	0.4%	0%	**0.6%**	0%	0.7%	0%	0%	**0.6%**	0%	0%	0%	0%	**0%**	0.7%

*L: Left, R: Right, T: Thru, U: U-Turn

Route 291 & Southwest Persels/Bailey Road - ... - TMC
Sat Jul 19, 2025
Midday Peak (WKND) (12 PM - 1 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1320852, Location: 38.89606, -94.375421

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



TRAFFIC COUNTS
Route 291 & 16th Street

Route 291 & Southeast 16th Street - Tuesday ... - TMC

Thu Jul 10, 2025
Full Length (7 AM-9 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1317912, Location: 38.89247, -94.373594

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	SR 291					SE 16th St					SR 291					SE 16th St					
Direction	Southbound					Westbound					Northbound					Eastbound					
Time	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	Int
2025-07-10 7:00AM	1	194	0	0	**195**	7	0	0	0	**7**	7	335	0	0	**342**	2	0	0	0	**2**	**546**
7:15AM	2	221	0	0	**223**	9	0	0	0	**9**	12	428	0	0	**440**	2	0	0	0	**2**	**674**
7:30AM	1	240	0	0	**241**	4	0	0	0	**4**	9	348	0	0	**357**	3	0	0	0	**3**	**605**
7:45AM	3	271	0	0	**274**	13	0	0	0	**13**	8	454	0	0	**462**	1	0	0	0	**1**	**750**
Hourly Total	7	926	0	0	**933**	33	0	0	0	**33**	36	1565	0	0	**1601**	8	0	0	0	**8**	**2575**
8:00AM	3	260	0	0	**263**	6	0	0	0	**6**	12	327	0	0	**339**	3	0	0	0	**3**	**611**
8:15AM	3	240	0	0	**243**	4	0	0	0	**4**	4	427	0	0	**431**	8	0	0	0	**8**	**686**
8:30AM	3	297	0	0	**300**	4	0	0	0	**4**	8	368	0	0	**376**	2	0	0	0	**2**	**682**
8:45AM	4	273	0	0	**277**	10	0	0	0	**10**	3	403	0	0	**406**	5	0	0	0	**5**	**698**
Hourly Total	13	1070	0	0	**1083**	24	0	0	0	**24**	27	1525	0	0	**1552**	18	0	0	0	**18**	**2677**
Total	20	1996	0	0	**2016**	57	0	0	0	**57**	63	3090	0	0	**3153**	26	0	0	0	**26**	**5252**
% Approach	1.0%	99.0%	0%	0%	-	100%	0%	0%	0%	-	2.0%	98.0%	0%	0%	-	100%	0%	0%	0%	-	-
% Total	0.4%	38.0%	0%	0%	**38.4%**	1.1%	0%	0%	0%	**1.1%**	1.2%	58.8%	0%	0%	**60.0%**	0.5%	0%	0%	0%	**0.5%**	-
Lights	20	1798	0	0	**1818**	48	0	0	0	**48**	60	2906	0	0	**2966**	25	0	0	0	**25**	4857
% Lights	100%	90.1%	0%	0%	**90.2%**	84.2%	0%	0%	0%	**84.2%**	95.2%	94.0%	0%	0%	**94.1%**	96.2%	0%	0%	0%	**96.2%**	92.5%
Articulated Trucks	0	65	0	0	**65**	0	0	0	0	**0**	0	55	0	0	**55**	0	0	0	0	**0**	120
% Articulated Trucks	0%	3.3%	0%	0%	**3.2%**	0%	0%	0%	0%	**0%**	0%	1.8%	0%	0%	**1.7%**	0%	0%	0%	0%	**0%**	2.3%
Buses and Single-Unit Trucks	0	133	0	0	**133**	9	0	0	0	**9**	3	129	0	0	**132**	1	0	0	0	**1**	275
% Buses and Single-Unit Trucks	0%	6.7%	0%	0%	**6.6%**	15.8%	0%	0%	0%	**15.8%**	4.8%	4.2%	0%	0%	**4.2%**	3.8%	0%	0%	0%	**3.8%**	5.2%

*L: Left, R: Right, T: Thru, U: U-Turn

Route 291 & Southeast 16th Street - Tuesday ... - TMC

Thu Jul 10, 2025
AM Peak (7:45 AM - 8:45 AM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1317912, Location: 38.89247, -94.373594

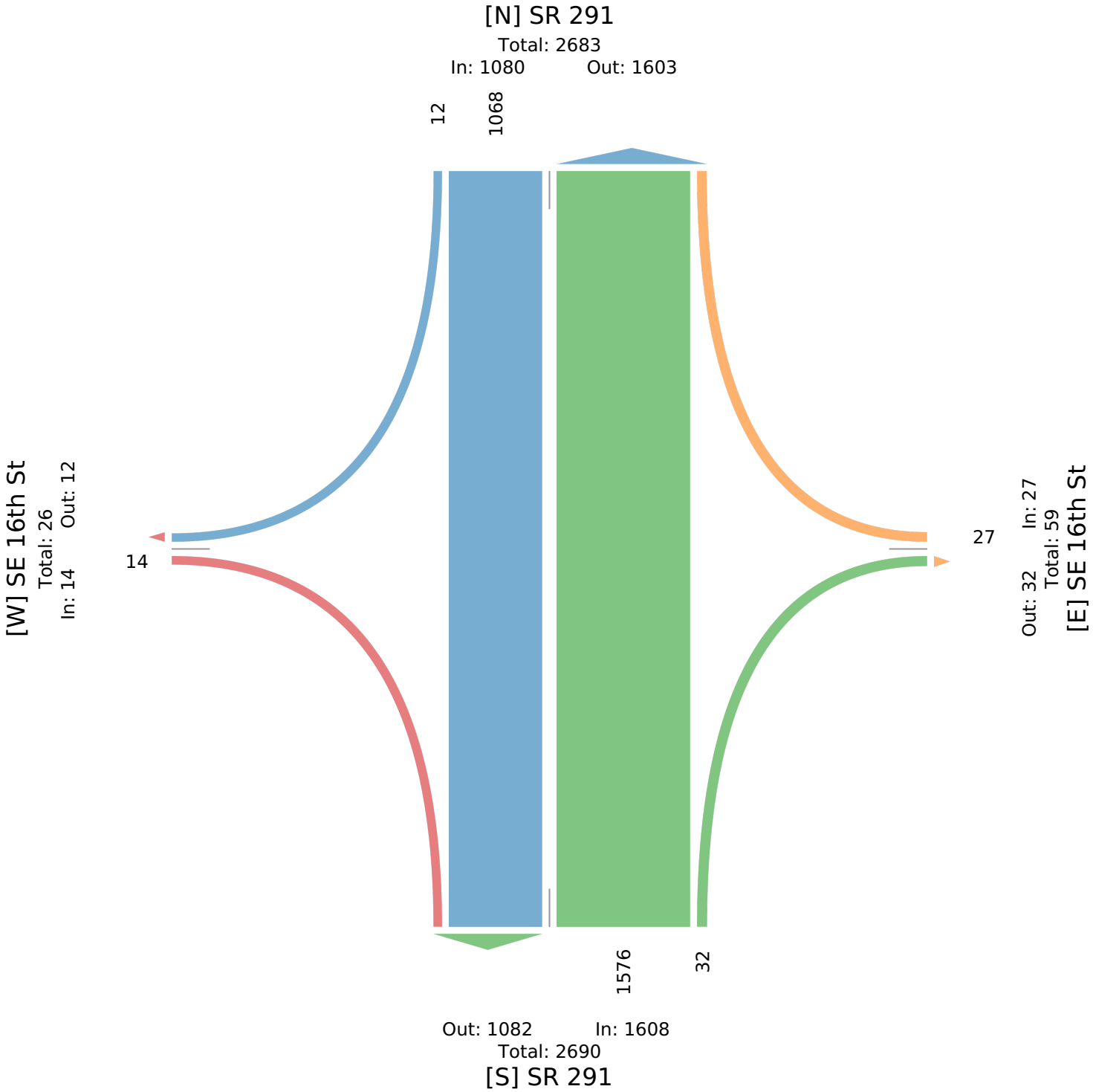
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	SR 291					SE 16th St					SR 291					SE 16th St					
Direction	Southbound					Westbound					Northbound					Eastbound					
Time	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	Int
2025-07-10 7:45AM	3	271	0	0	**274**	13	0	0	0	**13**	8	454	0	0	**462**	1	0	0	0	**1**	**750**
8:00AM	3	260	0	0	**263**	6	0	0	0	**6**	12	327	0	0	**339**	3	0	0	0	**3**	**611**
8:15AM	3	240	0	0	**243**	4	0	0	0	**4**	4	427	0	0	**431**	8	0	0	0	**8**	**686**
8:30AM	3	297	0	0	**300**	4	0	0	0	**4**	8	368	0	0	**376**	2	0	0	0	**2**	**682**
Total	12	1068	0	0	**1080**	27	0	0	0	**27**	32	1576	0	0	**1608**	14	0	0	0	**14**	**2729**
% Approach	1.1%	98.9%	0%	0%	**-**	100%	0%	0%	0%	**-**	2.0%	98.0%	0%	0%	**-**	100%	0%	0%	0%	**-**	**-**
% Total	0.4%	39.1%	0%	0%	**39.6%**	1.0%	0%	0%	0%	**1.0%**	1.2%	57.8%	0%	0%	**58.9%**	0.5%	0%	0%	0%	**0.5%**	**-**
PHF	1.000	0.899	-	-	**0.900**	0.519	-	-	-	**0.519**	0.667	0.868	-	-	**0.870**	0.438	-	-	-	**0.438**	0.910
Lights	12	962	0	0	**974**	25	0	0	0	**25**	30	1486	0	0	**1516**	13	0	0	0	**13**	2528
% Lights	100%	90.1%	0%	0%	**90.2%**	92.6%	0%	0%	0%	**92.6%**	93.8%	94.3%	0%	0%	**94.3%**	92.9%	0%	0%	0%	**92.9%**	92.6%
Articulated Trucks	0	36	0	0	**36**	0	0	0	0	**0**	0	34	0	0	**34**	0	0	0	0	**0**	70
% Articulated Trucks	0%	3.4%	0%	0%	**3.3%**	0%	0%	0%	0%	**0%**	0%	2.2%	0%	0%	**2.1%**	0%	0%	0%	0%	**0%**	2.6%
Buses and Single-Unit Trucks	0	70	0	0	**70**	2	0	0	0	**2**	2	56	0	0	**58**	1	0	0	0	**1**	131
% Buses and Single-Unit Trucks	0%	6.6%	0%	0%	**6.5%**	7.4%	0%	0%	0%	**7.4%**	6.3%	3.6%	0%	0%	**3.6%**	7.1%	0%	0%	0%	**7.1%**	4.8%

*L: Left, R: Right, T: Thru, U: U-Turn

Route 291 & Southeast 16th Street - Tuesday ... - TMC
Thu Jul 10, 2025
AM Peak (7:45 AM - 8:45 AM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1317912, Location: 38.89247, -94.373594

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



Route 291 & Southeast 16th Street - PM - TMC

Tue Jul 22, 2025
Full Length (4 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1320855, Location: 38.89247, -94.373594

GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	SR 291					16th St					SR 291					16th St					
Direction	Southbound					Westbound					Northbound					Eastbound					
Time	R	T	L	U	**App**	R	T	L	U	**App**	R	T	L	U	**App**	R	T	L	U	**App**	**Int**
2025-07-22 4:00PM	11	461	0	0	**472**	11	0	0	0	**11**	1	359	0	0	**360**	14	0	0	0	**14**	**857**
4:15PM	4	476	0	0	**480**	6	0	0	0	**6**	8	382	0	0	**390**	18	0	0	0	**18**	**894**
4:30PM	4	452	0	0	**456**	8	0	0	0	**8**	4	362	0	0	**366**	15	0	0	0	**15**	**845**
4:45PM	7	460	0	0	**467**	7	0	0	0	**7**	4	396	0	0	**400**	15	0	0	0	**15**	**889**
Hourly Total	26	1849	0	0	**1875**	32	0	0	0	**32**	17	1499	0	0	**1516**	62	0	0	0	**62**	**3485**
5:00PM	3	499	0	0	**502**	10	0	0	0	**10**	6	373	0	0	**379**	13	0	0	0	**13**	**904**
5:15PM	6	476	0	0	**482**	9	0	0	0	**9**	4	403	0	0	**407**	20	0	0	0	**20**	**918**
5:30PM	5	418	0	0	**423**	12	0	0	0	**12**	1	307	0	0	**308**	8	0	0	0	**8**	**751**
5:45PM	1	427	0	0	**428**	5	0	0	0	**5**	1	318	0	0	**319**	6	0	0	0	**6**	**758**
Hourly Total	15	1820	0	0	**1835**	36	0	0	0	**36**	12	1401	0	0	**1413**	47	0	0	0	**47**	**3331**
Total	41	3669	0	0	**3710**	68	0	0	0	**68**	29	2900	0	0	**2929**	109	0	0	0	**109**	**6816**
% Approach	1.1%	98.9%	0%	0%	-	100%	0%	0%	0%	-	1.0%	99.0%	0%	0%	-	100%	0%	0%	0%	-	-
% Total	0.6%	53.8%	0%	0%	**54.4%**	1.0%	0%	0%	0%	**1.0%**	0.4%	42.5%	0%	0%	**43.0%**	1.6%	0%	0%	0%	**1.6%**	-
Lights	40	3583	0	0	**3623**	68	0	0	0	**68**	26	2843	0	0	**2869**	105	0	0	0	**105**	6665
% Lights	97.6%	97.7%	0%	0%	**97.7%**	100%	0%	0%	0%	**100%**	89.7%	98.0%	0%	0%	**98.0%**	96.3%	0%	0%	0%	**96.3%**	97.8%
Articulated Trucks	0	28	0	0	**28**	0	0	0	0	**0**	0	24	0	0	**24**	0	0	0	0	**0**	52
% Articulated Trucks	0%	0.8%	0%	0%	**0.8%**	0%	0%	0%	0%	**0%**	0%	0.8%	0%	0%	**0.8%**	0%	0%	0%	0%	**0%**	0.8%
Buses and Single-Unit Trucks	1	58	0	0	**59**	0	0	0	0	**0**	3	33	0	0	**36**	4	0	0	0	**4**	99
% Buses and Single-Unit Trucks	2.4%	1.6%	0%	0%	**1.6%**	0%	0%	0%	0%	**0%**	10.3%	1.1%	0%	0%	**1.2%**	3.7%	0%	0%	0%	**3.7%**	1.5%

*L: Left, R: Right, T: Thru, U: U-Turn

Route 291 & Southeast 16th Street - PM - TMC

Tue Jul 22, 2025
PM Peak (4:30 PM - 5:30 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1320855, Location: 38.89247, -94.373594

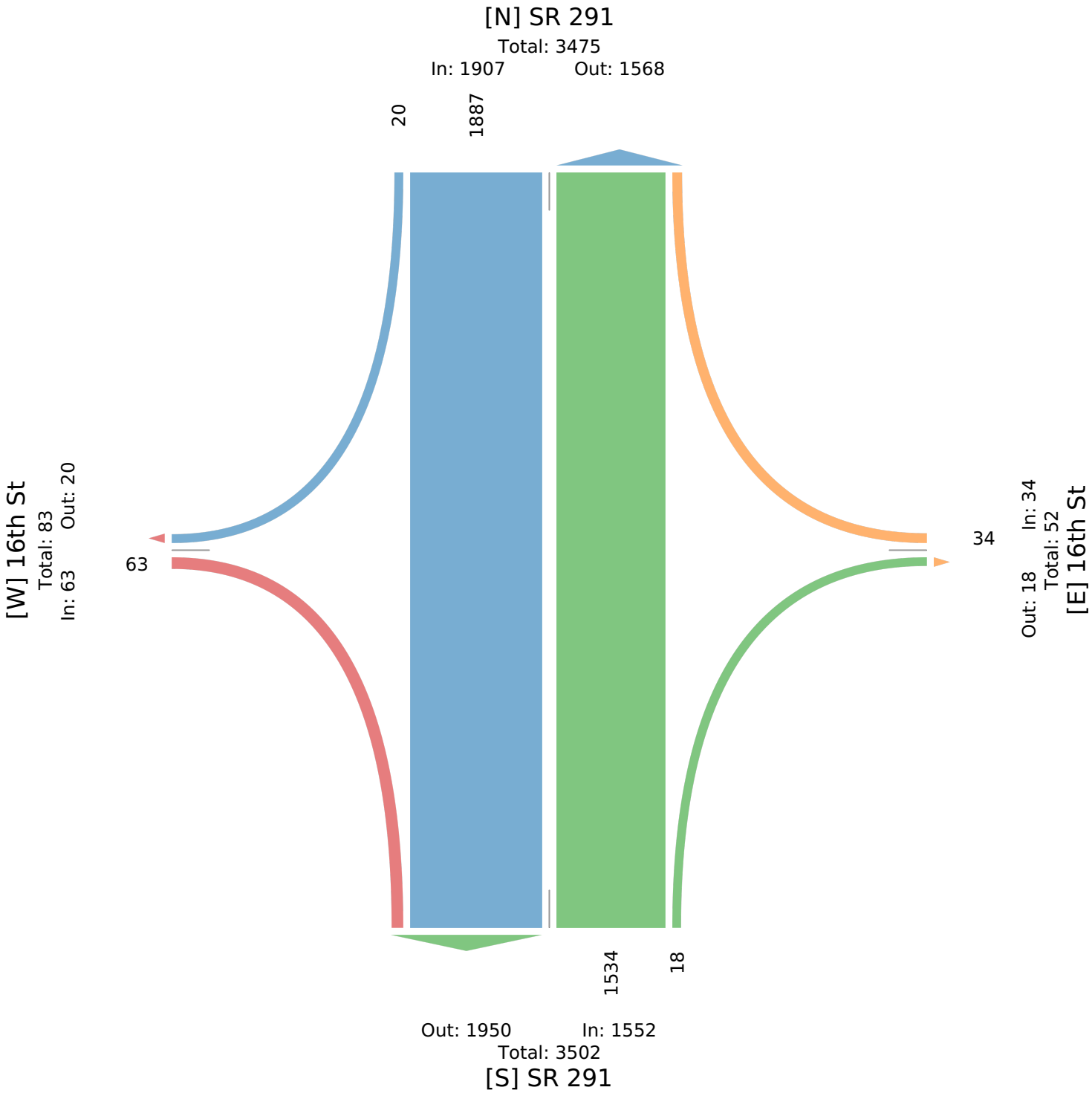
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	SR 291					16th St					SR 291					16th St					
Direction	Southbound					Westbound					Northbound					Eastbound					
Time	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	Int
2025-07-22 4:30PM	4	452	0	0	**456**	8	0	0	0	**8**	4	362	0	0	**366**	15	0	0	0	**15**	**845**
4:45PM	7	460	0	0	**467**	7	0	0	0	**7**	4	396	0	0	**400**	15	0	0	0	**15**	**889**
5:00PM	3	499	0	0	**502**	10	0	0	0	**10**	6	373	0	0	**379**	13	0	0	0	**13**	**904**
5:15PM	6	476	0	0	**482**	9	0	0	0	**9**	4	403	0	0	**407**	20	0	0	0	**20**	**918**
Total	20	1887	0	0	**1907**	34	0	0	0	**34**	18	1534	0	0	**1552**	63	0	0	0	**63**	**3556**
% Approach	1.0%	99.0%	0%	0%	**-**	100%	0%	0%	0%	**-**	1.2%	98.8%	0%	0%	**-**	100%	0%	0%	0%	**-**	-
% Total	0.6%	53.1%	0%	0%	**53.6%**	1.0%	0%	0%	0%	**1.0%**	0.5%	43.1%	0%	0%	**43.6%**	1.8%	0%	0%	0%	**1.8%**	-
PHF	0.714	0.945	-	-	**0.950**	0.850	-	-	-	**0.850**	0.750	0.952	-	-	**0.953**	0.788	-	-	-	**0.788**	0.968
Lights	19	1852	0	0	**1871**	34	0	0	0	**34**	16	1510	0	0	**1526**	59	0	0	0	**59**	3490
% Lights	95.0%	98.1%	0%	0%	**98.1%**	100%	0%	0%	0%	**100%**	88.9%	98.4%	0%	0%	**98.3%**	93.7%	0%	0%	0%	**93.7%**	98.1%
Articulated Trucks	0	12	0	0	**12**	0	0	0	0	**0**	0	9	0	0	**9**	0	0	0	0	**0**	21
% Articulated Trucks	0%	0.6%	0%	0%	**0.6%**	0%	0%	0%	0%	**0%**	0%	0.6%	0%	0%	**0.6%**	0%	0%	0%	0%	**0%**	0.6%
Buses and Single-Unit Trucks	1	23	0	0	**24**	0	0	0	0	**0**	2	15	0	0	**17**	4	0	0	0	**4**	45
% Buses and Single-Unit Trucks	5.0%	1.2%	0%	0%	**1.3%**	0%	0%	0%	0%	**0%**	11.1%	1.0%	0%	0%	**1.1%**	6.3%	0%	0%	0%	**6.3%**	1.3%

*L: Left, R: Right, T: Thru, U: U-Turn

Route 291 & Southeast 16th Street - PM - TMC
Tue Jul 22, 2025
PM Peak (4:30 PM - 5:30 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1320855, Location: 38.89247, -94.373594

GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



Route 291 & Southeast 16th Street - Saturday - TMC

Sat Jul 19, 2025
Full Length (11:30 AM-1:30 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1320858, Location: 38.89247, -94.373594

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	SR 291					16th St					SR 291					16th St					
Direction	Southbound					Westbound					Northbound					Eastbound					
Time	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	Int
2025-07-19 11:30AM	3	273	0	0	**276**	8	0	0	0	**8**	1	301	0	0	**302**	9	0	0	0	**9**	**595**
11:45AM	1	235	0	0	**236**	7	0	0	0	**7**	2	322	0	0	**324**	7	0	0	0	**7**	**574**
Hourly Total	4	508	0	0	**512**	15	0	0	0	**15**	3	623	0	0	**626**	16	0	0	0	**16**	**1169**
12:00PM	5	317	0	0	**322**	9	0	0	0	**9**	2	302	0	0	**304**	13	0	0	0	**13**	**648**
12:15PM	7	312	0	0	**319**	3	0	0	0	**3**	1	268	0	0	**269**	4	0	0	0	**4**	**595**
12:30PM	4	267	0	0	**271**	3	0	0	0	**3**	1	326	0	0	**327**	8	0	0	0	**8**	**609**
12:45PM	6	302	0	0	**308**	3	0	0	0	**3**	3	328	0	0	**331**	10	0	0	0	**10**	**652**
Hourly Total	22	1198	0	0	**1220**	18	0	0	0	**18**	7	1224	0	0	**1231**	35	0	0	0	**35**	**2504**
1:00PM	5	290	0	0	**295**	3	0	0	0	**3**	1	298	0	0	**299**	10	0	0	0	**10**	**607**
1:15PM	5	264	0	0	**269**	3	0	0	0	**3**	1	331	0	0	**332**	9	0	0	0	**9**	**613**
Hourly Total	10	554	0	0	**564**	6	0	0	0	**6**	2	629	0	0	**631**	19	0	0	0	**19**	**1220**
Total	36	2260	0	0	**2296**	39	0	0	0	**39**	12	2476	0	0	**2488**	70	0	0	0	**70**	**4893**
% Approach	1.6%	98.4%	0%	0%	**-**	100%	0%	0%	0%	**-**	0.5%	99.5%	0%	0%	**-**	100%	0%	0%	0%	**-**	-
% Total	0.7%	46.2%	0%	0%	**46.9%**	0.8%	0%	0%	0%	**0.8%**	0.2%	50.6%	0%	0%	**50.8%**	1.4%	0%	0%	0%	**1.4%**	-
Lights	36	2224	0	0	**2260**	39	0	0	0	**39**	12	2445	0	0	**2457**	70	0	0	0	**70**	4826
% Lights	100%	98.4%	0%	0%	**98.4%**	100%	0%	0%	0%	**100%**	100%	98.7%	0%	0%	**98.8%**	100%	0%	0%	0%	**100%**	98.6%
Articulated Trucks	0	17	0	0	**17**	0	0	0	0	**0**	0	14	0	0	**14**	0	0	0	0	**0**	31
% Articulated Trucks	0%	0.8%	0%	0%	**0.7%**	0%	0%	0%	0%	**0%**	0%	0.6%	0%	0%	**0.6%**	0%	0%	0%	0%	**0%**	0.6%
Buses and Single-Unit Trucks	0	19	0	0	**19**	0	0	0	0	**0**	0	17	0	0	**17**	0	0	0	0	**0**	36
% Buses and Single-Unit Trucks	0%	0.8%	0%	0%	**0.8%**	0%	0%	0%	0%	**0%**	0%	0.7%	0%	0%	**0.7%**	0%	0%	0%	0%	**0%**	0.7%

*L: Left, R: Right, T: Thru, U: U-Turn

Route 291 & Southeast 16th Street - Saturday - TMC

Sat Jul 19, 2025
Midday Peak (WKND) (12 PM - 1 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1320858, Location: 38.89247, -94.373594

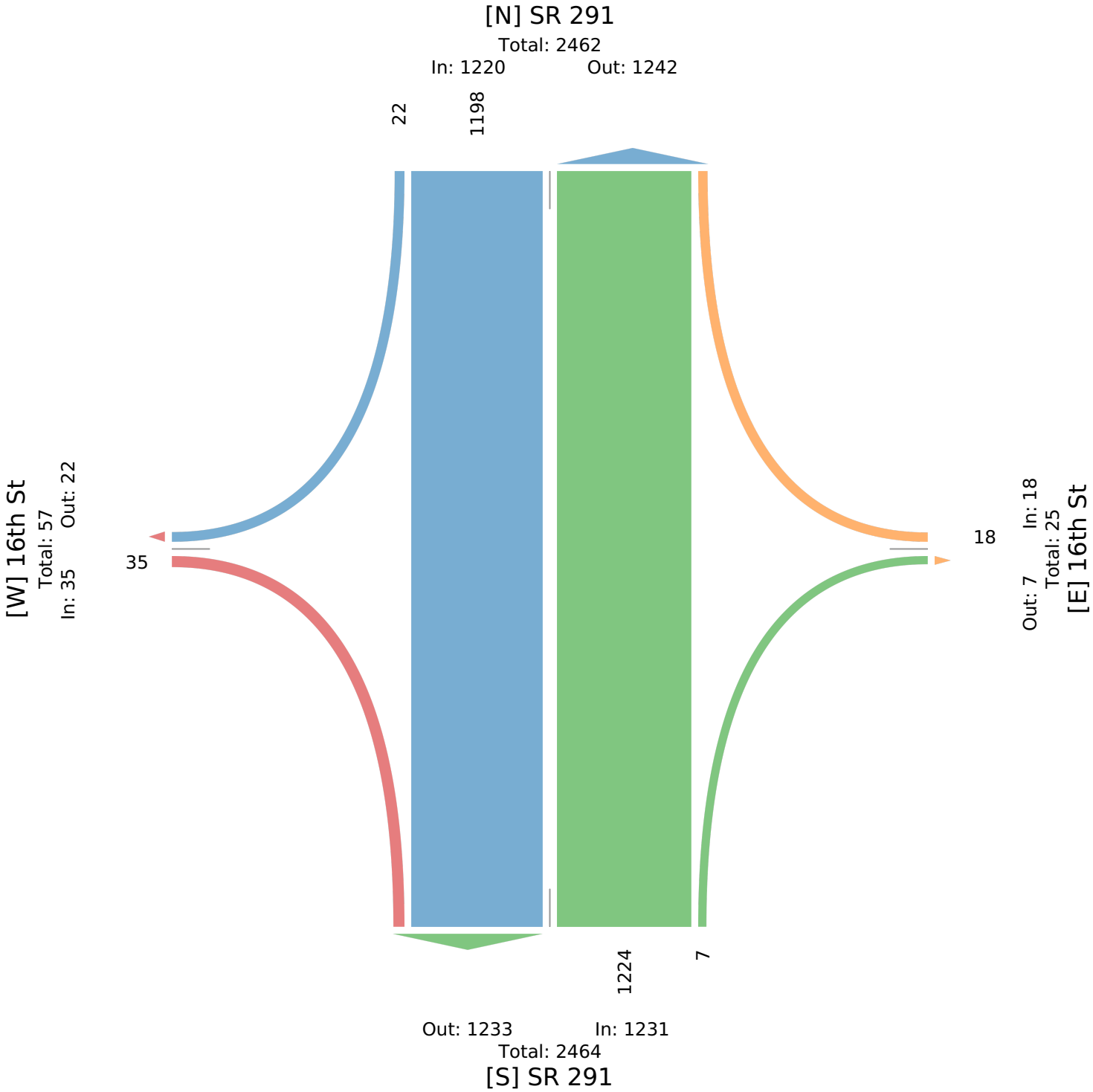
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	SR 291					16th St					SR 291					16th St					
Direction	Southbound					Westbound					Northbound					Eastbound					
Time	R	T	L	U	**App**	R	T	L	U	**App**	R	T	L	U	**App**	R	T	L	U	**App**	**Int**
2025-07-19 12:00PM	5	317	0	0	**322**	9	0	0	0	**9**	2	302	0	0	**304**	13	0	0	0	**13**	**648**
12:15PM	7	312	0	0	**319**	3	0	0	0	**3**	1	268	0	0	**269**	4	0	0	0	**4**	**595**
12:30PM	4	267	0	0	**271**	3	0	0	0	**3**	1	326	0	0	**327**	8	0	0	0	**8**	**609**
12:45PM	6	302	0	0	**308**	3	0	0	0	**3**	3	328	0	0	**331**	10	0	0	0	**10**	**652**
Total	22	1198	0	0	**1220**	18	0	0	0	**18**	7	1224	0	0	**1231**	35	0	0	0	**35**	**2504**
% Approach	1.8%	98.2%	0%	0%	**-**	100%	0%	0%	0%	**-**	0.6%	99.4%	0%	0%	**-**	100%	0%	0%	0%	**-**	-
% Total	0.9%	47.8%	0%	0%	**48.7%**	0.7%	0%	0%	0%	**0.7%**	0.3%	48.9%	0%	0%	**49.2%**	1.4%	0%	0%	0%	**1.4%**	-
PHF	0.786	0.945	-	-	**0.947**	0.500	-	-	-	**0.500**	0.583	0.933	-	-	**0.930**	0.673	-	-	-	**0.673**	0.960
Lights	22	1175	0	0	**1197**	18	0	0	0	**18**	7	1209	0	0	**1216**	35	0	0	0	**35**	2466
% Lights	100%	98.1%	0%	0%	**98.1%**	100%	0%	0%	0%	**100%**	100%	98.8%	0%	0%	**98.8%**	100%	0%	0%	0%	**100%**	98.5%
Articulated Trucks	0	11	0	0	**11**	0	0	0	0	**0**	0	8	0	0	**8**	0	0	0	0	**0**	19
% Articulated Trucks	0%	0.9%	0%	0%	**0.9%**	0%	0%	0%	0%	**0%**	0%	0.7%	0%	0%	**0.6%**	0%	0%	0%	0%	**0%**	0.8%
Buses and Single-Unit Trucks	0	12	0	0	**12**	0	0	0	0	**0**	0	7	0	0	**7**	0	0	0	0	**0**	19
% Buses and Single-Unit Trucks	0%	1.0%	0%	0%	**1.0%**	0%	0%	0%	0%	**0%**	0%	0.6%	0%	0%	**0.6%**	0%	0%	0%	0%	**0%**	0.8%

*L: Left, R: Right, T: Thru, U: U-Turn

Route 291 & Southeast 16th Street - Saturday - TMC
Sat Jul 19, 2025
Midday Peak (WKND) (12 PM - 1 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1320858, Location: 38.89247, -94.373594

GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



TRAFFIC COUNTS
Route 291 &
Scherer Road

Route 291 & Southwest Scherer Road - Tuesday... - TMC

Thu Jul 10, 2025
Full Length (7 AM-9 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1317913, Location: 38.888747, -94.373425

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	SR 291					Thompson Dr					SR 291					Scherer Rd					
Direction	Southbound					Westbound					Northbound					Eastbound					
Time	R	T	L	U	**App**	R	T	L	U	**App**	R	T	L	U	**App**	R	T	L	U	**App**	**Int**
2025-07-10 7:00AM	3	163	21	7	**194**	27	4	9	0	**40**	6	274	9	0	**289**	6	2	10	0	**18**	**541**
7:15AM	15	192	13	9	**229**	12	0	1	0	**13**	9	416	9	0	**434**	2	2	12	0	**16**	**692**
7:30AM	15	193	13	9	**230**	8	2	4	0	**14**	8	303	7	0	**318**	9	0	21	0	**30**	**592**
7:45AM	18	240	23	6	**287**	8	5	4	0	**17**	5	414	18	0	**437**	3	4	22	0	**29**	**770**
Hourly Total	51	788	70	31	**940**	55	11	18	0	**84**	28	1407	43	0	**1478**	20	8	65	0	**93**	**2595**
8:00AM	6	204	18	10	**238**	5	0	1	0	**6**	5	302	6	0	**313**	7	1	14	0	**22**	**579**
8:15AM	11	241	8	2	**262**	9	4	6	0	**19**	2	406	8	0	**416**	3	1	15	0	**19**	**716**
8:30AM	12	237	12	8	**269**	9	0	3	0	**12**	5	325	5	0	**335**	1	2	19	0	**22**	**638**
8:45AM	8	272	14	2	**296**	4	2	3	0	**9**	6	385	11	0	**402**	7	3	16	0	**26**	**733**
Hourly Total	37	954	52	22	**1065**	27	6	13	0	**46**	18	1418	30	0	**1466**	18	7	64	0	**89**	**2666**
Total	88	1742	122	53	**2005**	82	17	31	0	**130**	46	2825	73	0	**2944**	38	15	129	0	**182**	**5261**
% Approach	4.4%	86.9%	6.1%	2.6%	-	63.1%	13.1%	23.8%	0%	-	1.6%	96.0%	2.5%	0%	-	20.9%	8.2%	70.9%	0%	-	-
% Total	1.7%	33.1%	2.3%	1.0%	**38.1%**	1.6%	0.3%	0.6%	0%	**2.5%**	0.9%	53.7%	1.4%	0%	**56.0%**	0.7%	0.3%	2.5%	0%	**3.5%**	-
Lights	85	1570	105	51	**1811**	65	13	19	0	**97**	39	2663	73	0	**2775**	36	15	124	0	**175**	4858
% Lights	96.6%	90.1%	86.1%	96.2%	**90.3%**	79.3%	76.5%	61.3%	0%	**74.6%**	84.8%	94.3%	100%	0%	**94.3%**	94.7%	100%	96.1%	0%	**96.2%**	92.3%
Articulated Trucks	2	45	14	0	**61**	10	1	1	0	**12**	3	42	0	0	**45**	1	0	0	0	**1**	119
% Articulated Trucks	2.3%	2.6%	11.5%	0%	**3.0%**	12.2%	5.9%	3.2%	0%	**9.2%**	6.5%	1.5%	0%	0%	**1.5%**	2.6%	0%	0%	0%	**0.5%**	2.3%
Buses and Single-Unit Trucks	1	127	3	2	**133**	7	3	11	0	**21**	4	120	0	0	**124**	1	0	5	0	**6**	284
% Buses and Single-Unit Trucks	1.1%	7.3%	2.5%	3.8%	**6.6%**	8.5%	17.6%	35.5%	0%	**16.2%**	8.7%	4.2%	0%	0%	**4.2%**	2.6%	0%	3.9%	0%	**3.3%**	5.4%

*L: Left, R: Right, T: Thru, U: U-Turn

Route 291 & Southwest Scherer Road - Tuesday... - TMC

Thu Jul 10, 2025
AM Peak (7:45 AM - 8:45 AM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1317913, Location: 38.888747, -94.373425

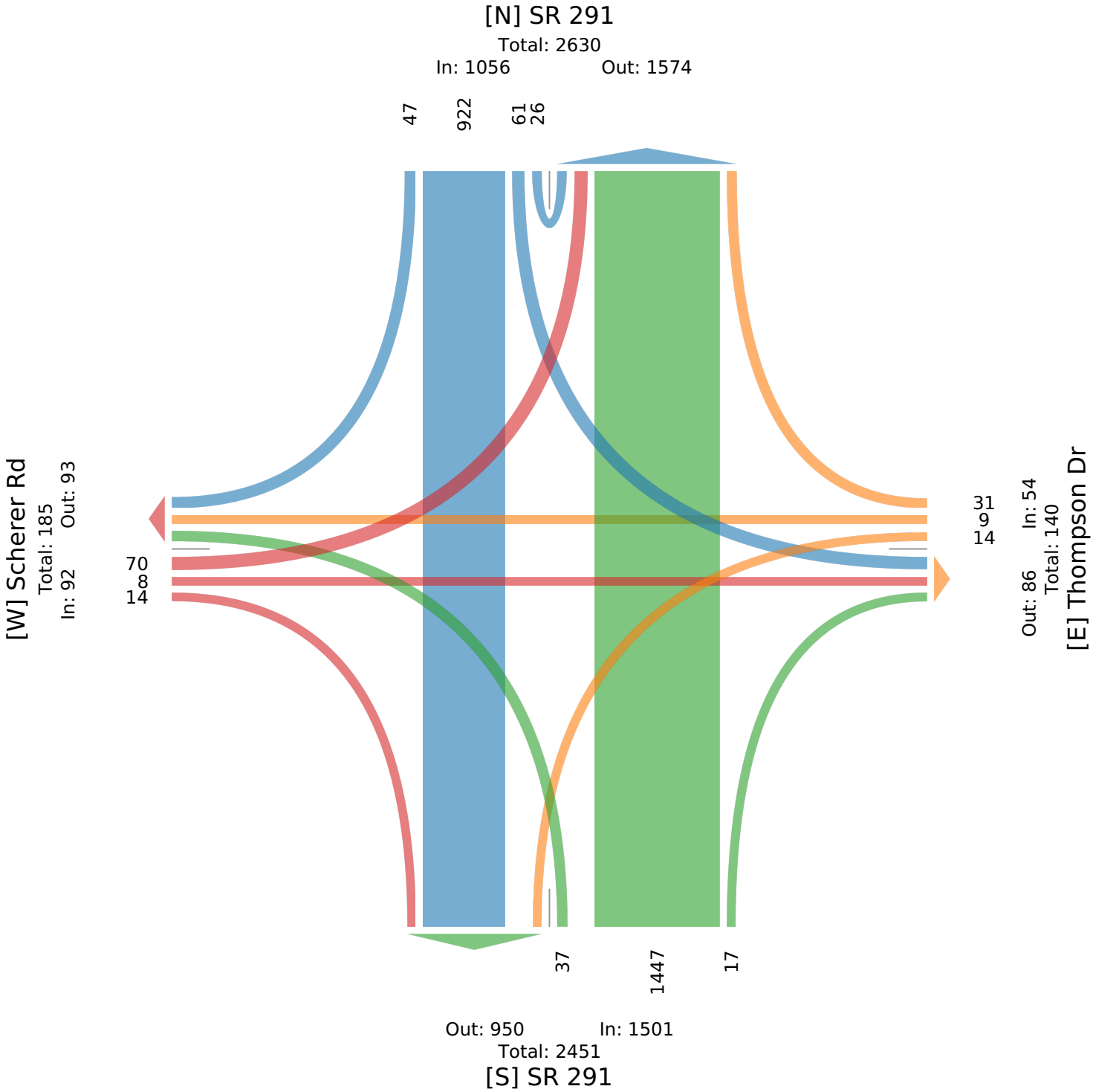
GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	SR 291					Thompson Dr					SR 291					Scherer Rd					
Direction	Southbound					Westbound					Northbound					Eastbound					
Time	R	T	L	U	**App**	R	T	L	U	**App**	R	T	L	U	**App**	R	T	L	U	**App**	**Int**
2025-07-10 7:45AM	18	240	23	6	**287**	8	5	4	0	**17**	5	414	18	0	**437**	3	4	22	0	**29**	**770**
8:00AM	6	204	18	10	**238**	5	0	1	0	**6**	5	302	6	0	**313**	7	1	14	0	**22**	**579**
8:15AM	11	241	8	2	**262**	9	4	6	0	**19**	2	406	8	0	**416**	3	1	15	0	**19**	**716**
8:30AM	12	237	12	8	**269**	9	0	3	0	**12**	5	325	5	0	**335**	1	2	19	0	**22**	**638**
Total	47	922	61	26	**1056**	31	9	14	0	**54**	17	1447	37	0	**1501**	14	8	70	0	**92**	**2703**
% Approach	4.5%	87.3%	5.8%	2.5%	-	57.4%	16.7%	25.9%	0%	-	1.1%	96.4%	2.5%	0%	-	15.2%	8.7%	76.1%	0%	-	-
% Total	1.7%	34.1%	2.3%	1.0%	**39.1%**	1.1%	0.3%	0.5%	0%	**2.0%**	0.6%	53.5%	1.4%	0%	**55.5%**	0.5%	0.3%	2.6%	0%	**3.4%**	-
PHF	0.653	0.956	0.663	0.650	**0.920**	0.861	0.450	0.583	-	**0.711**	0.850	0.874	0.514	-	**0.859**	0.500	0.500	0.795	-	**0.793**	0.878
Lights	46	832	52	25	**955**	23	5	8	0	**36**	15	1368	37	0	**1420**	13	8	67	0	**88**	2499
% Lights	97.9%	90.2%	85.2%	96.2%	**90.4%**	74.2%	55.6%	57.1%	0%	**66.7%**	88.2%	94.5%	100%	0%	**94.6%**	92.9%	100%	95.7%	0%	**95.7%**	92.5%
Articulated Trucks	1	23	8	0	**32**	6	1	0	0	**7**	1	25	0	0	**26**	0	0	0	0	**0**	65
% Articulated Trucks	2.1%	2.5%	13.1%	0%	**3.0%**	19.4%	11.1%	0%	0%	**13.0%**	5.9%	1.7%	0%	0%	**1.7%**	0%	0%	0%	0%	**0%**	2.4%
Buses and Single-Unit Trucks	0	67	1	1	**69**	2	3	6	0	**11**	1	54	0	0	**55**	1	0	3	0	**4**	139
% Buses and Single-Unit Trucks	0%	7.3%	1.6%	3.8%	**6.5%**	6.5%	33.3%	42.9%	0%	**20.4%**	5.9%	3.7%	0%	0%	**3.7%**	7.1%	0%	4.3%	0%	**4.3%**	5.1%

*L: Left, R: Right, T: Thru, U: U-Turn

Route 291 & Southwest Scherer Road - Tuesday... - TMC
Thu Jul 10, 2025
AM Peak (7:45 AM - 8:45 AM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1317913, Location: 38.888747, -94.373425

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



Route 291 & Southwest Scherer Road - PM - TMC

Tue Jul 22, 2025
Full Length (4 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1320861, Location: 38.888747, -94.373425

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	SR 291					Thompson Dr					SR 291					Scherer Road					
Direction	Southbound					Westbound					Northbound					Eastbound					
Time	R	T	L	U	**App**	R	T	L	U	**App**	R	T	L	U	**App**	R	T	L	U	**App**	**Int**
2025-07-22 4:00PM	15	419	11	0	**445**	13	1	11	0	**25**	3	313	11	0	**327**	16	2	28	0	**46**	**843**
4:15PM	9	485	4	8	**506**	9	3	8	0	**20**	3	352	3	0	**358**	7	1	24	0	**32**	**916**
4:30PM	6	442	2	5	**455**	13	3	4	0	**20**	4	301	11	1	**317**	16	3	50	0	**69**	**861**
4:45PM	16	461	6	6	**489**	15	2	6	0	**23**	1	357	7	0	**365**	12	1	17	0	**30**	**907**
Hourly Total	46	1807	23	19	**1895**	50	9	29	0	**88**	11	1323	32	1	**1367**	51	7	119	0	**177**	**3527**
5:00PM	8	461	6	5	**480**	16	0	7	0	**23**	2	330	10	0	**342**	12	0	32	0	**44**	**889**
5:15PM	15	488	6	3	**512**	16	0	8	0	**24**	2	366	11	1	**380**	6	1	31	0	**38**	**954**
5:30PM	8	398	7	2	**415**	9	0	3	0	**12**	0	277	4	0	**281**	8	0	21	0	**29**	**737**
5:45PM	12	421	9	0	**442**	6	0	1	0	**7**	2	292	6	0	**300**	12	2	19	0	**33**	**782**
Hourly Total	43	1768	28	10	**1849**	47	0	19	0	**66**	6	1265	31	1	**1303**	38	3	103	0	**144**	**3362**
Total	89	3575	51	29	**3744**	97	9	48	0	**154**	17	2588	63	2	**2670**	89	10	222	0	**321**	**6889**
% Approach	2.4%	95.5%	1.4%	0.8%	**-**	63.0%	5.8%	31.2%	0%	**-**	0.6%	96.9%	2.4%	0.1%	**-**	27.7%	3.1%	69.2%	0%	**-**	-
% Total	1.3%	51.9%	0.7%	0.4%	**54.3%**	1.4%	0.1%	0.7%	0%	**2.2%**	0.2%	37.6%	0.9%	0%	**38.8%**	1.3%	0.1%	3.2%	0%	**4.7%**	-
Lights	88	3508	34	28	**3658**	89	8	47	0	**144**	14	2538	62	2	**2616**	89	8	221	0	**318**	6736
% Lights	98.9%	98.1%	66.7%	96.6%	**97.7%**	91.8%	88.9%	97.9%	0%	**93.5%**	82.4%	98.1%	98.4%	100%	**98.0%**	100%	80.0%	99.5%	0%	**99.1%**	97.8%
Articulated Trucks	0	24	8	0	**32**	7	0	1	0	**8**	1	16	0	0	**17**	0	0	0	0	**0**	57
% Articulated Trucks	0%	0.7%	15.7%	0%	**0.9%**	7.2%	0%	2.1%	0%	**5.2%**	5.9%	0.6%	0%	0%	**0.6%**	0%	0%	0%	0%	**0%**	0.8%
Buses and Single-Unit Trucks	1	43	9	1	**54**	1	1	0	0	**2**	2	34	1	0	**37**	0	2	1	0	**3**	96
% Buses and Single-Unit Trucks	1.1%	1.2%	17.6%	3.4%	**1.4%**	1.0%	11.1%	0%	0%	**1.3%**	11.8%	1.3%	1.6%	0%	**1.4%**	0%	20.0%	0.5%	0%	**0.9%**	1.4%

*L: Left, R: Right, T: Thru, U: U-Turn

Route 291 & Southwest Scherer Road - PM - TMC

Tue Jul 22, 2025
PM Peak (4:30 PM - 5:30 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1320861, Location: 38.888747, -94.373425

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

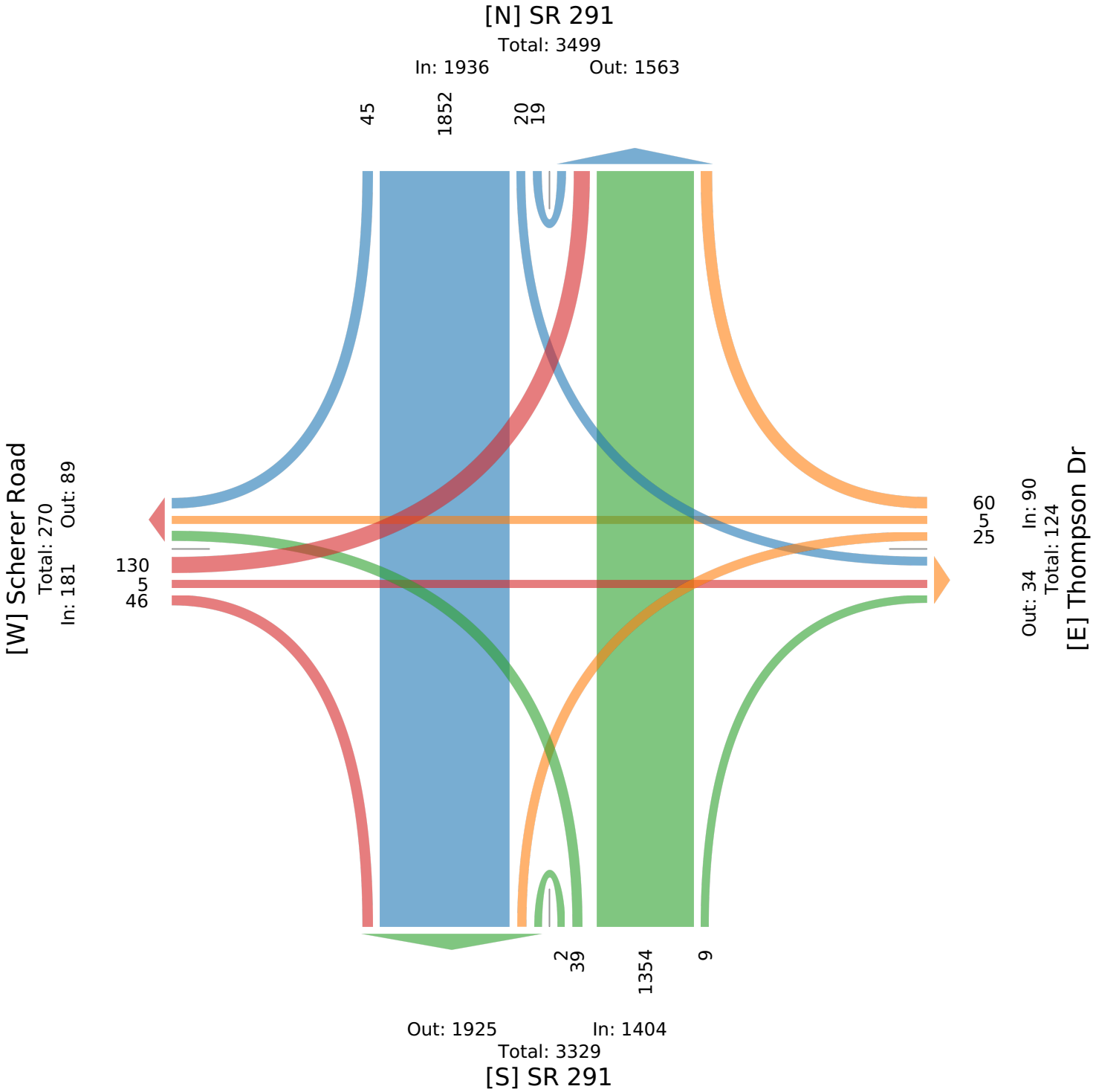
Leg	SR 291					Thompson Dr					SR 291					Scherer Road					
Direction	Southbound					Westbound					Northbound					Eastbound					
Time	R	T	L	U	**App**	R	T	L	U	**App**	R	T	L	U	**App**	R	T	L	U	**App**	**Int**
2025-07-22 4:30PM	6	442	2	5	**455**	13	3	4	0	**20**	4	301	11	1	**317**	16	3	50	0	**69**	**861**
4:45PM	16	461	6	6	**489**	15	2	6	0	**23**	1	357	7	0	**365**	12	1	17	0	**30**	**907**
5:00PM	8	461	6	5	**480**	16	0	7	0	**23**	2	330	10	0	**342**	12	0	32	0	**44**	**889**
5:15PM	15	488	6	3	**512**	16	0	8	0	**24**	2	366	11	1	**380**	6	1	31	0	**38**	**954**
Total	45	1852	20	19	**1936**	60	5	25	0	**90**	9	1354	39	2	**1404**	46	5	130	0	**181**	**3611**
% Approach	2.3%	95.7%	1.0%	1.0%	**-**	66.7%	5.6%	27.8%	0%	**-**	0.6%	96.4%	2.8%	0.1%	**-**	25.4%	2.8%	71.8%	0%	**-**	-
% Total	1.2%	51.3%	0.6%	0.5%	**53.6%**	1.7%	0.1%	0.7%	0%	**2.5%**	0.2%	37.5%	1.1%	0.1%	**38.9%**	1.3%	0.1%	3.6%	0%	**5.0%**	-
PHF	0.703	0.949	0.833	0.792	**0.945**	0.938	0.417	0.781	-	**0.938**	0.563	0.925	0.886	0.500	**0.924**	0.719	0.417	0.650	-	**0.656**	0.946
Lights	45	1823	13	18	**1899**	57	4	24	0	**85**	8	1334	38	2	**1382**	46	4	129	0	**179**	3545
% Lights	100%	98.4%	65.0%	94.7%	**98.1%**	95.0%	80.0%	96.0%	0%	**94.4%**	88.9%	98.5%	97.4%	100%	**98.4%**	100%	80.0%	99.2%	0%	**98.9%**	98.2%
Articulated Trucks	0	9	3	0	**12**	3	0	1	0	**4**	0	6	0	0	**6**	0	0	0	0	**0**	22
% Articulated Trucks	0%	0.5%	15.0%	0%	**0.6%**	5.0%	0%	4.0%	0%	**4.4%**	0%	0.4%	0%	0%	**0.4%**	0%	0%	0%	0%	**0%**	0.6%
Buses and Single-Unit Trucks	0	20	4	1	**25**	0	1	0	0	**1**	1	14	1	0	**16**	0	1	1	0	**2**	44
% Buses and Single-Unit Trucks	0%	1.1%	20.0%	5.3%	**1.3%**	0%	20.0%	0%	0%	**1.1%**	11.1%	1.0%	2.6%	0%	**1.1%**	0%	20.0%	0.8%	0%	**1.1%**	1.2%

*L: Left, R: Right, T: Thru, U: U-Turn

Route 291 & Southwest Scherer Road - PM - TMC

Tue Jul 22, 2025
PM Peak (4:30 PM - 5:30 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1320861, Location: 38.888747, -94.373425

GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



Route 291 & Southwest Scherer Road - Saturday - TMC

Sat Jul 19, 2025
Full Length (11:30 AM-1:30 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1320863, Location: 38.888747, -94.373425

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	SR 291					Thompson Dr					SR 291					Scherer Road					
Direction	Southbound					Westbound					Northbound					Eastbound					
Time	R	T	L	U	**App**	R	T	L	U	**App**	R	T	L	U	**App**	R	T	L	U	**App**	**Int**
2025-07-19 11:30AM	9	253	4	1	**267**	2	2	3	0	**7**	4	284	5	0	**293**	0	0	8	0	**8**	**575**
11:45AM	4	232	3	2	**241**	3	1	5	0	**9**	0	297	6	0	**303**	5	2	14	0	**21**	**574**
Hourly Total	13	485	7	3	**508**	5	3	8	0	**16**	4	581	11	0	**596**	5	2	22	0	**29**	**1149**
12:00PM	11	307	6	2	**326**	6	3	4	0	**13**	6	283	5	0	**294**	5	0	9	0	**14**	**647**
12:15PM	6	272	7	1	**286**	4	1	2	0	**7**	4	239	2	1	**246**	9	1	13	0	**23**	**562**
12:30PM	8	268	9	1	**286**	3	2	5	0	**10**	1	303	3	0	**307**	2	2	8	0	**12**	**615**
12:45PM	9	303	2	5	**319**	3	1	1	0	**5**	3	303	4	0	**310**	7	2	11	0	**20**	**654**
Hourly Total	34	1150	24	9	**1217**	16	7	12	0	**35**	14	1128	14	1	**1157**	23	5	41	0	**69**	**2478**
1:00PM	7	293	2	1	**303**	4	0	0	0	**4**	3	282	2	0	**287**	3	1	11	0	**15**	**609**
1:15PM	6	263	3	1	**273**	3	0	4	0	**7**	6	310	4	0	**320**	1	1	17	0	**19**	**619**
Hourly Total	13	556	5	2	**576**	7	0	4	0	**11**	9	592	6	0	**607**	4	2	28	0	**34**	**1228**
Total	60	2191	36	14	**2301**	28	10	24	0	**62**	27	2301	31	1	**2360**	32	9	91	0	**132**	**4855**
% Approach	2.6%	95.2%	1.6%	0.6%	**-**	45.2%	16.1%	38.7%	0%	**-**	1.1%	97.5%	1.3%	0%	**-**	24.2%	6.8%	68.9%	0%	**-**	**-**
% Total	1.2%	45.1%	0.7%	0.3%	**47.4%**	0.6%	0.2%	0.5%	0%	**1.3%**	0.6%	47.4%	0.6%	0%	**48.6%**	0.7%	0.2%	1.9%	0%	**2.7%**	**-**
Lights	59	2165	28	14	**2266**	25	10	23	0	**58**	25	2276	31	1	**2333**	32	9	91	0	**132**	4789
% Lights	98.3%	98.8%	77.8%	100%	**98.5%**	89.3%	100%	95.8%	0%	**93.5%**	92.6%	98.9%	100%	100%	**98.9%**	100%	100%	100%	0%	**100%**	98.6%
Articulated Trucks	0	14	3	0	**17**	1	0	0	0	**1**	1	11	0	0	**12**	0	0	0	0	**0**	30
% Articulated Trucks	0%	0.6%	8.3%	0%	**0.7%**	3.6%	0%	0%	0%	**1.6%**	3.7%	0.5%	0%	0%	**0.5%**	0%	0%	0%	0%	**0%**	0.6%
Buses and Single-Unit Trucks	1	12	5	0	**18**	2	0	1	0	**3**	1	14	0	0	**15**	0	0	0	0	**0**	36
% Buses and Single-Unit Trucks	1.7%	0.5%	13.9%	0%	**0.8%**	7.1%	0%	4.2%	0%	**4.8%**	3.7%	0.6%	0%	0%	**0.6%**	0%	0%	0%	0%	**0%**	0.7%

*L: Left, R: Right, T: Thru, U: U-Turn

Route 291 & Southwest Scherer Road - Saturday - TMC

Sat Jul 19, 2025
Midday Peak (WKND) (12:30 PM - 1:30 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1320863, Location: 38.888747, -94.373425

GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

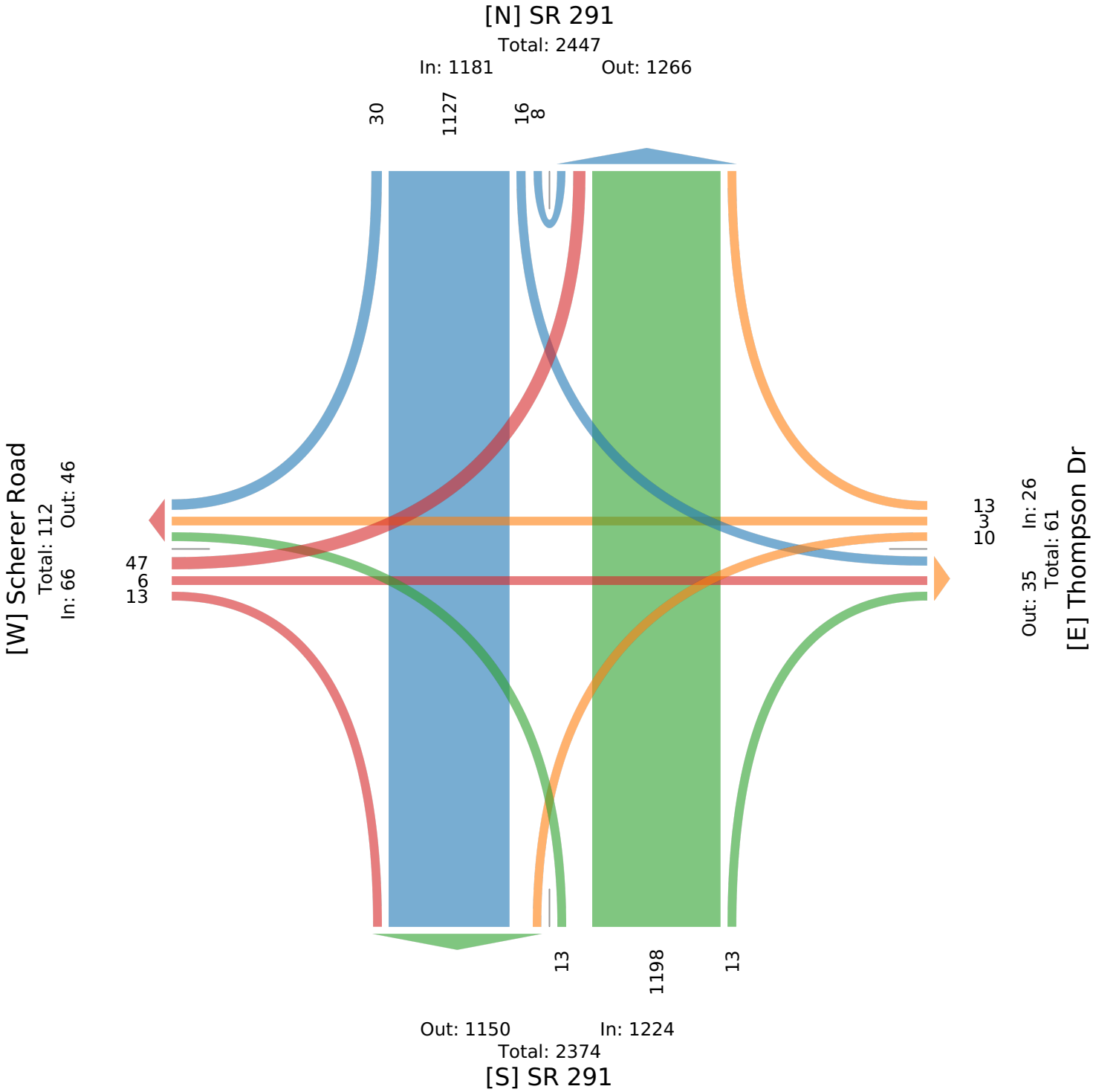
Leg	SR 291					Thompson Dr					SR 291					Scherer Road					
Direction	Southbound					Westbound					Northbound					Eastbound					
Time	R	T	L	U	**App**	R	T	L	U	**App**	R	T	L	U	**App**	R	T	L	U	**App**	**Int**
2025-07-19 12:30PM	8	268	9	1	**286**	3	2	5	0	**10**	1	303	3	0	**307**	2	2	8	0	**12**	**615**
12:45PM	9	303	2	5	**319**	3	1	1	0	**5**	3	303	4	0	**310**	7	2	11	0	**20**	**654**
1:00PM	7	293	2	1	**303**	4	0	0	0	**4**	3	282	2	0	**287**	3	1	11	0	**15**	**609**
1:15PM	6	263	3	1	**273**	3	0	4	0	**7**	6	310	4	0	**320**	1	1	17	0	**19**	**619**
Total	30	1127	16	8	**1181**	13	3	10	0	**26**	13	1198	13	0	**1224**	13	6	47	0	**66**	**2497**
% Approach	2.5%	95.4%	1.4%	0.7%	**-**	50.0%	11.5%	38.5%	0%	**-**	1.1%	97.9%	1.1%	0%	**-**	19.7%	9.1%	71.2%	0%	**-**	-
% Total	1.2%	45.1%	0.6%	0.3%	**47.3%**	0.5%	0.1%	0.4%	0%	**1.0%**	0.5%	48.0%	0.5%	0%	**49.0%**	0.5%	0.2%	1.9%	0%	**2.6%**	-
PHF	0.833	0.930	0.444	0.400	**0.926**	0.813	0.375	0.500	-	**0.650**	0.542	0.966	0.813	-	**0.956**	0.464	0.750	0.691	-	**0.825**	0.955
Lights	29	1112	14	8	**1163**	11	3	10	0	**24**	12	1181	13	0	**1206**	13	6	47	0	**66**	2459
% Lights	96.7%	98.7%	87.5%	100%	**98.5%**	84.6%	100%	100%	0%	**92.3%**	92.3%	98.6%	100%	0%	**98.5%**	100%	100%	100%	0%	**100%**	98.5%
Articulated Trucks	0	8	1	0	**9**	1	0	0	0	**1**	1	7	0	0	**8**	0	0	0	0	**0**	18
% Articulated Trucks	0%	0.7%	6.3%	0%	**0.8%**	7.7%	0%	0%	0%	**3.8%**	7.7%	0.6%	0%	0%	**0.7%**	0%	0%	0%	0%	**0%**	0.7%
Buses and Single-Unit Trucks	1	7	1	0	**9**	1	0	0	0	**1**	0	10	0	0	**10**	0	0	0	0	**0**	20
% Buses and Single-Unit Trucks	3.3%	0.6%	6.3%	0%	**0.8%**	7.7%	0%	0%	0%	**3.8%**	0%	0.8%	0%	0%	**0.8%**	0%	0%	0%	0%	**0%**	0.8%

*L: Left, R: Right, T: Thru, U: U-Turn

Route 291 & Southwest Scherer Road - Saturday - TMC

Sat Jul 19, 2025
Midday Peak (WKND) (12:30 PM - 1:30 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1320863, Location: 38.888747, -94.373425

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



TRAFFIC COUNTS
Bailey Road &
Hamblen Road

Southeast Bailey Road & Southeast Hamblen Ro... - TMC

Thu Jul 10, 2025
Full Length (7 AM-9 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1317914, Location: 38.895744, -94.363444

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	Hamblen Road					Bailey Road					Hamblen Road					Bailey Road					
Direction	Southbound					Westbound					Northbound					Eastbound					
Time	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	Int
2025-07-10 7:00AM	17	8	21	0	**46**	33	30	2	0	**65**	0	0	1	0	**1**	0	33	31	0	**64**	**176**
7:15AM	23	11	33	0	**67**	35	38	2	0	**75**	0	0	1	0	**1**	4	32	54	0	**90**	**233**
7:30AM	23	3	21	0	**47**	35	33	0	0	**68**	0	0	0	0	**0**	1	25	45	0	**71**	**186**
7:45AM	39	10	30	0	**79**	38	43	1	0	**82**	1	0	0	0	**1**	3	37	62	0	**102**	**264**
Hourly Total	102	32	105	0	**239**	141	144	5	0	**290**	1	0	2	0	**3**	8	127	192	0	**327**	**859**
8:00AM	25	1	24	0	**50**	39	35	0	0	**74**	0	1	4	0	**5**	0	32	41	0	**73**	**202**
8:15AM	28	1	18	0	**47**	36	35	0	0	**71**	0	2	0	0	**2**	0	24	58	0	**82**	**202**
8:30AM	43	2	12	0	**57**	36	33	0	0	**69**	0	9	8	0	**17**	0	21	42	0	**63**	**206**
8:45AM	36	2	21	0	**59**	22	39	0	0	**61**	0	1	0	0	**1**	0	38	55	0	**93**	**214**
Hourly Total	132	6	75	0	**213**	133	142	0	0	**275**	0	13	12	0	**25**	0	115	196	0	**311**	**824**
Total	234	38	180	0	**452**	274	286	5	0	**565**	1	13	14	0	**28**	8	242	388	0	**638**	**1683**
% Approach	51.8%	8.4%	39.8%	0%	**-**	48.5%	50.6%	0.9%	0%	**-**	3.6%	46.4%	50.0%	0%	**-**	1.3%	37.9%	60.8%	0%	**-**	-
% Total	13.9%	2.3%	10.7%	0%	**26.9%**	16.3%	17.0%	0.3%	0%	**33.6%**	0.1%	0.8%	0.8%	0%	**1.7%**	0.5%	14.4%	23.1%	0%	**37.9%**	-
Lights	215	35	163	0	**413**	252	256	5	0	**513**	0	7	4	0	**11**	7	218	374	0	**599**	1536
% Lights	91.9%	92.1%	90.6%	0%	**91.4%**	92.0%	89.5%	100%	0%	**90.8%**	0%	53.8%	28.6%	0%	**39.3%**	87.5%	90.1%	96.4%	0%	**93.9%**	91.3%
Articulated Trucks	1	1	2	0	**4**	5	8	0	0	**13**	0	1	3	0	**4**	0	2	0	0	**2**	23
% Articulated Trucks	0.4%	2.6%	1.1%	0%	**0.9%**	1.8%	2.8%	0%	0%	**2.3%**	0%	7.7%	21.4%	0%	**14.3%**	0%	0.8%	0%	0%	**0.3%**	1.4%
Buses and Single-Unit Trucks	18	2	15	0	**35**	17	22	0	0	**39**	1	5	7	0	**13**	1	22	14	0	**37**	124
% Buses and Single-Unit Trucks	7.7%	5.3%	8.3%	0%	**7.7%**	6.2%	7.7%	0%	0%	**6.9%**	100%	38.5%	50.0%	0%	**46.4%**	12.5%	9.1%	3.6%	0%	**5.8%**	7.4%

*L: Left, R: Right, T: Thru, U: U-Turn

Southeast Bailey Road & Southeast Hamblen Ro... - TMC

Thu Jul 10, 2025
AM Peak (7:15 AM - 8:15 AM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1317914, Location: 38.895744, -94.363444

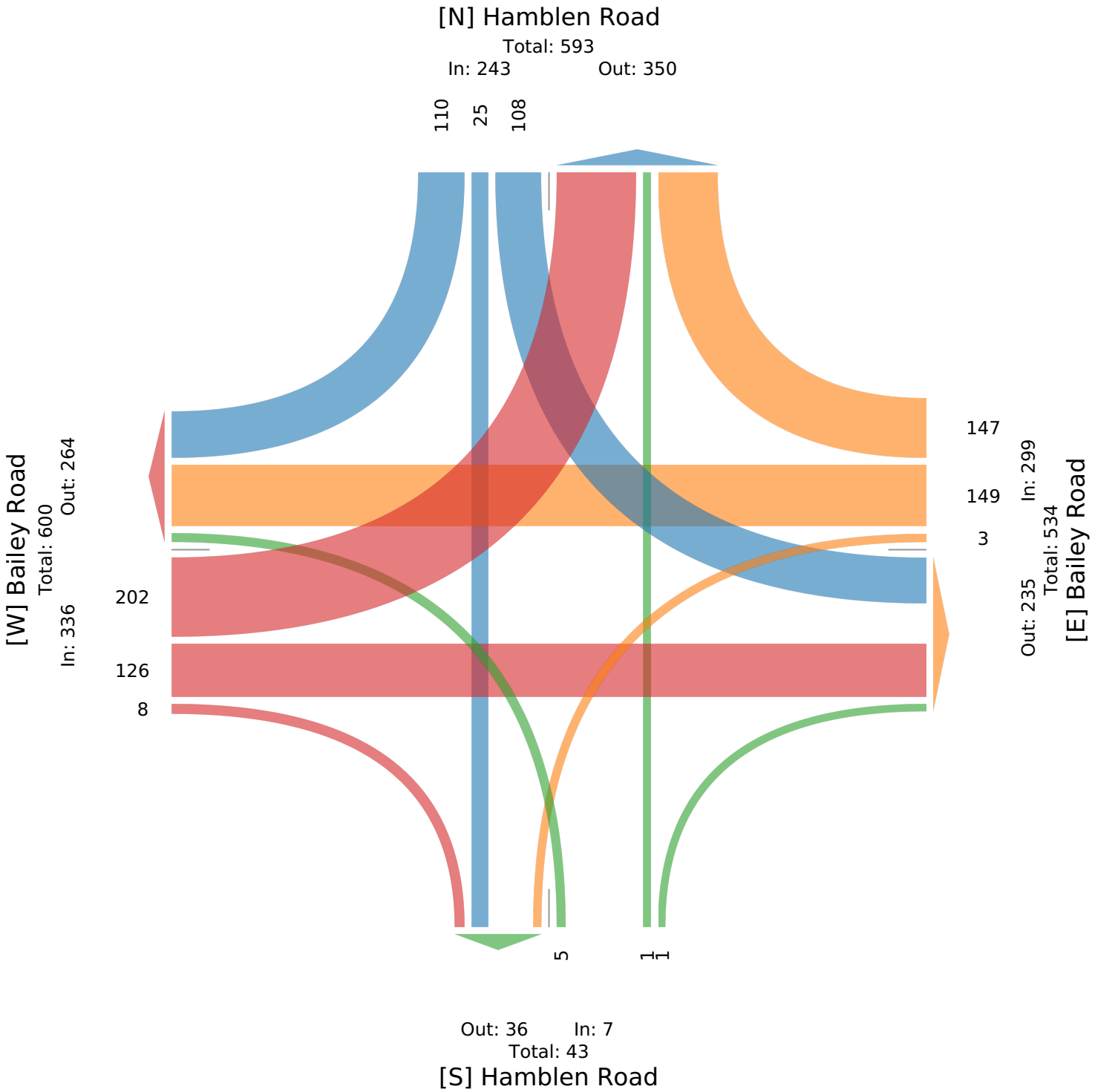
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	Hamblen Road					Bailey Road					Hamblen Road					Bailey Road					
Direction	Southbound					Westbound					Northbound					Eastbound					
Time	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	Int
2025-07-10 7:15AM	23	11	33	0	**67**	35	38	2	0	**75**	0	0	1	0	**1**	4	32	54	0	**90**	**233**
7:30AM	23	3	21	0	**47**	35	33	0	0	**68**	0	0	0	0	**0**	1	25	45	0	**71**	**186**
7:45AM	39	10	30	0	**79**	38	43	1	0	**82**	1	0	0	0	**1**	3	37	62	0	**102**	**264**
8:00AM	25	1	24	0	**50**	39	35	0	0	**74**	0	1	4	0	**5**	0	32	41	0	**73**	**202**
Total	110	25	108	0	**243**	147	149	3	0	**299**	1	1	5	0	**7**	8	126	202	0	**336**	**885**
% Approach	45.3%	10.3%	44.4%	0%	**-**	49.2%	49.8%	1.0%	0%	**-**	14.3%	14.3%	71.4%	0%	**-**	2.4%	37.5%	60.1%	0%	**-**	-
% Total	12.4%	2.8%	12.2%	0%	**27.5%**	16.6%	16.8%	0.3%	0%	**33.8%**	0.1%	0.1%	0.6%	0%	**0.8%**	0.9%	14.2%	22.8%	0%	**38.0%**	-
PHF	0.705	0.568	0.818	-	**0.769**	0.942	0.866	0.375	-	**0.912**	0.250	0.250	0.313	-	**0.350**	0.500	0.851	0.815	-	**0.824**	0.838
Lights	96	23	95	0	**214**	135	131	3	0	**269**	0	1	2	0	**3**	7	112	191	0	**310**	796
% Lights	87.3%	92.0%	88.0%	0%	**88.1%**	91.8%	87.9%	100%	0%	**90.0%**	0%	100%	40.0%	0%	**42.9%**	87.5%	88.9%	94.6%	0%	**92.3%**	89.9%
Articulated Trucks	0	0	1	0	**1**	3	7	0	0	**10**	0	0	1	0	**1**	0	1	0	0	**1**	13
% Articulated Trucks	0%	0%	0.9%	0%	**0.4%**	2.0%	4.7%	0%	0%	**3.3%**	0%	0%	20.0%	0%	**14.3%**	0%	0.8%	0%	0%	**0.3%**	1.5%
Buses and Single-Unit Trucks	14	2	12	0	**28**	9	11	0	0	**20**	1	0	2	0	**3**	1	13	11	0	**25**	76
% Buses and Single-Unit Trucks	12.7%	8.0%	11.1%	0%	**11.5%**	6.1%	7.4%	0%	0%	**6.7%**	100%	0%	40.0%	0%	**42.9%**	12.5%	10.3%	5.4%	0%	**7.4%**	8.6%

*L: Left, R: Right, T: Thru, U: U-Turn

Southeast Bailey Road & Southeast Hamblen Ro... - TMC
Thu Jul 10, 2025
AM Peak (7:15 AM - 8:15 AM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1317914, Location: 38.895744, -94.363444

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



Southeast Bailey Road & Southeast Hamblen Ro... - TMC

Tue Jul 22, 2025
Full Length (4 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1320865, Location: 38.895744, -94.363444

GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	Hamblen Road					Bailey Road					Hamblen Road					Bailey Road					
Direction	Southbound					Westbound					Northbound					Eastbound					
Time	R	T	L	U	**App**	R	T	L	U	**App**	R	T	L	U	**App**	R	T	L	U	**App**	**Int**
2025-07-22 4:00PM	88	2	41	0	**131**	37	49	0	0	**86**	1	12	5	0	**18**	3	29	62	0	**94**	**329**
4:15PM	80	0	37	0	**117**	33	45	0	0	**78**	1	3	0	0	**4**	0	45	55	0	**100**	**299**
4:30PM	75	3	41	0	**119**	36	66	0	0	**102**	1	4	3	0	**8**	0	51	47	0	**98**	**327**
4:45PM	100	2	49	0	**151**	29	67	1	0	**97**	0	4	0	0	**4**	0	46	58	0	**104**	**356**
Hourly Total	343	7	168	0	**518**	135	227	1	0	**363**	3	23	8	0	**34**	3	171	222	0	**396**	**1311**
5:00PM	105	0	68	0	**173**	18	69	2	0	**89**	1	3	2	0	**6**	0	59	48	0	**107**	**375**
5:15PM	71	0	64	0	**135**	25	62	0	0	**87**	1	1	0	0	**2**	0	43	48	0	**91**	**315**
5:30PM	87	0	54	0	**141**	27	83	0	0	**110**	0	0	0	0	**0**	0	51	69	0	**120**	**371**
5:45PM	82	0	40	0	**122**	24	79	0	0	**103**	0	0	0	0	**0**	0	44	38	0	**82**	**307**
Hourly Total	345	0	226	0	**571**	94	293	2	0	**389**	2	4	2	0	**8**	0	197	203	0	**400**	**1368**
Total	688	7	394	0	**1089**	229	520	3	0	**752**	5	27	10	0	**42**	3	368	425	0	**796**	**2679**
% Approach	63.2%	0.6%	36.2%	0%	-	30.5%	69.1%	0.4%	0%	-	11.9%	64.3%	23.8%	0%	-	0.4%	46.2%	53.4%	0%	-	-
% Total	25.7%	0.3%	14.7%	0%	**40.6%**	8.5%	19.4%	0.1%	0%	**28.1%**	0.2%	1.0%	0.4%	0%	**1.6%**	0.1%	13.7%	15.9%	0%	**29.7%**	-
Lights	685	4	391	0	**1080**	225	517	3	0	**745**	5	24	10	0	**39**	3	367	419	0	**789**	2653
% Lights	99.6%	57.1%	99.2%	0%	**99.2%**	98.3%	99.4%	100%	0%	**99.1%**	100%	88.9%	100%	0%	**92.9%**	100%	99.7%	98.6%	0%	**99.1%**	99.0%
Articulated Trucks	1	3	0	0	**4**	1	1	0	0	**2**	0	2	0	0	**2**	0	1	2	0	**3**	11
% Articulated Trucks	0.1%	42.9%	0%	0%	**0.4%**	0.4%	0.2%	0%	0%	**0.3%**	0%	7.4%	0%	0%	**4.8%**	0%	0.3%	0.5%	0%	**0.4%**	0.4%
Buses and Single-Unit Trucks	2	0	3	0	**5**	3	2	0	0	**5**	0	1	0	0	**1**	0	0	4	0	**4**	15
% Buses and Single-Unit Trucks	0.3%	0%	0.8%	0%	**0.5%**	1.3%	0.4%	0%	0%	**0.7%**	0%	3.7%	0%	0%	**2.4%**	0%	0%	0.9%	0%	**0.5%**	0.6%

*L: Left, R: Right, T: Thru, U: U-Turn

Southeast Bailey Road & Southeast Hamblen Ro... - TMC

Tue Jul 22, 2025
PM Peak (4:45 PM - 5:45 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1320865, Location: 38.895744, -94.363444

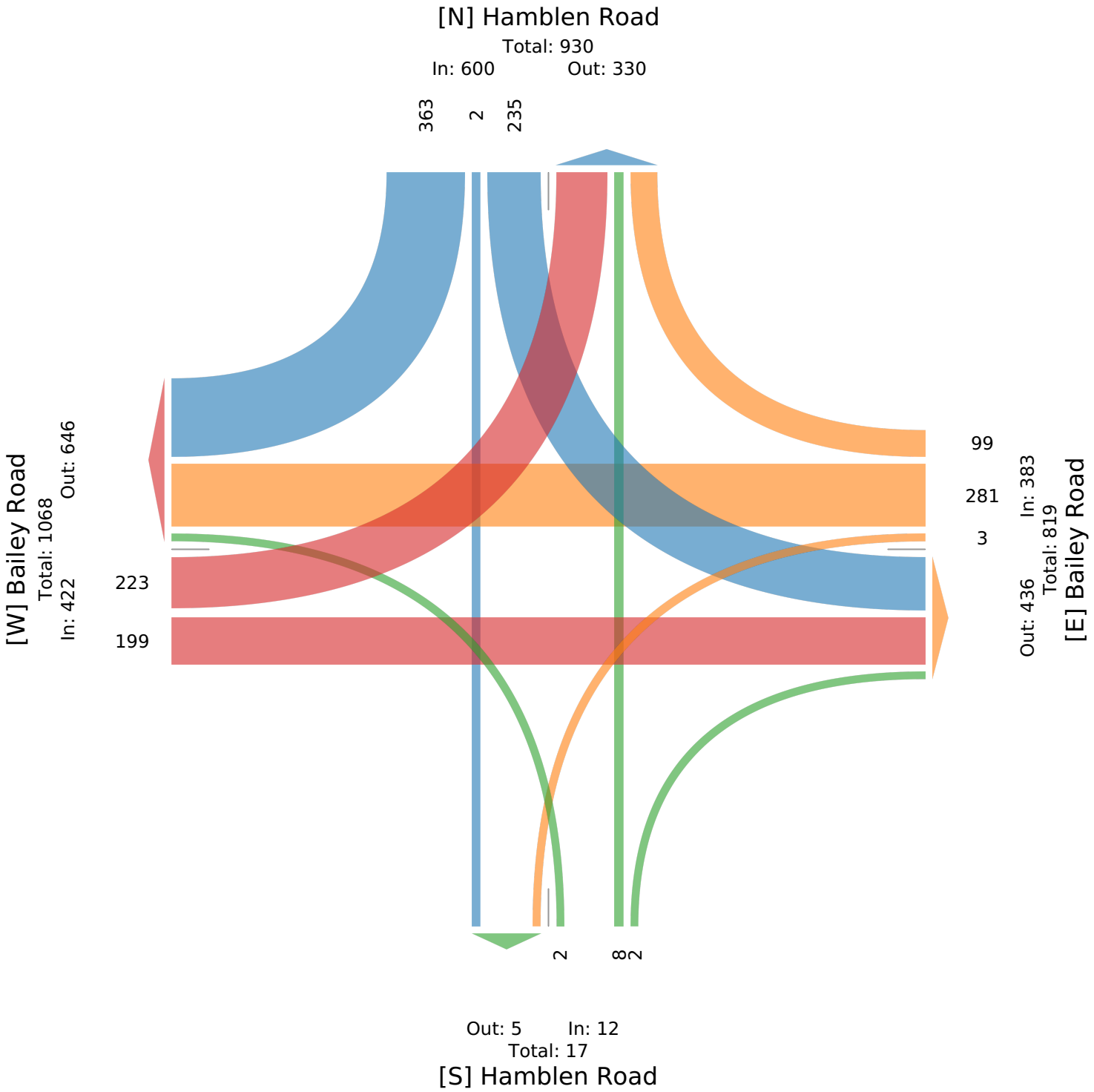
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	Hamblen Road					Bailey Road					Hamblen Road					Bailey Road					
Direction	Southbound					Westbound					Northbound					Eastbound					
Time	R	T	L	U	**App**	R	T	L	U	**App**	R	T	L	U	**App**	R	T	L	U	**App**	**Int**
2025-07-22 4:45PM	100	2	49	0	**151**	29	67	1	0	**97**	0	4	0	0	**4**	0	46	58	0	**104**	**356**
5:00PM	105	0	68	0	**173**	18	69	2	0	**89**	1	3	2	0	**6**	0	59	48	0	**107**	**375**
5:15PM	71	0	64	0	**135**	25	62	0	0	**87**	1	1	0	0	**2**	0	43	48	0	**91**	**315**
5:30PM	87	0	54	0	**141**	27	83	0	0	**110**	0	0	0	0	**0**	0	51	69	0	**120**	**371**
Total	363	2	235	0	**600**	99	281	3	0	**383**	2	8	2	0	**12**	0	199	223	0	**422**	**1417**
% Approach	60.5%	0.3%	39.2%	0%	**-**	25.8%	73.4%	0.8%	0%	**-**	16.7%	66.7%	16.7%	0%	**-**	0%	47.2%	52.8%	0%	**-**	-
% Total	25.6%	0.1%	16.6%	0%	**42.3%**	7.0%	19.8%	0.2%	0%	**27.0%**	0.1%	0.6%	0.1%	0%	**0.8%**	0%	14.0%	15.7%	0%	**29.8%**	-
PHF	0.864	0.250	0.864	-	**0.867**	0.853	0.846	0.375	-	**0.870**	0.500	0.500	0.250	-	**0.500**	-	0.843	0.808	-	**0.879**	0.945
Lights	361	0	233	0	**594**	98	280	3	0	**381**	2	5	2	0	**9**	0	198	221	0	**419**	1403
% Lights	99.4%	0%	99.1%	0%	**99.0%**	99.0%	99.6%	100%	0%	**99.5%**	100%	62.5%	100%	0%	**75.0%**	0%	99.5%	99.1%	0%	**99.3%**	99.0%
Articulated Trucks	1	2	0	0	**3**	0	0	0	0	**0**	0	2	0	0	**2**	0	1	1	0	**2**	7
% Articulated Trucks	0.3%	100%	0%	0%	**0.5%**	0%	0%	0%	0%	**0%**	0%	25.0%	0%	0%	**16.7%**	0%	0.5%	0.4%	0%	**0.5%**	0.5%
Buses and Single-Unit Trucks	1	0	2	0	**3**	1	1	0	0	**2**	0	1	0	0	**1**	0	0	1	0	**1**	7
% Buses and Single-Unit Trucks	0.3%	0%	0.9%	0%	**0.5%**	1.0%	0.4%	0%	0%	**0.5%**	0%	12.5%	0%	0%	**8.3%**	0%	0%	0.4%	0%	**0.2%**	0.5%

*L: Left, R: Right, T: Thru, U: U-Turn

Southeast Bailey Road & Southeast Hamblen Ro... - TMC
Tue Jul 22, 2025
PM Peak (4:45 PM - 5:45 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1320865, Location: 38.895744, -94.363444

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



Southeast Bailey Road & Southeast Hamblen Ro... - TMC

Sat Jul 19, 2025
Full Length (11:30 AM-1:30 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1320867, Location: 38.895744, -94.363444

GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	Hamblen Road					Bailey Rd					Hamblen Road					Bailey Rd					
Direction	Southbound					Westbound					Northbound					Eastbound					
Time	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	Int
2025-07-19 11:30AM	59	0	28	0	**87**	45	14	0	0	**59**	0	1	0	0	**1**	1	25	51	0	**77**	**224**
11:45AM	48	0	34	0	**82**	32	14	0	0	**46**	0	0	0	0	**0**	0	22	56	0	**78**	**206**
Hourly Total	107	0	62	0	**169**	77	28	0	0	**105**	0	1	0	0	**1**	1	47	107	0	**155**	**430**
12:00PM	67	0	19	0	**86**	34	41	0	0	**75**	0	1	0	0	**1**	0	28	46	0	**74**	**236**
12:15PM	79	0	33	0	**112**	20	30	0	0	**50**	0	0	0	0	**0**	0	21	36	0	**57**	**219**
12:30PM	51	1	21	0	**73**	29	21	0	0	**50**	1	0	0	0	**1**	0	26	41	0	**67**	**191**
12:45PM	48	0	37	0	**85**	24	32	0	0	**56**	0	0	0	0	**0**	0	28	54	0	**82**	**223**
Hourly Total	245	1	110	0	**356**	107	124	0	0	**231**	1	1	0	0	**2**	0	103	177	0	**280**	**869**
1:00PM	44	1	35	0	**80**	29	28	0	0	**57**	0	0	1	0	**1**	0	24	48	0	**72**	**210**
1:15PM	48	0	33	0	**81**	24	15	0	0	**39**	0	0	0	0	**0**	0	28	47	0	**75**	**195**
Hourly Total	92	1	68	0	**161**	53	43	0	0	**96**	0	0	1	0	**1**	0	52	95	0	**147**	**405**
Total	444	2	240	0	**686**	237	195	0	0	**432**	1	2	1	0	**4**	1	202	379	0	**582**	**1704**
% Approach	64.7%	0.3%	35.0%	0%	**-**	54.9%	45.1%	0%	0%	**-**	25.0%	50.0%	25.0%	0%	**-**	0.2%	34.7%	65.1%	0%	**-**	-
% Total	26.1%	0.1%	14.1%	0%	**40.3%**	13.9%	11.4%	0%	0%	**25.4%**	0.1%	0.1%	0.1%	0%	**0.2%**	0.1%	11.9%	22.2%	0%	**34.2%**	-
Lights	444	2	235	0	**681**	235	192	0	0	**427**	1	2	1	0	**4**	1	201	378	0	**580**	1692
% Lights	100%	100%	97.9%	0%	**99.3%**	99.2%	98.5%	0%	0%	**98.8%**	100%	100%	100%	0%	**100%**	100%	99.5%	99.7%	0%	**99.7%**	99.3%
Articulated Trucks	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0
% Articulated Trucks	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0%
Buses and Single-Unit Trucks	0	0	5	0	**5**	2	3	0	0	**5**	0	0	0	0	**0**	0	1	1	0	**2**	12
% Buses and Single-Unit Trucks	0%	0%	2.1%	0%	**0.7%**	0.8%	1.5%	0%	0%	**1.2%**	0%	0%	0%	0%	**0%**	0%	0.5%	0.3%	0%	**0.3%**	0.7%

*L: Left, R: Right, T: Thru, U: U-Turn

Southeast Bailey Road & Southeast Hamblen Ro... - TMC

Sat Jul 19, 2025
Midday Peak (WKND) (11:30 AM - 12:30 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1320867, Location: 38.895744, -94.363444

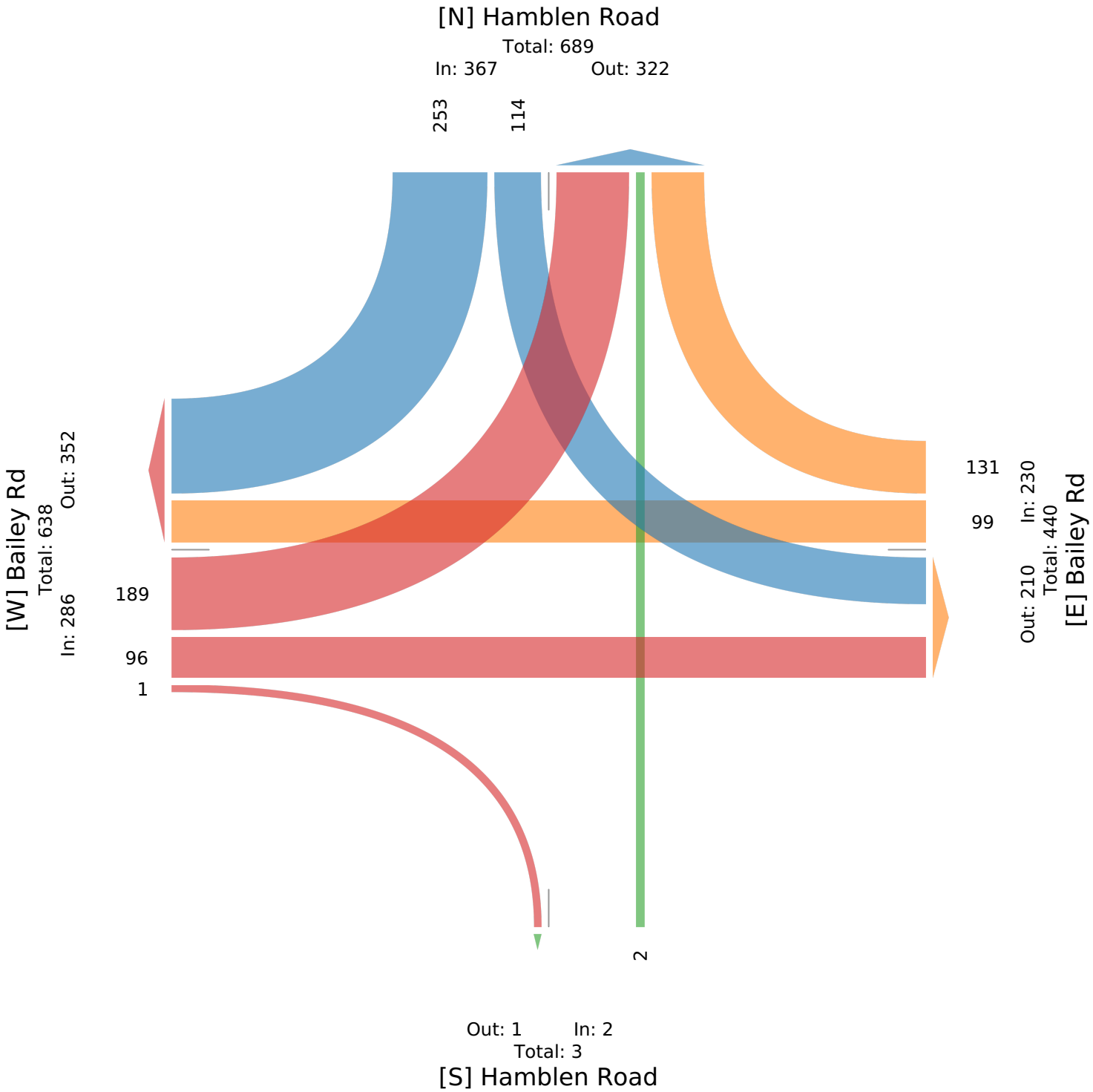
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	Hamblen Road					Bailey Rd					Hamblen Road					Bailey Rd					
Direction	Southbound					Westbound					Northbound					Eastbound					
Time	R	T	L	U	**App**	R	T	L	U	**App**	R	T	L	U	**App**	R	T	L	U	**App**	**Int**
2025-07-19 11:30AM	59	0	28	0	**87**	45	14	0	0	**59**	0	1	0	0	**1**	1	25	51	0	**77**	**224**
11:45AM	48	0	34	0	**82**	32	14	0	0	**46**	0	0	0	0	**0**	0	22	56	0	**78**	**206**
12:00PM	67	0	19	0	**86**	34	41	0	0	**75**	0	1	0	0	**1**	0	28	46	0	**74**	**236**
12:15PM	79	0	33	0	**112**	20	30	0	0	**50**	0	0	0	0	**0**	0	21	36	0	**57**	**219**
Total	253	0	114	0	**367**	131	99	0	0	**230**	0	2	0	0	**2**	1	96	189	0	**286**	**885**
% Approach	68.9%	0%	31.1%	0%	**-**	57.0%	43.0%	0%	0%	**-**	0%	100%	0%	0%	**-**	0.3%	33.6%	66.1%	0%	**-**	-
% Total	28.6%	0%	12.9%	0%	**41.5%**	14.8%	11.2%	0%	0%	**26.0%**	0%	0.2%	0%	0%	**0.2%**	0.1%	10.8%	21.4%	0%	**32.3%**	-
PHF	0.801	-	0.838	-	**0.819**	0.728	0.604	-	-	**0.767**	-	0.500	-	-	**0.500**	0.250	0.857	0.844	-	**0.917**	0.938
Lights	253	0	113	0	**366**	131	99	0	0	**230**	0	2	0	0	**2**	1	96	189	0	**286**	884
% Lights	100%	0%	99.1%	0%	**99.7%**	100%	100%	0%	0%	**100%**	0%	100%	0%	0%	**100%**	100%	100%	100%	0%	**100%**	99.9%
Articulated Trucks	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0
% Articulated Trucks	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0%
Buses and Single-Unit Trucks	0	0	1	0	**1**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	1
% Buses and Single-Unit Trucks	0%	0%	0.9%	0%	**0.3%**	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0.1%

*L: Left, R: Right, T: Thru, U: U-Turn

Southeast Bailey Road & Southeast Hamblen Ro... - TMC
Sat Jul 19, 2025
Midday Peak (WKND) (11:30 AM - 12:30 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1320867, Location: 38.895744, -94.363444

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



APPENDIX C
ITE TRIP GENERATION PLOTS

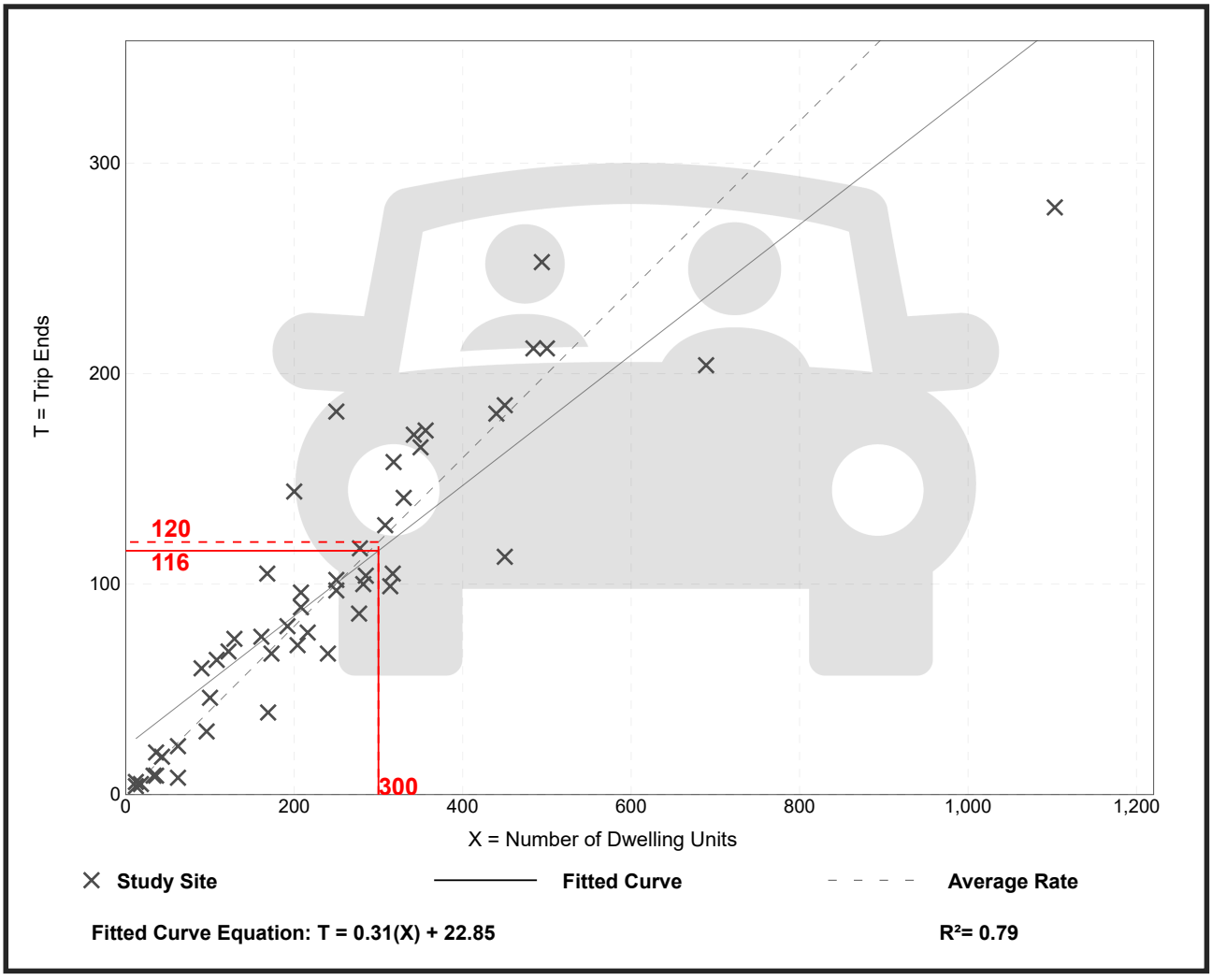
Multifamily Housing (Low-Rise)
Not Close to Rail Transit (220)

Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 49
Avg. Num. of Dwelling Units: 249
Directional Distribution: 24% entering, 76% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.40	0.13 - 0.73	0.12

Data Plot and Equation



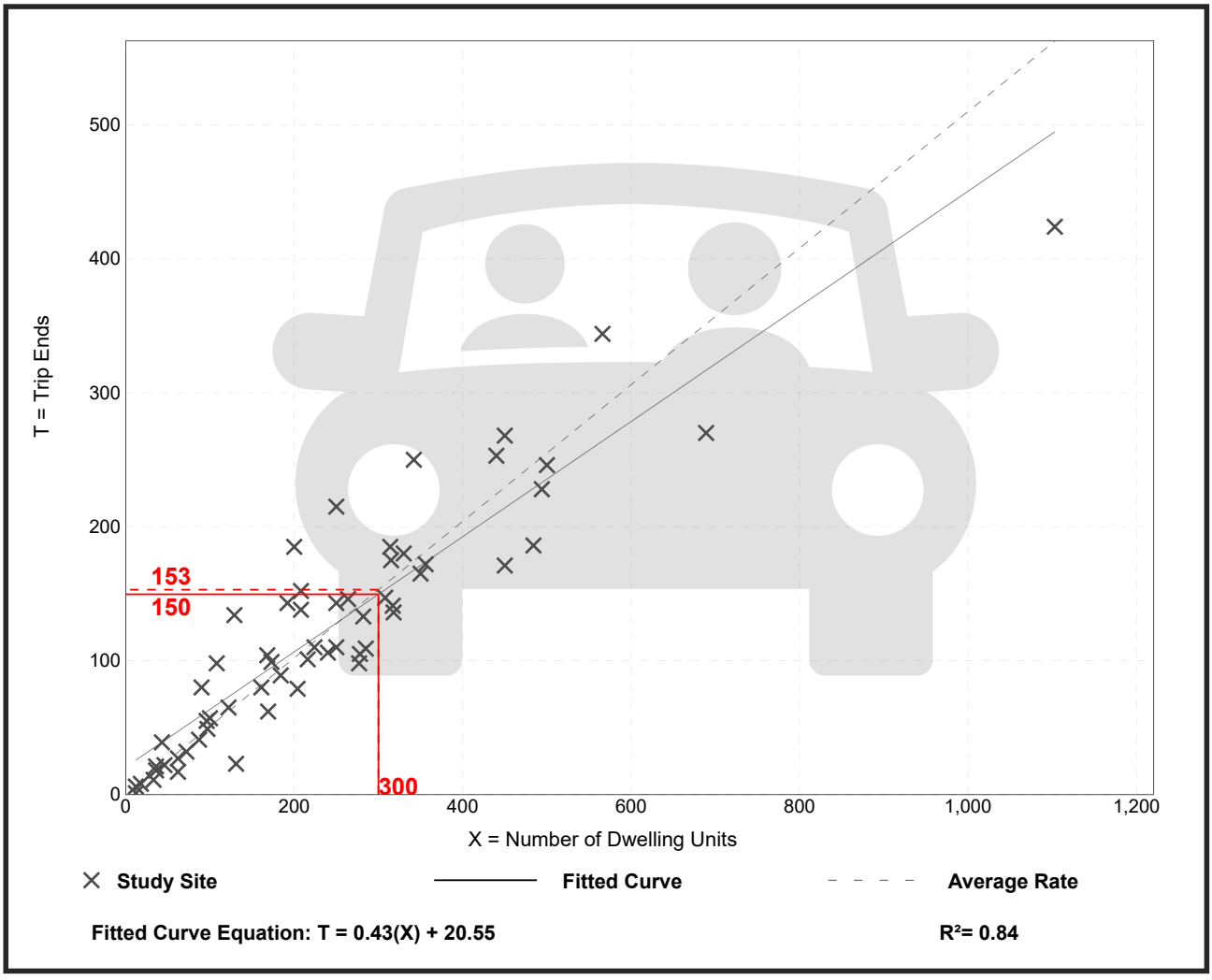
Multifamily Housing (Low-Rise)
Not Close to Rail Transit (220)

Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 59
Avg. Num. of Dwelling Units: 241
Directional Distribution: 63% entering, 37% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.51	0.08 - 1.04	0.15

Data Plot and Equation



Multifamily Housing (Low-Rise)
Not Close to Rail Transit (220)

Vehicle Trip Ends vs: **Dwelling Units**
On a: **Saturday, Peak Hour of Generator**

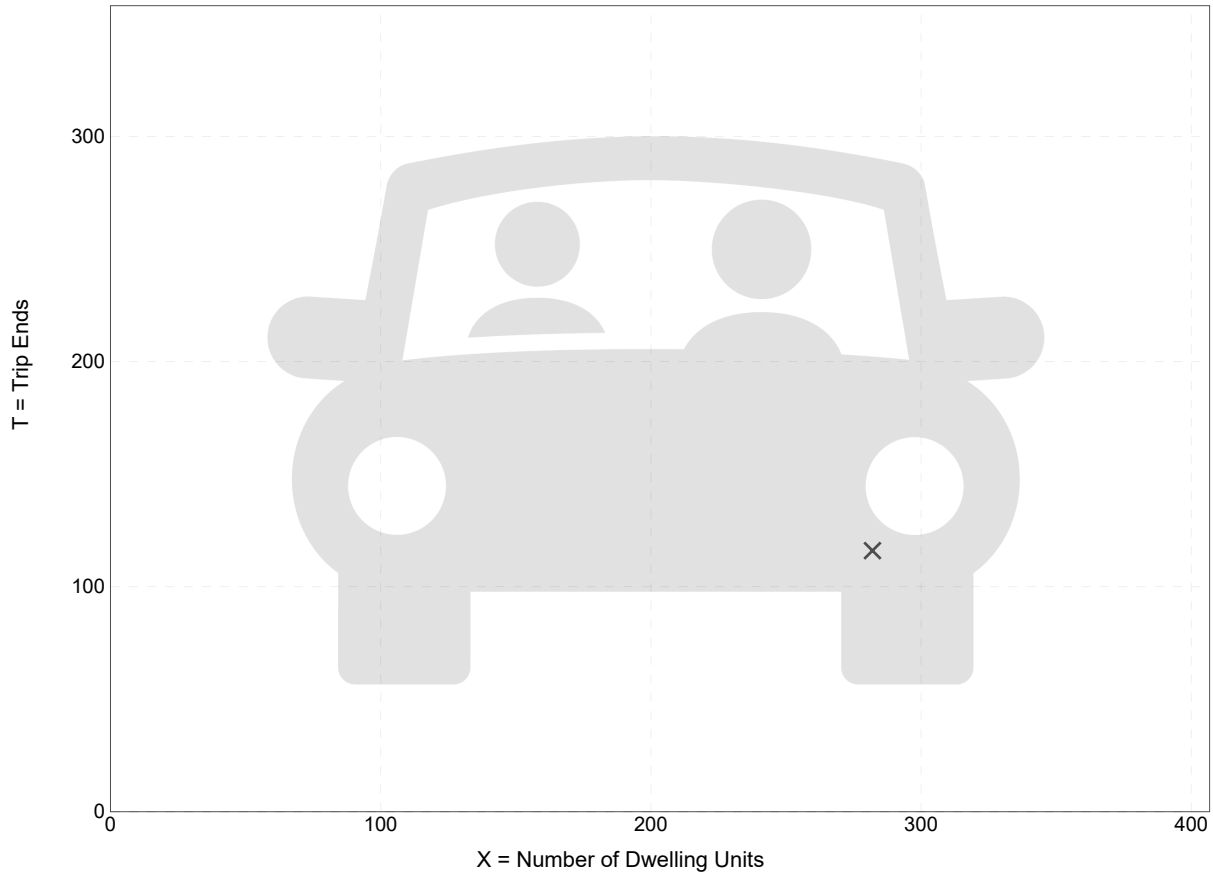
Setting/Location: **General Urban/Suburban**
Number of Studies: 1
Avg. Num. of Dwelling Units: 282
Directional Distribution: Not Available

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.41	0.41 - 0.41	*

Data Plot and Equation

Caution – Small Sample Size



Fitted Curve Equation: Not Given

R^2= **

Multifamily Housing (Low-Rise)
Not Close to Rail Transit (220)

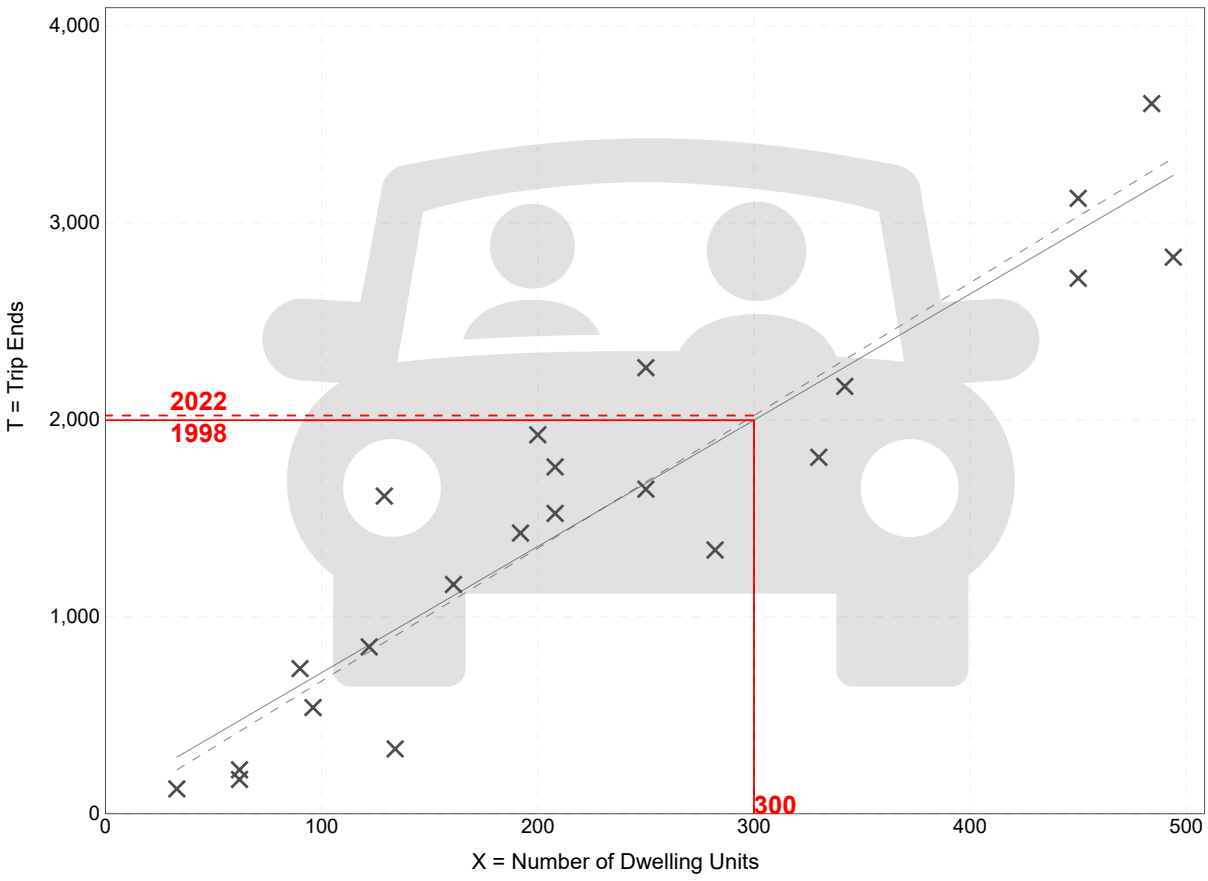
Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday**

Setting/Location: **General Urban/Suburban**
Number of Studies: 22
Avg. Num. of Dwelling Units: 229
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
6.74	2.46 - 12.50	1.79

Data Plot and Equation



Fitted Curve Equation: T = 6.41(X) + 75.31

R^2= 0.86

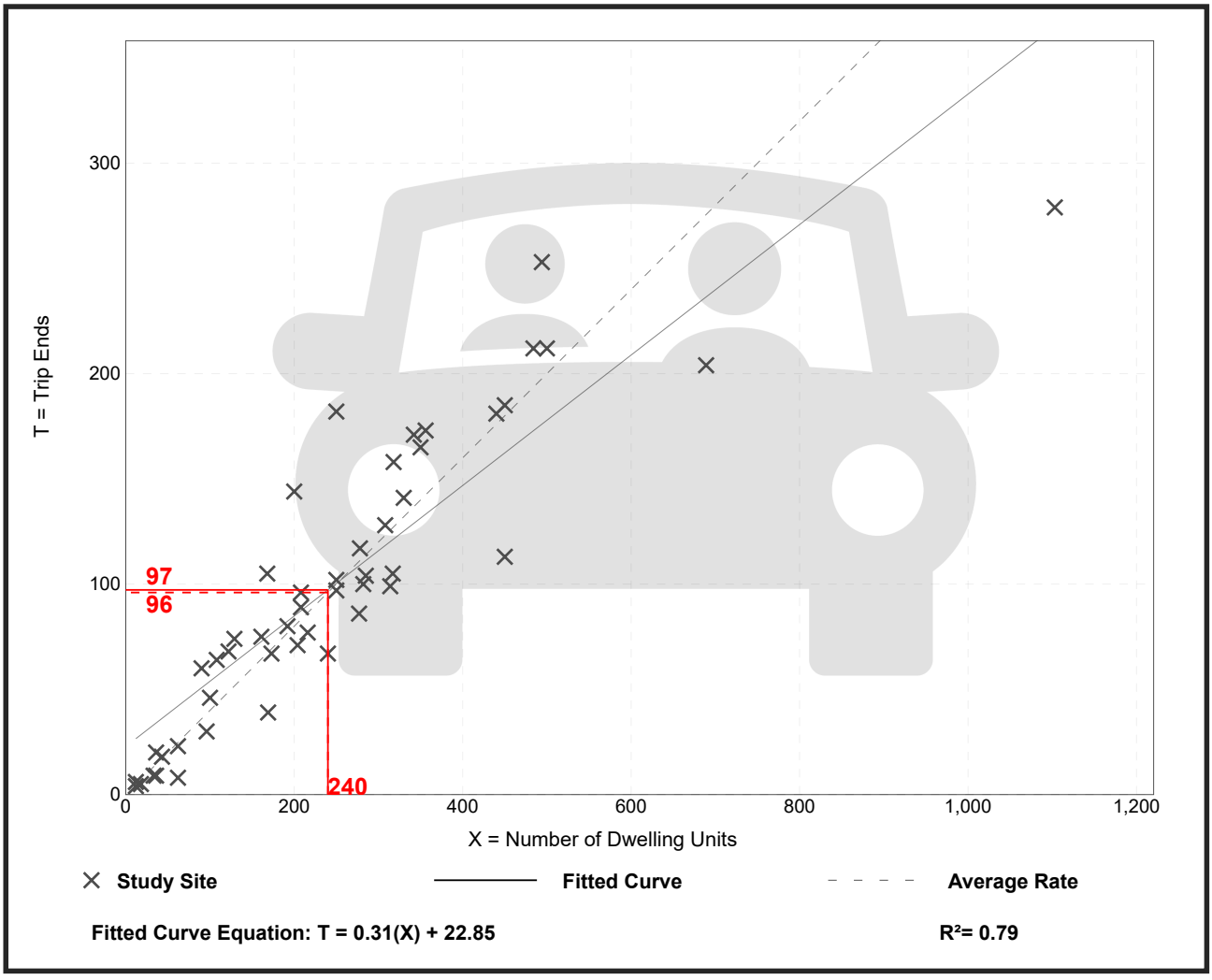
Multifamily Housing (Low-Rise)
Not Close to Rail Transit (220)

Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 49
Avg. Num. of Dwelling Units: 249
Directional Distribution: 24% entering, 76% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.40	0.13 - 0.73	0.12

Data Plot and Equation



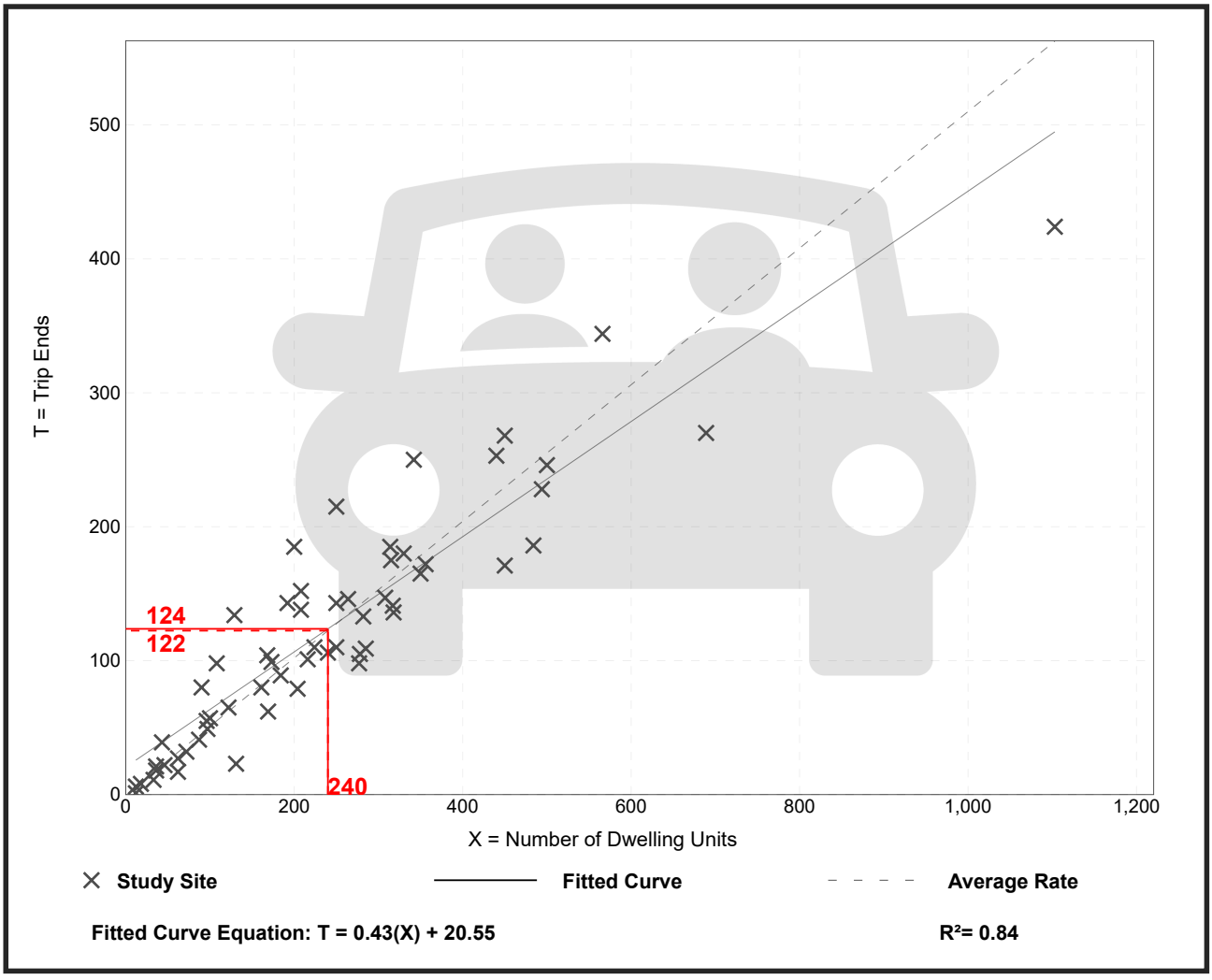
Multifamily Housing (Low-Rise)
Not Close to Rail Transit (220)

Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 59
Avg. Num. of Dwelling Units: 241
Directional Distribution: 63% entering, 37% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.51	0.08 - 1.04	0.15

Data Plot and Equation



Multifamily Housing (Low-Rise)
Not Close to Rail Transit (220)

Vehicle Trip Ends vs: **Dwelling Units**
On a: **Saturday, Peak Hour of Generator**

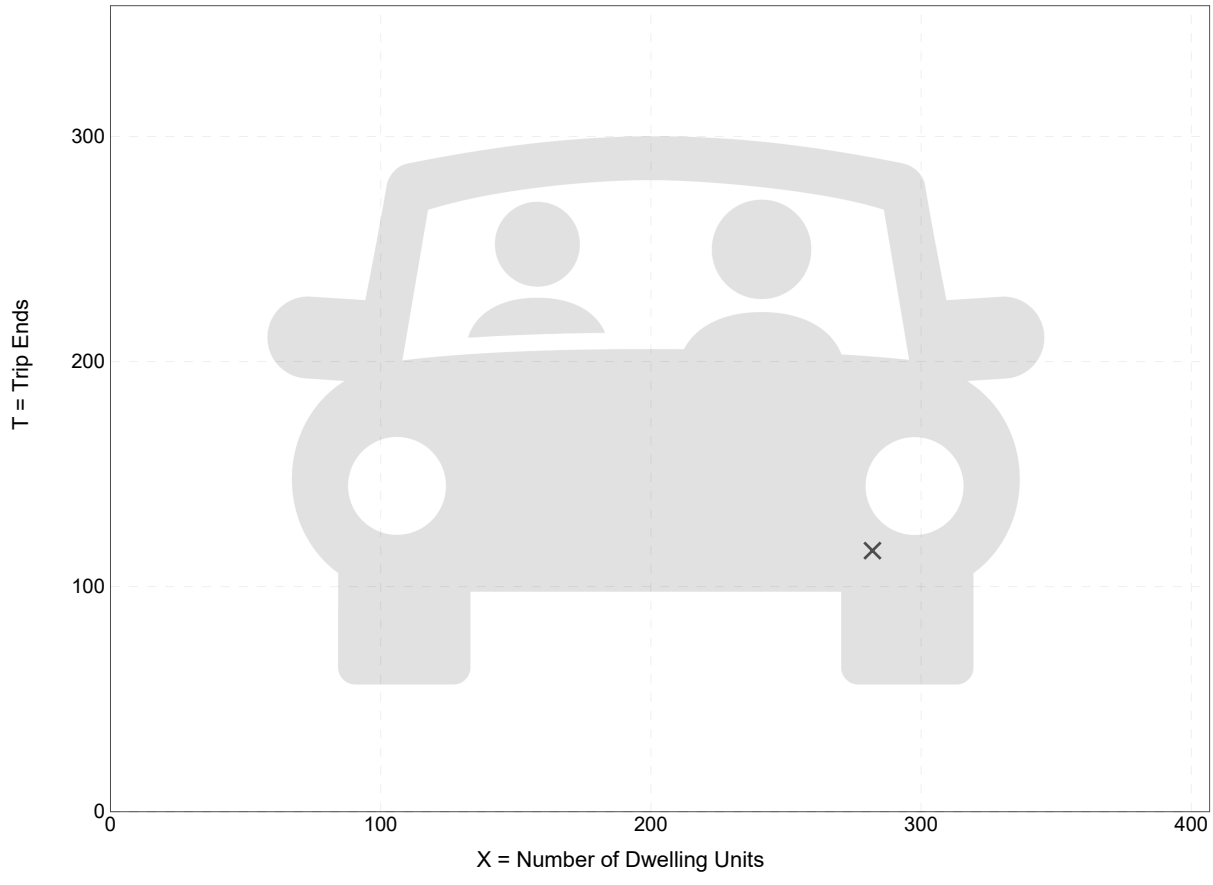
Setting/Location: **General Urban/Suburban**
Number of Studies: 1
Avg. Num. of Dwelling Units: 282
Directional Distribution: Not Available

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.41	0.41 - 0.41	*

Data Plot and Equation

Caution – Small Sample Size



Fitted Curve Equation: Not Given

R^2= **

Multifamily Housing (Low-Rise)
Not Close to Rail Transit (220)

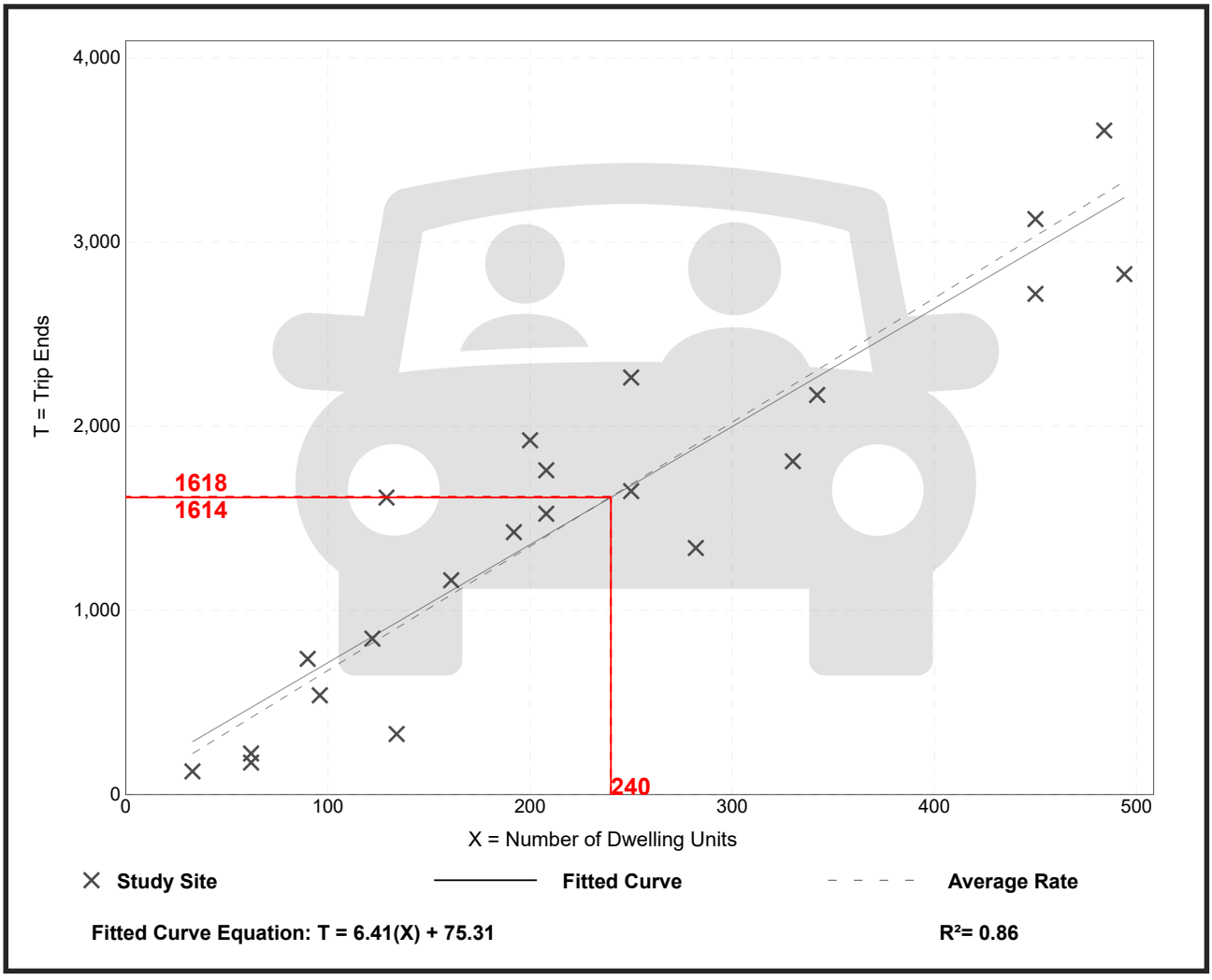
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On a: **Weekday**

Setting/Location: **General Urban/Suburban**
Number of Studies: 22
Avg. Num. of Dwelling Units: 229
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
6.74	2.46 - 12.50	1.79

Data Plot and Equation



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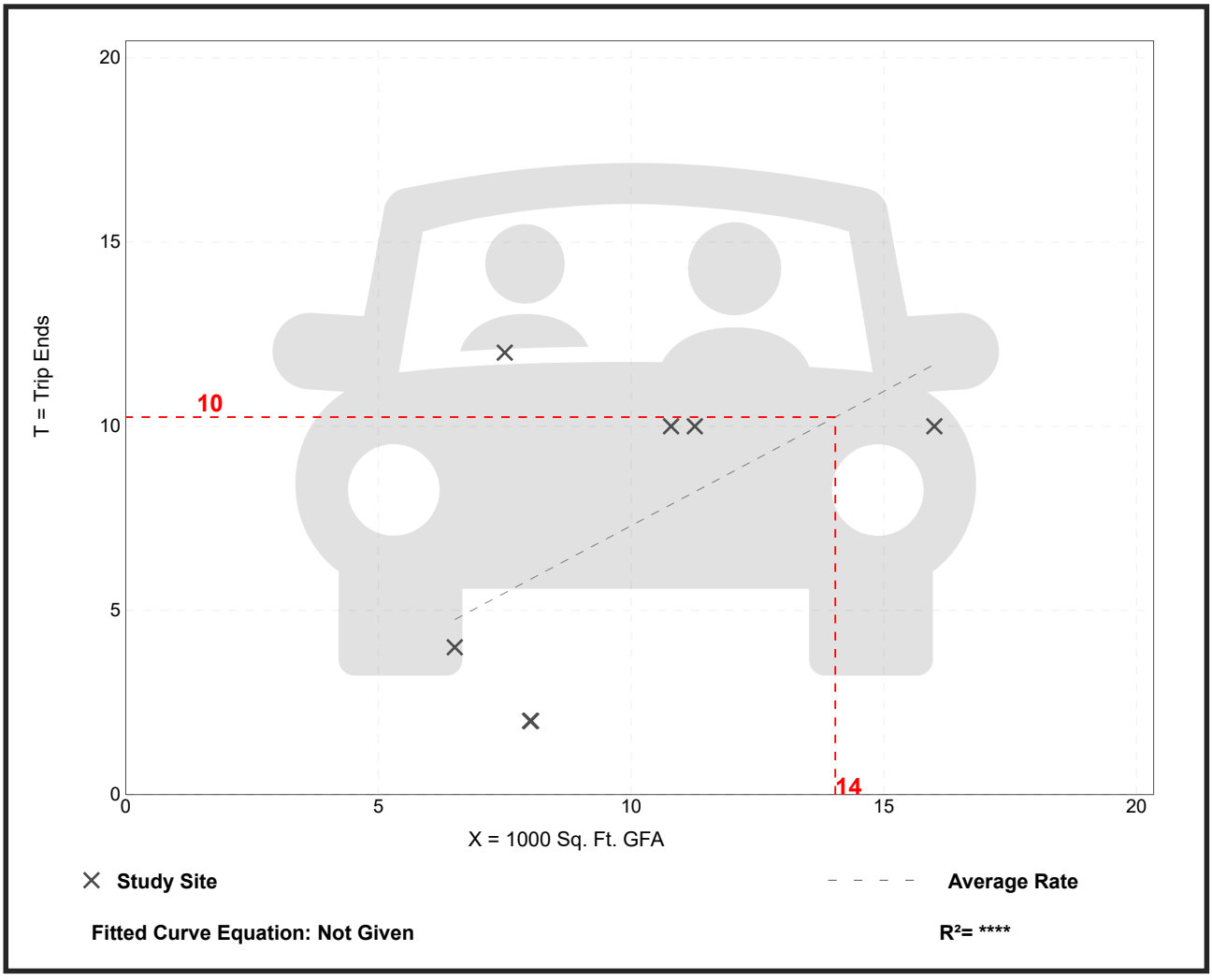
Fine Dining Restaurant
(931)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 7
Avg. 1000 Sq. Ft. GFA: 10
Directional Distribution: Not Available

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.73	0.25 - 1.60	0.42

Data Plot and Equation



Fitted Curve Equation: Not Given

R^2= ****

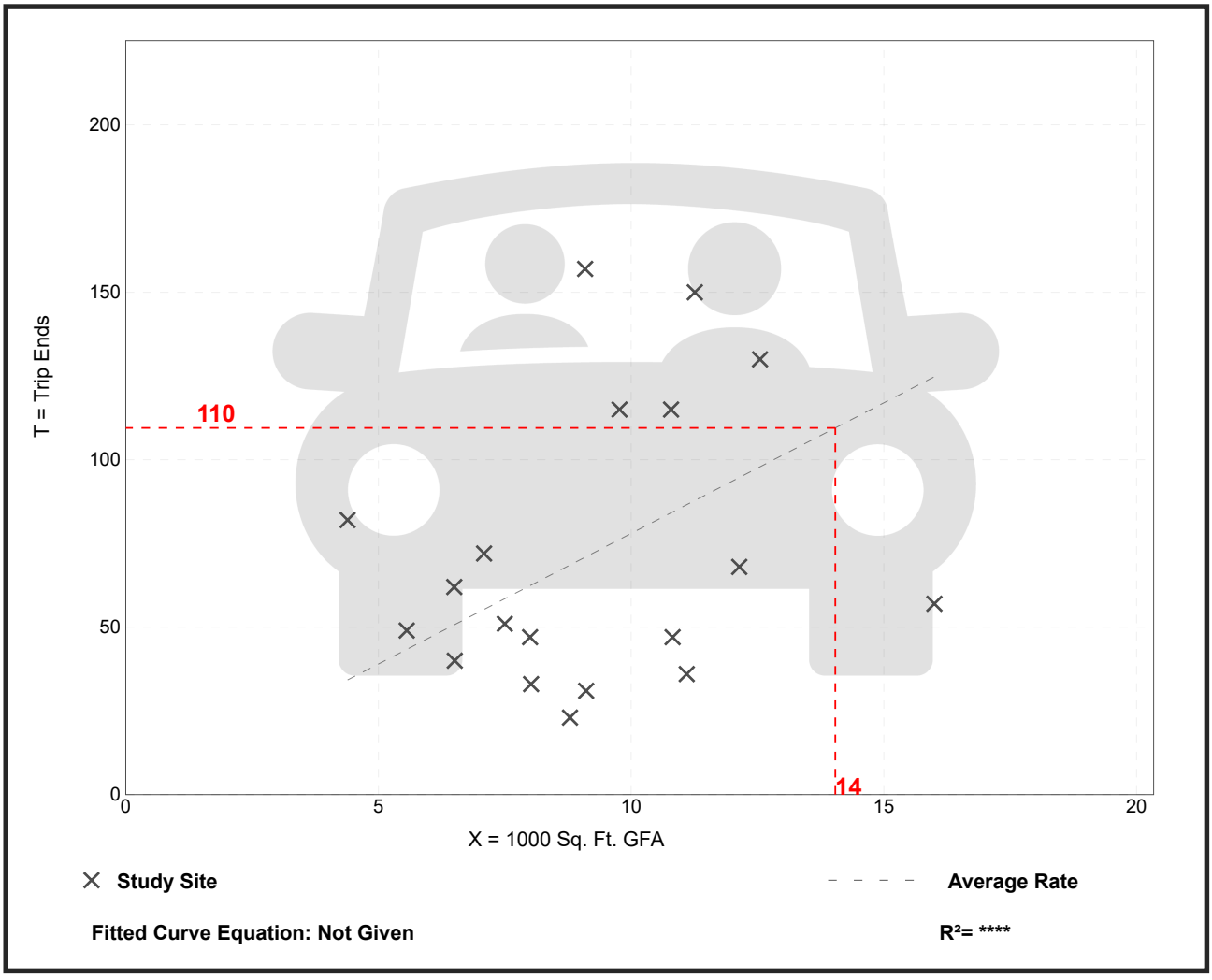
Fine Dining Restaurant
(931)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 19
Avg. 1000 Sq. Ft. GFA: 9
Directional Distribution: 67% entering, 33% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
7.80	2.62 - 18.68	4.49

Data Plot and Equation



Fitted Curve Equation: Not Given

R^2= **

Fine Dining Restaurant
(931)

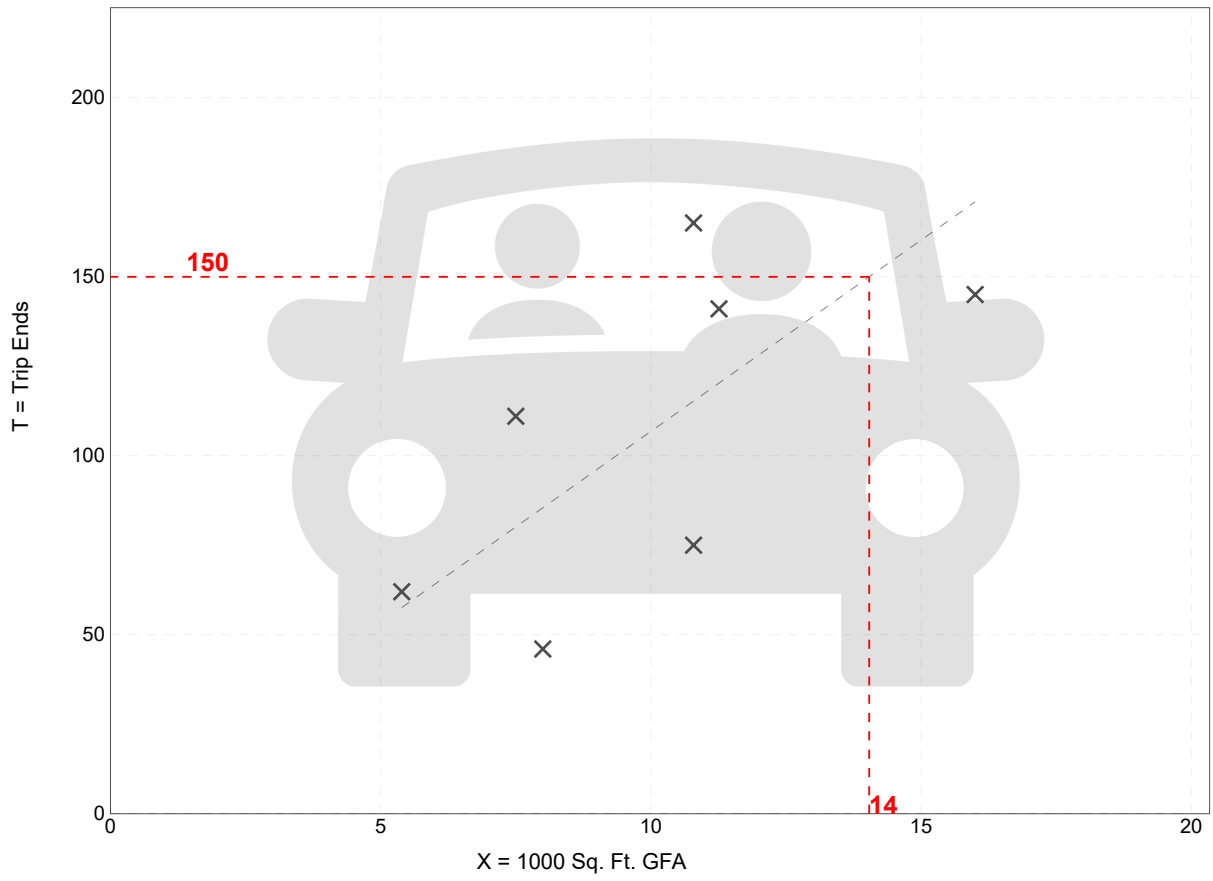
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Saturday, Peak Hour of Generator**

Setting/Location: **General Urban/Suburban**
Number of Studies: 7
Avg. 1000 Sq. Ft. GFA: 10
Directional Distribution: 59% entering, 41% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
10.68	5.75 - 15.29	3.62

Data Plot and Equation



Fitted Curve Equation: Not Given

R^2= ****

Fine Dining Restaurant
(931)

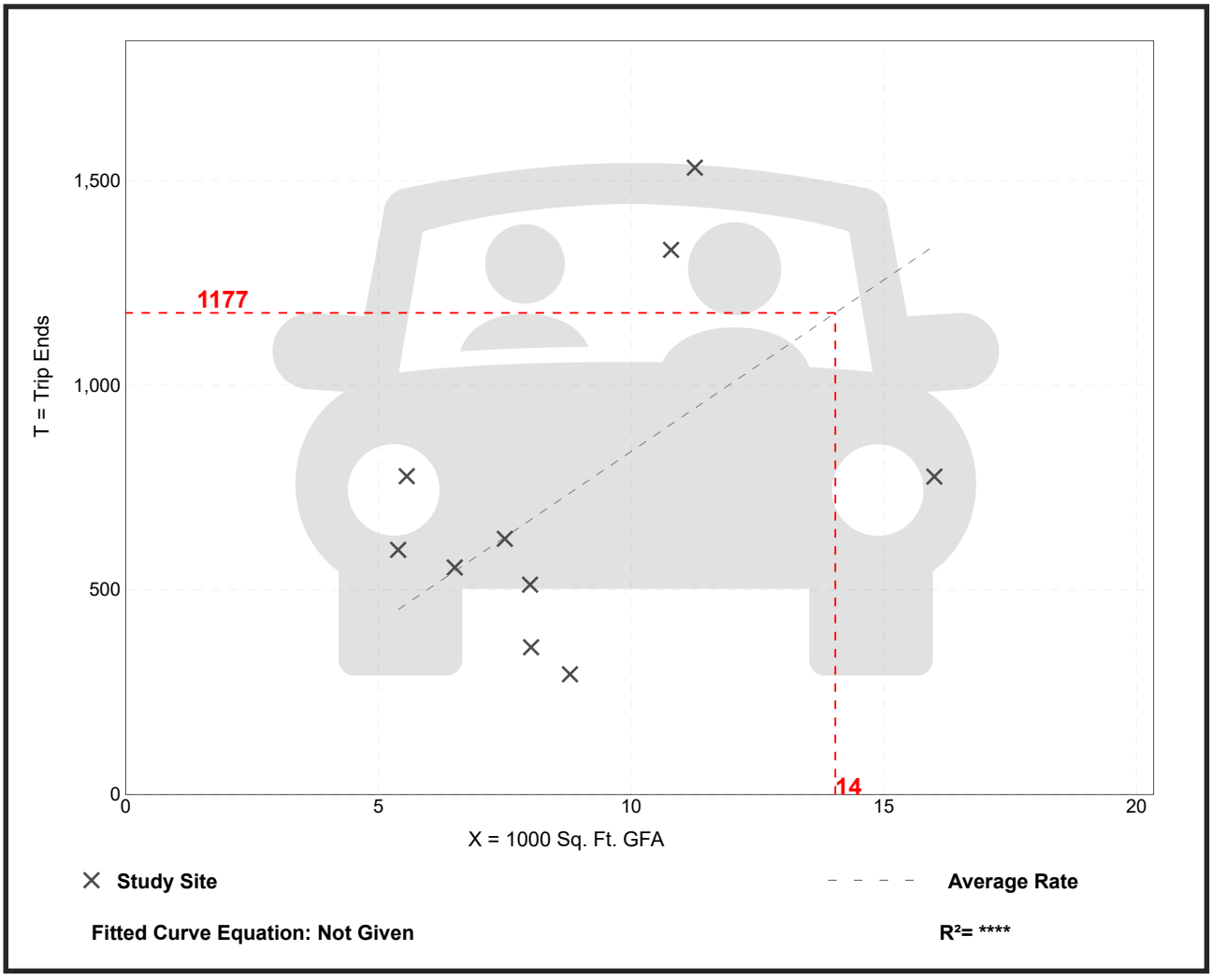
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday**

Setting/Location: **General Urban/Suburban**
Number of Studies: 10
Avg. 1000 Sq. Ft. GFA: 9
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
83.84	33.45 - 139.93	40.01

Data Plot and Equation



Fitted Curve Equation: Not Given

R^2= ****

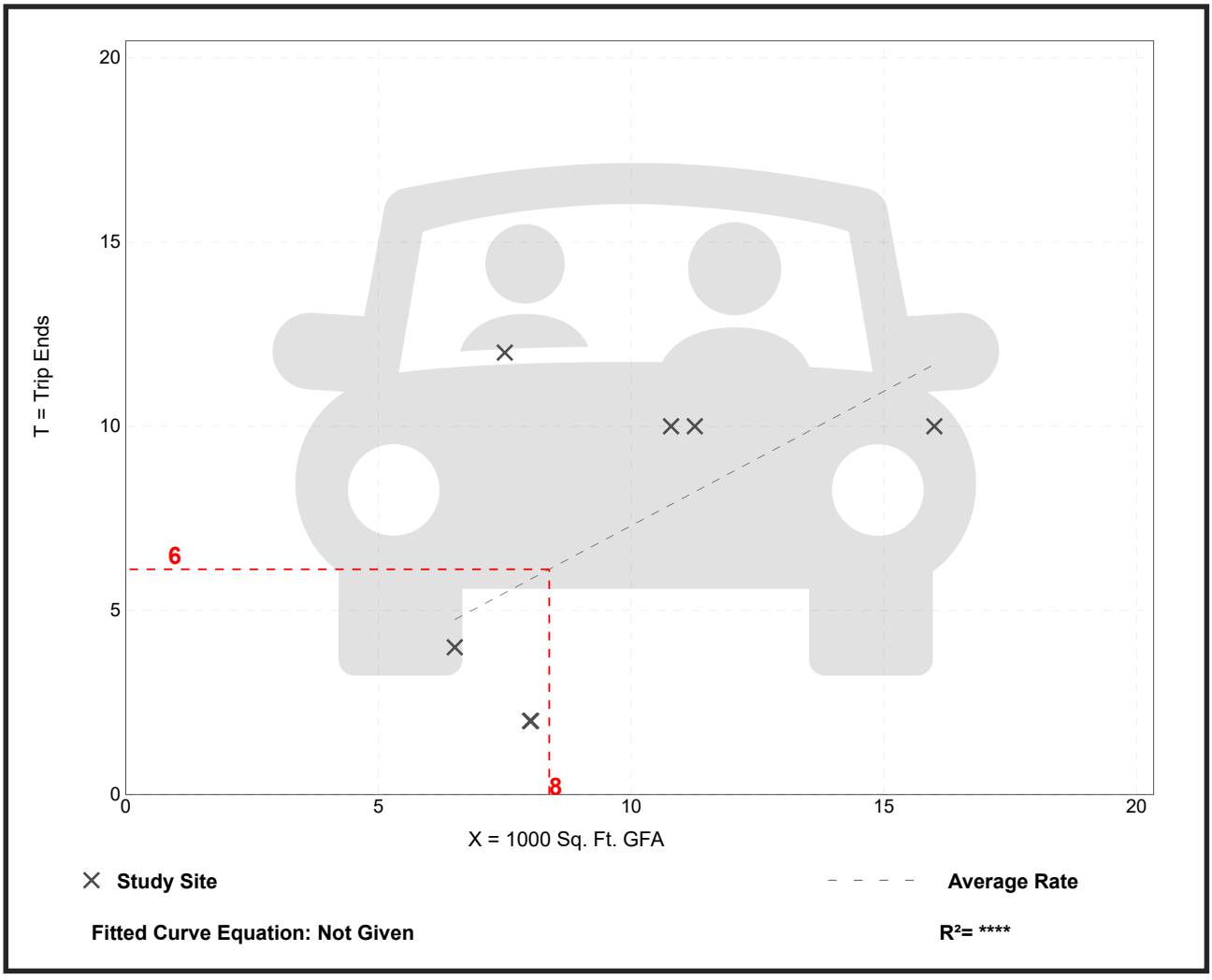
Fine Dining Restaurant
(931)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 7
Avg. 1000 Sq. Ft. GFA: 10
Directional Distribution: Not Available

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.73	0.25 - 1.60	0.42

Data Plot and Equation



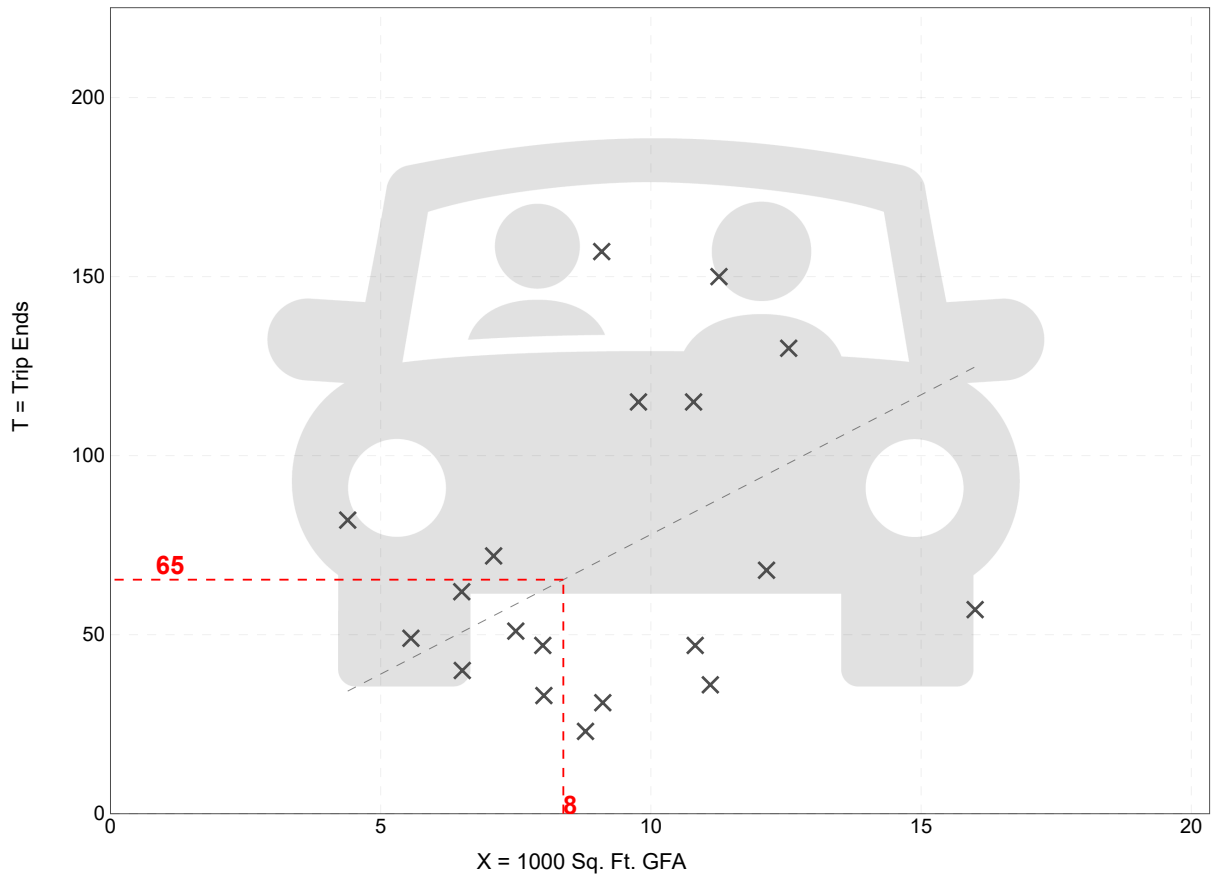
Fine Dining Restaurant
(931)

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Data Plot and Equation



Fine Dining Restaurant
(931)

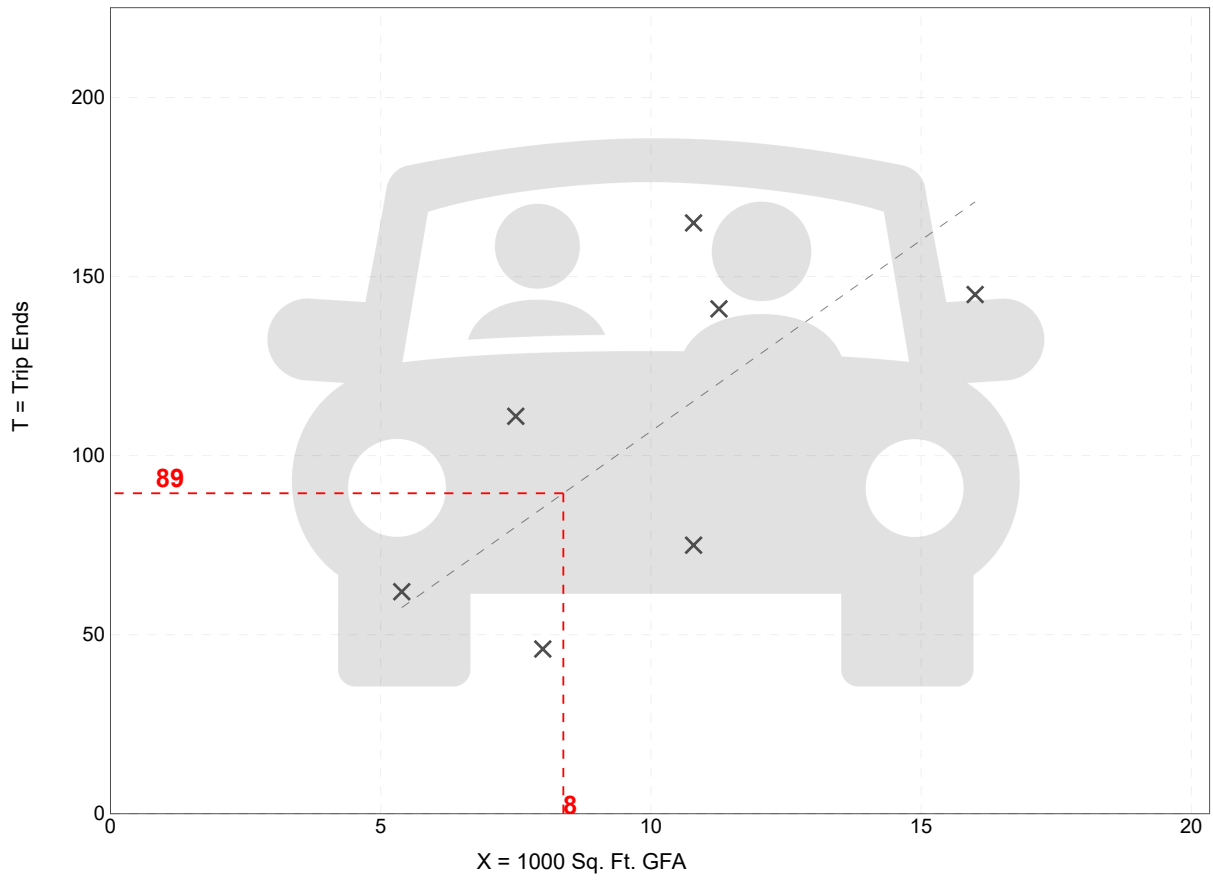
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Setting/Location: **General Urban/Suburban**
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Data Plot and Equation



Fitted Curve Equation: Not Given

R^2= ****

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Fine Dining Restaurant
(931)

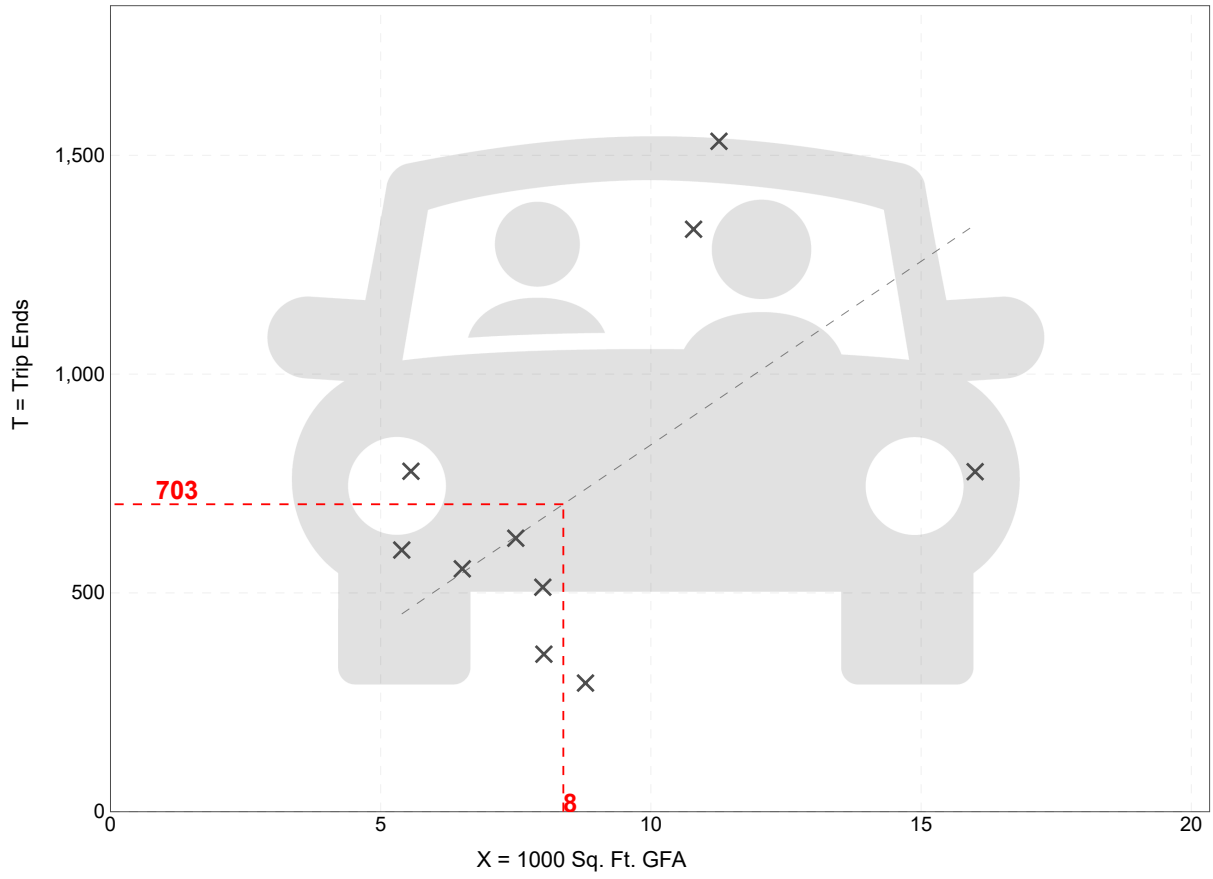
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Data Plot and Equation



Fitted Curve Equation: Not Given

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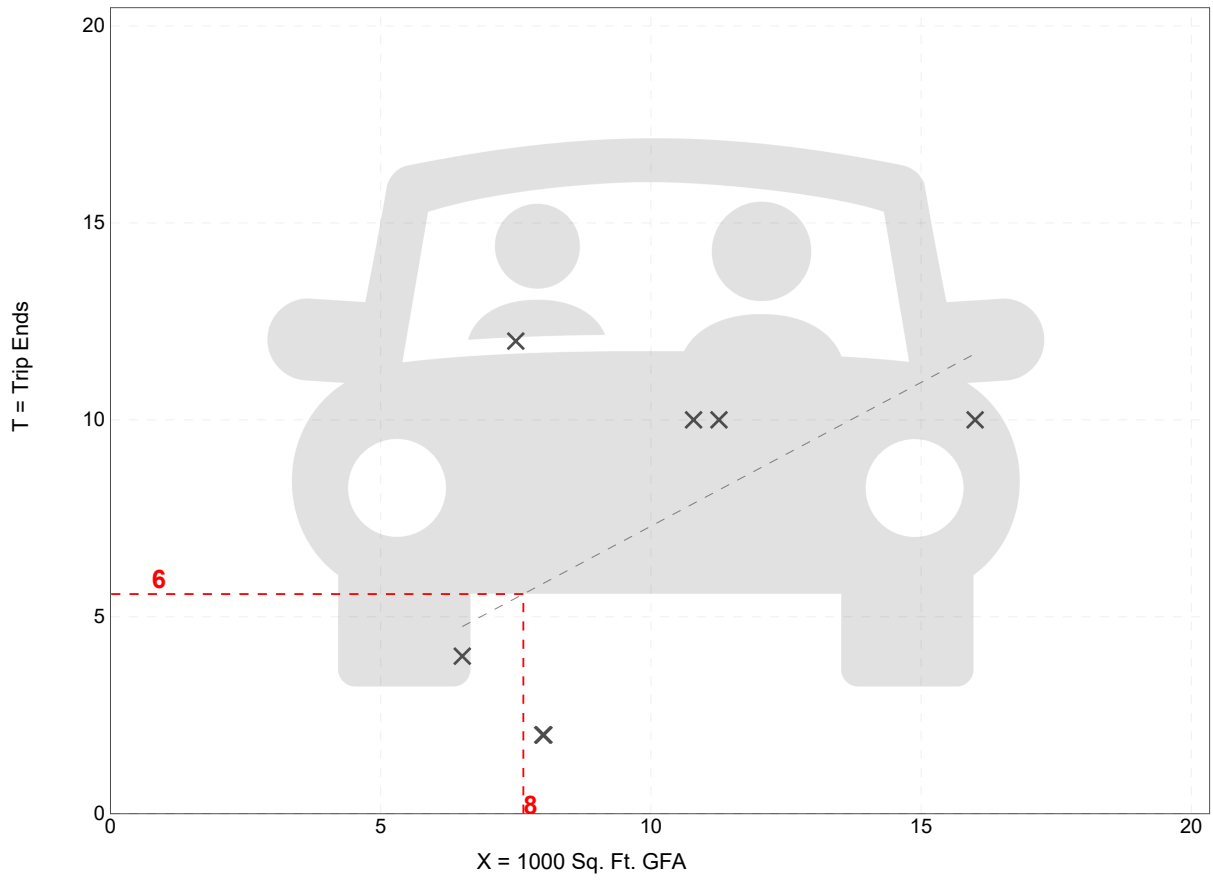
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Data Plot and Equation



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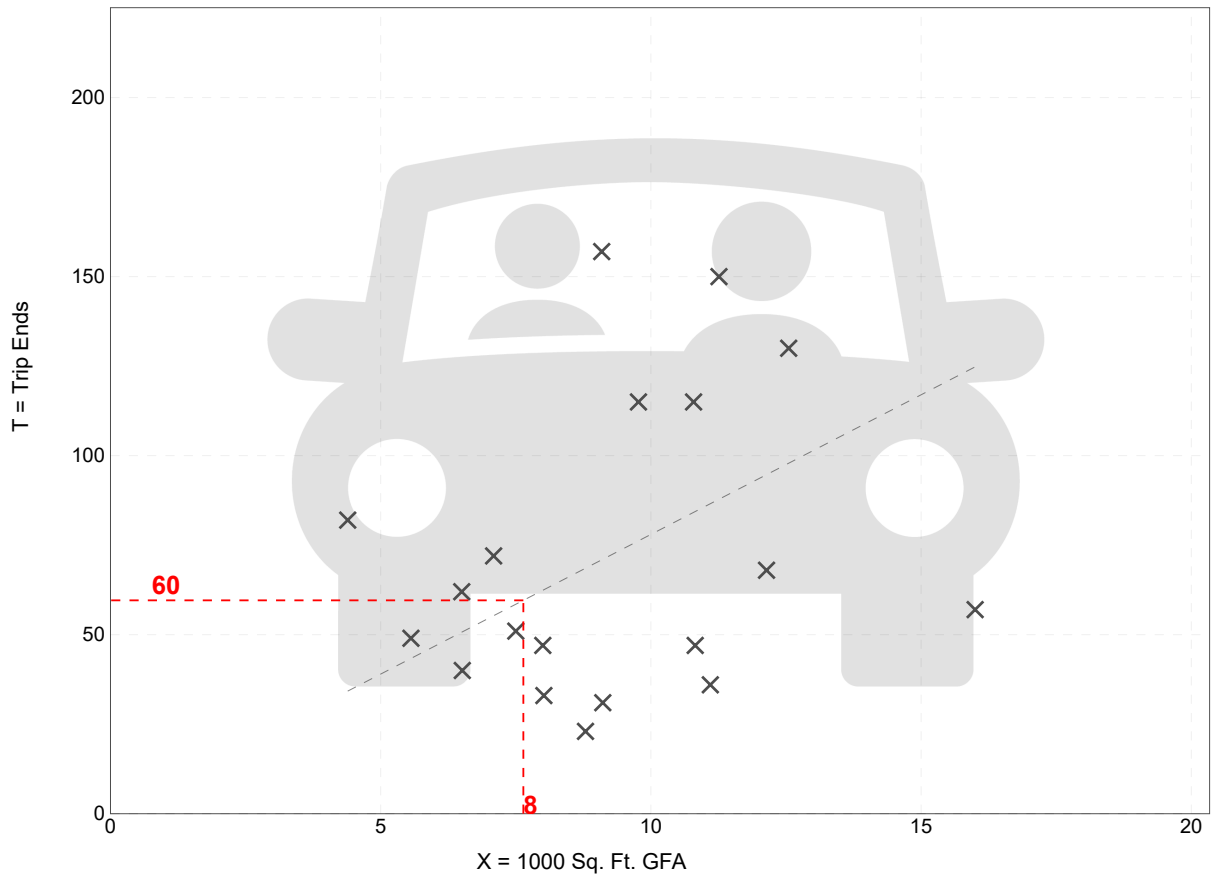
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Data Plot and Equation



Fitted Curve Equation: Not Given

R^2= **

Fine Dining Restaurant
(931)

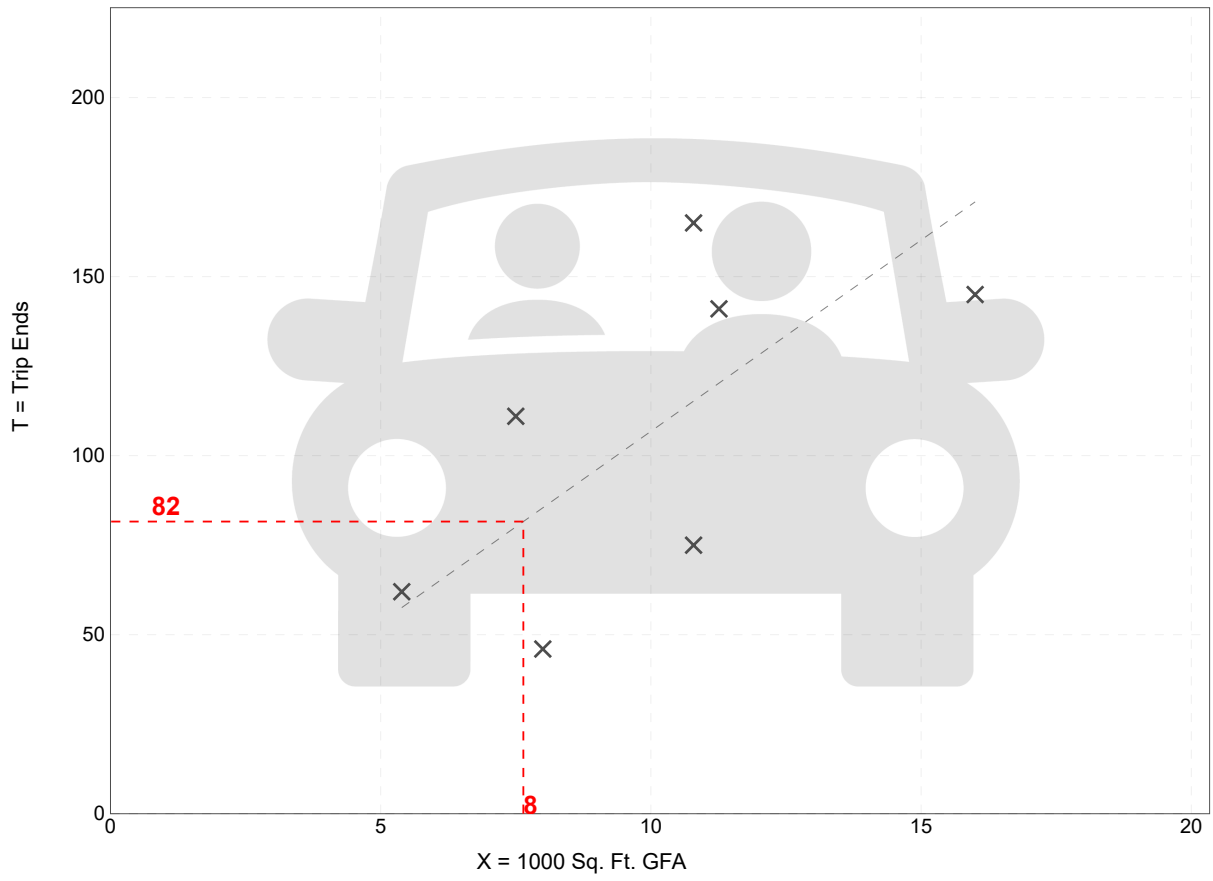
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Data Plot and Equation



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Fine Dining Restaurant
(931)

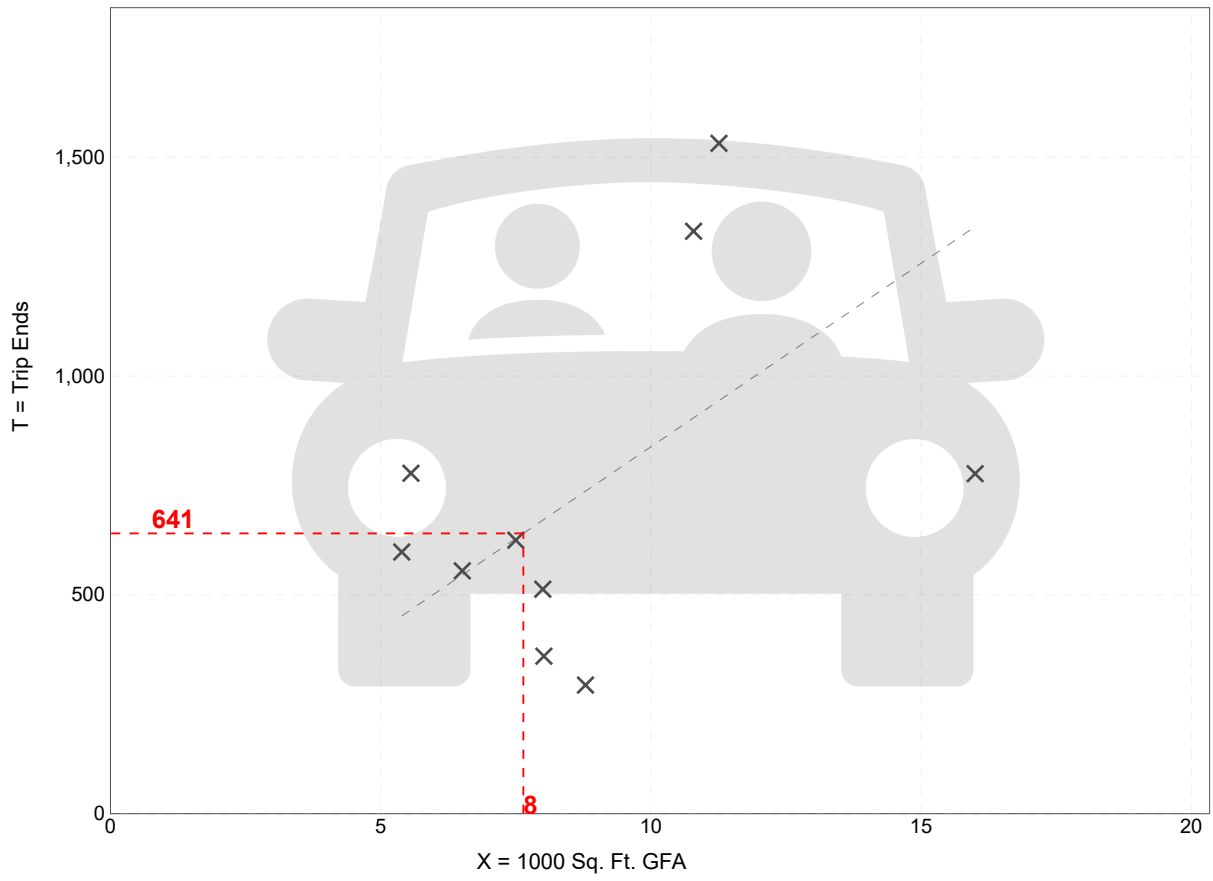
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Data Plot and Equation



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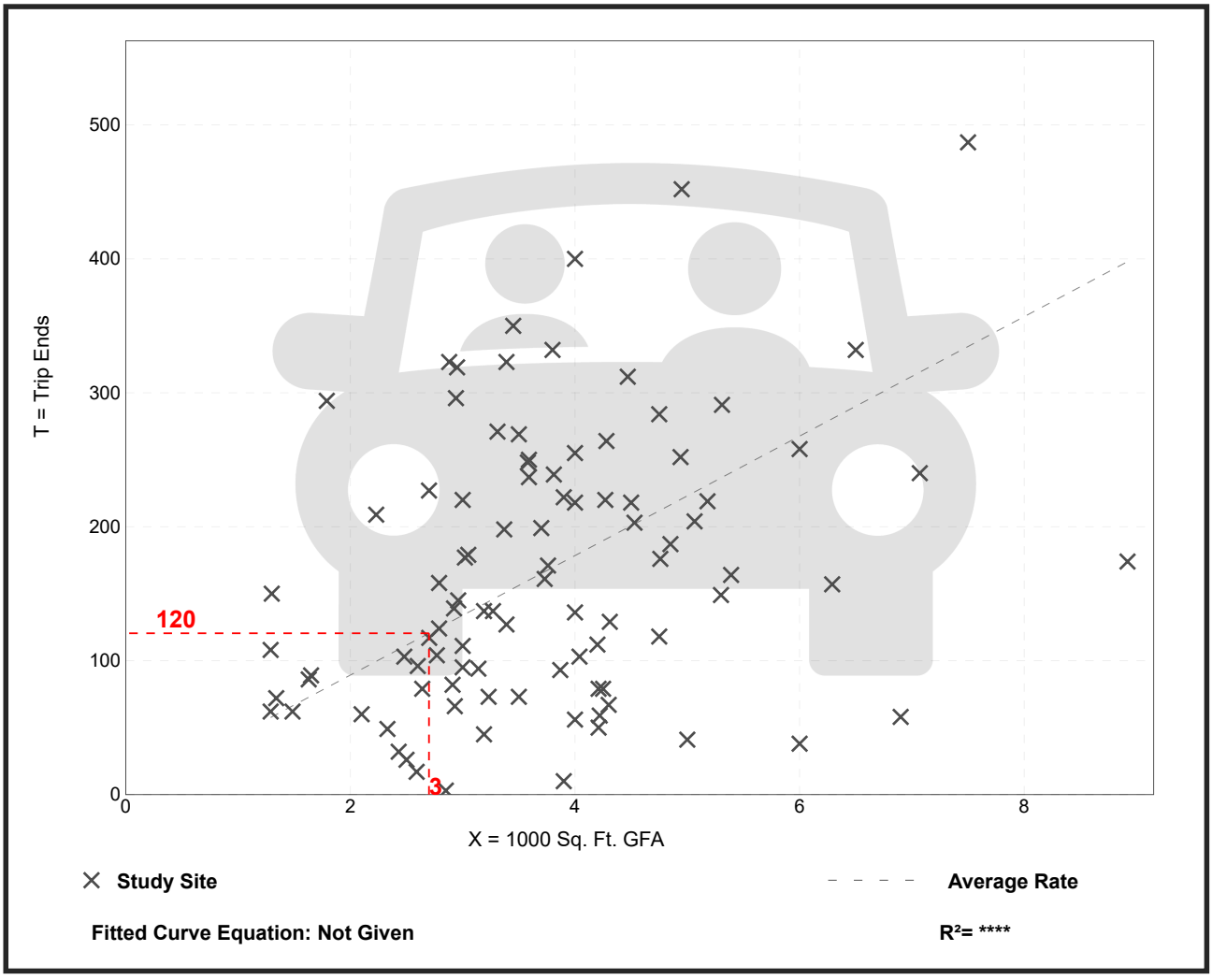
Fast-Food Restaurant with Drive-Through Window
(934)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 96
Avg. 1000 Sq. Ft. GFA: 4
Directional Distribution: 51% entering, 49% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
44.61	1.05 - 164.25	27.14

Data Plot and Equation



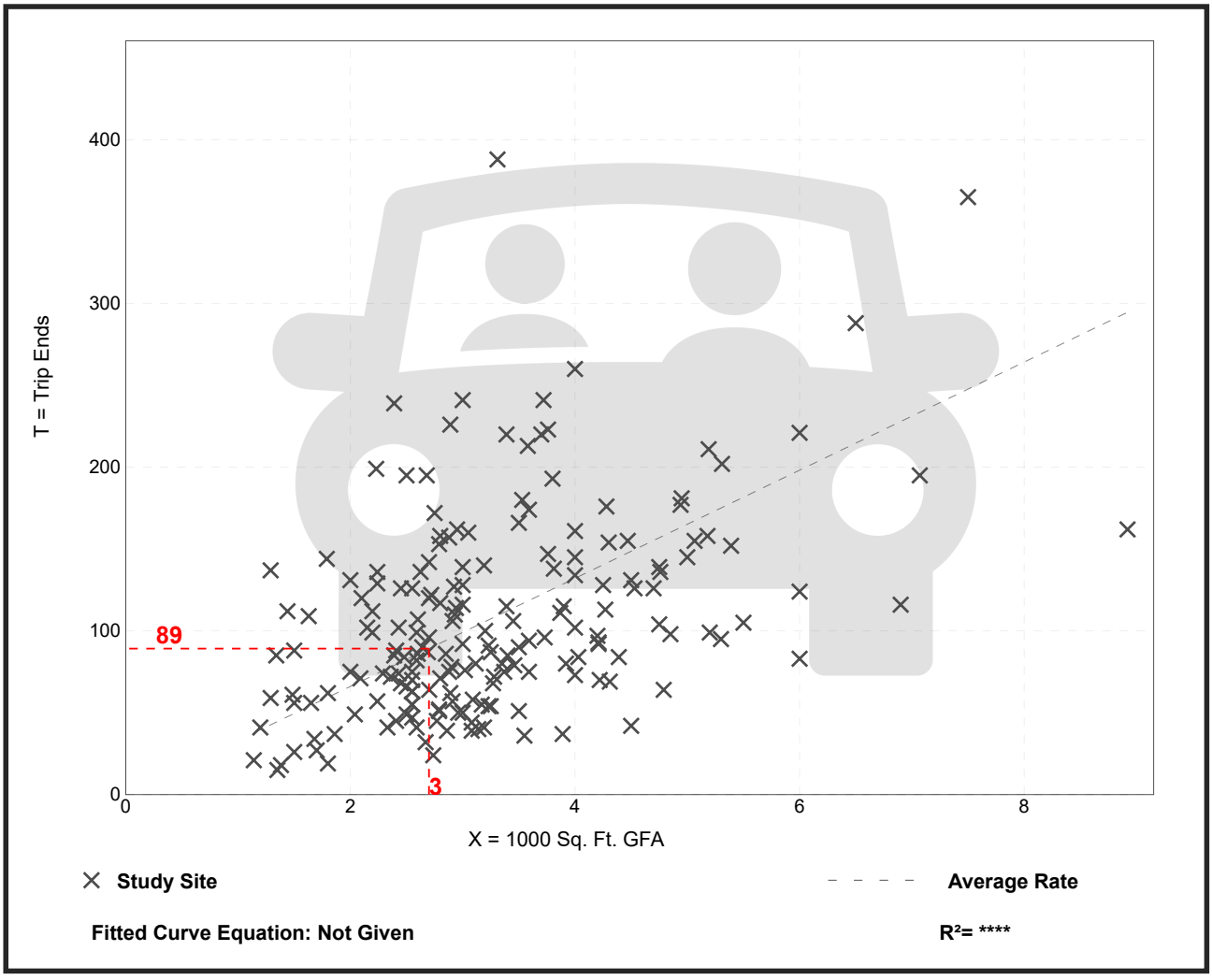
Fast-Food Restaurant with Drive-Through Window
(934)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 190
Avg. 1000 Sq. Ft. GFA: 3
Directional Distribution: 52% entering, 48% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
33.03	8.77 - 117.22	17.59

Data Plot and Equation



Fast-Food Restaurant with Drive-Through Window
(934)

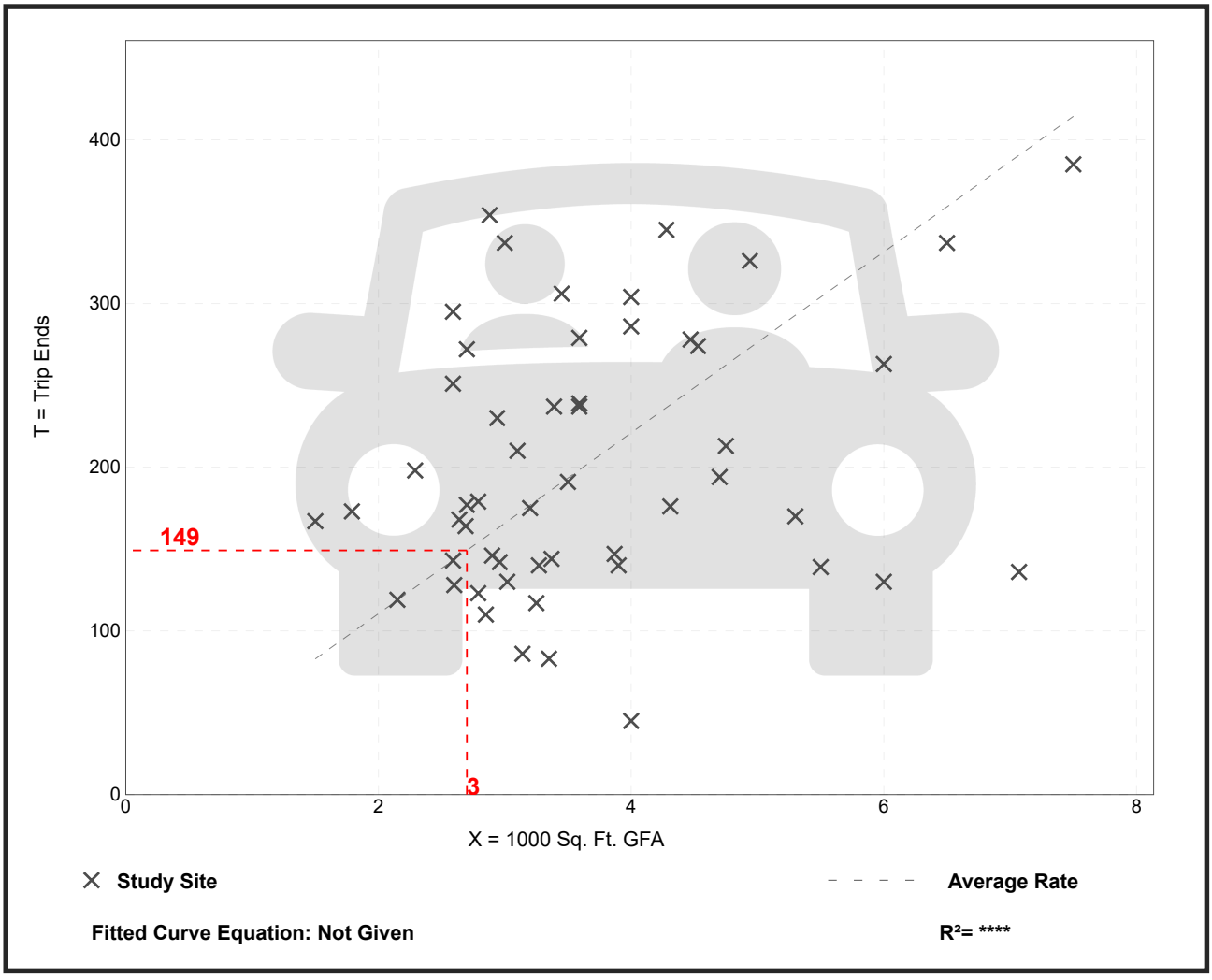
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Saturday, Peak Hour of Generator**

Setting/Location: **General Urban/Suburban**
Number of Studies: 53
Avg. 1000 Sq. Ft. GFA: 4
Directional Distribution: 51% entering, 49% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
55.25	11.25 - 122.92	24.62

Data Plot and Equation



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Fast-Food Restaurant with Drive-Through Window
(934)

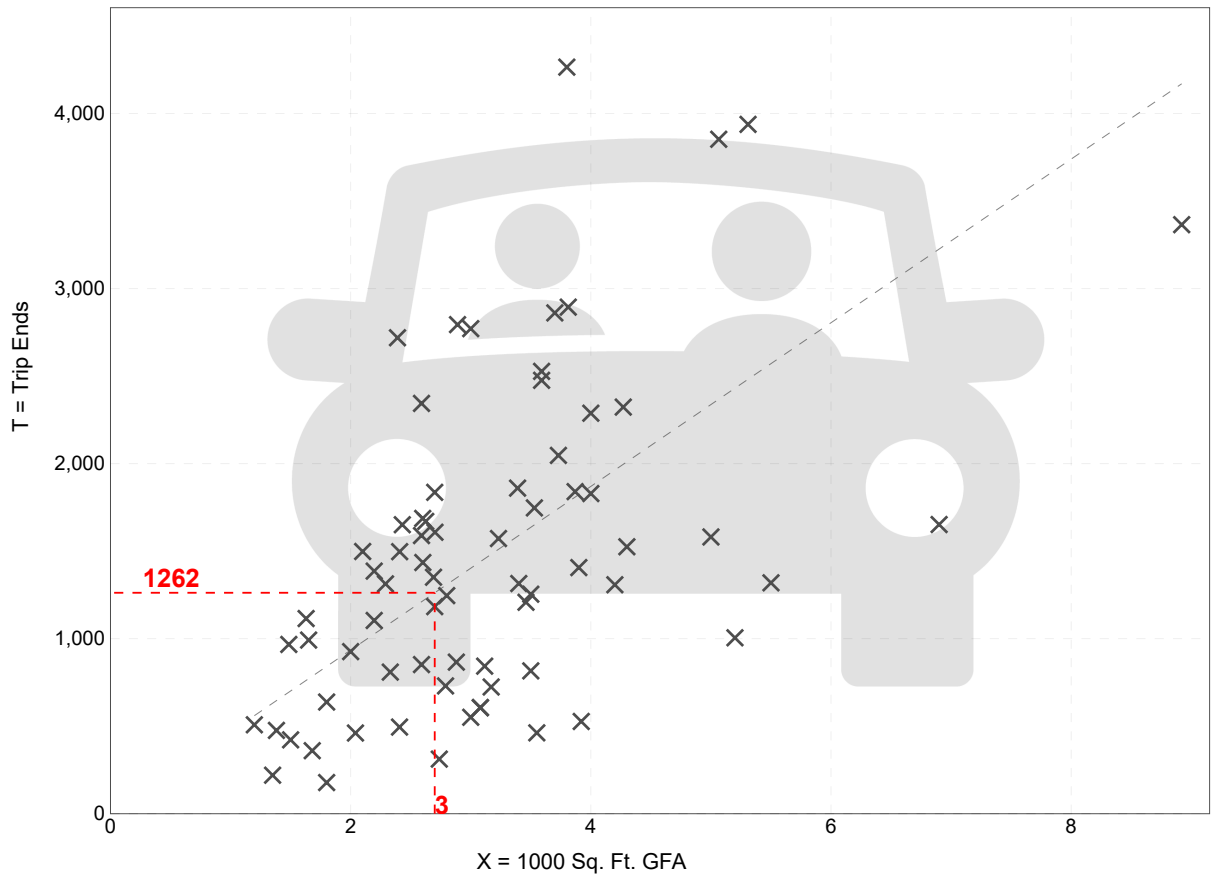
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday**

Setting/Location: **General Urban/Suburban**
Number of Studies: 71
Avg. 1000 Sq. Ft. GFA: 3
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
467.48	98.89 - 1137.66	238.62

Data Plot and Equation



Fitted Curve Equation: Not Given

R^2= ****

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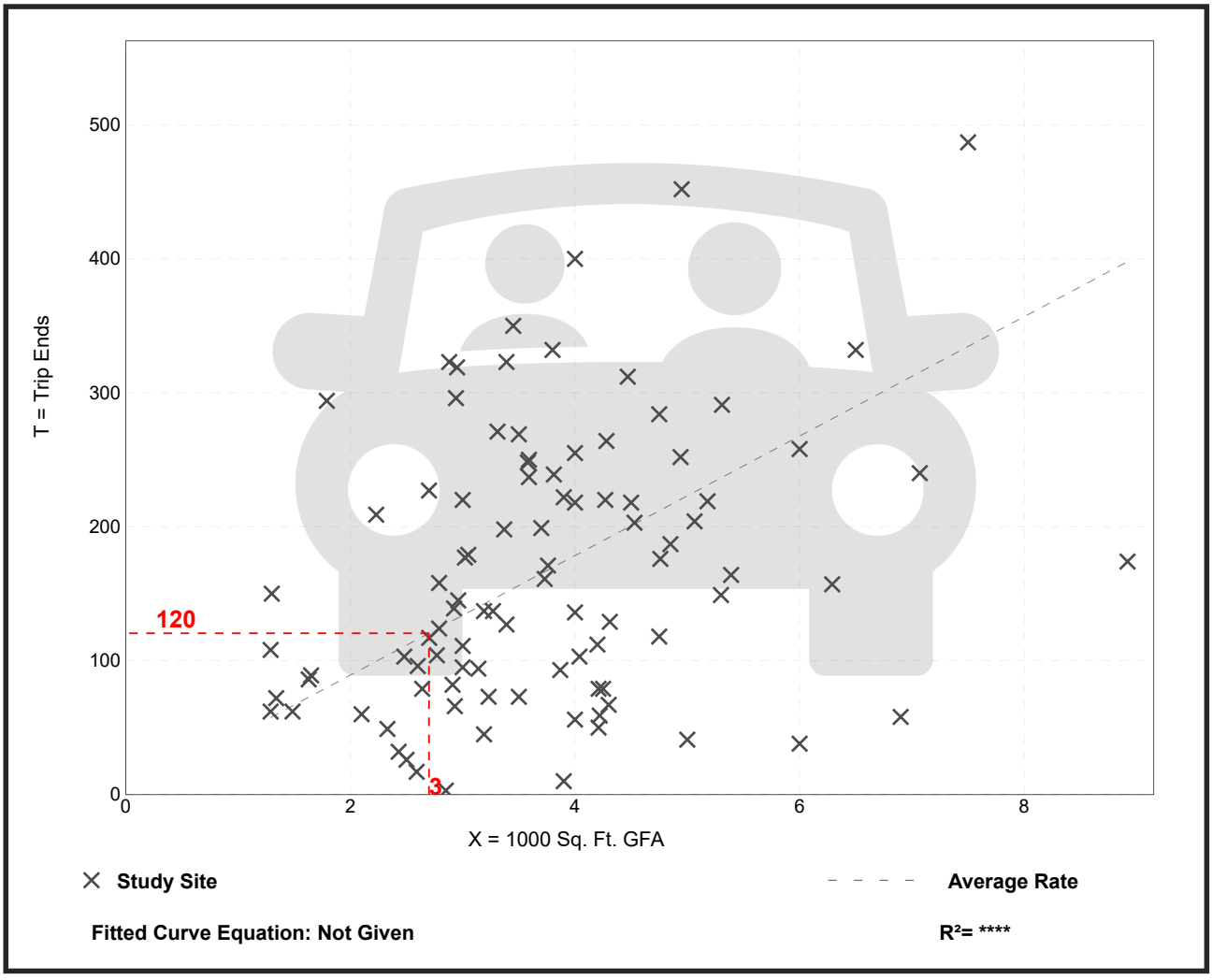
Fast-Food Restaurant with Drive-Through Window
(934)

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44.61	1.05 - 164.25	27.14

Data Plot and Equation



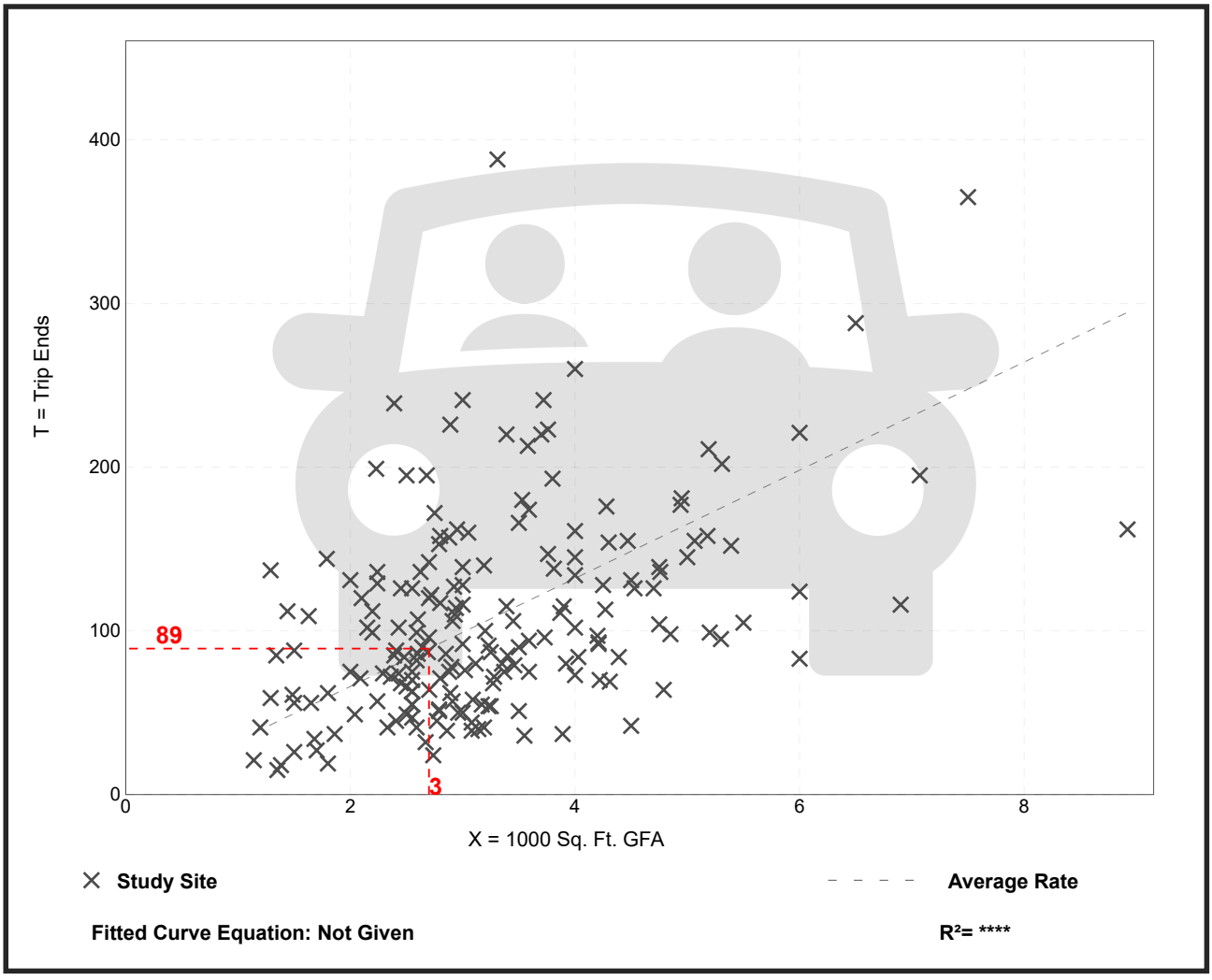
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Data Plot and Equation



Fast-Food Restaurant with Drive-Through Window
(934)

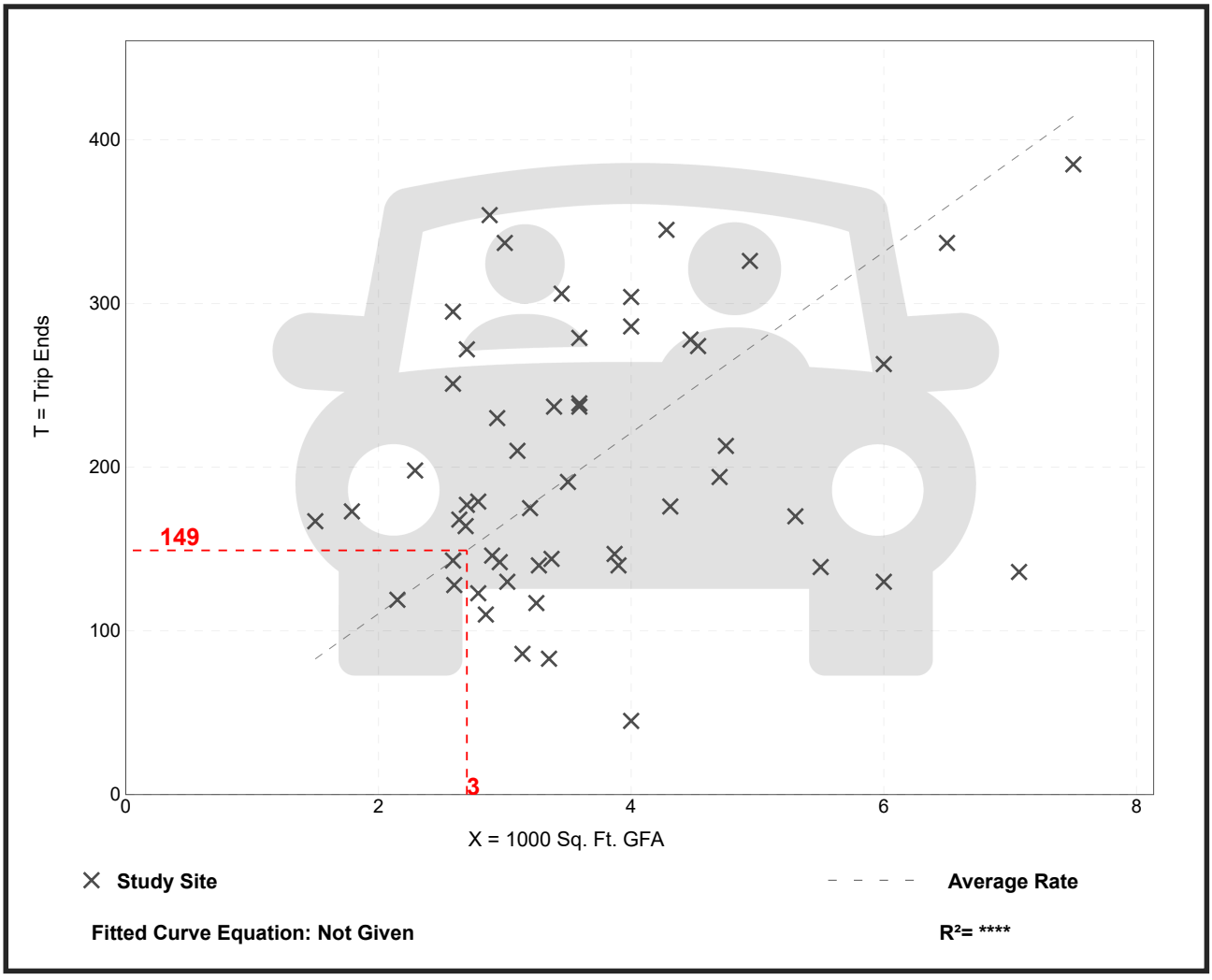
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
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Data Plot and Equation



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Fast-Food Restaurant with Drive-Through Window
(934)

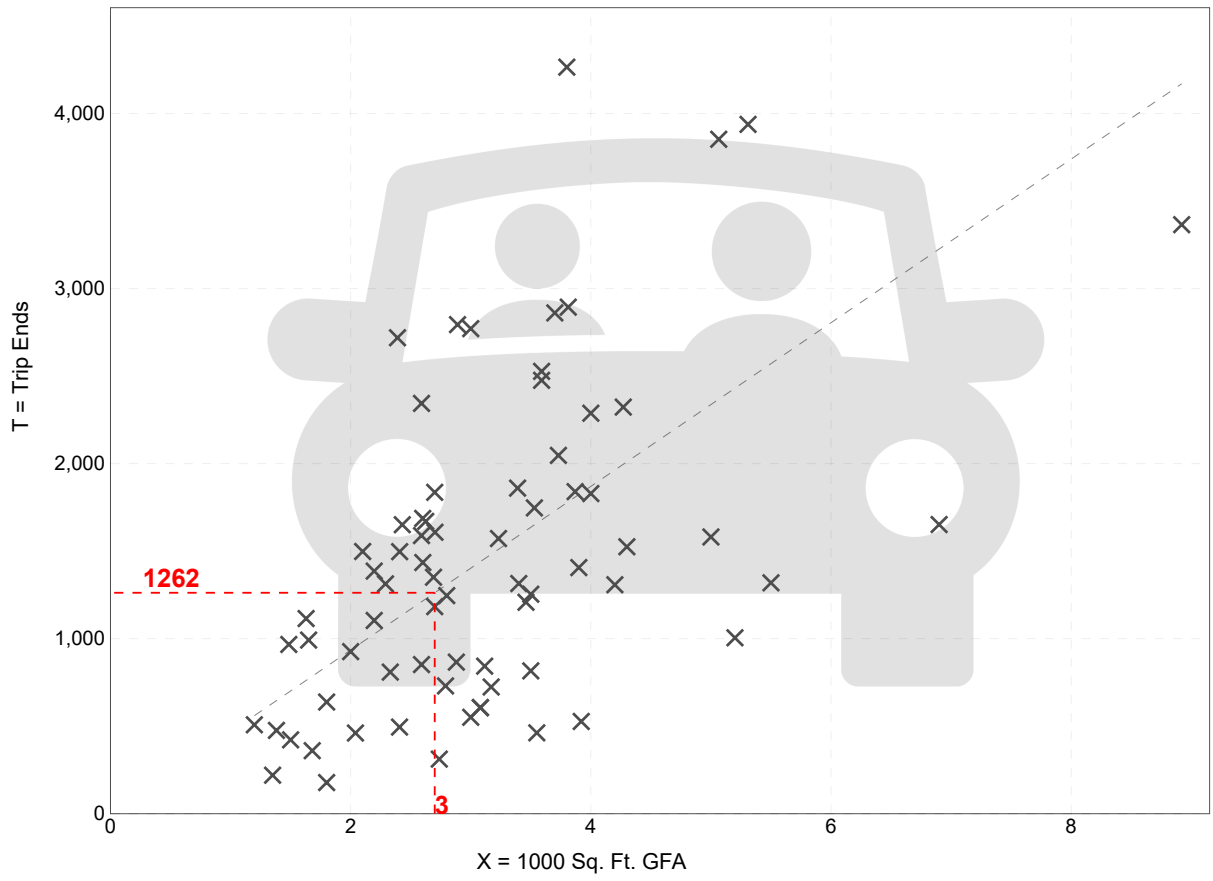
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Setting/Location: **General Urban/Suburban**
Number of Studies: 71
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Average Rate	Range of Rates	Standard Deviation
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Data Plot and Equation



Fitted Curve Equation: Not Given

R^2= ****

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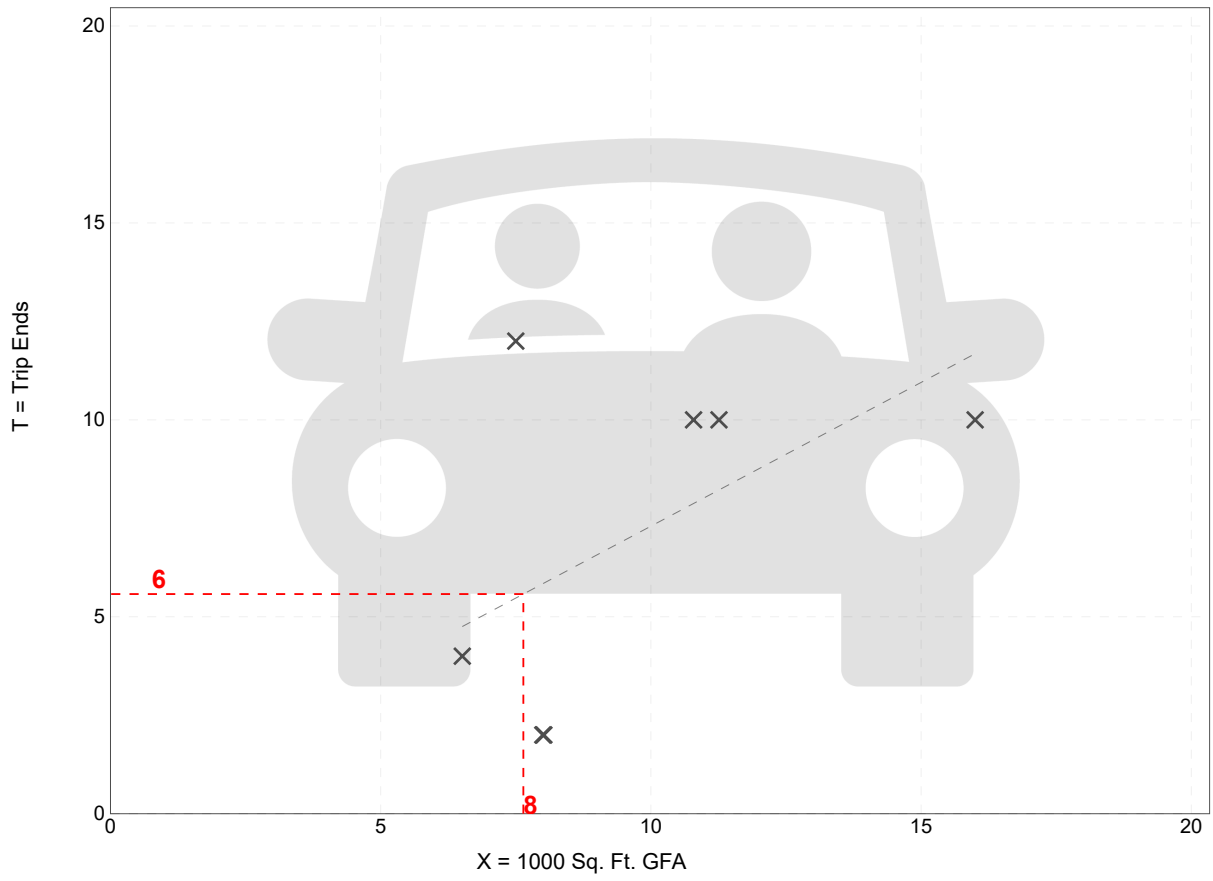
Fine Dining Restaurant
(931)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 7
Avg. 1000 Sq. Ft. GFA: 10
Directional Distribution: Not Available

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
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Data Plot and Equation



Fitted Curve Equation: Not Given

R^2= ****

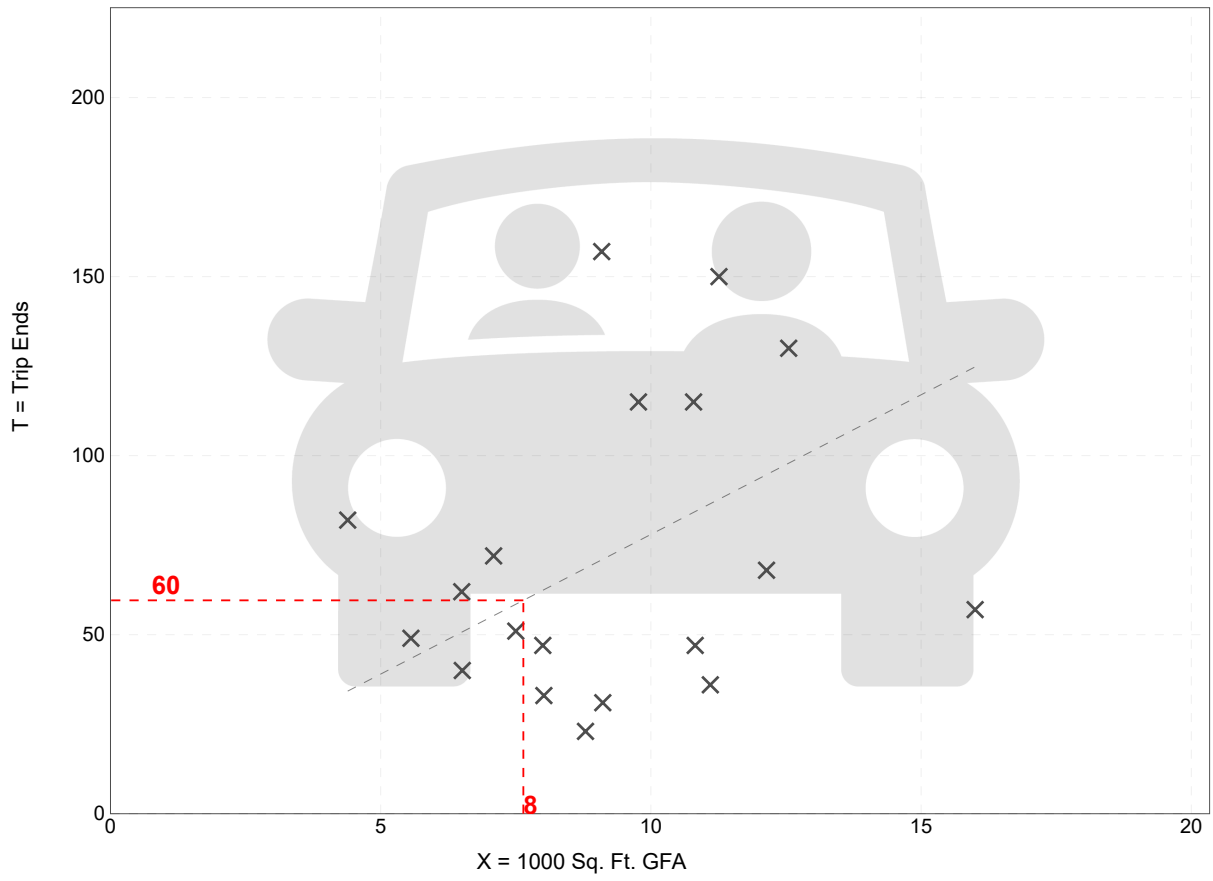
Fine Dining Restaurant
(931)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 19
Avg. 1000 Sq. Ft. GFA: 9
Directional Distribution: 67% entering, 33% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
7.80	2.62 - 18.68	4.49

Data Plot and Equation



Fitted Curve Equation: Not Given

R^2= **

Fine Dining Restaurant
(931)

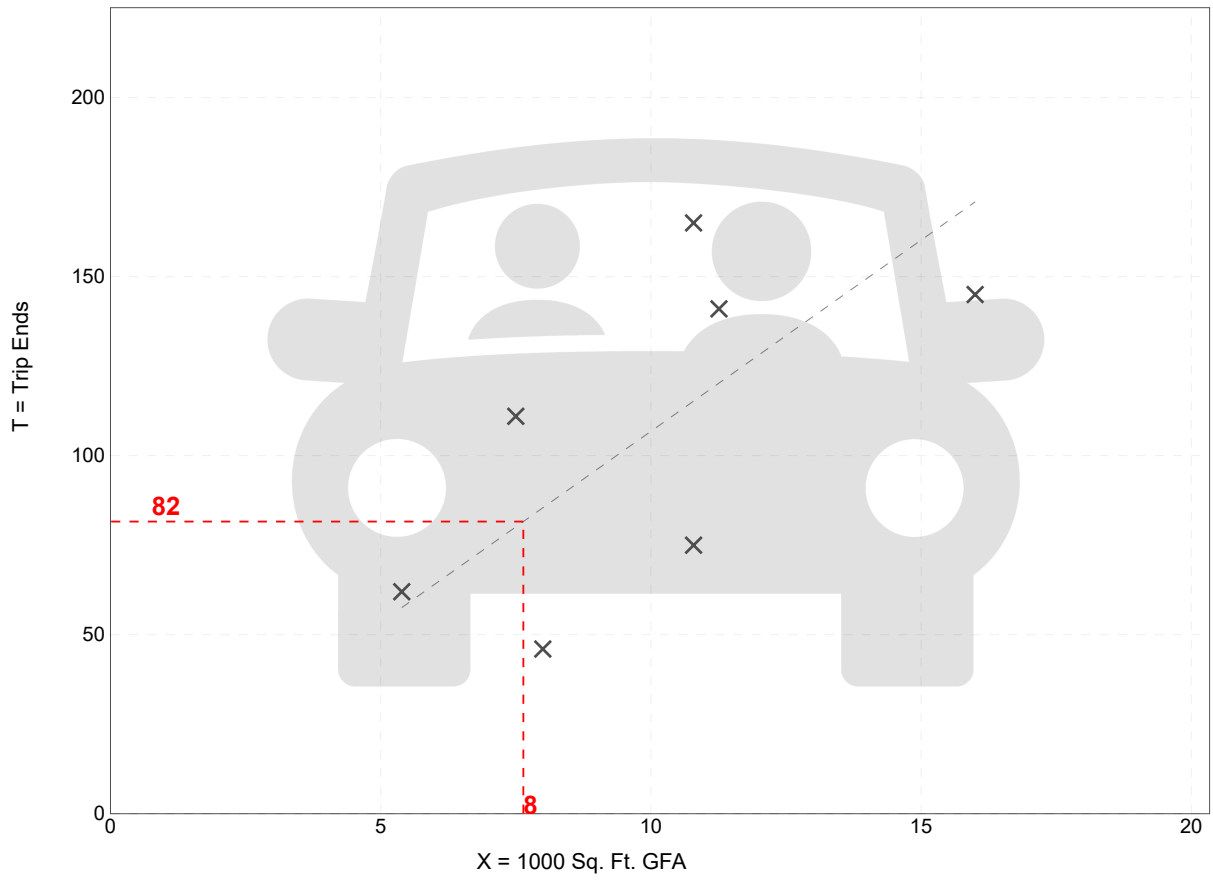
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Saturday, Peak Hour of Generator**

Setting/Location: **General Urban/Suburban**
Number of Studies: 7
Avg. 1000 Sq. Ft. GFA: 10
Directional Distribution: 59% entering, 41% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
10.68	5.75 - 15.29	3.62

Data Plot and Equation



Fitted Curve Equation: Not Given

R^2= ****

Fine Dining Restaurant
(931)

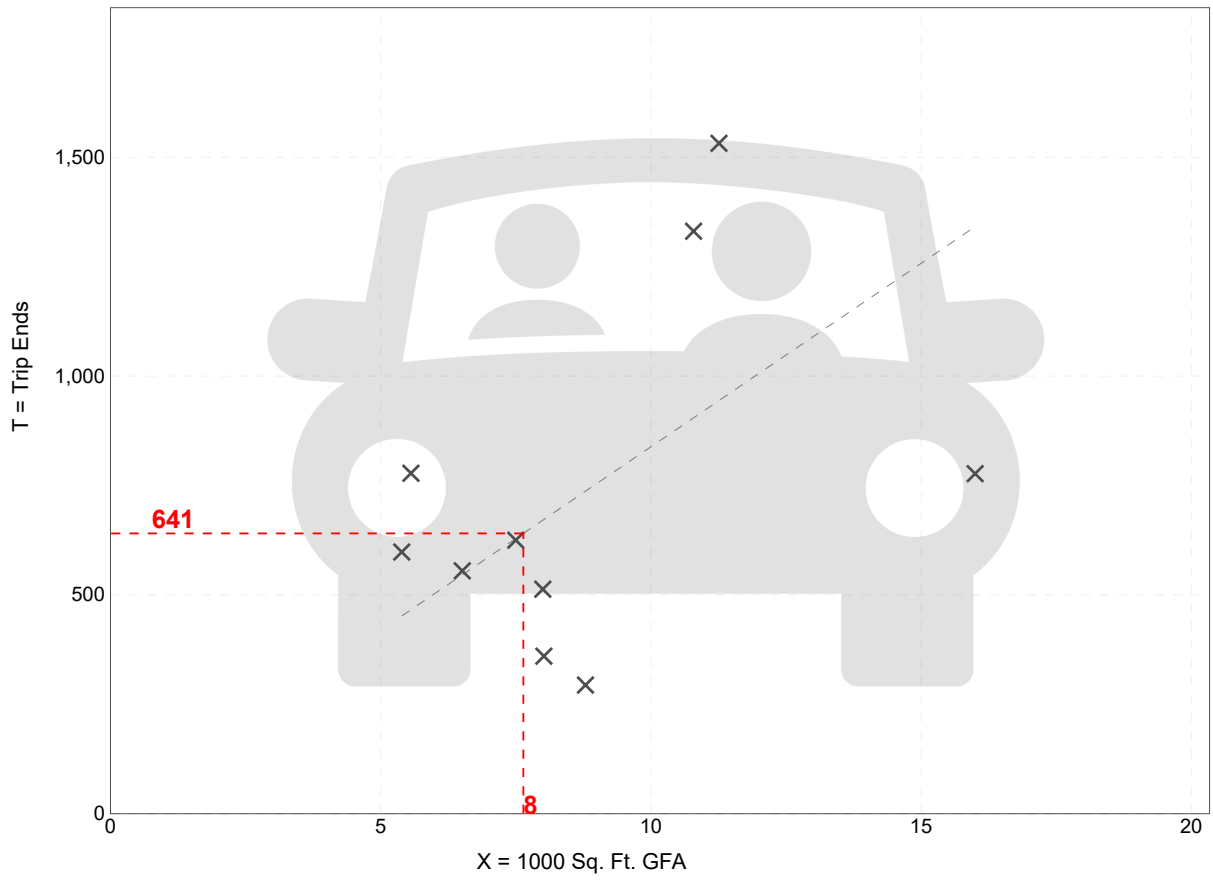
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday**

Setting/Location: **General Urban/Suburban**
Number of Studies: 10
Avg. 1000 Sq. Ft. GFA: 9
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
83.84	33.45 - 139.93	40.01

Data Plot and Equation



Fitted Curve Equation: Not Given

R^2= ****

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Strip Retail Plaza (<40k)
(822)

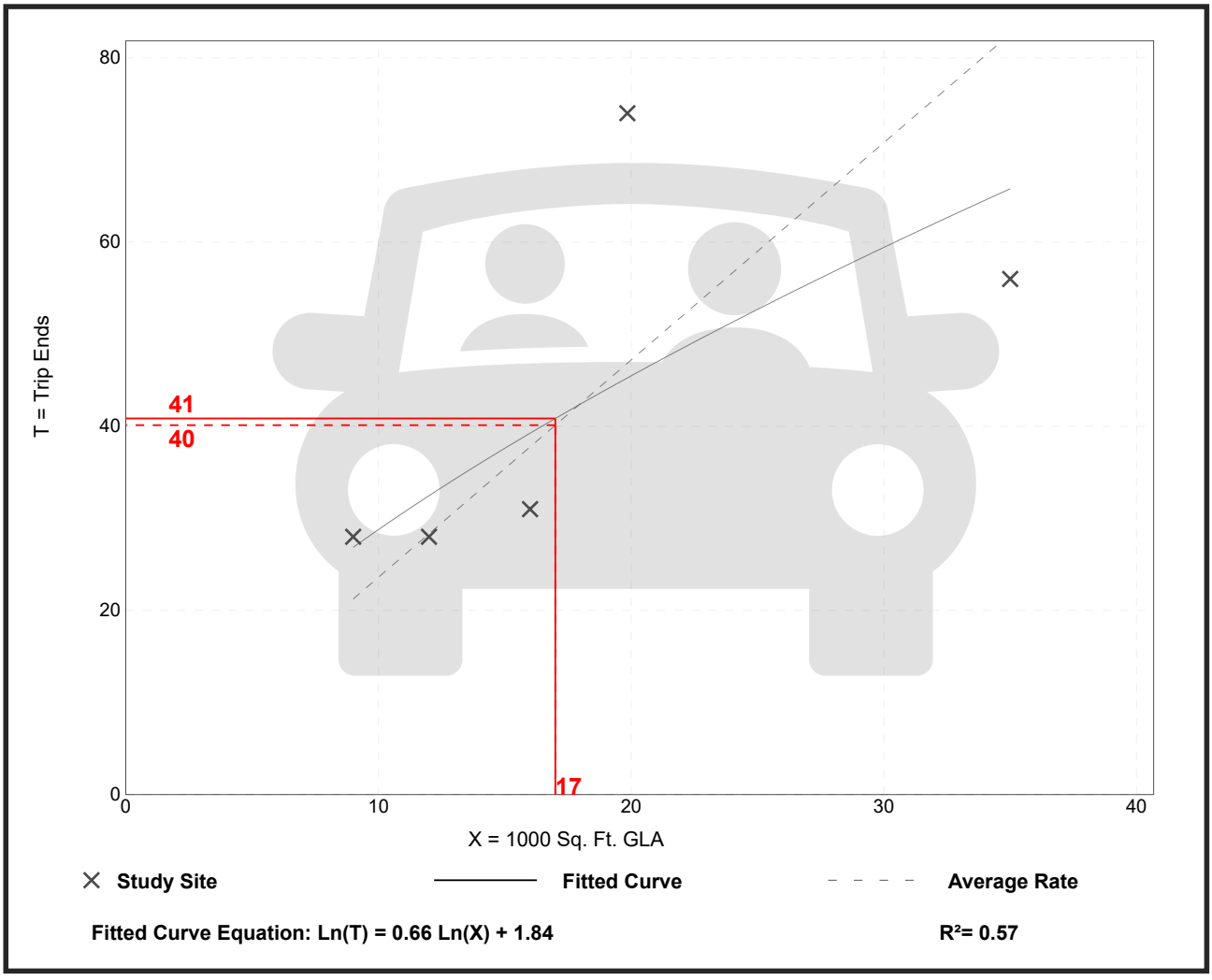
Vehicle Trip Ends vs: **1000 Sq. Ft. GLA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 5
Avg. 1000 Sq. Ft. GLA: 18
Directional Distribution: 60% entering, 40% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
2.36	1.60 - 3.73	0.94

Data Plot and Equation

Caution – Small Sample Size



Fitted Curve Equation: Ln(T) = 0.66 Ln(X) + 1.84

R^2= 0.57

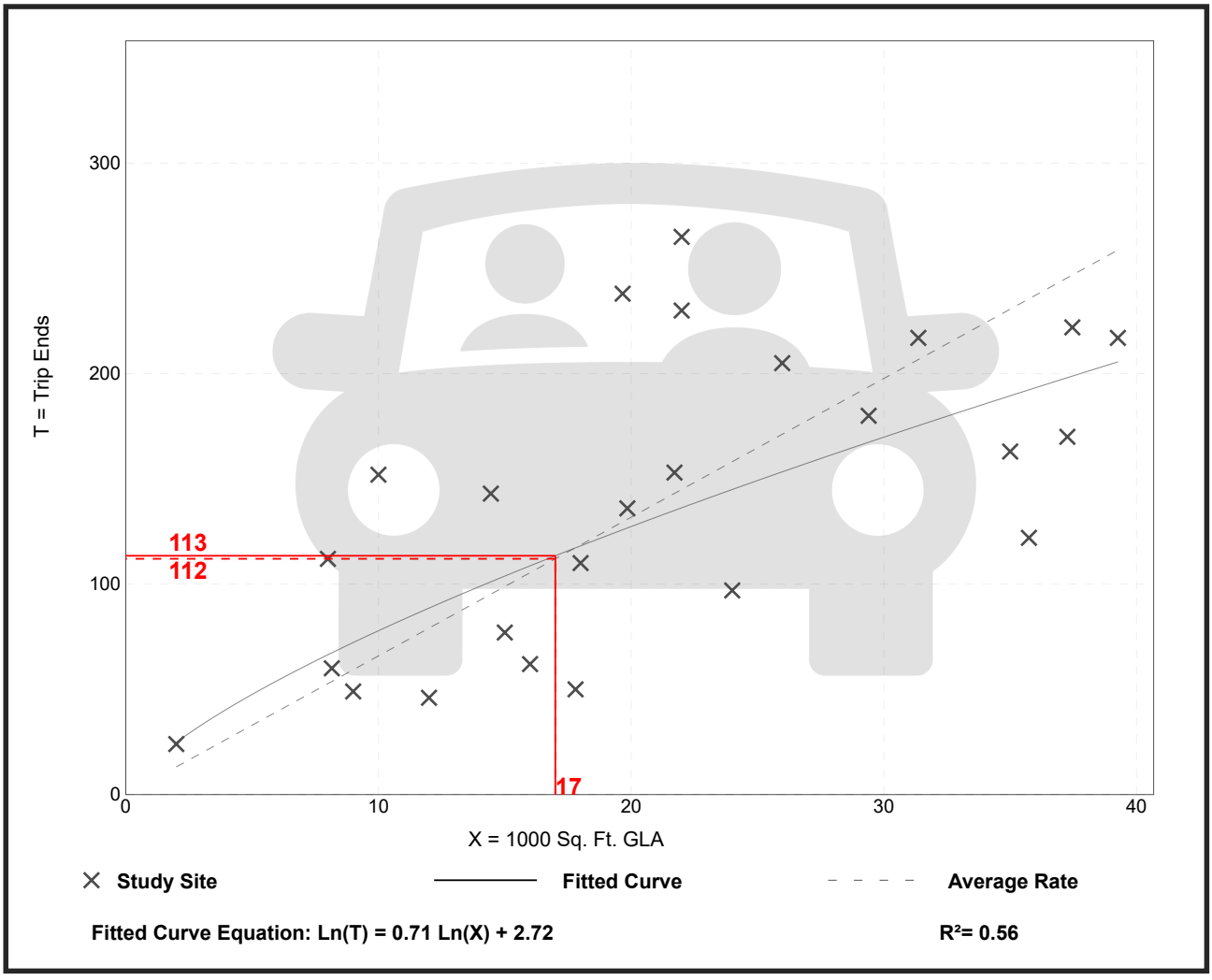
Strip Retail Plaza (<40k)
(822)

Vehicle Trip Ends vs:	**1000 Sq. Ft. GLA**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	25
Avg. 1000 Sq. Ft. GLA:	21
Directional Distribution:	50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
6.59	2.81 - 15.20	2.94

Data Plot and Equation



Strip Retail Plaza (<40k)
(822)

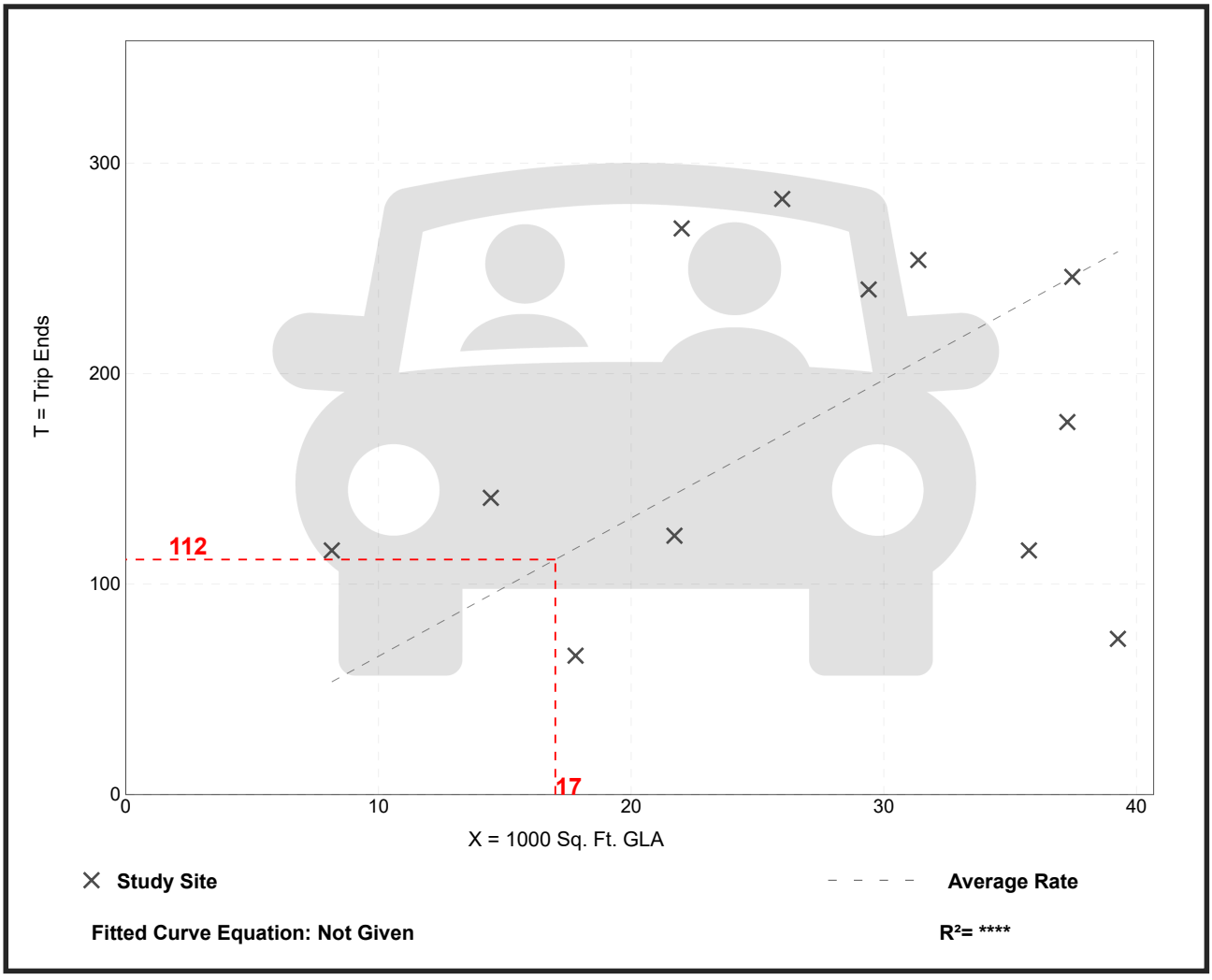
Vehicle Trip Ends vs: **1000 Sq. Ft. GLA**
On a: **Saturday, Peak Hour of Generator**

Setting/Location: **General Urban/Suburban**
Number of Studies: 12
Avg. 1000 Sq. Ft. GLA: 27
Directional Distribution: 51% entering, 49% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
6.57	1.88 - 14.23	3.45

Data Plot and Equation



Fitted Curve Equation: Not Given

R^2= ****

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Strip Retail Plaza (<40k)
(822)

Vehicle Trip Ends vs: **1000 Sq. Ft. GLA**
On a: **Weekday**

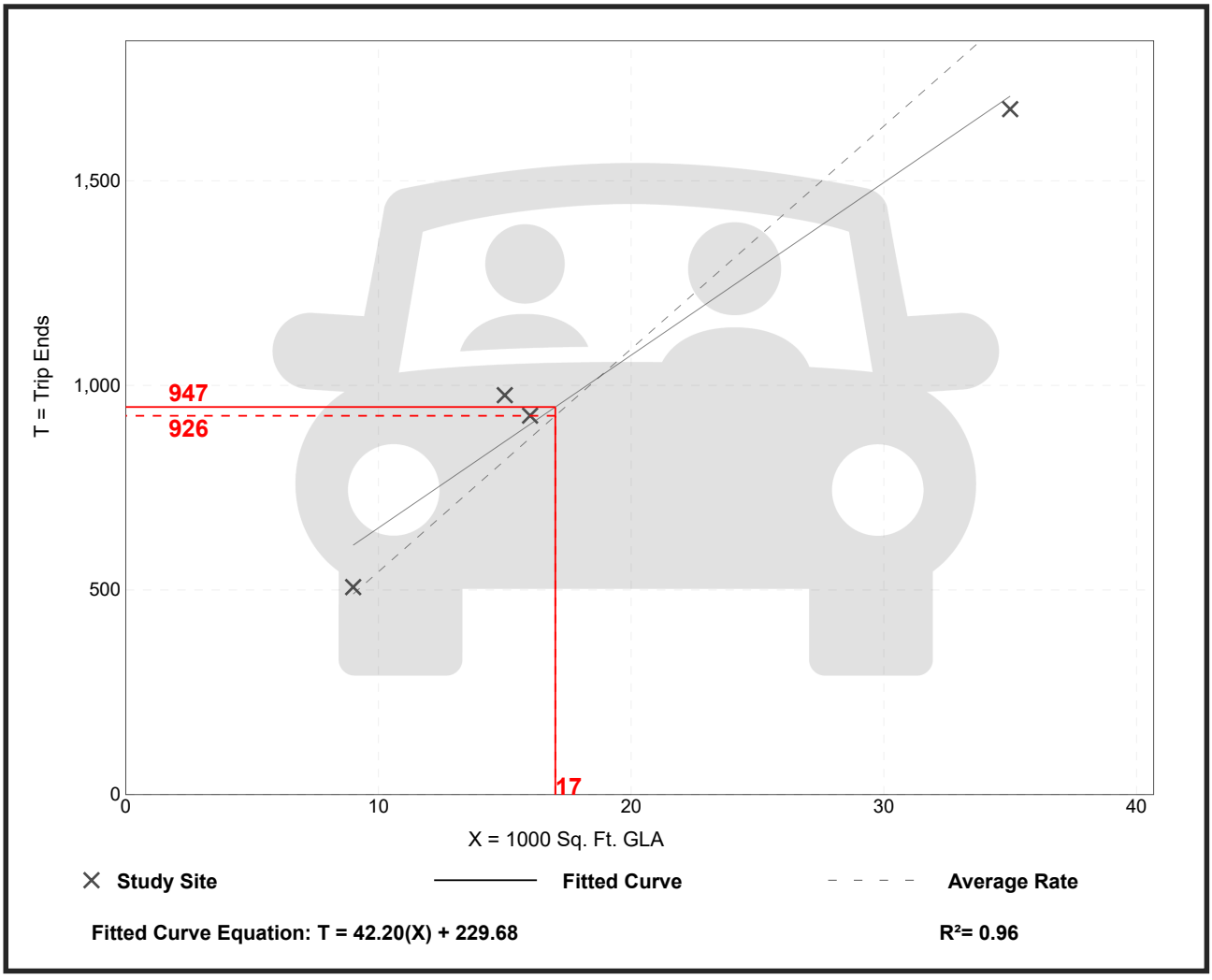
Setting/Location: **General Urban/Suburban**
Number of Studies: 4
Avg. 1000 Sq. Ft. GLA: 19
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
54.45	47.86 - 65.07	7.81

Data Plot and Equation

Caution – Small Sample Size



Fitted Curve Equation: T = 42.20(X) + 229.68

R^2= 0.96

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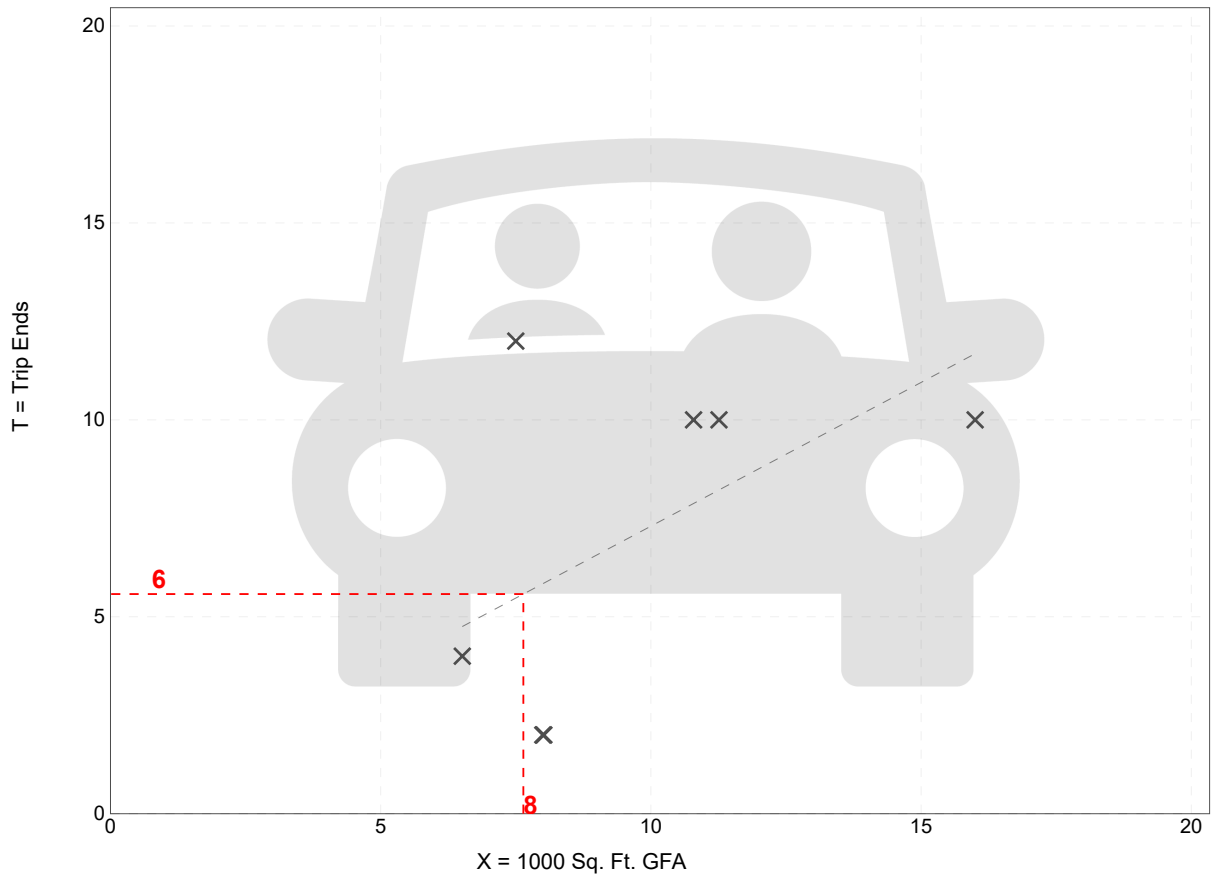
Fine Dining Restaurant
(931)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 7
Avg. 1000 Sq. Ft. GFA: 10
Directional Distribution: Not Available

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.73	0.25 - 1.60	0.42

Data Plot and Equation



Fitted Curve Equation: Not Given

R^2= ****

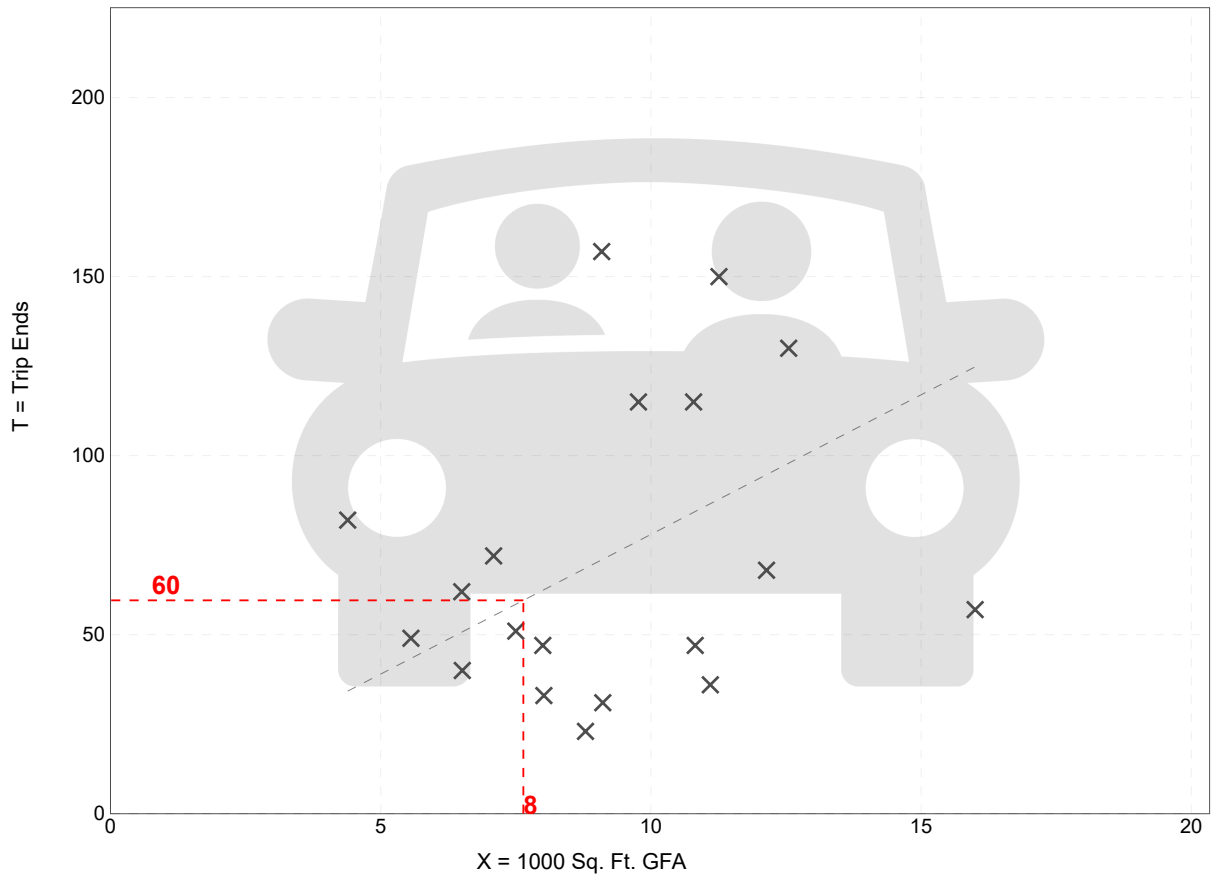
Fine Dining Restaurant
(931)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 19
Avg. 1000 Sq. Ft. GFA: 9
Directional Distribution: 67% entering, 33% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
7.80	2.62 - 18.68	4.49

Data Plot and Equation



Fitted Curve Equation: Not Given

R^2= **

Fine Dining Restaurant
(931)

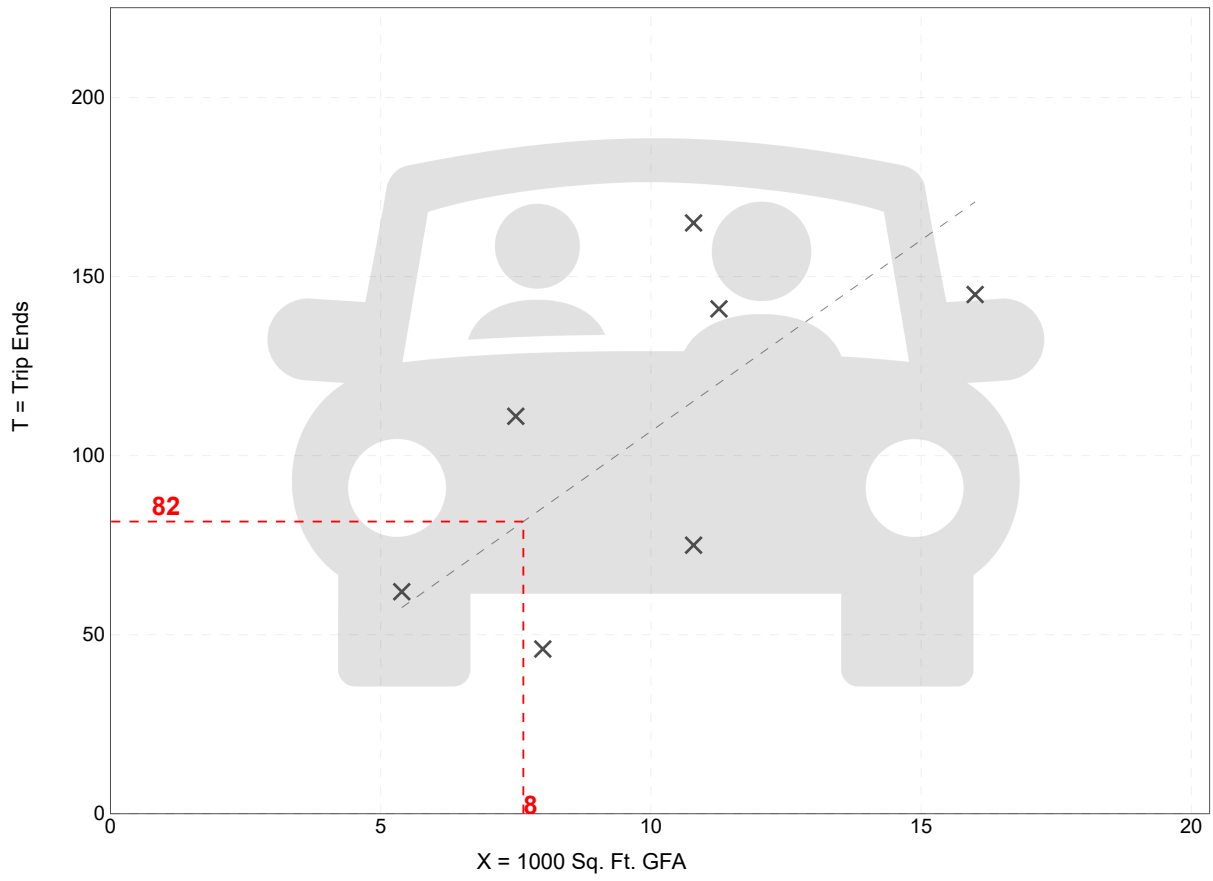
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Saturday, Peak Hour of Generator**

Setting/Location: **General Urban/Suburban**
Number of Studies: 7
Avg. 1000 Sq. Ft. GFA: 10
Directional Distribution: 59% entering, 41% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
10.68	5.75 - 15.29	3.62

Data Plot and Equation



Fitted Curve Equation: Not Given

R^2= ****

Fine Dining Restaurant
(931)

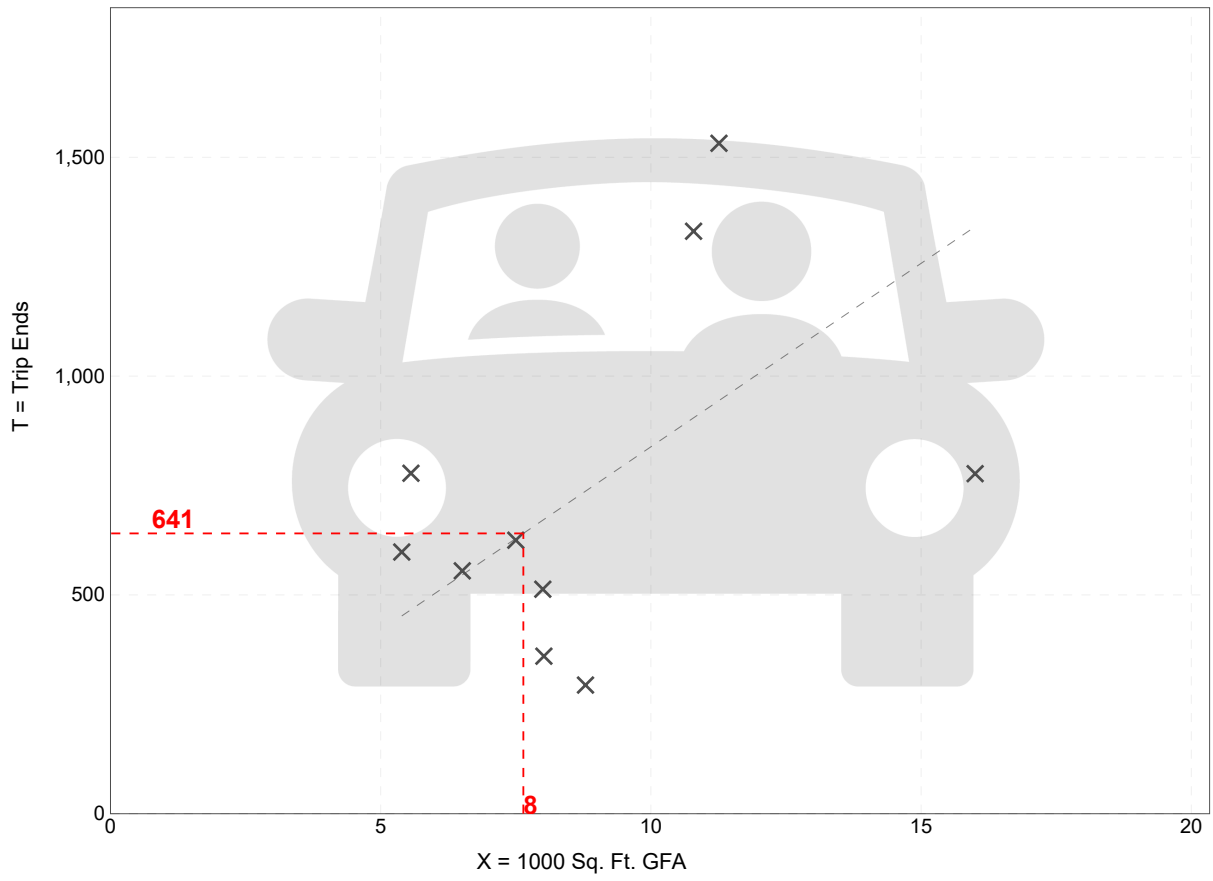
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday**

Setting/Location: **General Urban/Suburban**
Number of Studies: 10
Avg. 1000 Sq. Ft. GFA: 9
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
83.84	33.45 - 139.93	40.01

Data Plot and Equation



Fitted Curve Equation: Not Given

R^2= ****

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Public Park
(411)

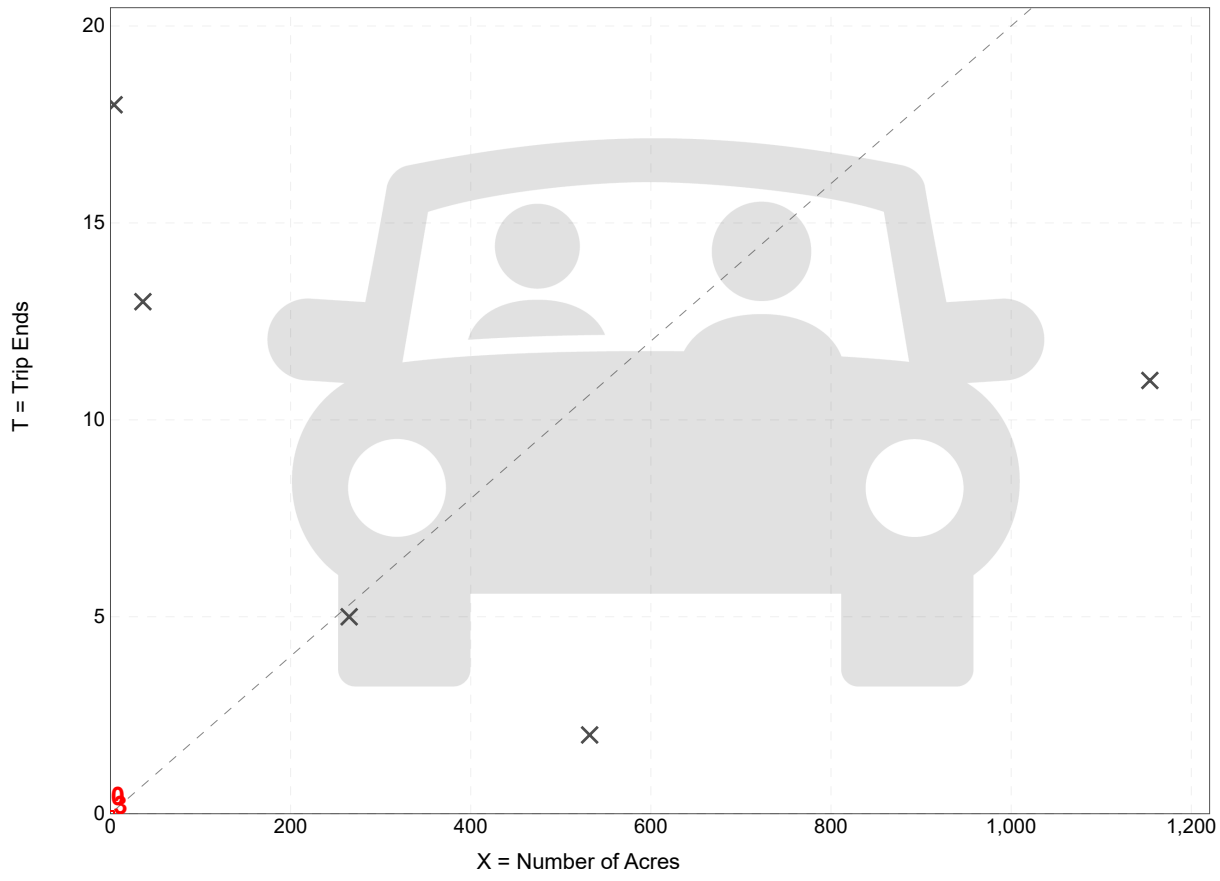
Vehicle Trip Ends vs:	**Acres**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	5
Avg. Num. of Acres:	398
Directional Distribution:	59% entering, 41% exiting

Vehicle Trip Generation per Acre

Average Rate	Range of Rates	Standard Deviation
0.02	0.00 - 4.50	0.23

Data Plot and Equation

Caution – Small Sample Size



Fitted Curve Equation: Not Given

R^2= ****

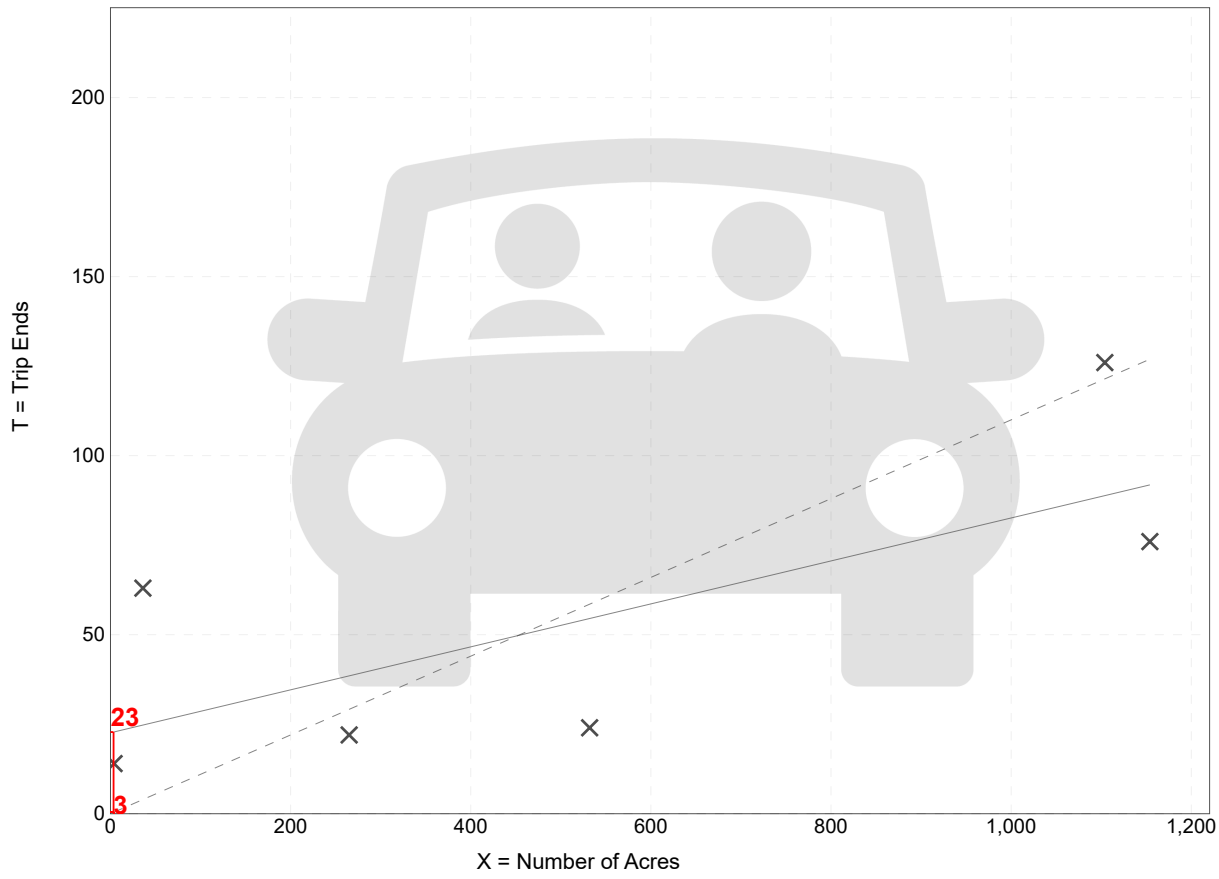
Public Park
(411)

Vehicle Trip Ends vs: **Acres**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 6
Avg. Num. of Acres: 516
Directional Distribution: 55% entering, 45% exiting

Vehicle Trip Generation per Acre

Average Rate	Range of Rates	Standard Deviation
0.11	0.05 - 3.50	0.24

Data Plot and Equation



Fitted Curve Equation: T = 0.06(X) + 22.60

R^2= 0.53

Public Park
(411)

Vehicle Trip Ends vs: **Acres**
On a: **Saturday, Peak Hour of Generator**

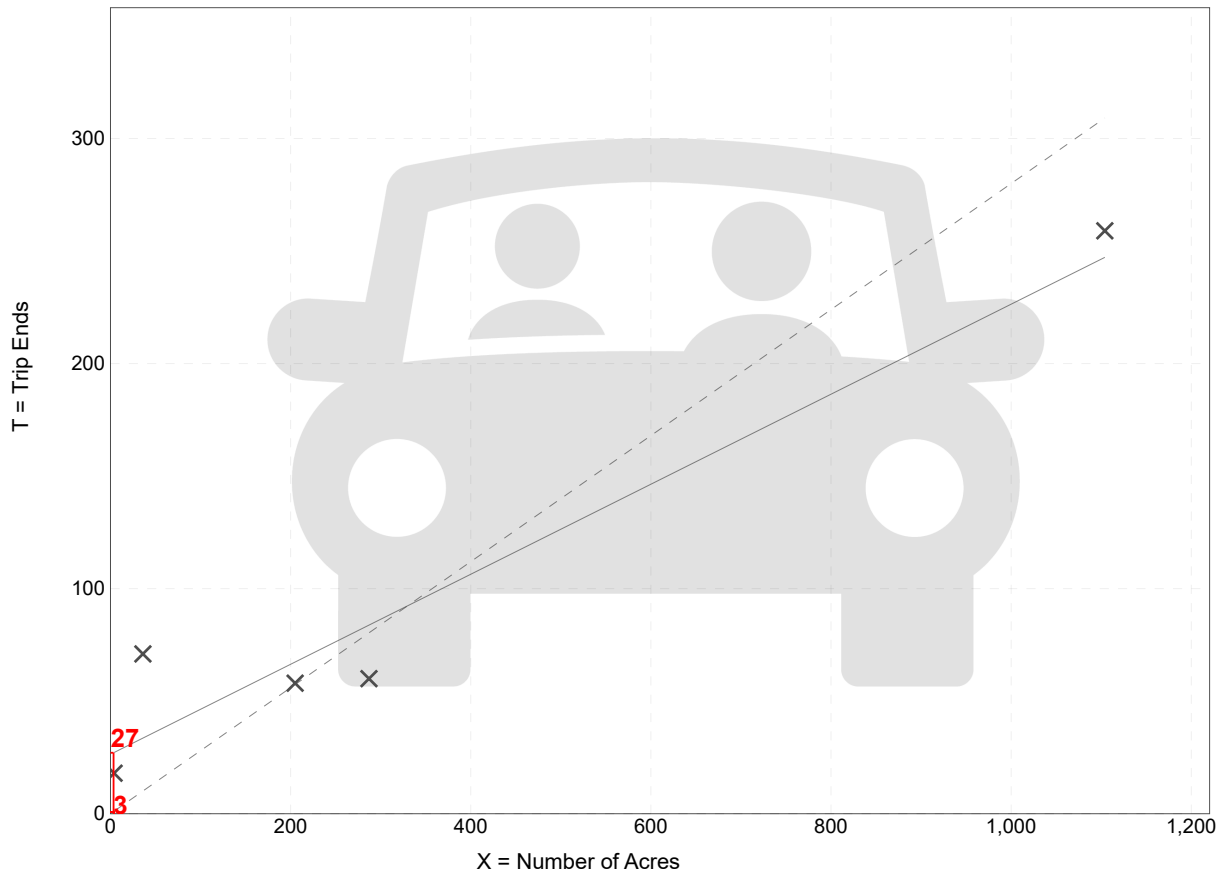
Setting/Location: **General Urban/Suburban**
Number of Studies: 5
Avg. Num. of Acres: 327
Directional Distribution: 55% entering, 45% exiting

Vehicle Trip Generation per Acre

Average Rate	Range of Rates	Standard Deviation
0.28	0.21 - 4.50	0.37

Data Plot and Equation

Caution – Small Sample Size



Fitted Curve Equation: T = 0.20(X) + 26.40

R^2= 0.94

Public Park
(411)

Vehicle Trip Ends vs: **Acres**
On a: **Weekday**

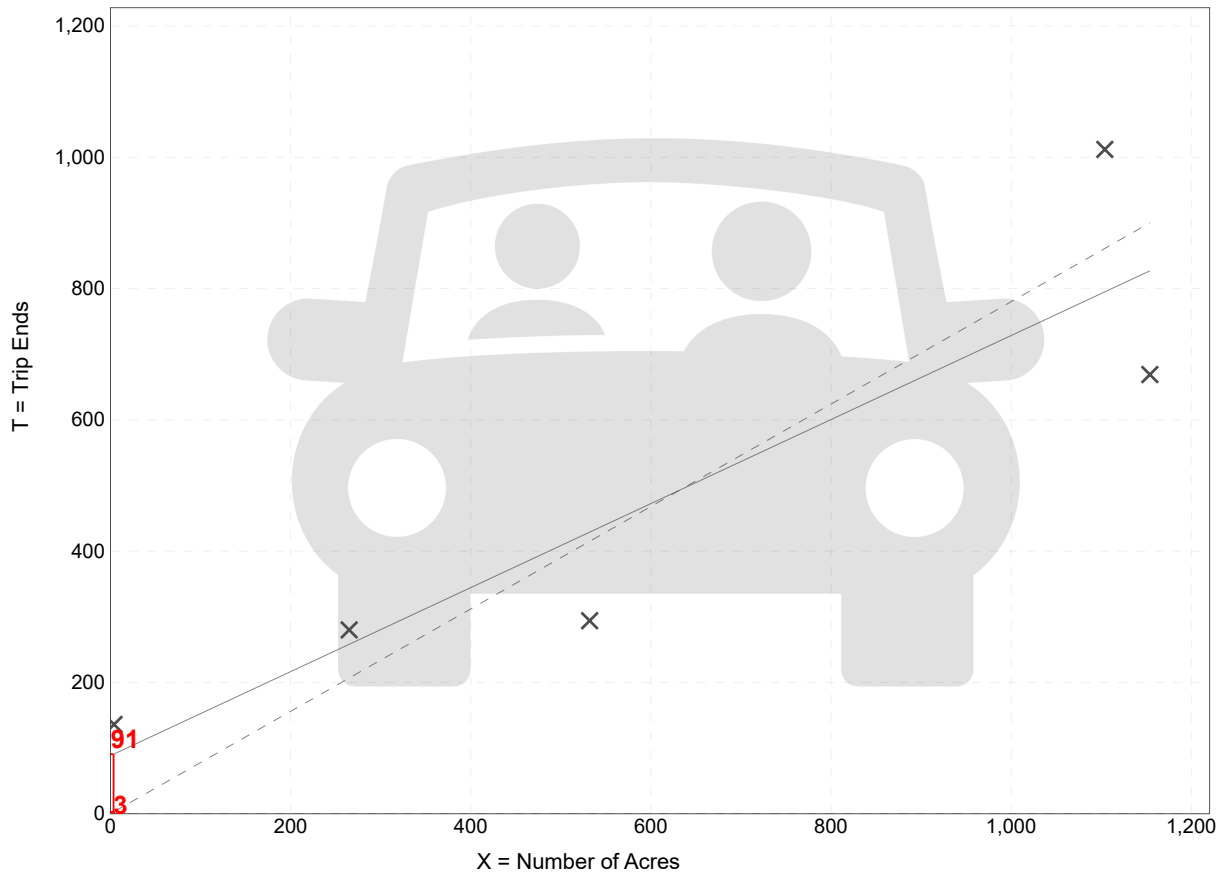
Setting/Location: **General Urban/Suburban**
Number of Studies: 5
Avg. Num. of Acres: 612
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Acre

Average Rate	Range of Rates	Standard Deviation
0.78	0.55 - 34.00	1.36

Data Plot and Equation

Caution – Small Sample Size



Fitted Curve Equation: T = 0.64(X) + 88.46

R^2= 0.82

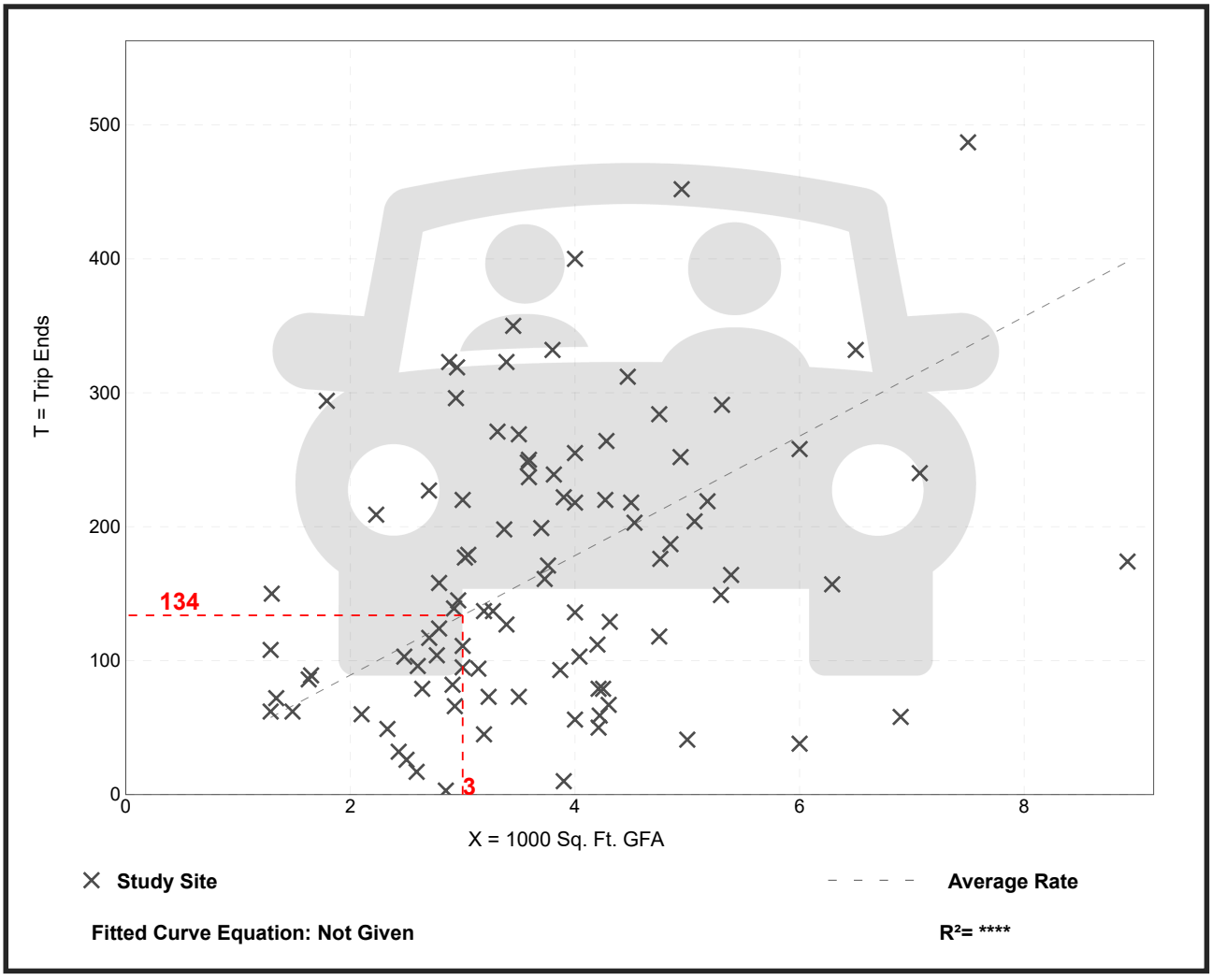
Fast-Food Restaurant with Drive-Through Window
(934)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 96
Avg. 1000 Sq. Ft. GFA: 4
Directional Distribution: 51% entering, 49% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
44.61	1.05 - 164.25	27.14

Data Plot and Equation



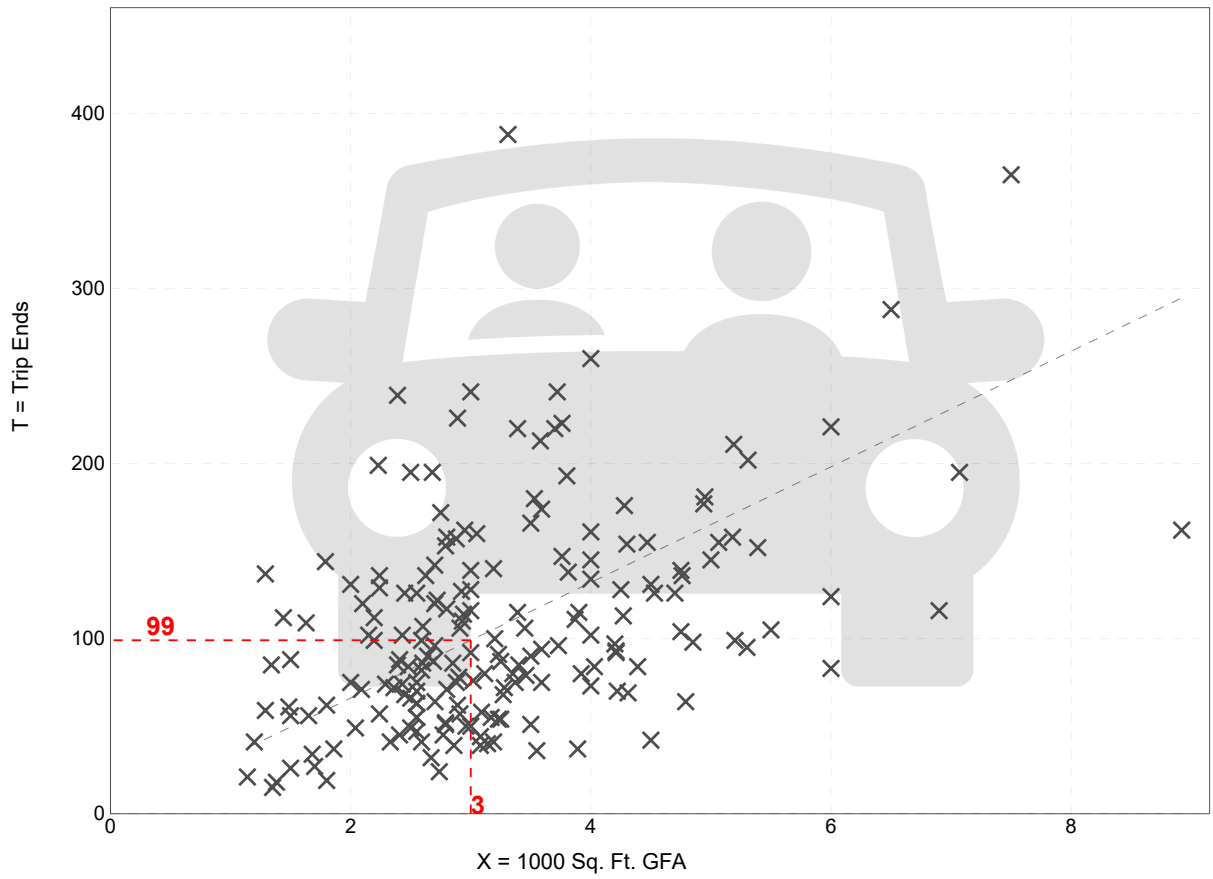
Fast-Food Restaurant with Drive-Through Window
(934)

Vehicle Trip Ends vs:	**1000 Sq. Ft. GFA**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	190
Avg. 1000 Sq. Ft. GFA:	3
Directional Distribution:	52% entering, 48% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
33.03	8.77 - 117.22	17.59

Data Plot and Equation



Fast-Food Restaurant with Drive-Through Window
(934)

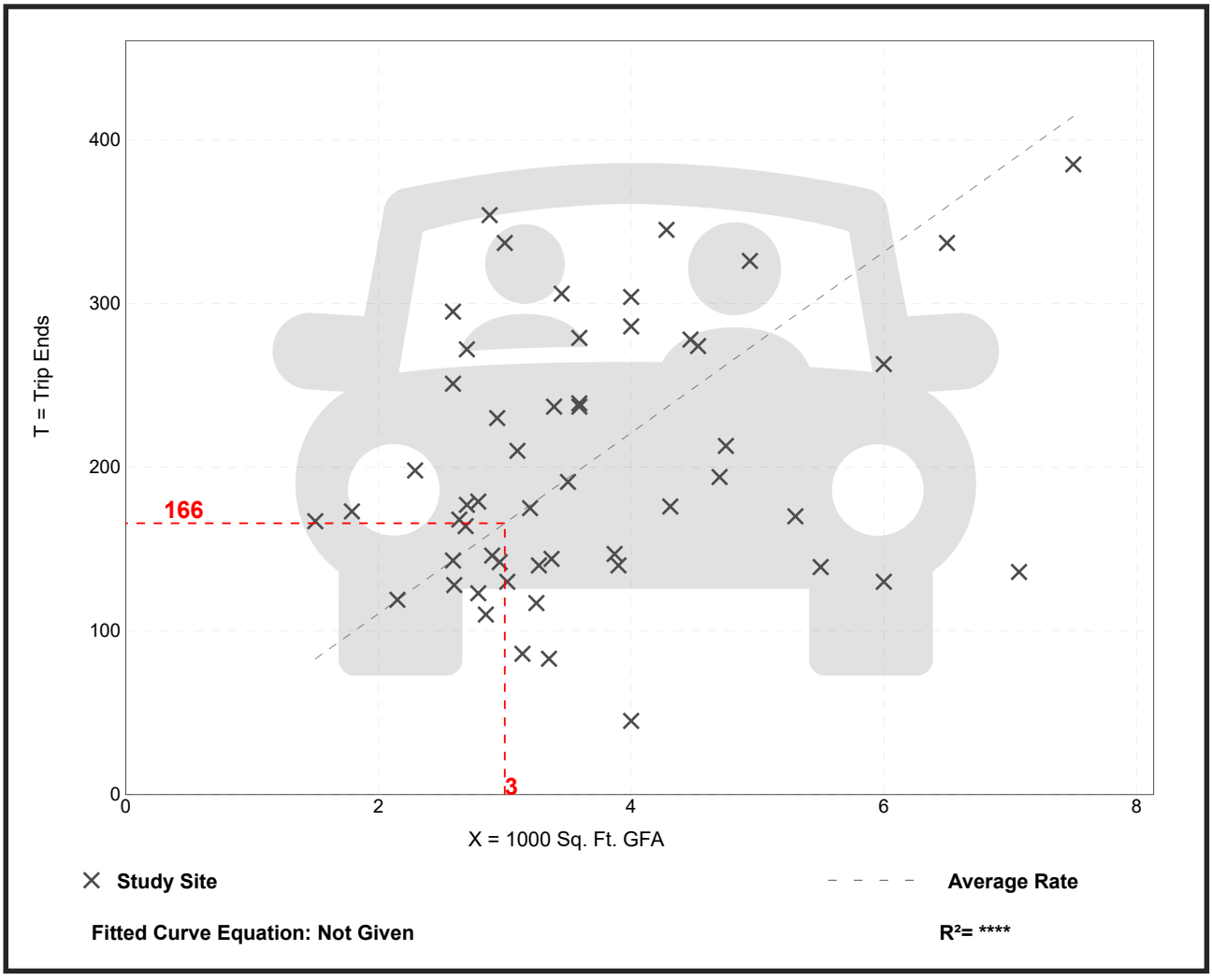
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Saturday, Peak Hour of Generator**

Setting/Location: **General Urban/Suburban**
Number of Studies: 53
Avg. 1000 Sq. Ft. GFA: 4
Directional Distribution: 51% entering, 49% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
55.25	11.25 - 122.92	24.62

Data Plot and Equation



Fast-Food Restaurant with Drive-Through Window
(934)

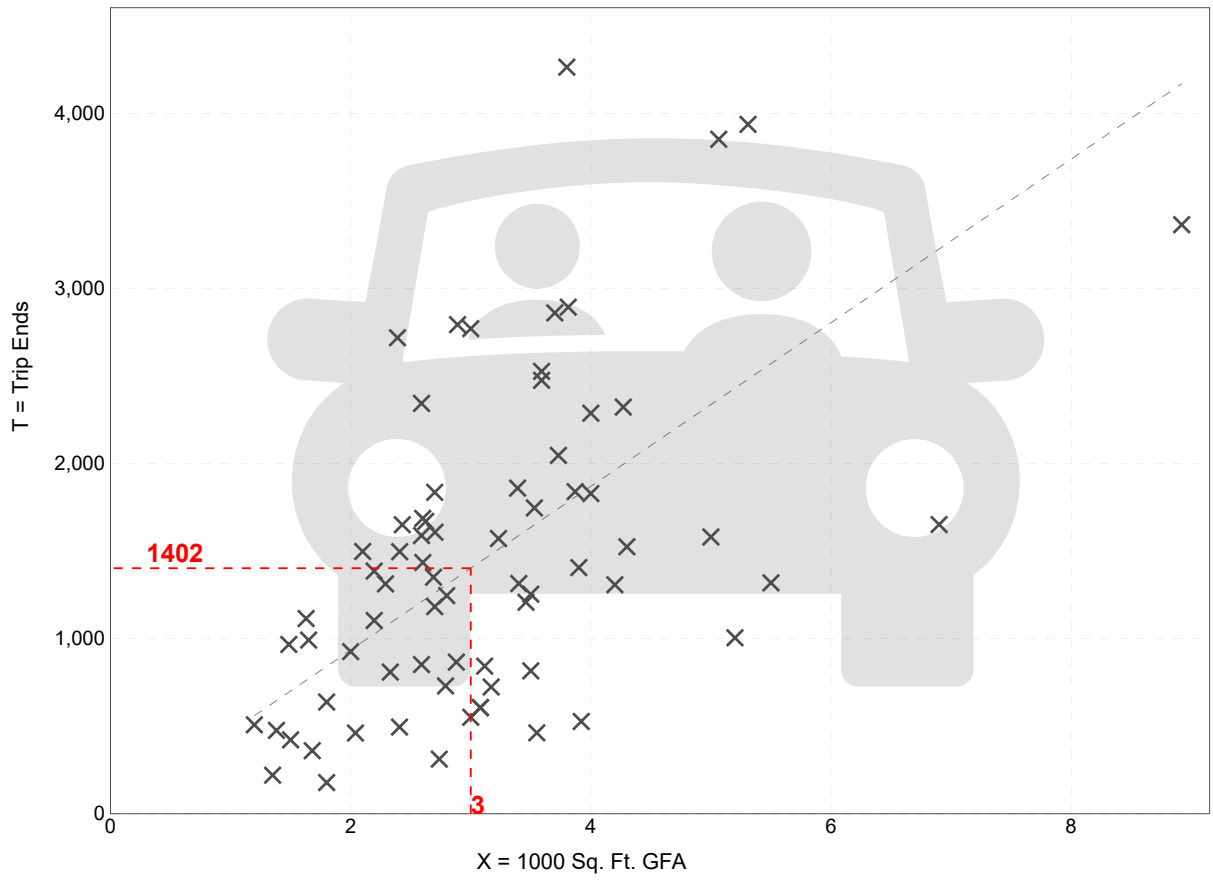
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday**

Setting/Location: **General Urban/Suburban**
Number of Studies: 71
Avg. 1000 Sq. Ft. GFA: 3
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
467.48	98.89 - 1137.66	238.62

Data Plot and Equation



Fitted Curve Equation: Not Given

R^2= **

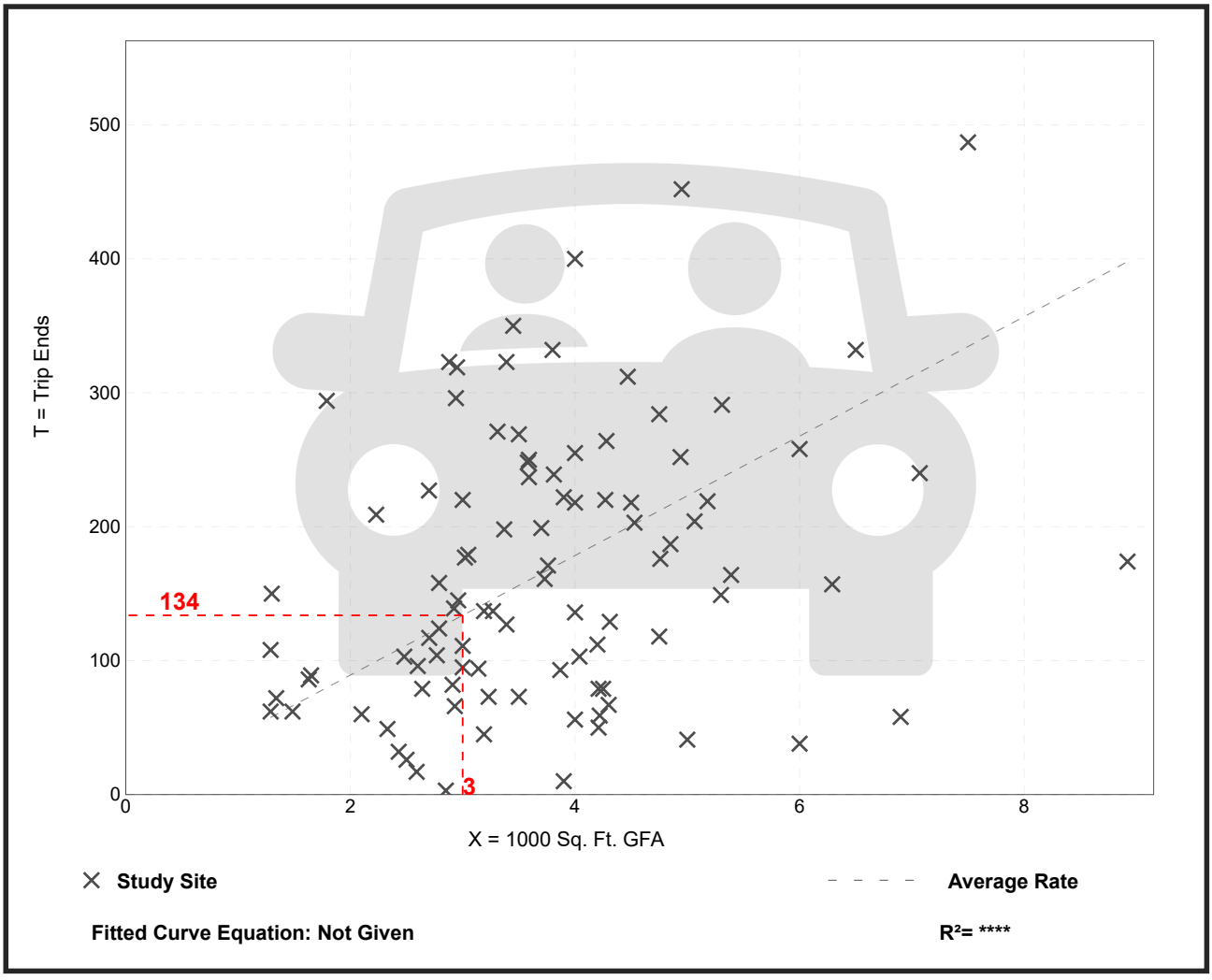
Fast-Food Restaurant with Drive-Through Window
(934)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
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Setting/Location: **General Urban/Suburban**
Number of Studies: 96
Avg. 1000 Sq. Ft. GFA: 4
Directional Distribution: 51% entering, 49% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
44.61	1.05 - 164.25	27.14

Data Plot and Equation



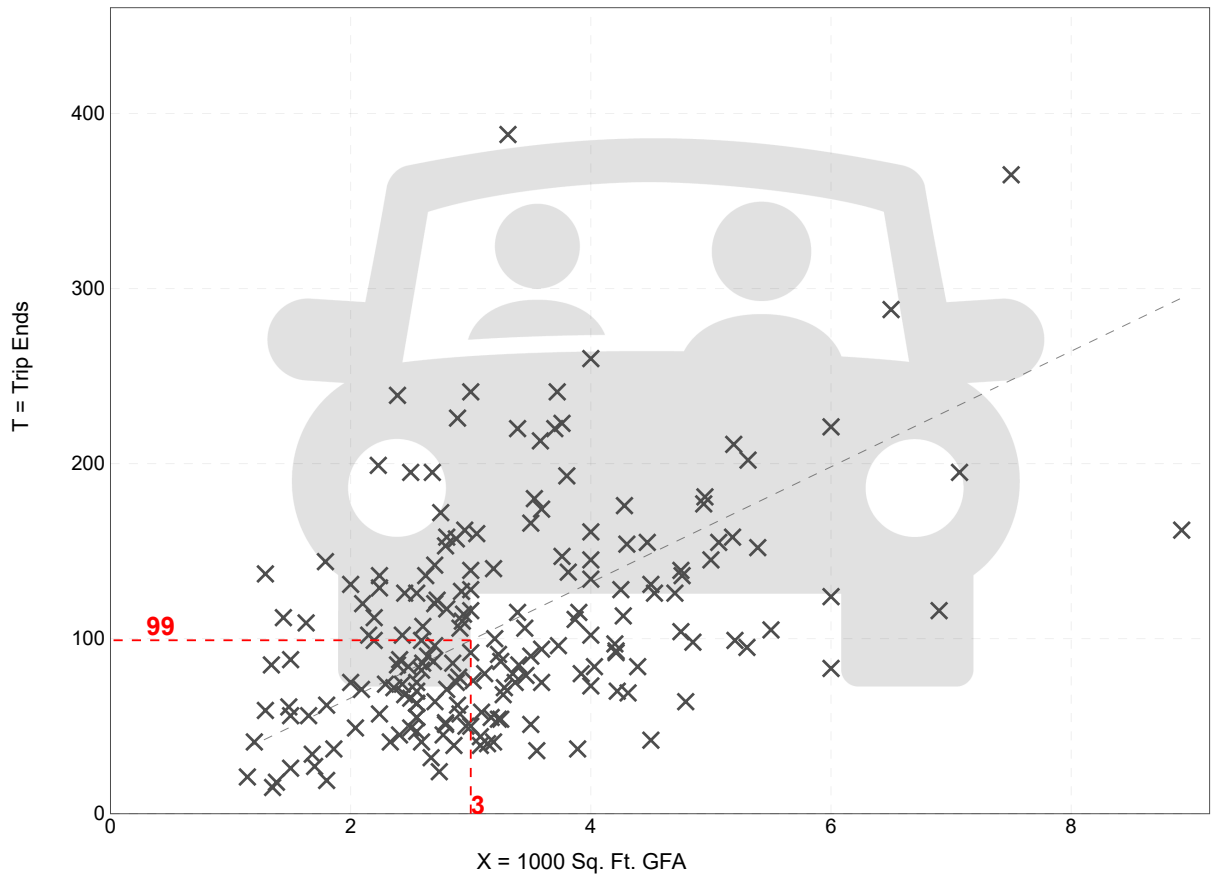
Fast-Food Restaurant with Drive-Through Window
(934)

Vehicle Trip Ends vs:	**1000 Sq. Ft. GFA**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	190
Avg. 1000 Sq. Ft. GFA:	3
Directional Distribution:	52% entering, 48% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
33.03	8.77 - 117.22	17.59

Data Plot and Equation



Fast-Food Restaurant with Drive-Through Window
(934)

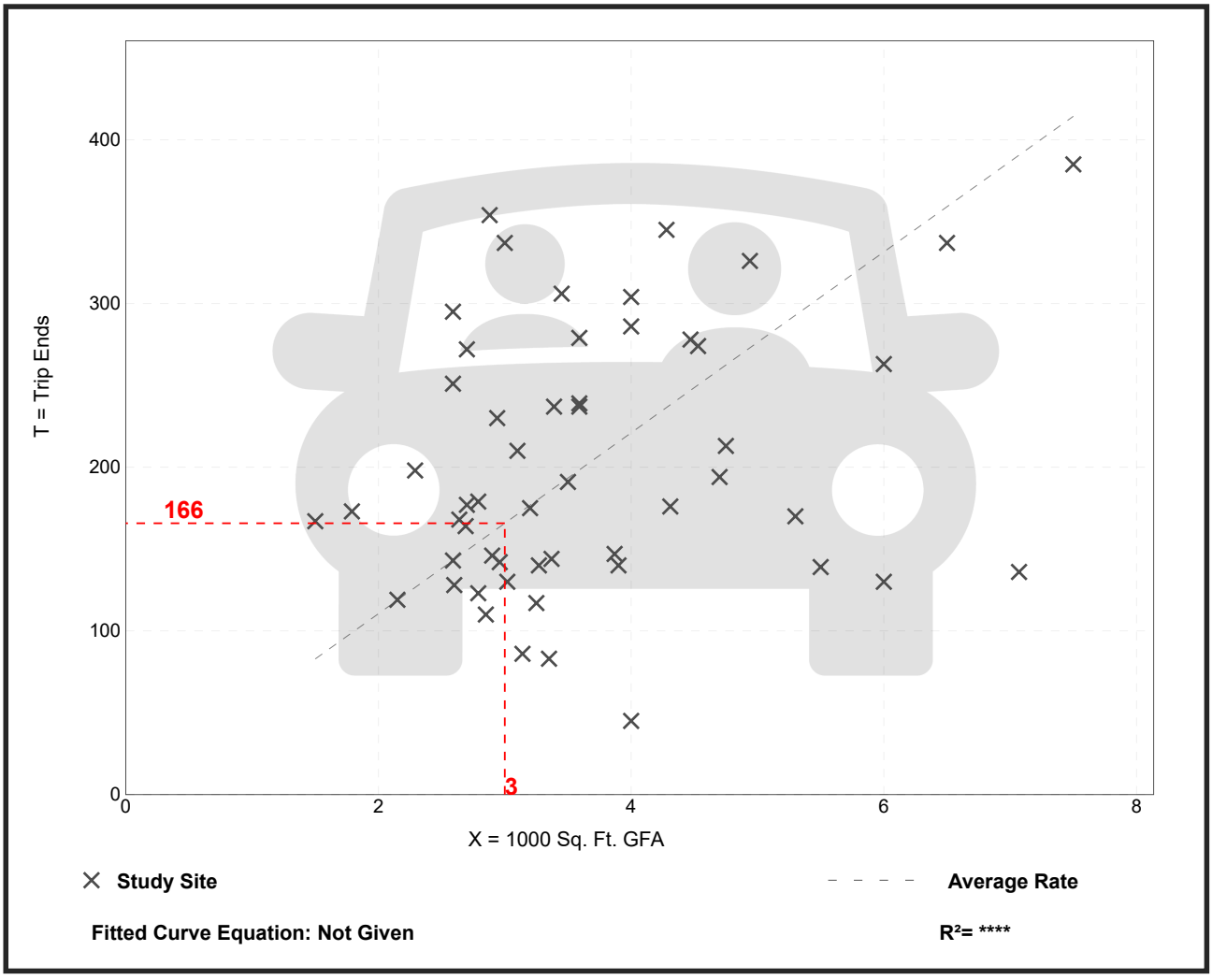
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Saturday, Peak Hour of Generator**

Setting/Location: **General Urban/Suburban**
Number of Studies: 53
Avg. 1000 Sq. Ft. GFA: 4
Directional Distribution: 51% entering, 49% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
55.25	11.25 - 122.92	24.62

Data Plot and Equation



Fast-Food Restaurant with Drive-Through Window
(934)

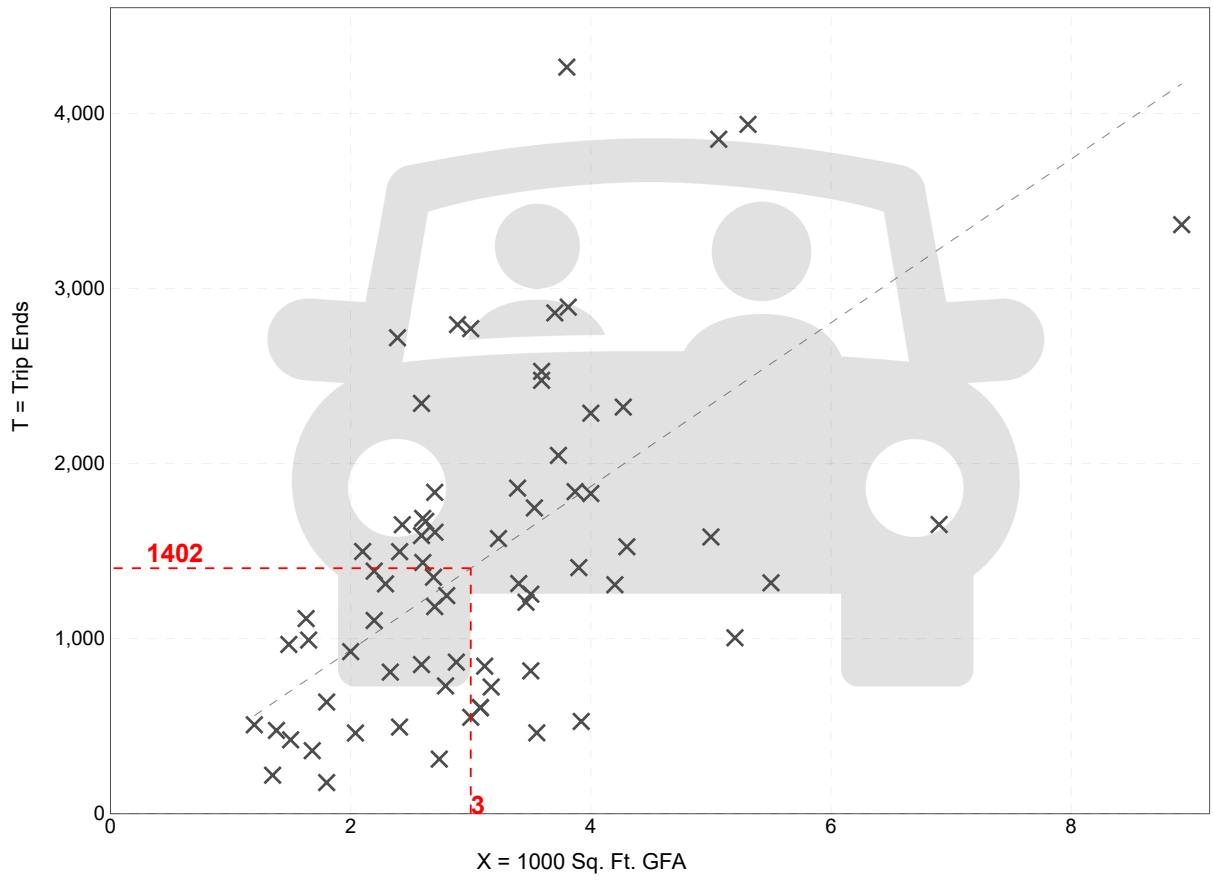
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday**

Setting/Location: **General Urban/Suburban**
Number of Studies: 71
Avg. 1000 Sq. Ft. GFA: 3
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
467.48	98.89 - 1137.66	238.62

Data Plot and Equation



Fitted Curve Equation: Not Given

R^2= **

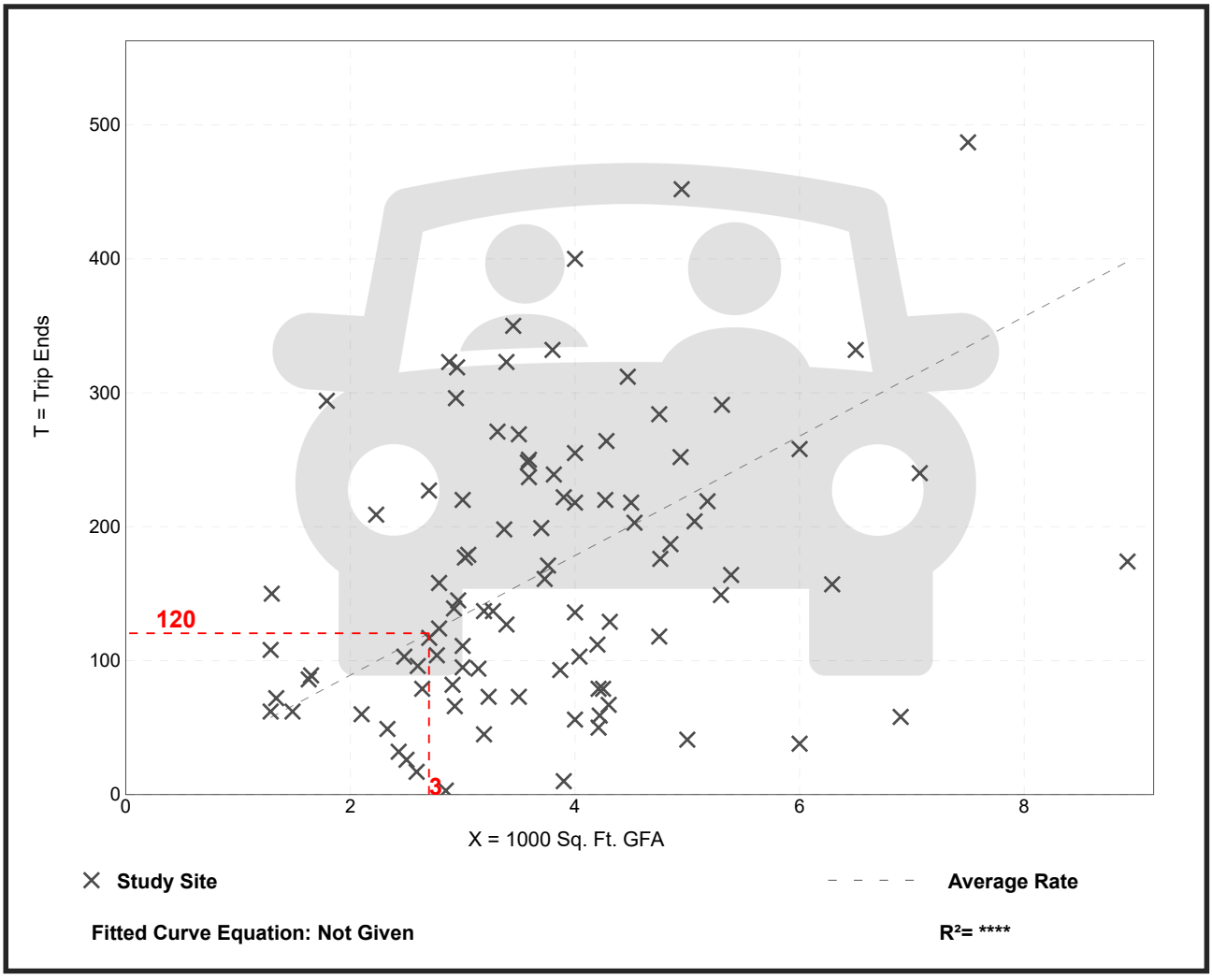
Fast-Food Restaurant with Drive-Through Window
(934)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
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Vehicle Trip Generation per 1000 Sq. Ft. GFA

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Data Plot and Equation



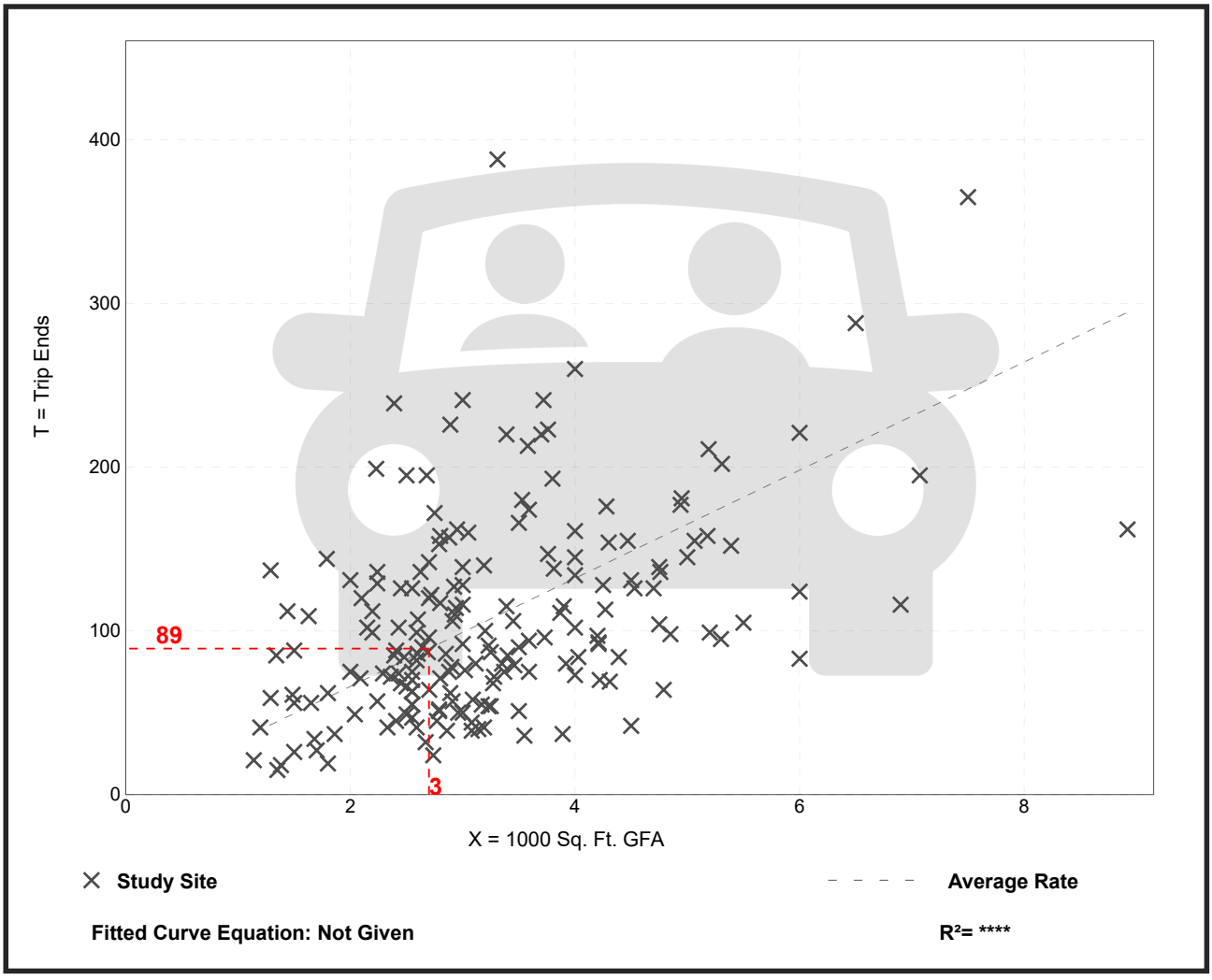
Fast-Food Restaurant with Drive-Through Window
(934)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
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Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 190
Avg. 1000 Sq. Ft. GFA: 3
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Average Rate	Range of Rates	Standard Deviation
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Data Plot and Equation



Fast-Food Restaurant with Drive-Through Window
(934)

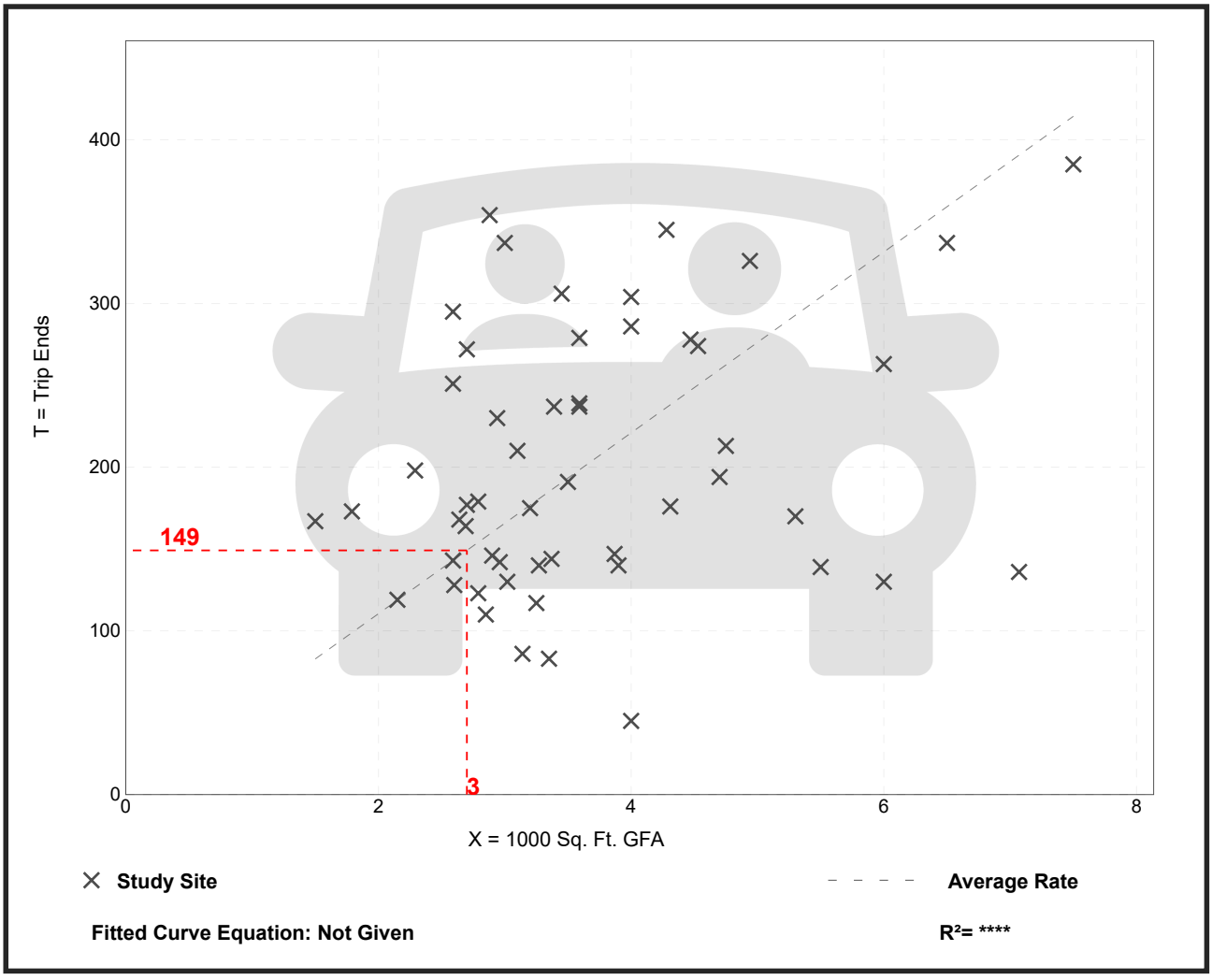
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Saturday, Peak Hour of Generator**

Setting/Location: **General Urban/Suburban**
Number of Studies: 53
Avg. 1000 Sq. Ft. GFA: 4
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Vehicle Trip Generation per 1000 Sq. Ft. GFA

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Data Plot and Equation



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Fast-Food Restaurant with Drive-Through Window
(934)

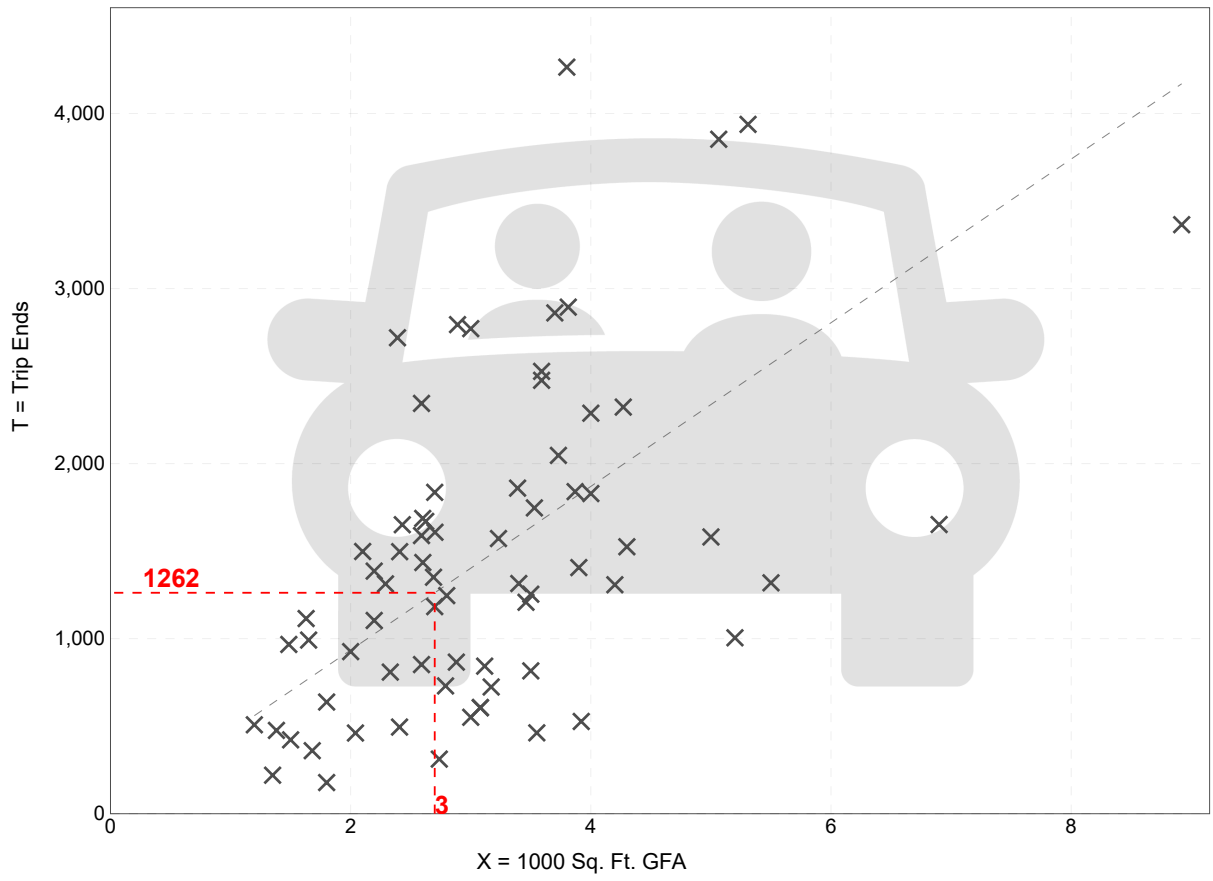
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday**

Setting/Location: **General Urban/Suburban**
Number of Studies: 71
Avg. 1000 Sq. Ft. GFA: 3
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
467.48	98.89 - 1137.66	238.62

Data Plot and Equation



Fitted Curve Equation: Not Given

R^2= ****

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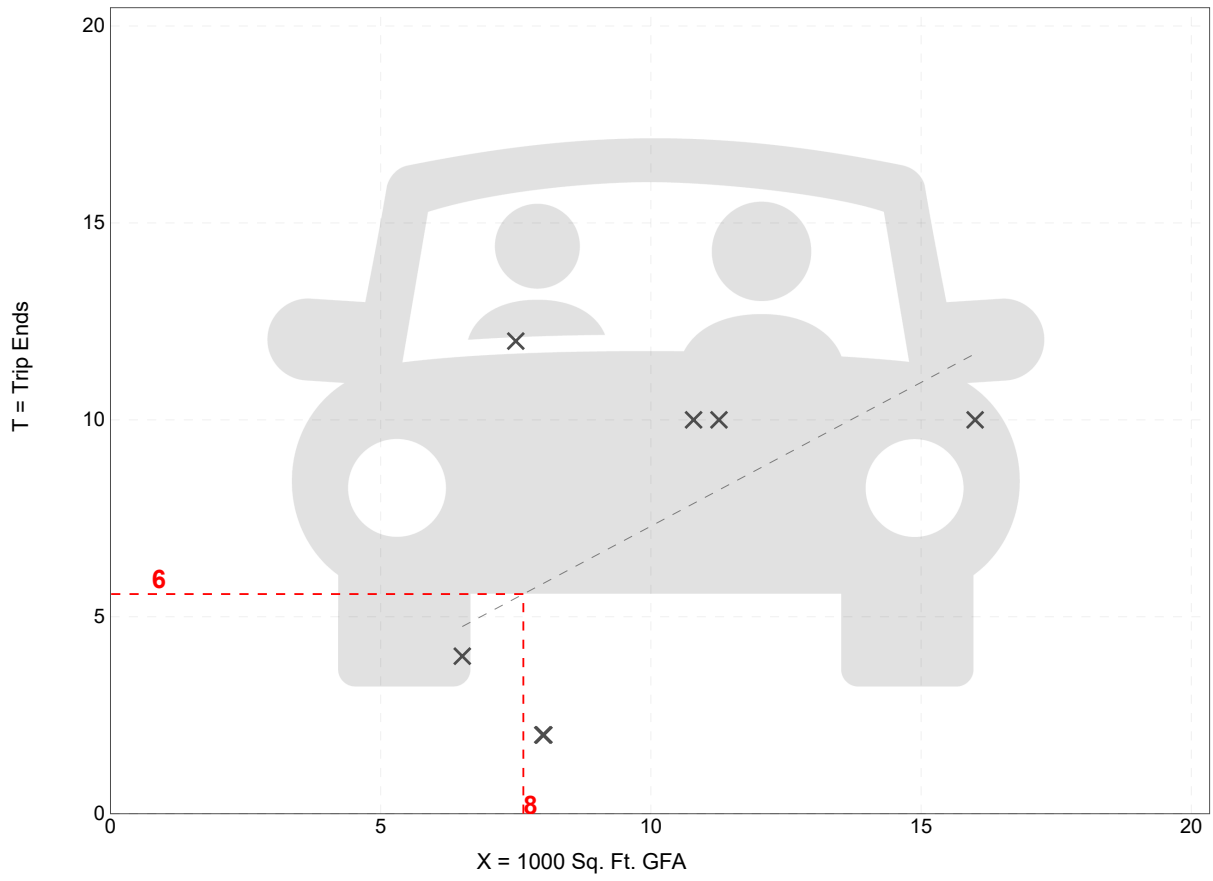
Fine Dining Restaurant
(931)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 7
Avg. 1000 Sq. Ft. GFA: 10
Directional Distribution: Not Available

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.73	0.25 - 1.60	0.42

Data Plot and Equation



Fitted Curve Equation: Not Given

R^2= ****

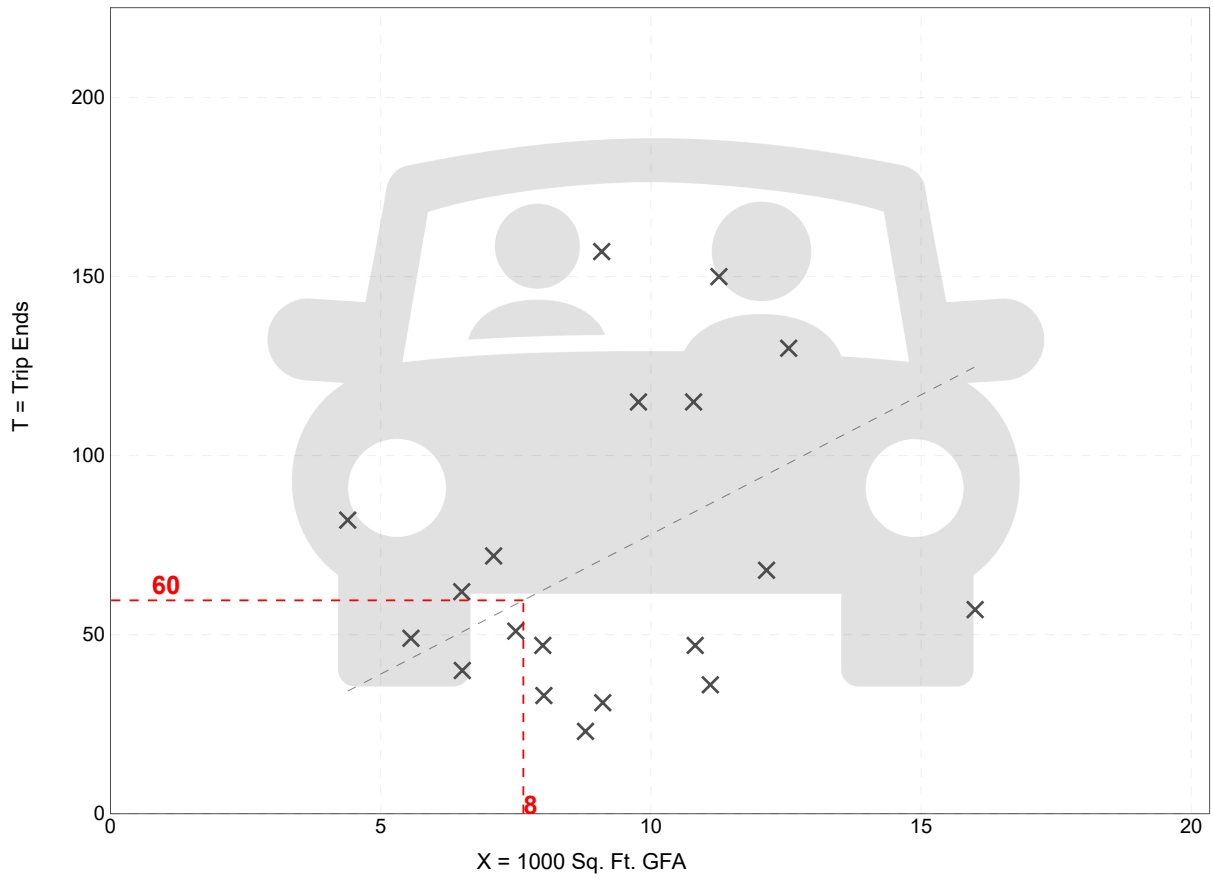
Fine Dining Restaurant
(931)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 19
Avg. 1000 Sq. Ft. GFA: 9
Directional Distribution: 67% entering, 33% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
7.80	2.62 - 18.68	4.49

Data Plot and Equation



Fitted Curve Equation: Not Given

R^2= **

Fine Dining Restaurant
(931)

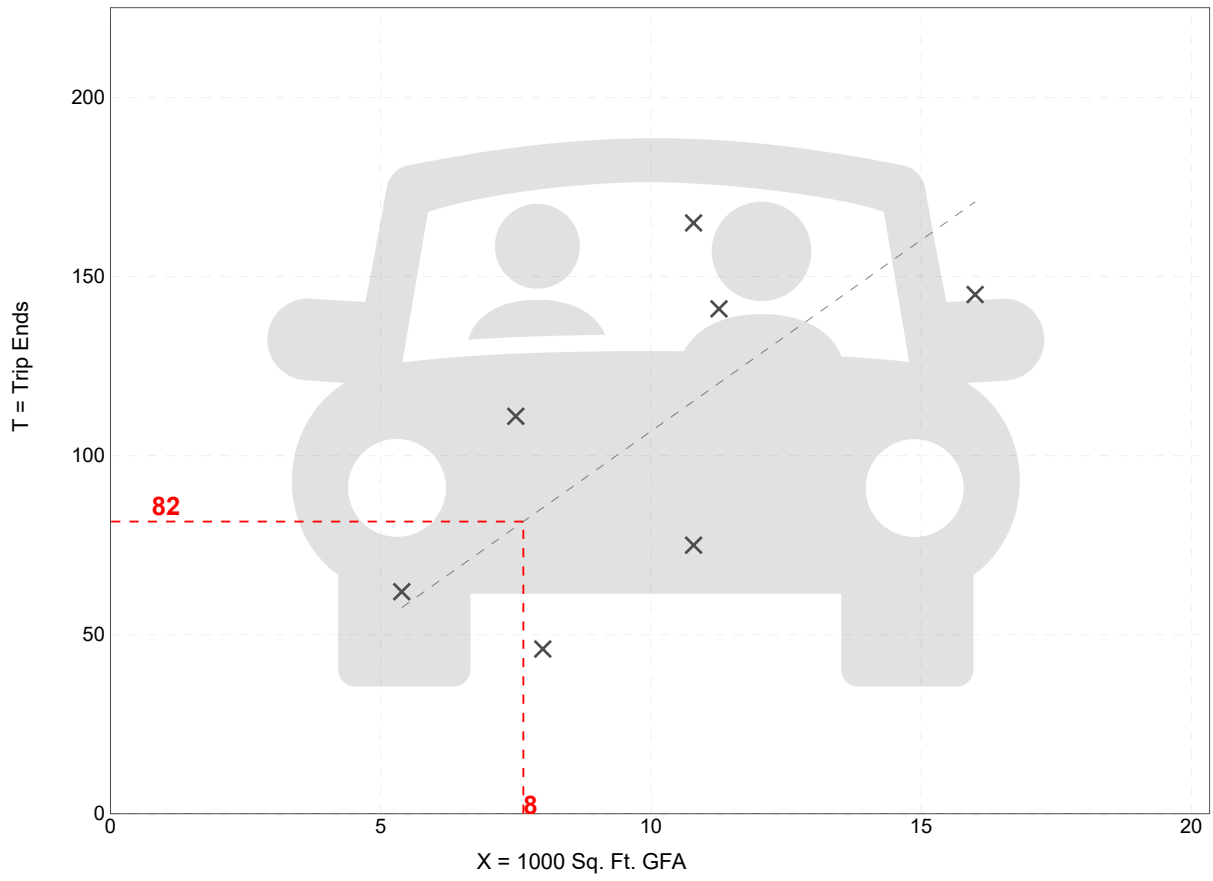
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Saturday, Peak Hour of Generator**

Setting/Location: **General Urban/Suburban**
Number of Studies: 7
Avg. 1000 Sq. Ft. GFA: 10
Directional Distribution: 59% entering, 41% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
10.68	5.75 - 15.29	3.62

Data Plot and Equation



Fitted Curve Equation: Not Given

R^2= ****

Fine Dining Restaurant
(931)

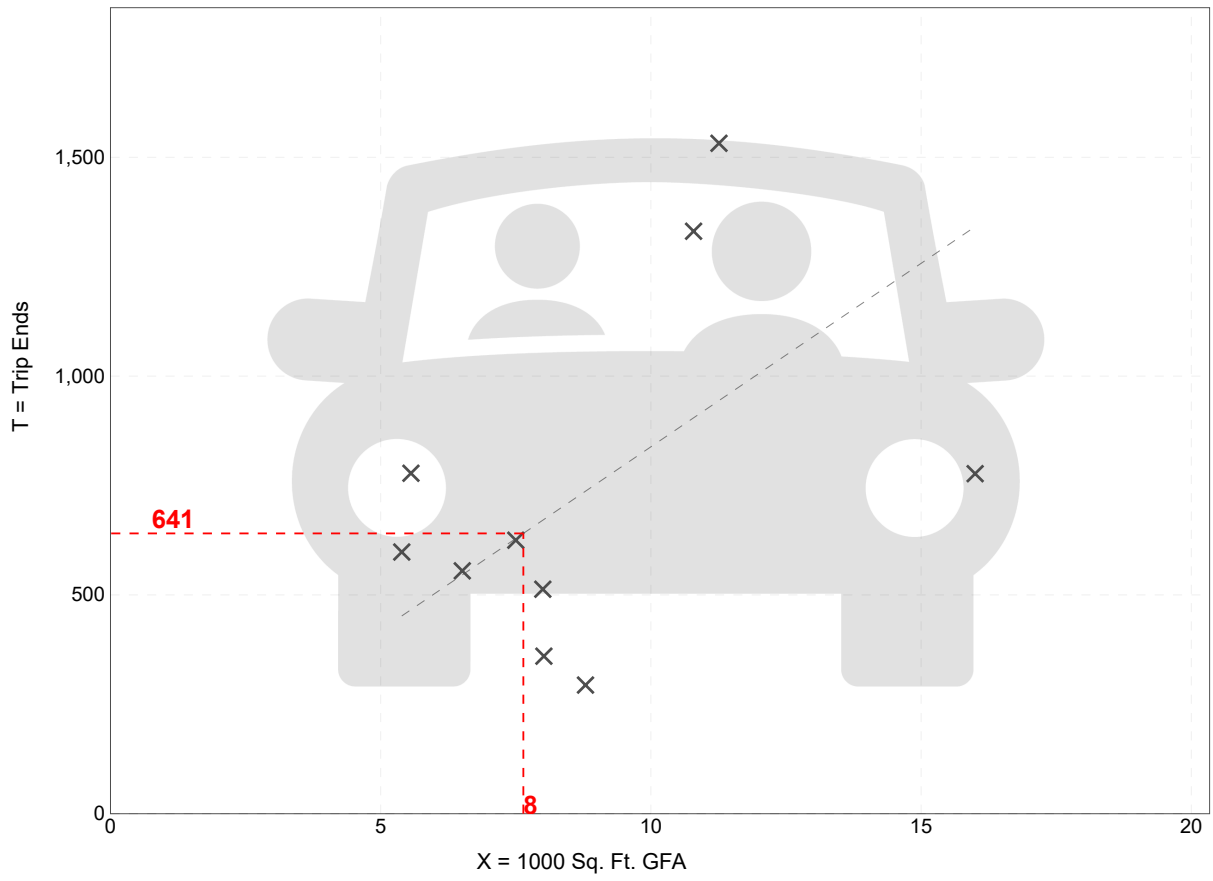
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday**

Setting/Location: **General Urban/Suburban**
Number of Studies: 10
Avg. 1000 Sq. Ft. GFA: 9
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
83.84	33.45 - 139.93	40.01

Data Plot and Equation



Fitted Curve Equation: Not Given

R^2= ****

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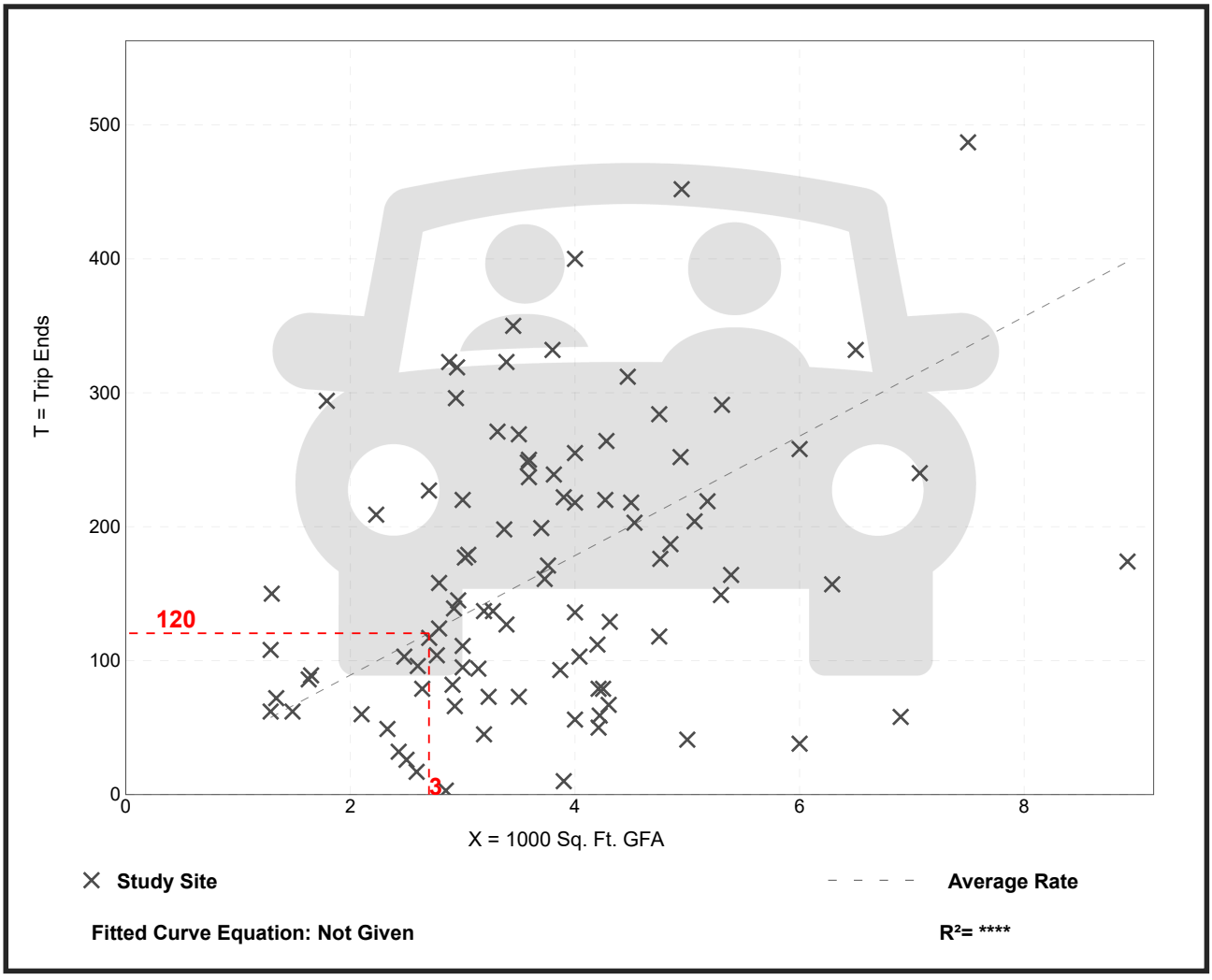
Fast-Food Restaurant with Drive-Through Window
(934)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 96
Avg. 1000 Sq. Ft. GFA: 4
Directional Distribution: 51% entering, 49% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
44.61	1.05 - 164.25	27.14

Data Plot and Equation



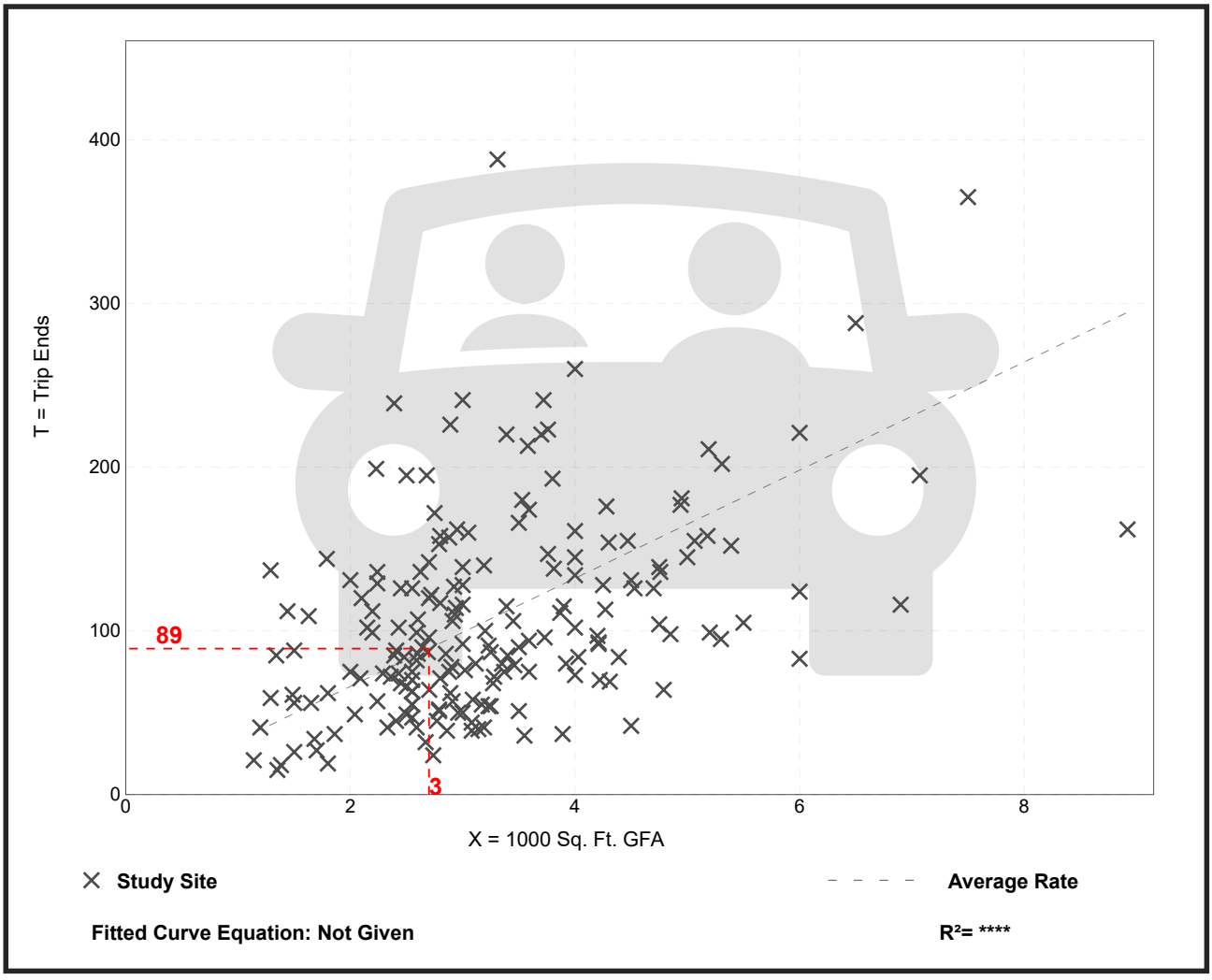
Fast-Food Restaurant with Drive-Through Window
(934)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 190
Avg. 1000 Sq. Ft. GFA: 3
Directional Distribution: 52% entering, 48% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
33.03	8.77 - 117.22	17.59

Data Plot and Equation



Fast-Food Restaurant with Drive-Through Window
(934)

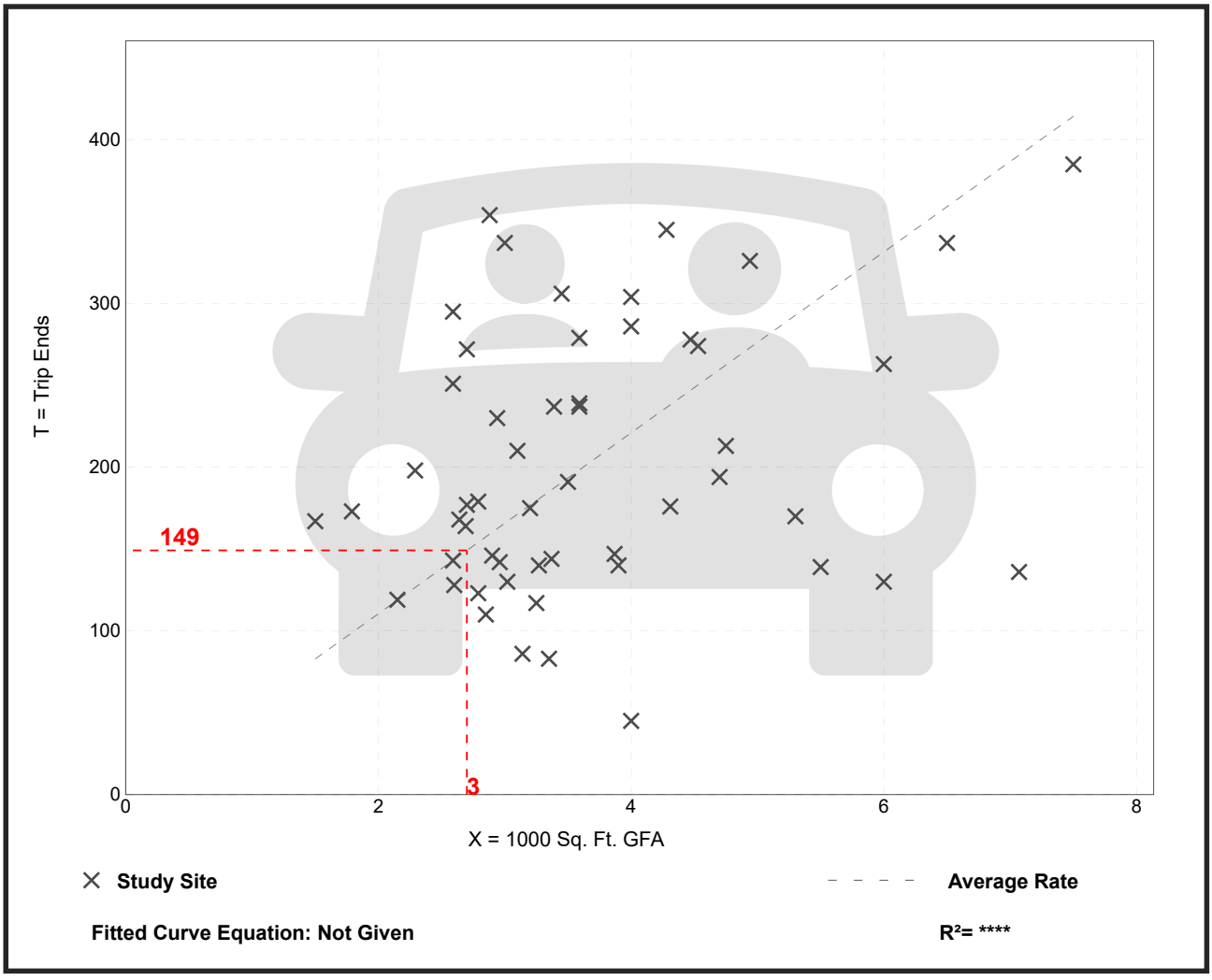
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Saturday, Peak Hour of Generator**

Setting/Location: **General Urban/Suburban**
Number of Studies: 53
Avg. 1000 Sq. Ft. GFA: 4
Directional Distribution: 51% entering, 49% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
55.25	11.25 - 122.92	24.62

Data Plot and Equation



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Fast-Food Restaurant with Drive-Through Window
(934)

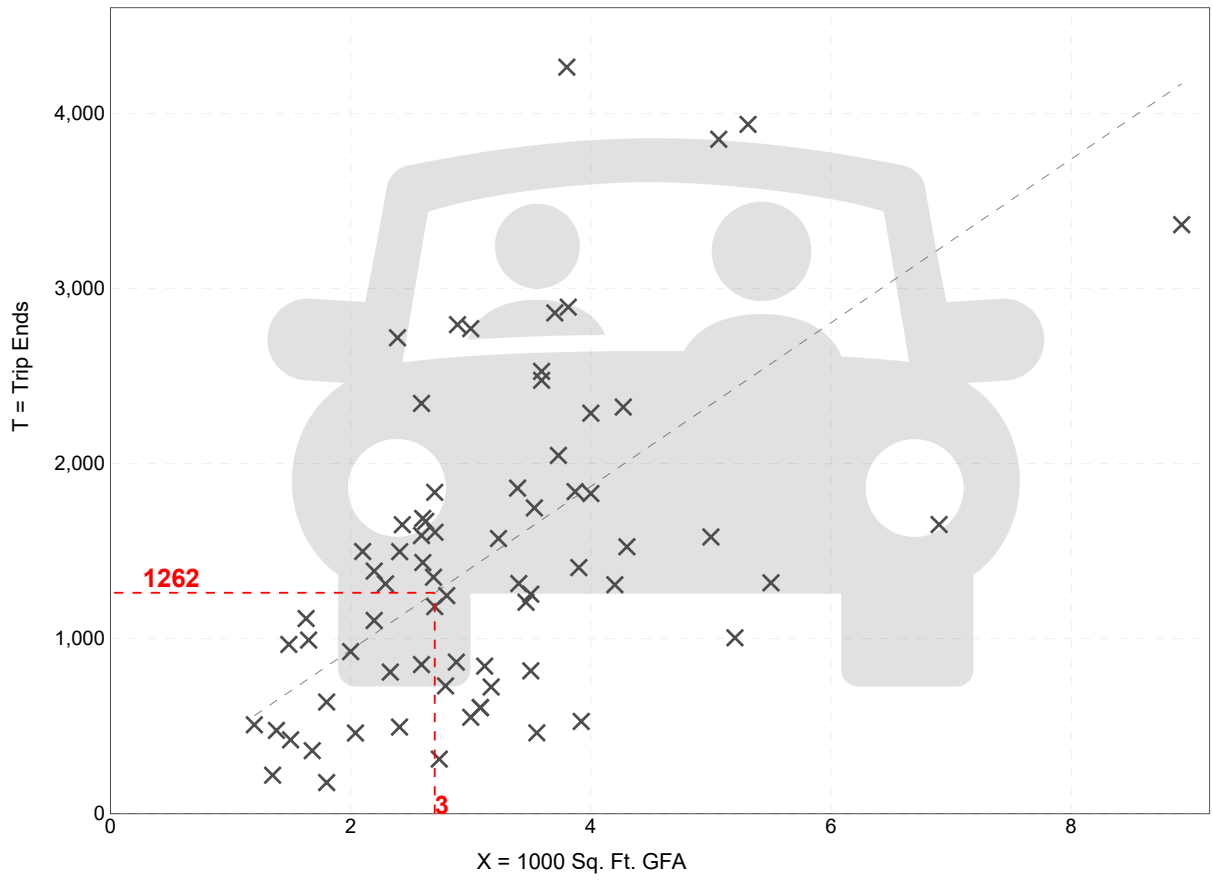
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday**

Setting/Location: **General Urban/Suburban**
Number of Studies: 71
Avg. 1000 Sq. Ft. GFA: 3
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
467.48	98.89 - 1137.66	238.62

Data Plot and Equation



Fitted Curve Equation: Not Given

R^2= ****

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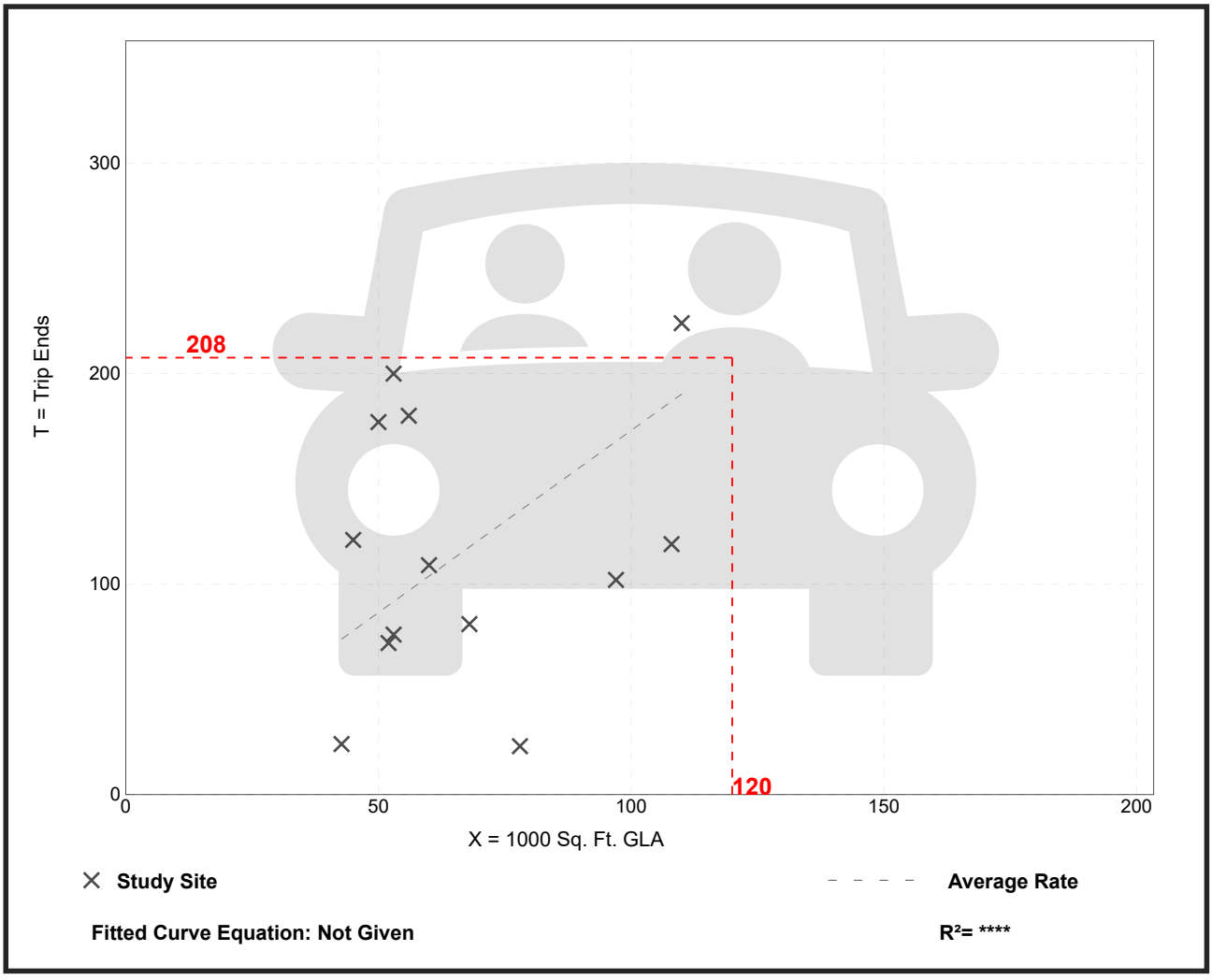
Shopping Plaza (40-150k) - Supermarket - No (821)

Vehicle Trip Ends vs: **1000 Sq. Ft. GLA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 13
Avg. 1000 Sq. Ft. GLA: 67
Directional Distribution: 62% entering, 38% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
1.73	0.29 - 3.77	1.06

Data Plot and Equation



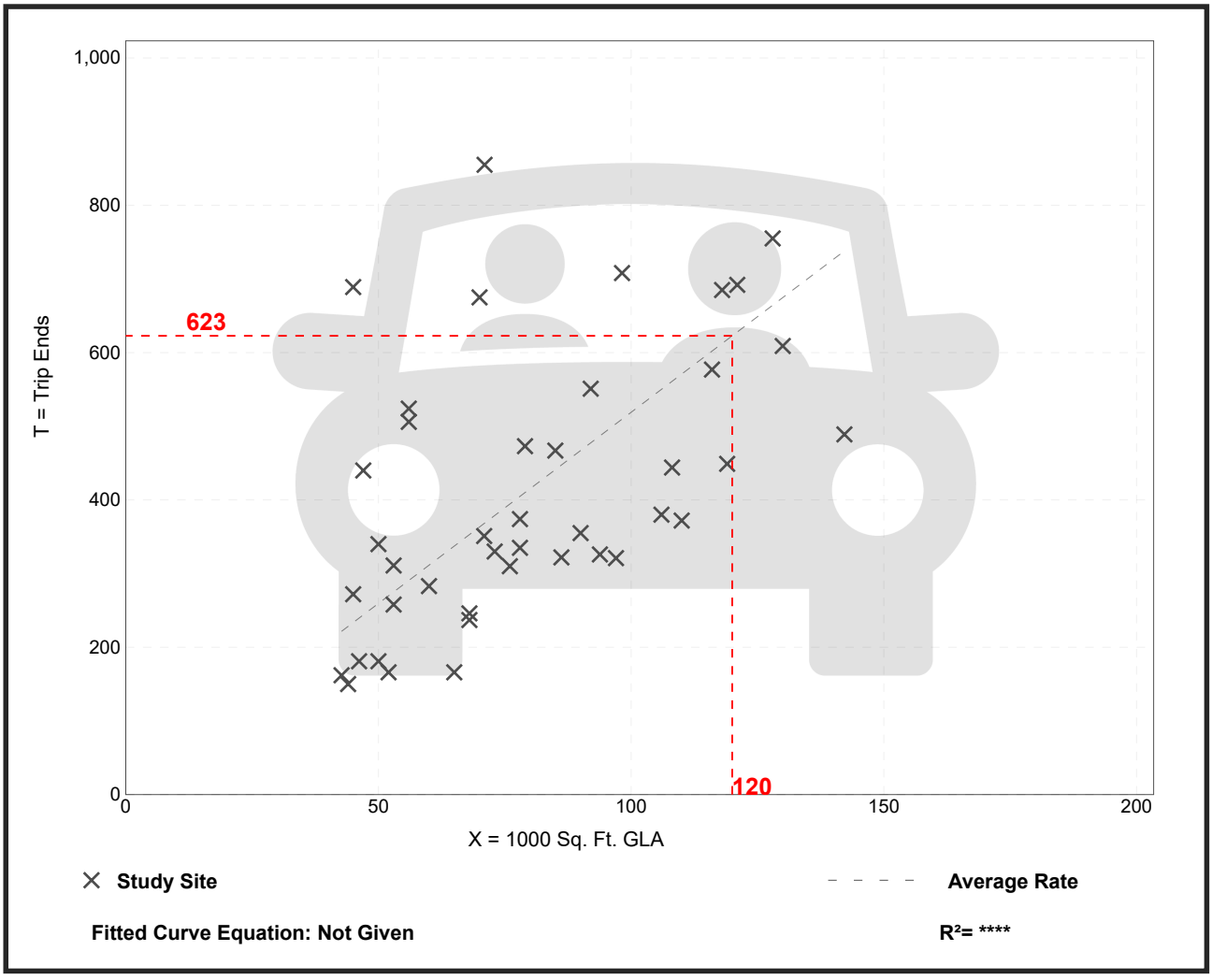
Shopping Plaza (40-150k) - Supermarket - No (821)

Vehicle Trip Ends vs: **1000 Sq. Ft. GLA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 42
Avg. 1000 Sq. Ft. GLA: 79
Directional Distribution: 49% entering, 51% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
5.19	2.55 - 15.31	2.28

Data Plot and Equation



Fitted Curve Equation: Not Given

R^2= **

Shopping Plaza (40-150k) - Supermarket - No (821)

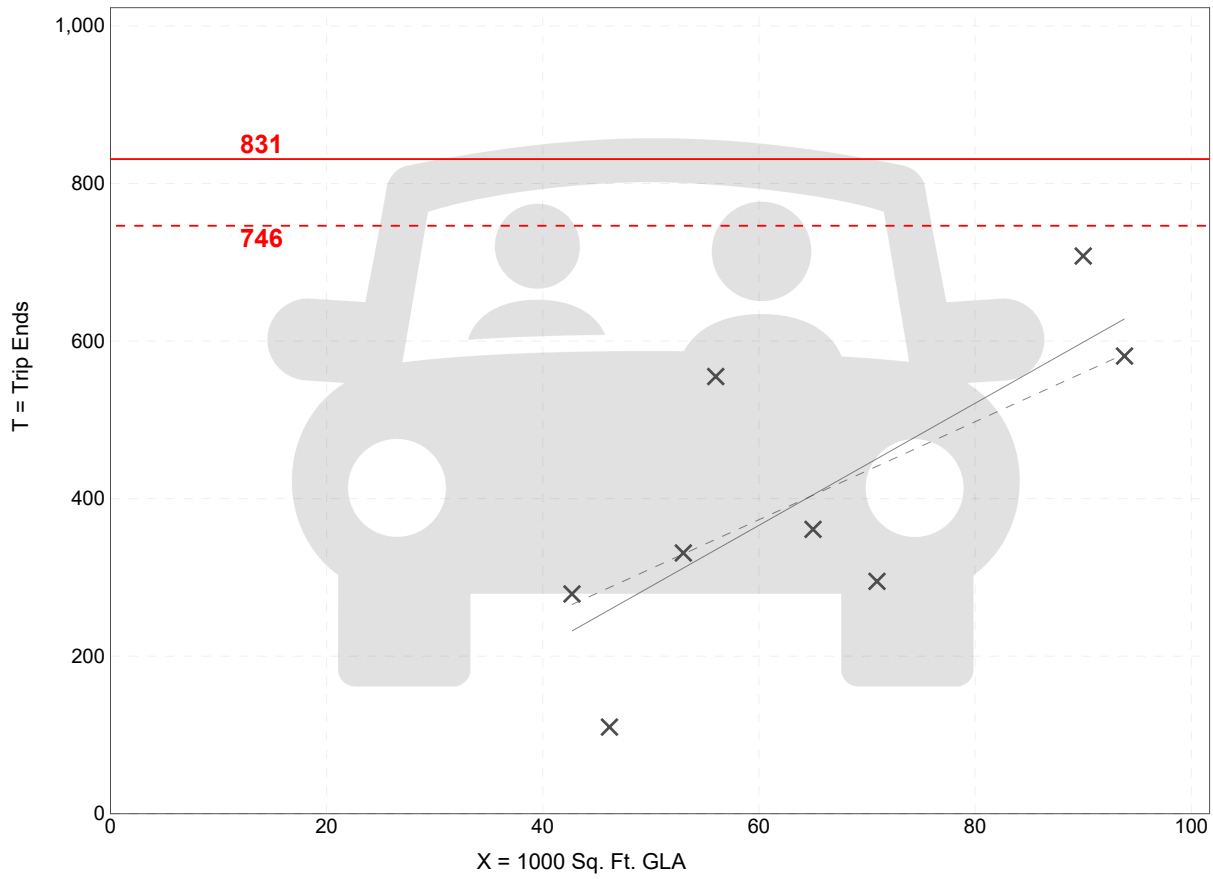
Vehicle Trip Ends vs: **1000 Sq. Ft. GLA**
On a: **Saturday, Peak Hour of Generator**

Setting/Location: **General Urban/Suburban**
Number of Studies: 8
Avg. 1000 Sq. Ft. GLA: 65
Directional Distribution: 52% entering, 48% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
6.22	2.38 - 9.91	2.11

Data Plot and Equation



Fitted Curve Equation: T = 7.75(X) - 98.93

R^2= 0.58

Shopping Plaza (40-150k) - Supermarket - No (821)

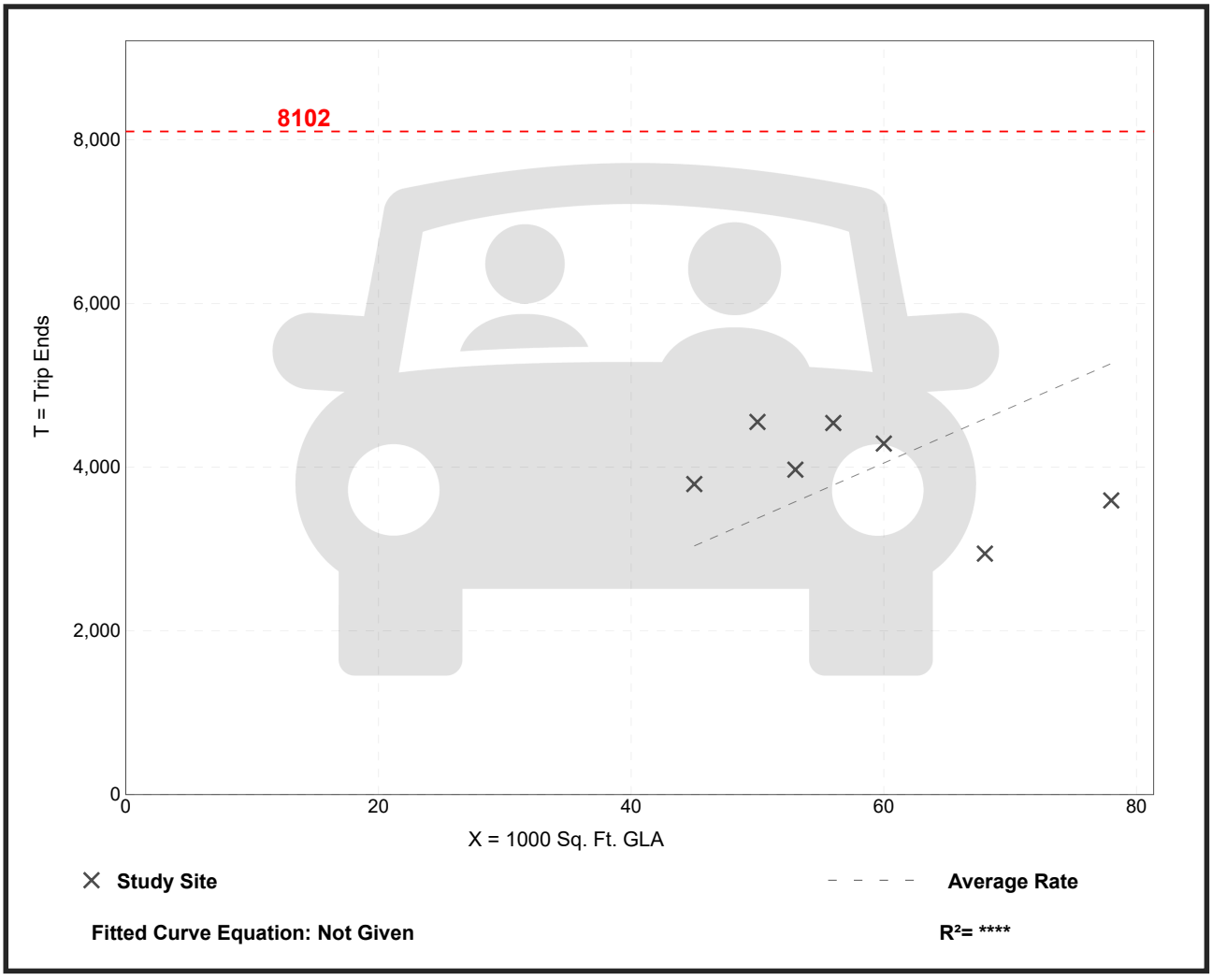
Vehicle Trip Ends vs: **1000 Sq. Ft. GLA**
On a: **Weekday**

Setting/Location: **General Urban/Suburban**
Number of Studies: 7
Avg. 1000 Sq. Ft. GLA: 59
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
67.52	43.29 - 91.06	19.25

Data Plot and Equation



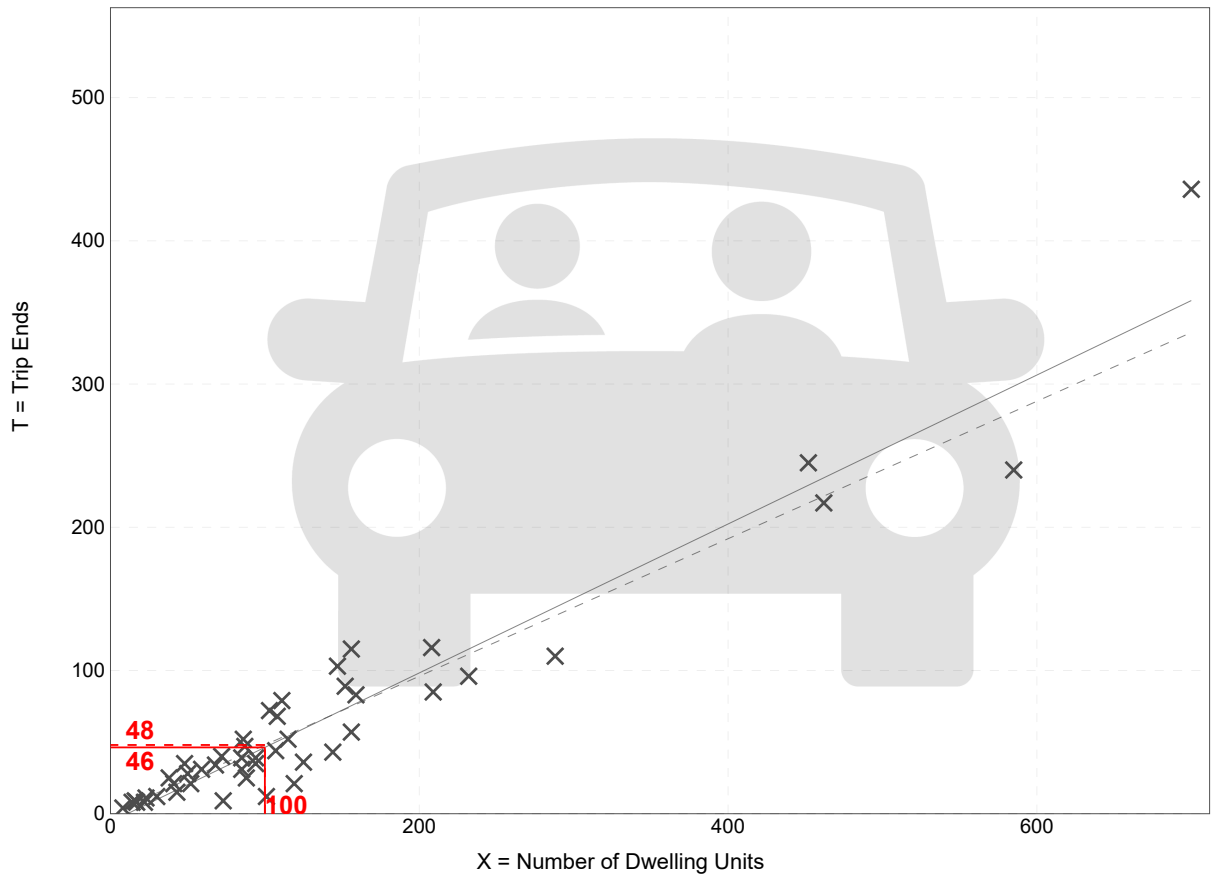
Single-Family Attached Housing
(215)

Vehicle Trip Ends vs:	**Dwelling Units**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	46
Avg. Num. of Dwelling Units:	135
Directional Distribution:	25% entering, 75% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.48	0.12 - 0.74	0.14

Data Plot and Equation



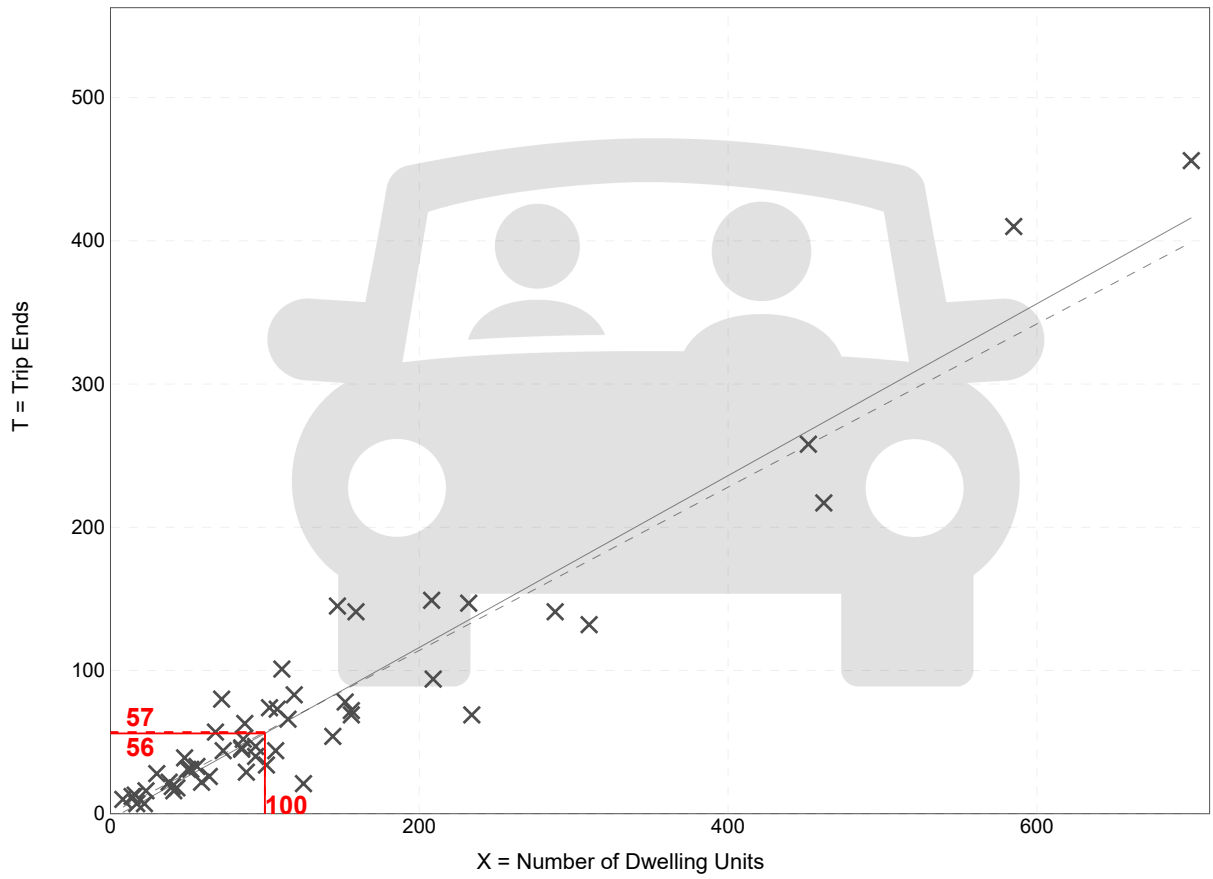
Single-Family Attached Housing
(215)

Vehicle Trip Ends vs:	**Dwelling Units**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	51
Avg. Num. of Dwelling Units:	136
Directional Distribution:	59% entering, 41% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.57	0.17 - 1.25	0.18

Data Plot and Equation



Fitted Curve Equation: T = 0.60(X) - 3.93

R^2= 0.91

Single-Family Attached Housing
(215)

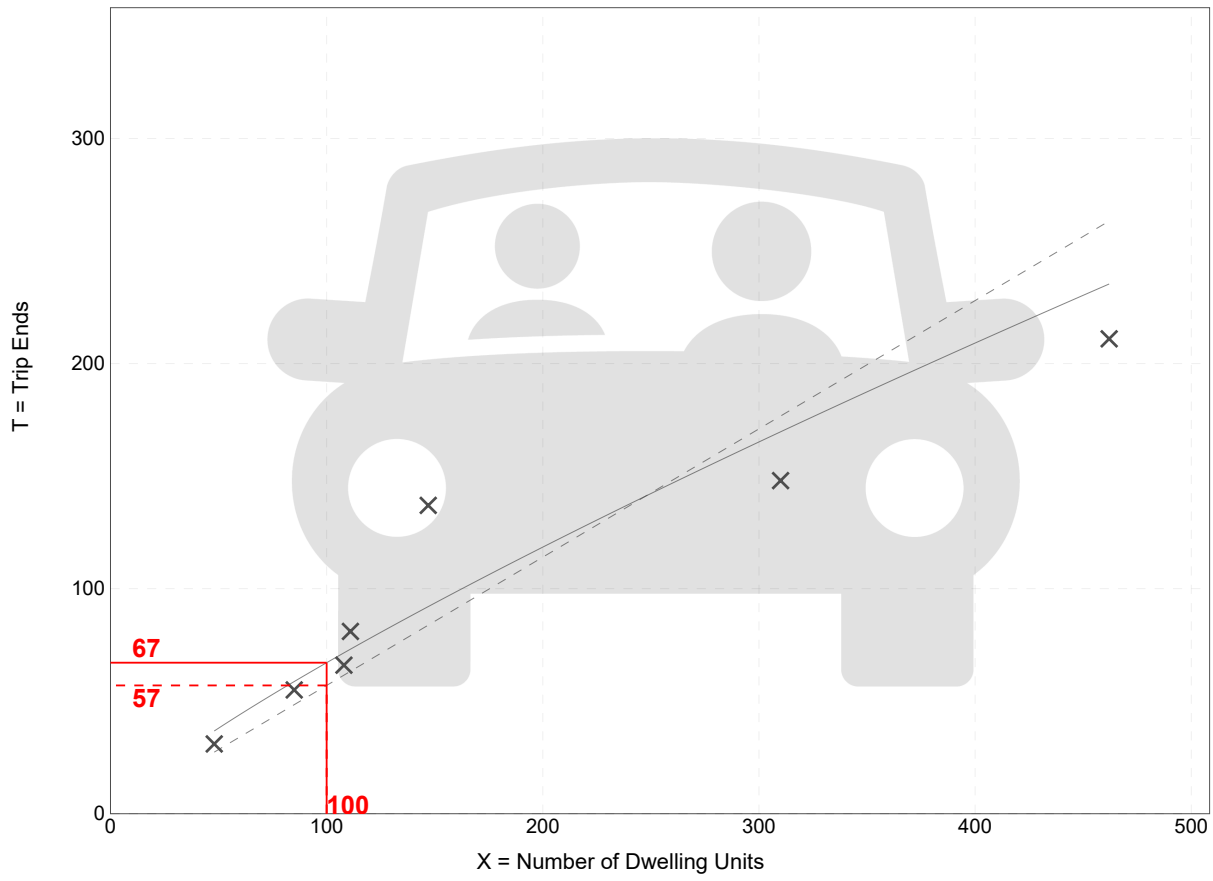
Vehicle Trip Ends vs: **Dwelling Units**
On a: **Saturday, Peak Hour of Generator**

Setting/Location: **General Urban/Suburban**
Number of Studies: 7
Avg. Num. of Dwelling Units: 182
Directional Distribution: 48% entering, 52% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.57	0.46 - 0.93	0.17

Data Plot and Equation



Fitted Curve Equation: Ln(T) = 0.82 Ln(X) + 0.43

R^2= 0.91

Single-Family Attached Housing
(215)

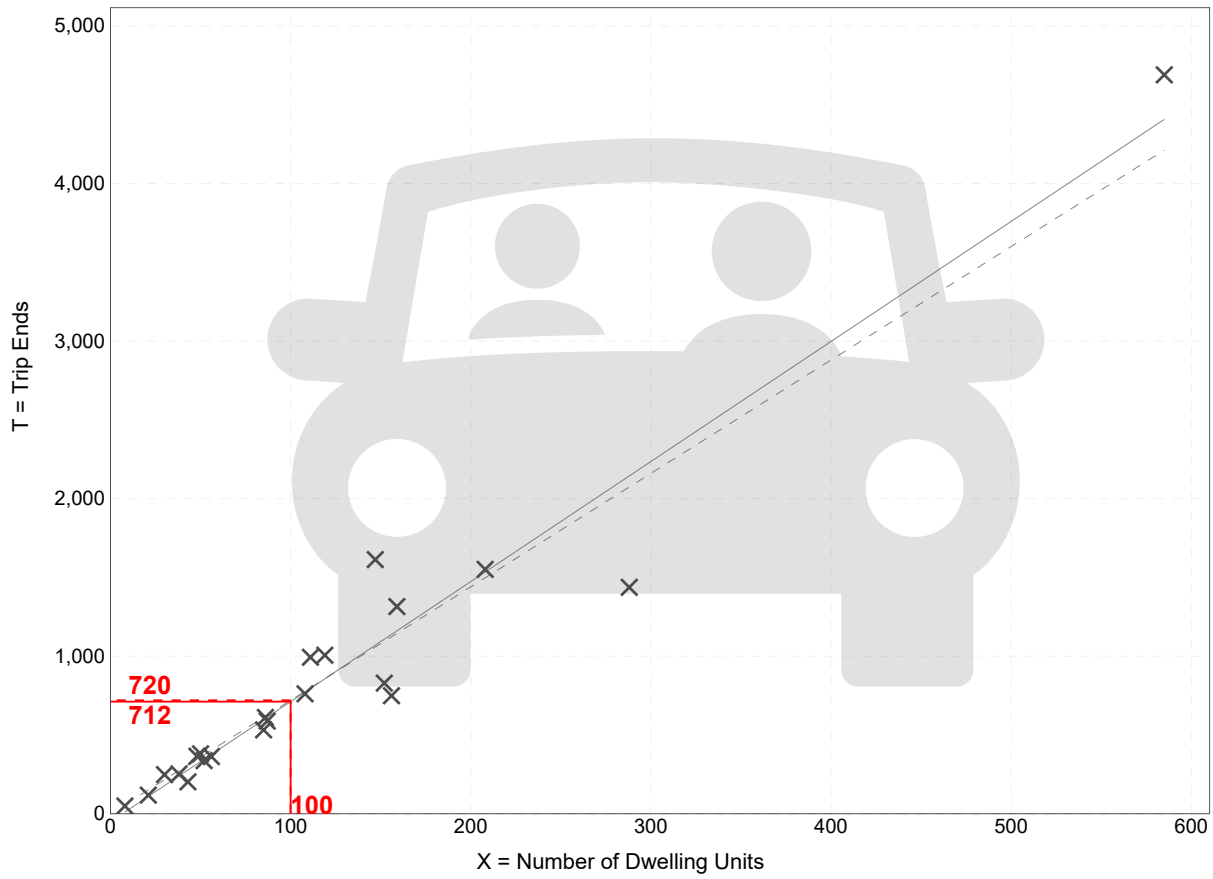
Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday**

Setting/Location: **General Urban/Suburban**
Number of Studies: 22
Avg. Num. of Dwelling Units: 120
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
7.20	4.70 - 10.97	1.61

Data Plot and Equation



Fitted Curve Equation: T = 7.62(X) - 50.48

R^2= 0.94

APPENDIX D
CAPACITY AND QUEUING ANALYSES

Intersection 1
M-291 & Oldham Parkway

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø3	Ø8
Lane Configurations									
Traffic Volume (vph)	558	247	285	1550	1034	606			
Future Volume (vph)	558	247	285	1550	1034	606			
Turn Type	Prot	Perm	Prot	NA	NA	Perm			
Protected Phases	7		5	2	6		1	3	8
Permitted Phases		4				6			
Detector Phase	7	4	5	2	6	6			
Switch Phase									
Minimum Initial (s)	5.0	7.0	5.0	10.0	10.0	10.0	5.0	5.0	7.0
Minimum Split (s)	25.0	25.0	20.0	65.0	60.0	60.0	15.0	15.0	15.0
Total Split (s)	25.0	25.0	20.0	65.0	60.0	60.0	15.0	15.0	15.0
Total Split (%)	20.8%	20.8%	16.7%	54.2%	50.0%	50.0%	13%	13%	13%
Yellow Time (s)	3.2	3.2	3.6	3.6	3.6	3.6	3.6	3.2	3.2
All-Red Time (s)	4.0	3.8	3.6	3.6	3.0	3.0	3.0	4.1	3.6
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0			
Total Lost Time (s)	7.2	7.0	7.2	7.2	6.6	6.6			
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	C-Min	C-Min	C-Min	None	None	None
Act Effct Green (s)	29.7	29.9	15.8	75.9	53.5	53.5			
Actuated g/C Ratio	0.25	0.25	0.13	0.63	0.45	0.45			
v/c Ratio	0.68	0.42	0.65	0.50	0.47	0.59			
Control Delay	46.1	4.9	44.6	20.2	24.2	4.2			
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0			
Total Delay	46.1	4.9	44.6	20.2	24.2	4.2			
LOS	D	A	D	C	C	A			
Approach Delay				24.0	16.8				
Approach LOS				C	B				

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 110 (92%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.68	
Intersection Signal Delay: 23.0	Intersection LOS: C
Intersection Capacity Utilization 67.4%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 3: MO 291 & Oldham Parkway





Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	575	255	294	1598	1066	625
v/c Ratio	0.68	0.42	0.65	0.50	0.47	0.59
Control Delay	46.1	4.9	44.6	20.2	24.2	4.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.1	4.9	44.6	20.2	24.2	4.2
Queue Length 50th (ft)	210	0	105	334	205	0
Queue Length 95th (ft)	284	46	153	386	245	64
Internal Link Dist (ft)				1449	332	
Turn Bay Length (ft)						
Base Capacity (vph)	850	611	456	3215	2288	1056
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.42	0.64	0.50	0.47	0.59

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	558	0	247	0	0	0	285	1550	0	0	1034	606
Future Volume (veh/h)	558	0	247	0	0	0	285	1550	0	0	1034	606
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	575	0	0	0	0	0	294	1598	0	0	1066	0
Adj No. of Lanes	2	1	1	2	1	1	2	3	1	2	3	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	511	279	237	3	2	1	344	3721	1158	3	2907	905
Arrive On Green	0.15	0.00	0.00	0.00	0.00	0.00	0.20	1.00	0.00	0.00	0.57	0.00
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	575	0	0	0	0	0	294	1598	0	0	1066	0
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1721	1863	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	17.8	0.0	0.0	0.0	0.0	0.0	9.9	0.0	0.0	0.0	13.6	0.0
Cycle Q Clear(g_c), s	17.8	0.0	0.0	0.0	0.0	0.0	9.9	0.0	0.0	0.0	13.6	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	511	279	237	3	2	1	344	3721	1158	3	2907	905
V/C Ratio(X)	1.13	0.00	0.00	0.00	0.00	0.00	0.85	0.43	0.00	0.00	0.37	0.00
Avail Cap(c_a), veh/h	511	279	237	221	127	108	367	3721	1158	241	2907	905
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.00	0.00	0.00	0.78	0.78	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	51.1	0.0	0.0	0.0	0.0	0.0	47.2	0.0	0.0	0.0	13.9	0.0
Incr Delay (d2), s/veh	79.4	0.0	0.0	0.0	0.0	0.0	13.7	0.3	0.0	0.0	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.1	0.0	0.0	0.0	0.0	0.0	5.3	0.1	0.0	0.0	6.4	0.0
LnGrp Delay(d),s/veh	130.5	0.0	0.0	0.0	0.0	0.0	60.8	0.3	0.0	0.0	14.3	0.0
LnGrp LOS	F						E	A			B	
Approach Vol, veh/h		575			0			1892			1066	
Approach Delay, s/veh		130.5			0.0			9.7			14.3	
Approach LOS		F						A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	95.0	0.0	25.0	19.2	75.8	25.0	0.0
Change Period (Y+Rc), s	6.6	7.2	* 7.3	7.0	7.2	* 7.2	* 7.2	* 7
Max Green Setting (Gmax), s	8.4	57.8	* 7.7	18.0	12.8	* 53	* 18	* 8.2
Max Q Clear Time (g_c+I1), s	0.0	2.0	0.0	0.0	11.9	15.6	19.8	0.0
Green Ext Time (p_c), s	0.0	16.5	0.0	0.0	0.1	8.3	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	30.7
HCM 2010 LOS	C

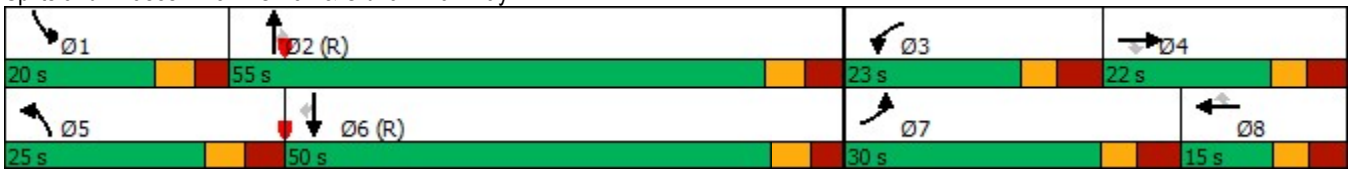
Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø3	Ø8
Lane Configurations									
Traffic Volume (vph)	467	223	235	1541	1580	476			
Future Volume (vph)	467	223	235	1541	1580	476			
Turn Type	Prot	Perm	Prot	NA	NA	Perm			
Protected Phases	7		5	2	6		1	3	8
Permitted Phases		4				6			
Detector Phase	7	4	5	2	6	6			
Switch Phase									
Minimum Initial (s)	5.0	7.0	5.0	10.0	10.0	10.0	5.0	5.0	5.2
Minimum Split (s)	30.0	22.0	25.0	55.0	50.0	50.0	20.0	23.0	15.0
Total Split (s)	30.0	22.0	25.0	55.0	50.0	50.0	20.0	23.0	15.0
Total Split (%)	25.0%	18.3%	20.8%	45.8%	41.7%	41.7%	17%	19%	13%
Yellow Time (s)	3.2	3.2	3.6	3.6	3.6	3.6	3.6	3.2	3.2
All-Red Time (s)	4.0	3.8	3.6	3.6	3.0	3.0	3.0	4.1	3.6
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0			
Total Lost Time (s)	7.2	7.0	7.2	7.2	6.6	6.6			
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	C-Min	C-Min	C-Min	None	None	None
Act Effct Green (s)	21.1	21.3	14.0	84.5	63.9	63.9			
Actuated g/C Ratio	0.18	0.18	0.12	0.70	0.53	0.53			
v/c Ratio	0.82	0.37	0.62	0.46	0.62	0.49			
Control Delay	59.8	1.6	47.1	14.3	21.5	5.0			
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0			
Total Delay	59.8	1.6	47.1	14.3	21.5	5.0			
LOS	E	A	D	B	C	A			
Approach Delay				18.6	17.7				
Approach LOS				B	B				

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 110 (92%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay: 21.6	Intersection LOS: C
Intersection Capacity Utilization 67.9%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 3: MO 291 & Oldham Parkway





Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	497	237	250	1639	1681	506
v/c Ratio	0.82	0.37	0.62	0.46	0.62	0.49
Control Delay	59.8	1.6	47.1	14.3	21.5	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.8	1.6	47.1	14.3	21.5	5.0
Queue Length 50th (ft)	190	0	89	267	328	31
Queue Length 95th (ft)	251	0	m139	417	409	108
Internal Link Dist (ft)				1449	332	
Turn Bay Length (ft)						
Base Capacity (vph)	652	644	509	3581	2708	1041
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.76	0.37	0.49	0.46	0.62	0.49

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	467	0	223	0	0	0	235	1541	0	0	1580	476
Future Volume (veh/h)	467	0	223	0	0	0	235	1541	0	0	1580	476
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	497	0	0	0	0	0	250	1639	0	0	1681	0
Adj No. of Lanes	2	1	1	2	1	1	2	3	1	2	3	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	564	308	262	3	2	1	310	3642	1134	3	2878	896
Arrive On Green	0.16	0.00	0.00	0.00	0.00	0.00	0.18	1.00	0.00	0.00	0.57	0.00
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	497	0	0	0	0	0	250	1639	0	0	1681	0
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1721	1863	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	16.9	0.0	0.0	0.0	0.0	0.0	8.4	0.0	0.0	0.0	25.7	0.0
Cycle Q Clear(g_c), s	16.9	0.0	0.0	0.0	0.0	0.0	8.4	0.0	0.0	0.0	25.7	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	564	308	262	3	2	1	310	3642	1134	3	2878	896
V/C Ratio(X)	0.88	0.00	0.00	0.00	0.00	0.00	0.81	0.45	0.00	0.00	0.58	0.00
Avail Cap(c_a), veh/h	654	308	262	450	127	108	511	3642	1134	384	2878	896
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.00	0.00	0.00	0.78	0.78	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	49.0	0.0	0.0	0.0	0.0	0.0	48.2	0.0	0.0	0.0	16.9	0.0
Incr Delay (d2), s/veh	12.0	0.0	0.0	0.0	0.0	0.0	3.9	0.3	0.0	0.0	0.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.0	0.0	0.0	0.0	0.0	0.0	4.1	0.1	0.0	0.0	12.2	0.0
LnGrp Delay(d),s/veh	61.1	0.0	0.0	0.0	0.0	0.0	52.0	0.3	0.0	0.0	17.8	0.0
LnGrp LOS	E						D	A			B	
Approach Vol, veh/h		497			0			1889			1681	
Approach Delay, s/veh		61.1			0.0			7.2			17.8	
Approach LOS		E						A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	93.1	0.0	26.9	18.0	75.1	26.9	0.0
Change Period (Y+Rc), s	6.6	7.2	* 7.3	7.0	7.2	* 7.2	* 7.2	* 7
Max Green Setting (Gmax), s	13.4	47.8	* 16	15.0	17.8	* 43	* 23	* 8.2
Max Q Clear Time (g_c+I1), s	0.0	2.0	0.0	0.0	10.4	27.7	18.9	0.0
Green Ext Time (p_c), s	0.0	16.4	0.0	0.0	0.5	9.8	0.7	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	18.1
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø3	Ø8
Lane Configurations									
Traffic Volume (vph)	568	271	281	1186	1008	563			
Future Volume (vph)	568	271	281	1186	1008	563			
Turn Type	Prot	Perm	Prot	NA	NA	Perm			
Protected Phases	7		5	2	6		1	3	8
Permitted Phases		4				6			
Detector Phase	7	4	5	2	6	6			
Switch Phase									
Minimum Initial (s)	5.0	7.0	5.0	10.0	10.0	10.0	5.0	5.0	5.2
Minimum Split (s)	32.0	15.0	24.0	44.0	49.0	49.0	29.0	32.0	15.0
Total Split (s)	32.0	15.0	24.0	44.0	49.0	49.0	29.0	32.0	15.0
Total Split (%)	26.7%	12.5%	20.0%	36.7%	40.8%	40.8%	24%	27%	13%
Yellow Time (s)	3.2	3.2	3.6	3.6	3.6	3.6	3.6	3.2	3.2
All-Red Time (s)	4.0	3.8	3.6	3.6	3.0	3.0	3.0	4.1	3.6
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0			
Total Lost Time (s)	7.2	7.0	7.2	7.2	6.6	6.6			
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	C-Min	C-Min	C-Min	None	None	None
Act Effct Green (s)	25.2	25.4	15.6	80.4	58.2	58.2			
Actuated g/C Ratio	0.21	0.21	0.13	0.67	0.48	0.48			
v/c Ratio	0.84	0.36	0.67	0.37	0.44	0.56			
Control Delay	56.7	1.3	57.1	9.2	21.6	3.8			
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0			
Total Delay	56.7	1.3	57.1	9.2	21.6	3.8			
LOS	E	A	E	A	C	A			
Approach Delay				18.4	15.2				
Approach LOS				B	B				

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 21.5	Intersection LOS: C
Intersection Capacity Utilization 61.0%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 3: MO 291 & Oldham Parkway





Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	604	288	299	1262	1072	599
v/c Ratio	0.84	0.36	0.67	0.37	0.44	0.56
Control Delay	56.7	1.3	57.1	9.2	21.6	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.7	1.3	57.1	9.2	21.6	3.8
Queue Length 50th (ft)	228	0	115	150	199	0
Queue Length 95th (ft)	#322	0	157	167	245	63
Internal Link Dist (ft)				1449	332	
Turn Bay Length (ft)						
Base Capacity (vph)	747	796	499	3406	2464	1075
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.81	0.36	0.60	0.37	0.44	0.56

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	568	0	271	0	0	0	281	1186	0	0	1008	563
Future Volume (veh/h)	568	0	271	0	0	0	281	1186	0	0	1008	563
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	604	0	0	0	0	0	299	1262	0	0	1072	0
Adj No. of Lanes	2	1	1	2	1	1	2	3	1	2	3	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	665	363	309	3	2	1	362	3492	1087	3	2652	826
Arrive On Green	0.19	0.00	0.00	0.00	0.00	0.00	0.11	0.69	0.00	0.00	0.52	0.00
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	604	0	0	0	0	0	299	1262	0	0	1072	0
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1721	1863	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	20.6	0.0	0.0	0.0	0.0	0.0	10.2	12.4	0.0	0.0	15.3	0.0
Cycle Q Clear(g_c), s	20.6	0.0	0.0	0.0	0.0	0.0	10.2	12.4	0.0	0.0	15.3	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	665	363	309	3	2	1	362	3492	1087	3	2652	826
V/C Ratio(X)	0.91	0.00	0.00	0.00	0.00	0.00	0.83	0.36	0.00	0.00	0.40	0.00
Avail Cap(c_a), veh/h	711	363	309	708	127	108	482	3492	1087	642	2652	826
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.00	0.00	0.00	0.83	0.83	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	47.4	0.0	0.0	0.0	0.0	0.0	52.6	7.8	0.0	0.0	17.4	0.0
Incr Delay (d2), s/veh	15.0	0.0	0.0	0.0	0.0	0.0	7.2	0.2	0.0	0.0	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.2	0.0	0.0	0.0	0.0	0.0	5.2	5.8	0.0	0.0	7.3	0.0
LnGrp Delay(d),s/veh	62.4	0.0	0.0	0.0	0.0	0.0	59.8	8.1	0.0	0.0	17.9	0.0
LnGrp LOS	E						E	A			B	
Approach Vol, veh/h		604			0			1561			1072	
Approach Delay, s/veh		62.4			0.0			18.0			17.9	
Approach LOS		E						B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	89.6	0.0	30.4	19.8	69.8	30.4	0.0
Change Period (Y+Rc), s	6.6	7.2	* 7.3	7.0	7.2	* 7.2	* 7.2	* 7
Max Green Setting (Gmax), s	22.4	36.8	* 25	8.0	16.8	* 42	* 25	* 8.2
Max Q Clear Time (g_c+I1), s	0.0	14.4	0.0	0.0	12.2	17.3	22.6	0.0
Green Ext Time (p_c), s	0.0	8.8	0.0	0.0	0.4	7.6	0.6	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	26.2
HCM 2010 LOS	C

Notes

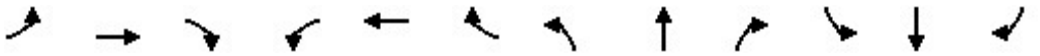
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	558	10	247	43	10	100	285	1550	54	125	1034	606
Future Volume (vph)	558	10	247	43	10	100	285	1550	54	125	1034	606
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	31.0	15.0	15.0	31.0	15.0	15.0	27.0	47.0	47.0	27.0	47.0	47.0
Total Split (s)	31.0	15.0	15.0	31.0	15.0	15.0	27.0	47.0	47.0	27.0	47.0	47.0
Total Split (%)	25.8%	12.5%	12.5%	25.8%	12.5%	12.5%	22.5%	39.2%	39.2%	22.5%	39.2%	39.2%
Yellow Time (s)	3.2	3.2	3.2	3.2	3.2	3.2	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	4.0	3.8	3.8	4.1	3.6	3.6	3.6	3.6	3.6	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.2	7.0	7.0	7.3	6.8	6.8	7.2	7.2	7.2	6.6	6.6	6.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	22.9	25.3	25.3	7.0	7.1	7.1	15.5	52.3	52.3	9.9	46.7	46.7
Actuated g/C Ratio	0.19	0.21	0.21	0.06	0.06	0.06	0.13	0.44	0.44	0.08	0.39	0.39
v/c Ratio	0.88	0.03	0.48	0.22	0.09	0.41	0.66	0.72	0.07	0.46	0.54	0.63
Control Delay	62.6	40.0	8.3	56.0	55.3	5.2	61.2	28.0	1.2	57.4	30.3	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.6	40.0	8.3	56.0	55.3	5.2	61.2	28.0	1.2	57.4	30.3	5.4
LOS	E	D	A	E	E	A	E	C	A	E	C	A
Approach Delay		45.9			22.6			32.2			23.6	
Approach LOS		D			C			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 31.0	Intersection LOS: C
Intersection Capacity Utilization 74.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 3: MO 291 & Oldham Parkway





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	575	10	255	44	10	103	294	1598	56	129	1066	625
v/c Ratio	0.88	0.03	0.48	0.22	0.09	0.41	0.66	0.72	0.07	0.46	0.54	0.63
Control Delay	62.6	40.0	8.3	56.0	55.3	5.2	61.2	28.0	1.2	57.4	30.3	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.6	40.0	8.3	56.0	55.3	5.2	61.2	28.0	1.2	57.4	30.3	5.4
Queue Length 50th (ft)	223	6	0	17	8	0	125	201	0	50	233	0
Queue Length 95th (ft)	#308	22	72	36	26	4	m168	356	m2	80	298	87
Internal Link Dist (ft)		107			302			1449			332	
Turn Bay Length (ft)												
Base Capacity (vph)	680	392	535	678	127	266	566	2216	784	583	1977	997
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.85	0.03	0.48	0.06	0.08	0.39	0.52	0.72	0.07	0.22	0.54	0.63

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	558	10	247	43	10	100	285	1550	54	125	1034	606
Future Volume (veh/h)	558	10	247	43	10	100	285	1550	54	125	1034	606
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	575	10	0	44	10	0	294	1598	0	129	1066	0
Adj No. of Lanes	2	1	1	2	1	1	2	3	1	2	3	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	636	379	322	110	96	81	356	2418	753	190	2146	668
Arrive On Green	0.18	0.20	0.00	0.03	0.05	0.00	0.21	0.95	0.00	0.06	0.42	0.00
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	575	10	0	44	10	0	294	1598	0	129	1066	0
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1721	1863	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	19.6	0.5	0.0	1.5	0.6	0.0	9.8	5.0	0.0	4.4	18.4	0.0
Cycle Q Clear(g_c), s	19.6	0.5	0.0	1.5	0.6	0.0	9.8	5.0	0.0	4.4	18.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	636	379	322	110	96	81	356	2418	753	190	2146	668
V/C Ratio(X)	0.90	0.03	0.00	0.40	0.10	0.00	0.83	0.66	0.00	0.68	0.50	0.00
Avail Cap(c_a), veh/h	683	379	322	680	127	108	568	2418	753	585	2146	668
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	0.69	0.69	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	47.9	38.3	0.0	56.9	54.3	0.0	46.6	1.7	0.0	55.7	25.4	0.0
Incr Delay (d2), s/veh	15.0	0.0	0.0	2.3	0.5	0.0	3.8	1.0	0.0	4.2	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.7	0.3	0.0	0.8	0.3	0.0	4.8	2.0	0.0	2.2	8.8	0.0
LnGrp Delay(d),s/veh	62.8	38.3	0.0	59.3	54.8	0.0	50.4	2.7	0.0	59.9	26.2	0.0
LnGrp LOS	E	D		E	D		D	A		E	C	
Approach Vol, veh/h		585			54			1892			1195	
Approach Delay, s/veh		62.4			58.4			10.1			29.8	
Approach LOS		E			E			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.2	64.3	11.1	31.4	19.6	57.9	29.4	13.2
Change Period (Y+Rc), s	6.6	7.2	* 7.3	7.0	7.2	* 7.2	* 7.2	* 7
Max Green Setting (Gmax), s	20.4	39.8	* 24	8.0	19.8	* 40	* 24	* 8.2
Max Q Clear Time (g_c+I1), s	6.4	7.0	3.5	2.5	11.8	20.4	21.6	2.6
Green Ext Time (p_c), s	0.3	14.1	0.1	0.0	0.6	6.9	0.5	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	25.3
HCM 2010 LOS	C

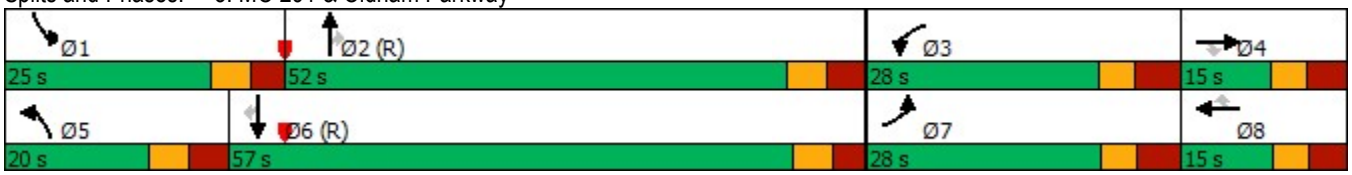
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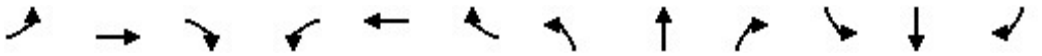
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	497	10	223	277	10	444	235	1495	158	368	1473	476
Future Volume (vph)	497	10	223	277	10	444	235	1495	158	368	1473	476
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	28.0	15.0	15.0	28.0	15.0	15.0	20.0	52.0	52.0	25.0	57.0	57.0
Total Split (s)	28.0	15.0	15.0	28.0	15.0	15.0	20.0	52.0	52.0	25.0	57.0	57.0
Total Split (%)	23.3%	12.5%	12.5%	23.3%	12.5%	12.5%	16.7%	43.3%	43.3%	20.8%	47.5%	47.5%
Yellow Time (s)	3.2	3.2	3.2	3.2	3.2	3.2	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	4.0	3.8	3.8	4.1	3.6	3.6	3.6	3.6	3.6	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.2	7.0	7.0	7.3	6.8	6.8	7.2	7.2	7.2	6.6	6.6	6.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	20.5	14.3	14.3	15.6	9.7	9.7	12.2	44.8	44.8	17.2	49.8	49.8
Actuated g/C Ratio	0.17	0.12	0.12	0.13	0.08	0.08	0.10	0.37	0.37	0.14	0.42	0.42
v/c Ratio	0.90	0.05	0.63	0.66	0.07	1.59	0.72	0.84	0.24	0.79	0.74	0.53
Control Delay	68.9	51.0	18.3	56.9	53.7	303.8	57.9	38.5	11.9	62.1	32.2	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.9	51.0	18.3	56.9	53.7	303.8	57.9	38.5	11.9	62.1	32.2	4.3
LOS	E	D	B	E	D	F	E	D	B	E	C	A
Approach Delay		53.2			206.6			38.7			31.2	
Approach LOS		D			F			D			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 110 (92%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.59	
Intersection Signal Delay: 59.2	Intersection LOS: E
Intersection Capacity Utilization 88.1%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 3: MO 291 & Oldham Parkway





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	529	11	237	295	11	472	250	1590	168	391	1567	506
v/c Ratio	0.90	0.05	0.63	0.66	0.07	1.59	0.72	0.84	0.24	0.79	0.74	0.53
Control Delay	68.9	51.0	18.3	56.9	53.7	303.8	57.9	38.5	11.9	62.1	32.2	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.9	51.0	18.3	56.9	53.7	303.8	57.9	38.5	11.9	62.1	32.2	4.3
Queue Length 50th (ft)	208	8	18	113	8	~398	106	252	6	151	367	2
Queue Length 95th (ft)	#303	28	#128	155	28	#609	m146	403	m89	206	424	66
Internal Link Dist (ft)		107			302			1449			332	
Turn Bay Length (ft)												
Base Capacity (vph)	595	221	375	592	150	297	366	1911	699	526	2138	957
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.89	0.05	0.63	0.50	0.07	1.59	0.68	0.83	0.24	0.74	0.73	0.53

Intersection Summary

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

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

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	497	10	223	277	10	444	235	1495	158	368	1473	476
Future Volume (veh/h)	497	10	223	277	10	444	235	1495	158	368	1473	476
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	529	11	0	295	11	0	250	1590	0	391	1567	0
Adj No. of Lanes	2	1	1	2	1	1	2	3	1	2	3	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	582	224	191	365	109	92	311	2073	646	453	2258	703
Arrive On Green	0.17	0.12	0.00	0.11	0.06	0.00	0.03	0.13	0.00	0.13	0.44	0.00
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	529	11	0	295	11	0	250	1590	0	391	1567	0
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1721	1863	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	18.1	0.6	0.0	10.1	0.7	0.0	8.7	36.2	0.0	13.4	29.7	0.0
Cycle Q Clear(g_c), s	18.1	0.6	0.0	10.1	0.7	0.0	8.7	36.2	0.0	13.4	29.7	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	582	224	191	365	109	92	311	2073	646	453	2258	703
V/C Ratio(X)	0.91	0.05	0.00	0.81	0.10	0.00	0.80	0.77	0.00	0.86	0.69	0.00
Avail Cap(c_a), veh/h	597	224	191	594	127	108	367	2073	646	528	2258	703
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	0.69	0.69	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	49.0	46.7	0.0	52.4	53.5	0.0	57.2	46.4	0.0	51.0	26.8	0.0
Incr Delay (d2), s/veh	17.8	0.1	0.0	4.3	0.4	0.0	7.5	1.9	0.0	12.4	1.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.0	0.3	0.0	5.0	0.4	0.0	4.5	17.4	0.0	7.1	14.3	0.0
LnGrp Delay(d),s/veh	66.7	46.8	0.0	56.7	53.9	0.0	64.7	48.3	0.0	63.5	28.6	0.0
LnGrp LOS	E	D		E	D		E	D		E	C	
Approach Vol, veh/h		540			306			1840			1958	
Approach Delay, s/veh		66.3			56.6			50.6			35.6	
Approach LOS		E			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.4	56.1	20.0	21.5	18.0	60.5	27.5	14.0
Change Period (Y+Rc), s	6.6	7.2	* 7.3	7.0	7.2	* 7.2	* 7.2	* 7
Max Green Setting (Gmax), s	18.4	44.8	* 21	8.0	12.8	* 50	* 21	* 8.2
Max Q Clear Time (g_c+I1), s	15.4	38.2	12.1	2.6	10.7	31.7	20.1	2.7
Green Ext Time (p_c), s	0.4	4.8	0.7	0.0	0.2	10.3	0.2	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	46.5
HCM 2010 LOS	D

Notes

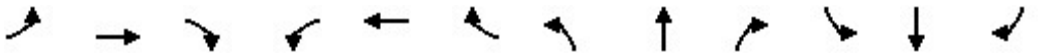
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	568	10	271	342	10	586	281	1138	227	531	897	563
Future Volume (vph)	568	10	271	342	10	586	281	1138	227	531	897	563
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	32.0	15.0	15.0	32.0	15.0	15.0	24.0	44.0	44.0	29.0	49.0	49.0
Total Split (s)	32.0	15.0	15.0	32.0	15.0	15.0	24.0	44.0	44.0	29.0	49.0	49.0
Total Split (%)	26.7%	12.5%	12.5%	26.7%	12.5%	12.5%	20.0%	36.7%	36.7%	24.2%	40.8%	40.8%
Yellow Time (s)	3.2	3.2	3.2	3.2	3.2	3.2	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	4.0	3.8	3.8	4.1	3.6	3.6	3.6	3.6	3.6	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.2	7.0	7.0	7.3	6.8	6.8	7.2	7.2	7.2	6.6	6.6	6.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	23.9	16.2	16.2	17.9	10.6	10.6	15.0	35.8	35.8	21.9	42.8	42.8
Actuated g/C Ratio	0.20	0.14	0.14	0.15	0.09	0.09	0.12	0.30	0.30	0.18	0.36	0.36
v/c Ratio	0.88	0.04	0.63	0.71	0.07	1.73	0.70	0.80	0.38	0.90	0.53	0.63
Control Delay	62.4	49.7	13.7	56.2	53.5	359.8	63.2	36.3	8.7	66.7	31.9	5.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.4	49.7	13.7	56.2	53.5	359.8	63.2	36.3	8.7	66.7	31.9	5.6
LOS	E	D	B	E	D	F	E	D	A	E	C	A
Approach Delay		46.7			245.7			37.1			33.7	
Approach LOS		D			F			D			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 5 (4%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 140	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.73	
Intersection Signal Delay: 73.4	Intersection LOS: E
Intersection Capacity Utilization 92.0%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 3: MO 291 & Oldham Parkway





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	604	11	288	364	11	623	299	1211	241	565	954	599
v/c Ratio	0.88	0.04	0.63	0.71	0.07	1.73	0.70	0.80	0.38	0.90	0.53	0.63
Control Delay	62.4	49.7	13.7	56.2	53.5	359.8	63.2	36.3	8.7	66.7	31.9	5.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.4	49.7	13.7	56.2	53.5	359.8	63.2	36.3	8.7	66.7	31.9	5.6
Queue Length 50th (ft)	234	8	6	139	8	~554	127	141	8	221	210	0
Queue Length 95th (ft)	#322	27	#104	183	28	#783	m171	263	m91	#315	258	83
Internal Link Dist (ft)		107			302			1449			332	
Turn Bay Length (ft)												
Base Capacity (vph)	709	251	455	706	164	360	480	1559	652	640	1821	951
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.85	0.04	0.63	0.52	0.07	1.73	0.62	0.78	0.37	0.88	0.52	0.63

Intersection Summary

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

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

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	568	10	271	342	10	586	281	1138	227	531	897	563
Future Volume (veh/h)	568	10	271	342	10	586	281	1138	227	531	897	563
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	604	11	0	364	11	0	299	1211	0	565	954	0
Adj No. of Lanes	2	1	1	2	1	1	2	3	1	2	3	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	665	229	195	440	109	92	357	1704	531	620	2067	644
Arrive On Green	0.19	0.12	0.00	0.13	0.06	0.00	0.21	0.67	0.00	0.18	0.41	0.00
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	604	11	0	364	11	0	299	1211	0	565	954	0
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1721	1863	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	20.6	0.6	0.0	12.4	0.7	0.0	10.0	18.0	0.0	19.3	16.4	0.0
Cycle Q Clear(g_c), s	20.6	0.6	0.0	12.4	0.7	0.0	10.0	18.0	0.0	19.3	16.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	665	229	195	440	109	92	357	1704	531	620	2067	644
V/C Ratio(X)	0.91	0.05	0.00	0.83	0.10	0.00	0.84	0.71	0.00	0.91	0.46	0.00
Avail Cap(c_a), veh/h	711	229	195	708	127	108	482	1704	531	642	2067	644
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	0.69	0.69	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	47.4	46.4	0.0	51.0	53.5	0.0	46.6	16.1	0.0	48.3	26.0	0.0
Incr Delay (d2), s/veh	15.0	0.1	0.0	4.4	0.4	0.0	6.7	1.8	0.0	17.1	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.2	0.3	0.0	6.1	0.4	0.0	5.1	8.3	0.0	10.6	7.8	0.0
LnGrp Delay(d),s/veh	62.4	46.5	0.0	55.4	53.9	0.0	53.3	17.9	0.0	65.3	26.8	0.0
LnGrp LOS	E	D		E	D		D	B		E	C	
Approach Vol, veh/h		615			375			1510			1519	
Approach Delay, s/veh		62.1			55.4			24.9			41.1	
Approach LOS		E			E			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	28.2	47.4	22.6	21.7	19.6	56.0	30.4	14.0
Change Period (Y+Rc), s	6.6	7.2	* 7.3	7.0	7.2	* 7.2	* 7.2	* 7
Max Green Setting (Gmax), s	22.4	36.8	* 25	8.0	16.8	* 42	* 25	* 8.2
Max Q Clear Time (g_c+I1), s	21.3	20.0	14.4	2.6	12.0	18.4	22.6	2.7
Green Ext Time (p_c), s	0.3	7.3	1.0	0.0	0.4	6.5	0.6	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	39.6
HCM 2010 LOS	D

Notes

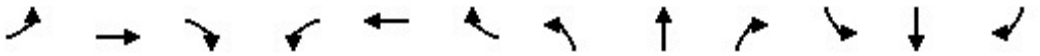
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	558	10	247	149	10	227	285	1560	111	186	1013	606
Future Volume (vph)	558	10	247	149	10	227	285	1560	111	186	1013	606
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	31.0	15.0	15.0	31.0	15.0	15.0	27.0	47.0	47.0	27.0	47.0	47.0
Total Split (s)	31.0	15.0	15.0	31.0	15.0	15.0	27.0	47.0	47.0	27.0	47.0	47.0
Total Split (%)	25.8%	12.5%	12.5%	25.8%	12.5%	12.5%	22.5%	39.2%	39.2%	22.5%	39.2%	39.2%
Yellow Time (s)	3.2	3.2	3.2	3.2	3.2	3.2	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	4.0	3.8	3.8	4.1	3.6	3.6	3.6	3.6	3.6	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.2	7.0	7.0	7.3	6.8	6.8	7.2	7.2	7.2	6.6	6.6	6.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	22.9	19.4	19.4	10.7	7.5	7.5	15.5	49.8	49.8	12.0	46.3	46.3
Actuated g/C Ratio	0.19	0.16	0.16	0.09	0.06	0.06	0.13	0.42	0.42	0.10	0.39	0.39
v/c Ratio	0.88	0.03	0.54	0.50	0.09	0.74	0.66	0.76	0.15	0.56	0.53	0.63
Control Delay	62.6	43.4	10.2	57.5	54.4	21.4	57.7	34.4	7.6	57.5	30.5	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.6	43.4	10.2	57.5	54.4	21.4	57.7	34.4	7.6	57.5	30.5	5.4
LOS	E	D	B	E	D	C	E	C	A	E	C	A
Approach Delay		46.5			36.2			36.3			24.9	
Approach LOS		D			D			D			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 110 (92%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 33.8	Intersection LOS: C
Intersection Capacity Utilization 77.6%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 3: MO 291 & Oldham Parkway





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	575	10	255	154	10	234	294	1608	114	192	1044	625
v/c Ratio	0.88	0.03	0.54	0.50	0.09	0.74	0.66	0.76	0.15	0.56	0.53	0.63
Control Delay	62.6	43.4	10.2	57.5	54.4	21.4	57.7	34.4	7.6	57.5	30.5	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.6	43.4	10.2	57.5	54.4	21.4	57.7	34.4	7.6	57.5	30.5	5.4
Queue Length 50th (ft)	223	7	0	59	8	0	125	248	1	74	227	0
Queue Length 95th (ft)	#308	23	76	92	25	#96	m168	417	m41	109	294	88
Internal Link Dist (ft)		107			302			1449			332	
Turn Bay Length (ft)												
Base Capacity (vph)	680	301	469	678	127	326	566	2108	754	583	1961	994
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.85	0.03	0.54	0.23	0.08	0.72	0.52	0.76	0.15	0.33	0.53	0.63

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	558	10	247	149	10	227	285	1560	111	186	1013	606
Future Volume (veh/h)	558	10	247	149	10	227	285	1560	111	186	1013	606
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	575	10	0	154	10	0	294	1608	0	192	1044	0
Adj No. of Lanes	2	1	1	2	1	1	2	3	1	2	3	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	636	332	283	219	108	92	364	2283	711	258	2100	654
Arrive On Green	0.18	0.18	0.00	0.06	0.06	0.00	0.07	0.30	0.00	0.07	0.41	0.00
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	575	10	0	154	10	0	294	1608	0	192	1044	0
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1721	1863	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	19.6	0.5	0.0	5.3	0.6	0.0	10.1	33.7	0.0	6.6	18.2	0.0
Cycle Q Clear(g_c), s	19.6	0.5	0.0	5.3	0.6	0.0	10.1	33.7	0.0	6.6	18.2	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	636	332	283	219	108	92	364	2283	711	258	2100	654
V/C Ratio(X)	0.90	0.03	0.00	0.70	0.09	0.00	0.81	0.70	0.00	0.75	0.50	0.00
Avail Cap(c_a), veh/h	683	332	283	680	127	108	568	2283	711	585	2100	654
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	0.73	0.73	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	47.9	40.7	0.0	55.1	53.5	0.0	54.5	34.9	0.0	54.4	26.0	0.0
Incr Delay (d2), s/veh	15.0	0.0	0.0	4.1	0.4	0.0	3.5	1.4	0.0	4.3	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.7	0.3	0.0	2.6	0.3	0.0	5.0	16.1	0.0	3.3	8.7	0.0
LnGrp Delay(d),s/veh	62.8	40.8	0.0	59.2	53.9	0.0	58.1	36.2	0.0	58.6	26.9	0.0
LnGrp LOS	E	D		E	D		E	D		E	C	
Approach Vol, veh/h		585			164			1902			1236	
Approach Delay, s/veh		62.5			58.8			39.6			31.8	
Approach LOS		E			E			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.6	61.1	14.9	28.4	19.9	56.8	29.4	14.0
Change Period (Y+Rc), s	6.6	7.2	* 7.3	7.0	7.2	* 7.2	* 7.2	* 7
Max Green Setting (Gmax), s	20.4	39.8	* 24	8.0	19.8	* 40	* 24	* 8.2
Max Q Clear Time (g_c+I1), s	8.6	35.7	7.3	2.5	12.1	20.2	21.6	2.6
Green Ext Time (p_c), s	0.4	3.2	0.4	0.0	0.6	6.8	0.5	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	41.4
HCM 2010 LOS	D

Notes

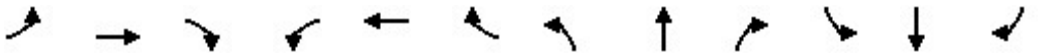
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	467	10	223	429	10	561	235	1459	294	499	1461	476
Future Volume (vph)	467	10	223	429	10	561	235	1459	294	499	1461	476
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	26.0	15.0	15.0	26.0	15.0	15.0	21.0	52.0	52.0	27.0	58.0	58.0
Total Split (s)	26.0	15.0	15.0	26.0	15.0	15.0	21.0	52.0	52.0	27.0	58.0	58.0
Total Split (%)	21.7%	12.5%	12.5%	21.7%	12.5%	12.5%	17.5%	43.3%	43.3%	22.5%	48.3%	48.3%
Yellow Time (s)	3.2	3.2	3.2	3.2	3.2	3.2	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	4.0	3.8	3.8	4.1	3.6	3.6	3.6	3.6	3.6	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.2	7.0	7.0	7.3	6.8	6.8	7.2	7.2	7.2	6.6	6.6	6.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	18.8	9.4	9.4	18.3	9.1	9.1	12.8	44.1	44.1	20.2	51.5	51.5
Actuated g/C Ratio	0.16	0.08	0.08	0.15	0.08	0.08	0.11	0.37	0.37	0.17	0.43	0.43
v/c Ratio	0.93	0.08	0.76	0.87	0.08	1.96	0.68	0.83	0.41	0.92	0.71	0.52
Control Delay	74.4	54.0	28.1	68.1	53.8	463.7	48.9	44.5	15.4	71.4	30.4	4.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.4	54.0	28.1	68.1	53.8	463.7	48.9	44.5	15.4	71.4	30.4	4.0
LOS	E	D	C	E	D	F	D	D	B	E	C	A
Approach Delay		59.4			289.9			40.7			33.7	
Approach LOS		E			F			D			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 110 (92%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 140	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.96	
Intersection Signal Delay: 80.7	Intersection LOS: F
Intersection Capacity Utilization 93.7%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 3: MO 291 & Oldham Parkway





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	497	11	237	456	11	597	250	1552	313	531	1554	506
v/c Ratio	0.93	0.08	0.76	0.87	0.08	1.96	0.68	0.83	0.41	0.92	0.71	0.52
Control Delay	74.4	54.0	28.1	68.1	53.8	463.7	48.9	44.5	15.4	71.4	30.4	4.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.4	54.0	28.1	68.1	53.8	463.7	48.9	44.5	15.4	71.4	30.4	4.0
Queue Length 50th (ft)	197	8	25	179	8	~578	102	329	63	210	356	0
Queue Length 95th (ft)	#298	28	#149	#262	28	#804	m140	395	m137	#310	413	63
Internal Link Dist (ft)		107			302			1449			332	
Turn Bay Length (ft)												
Base Capacity (vph)	537	145	311	534	141	305	394	1898	772	583	2190	969
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.93	0.08	0.76	0.85	0.08	1.96	0.63	0.82	0.41	0.91	0.71	0.52

Intersection Summary

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

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

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	467	10	223	429	10	561	235	1459	294	499	1461	476
Future Volume (veh/h)	467	10	223	429	10	561	235	1459	294	499	1461	476
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	497	11	0	456	11	0	250	1552	0	531	1554	0
Adj No. of Lanes	2	1	1	2	1	1	2	3	1	2	3	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	539	122	104	511	109	92	313	1947	606	581	2318	722
Arrive On Green	0.16	0.07	0.00	0.15	0.06	0.00	0.03	0.13	0.00	0.17	0.46	0.00
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	497	11	0	456	11	0	250	1552	0	531	1554	0
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1721	1863	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	17.1	0.7	0.0	15.6	0.7	0.0	8.7	35.6	0.0	18.2	28.7	0.0
Cycle Q Clear(g_c), s	17.1	0.7	0.0	15.6	0.7	0.0	8.7	35.6	0.0	18.2	28.7	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	539	122	104	511	109	92	313	1947	606	581	2318	722
V/C Ratio(X)	0.92	0.09	0.00	0.89	0.10	0.00	0.80	0.80	0.00	0.91	0.67	0.00
Avail Cap(c_a), veh/h	539	124	106	536	127	108	396	1947	606	585	2318	722
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	0.63	0.63	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	49.9	52.7	0.0	50.1	53.5	0.0	57.1	47.9	0.0	49.0	25.6	0.0
Incr Delay (d2), s/veh	21.4	0.3	0.0	16.6	0.4	0.0	5.8	2.2	0.0	19.0	1.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.8	0.4	0.0	8.6	0.4	0.0	4.4	17.1	0.0	10.2	13.7	0.0
LnGrp Delay(d),s/veh	71.3	53.0	0.0	66.7	53.9	0.0	62.9	50.1	0.0	68.0	27.2	0.0
LnGrp LOS	E	D		E	D		E	D		E	C	
Approach Vol, veh/h		508			467			1802			2085	
Approach Delay, s/veh		70.9			66.4			51.9			37.6	
Approach LOS		E			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.8	53.2	25.1	14.9	18.1	61.9	26.0	14.0
Change Period (Y+Rc), s	6.6	7.2	* 7.3	7.0	7.2	* 7.2	* 7.2	* 7
Max Green Setting (Gmax), s	20.4	44.8	* 19	8.0	13.8	* 51	* 19	* 8.2
Max Q Clear Time (g_c+I1), s	20.2	37.6	17.6	2.7	10.7	30.7	19.1	2.7
Green Ext Time (p_c), s	0.1	5.1	0.2	0.0	0.2	10.8	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	49.1
HCM 2010 LOS	D

Notes

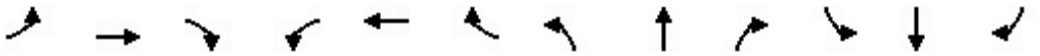
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	568	10	271	494	10	719	281	1171	432	699	971	563
Future Volume (vph)	568	10	271	494	10	719	281	1171	432	699	971	563
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	29.0	15.0	15.0	29.0	15.0	15.0	31.0	43.0	43.0	33.0	45.0	45.0
Total Split (s)	29.0	15.0	15.0	29.0	15.0	15.0	31.0	43.0	43.0	33.0	45.0	45.0
Total Split (%)	24.2%	12.5%	12.5%	24.2%	12.5%	12.5%	25.8%	35.8%	35.8%	27.5%	37.5%	37.5%
Yellow Time (s)	3.2	3.2	3.2	3.2	3.2	3.2	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	4.0	3.8	3.8	4.1	3.6	3.6	3.6	3.6	3.6	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.2	7.0	7.0	7.3	6.8	6.8	7.2	7.2	7.2	6.6	6.6	6.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	22.1	9.1	9.1	21.1	8.3	8.3	15.7	35.3	35.3	26.4	46.0	46.0
Actuated g/C Ratio	0.18	0.08	0.08	0.18	0.07	0.07	0.13	0.29	0.29	0.22	0.38	0.38
v/c Ratio	0.95	0.08	0.75	0.87	0.09	1.86	0.67	0.83	0.58	0.99	0.53	0.61
Control Delay	75.0	54.0	18.9	64.5	54.1	414.4	56.9	45.3	6.2	76.3	30.2	5.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	75.0	54.0	18.9	64.5	54.1	414.4	56.9	45.3	6.2	76.3	30.2	5.2
LOS	E	D	B	E	D	F	E	D	A	E	C	A
Approach Delay		56.9			270.0			38.1			38.3	
Approach LOS		E			F			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 110 (92%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.86	
Intersection Signal Delay: 86.6	Intersection LOS: F
Intersection Capacity Utilization 100.8%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 3: MO 291 & Oldham Parkway





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	604	11	288	526	11	765	299	1246	460	744	1033	599
v/c Ratio	0.95	0.08	0.75	0.87	0.09	1.86	0.67	0.83	0.58	0.99	0.53	0.61
Control Delay	75.0	54.0	18.9	64.5	54.1	414.4	56.9	45.3	6.2	76.3	30.2	5.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	75.0	54.0	18.9	64.5	54.1	414.4	56.9	45.3	6.2	76.3	30.2	5.2
Queue Length 50th (ft)	241	8	0	205	8	~661	115	328	0	297	222	0
Queue Length 95th (ft)	#358	28	#115	#290	28	#903	157	387	80	#426	283	83
Internal Link Dist (ft)		107			302			1449			332	
Turn Bay Length (ft)												
Base Capacity (vph)	633	141	386	620	129	411	680	1517	795	755	1950	976
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.95	0.08	0.75	0.85	0.09	1.86	0.44	0.82	0.58	0.99	0.53	0.61

Intersection Summary

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

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	568	10	271	494	10	719	281	1171	432	699	971	563
Future Volume (veh/h)	568	10	271	494	10	719	281	1171	432	699	971	563
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	604	11	0	526	11	0	299	1246	0	744	1033	0
Adj No. of Lanes	2	1	1	2	1	1	2	3	1	2	3	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	625	129	110	584	109	92	371	1559	486	757	2104	655
Arrive On Green	0.18	0.07	0.00	0.17	0.06	0.00	0.11	0.31	0.00	0.22	0.41	0.00
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	604	11	0	526	11	0	299	1246	0	744	1033	0
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1721	1863	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	20.9	0.7	0.0	18.0	0.7	0.0	10.2	27.0	0.0	25.8	17.9	0.0
Cycle Q Clear(g_c), s	20.9	0.7	0.0	18.0	0.7	0.0	10.2	27.0	0.0	25.8	17.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	625	129	110	584	109	92	371	1559	486	757	2104	655
V/C Ratio(X)	0.97	0.09	0.00	0.90	0.10	0.00	0.81	0.80	0.00	0.98	0.49	0.00
Avail Cap(c_a), veh/h	625	129	110	622	127	108	683	1559	486	757	2104	655
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	0.56	0.56	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	48.7	52.3	0.0	48.8	53.5	0.0	52.3	38.2	0.0	46.6	25.9	0.0
Incr Delay (d2), s/veh	27.6	0.3	0.0	15.6	0.4	0.0	2.4	2.5	0.0	28.3	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.3	0.4	0.0	9.8	0.4	0.0	5.0	12.9	0.0	15.3	8.6	0.0
LnGrp Delay(d),s/veh	76.4	52.6	0.0	64.4	53.9	0.0	54.7	40.7	0.0	74.9	26.7	0.0
LnGrp LOS	E	D		E	D		D	D		E	C	
Approach Vol, veh/h		615			537			1545			1777	
Approach Delay, s/veh		75.9			64.2			43.4			46.9	
Approach LOS		E			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	33.0	44.0	27.7	15.3	20.1	56.9	29.0	14.0
Change Period (Y+Rc), s	6.6	7.2	* 7.3	7.0	7.2	* 7.2	* 7.2	* 7
Max Green Setting (Gmax), s	26.4	35.8	* 22	8.0	23.8	* 38	* 22	* 8.2
Max Q Clear Time (g_c+I1), s	27.8	29.0	20.0	2.7	12.2	19.9	22.9	2.7
Green Ext Time (p_c), s	0.0	4.1	0.4	0.0	0.8	6.4	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	51.8
HCM 2010 LOS	D

Notes

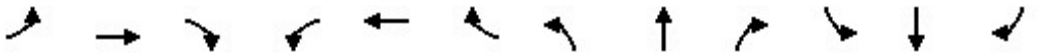
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	558	10	247	149	10	227	285	1655	111	186	1123	606
Future Volume (vph)	558	10	247	149	10	227	285	1655	111	186	1123	606
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	31.0	15.0	15.0	31.0	15.0	15.0	27.0	47.0	47.0	27.0	47.0	47.0
Total Split (s)	31.0	15.0	15.0	31.0	15.0	15.0	27.0	47.0	47.0	27.0	47.0	47.0
Total Split (%)	25.8%	12.5%	12.5%	25.8%	12.5%	12.5%	22.5%	39.2%	39.2%	22.5%	39.2%	39.2%
Yellow Time (s)	3.2	3.2	3.2	3.2	3.2	3.2	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	4.0	3.8	3.8	4.1	3.6	3.6	3.6	3.6	3.6	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.2	7.0	7.0	7.3	6.8	6.8	7.2	7.2	7.2	6.6	6.6	6.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	22.9	19.4	19.4	10.7	7.5	7.5	15.5	49.8	49.8	12.0	46.3	46.3
Actuated g/C Ratio	0.19	0.16	0.16	0.09	0.06	0.06	0.13	0.42	0.42	0.10	0.39	0.39
v/c Ratio	0.88	0.03	0.54	0.50	0.09	0.74	0.66	0.81	0.15	0.56	0.59	0.63
Control Delay	62.6	43.4	10.2	57.5	54.4	21.4	53.8	37.5	8.7	57.5	31.6	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.6	43.4	10.2	57.5	54.4	21.4	53.8	37.5	8.7	57.5	31.6	5.4
LOS	E	D	B	E	D	C	D	D	A	E	C	A
Approach Delay		46.5			36.2			38.2			25.8	
Approach LOS		D			D			D			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 110 (92%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 34.8	Intersection LOS: C
Intersection Capacity Utilization 79.5%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 3: MO 291 & Oldham Parkway





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	575	10	255	154	10	234	294	1706	114	192	1158	625
v/c Ratio	0.88	0.03	0.54	0.50	0.09	0.74	0.66	0.81	0.15	0.56	0.59	0.63
Control Delay	62.6	43.4	10.2	57.5	54.4	21.4	53.8	37.5	8.7	57.5	31.6	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.6	43.4	10.2	57.5	54.4	21.4	53.8	37.5	8.7	57.5	31.6	5.4
Queue Length 50th (ft)	223	7	0	59	8	0	124	310	4	74	260	0
Queue Length 95th (ft)	#308	23	76	92	25	#96	m164	454	m35	109	332	88
Internal Link Dist (ft)		107			302			1449			332	
Turn Bay Length (ft)												
Base Capacity (vph)	680	301	469	678	127	326	566	2108	754	583	1961	994
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.85	0.03	0.54	0.23	0.08	0.72	0.52	0.81	0.15	0.33	0.59	0.63

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	558	10	247	149	10	227	285	1655	111	186	1123	606
Future Volume (veh/h)	558	10	247	149	10	227	285	1655	111	186	1123	606
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	575	10	0	154	10	0	294	1706	0	192	1158	0
Adj No. of Lanes	2	1	1	2	1	1	2	3	1	2	3	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	636	332	283	219	108	92	364	2283	711	258	2100	654
Arrive On Green	0.18	0.18	0.00	0.06	0.06	0.00	0.07	0.30	0.00	0.07	0.41	0.00
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	575	10	0	154	10	0	294	1706	0	192	1158	0
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1721	1863	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	19.6	0.5	0.0	5.3	0.6	0.0	10.1	36.3	0.0	6.6	20.8	0.0
Cycle Q Clear(g_c), s	19.6	0.5	0.0	5.3	0.6	0.0	10.1	36.3	0.0	6.6	20.8	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	636	332	283	219	108	92	364	2283	711	258	2100	654
V/C Ratio(X)	0.90	0.03	0.00	0.70	0.09	0.00	0.81	0.75	0.00	0.75	0.55	0.00
Avail Cap(c_a), veh/h	683	332	283	680	127	108	568	2283	711	585	2100	654
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	0.66	0.66	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	47.9	40.7	0.0	55.1	53.5	0.0	54.5	35.8	0.0	54.4	26.8	0.0
Incr Delay (d2), s/veh	15.0	0.0	0.0	4.1	0.4	0.0	3.2	1.5	0.0	4.3	1.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.7	0.3	0.0	2.6	0.3	0.0	5.0	17.4	0.0	3.3	9.9	0.0
LnGrp Delay(d),s/veh	62.8	40.8	0.0	59.2	53.9	0.0	57.7	37.3	0.0	58.6	27.8	0.0
LnGrp LOS	E	D		E	D		E	D		E	C	
Approach Vol, veh/h		585			164			2000			1350	
Approach Delay, s/veh		62.5			58.8			40.3			32.2	
Approach LOS		E			E			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.6	61.1	14.9	28.4	19.9	56.8	29.4	14.0
Change Period (Y+Rc), s	6.6	7.2	* 7.3	7.0	7.2	* 7.2	* 7.2	* 7
Max Green Setting (Gmax), s	20.4	39.8	* 24	8.0	19.8	* 40	* 24	* 8.2
Max Q Clear Time (g_c+I1), s	8.6	38.3	7.3	2.5	12.1	22.8	21.6	2.6
Green Ext Time (p_c), s	0.4	1.3	0.4	0.0	0.6	7.2	0.5	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	41.6
HCM 2010 LOS	D

Notes

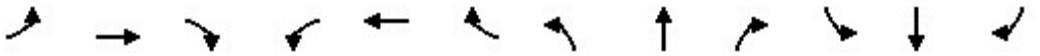
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	467	10	223	429	10	561	235	1566	294	499	1575	476
Future Volume (vph)	467	10	223	429	10	561	235	1566	294	499	1575	476
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	26.0	15.0	15.0	26.0	15.0	15.0	21.0	52.0	52.0	27.0	58.0	58.0
Total Split (s)	26.0	15.0	15.0	26.0	15.0	15.0	21.0	52.0	52.0	27.0	58.0	58.0
Total Split (%)	21.7%	12.5%	12.5%	21.7%	12.5%	12.5%	17.5%	43.3%	43.3%	22.5%	48.3%	48.3%
Yellow Time (s)	3.2	3.2	3.2	3.2	3.2	3.2	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	4.0	3.8	3.8	4.1	3.6	3.6	3.6	3.6	3.6	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.2	7.0	7.0	7.3	6.8	6.8	7.2	7.2	7.2	6.6	6.6	6.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	18.8	8.6	8.6	18.3	8.4	8.4	12.8	44.8	44.8	20.2	52.2	52.2
Actuated g/C Ratio	0.16	0.07	0.07	0.15	0.07	0.07	0.11	0.37	0.37	0.17	0.44	0.44
v/c Ratio	0.93	0.08	0.79	0.87	0.08	2.02	0.68	0.88	0.41	0.92	0.76	0.53
Control Delay	74.4	54.2	30.7	68.1	54.0	490.7	50.4	45.7	16.7	71.4	31.5	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.4	54.2	30.7	68.1	54.0	490.7	50.4	45.7	16.7	71.4	31.5	4.9
LOS	E	D	C	E	D	F	D	D	B	E	C	A
Approach Delay		60.2			305.1			42.2			34.3	
Approach LOS		E			F			D			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 110 (92%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 2.02	
Intersection Signal Delay: 82.4	Intersection LOS: F
Intersection Capacity Utilization 95.8%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 3: MO 291 & Oldham Parkway





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	497	11	237	456	11	597	250	1666	313	531	1676	506
v/c Ratio	0.93	0.08	0.79	0.87	0.08	2.02	0.68	0.88	0.41	0.92	0.76	0.53
Control Delay	74.4	54.2	30.7	68.1	54.0	490.7	50.4	45.7	16.7	71.4	31.5	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.4	54.2	30.7	68.1	54.0	490.7	50.4	45.7	16.7	71.4	31.5	4.9
Queue Length 50th (ft)	197	8	26	179	8	~580	105	365	80	210	398	13
Queue Length 95th (ft)	#298	28	#152	#262	28	#806	m139	428	m138	#310	459	85
Internal Link Dist (ft)		107			302			1449			332	
Turn Bay Length (ft)												
Base Capacity (vph)	537	134	301	534	130	295	394	1898	760	583	2212	957
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.93	0.08	0.79	0.85	0.08	2.02	0.63	0.88	0.41	0.91	0.76	0.53

Intersection Summary

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

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

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	467	10	223	429	10	561	235	1566	294	499	1575	476
Future Volume (veh/h)	467	10	223	429	10	561	235	1566	294	499	1575	476
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	497	11	0	456	11	0	250	1666	0	531	1676	0
Adj No. of Lanes	2	1	1	2	1	1	2	3	1	2	3	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	539	122	104	511	109	92	313	1947	606	581	2318	722
Arrive On Green	0.16	0.07	0.00	0.15	0.06	0.00	0.03	0.13	0.00	0.17	0.46	0.00
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	497	11	0	456	11	0	250	1666	0	531	1676	0
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1721	1863	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	17.1	0.7	0.0	15.6	0.7	0.0	8.7	38.5	0.0	18.2	32.1	0.0
Cycle Q Clear(g_c), s	17.1	0.7	0.0	15.6	0.7	0.0	8.7	38.5	0.0	18.2	32.1	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	539	122	104	511	109	92	313	1947	606	581	2318	722
V/C Ratio(X)	0.92	0.09	0.00	0.89	0.10	0.00	0.80	0.86	0.00	0.91	0.72	0.00
Avail Cap(c_a), veh/h	539	124	106	536	127	108	396	1947	606	585	2318	722
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	0.58	0.58	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	49.9	52.7	0.0	50.1	53.5	0.0	57.1	49.2	0.0	49.0	26.5	0.0
Incr Delay (d2), s/veh	21.4	0.3	0.0	16.6	0.4	0.0	5.3	3.0	0.0	19.0	2.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.8	0.4	0.0	8.6	0.4	0.0	4.4	18.7	0.0	10.2	15.5	0.0
LnGrp Delay(d),s/veh	71.3	53.0	0.0	66.7	53.9	0.0	62.4	52.2	0.0	68.0	28.5	0.0
LnGrp LOS	E	D		E	D		E	D		E	C	
Approach Vol, veh/h		508			467			1916			2207	
Approach Delay, s/veh		70.9			66.4			53.5			38.0	
Approach LOS		E			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.8	53.2	25.1	14.9	18.1	61.9	26.0	14.0
Change Period (Y+Rc), s	6.6	7.2	* 7.3	7.0	7.2	* 7.2	* 7.2	* 7
Max Green Setting (Gmax), s	20.4	44.8	* 19	8.0	13.8	* 51	* 19	* 8.2
Max Q Clear Time (g_c+I1), s	20.2	40.5	17.6	2.7	10.7	34.1	19.1	2.7
Green Ext Time (p_c), s	0.1	3.4	0.2	0.0	0.2	10.5	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	49.7
HCM 2010 LOS	D

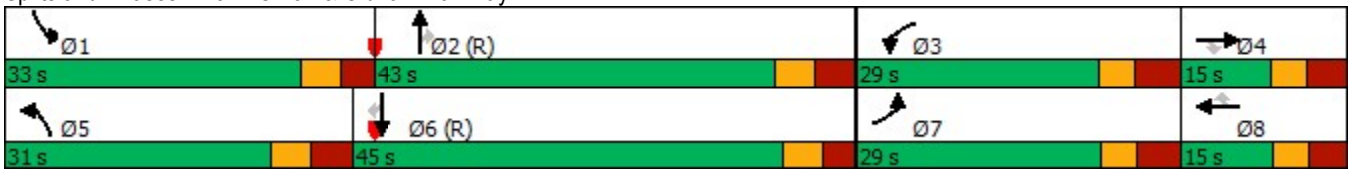
Notes

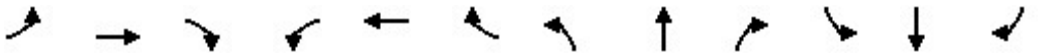
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	568	10	271	494	10	719	281	1469	432	699	1291	563
Future Volume (vph)	568	10	271	494	10	719	281	1469	432	699	1291	563
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	29.0	15.0	15.0	29.0	15.0	15.0	31.0	43.0	43.0	33.0	45.0	45.0
Total Split (s)	29.0	15.0	15.0	29.0	15.0	15.0	31.0	43.0	43.0	33.0	45.0	45.0
Total Split (%)	24.2%	12.5%	12.5%	24.2%	12.5%	12.5%	25.8%	35.8%	35.8%	27.5%	37.5%	37.5%
Yellow Time (s)	3.2	3.2	3.2	3.2	3.2	3.2	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	4.0	3.8	3.8	4.1	3.6	3.6	3.6	3.6	3.6	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.2	7.0	7.0	7.3	6.8	6.8	7.2	7.2	7.2	6.6	6.6	6.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	21.8	8.6	8.6	21.1	8.2	8.2	15.7	35.8	35.8	26.4	46.5	46.5
Actuated g/C Ratio	0.18	0.07	0.07	0.18	0.07	0.07	0.13	0.30	0.30	0.22	0.39	0.39
v/c Ratio	0.97	0.08	0.76	0.87	0.09	1.87	0.67	1.03	0.62	0.99	0.70	0.62
Control Delay	78.3	54.2	19.7	64.5	54.1	419.2	45.5	82.6	29.3	76.3	33.6	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	78.3	54.2	19.7	64.5	54.1	419.2	45.5	82.6	29.3	76.3	33.6	5.9
LOS	E	D	B	E	D	F	D	F	C	E	C	A
Approach Delay		59.3			272.8			67.2			39.2	
Approach LOS		E			F			E			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 110 (92%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.87	
Intersection Signal Delay: 92.7	Intersection LOS: F
Intersection Capacity Utilization 106.6%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 3: MO 291 & Oldham Parkway





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	604	11	288	526	11	765	299	1563	460	744	1373	599
v/c Ratio	0.97	0.08	0.76	0.87	0.09	1.87	0.67	1.03	0.62	0.99	0.70	0.62
Control Delay	78.3	54.2	19.7	64.5	54.1	419.2	45.5	82.6	29.3	76.3	33.6	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	78.3	54.2	19.7	64.5	54.1	419.2	45.5	82.6	29.3	76.3	33.6	5.9
Queue Length 50th (ft)	241	8	0	205	8	~662	125	~452	179	297	323	10
Queue Length 95th (ft)	#358	28	#115	#290	28	#905	m143	m#554	m247	#426	400	104
Internal Link Dist (ft)		107			302			1449			332	
Turn Bay Length (ft)												
Base Capacity (vph)	623	134	381	620	127	409	680	1517	737	755	1970	967
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.97	0.08	0.76	0.85	0.09	1.87	0.44	1.03	0.62	0.99	0.70	0.62

Intersection Summary

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

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

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	568	10	271	494	10	719	281	1469	432	699	1291	563
Future Volume (veh/h)	568	10	271	494	10	719	281	1469	432	699	1291	563
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	604	11	0	526	11	0	299	1563	0	744	1373	0
Adj No. of Lanes	2	1	1	2	1	1	2	3	1	2	3	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	625	129	110	584	109	92	371	1559	486	757	2104	655
Arrive On Green	0.18	0.07	0.00	0.17	0.06	0.00	0.11	0.31	0.00	0.22	0.41	0.00
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	604	11	0	526	11	0	299	1563	0	744	1373	0
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1721	1863	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	20.9	0.7	0.0	18.0	0.7	0.0	10.2	36.8	0.0	25.8	26.0	0.0
Cycle Q Clear(g_c), s	20.9	0.7	0.0	18.0	0.7	0.0	10.2	36.8	0.0	25.8	26.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	625	129	110	584	109	92	371	1559	486	757	2104	655
V/C Ratio(X)	0.97	0.09	0.00	0.90	0.10	0.00	0.81	1.00	0.00	0.98	0.65	0.00
Avail Cap(c_a), veh/h	625	129	110	622	127	108	683	1559	486	757	2104	655
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	0.36	0.36	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	48.7	52.3	0.0	48.8	53.5	0.0	52.3	41.6	0.0	46.6	28.2	0.0
Incr Delay (d2), s/veh	27.6	0.3	0.0	15.6	0.4	0.0	1.5	14.2	0.0	28.3	1.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.3	0.4	0.0	9.8	0.4	0.0	4.9	19.2	0.0	15.3	12.5	0.0
LnGrp Delay(d),s/veh	76.4	52.6	0.0	64.4	53.9	0.0	53.8	55.8	0.0	74.9	29.8	0.0
LnGrp LOS	E	D		E	D		D	F		E	C	
Approach Vol, veh/h		615			537			1862			2117	
Approach Delay, s/veh		75.9			64.2			55.5			45.7	
Approach LOS		E			E			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	33.0	44.0	27.7	15.3	20.1	56.9	29.0	14.0
Change Period (Y+Rc), s	6.6	7.2	* 7.3	7.0	7.2	* 7.2	* 7.2	* 7
Max Green Setting (Gmax), s	26.4	35.8	* 22	8.0	23.8	* 38	* 22	* 8.2
Max Q Clear Time (g_c+I1), s	27.8	38.8	20.0	2.7	12.2	28.0	22.9	2.7
Green Ext Time (p_c), s	0.0	0.0	0.4	0.0	0.8	6.1	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	54.8
HCM 2010 LOS	D

Notes

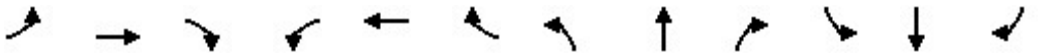
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	558	10	247	149	10	227	285	1995	111	186	1362	606
Future Volume (vph)	558	10	247	149	10	227	285	1995	111	186	1362	606
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	31.0	15.0	15.0	31.0	15.0	15.0	27.0	47.0	47.0	27.0	47.0	47.0
Total Split (s)	31.0	15.0	15.0	31.0	15.0	15.0	27.0	47.0	47.0	27.0	47.0	47.0
Total Split (%)	25.8%	12.5%	12.5%	25.8%	12.5%	12.5%	22.5%	39.2%	39.2%	22.5%	39.2%	39.2%
Yellow Time (s)	3.2	3.2	3.2	3.2	3.2	3.2	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	4.0	3.8	3.8	4.1	3.6	3.6	3.6	3.6	3.6	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.2	7.0	7.0	7.3	6.8	6.8	7.2	7.2	7.2	6.6	6.6	6.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	22.9	19.4	19.4	10.7	7.5	7.5	15.5	49.8	49.8	12.0	46.3	46.3
Actuated g/C Ratio	0.19	0.16	0.16	0.09	0.06	0.06	0.13	0.42	0.42	0.10	0.39	0.39
v/c Ratio	0.88	0.03	0.54	0.50	0.09	0.74	0.66	0.98	0.15	0.56	0.72	0.64
Control Delay	62.6	43.4	10.2	57.5	54.4	21.4	54.7	48.8	7.4	57.5	34.6	6.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.6	43.4	10.2	57.5	54.4	21.4	54.7	48.8	7.4	57.5	34.6	6.2
LOS	E	D	B	E	D	C	D	D	A	E	C	A
Approach Delay		46.5			36.2			47.6			28.6	
Approach LOS		D			D			D			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 110 (92%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.98	
Intersection Signal Delay: 39.5	Intersection LOS: D
Intersection Capacity Utilization 86.0%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 3: MO 291 & Oldham Parkway





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	575	10	255	154	10	234	294	2057	114	192	1404	625
v/c Ratio	0.88	0.03	0.54	0.50	0.09	0.74	0.66	0.98	0.15	0.56	0.72	0.64
Control Delay	62.6	43.4	10.2	57.5	54.4	21.4	54.7	48.8	7.4	57.5	34.6	6.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.6	43.4	10.2	57.5	54.4	21.4	54.7	48.8	7.4	57.5	34.6	6.2
Queue Length 50th (ft)	223	7	0	59	8	0	123	392	3	74	336	10
Queue Length 95th (ft)	#308	23	76	92	25	#96	m162	#731	m30	109	423	109
Internal Link Dist (ft)		107			302			1449			332	
Turn Bay Length (ft)												
Base Capacity (vph)	680	301	469	678	127	326	566	2108	754	583	1961	982
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.85	0.03	0.54	0.23	0.08	0.72	0.52	0.98	0.15	0.33	0.72	0.64

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	558	10	247	149	10	227	285	1995	111	186	1362	606
Future Volume (veh/h)	558	10	247	149	10	227	285	1995	111	186	1362	606
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	575	10	0	154	10	0	294	2057	0	192	1404	0
Adj No. of Lanes	2	1	1	2	1	1	2	3	1	2	3	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	636	332	283	219	108	92	366	2283	711	258	2097	653
Arrive On Green	0.18	0.18	0.00	0.06	0.06	0.00	0.04	0.15	0.00	0.07	0.41	0.00
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	575	10	0	154	10	0	294	2057	0	192	1404	0
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1721	1863	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	19.6	0.5	0.0	5.3	0.6	0.0	10.2	47.7	0.0	6.6	26.9	0.0
Cycle Q Clear(g_c), s	19.6	0.5	0.0	5.3	0.6	0.0	10.2	47.7	0.0	6.6	26.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	636	332	283	219	108	92	366	2283	711	258	2097	653
V/C Ratio(X)	0.90	0.03	0.00	0.70	0.09	0.00	0.80	0.90	0.00	0.75	0.67	0.00
Avail Cap(c_a), veh/h	683	332	283	680	127	108	568	2283	711	585	2097	653
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	0.66	0.66	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	47.9	40.7	0.0	55.1	53.5	0.0	56.6	48.5	0.0	54.4	28.6	0.0
Incr Delay (d2), s/veh	15.0	0.0	0.0	4.1	0.4	0.0	3.1	4.3	0.0	4.3	1.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.7	0.3	0.0	2.6	0.3	0.0	5.0	23.3	0.0	3.3	12.9	0.0
LnGrp Delay(d),s/veh	62.8	40.8	0.0	59.2	53.9	0.0	59.8	52.8	0.0	58.6	30.3	0.0
LnGrp LOS	E	D		E	D		E	D		E	C	
Approach Vol, veh/h		585			164			2351			1596	
Approach Delay, s/veh		62.5			58.8			53.7			33.7	
Approach LOS		E			E			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.6	61.1	14.9	28.4	20.0	56.7	29.4	14.0
Change Period (Y+Rc), s	6.6	7.2	* 7.3	7.0	7.2	* 7.2	* 7.2	* 7
Max Green Setting (Gmax), s	20.4	39.8	* 24	8.0	19.8	* 40	* 24	* 8.2
Max Q Clear Time (g_c+I1), s	8.6	49.7	7.3	2.5	12.2	28.9	21.6	2.6
Green Ext Time (p_c), s	0.4	0.0	0.4	0.0	0.6	6.7	0.5	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	48.2
HCM 2010 LOS	D

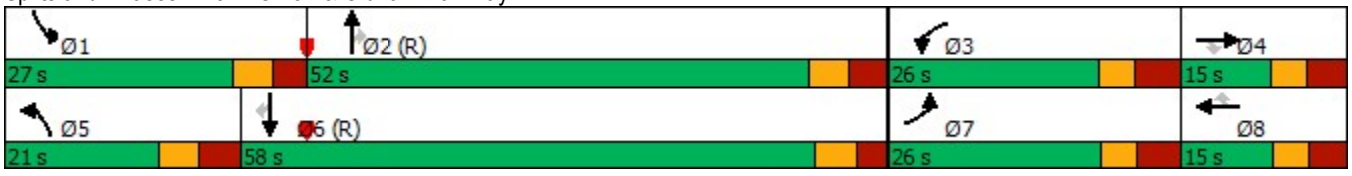
Notes

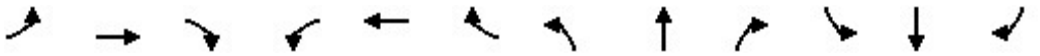
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	467	10	223	429	10	561	235	1909	294	499	1940	476
Future Volume (vph)	467	10	223	429	10	561	235	1909	294	499	1940	476
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	26.0	15.0	15.0	26.0	15.0	15.0	21.0	52.0	52.0	27.0	58.0	58.0
Total Split (s)	26.0	15.0	15.0	26.0	15.0	15.0	21.0	52.0	52.0	27.0	58.0	58.0
Total Split (%)	21.7%	12.5%	12.5%	21.7%	12.5%	12.5%	17.5%	43.3%	43.3%	22.5%	48.3%	48.3%
Yellow Time (s)	3.2	3.2	3.2	3.2	3.2	3.2	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	4.0	3.8	3.8	4.1	3.6	3.6	3.6	3.6	3.6	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.2	7.0	7.0	7.3	6.8	6.8	7.2	7.2	7.2	6.6	6.6	6.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	18.8	8.4	8.4	18.3	8.2	8.2	12.8	45.0	45.0	20.2	52.4	52.4
Actuated g/C Ratio	0.16	0.07	0.07	0.15	0.07	0.07	0.11	0.38	0.38	0.17	0.44	0.44
v/c Ratio	0.93	0.08	0.80	0.87	0.09	2.04	0.68	1.07	0.43	0.92	0.93	0.56
Control Delay	74.4	54.2	32.2	68.1	54.1	501.1	52.7	78.6	18.8	71.4	41.0	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.4	54.2	32.2	68.1	54.1	501.1	52.7	78.6	18.8	71.4	41.0	8.4
LOS	E	D	C	E	D	F	D	E	B	E	D	A
Approach Delay		60.7			310.9			68.9			40.9	
Approach LOS		E			F			E			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 110 (92%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 2.04	
Intersection Signal Delay: 90.8	Intersection LOS: F
Intersection Capacity Utilization 102.4%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 3: MO 291 & Oldham Parkway





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	497	11	237	456	11	597	250	2031	313	531	2064	506
v/c Ratio	0.93	0.08	0.80	0.87	0.09	2.04	0.68	1.07	0.43	0.92	0.93	0.56
Control Delay	74.4	54.2	32.2	68.1	54.1	501.1	52.7	78.6	18.8	71.4	41.0	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.4	54.2	32.2	68.1	54.1	501.1	52.7	78.6	18.8	71.4	41.0	8.4
Queue Length 50th (ft)	197	8	28	179	8	~581	104	~616	88	210	553	57
Queue Length 95th (ft)	#298	28	#155	#262	28	#807	m139	#718	m148	#310	#671	157
Internal Link Dist (ft)		107			302			1449			332	
Turn Bay Length (ft)												
Base Capacity (vph)	537	131	297	534	127	292	394	1906	732	583	2220	908
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.93	0.08	0.80	0.85	0.09	2.04	0.63	1.07	0.43	0.91	0.93	0.56

Intersection Summary

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

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

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	467	10	223	429	10	561	235	1909	294	499	1940	476
Future Volume (veh/h)	467	10	223	429	10	561	235	1909	294	499	1940	476
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	497	11	0	456	11	0	250	2031	0	531	2064	0
Adj No. of Lanes	2	1	1	2	1	1	2	3	1	2	3	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	539	122	104	511	109	92	313	1947	606	581	2318	722
Arrive On Green	0.16	0.07	0.00	0.15	0.06	0.00	0.03	0.13	0.00	0.17	0.46	0.00
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	497	11	0	456	11	0	250	2031	0	531	2064	0
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1721	1863	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	17.1	0.7	0.0	15.6	0.7	0.0	8.7	46.0	0.0	18.2	44.6	0.0
Cycle Q Clear(g_c), s	17.1	0.7	0.0	15.6	0.7	0.0	8.7	46.0	0.0	18.2	44.6	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	539	122	104	511	109	92	313	1947	606	581	2318	722
V/C Ratio(X)	0.92	0.09	0.00	0.89	0.10	0.00	0.80	1.04	0.00	0.91	0.89	0.00
Avail Cap(c_a), veh/h	539	124	106	536	127	108	396	1947	606	585	2318	722
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	0.58	0.58	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	49.9	52.7	0.0	50.1	53.5	0.0	57.1	52.4	0.0	49.0	29.9	0.0
Incr Delay (d2), s/veh	21.4	0.3	0.0	16.6	0.4	0.0	5.3	28.2	0.0	19.0	5.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.8	0.4	0.0	8.6	0.4	0.0	4.4	26.7	0.0	10.2	22.0	0.0
LnGrp Delay(d),s/veh	71.3	53.0	0.0	66.7	53.9	0.0	62.4	80.6	0.0	68.0	35.6	0.0
LnGrp LOS	E	D		E	D		E	F		E	D	
Approach Vol, veh/h		508			467			2281			2595	
Approach Delay, s/veh		70.9			66.4			78.6			42.2	
Approach LOS		E			E			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.8	53.2	25.1	14.9	18.1	61.9	26.0	14.0
Change Period (Y+Rc), s	6.6	7.2	* 7.3	7.0	7.2	* 7.2	* 7.2	* 7
Max Green Setting (Gmax), s	20.4	44.8	* 19	8.0	13.8	* 51	* 19	* 8.2
Max Q Clear Time (g_c+I1), s	20.2	48.0	17.6	2.7	10.7	46.6	19.1	2.7
Green Ext Time (p_c), s	0.1	0.0	0.2	0.0	0.2	4.2	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	60.8
HCM 2010 LOS	E

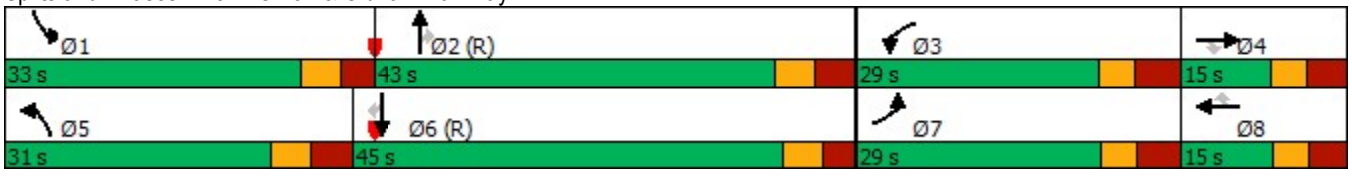
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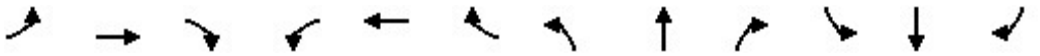
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	568	10	271	494	10	719	281	1726	432	699	1517	563
Future Volume (vph)	568	10	271	494	10	719	281	1726	432	699	1517	563
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	29.0	15.0	15.0	29.0	15.0	15.0	31.0	43.0	43.0	33.0	45.0	45.0
Total Split (s)	29.0	15.0	15.0	29.0	15.0	15.0	31.0	43.0	43.0	33.0	45.0	45.0
Total Split (%)	24.2%	12.5%	12.5%	24.2%	12.5%	12.5%	25.8%	35.8%	35.8%	27.5%	37.5%	37.5%
Yellow Time (s)	3.2	3.2	3.2	3.2	3.2	3.2	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	4.0	3.8	3.8	4.1	3.6	3.6	3.6	3.6	3.6	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.2	7.0	7.0	7.3	6.8	6.8	7.2	7.2	7.2	6.6	6.6	6.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	21.8	8.6	8.6	21.1	8.2	8.2	15.7	35.8	35.8	26.4	46.5	46.5
Actuated g/C Ratio	0.18	0.07	0.07	0.18	0.07	0.07	0.13	0.30	0.30	0.22	0.39	0.39
v/c Ratio	0.97	0.08	0.76	0.87	0.09	1.88	0.67	1.21	0.66	0.99	0.82	0.66
Control Delay	78.3	54.2	19.7	64.5	54.1	421.3	47.3	146.7	32.5	76.3	37.7	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	78.3	54.2	19.7	64.5	54.1	421.3	47.3	146.7	32.5	76.3	37.7	9.6
LOS	E	D	B	E	D	F	D	F	C	E	D	A
Approach Delay		59.3			274.0			115.0			41.7	
Approach LOS		E			F			F			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 110 (92%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.88	
Intersection Signal Delay: 107.3	Intersection LOS: F
Intersection Capacity Utilization 111.6%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 3: MO 291 & Oldham Parkway





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	604	11	288	526	11	765	299	1836	460	744	1614	599
v/c Ratio	0.97	0.08	0.76	0.87	0.09	1.88	0.67	1.21	0.66	0.99	0.82	0.66
Control Delay	78.3	54.2	19.7	64.5	54.1	421.3	47.3	146.7	32.5	76.3	37.7	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	78.3	54.2	19.7	64.5	54.1	421.3	47.3	146.7	32.5	76.3	37.7	9.6
Queue Length 50th (ft)	241	8	0	205	8	~664	124	~617	183	297	406	54
Queue Length 95th (ft)	#358	28	#115	#290	28	#907	m145	m#725	m248	#426	498	191
Internal Link Dist (ft)		107			302			1449			332	
Turn Bay Length (ft)												
Base Capacity (vph)	623	134	381	620	127	408	680	1517	697	755	1970	914
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.97	0.08	0.76	0.85	0.09	1.88	0.44	1.21	0.66	0.99	0.82	0.66

Intersection Summary

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

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

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	568	10	271	494	10	719	281	1726	432	699	1517	563
Future Volume (veh/h)	568	10	271	494	10	719	281	1726	432	699	1517	563
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	604	11	0	526	11	0	299	1836	0	744	1614	0
Adj No. of Lanes	2	1	1	2	1	1	2	3	1	2	3	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	625	129	110	584	109	92	371	1559	486	757	2104	655
Arrive On Green	0.18	0.07	0.00	0.17	0.06	0.00	0.11	0.31	0.00	0.22	0.41	0.00
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	604	11	0	526	11	0	299	1836	0	744	1614	0
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1721	1863	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	20.9	0.7	0.0	18.0	0.7	0.0	10.2	36.8	0.0	25.8	32.7	0.0
Cycle Q Clear(g_c), s	20.9	0.7	0.0	18.0	0.7	0.0	10.2	36.8	0.0	25.8	32.7	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	625	129	110	584	109	92	371	1559	486	757	2104	655
V/C Ratio(X)	0.97	0.09	0.00	0.90	0.10	0.00	0.81	1.18	0.00	0.98	0.77	0.00
Avail Cap(c_a), veh/h	625	129	110	622	127	108	683	1559	486	757	2104	655
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	0.36	0.36	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	48.7	52.3	0.0	48.8	53.5	0.0	52.3	41.6	0.0	46.6	30.2	0.0
Incr Delay (d2), s/veh	27.6	0.3	0.0	15.6	0.4	0.0	1.5	82.4	0.0	28.3	2.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.3	0.4	0.0	9.8	0.4	0.0	4.9	29.1	0.0	15.3	15.8	0.0
LnGrp Delay(d),s/veh	76.4	52.6	0.0	64.4	53.9	0.0	53.8	124.0	0.0	74.9	33.0	0.0
LnGrp LOS	E	D		E	D		D	F		E	C	
Approach Vol, veh/h		615			537			2135			2358	
Approach Delay, s/veh		75.9			64.2			114.2			46.2	
Approach LOS		E			E			F			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	33.0	44.0	27.7	15.3	20.1	56.9	29.0	14.0
Change Period (Y+Rc), s	6.6	7.2	* 7.3	7.0	7.2	* 7.2	* 7.2	* 7
Max Green Setting (Gmax), s	26.4	35.8	* 22	8.0	23.8	* 38	* 22	* 8.2
Max Q Clear Time (g_c+I1), s	27.8	38.8	20.0	2.7	12.2	34.7	22.9	2.7
Green Ext Time (p_c), s	0.0	0.0	0.4	0.0	0.8	2.9	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	76.9
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

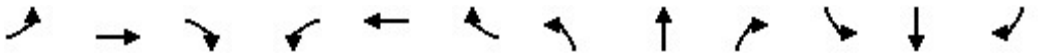
Intersection 2
M-291 & Persels Road/Bailey Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	308	100	130	169	94	53	148	1441	233	35	990	342
Future Volume (vph)	308	100	130	169	94	53	148	1441	233	35	990	342
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	25.0	30.0	30.0	20.0	25.0	25.0	25.0	55.0	55.0	15.0	45.0	45.0
Total Split (s)	25.0	30.0	30.0	20.0	25.0	25.0	25.0	55.0	55.0	15.0	45.0	45.0
Total Split (%)	20.8%	25.0%	25.0%	16.7%	20.8%	20.8%	20.8%	45.8%	45.8%	12.5%	37.5%	37.5%
Yellow Time (s)	3.4	3.4	3.4	3.5	3.5	3.5	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	2.5	2.9	2.9	2.4	2.4	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.1	7.1	7.1	6.1	6.5	6.5	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	15.8	16.3	16.3	11.1	11.6	11.6	15.5	62.9	62.9	8.3	50.8	50.8
Actuated g/C Ratio	0.13	0.14	0.14	0.09	0.10	0.10	0.13	0.52	0.52	0.07	0.42	0.42
v/c Ratio	0.71	0.41	0.34	0.55	0.54	0.16	0.67	0.56	0.26	0.30	0.69	0.42
Control Delay	58.8	51.4	3.0	58.7	62.3	1.0	63.8	22.6	3.4	75.0	17.5	1.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.8	51.4	3.0	58.7	62.3	1.0	63.8	22.6	3.4	75.0	17.5	1.7
LOS	E	D	A	E	E	A	E	C	A	E	B	A
Approach Delay		44.0			50.1			23.5			15.0	
Approach LOS		D			D			C			B	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green, Master Intersection	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.71	
Intersection Signal Delay: 25.4	Intersection LOS: C
Intersection Capacity Utilization 66.9%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 6: MO 291 & SW Persels Road/SE Bailey Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	321	104	135	176	98	55	154	1501	243	36	1031	356
v/c Ratio	0.71	0.41	0.34	0.55	0.54	0.16	0.67	0.56	0.26	0.30	0.69	0.42
Control Delay	58.8	51.4	3.0	58.7	62.3	1.0	63.8	22.6	3.4	75.0	17.5	1.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.8	51.4	3.0	58.7	62.3	1.0	63.8	22.6	3.4	75.0	17.5	1.7
Queue Length 50th (ft)	123	75	0	68	74	0	115	305	0	29	91	1
Queue Length 95th (ft)	170	125	7	104	126	0	179	410	49	m65	#522	14
Internal Link Dist (ft)		457			705			1579			1449	
Turn Bay Length (ft)												
Base Capacity (vph)	514	357	469	369	277	411	284	2664	945	137	1498	855
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.29	0.29	0.48	0.35	0.13	0.54	0.56	0.26	0.26	0.69	0.42

Intersection Summary

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

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	308	100	130	169	94	53	148	1441	233	35	990	342
Future Volume (veh/h)	308	100	130	169	94	53	148	1441	233	35	990	342
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	321	104	135	176	98	55	154	1501	0	36	1031	0
Adj No. of Lanes	2	1	1	2	1	1	1	3	1	1	2	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	386	213	181	236	133	113	183	2816	877	72	1737	777
Arrive On Green	0.11	0.11	0.11	0.07	0.07	0.07	0.10	0.55	0.00	0.08	0.98	0.00
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	1774	5085	1583	1774	3539	1583
Grp Volume(v), veh/h	321	104	135	176	98	55	154	1501	0	36	1031	0
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1721	1863	1583	1774	1695	1583	1774	1770	1583
Q Serve(g_s), s	11.0	6.3	9.9	6.0	6.2	4.0	10.2	22.4	0.0	2.3	1.5	0.0
Cycle Q Clear(g_c), s	11.0	6.3	9.9	6.0	6.2	4.0	10.2	22.4	0.0	2.3	1.5	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	386	213	181	236	133	113	183	2816	877	72	1737	777
V/C Ratio(X)	0.83	0.49	0.75	0.75	0.74	0.49	0.84	0.53	0.00	0.50	0.59	0.00
Avail Cap(c_a), veh/h	516	357	303	370	278	236	279	2816	877	133	1737	777
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.89	0.89	0.00
Uniform Delay (d), s/veh	52.1	49.8	51.4	54.9	54.6	53.6	52.9	16.9	0.0	53.9	0.6	0.0
Incr Delay (d2), s/veh	8.4	1.7	6.0	4.7	7.6	3.2	13.2	0.7	0.0	4.6	1.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	3.3	4.6	3.0	3.5	1.8	5.7	10.6	0.0	1.2	0.6	0.0
LnGrp Delay(d),s/veh	60.5	51.6	57.4	59.5	62.3	56.8	66.1	17.7	0.0	58.6	1.9	0.0
LnGrp LOS	E	D	E	E	E	E	E	B		E	A	
Approach Vol, veh/h		560			329			1655			1067	
Approach Delay, s/veh		58.1			59.9			22.2			3.8	
Approach LOS		E			E			C			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.9	73.0	15.3	20.8	18.5	65.4	20.5	15.7
Change Period (Y+Rc), s	6.0	6.5	7.1	* 7.1	6.1	* 6.5	7.0	7.1
Max Green Setting (Gmax), s	9.0	48.5	12.9	* 23	18.9	* 39	18.0	17.9
Max Q Clear Time (g_c+I1), s	4.3	24.4	8.0	11.9	12.2	3.5	13.0	8.2
Green Ext Time (p_c), s	0.0	11.3	0.2	0.7	0.2	8.0	0.5	0.4

Intersection Summary	
HCM 2010 Ctrl Delay	25.8
HCM 2010 LOS	C

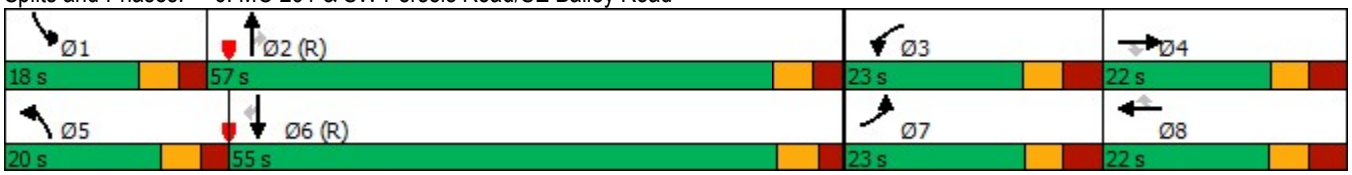
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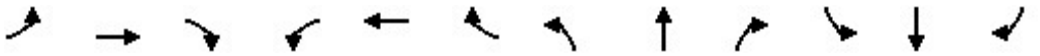
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	352	122	143	381	187	85	155	1331	275	39	1539	278
Future Volume (vph)	352	122	143	381	187	85	155	1331	275	39	1539	278
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	23.0	22.0	22.0	23.0	22.0	22.0	20.0	57.0	57.0	18.0	55.0	55.0
Total Split (s)	23.0	22.0	22.0	23.0	22.0	22.0	20.0	57.0	57.0	18.0	55.0	55.0
Total Split (%)	19.2%	18.3%	18.3%	19.2%	18.3%	18.3%	16.7%	47.5%	47.5%	15.0%	45.8%	45.8%
Yellow Time (s)	3.4	3.4	3.4	3.5	3.5	3.5	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	2.5	2.9	2.9	2.4	2.4	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.1	7.1	7.1	6.1	6.5	6.5	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	15.5	14.3	14.3	15.7	14.5	14.5	13.3	57.5	57.5	8.5	50.5	50.5
Actuated g/C Ratio	0.13	0.12	0.12	0.13	0.12	0.12	0.11	0.48	0.48	0.07	0.42	0.42
v/c Ratio	0.82	0.57	0.46	0.88	0.86	0.27	0.82	0.56	0.31	0.32	1.07	0.37
Control Delay	66.5	60.5	12.0	72.0	84.7	2.4	82.5	24.5	3.3	84.9	60.7	2.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.5	60.5	12.0	72.0	84.7	2.4	82.5	24.5	3.3	84.9	60.7	2.0
LOS	E	E	B	E	F	A	F	C	A	F	E	A
Approach Delay		52.7			66.6			26.3			52.4	
Approach LOS		D			E			C			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green, Master Intersection	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.07	
Intersection Signal Delay: 44.9	Intersection LOS: D
Intersection Capacity Utilization 92.8%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 6: MO 291 & SW Persels Road/SE Bailey Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	363	126	147	393	193	88	160	1372	284	40	1587	287
v/c Ratio	0.82	0.57	0.46	0.88	0.86	0.27	0.82	0.56	0.31	0.32	1.07	0.37
Control Delay	66.5	60.5	12.0	72.0	84.7	2.4	82.5	24.5	3.3	84.9	60.7	2.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.5	60.5	12.0	72.0	84.7	2.4	82.5	24.5	3.3	84.9	60.7	2.0
Queue Length 50th (ft)	142	93	0	155	148	0	122	284	0	33	~735	1
Queue Length 95th (ft)	#210	158	57	#239	#275	3	#233	349	50	m55	#876	3
Internal Link Dist (ft)		457			705			1579			1449	
Turn Bay Length (ft)												
Base Capacity (vph)	457	232	330	454	231	328	205	2437	906	177	1489	776
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.54	0.45	0.87	0.84	0.27	0.78	0.56	0.31	0.23	1.07	0.37

Intersection Summary

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

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

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	352	122	143	381	187	85	155	1331	275	39	1539	278
Future Volume (veh/h)	352	122	143	381	187	85	155	1331	275	39	1539	278
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	363	126	147	393	193	88	160	1372	0	40	1587	0
Adj No. of Lanes	2	1	1	2	1	1	1	3	1	1	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	420	207	176	446	222	189	187	2512	782	76	1525	682
Arrive On Green	0.12	0.11	0.11	0.13	0.12	0.12	0.11	0.49	0.00	0.09	0.86	0.00
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	1774	5085	1583	1774	3539	1583
Grp Volume(v), veh/h	363	126	147	393	193	88	160	1372	0	40	1587	0
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1721	1863	1583	1774	1695	1583	1774	1770	1583
Q Serve(g_s), s	12.4	7.7	10.9	13.5	12.2	6.2	10.6	22.4	0.0	2.6	51.7	0.0
Cycle Q Clear(g_c), s	12.4	7.7	10.9	13.5	12.2	6.2	10.6	22.4	0.0	2.6	51.7	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	420	207	176	446	222	189	187	2512	782	76	1525	682
V/C Ratio(X)	0.86	0.61	0.84	0.88	0.87	0.47	0.86	0.55	0.00	0.52	1.04	0.00
Avail Cap(c_a), veh/h	459	233	198	456	231	197	205	2512	782	177	1525	682
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.78	0.78	0.00
Uniform Delay (d), s/veh	51.7	50.9	52.3	51.3	51.9	49.3	52.8	21.0	0.0	53.7	8.3	0.0
Incr Delay (d2), s/veh	14.7	3.7	23.7	17.7	27.2	1.8	26.7	0.9	0.0	4.3	31.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	4.2	5.9	7.5	8.0	2.8	6.6	10.6	0.0	1.4	29.2	0.0
LnGrp Delay(d),s/veh	66.4	54.6	75.9	69.0	79.1	51.1	79.5	21.9	0.0	58.0	40.1	0.0
LnGrp LOS	E	D	E	E	E	D	E	C		E	F	
Approach Vol, veh/h		636			674			1532			1627	
Approach Delay, s/veh		66.3			69.6			27.9			40.5	
Approach LOS		E			E			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.2	65.8	22.6	20.4	18.7	58.2	21.7	21.4
Change Period (Y+Rc), s	6.0	6.5	7.1	* 7.1	6.1	* 6.5	7.0	7.1
Max Green Setting (Gmax), s	12.0	50.5	15.9	* 15	13.9	* 49	16.0	14.9
Max Q Clear Time (g_c+I1), s	4.6	24.4	15.5	12.9	12.6	53.7	14.4	14.2
Green Ext Time (p_c), s	0.0	10.4	0.1	0.2	0.0	0.0	0.2	0.1

Intersection Summary	
HCM 2010 Ctrl Delay	44.2
HCM 2010 LOS	D

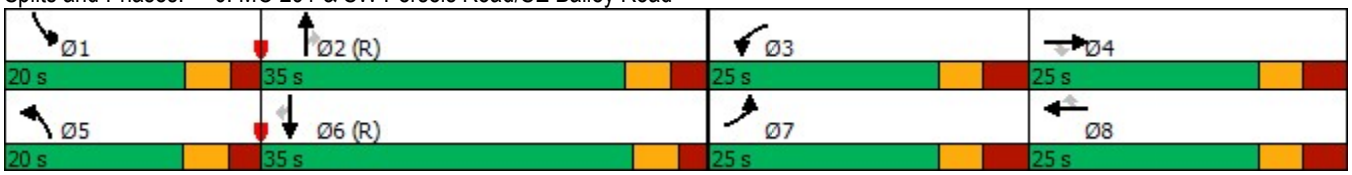
Notes

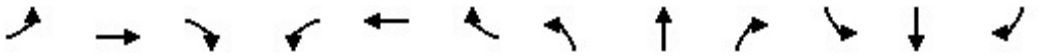
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	279	84	146	247	102	58	144	1151	201	45	1012	248
Future Volume (vph)	279	84	146	247	102	58	144	1151	201	45	1012	248
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	25.0	25.0	25.0	25.0	25.0	25.0	20.0	35.0	35.0	20.0	35.0	35.0
Total Split (s)	25.0	25.0	25.0	25.0	25.0	25.0	20.0	35.0	35.0	20.0	35.0	35.0
Total Split (%)	23.8%	23.8%	23.8%	23.8%	23.8%	23.8%	19.0%	33.3%	33.3%	19.0%	33.3%	33.3%
Yellow Time (s)	3.4	3.4	3.4	3.5	3.5	3.5	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	2.5	2.9	2.9	2.4	2.4	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.1	7.1	7.1	6.1	6.5	6.5	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	14.2	12.3	12.3	13.2	11.3	11.3	13.7	46.9	46.9	8.5	39.6	39.6
Actuated g/C Ratio	0.14	0.12	0.12	0.13	0.11	0.11	0.13	0.45	0.45	0.08	0.38	0.38
v/c Ratio	0.63	0.40	0.45	0.60	0.54	0.19	0.66	0.53	0.26	0.33	0.80	0.35
Control Delay	49.0	47.4	9.0	49.2	53.4	1.3	57.1	24.4	4.3	51.1	36.7	6.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.0	47.4	9.0	49.2	53.4	1.3	57.1	24.4	4.3	51.1	36.7	6.2
LOS	D	D	A	D	D	A	E	C	A	D	D	A
Approach Delay		37.3			43.4			24.9			31.4	
Approach LOS		D			D			C			C	

Intersection Summary	
Cycle Length: 105	
Actuated Cycle Length: 105	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green, Master Intersection	
Natural Cycle: 105	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay: 30.9	Intersection LOS: C
Intersection Capacity Utilization 66.5%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 6: MO 291 & SW Persels Road/SE Bailey Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	294	88	154	260	107	61	152	1212	212	47	1065	261
v/c Ratio	0.63	0.40	0.45	0.60	0.54	0.19	0.66	0.53	0.26	0.33	0.80	0.35
Control Delay	49.0	47.4	9.0	49.2	53.4	1.3	57.1	24.4	4.3	51.1	36.7	6.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.0	47.4	9.0	49.2	53.4	1.3	57.1	24.4	4.3	51.1	36.7	6.2
Queue Length 50th (ft)	97	56	0	86	69	0	98	220	0	30	334	8
Queue Length 95th (ft)	136	100	44	123	120	0	163	318	51	66	#555	72
Internal Link Dist (ft)		457			705			1579			1449	
Turn Bay Length (ft)												
Base Capacity (vph)	588	319	415	585	317	414	252	2273	824	236	1335	748
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.28	0.37	0.44	0.34	0.15	0.60	0.53	0.26	0.20	0.80	0.35

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	279	84	146	247	102	58	144	1151	201	45	1012	248
Future Volume (veh/h)	279	84	146	247	102	58	144	1151	201	45	1012	248
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	294	88	154	260	107	61	152	1212	0	47	1065	0
Adj No. of Lanes	2	1	1	2	1	1	1	3	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	372	221	187	337	204	173	182	2440	760	88	1507	674
Arrive On Green	0.11	0.12	0.12	0.10	0.11	0.11	0.10	0.48	0.00	0.05	0.43	0.00
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	1774	5085	1583	1774	3539	1583
Grp Volume(v), veh/h	294	88	154	260	107	61	152	1212	0	47	1065	0
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1721	1863	1583	1774	1695	1583	1774	1770	1583
Q Serve(g_s), s	8.7	4.6	10.0	7.7	5.7	3.7	8.8	17.1	0.0	2.7	26.0	0.0
Cycle Q Clear(g_c), s	8.7	4.6	10.0	7.7	5.7	3.7	8.8	17.1	0.0	2.7	26.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	372	221	187	337	204	173	182	2440	760	88	1507	674
V/C Ratio(X)	0.79	0.40	0.82	0.77	0.53	0.35	0.83	0.50	0.00	0.53	0.71	0.00
Avail Cap(c_a), veh/h	590	319	271	587	318	270	235	2440	760	237	1507	674
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.84	0.84	0.00
Uniform Delay (d), s/veh	45.7	42.8	45.2	46.2	44.2	43.3	46.2	18.7	0.0	48.7	24.8	0.0
Incr Delay (d2), s/veh	3.8	1.2	12.3	3.8	2.1	1.2	17.8	0.7	0.0	4.1	2.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	2.4	5.0	3.9	3.1	1.7	5.3	8.1	0.0	1.4	13.1	0.0
LnGrp Delay(d),s/veh	49.5	44.0	57.5	50.0	46.3	44.5	64.0	19.4	0.0	52.8	27.2	0.0
LnGrp LOS	D	D	E	D	D	D	E	B		D	C	
Approach Vol, veh/h		536			428			1364			1112	
Approach Delay, s/veh		50.9			48.3			24.4			28.2	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.2	56.9	17.4	19.5	16.9	51.2	18.3	18.6
Change Period (Y+Rc), s	6.0	6.5	7.1	* 7.1	6.1	* 6.5	7.0	7.1
Max Green Setting (Gmax), s	14.0	28.5	17.9	* 18	13.9	* 29	18.0	17.9
Max Q Clear Time (g_c+I1), s	4.7	19.1	9.7	12.0	10.8	28.0	10.7	7.7
Green Ext Time (p_c), s	0.0	5.1	0.5	0.5	0.1	0.7	0.6	0.5

Intersection Summary	
HCM 2010 Ctrl Delay	32.7
HCM 2010 LOS	C

Notes

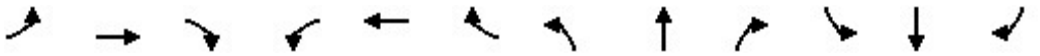
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	317	100	130	169	94	71	148	1468	233	49	1011	349
Future Volume (vph)	317	100	130	169	94	71	148	1468	233	49	1011	349
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	21.0	25.0	25.0	26.0	30.0	30.0	20.0	54.0	54.0	15.0	49.0	49.0
Total Split (s)	21.0	25.0	25.0	26.0	30.0	30.0	20.0	54.0	54.0	15.0	49.0	49.0
Total Split (%)	17.5%	20.8%	20.8%	21.7%	25.0%	25.0%	16.7%	45.0%	45.0%	12.5%	40.8%	40.8%
Yellow Time (s)	3.4	3.4	3.4	3.5	3.5	3.5	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	2.5	2.9	2.9	2.4	2.4	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.1	7.1	7.1	6.1	6.5	6.5	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	14.2	14.5	14.5	11.5	11.8	11.8	15.8	60.9	60.9	9.1	52.0	52.0
Actuated g/C Ratio	0.12	0.12	0.12	0.10	0.10	0.10	0.13	0.51	0.51	0.08	0.43	0.43
v/c Ratio	0.81	0.46	0.42	0.54	0.54	0.25	0.66	0.59	0.26	0.38	0.69	0.42
Control Delay	68.2	55.8	9.8	57.5	61.3	2.1	63.0	23.7	3.6	69.9	15.9	1.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.2	55.8	9.8	57.5	61.3	2.1	63.0	23.7	3.6	69.9	15.9	1.4
LOS	E	E	A	E	E	A	E	C	A	E	B	A
Approach Delay		52.1			46.8			24.3			14.2	
Approach LOS		D			D			C			B	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green, Master Intersection	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 26.3	Intersection LOS: C
Intersection Capacity Utilization 67.8%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 6: MO 291 & SW Persels Road/SE Bailey Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	330	104	135	176	98	74	154	1529	243	51	1053	364
v/c Ratio	0.81	0.46	0.42	0.54	0.54	0.25	0.66	0.59	0.26	0.38	0.69	0.42
Control Delay	68.2	55.8	9.8	57.5	61.3	2.1	63.0	23.7	3.6	69.9	15.9	1.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.2	55.8	9.8	57.5	61.3	2.1	63.0	23.7	3.6	69.9	15.9	1.4
Queue Length 50th (ft)	129	76	0	68	74	0	115	309	2	42	112	1
Queue Length 95th (ft)	#203	132	47	102	124	0	181	412	51	m80	147	4
Internal Link Dist (ft)		457			705			1579			1449	
Turn Bay Length (ft)												
Base Capacity (vph)	412	279	364	540	355	423	242	2579	919	145	1533	877
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.80	0.37	0.37	0.33	0.28	0.17	0.64	0.59	0.26	0.35	0.69	0.42

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	317	100	130	169	94	71	148	1468	233	49	1011	349
Future Volume (veh/h)	317	100	130	169	94	71	148	1468	233	49	1011	349
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	330	104	135	176	98	74	154	1529	0	51	1053	0
Adj No. of Lanes	2	1	1	2	1	1	1	3	1	1	2	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	384	212	180	240	136	115	181	2777	865	85	1738	778
Arrive On Green	0.11	0.11	0.11	0.07	0.07	0.07	0.10	0.55	0.00	0.10	0.98	0.00
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	1774	5085	1583	1774	3539	1583
Grp Volume(v), veh/h	330	104	135	176	98	74	154	1529	0	51	1053	0
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1721	1863	1583	1774	1695	1583	1774	1770	1583
Q Serve(g_s), s	11.3	6.3	9.9	6.0	6.2	5.5	10.2	23.4	0.0	3.3	1.6	0.0
Cycle Q Clear(g_c), s	11.3	6.3	9.9	6.0	6.2	5.5	10.2	23.4	0.0	3.3	1.6	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	384	212	180	240	136	115	181	2777	865	85	1738	778
V/C Ratio(X)	0.86	0.49	0.75	0.73	0.72	0.64	0.85	0.55	0.00	0.60	0.61	0.00
Avail Cap(c_a), veh/h	402	279	237	542	355	302	205	2777	865	133	1738	778
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.84	0.84	0.00
Uniform Delay (d), s/veh	52.4	49.9	51.5	54.7	54.4	54.1	53.0	17.7	0.0	53.2	0.6	0.0
Incr Delay (d2), s/veh	16.3	1.8	8.9	4.3	7.1	5.8	25.2	0.8	0.0	5.7	1.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.2	3.3	4.8	3.0	3.5	2.6	6.3	11.1	0.0	1.7	0.6	0.0
LnGrp Delay(d),s/veh	68.7	51.7	60.4	59.0	61.5	59.9	78.2	18.5	0.0	58.9	1.9	0.0
LnGrp LOS	E	D	E	E	E	E	E	B		E	A	
Approach Vol, veh/h		569			348			1683			1104	
Approach Delay, s/veh		63.6			59.9			23.9			4.5	
Approach LOS		E			E			C			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.7	72.0	15.5	20.8	18.3	65.4	20.4	15.8
Change Period (Y+Rc), s	6.0	6.5	7.1	* 7.1	6.1	* 6.5	7.0	7.1
Max Green Setting (Gmax), s	9.0	47.5	18.9	* 18	13.9	* 43	14.0	22.9
Max Q Clear Time (g_c+I1), s	5.3	25.4	8.0	11.9	12.2	3.6	13.3	8.2
Green Ext Time (p_c), s	0.0	11.0	0.4	0.5	0.1	8.4	0.1	0.6

Intersection Summary	
HCM 2010 Ctrl Delay	27.6
HCM 2010 LOS	C

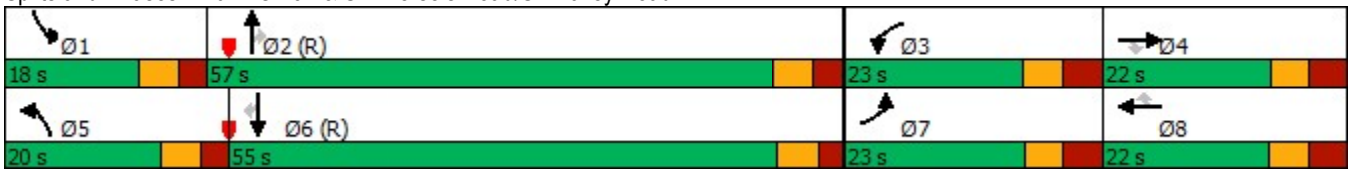
Notes

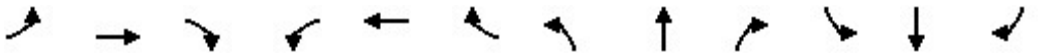
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	370	122	143	381	187	123	155	1387	275	79	1599	298
Future Volume (vph)	370	122	143	381	187	123	155	1387	275	79	1599	298
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	23.0	22.0	22.0	23.0	22.0	22.0	20.0	57.0	57.0	18.0	55.0	55.0
Total Split (s)	23.0	22.0	22.0	23.0	22.0	22.0	20.0	57.0	57.0	18.0	55.0	55.0
Total Split (%)	19.2%	18.3%	18.3%	19.2%	18.3%	18.3%	16.7%	47.5%	47.5%	15.0%	45.8%	45.8%
Yellow Time (s)	3.4	3.4	3.4	3.5	3.5	3.5	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	2.5	2.9	2.9	2.4	2.4	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.1	7.1	7.1	6.1	6.5	6.5	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	15.7	14.4	14.4	15.7	14.5	14.5	13.3	55.7	55.7	10.2	50.4	50.4
Actuated g/C Ratio	0.13	0.12	0.12	0.13	0.12	0.12	0.11	0.46	0.46	0.08	0.42	0.42
v/c Ratio	0.85	0.57	0.46	0.88	0.86	0.39	0.82	0.61	0.32	0.54	1.11	0.39
Control Delay	69.4	60.1	11.9	72.0	84.7	8.3	82.5	26.5	3.5	75.7	78.1	3.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.4	60.1	11.9	72.0	84.7	8.3	82.5	26.5	3.5	75.7	78.1	3.2
LOS	E	E	B	E	F	A	F	C	A	E	E	A
Approach Delay		54.7			64.1			27.8			66.7	
Approach LOS		D			E			C			E	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green, Master Intersection	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.11	
Intersection Signal Delay: 51.1	Intersection LOS: D
Intersection Capacity Utilization 95.0%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 6: MO 291 & SW Persels Road/SE Bailey Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	381	126	147	393	193	127	160	1430	284	81	1648	307
v/c Ratio	0.85	0.57	0.46	0.88	0.86	0.39	0.82	0.61	0.32	0.54	1.11	0.39
Control Delay	69.4	60.1	11.9	72.0	84.7	8.3	82.5	26.5	3.5	75.7	78.1	3.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.4	60.1	11.9	72.0	84.7	8.3	82.5	26.5	3.5	75.7	78.1	3.2
Queue Length 50th (ft)	150	93	0	155	148	0	122	315	0	67	~792	11
Queue Length 95th (ft)	#226	158	57	#239	#275	39	#233	375	51	m98	#911	24
Internal Link Dist (ft)		457			705			1579			1449	
Turn Bay Length (ft)												
Base Capacity (vph)	457	232	330	454	231	328	205	2359	886	177	1485	778
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.83	0.54	0.45	0.87	0.84	0.39	0.78	0.61	0.32	0.46	1.11	0.39

Intersection Summary

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

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

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	370	122	143	381	187	123	155	1387	275	79	1599	298
Future Volume (veh/h)	370	122	143	381	187	123	155	1387	275	79	1599	298
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	381	126	147	393	193	127	160	1430	0	81	1648	0
Adj No. of Lanes	2	1	1	2	1	1	1	3	1	1	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	436	215	183	446	222	189	187	2415	752	102	1509	675
Arrive On Green	0.13	0.12	0.12	0.13	0.12	0.12	0.11	0.47	0.00	0.11	0.85	0.00
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	1774	5085	1583	1774	3539	1583
Grp Volume(v), veh/h	381	126	147	393	193	127	160	1430	0	81	1648	0
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1721	1863	1583	1774	1695	1583	1774	1770	1583
Q Serve(g_s), s	13.0	7.7	10.9	13.5	12.2	9.2	10.6	24.7	0.0	5.3	51.1	0.0
Cycle Q Clear(g_c), s	13.0	7.7	10.9	13.5	12.2	9.2	10.6	24.7	0.0	5.3	51.1	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	436	215	183	446	222	189	187	2415	752	102	1509	675
V/C Ratio(X)	0.87	0.58	0.80	0.88	0.87	0.67	0.86	0.59	0.00	0.79	1.09	0.00
Avail Cap(c_a), veh/h	459	233	198	456	231	197	205	2415	752	177	1509	675
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.62	0.62	0.00
Uniform Delay (d), s/veh	51.5	50.3	51.7	51.3	51.9	50.6	52.8	23.0	0.0	52.4	8.9	0.0
Incr Delay (d2), s/veh	16.3	3.2	19.5	17.7	27.1	8.2	26.7	1.1	0.0	8.5	49.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.2	4.1	5.7	7.5	7.9	4.5	6.6	11.8	0.0	2.8	32.9	0.0
LnGrp Delay(d),s/veh	67.8	53.6	71.3	69.0	79.0	58.8	79.5	24.1	0.0	60.9	57.9	0.0
LnGrp LOS	E	D	E	E	E	E	E	C		E	F	
Approach Vol, veh/h		654			713			1590			1729	
Approach Delay, s/veh		65.8			69.9			29.7			58.1	
Approach LOS		E			E			C			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.9	63.5	22.6	21.0	18.7	57.6	22.2	21.4
Change Period (Y+Rc), s	6.0	6.5	7.1	* 7.1	6.1	* 6.5	7.0	7.1
Max Green Setting (Gmax), s	12.0	50.5	15.9	* 15	13.9	* 49	16.0	14.9
Max Q Clear Time (g_c+I1), s	7.3	26.7	15.5	12.9	12.6	53.1	15.0	14.2
Green Ext Time (p_c), s	0.1	10.6	0.1	0.2	0.0	0.0	0.2	0.1

Intersection Summary	
HCM 2010 Ctrl Delay	51.3
HCM 2010 LOS	D

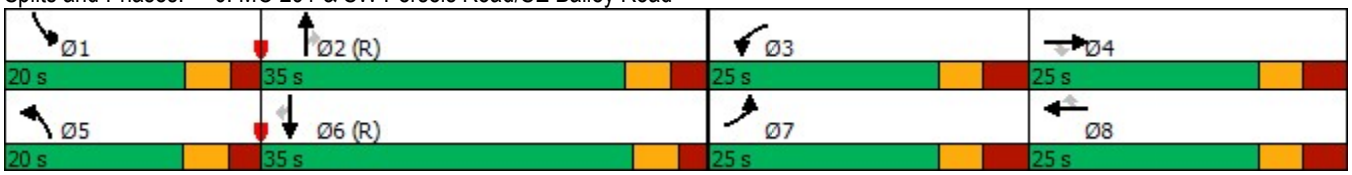
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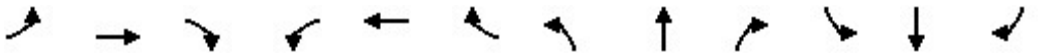
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	309	84	146	247	102	118	144	1241	201	106	1103	278
Future Volume (vph)	309	84	146	247	102	118	144	1241	201	106	1103	278
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	25.0	25.0	25.0	25.0	25.0	25.0	20.0	35.0	35.0	20.0	35.0	35.0
Total Split (s)	25.0	25.0	25.0	25.0	25.0	25.0	20.0	35.0	35.0	20.0	35.0	35.0
Total Split (%)	23.8%	23.8%	23.8%	23.8%	23.8%	23.8%	19.0%	33.3%	33.3%	19.0%	33.3%	33.3%
Yellow Time (s)	3.4	3.4	3.4	3.5	3.5	3.5	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	2.5	2.9	2.9	2.4	2.4	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.1	7.1	7.1	6.1	6.5	6.5	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	14.9	13.0	13.0	13.2	11.3	11.3	13.7	40.3	40.3	11.9	38.9	38.9
Actuated g/C Ratio	0.14	0.12	0.12	0.13	0.11	0.11	0.13	0.38	0.38	0.11	0.37	0.37
v/c Ratio	0.67	0.38	0.44	0.60	0.54	0.38	0.66	0.67	0.29	0.56	0.89	0.39
Control Delay	49.5	46.2	8.6	49.2	53.4	5.5	57.1	30.8	5.1	54.3	42.4	7.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.5	46.2	8.6	49.2	53.4	5.5	57.1	30.8	5.1	54.3	42.4	7.7
LOS	D	D	A	D	D	A	E	C	A	D	D	A
Approach Delay		37.9			39.1			30.0			36.8	
Approach LOS		D			D			C			D	

Intersection Summary	
Cycle Length: 105	
Actuated Cycle Length: 105	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green, Master Intersection	
Natural Cycle: 105	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 34.5	Intersection LOS: C
Intersection Capacity Utilization 69.9%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 6: MO 291 & SW Persels Road/SE Bailey Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	325	88	154	260	107	124	152	1306	212	112	1161	293
v/c Ratio	0.67	0.38	0.44	0.60	0.54	0.38	0.66	0.67	0.29	0.56	0.89	0.39
Control Delay	49.5	46.2	8.6	49.2	53.4	5.5	57.1	30.8	5.1	54.3	42.4	7.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.5	46.2	8.6	49.2	53.4	5.5	57.1	30.8	5.1	54.3	42.4	7.7
Queue Length 50th (ft)	107	55	0	86	69	0	98	263	0	72	385	19
Queue Length 95th (ft)	149	100	44	123	120	20	163	#410	55	124	#628	93
Internal Link Dist (ft)		457			705			1579			1449	
Turn Bay Length (ft)												
Base Capacity (vph)	588	319	415	585	317	414	252	1951	738	244	1311	744
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.28	0.37	0.44	0.34	0.30	0.60	0.67	0.29	0.46	0.89	0.39

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	309	84	146	247	102	118	144	1241	201	106	1103	278
Future Volume (veh/h)	309	84	146	247	102	118	144	1241	201	106	1103	278
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	325	88	154	260	107	124	152	1306	0	112	1161	0
Adj No. of Lanes	2	1	1	2	1	1	1	3	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	403	221	188	337	187	159	182	2289	713	140	1505	673
Arrive On Green	0.12	0.12	0.12	0.10	0.10	0.10	0.10	0.45	0.00	0.08	0.43	0.00
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	1774	5085	1583	1774	3539	1583
Grp Volume(v), veh/h	325	88	154	260	107	124	152	1306	0	112	1161	0
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1721	1863	1583	1774	1695	1583	1774	1770	1583
Q Serve(g_s), s	9.7	4.6	10.0	7.7	5.8	8.0	8.8	20.0	0.0	6.5	29.5	0.0
Cycle Q Clear(g_c), s	9.7	4.6	10.0	7.7	5.8	8.0	8.8	20.0	0.0	6.5	29.5	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	403	221	188	337	187	159	182	2289	713	140	1505	673
V/C Ratio(X)	0.81	0.40	0.82	0.77	0.57	0.78	0.83	0.57	0.00	0.80	0.77	0.00
Avail Cap(c_a), veh/h	590	319	271	587	318	270	235	2289	713	237	1505	673
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.78	0.78	0.00
Uniform Delay (d), s/veh	45.2	42.8	45.2	46.2	45.1	46.1	46.2	21.4	0.0	47.5	25.8	0.0
Incr Delay (d2), s/veh	5.2	1.2	12.1	3.8	2.7	7.9	17.8	1.0	0.0	8.0	3.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	2.4	5.0	3.9	3.1	3.8	5.3	9.5	0.0	3.5	15.0	0.0
LnGrp Delay(d),s/veh	50.4	44.0	57.3	50.0	47.8	54.0	64.0	22.4	0.0	55.5	28.9	0.0
LnGrp LOS	D	D	E	D	D	D	E	C		E	C	
Approach Vol, veh/h		567			491			1458			1273	
Approach Delay, s/veh		51.3			50.5			26.7			31.2	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.3	53.8	17.4	19.6	16.9	51.2	19.3	17.7
Change Period (Y+Rc), s	6.0	6.5	7.1	* 7.1	6.1	* 6.5	7.0	7.1
Max Green Setting (Gmax), s	14.0	28.5	17.9	* 18	13.9	* 29	18.0	17.9
Max Q Clear Time (g_c+I1), s	8.5	22.0	9.7	12.0	10.8	31.5	11.7	10.0
Green Ext Time (p_c), s	0.1	4.1	0.5	0.5	0.1	0.0	0.6	0.5

Intersection Summary	
HCM 2010 Ctrl Delay	35.0
HCM 2010 LOS	C

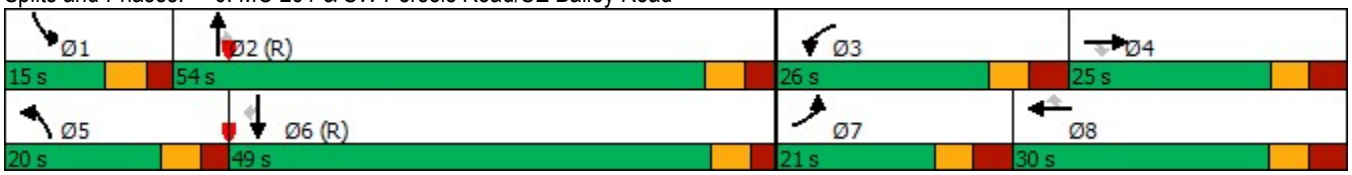
Notes

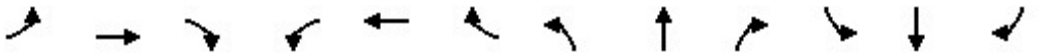
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	318	102	130	202	100	89	148	1515	250	49	1068	353
Future Volume (vph)	318	102	130	202	100	89	148	1515	250	49	1068	353
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	21.0	25.0	25.0	26.0	30.0	30.0	20.0	54.0	54.0	15.0	49.0	49.0
Total Split (s)	21.0	25.0	25.0	26.0	30.0	30.0	20.0	54.0	54.0	15.0	49.0	49.0
Total Split (%)	17.5%	20.8%	20.8%	21.7%	25.0%	25.0%	16.7%	45.0%	45.0%	12.5%	40.8%	40.8%
Yellow Time (s)	3.4	3.4	3.4	3.5	3.5	3.5	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	2.5	2.9	2.9	2.4	2.4	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.1	7.1	7.1	6.1	6.5	6.5	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	14.2	14.1	14.1	12.6	12.5	12.5	15.5	60.2	60.2	9.1	51.6	51.6
Actuated g/C Ratio	0.12	0.12	0.12	0.10	0.10	0.10	0.13	0.50	0.50	0.08	0.43	0.43
v/c Ratio	0.82	0.49	0.42	0.58	0.54	0.31	0.68	0.62	0.28	0.38	0.51	0.41
Control Delay	68.3	57.1	10.0	57.5	60.3	3.7	64.6	24.7	4.1	67.9	16.1	1.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.3	57.1	10.0	57.5	60.3	3.7	64.6	24.7	4.1	67.9	16.1	1.8
LOS	E	E	B	E	E	A	E	C	A	E	B	A
Approach Delay		52.5			45.9			25.1			14.4	
Approach LOS		D			D			C			B	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green, Master Intersection	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay: 26.8	Intersection LOS: C
Intersection Capacity Utilization 67.1%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 6: MO 291 & SW Persels Road/SE Bailey Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	331	106	135	210	104	93	154	1578	260	51	1113	368
v/c Ratio	0.82	0.49	0.42	0.58	0.54	0.31	0.68	0.62	0.28	0.38	0.51	0.41
Control Delay	68.3	57.1	10.0	57.5	60.3	3.7	64.6	24.7	4.1	67.9	16.1	1.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.3	57.1	10.0	57.5	60.3	3.7	64.6	24.7	4.1	67.9	16.1	1.8
Queue Length 50th (ft)	130	78	0	80	78	0	115	325	6	42	99	0
Queue Length 95th (ft)	#204	134	47	118	129	8	184	441	58	m79	126	8
Internal Link Dist (ft)		457			705			1579			1449	
Turn Bay Length (ft)												
Base Capacity (vph)	412	279	364	540	355	423	238	2550	916	145	2188	890
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.80	0.38	0.37	0.39	0.29	0.22	0.65	0.62	0.28	0.35	0.51	0.41

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	318	102	130	202	100	89	148	1515	250	49	1068	353
Future Volume (veh/h)	318	102	130	202	100	89	148	1515	250	49	1068	353
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	331	106	135	210	104	93	154	1578	0	51	1112	0
Adj No. of Lanes	2	1	1	2	1	1	1	3	1	1	3	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	385	206	175	276	148	126	181	2743	854	85	2462	767
Arrive On Green	0.11	0.11	0.11	0.08	0.08	0.08	0.10	0.54	0.00	0.10	0.97	0.00
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	331	106	135	210	104	93	154	1578	0	51	1112	0
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1721	1863	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	11.3	6.4	10.0	7.2	6.5	6.9	10.2	24.9	0.0	3.3	1.5	0.0
Cycle Q Clear(g_c), s	11.3	6.4	10.0	7.2	6.5	6.9	10.2	24.9	0.0	3.3	1.5	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	385	206	175	276	148	126	181	2743	854	85	2462	767
V/C Ratio(X)	0.86	0.52	0.77	0.76	0.70	0.74	0.85	0.58	0.00	0.60	0.45	0.00
Avail Cap(c_a), veh/h	402	279	237	542	355	302	205	2743	854	133	2462	767
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.83	0.83	0.00
Uniform Delay (d), s/veh	52.4	50.4	51.9	54.1	53.9	54.0	53.0	18.5	0.0	53.2	1.0	0.0
Incr Delay (d2), s/veh	16.4	2.0	10.3	4.3	6.0	8.2	25.2	0.9	0.0	5.6	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.3	3.4	4.8	3.6	3.6	3.3	6.3	11.8	0.0	1.7	0.5	0.0
LnGrp Delay(d),s/veh	68.8	52.4	62.2	58.4	59.8	62.2	78.2	19.3	0.0	58.8	1.5	0.0
LnGrp LOS	E	D	E	E	E	E	E	B		E	A	
Approach Vol, veh/h		572			407			1732			1163	
Approach Delay, s/veh		64.2			59.6			24.6			4.0	
Approach LOS		E			E			C			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.7	71.2	16.7	20.3	18.3	64.6	20.4	16.6
Change Period (Y+Rc), s	6.0	6.5	7.1	* 7.1	6.1	* 6.5	7.0	7.1
Max Green Setting (Gmax), s	9.0	47.5	18.9	* 18	13.9	* 43	14.0	22.9
Max Q Clear Time (g_c+I1), s	5.3	26.9	9.2	12.0	12.2	3.5	13.3	8.9
Green Ext Time (p_c), s	0.0	11.0	0.5	0.5	0.1	8.9	0.1	0.6

Intersection Summary	
HCM 2010 Ctrl Delay	27.9
HCM 2010 LOS	C

Notes

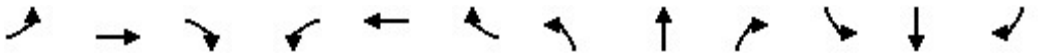
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	378	130	143	417	194	111	155	1490	325	83	1690	305
Future Volume (vph)	378	130	143	417	194	111	155	1490	325	83	1690	305
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	25.0	23.0	23.0	25.0	23.0	23.0	20.0	54.0	54.0	18.0	52.0	52.0
Total Split (s)	25.0	23.0	23.0	25.0	23.0	23.0	20.0	54.0	54.0	18.0	52.0	52.0
Total Split (%)	20.8%	19.2%	19.2%	20.8%	19.2%	19.2%	16.7%	45.0%	45.0%	15.0%	43.3%	43.3%
Yellow Time (s)	3.4	3.4	3.4	3.5	3.5	3.5	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	2.5	2.9	2.9	2.4	2.4	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.1	7.1	7.1	6.1	6.5	6.5	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	17.0	15.0	15.0	17.5	15.4	15.4	13.4	53.3	53.3	10.3	48.0	48.0
Actuated g/C Ratio	0.14	0.12	0.12	0.15	0.13	0.13	0.11	0.44	0.44	0.09	0.40	0.40
v/c Ratio	0.80	0.58	0.45	0.86	0.84	0.34	0.81	0.68	0.38	0.57	0.86	0.40
Control Delay	63.0	59.7	11.6	67.8	79.7	5.9	81.5	30.0	4.3	73.0	24.9	3.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.0	59.7	11.6	67.8	79.7	5.9	81.5	30.0	4.3	73.0	24.9	3.2
LOS	E	E	B	E	E	A	F	C	A	E	C	A
Approach Delay		51.1			61.5			29.8			23.7	
Approach LOS		D			E			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green, Master Intersection	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 34.2	Intersection LOS: C
Intersection Capacity Utilization 84.1%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 6: MO 291 & SW Persels Road/SE Bailey Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	390	134	147	430	200	114	160	1536	335	86	1742	314
v/c Ratio	0.80	0.58	0.45	0.86	0.84	0.34	0.81	0.68	0.38	0.57	0.86	0.40
Control Delay	63.0	59.7	11.6	67.8	79.7	5.9	81.5	30.0	4.3	73.0	24.9	3.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.0	59.7	11.6	67.8	79.7	5.9	81.5	30.0	4.3	73.0	24.9	3.2
Queue Length 50th (ft)	151	98	0	169	153	0	122	367	5	71	258	19
Queue Length 95th (ft)	206	164	57	#248	#275	27	#233	432	63	m96	323	m34
Internal Link Dist (ft)		457			705			1579			1449	
Turn Bay Length (ft)												
Base Capacity (vph)	514	248	341	512	248	341	206	2257	883	177	2033	791
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.76	0.54	0.43	0.84	0.81	0.33	0.78	0.68	0.38	0.49	0.86	0.40

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	378	130	143	417	194	111	155	1490	325	83	1690	305
Future Volume (veh/h)	378	130	143	417	194	111	155	1490	325	83	1690	305
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	390	134	147	430	200	114	160	1536	0	86	1742	0
Adj No. of Lanes	2	1	1	2	1	1	1	3	1	1	3	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	451	210	179	486	230	196	187	2354	733	108	2123	661
Arrive On Green	0.13	0.11	0.11	0.14	0.12	0.12	0.11	0.46	0.00	0.12	0.84	0.00
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	390	134	147	430	200	114	160	1536	0	86	1742	0
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1721	1863	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	13.3	8.3	10.9	14.7	12.6	8.2	10.6	27.9	0.0	5.7	21.5	0.0
Cycle Q Clear(g_c), s	13.3	8.3	10.9	14.7	12.6	8.2	10.6	27.9	0.0	5.7	21.5	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	451	210	179	486	230	196	187	2354	733	108	2123	661
V/C Ratio(X)	0.86	0.64	0.82	0.89	0.87	0.58	0.86	0.65	0.00	0.80	0.82	0.00
Avail Cap(c_a), veh/h	516	248	211	513	247	210	205	2354	733	177	2123	661
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.58	0.58	0.00
Uniform Delay (d), s/veh	51.1	50.9	52.1	50.6	51.6	49.7	52.8	24.8	0.0	52.0	7.5	0.0
Incr Delay (d2), s/veh	13.0	4.1	19.7	16.2	25.4	3.6	26.7	1.4	0.0	7.7	2.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.1	4.5	5.8	8.1	8.1	3.8	6.6	13.3	0.0	3.0	9.8	0.0
LnGrp Delay(d),s/veh	64.1	55.0	71.8	66.8	77.0	53.2	79.5	26.2	0.0	59.7	9.7	0.0
LnGrp LOS	E	D	E	E	E	D	E	C		E	A	
Approach Vol, veh/h		671			744			1696			1828	
Approach Delay, s/veh		63.9			67.5			31.2			12.1	
Approach LOS		E			E			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.3	62.1	24.0	20.6	18.7	56.6	22.7	21.9
Change Period (Y+Rc), s	6.0	6.5	7.1	* 7.1	6.1	* 6.5	7.0	7.1
Max Green Setting (Gmax), s	12.0	47.5	17.9	* 16	13.9	* 46	18.0	15.9
Max Q Clear Time (g_c+I1), s	7.7	29.9	16.7	12.9	12.6	23.5	15.3	14.6
Green Ext Time (p_c), s	0.1	9.7	0.2	0.3	0.0	12.9	0.4	0.2

Intersection Summary	
HCM 2010 Ctrl Delay	34.0
HCM 2010 LOS	C

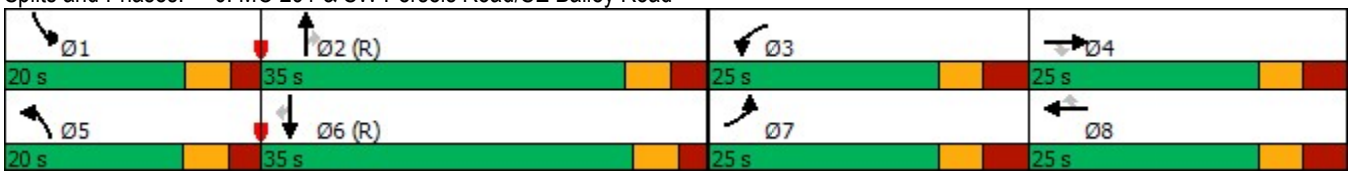
Notes

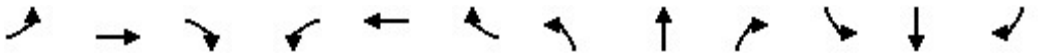
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	330	92	146	292	110	112	144	1461	251	106	1304	297
Future Volume (vph)	330	92	146	292	110	112	144	1461	251	106	1304	297
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	25.0	25.0	25.0	25.0	25.0	25.0	20.0	35.0	35.0	20.0	35.0	35.0
Total Split (s)	25.0	25.0	25.0	25.0	25.0	25.0	20.0	35.0	35.0	20.0	35.0	35.0
Total Split (%)	23.8%	23.8%	23.8%	23.8%	23.8%	23.8%	19.0%	33.3%	33.3%	19.0%	33.3%	33.3%
Yellow Time (s)	3.4	3.4	3.4	3.5	3.5	3.5	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	2.5	2.9	2.9	2.4	2.4	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.1	7.1	7.1	6.1	6.5	6.5	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	15.4	12.7	12.7	14.5	11.8	11.8	13.5	39.4	39.4	11.7	38.1	38.1
Actuated g/C Ratio	0.15	0.12	0.12	0.14	0.11	0.11	0.13	0.38	0.38	0.11	0.36	0.36
v/c Ratio	0.69	0.43	0.45	0.65	0.56	0.36	0.67	0.81	0.35	0.57	0.74	0.40
Control Delay	49.8	47.9	8.8	49.2	53.5	4.6	57.9	35.3	6.4	54.9	34.1	5.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.8	47.9	8.8	49.2	53.5	4.6	57.9	35.3	6.4	54.9	34.1	5.1
LOS	D	D	A	D	D	A	E	D	A	D	C	A
Approach Delay		38.9			40.4			33.1			30.3	
Approach LOS		D			D			C			C	

Intersection Summary	
Cycle Length: 105	
Actuated Cycle Length: 105	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green, Master Intersection	
Natural Cycle: 105	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 33.6	Intersection LOS: C
Intersection Capacity Utilization 66.4%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 6: MO 291 & SW Persels Road/SE Bailey Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	347	97	154	307	116	118	152	1538	264	112	1373	313
v/c Ratio	0.69	0.43	0.45	0.65	0.56	0.36	0.67	0.81	0.35	0.57	0.74	0.40
Control Delay	49.8	47.9	8.8	49.2	53.5	4.6	57.9	35.3	6.4	54.9	34.1	5.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.8	47.9	8.8	49.2	53.5	4.6	57.9	35.3	6.4	54.9	34.1	5.1
Queue Length 50th (ft)	114	61	0	102	75	0	98	336	9	72	297	0
Queue Length 95th (ft)	159	109	44	142	127	16	164	#531	74	126	#439	64
Internal Link Dist (ft)		457			705			1579			1449	
Turn Bay Length (ft)												
Base Capacity (vph)	588	319	415	585	317	414	250	1910	746	241	1843	773
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.30	0.37	0.52	0.37	0.29	0.61	0.81	0.35	0.46	0.74	0.40

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	330	92	146	292	110	112	144	1461	251	106	1304	297
Future Volume (veh/h)	330	92	146	292	110	112	144	1461	251	106	1304	297
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	347	97	154	307	116	118	152	1538	0	112	1373	0
Adj No. of Lanes	2	1	1	2	1	1	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	424	221	188	384	201	171	182	2219	691	140	2093	652
Arrive On Green	0.12	0.12	0.12	0.11	0.11	0.11	0.10	0.44	0.00	0.08	0.41	0.00
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	347	97	154	307	116	118	152	1538	0	112	1373	0
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1721	1863	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	10.3	5.1	10.0	9.1	6.2	7.5	8.8	25.7	0.0	6.5	22.8	0.0
Cycle Q Clear(g_c), s	10.3	5.1	10.0	9.1	6.2	7.5	8.8	25.7	0.0	6.5	22.8	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	424	221	188	384	201	171	182	2219	691	140	2093	652
V/C Ratio(X)	0.82	0.44	0.82	0.80	0.58	0.69	0.83	0.69	0.00	0.80	0.66	0.00
Avail Cap(c_a), veh/h	590	319	271	587	318	270	235	2219	691	237	2093	652
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.70	0.70	0.00
Uniform Delay (d), s/veh	44.9	43.0	45.2	45.5	44.5	45.1	46.2	23.9	0.0	47.5	24.9	0.0
Incr Delay (d2), s/veh	6.3	1.4	12.2	4.5	2.6	4.9	17.8	1.8	0.0	7.2	1.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	2.7	5.0	4.6	3.3	3.5	5.3	12.3	0.0	3.5	10.9	0.0
LnGrp Delay(d),s/veh	51.2	44.4	57.4	50.0	47.1	50.0	64.0	25.7	0.0	54.7	26.0	0.0
LnGrp LOS	D	D	E	D	D	D	E	C		D	C	
Approach Vol, veh/h		598			541			1690			1485	
Approach Delay, s/veh		51.7			49.4			29.2			28.2	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.3	52.3	18.8	19.6	16.9	49.7	19.9	18.4
Change Period (Y+Rc), s	6.0	6.5	7.1	* 7.1	6.1	* 6.5	7.0	7.1
Max Green Setting (Gmax), s	14.0	28.5	17.9	* 18	13.9	* 29	18.0	17.9
Max Q Clear Time (g_c+I1), s	8.5	27.7	11.1	12.0	10.8	24.8	12.3	9.5
Green Ext Time (p_c), s	0.1	0.7	0.6	0.5	0.1	2.9	0.6	0.6

Intersection Summary	
HCM 2010 Ctrl Delay	34.5
HCM 2010 LOS	C

Notes

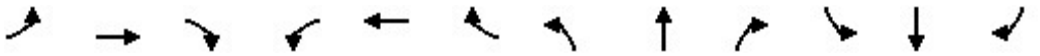
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	318	109	130	254	105	167	149	1533	260	159	1069	353
Future Volume (vph)	318	109	130	254	105	167	149	1533	260	159	1069	353
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	21.0	25.0	25.0	26.0	30.0	30.0	20.0	54.0	54.0	15.0	49.0	49.0
Total Split (s)	21.0	25.0	25.0	26.0	30.0	30.0	20.0	54.0	54.0	15.0	49.0	49.0
Total Split (%)	17.5%	20.8%	20.8%	21.7%	25.0%	25.0%	16.7%	45.0%	45.0%	12.5%	40.8%	40.8%
Yellow Time (s)	3.4	3.4	3.4	3.5	3.5	3.5	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	2.5	2.9	2.9	2.4	2.4	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.1	7.1	7.1	6.1	6.5	6.5	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	14.1	13.5	13.5	14.5	13.9	13.9	14.9	55.1	55.1	10.3	50.9	50.9
Actuated g/C Ratio	0.12	0.11	0.11	0.12	0.12	0.12	0.12	0.46	0.46	0.09	0.42	0.42
v/c Ratio	0.82	0.55	0.43	0.64	0.50	0.54	0.71	0.68	0.31	0.56	0.52	0.42
Control Delay	69.0	59.8	10.2	57.2	56.6	15.8	67.9	28.5	4.6	68.3	15.6	1.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.0	59.8	10.2	57.2	56.6	15.8	67.9	28.5	4.6	68.3	15.6	1.7
LOS	E	E	B	E	E	B	E	C	A	E	B	A
Approach Delay		53.5			43.9			28.3			17.8	
Approach LOS		D			D			C			B	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green, Master Intersection	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay: 29.5	Intersection LOS: C
Intersection Capacity Utilization 67.4%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 6: MO 291 & SW Persels Road/SE Bailey Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	331	114	135	265	109	174	155	1597	271	166	1114	368
v/c Ratio	0.82	0.55	0.43	0.64	0.50	0.54	0.71	0.68	0.31	0.56	0.52	0.42
Control Delay	69.0	59.8	10.2	57.2	56.6	15.8	67.9	28.5	4.6	68.3	15.6	1.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.0	59.8	10.2	57.2	56.6	15.8	67.9	28.5	4.6	68.3	15.6	1.7
Queue Length 50th (ft)	131	86	0	102	81	12	115	348	7	70	93	0
Queue Length 95th (ft)	#204	141	46	142	130	74	#207	456	62	107	119	7
Internal Link Dist (ft)		457			705			1579			1449	
Turn Bay Length (ft)												
Base Capacity (vph)	409	279	364	540	355	429	229	2333	863	300	2156	883
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.81	0.41	0.37	0.49	0.31	0.41	0.68	0.68	0.31	0.55	0.52	0.42

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	318	109	130	254	105	167	149	1533	260	159	1069	353
Future Volume (veh/h)	318	109	130	254	105	167	149	1533	260	159	1069	353
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	331	114	135	265	109	0	155	1597	0	166	1114	0
Adj No. of Lanes	2	1	1	2	1	1	1	3	1	2	3	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	385	194	165	332	167	142	182	2610	812	219	2407	750
Arrive On Green	0.11	0.10	0.10	0.10	0.09	0.00	0.10	0.51	0.00	0.13	0.95	0.00
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	1774	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	331	114	135	265	109	0	155	1597	0	166	1114	0
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1721	1863	1583	1774	1695	1583	1721	1695	1583
Q Serve(g_s), s	11.3	7.0	10.0	9.0	6.8	0.0	10.3	26.7	0.0	5.6	2.5	0.0
Cycle Q Clear(g_c), s	11.3	7.0	10.0	9.0	6.8	0.0	10.3	26.7	0.0	5.6	2.5	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	385	194	165	332	167	142	182	2610	812	219	2407	750
V/C Ratio(X)	0.86	0.59	0.82	0.80	0.65	0.00	0.85	0.61	0.00	0.76	0.46	0.00
Avail Cap(c_a), veh/h	402	279	237	542	355	302	205	2610	812	258	2407	750
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	0.80	0.80	0.00	1.00	1.00	0.00	0.79	0.79	0.00
Uniform Delay (d), s/veh	52.4	51.3	52.6	53.1	52.8	0.0	53.0	20.7	0.0	51.5	1.7	0.0
Incr Delay (d2), s/veh	16.4	2.8	13.6	3.5	3.4	0.0	25.4	1.1	0.0	8.4	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.3	3.8	5.0	4.5	3.7	0.0	6.4	12.7	0.0	2.9	0.9	0.0
LnGrp Delay(d),s/veh	68.8	54.1	66.2	56.6	56.2	0.0	78.4	21.8	0.0	59.9	2.3	0.0
LnGrp LOS	E	D	E	E	E		E	C		E	A	
Approach Vol, veh/h		580			374			1752			1280	
Approach Delay, s/veh		65.3			56.5			26.8			9.7	
Approach LOS		E			E			C			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.6	68.1	18.7	19.6	18.4	63.3	20.4	17.9
Change Period (Y+Rc), s	6.0	6.5	7.1	* 7.1	6.1	* 6.5	7.0	7.1
Max Green Setting (Gmax), s	9.0	47.5	18.9	* 18	13.9	* 43	14.0	22.9
Max Q Clear Time (g_c+I1), s	7.6	28.7	11.0	12.0	12.3	4.5	13.3	8.8
Green Ext Time (p_c), s	0.1	10.5	0.5	0.5	0.1	8.9	0.1	0.4

Intersection Summary	
HCM 2010 Ctrl Delay	29.7
HCM 2010 LOS	C

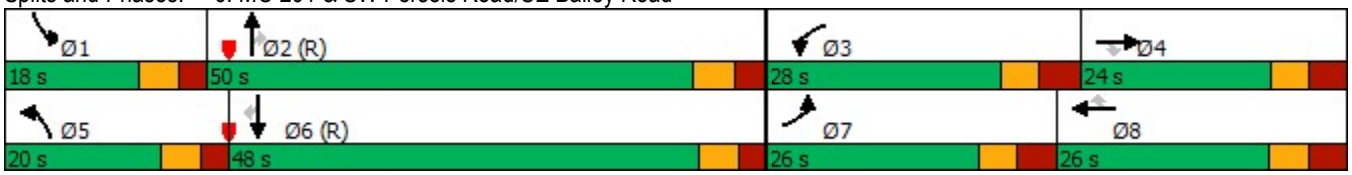
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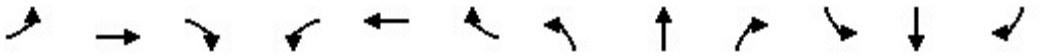
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	378	142	143	476	203	196	157	1513	333	197	1690	305
Future Volume (vph)	378	142	143	476	203	196	157	1513	333	197	1690	305
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	26.0	24.0	24.0	28.0	26.0	26.0	20.0	50.0	50.0	18.0	48.0	48.0
Total Split (s)	26.0	24.0	24.0	28.0	26.0	26.0	20.0	50.0	50.0	18.0	48.0	48.0
Total Split (%)	21.7%	20.0%	20.0%	23.3%	21.7%	21.7%	16.7%	41.7%	41.7%	15.0%	40.0%	40.0%
Yellow Time (s)	3.4	3.4	3.4	3.5	3.5	3.5	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	2.5	2.9	2.9	2.4	2.4	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.1	7.1	7.1	6.1	6.5	6.5	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	17.5	14.5	14.5	20.1	17.1	17.1	13.5	47.5	47.5	11.2	45.6	45.6
Actuated g/C Ratio	0.15	0.12	0.12	0.17	0.14	0.14	0.11	0.40	0.40	0.09	0.38	0.38
v/c Ratio	0.78	0.65	0.46	0.85	0.79	0.52	0.81	0.77	0.42	0.63	0.90	0.42
Control Delay	60.7	63.5	11.7	63.6	70.2	12.5	81.5	35.8	6.0	68.1	29.9	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.7	63.5	11.7	63.6	70.2	12.5	81.5	35.8	6.0	68.1	29.9	5.0
LOS	E	E	B	E	E	B	F	D	A	E	C	A
Approach Delay		50.8			53.7			34.4			29.9	
Approach LOS		D			D			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green, Master Intersection	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay: 37.5	Intersection LOS: D
Intersection Capacity Utilization 84.7%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 6: MO 291 & SW Persels Road/SE Bailey Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	390	146	147	491	209	202	162	1560	343	203	1742	314
v/c Ratio	0.78	0.65	0.46	0.85	0.79	0.52	0.81	0.77	0.42	0.63	0.90	0.42
Control Delay	60.7	63.5	11.7	63.6	70.2	12.5	81.5	35.8	6.0	68.1	29.9	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.7	63.5	11.7	63.6	70.2	12.5	81.5	35.8	6.0	68.1	29.9	5.0
Queue Length 50th (ft)	150	107	0	190	156	7	124	403	16	86	275	18
Queue Length 95th (ft)	204	177	57	#268	#255	75	#236	467	84	m111	#584	m57
Internal Link Dist (ft)		457			705			1579			1449	
Turn Bay Length (ft)												
Base Capacity (vph)	543	263	353	597	293	411	207	2013	814	344	1932	756
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.56	0.42	0.82	0.71	0.49	0.78	0.77	0.42	0.59	0.90	0.42

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	378	142	143	476	203	196	157	1513	333	197	1690	305
Future Volume (veh/h)	378	142	143	476	203	196	157	1513	333	197	1690	305
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	390	146	147	491	209	0	162	1560	0	203	1742	0
Adj No. of Lanes	2	1	1	2	1	1	1	3	1	2	3	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	454	208	176	551	262	222	189	2192	682	258	2028	631
Arrive On Green	0.13	0.11	0.11	0.16	0.14	0.00	0.11	0.43	0.00	0.15	0.80	0.00
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	1774	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	390	146	147	491	209	0	162	1560	0	203	1742	0
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1721	1863	1583	1774	1695	1583	1721	1695	1583
Q Serve(g_s), s	13.3	9.1	10.9	16.8	13.0	0.0	10.8	30.2	0.0	6.8	26.4	0.0
Cycle Q Clear(g_c), s	13.3	9.1	10.9	16.8	13.0	0.0	10.8	30.2	0.0	6.8	26.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	454	208	176	551	262	222	189	2192	682	258	2028	631
V/C Ratio(X)	0.86	0.70	0.83	0.89	0.80	0.00	0.86	0.71	0.00	0.79	0.86	0.00
Avail Cap(c_a), veh/h	545	264	224	599	293	249	205	2192	682	344	2028	631
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	0.50	0.50	0.00	1.00	1.00	0.00	0.53	0.53	0.00
Uniform Delay (d), s/veh	51.0	51.4	52.2	49.4	49.9	0.0	52.7	28.0	0.0	50.1	10.0	0.0
Incr Delay (d2), s/veh	11.3	5.9	18.7	8.2	7.0	0.0	27.1	2.0	0.0	4.6	2.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.1	5.0	5.7	8.6	7.2	0.0	6.7	14.6	0.0	3.4	12.1	0.0
LnGrp Delay(d),s/veh	62.3	57.3	70.9	57.6	56.9	0.0	79.9	30.0	0.0	54.7	12.7	0.0
LnGrp LOS	E	E	E	E	E		E	C		D	B	
Approach Vol, veh/h		683			700			1722			1945	
Approach Delay, s/veh		63.1			57.4			34.7			17.1	
Approach LOS		E			E			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	58.2	26.3	20.5	18.9	54.4	22.8	24.0
Change Period (Y+Rc), s	6.0	6.5	7.1	* 7.1	6.1	* 6.5	7.0	7.1
Max Green Setting (Gmax), s	12.0	43.5	20.9	* 17	13.9	* 42	19.0	18.9
Max Q Clear Time (g_c+I1), s	8.8	32.2	18.8	12.9	12.8	28.4	15.3	15.0
Green Ext Time (p_c), s	0.2	7.3	0.4	0.5	0.0	9.2	0.5	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	34.9
HCM 2010 LOS	C

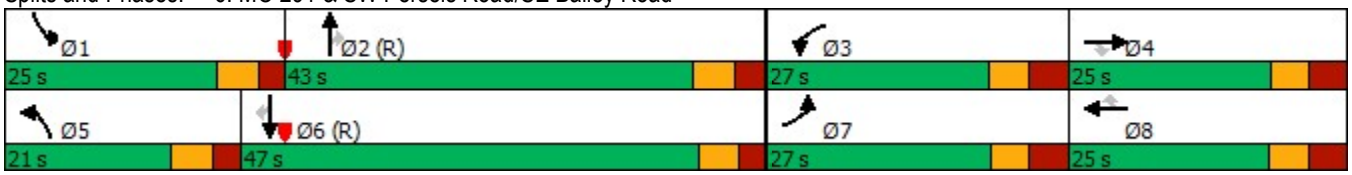
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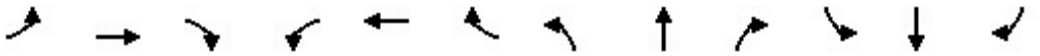
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	330	120	146	454	132	347	150	1524	303	426	1304	297
Future Volume (vph)	330	120	146	454	132	347	150	1524	303	426	1304	297
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	27.0	25.0	25.0	27.0	25.0	25.0	21.0	43.0	43.0	25.0	47.0	47.0
Total Split (s)	27.0	25.0	25.0	27.0	25.0	25.0	21.0	43.0	43.0	25.0	47.0	47.0
Total Split (%)	22.5%	20.8%	20.8%	22.5%	20.8%	20.8%	17.5%	35.8%	35.8%	20.8%	39.2%	39.2%
Yellow Time (s)	3.4	3.4	3.4	3.5	3.5	3.5	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	2.5	2.9	2.9	2.4	2.4	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.1	7.1	7.1	6.1	6.5	6.5	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	16.9	14.0	14.0	19.3	16.4	16.4	14.1	41.1	41.1	18.9	46.3	46.3
Actuated g/C Ratio	0.14	0.12	0.12	0.16	0.14	0.14	0.12	0.34	0.34	0.16	0.39	0.39
v/c Ratio	0.72	0.58	0.48	0.86	0.55	0.85	0.76	0.92	0.45	0.83	0.70	0.39
Control Delay	57.7	60.2	12.4	65.6	56.4	35.3	74.3	48.4	9.6	72.6	25.0	4.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.7	60.2	12.4	65.6	56.4	35.3	74.3	48.4	9.6	72.6	25.0	4.2
LOS	E	E	B	E	E	D	E	D	A	E	C	A
Approach Delay		47.1			53.0			44.4			31.9	
Approach LOS		D			D			D			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green, Master Intersection	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay: 41.6	Intersection LOS: D
Intersection Capacity Utilization 83.0%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 6: MO 291 & SW Persels Road/SE Bailey Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	347	126	154	478	139	365	158	1604	319	448	1373	313
v/c Ratio	0.72	0.58	0.48	0.86	0.55	0.85	0.76	0.92	0.45	0.83	0.70	0.39
Control Delay	57.7	60.2	12.4	65.6	56.4	35.3	74.3	48.4	9.6	72.6	25.0	4.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.7	60.2	12.4	65.6	56.4	35.3	74.3	48.4	9.6	72.6	25.0	4.2
Queue Length 50th (ft)	133	93	0	187	101	90	118	453	34	190	167	21
Queue Length 95th (ft)	180	153	60	#268	167	#245	#216	#587	115	m#250	241	m51
Internal Link Dist (ft)		457			705			1579			1449	
Turn Bay Length (ft)												
Base Capacity (vph)	572	279	368	569	280	448	223	1743	711	556	1962	802
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.45	0.42	0.84	0.50	0.81	0.71	0.92	0.45	0.81	0.70	0.39

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	330	120	146	454	132	347	150	1524	303	426	1304	297
Future Volume (veh/h)	330	120	146	454	132	347	150	1524	303	426	1304	297
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	347	126	154	478	139	0	158	1604	0	448	1373	0
Adj No. of Lanes	2	1	1	2	1	1	1	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	415	216	183	535	282	240	185	1838	572	498	2039	635
Arrive On Green	0.12	0.12	0.12	0.16	0.15	0.00	0.10	0.36	0.00	0.29	0.80	0.00
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	1774	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	347	126	154	478	139	0	158	1604	0	448	1373	0
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1721	1863	1583	1774	1695	1583	1721	1695	1583
Q Serve(g_s), s	11.8	7.7	11.4	16.3	8.2	0.0	10.5	35.3	0.0	15.0	14.0	0.0
Cycle Q Clear(g_c), s	11.8	7.7	11.4	16.3	8.2	0.0	10.5	35.3	0.0	15.0	14.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	415	216	183	535	282	240	185	1838	572	498	2039	635
V/C Ratio(X)	0.84	0.58	0.84	0.89	0.49	0.00	0.85	0.87	0.00	0.90	0.67	0.00
Avail Cap(c_a), veh/h	574	279	237	571	282	240	220	1838	572	545	2039	635
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	0.61	0.61	0.00	1.00	1.00	0.00	0.58	0.58	0.00
Uniform Delay (d), s/veh	51.6	50.3	52.0	49.7	46.7	0.0	52.8	35.7	0.0	41.8	8.5	0.0
Incr Delay (d2), s/veh	7.6	2.5	18.4	10.5	0.8	0.0	23.2	6.1	0.0	10.9	1.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	4.1	5.9	8.5	4.3	0.0	6.3	17.5	0.0	7.8	6.3	0.0
LnGrp Delay(d),s/veh	59.2	52.8	70.4	60.2	47.5	0.0	76.1	41.8	0.0	52.7	9.6	0.0
LnGrp LOS	E	D	E	E	D		E	D		D	A	
Approach Vol, veh/h		627			617			1762			1821	
Approach Delay, s/veh		60.6			57.3			44.9			20.2	
Approach LOS		E			E			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.4	49.9	25.8	21.0	18.6	54.6	21.5	25.3
Change Period (Y+Rc), s	6.0	6.5	7.1	* 7.1	6.1	* 6.5	7.0	7.1
Max Green Setting (Gmax), s	19.0	36.5	19.9	* 18	14.9	* 41	20.0	17.9
Max Q Clear Time (g_c+I1), s	17.0	37.3	18.3	13.4	12.5	16.0	13.8	10.2
Green Ext Time (p_c), s	0.4	0.0	0.3	0.5	0.1	10.3	0.7	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	39.2
HCM 2010 LOS	D

Notes

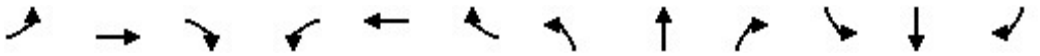
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	318	109	130	254	105	167	149	1819	260	159	1263	353
Future Volume (vph)	318	109	130	254	105	167	149	1819	260	159	1263	353
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	21.0	25.0	25.0	26.0	30.0	30.0	20.0	54.0	54.0	15.0	49.0	49.0
Total Split (s)	21.0	25.0	25.0	26.0	30.0	30.0	20.0	54.0	54.0	15.0	49.0	49.0
Total Split (%)	17.5%	20.8%	20.8%	21.7%	25.0%	25.0%	16.7%	45.0%	45.0%	12.5%	40.8%	40.8%
Yellow Time (s)	3.4	3.4	3.4	3.5	3.5	3.5	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	2.5	2.9	2.9	2.4	2.4	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.1	7.1	7.1	6.1	6.5	6.5	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	13.8	13.2	13.2	14.5	13.9	13.9	14.9	55.4	55.4	10.3	51.2	51.2
Actuated g/C Ratio	0.12	0.11	0.11	0.12	0.12	0.12	0.12	0.46	0.46	0.09	0.43	0.43
v/c Ratio	0.84	0.56	0.44	0.64	0.50	0.54	0.71	0.81	0.32	0.56	0.61	0.42
Control Delay	71.3	60.7	10.3	57.2	56.6	16.0	67.9	32.2	6.8	68.5	16.3	2.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.3	60.7	10.3	57.2	56.6	16.0	67.9	32.2	6.8	68.5	16.3	2.6
LOS	E	E	B	E	E	B	E	C	A	E	B	A
Approach Delay		55.1			44.0			31.6			18.2	
Approach LOS		E			D			C			B	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green, Master Intersection	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 30.8	Intersection LOS: C
Intersection Capacity Utilization 73.0%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 6: MO 291 & SW Persels Road/SE Bailey Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	331	114	135	265	109	174	155	1895	271	166	1316	368
v/c Ratio	0.84	0.56	0.44	0.64	0.50	0.54	0.71	0.81	0.32	0.56	0.61	0.42
Control Delay	71.3	60.7	10.3	57.2	56.6	16.0	67.9	32.2	6.8	68.5	16.3	2.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.3	60.7	10.3	57.2	56.6	16.0	67.9	32.2	6.8	68.5	16.3	2.6
Queue Length 50th (ft)	131	86	0	102	81	13	115	452	25	70	97	0
Queue Length 95th (ft)	#204	141	46	142	130	75	#207	#620	88	m101	174	50
Internal Link Dist (ft)		457			705			1579			1449	
Turn Bay Length (ft)												
Base Capacity (vph)	400	279	364	540	355	428	229	2347	845	300	2169	886
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.83	0.41	0.37	0.49	0.31	0.41	0.68	0.81	0.32	0.55	0.61	0.42

Intersection Summary

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

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	318	109	130	254	105	167	149	1819	260	159	1263	353
Future Volume (veh/h)	318	109	130	254	105	167	149	1819	260	159	1263	353
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	331	114	135	265	109	0	155	1895	0	166	1316	0
Adj No. of Lanes	2	1	1	2	1	1	1	3	1	2	3	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	385	194	165	332	167	142	182	2610	812	219	2407	750
Arrive On Green	0.11	0.10	0.10	0.10	0.09	0.00	0.10	0.51	0.00	0.13	0.95	0.00
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	1774	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	331	114	135	265	109	0	155	1895	0	166	1316	0
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1721	1863	1583	1774	1695	1583	1721	1695	1583
Q Serve(g_s), s	11.3	7.0	10.0	9.0	6.8	0.0	10.3	34.7	0.0	5.6	3.4	0.0
Cycle Q Clear(g_c), s	11.3	7.0	10.0	9.0	6.8	0.0	10.3	34.7	0.0	5.6	3.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	385	194	165	332	167	142	182	2610	812	219	2407	750
V/C Ratio(X)	0.86	0.59	0.82	0.80	0.65	0.00	0.85	0.73	0.00	0.76	0.55	0.00
Avail Cap(c_a), veh/h	402	279	237	542	355	302	205	2610	812	258	2407	750
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	0.80	0.80	0.00	1.00	1.00	0.00	0.68	0.68	0.00
Uniform Delay (d), s/veh	52.4	51.3	52.6	53.1	52.8	0.0	53.0	22.7	0.0	51.5	1.8	0.0
Incr Delay (d2), s/veh	16.4	2.8	13.6	3.6	3.4	0.0	25.4	1.8	0.0	7.3	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.3	3.8	5.0	4.5	3.7	0.0	6.4	16.6	0.0	2.8	1.4	0.0
LnGrp Delay(d),s/veh	68.8	54.1	66.2	56.6	56.2	0.0	78.4	24.5	0.0	58.8	2.4	0.0
LnGrp LOS	E	D	E	E	E		E	C		E	A	
Approach Vol, veh/h		580			374			2050			1482	
Approach Delay, s/veh		65.3			56.5			28.5			8.7	
Approach LOS		E			E			C			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.6	68.1	18.7	19.6	18.4	63.3	20.4	17.9
Change Period (Y+Rc), s	6.0	6.5	7.1	* 7.1	6.1	* 6.5	7.0	7.1
Max Green Setting (Gmax), s	9.0	47.5	18.9	* 18	13.9	* 43	14.0	22.9
Max Q Clear Time (g_c+I1), s	7.6	36.7	11.0	12.0	12.3	5.4	13.3	8.8
Green Ext Time (p_c), s	0.1	8.2	0.5	0.5	0.1	11.1	0.1	0.4

Intersection Summary	
HCM 2010 Ctrl Delay	29.1
HCM 2010 LOS	C

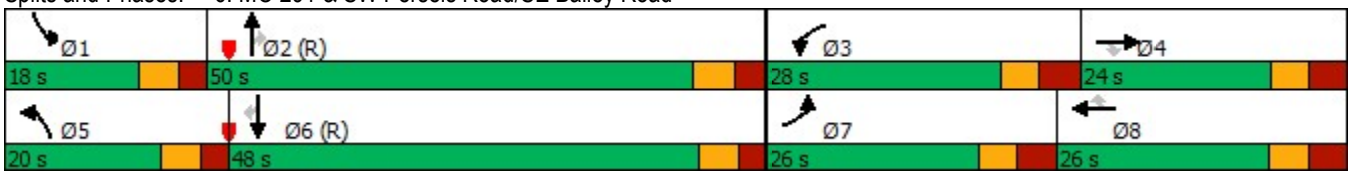
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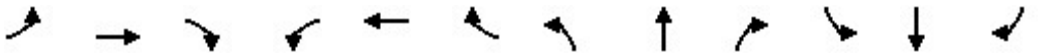
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	378	142	143	476	203	196	157	1786	333	197	2010	305
Future Volume (vph)	378	142	143	476	203	196	157	1786	333	197	2010	305
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	26.0	24.0	24.0	28.0	26.0	26.0	20.0	50.0	50.0	18.0	48.0	48.0
Total Split (s)	26.0	24.0	24.0	28.0	26.0	26.0	20.0	50.0	50.0	18.0	48.0	48.0
Total Split (%)	21.7%	20.0%	20.0%	23.3%	21.7%	21.7%	16.7%	41.7%	41.7%	15.0%	40.0%	40.0%
Yellow Time (s)	3.4	3.4	3.4	3.5	3.5	3.5	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	2.5	2.9	2.9	2.4	2.4	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.1	7.1	7.1	6.1	6.5	6.5	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	17.5	14.5	14.5	20.1	17.1	17.1	13.5	47.5	47.5	11.2	45.6	45.6
Actuated g/C Ratio	0.15	0.12	0.12	0.17	0.14	0.14	0.11	0.40	0.40	0.09	0.38	0.38
v/c Ratio	0.78	0.65	0.46	0.85	0.79	0.52	0.81	0.91	0.44	0.63	1.07	0.43
Control Delay	60.7	63.5	11.7	63.6	70.2	12.7	81.5	43.4	9.0	65.3	67.8	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.7	63.5	11.7	63.6	70.2	12.7	81.5	43.4	9.0	65.3	67.8	9.9
LOS	E	E	B	E	E	B	F	D	A	E	E	A
Approach Delay		50.8			53.7			41.0			60.6	
Approach LOS		D			D			D			E	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green, Master Intersection	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.07	
Intersection Signal Delay: 51.6	Intersection LOS: D
Intersection Capacity Utilization 90.8%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 6: MO 291 & SW Persels Road/SE Bailey Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	390	146	147	491	209	202	162	1841	343	203	2072	314
v/c Ratio	0.78	0.65	0.46	0.85	0.79	0.52	0.81	0.91	0.44	0.63	1.07	0.43
Control Delay	60.7	63.5	11.7	63.6	70.2	12.7	81.5	43.4	9.0	65.3	67.8	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.7	63.5	11.7	63.6	70.2	12.7	81.5	43.4	9.0	65.3	67.8	9.9
Queue Length 50th (ft)	150	107	0	190	156	7	124	517	41	86	~682	41
Queue Length 95th (ft)	204	177	57	#268	#255	76	#236	#639	120	m95	m#779	m62
Internal Link Dist (ft)		457			705			1579			1449	
Turn Bay Length (ft)												
Base Capacity (vph)	543	263	353	597	293	410	207	2013	785	344	1932	731
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.56	0.42	0.82	0.71	0.49	0.78	0.91	0.44	0.59	1.07	0.43

Intersection Summary

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

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

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	378	142	143	476	203	196	157	1786	333	197	2010	305
Future Volume (veh/h)	378	142	143	476	203	196	157	1786	333	197	2010	305
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	390	146	147	491	209	0	162	1841	0	203	2072	0
Adj No. of Lanes	2	1	1	2	1	1	1	3	1	2	3	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	454	208	176	551	262	222	189	2192	682	258	2028	631
Arrive On Green	0.13	0.11	0.11	0.16	0.14	0.00	0.11	0.43	0.00	0.15	0.80	0.00
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	1774	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	390	146	147	491	209	0	162	1841	0	203	2072	0
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1721	1863	1583	1774	1695	1583	1721	1695	1583
Q Serve(g_s), s	13.3	9.1	10.9	16.8	13.0	0.0	10.8	38.7	0.0	6.8	47.9	0.0
Cycle Q Clear(g_c), s	13.3	9.1	10.9	16.8	13.0	0.0	10.8	38.7	0.0	6.8	47.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	454	208	176	551	262	222	189	2192	682	258	2028	631
V/C Ratio(X)	0.86	0.70	0.83	0.89	0.80	0.00	0.86	0.84	0.00	0.79	1.02	0.00
Avail Cap(c_a), veh/h	545	264	224	599	293	249	205	2192	682	344	2028	631
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	0.51	0.51	0.00	1.00	1.00	0.00	0.30	0.30	0.00
Uniform Delay (d), s/veh	51.0	51.4	52.2	49.4	49.9	0.0	52.7	30.5	0.0	50.1	12.1	0.0
Incr Delay (d2), s/veh	11.3	5.9	18.7	8.3	7.0	0.0	27.1	4.1	0.0	2.6	16.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.1	5.0	5.7	8.6	7.2	0.0	6.7	18.9	0.0	3.3	24.2	0.0
LnGrp Delay(d),s/veh	62.3	57.3	70.9	57.7	57.0	0.0	79.9	34.5	0.0	52.7	29.1	0.0
LnGrp LOS	E	E	E	E	E		E	C		D	F	
Approach Vol, veh/h		683			700			2003			2275	
Approach Delay, s/veh		63.1			57.4			38.2			31.2	
Approach LOS		E			E			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	58.2	26.3	20.5	18.9	54.4	22.8	24.0
Change Period (Y+Rc), s	6.0	6.5	7.1	* 7.1	6.1	* 6.5	7.0	7.1
Max Green Setting (Gmax), s	12.0	43.5	20.9	* 17	13.9	* 42	19.0	18.9
Max Q Clear Time (g_c+I1), s	8.8	40.7	18.8	12.9	12.8	49.9	15.3	15.0
Green Ext Time (p_c), s	0.2	2.4	0.4	0.5	0.0	0.0	0.5	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	40.8
HCM 2010 LOS	D

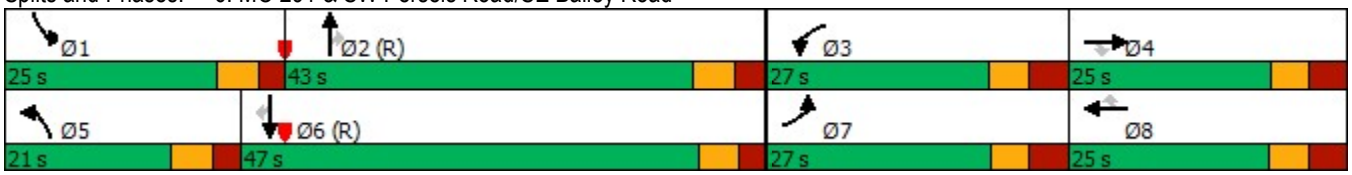
Notes

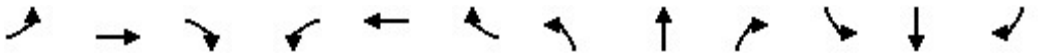
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	330	120	146	454	132	347	150	1748	303	426	1499	297
Future Volume (vph)	330	120	146	454	132	347	150	1748	303	426	1499	297
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	27.0	25.0	25.0	27.0	25.0	25.0	21.0	43.0	43.0	25.0	47.0	47.0
Total Split (s)	27.0	25.0	25.0	27.0	25.0	25.0	21.0	43.0	43.0	25.0	47.0	47.0
Total Split (%)	22.5%	20.8%	20.8%	22.5%	20.8%	20.8%	17.5%	35.8%	35.8%	20.8%	39.2%	39.2%
Yellow Time (s)	3.4	3.4	3.4	3.5	3.5	3.5	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	2.5	2.9	2.9	2.4	2.4	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.1	7.1	7.1	6.1	6.5	6.5	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	16.9	14.0	14.0	19.3	16.4	16.4	14.1	41.1	41.1	18.9	46.3	46.3
Actuated g/C Ratio	0.14	0.12	0.12	0.16	0.14	0.14	0.12	0.34	0.34	0.16	0.39	0.39
v/c Ratio	0.72	0.58	0.48	0.86	0.55	0.85	0.76	1.06	0.46	0.83	0.80	0.40
Control Delay	57.7	60.2	12.4	65.6	56.4	35.3	74.3	76.7	12.5	71.3	27.8	6.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.7	60.2	12.4	65.6	56.4	35.3	74.3	76.7	12.5	71.3	27.8	6.1
LOS	E	E	B	E	E	D	E	E	B	E	C	A
Approach Delay		47.1			53.0			67.7			33.2	
Approach LOS		D			D			E			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green, Master Intersection	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.06	
Intersection Signal Delay: 50.5	Intersection LOS: D
Intersection Capacity Utilization 87.4%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 6: MO 291 & SW Persels Road/SE Bailey Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	347	126	154	478	139	365	158	1840	319	448	1578	313
v/c Ratio	0.72	0.58	0.48	0.86	0.55	0.85	0.76	1.06	0.46	0.83	0.80	0.40
Control Delay	57.7	60.2	12.4	65.6	56.4	35.3	74.3	76.7	12.5	71.3	27.8	6.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.7	60.2	12.4	65.6	56.4	35.3	74.3	76.7	12.5	71.3	27.8	6.1
Queue Length 50th (ft)	133	93	0	187	101	90	118	~612	53	190	179	20
Queue Length 95th (ft)	180	153	60	#268	167	#245	#216	#726	141	m#235	#381	m65
Internal Link Dist (ft)		457			705			1579			1449	
Turn Bay Length (ft)												
Base Capacity (vph)	572	279	368	569	280	448	223	1743	689	556	1962	777
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.45	0.42	0.84	0.50	0.81	0.71	1.06	0.46	0.81	0.80	0.40

Intersection Summary

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

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

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	330	120	146	454	132	347	150	1748	303	426	1499	297
Future Volume (veh/h)	330	120	146	454	132	347	150	1748	303	426	1499	297
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	347	126	154	478	139	0	158	1840	0	448	1578	0
Adj No. of Lanes	2	1	1	2	1	1	1	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	415	216	183	535	282	240	185	1838	572	498	2039	635
Arrive On Green	0.12	0.12	0.12	0.16	0.15	0.00	0.10	0.36	0.00	0.29	0.80	0.00
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	1774	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	347	126	154	478	139	0	158	1840	0	448	1578	0
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1721	1863	1583	1774	1695	1583	1721	1695	1583
Q Serve(g_s), s	11.8	7.7	11.4	16.3	8.2	0.0	10.5	43.4	0.0	15.0	19.5	0.0
Cycle Q Clear(g_c), s	11.8	7.7	11.4	16.3	8.2	0.0	10.5	43.4	0.0	15.0	19.5	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	415	216	183	535	282	240	185	1838	572	498	2039	635
V/C Ratio(X)	0.84	0.58	0.84	0.89	0.49	0.00	0.85	1.00	0.00	0.90	0.77	0.00
Avail Cap(c_a), veh/h	574	279	237	571	282	240	220	1838	572	545	2039	635
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	0.62	0.62	0.00	1.00	1.00	0.00	0.46	0.46	0.00
Uniform Delay (d), s/veh	51.6	50.3	52.0	49.7	46.7	0.0	52.8	38.3	0.0	41.8	9.1	0.0
Incr Delay (d2), s/veh	7.6	2.5	18.4	10.5	0.8	0.0	23.2	21.3	0.0	8.9	1.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	4.1	5.9	8.6	4.3	0.0	6.3	23.9	0.0	7.7	8.7	0.0
LnGrp Delay(d),s/veh	59.2	52.8	70.4	60.2	47.5	0.0	76.1	59.6	0.0	50.7	10.4	0.0
LnGrp LOS	E	D	E	E	D		E	F		D	B	
Approach Vol, veh/h		627			617			1998			2026	
Approach Delay, s/veh		60.6			57.4			60.9			19.3	
Approach LOS		E			E			E			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.4	49.9	25.8	21.0	18.6	54.6	21.5	25.3
Change Period (Y+Rc), s	6.0	6.5	7.1	* 7.1	6.1	* 6.5	7.0	7.1
Max Green Setting (Gmax), s	19.0	36.5	19.9	* 18	14.9	* 41	20.0	17.9
Max Q Clear Time (g_c+I1), s	17.0	45.4	18.3	13.4	12.5	21.5	13.8	10.2
Green Ext Time (p_c), s	0.4	0.0	0.3	0.5	0.1	10.6	0.7	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	44.5
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Intersection 3
M-291 & 16th Street

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↱			↱		↑↑	↱		↑↑	↱
Traffic Vol, veh/h	0	0	14	0	0	27	0	1576	32	0	1068	12
Future Vol, veh/h	0	0	14	0	0	27	0	1576	32	0	1068	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	15	0	0	30	0	1732	35	0	1174	13

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	587	-	-	866	-	0	0	-	-	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	-	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	-	-	-	-	-	-
Pot Cap-1 Maneuver	0	0	453	0	0	297	0	-	-	0	-	-
Stage 1	0	0	-	0	0	-	0	-	-	0	-	-
Stage 2	0	0	-	0	0	-	0	-	-	0	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	453	-	-	297	-	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.2	18.5	0	0
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	SBT	SBR
Capacity (veh/h)	-	-	453	297	-	-
HCM Lane V/C Ratio	-	-	0.034	0.1	-	-
HCM Control Delay (s)	-	-	13.2	18.5	-	-
HCM Lane LOS	-	-	B	C	-	-
HCM 95th %tile Q(veh)	-	-	0.1	0.3	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	63	0	0	34	0	1534	18	0	1887	20
Future Vol, veh/h	0	0	63	0	0	34	0	1534	18	0	1887	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	65	0	0	35	0	1581	19	0	1945	21

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	973	-	-	791	-	0	0	-	-	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	-	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	-	-	-	-	-	-
Pot Cap-1 Maneuver	0	0	252	0	0	332	0	-	-	0	-	-
Stage 1	0	0	-	0	0	-	0	-	-	0	-	-
Stage 2	0	0	-	0	0	-	0	-	-	0	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	252	-	-	332	-	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	24.2	17.1	0	0
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	SBT	SBR
Capacity (veh/h)	-	-	252	332	-	-
HCM Lane V/C Ratio	-	-	0.258	0.106	-	-
HCM Control Delay (s)	-	-	24.2	17.1	-	-
HCM Lane LOS	-	-	C	C	-	-
HCM 95th %tile Q(veh)	-	-	1	0.4	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	35	0	0	18	0	1224	7	0	1198	22
Future Vol, veh/h	0	0	35	0	0	18	0	1224	7	0	1198	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	36	0	0	19	0	1275	7	0	1248	23

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	624	-	-	638	-	0	0	-	-	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	-	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	-	-	-	-	-	-
Pot Cap-1 Maneuver	0	0	428	0	0	419	0	-	-	0	-	-
Stage 1	0	0	-	0	0	-	0	-	-	0	-	-
Stage 2	0	0	-	0	0	-	0	-	-	0	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	428	-	-	419	-	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.2	14	0	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	SBT	SBR
Capacity (veh/h)	-	-	428	419	-	-
HCM Lane V/C Ratio	-	-	0.085	0.045	-	-
HCM Control Delay (s)	-	-	14.2	14	-	-
HCM Lane LOS	-	-	B	B	-	-
HCM 95th %tile Q(veh)	-	-	0.3	0.1	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↱			↱		↑↑	↱		↑↑	↱
Traffic Vol, veh/h	0	0	14	0	0	27	0	1603	32	0	1089	12
Future Vol, veh/h	0	0	14	0	0	27	0	1603	32	0	1089	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	15	0	0	30	0	1762	35	0	1197	13

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	599	-	-	881	-	0	0	-	-	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	-	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	-	-	-	-	-	-
Pot Cap-1 Maneuver	0	0	445	0	0	290	0	-	-	0	-	-
Stage 1	0	0	-	0	0	-	0	-	-	0	-	-
Stage 2	0	0	-	0	0	-	0	-	-	0	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	445	-	-	290	-	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.4	18.8	0	0
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	SBT	SBR
Capacity (veh/h)	-	-	445	290	-	-
HCM Lane V/C Ratio	-	-	0.035	0.102	-	-
HCM Control Delay (s)	-	-	13.4	18.8	-	-
HCM Lane LOS	-	-	B	C	-	-
HCM 95th %tile Q(veh)	-	-	0.1	0.3	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	63	0	0	34	0	1590	18	0	1947	20
Future Vol, veh/h	0	0	63	0	0	34	0	1590	18	0	1947	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	65	0	0	35	0	1639	19	0	2007	21

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	1004	-	-	820	-	0	0	-	-	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	-	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	-	-	-	-	-	-
Pot Cap-1 Maneuver	0	0	240	0	0	318	0	-	-	0	-	-
Stage 1	0	0	-	0	0	-	0	-	-	0	-	-
Stage 2	0	0	-	0	0	-	0	-	-	0	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	240	-	-	318	-	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	25.5	17.7	0	0
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	SBT	SBR
Capacity (veh/h)	-	-	240	318	-	-
HCM Lane V/C Ratio	-	-	0.271	0.11	-	-
HCM Control Delay (s)	-	-	25.5	17.7	-	-
HCM Lane LOS	-	-	D	C	-	-
HCM 95th %tile Q(veh)	-	-	1.1	0.4	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	35	0	0	18	0	1314	7	0	1289	22
Future Vol, veh/h	0	0	35	0	0	18	0	1314	7	0	1289	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	36	0	0	19	0	1369	7	0	1343	23

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	672	-	-	685	-	0	0	-	-	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	-	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	-	-	-	-	-	-
Pot Cap-1 Maneuver	0	0	398	0	0	391	0	-	-	0	-	-
Stage 1	0	0	-	0	0	-	0	-	-	0	-	-
Stage 2	0	0	-	0	0	-	0	-	-	0	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	398	-	-	391	-	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15	14.7	0	0
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	SBT	SBR
Capacity (veh/h)	-	-	398	391	-	-
HCM Lane V/C Ratio	-	-	0.092	0.048	-	-
HCM Control Delay (s)	-	-	15	14.7	-	-
HCM Lane LOS	-	-	C	B	-	-
HCM 95th %tile Q(veh)	-	-	0.3	0.2	-	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	14	0	0	27	0	1667	32	0	1179	12
Future Vol, veh/h	0	0	14	0	0	27	0	1667	32	0	1179	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	15	0	0	30	0	1832	35	0	1296	13

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	648	-	-	916	-	0	0	-	-	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	-	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	-	-	-	-	-	-
Pot Cap-1 Maneuver	0	0	413	0	0	275	0	-	-	0	-	-
Stage 1	0	0	-	0	0	-	0	-	-	0	-	-
Stage 2	0	0	-	0	0	-	0	-	-	0	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	413	-	-	275	-	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.1	19.7	0	0
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	SBT	SBR
Capacity (veh/h)	-	-	413	275	-	-
HCM Lane V/C Ratio	-	-	0.037	0.108	-	-
HCM Control Delay (s)	-	-	14.1	19.7	-	-
HCM Lane LOS	-	-	B	C	-	-
HCM 95th %tile Q(veh)	-	-	0.1	0.4	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	63	0	0	34	0	1743	18	0	2074	20
Future Vol, veh/h	0	0	63	0	0	34	0	1743	18	0	2074	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	65	0	0	35	0	1797	19	0	2138	21

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	1069	-	-	899	-	0	0	-	-	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	-	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	-	-	-	-	-	-
Pot Cap-1 Maneuver	0	0	217	0	0	282	0	-	-	0	-	-
Stage 1	0	0	-	0	0	-	0	-	-	0	-	-
Stage 2	0	0	-	0	0	-	0	-	-	0	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	217	-	-	282	-	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	28.5	19.6	0	0
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	SBT	SBR
Capacity (veh/h)	-	-	217	282	-	-
HCM Lane V/C Ratio	-	-	0.299	0.124	-	-
HCM Control Delay (s)	-	-	28.5	19.6	-	-
HCM Lane LOS	-	-	D	C	-	-
HCM 95th %tile Q(veh)	-	-	1.2	0.4	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	35	0	0	18	0	1584	7	0	1535	22
Future Vol, veh/h	0	0	35	0	0	18	0	1584	7	0	1535	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	36	0	0	19	0	1650	7	0	1599	23

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	800	-	-	825	-	0	0	-	-	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	-	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	-	-	-	-	-	-
Pot Cap-1 Maneuver	0	0	328	0	0	316	0	-	-	0	-	-
Stage 1	0	0	-	0	0	-	0	-	-	0	-	-
Stage 2	0	0	-	0	0	-	0	-	-	0	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	328	-	-	316	-	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17.3	17.1	0	0
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	SBT	SBR
Capacity (veh/h)	-	-	328	316	-	-
HCM Lane V/C Ratio	-	-	0.111	0.059	-	-
HCM Control Delay (s)	-	-	17.3	17.1	-	-
HCM Lane LOS	-	-	C	C	-	-
HCM 95th %tile Q(veh)	-	-	0.4	0.2	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	14	0	0	65	0	1659	102	0	1231	12
Future Vol, veh/h	0	0	14	0	0	65	0	1659	102	0	1231	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	15	0	0	71	0	1823	112	0	1353	13

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	677	-	-	912	-	0	0	-	-	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	-	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	-	-	-	-	-	-
Pot Cap-1 Maneuver	0	0	395	0	0	276	0	-	-	0	-	-
Stage 1	0	0	-	0	0	-	0	-	-	0	-	-
Stage 2	0	0	-	0	0	-	0	-	-	0	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	395	-	-	276	-	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.5	22.5	0	0
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	SBT	SBR
Capacity (veh/h)	-	-	395	276	-	-
HCM Lane V/C Ratio	-	-	0.039	0.259	-	-
HCM Control Delay (s)	-	-	14.5	22.5	-	-
HCM Lane LOS	-	-	B	C	-	-
HCM 95th %tile Q(veh)	-	-	0.1	1	-	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	63	0	0	116	0	1693	130	0	2133	20
Future Vol, veh/h	0	0	63	0	0	116	0	1693	130	0	2133	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	65	0	0	120	0	1745	134	0	2199	21

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	1100	-	-	873	-	0	0	-	-	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	-	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	-	-	-	-	-	-
Pot Cap-1 Maneuver	0	0	207	0	0	293	0	-	-	0	-	-
Stage 1	0	0	-	0	0	-	0	-	-	0	-	-
Stage 2	0	0	-	0	0	-	0	-	-	0	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	207	-	-	293	-	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	30.1	25.5	0	0
HCM LOS	D	D		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	SBT	SBR
Capacity (veh/h)	-	-	207	293	-	-
HCM Lane V/C Ratio	-	-	0.314	0.408	-	-
HCM Control Delay (s)	-	-	30.1	25.5	-	-
HCM Lane LOS	-	-	D	D	-	-
HCM 95th %tile Q(veh)	-	-	1.3	1.9	-	-

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	35	0	0	123	0	1600	166	0	1697	22
Future Vol, veh/h	0	0	35	0	0	123	0	1600	166	0	1697	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	36	0	0	128	0	1667	173	0	1768	23

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	884	-	-	834	-	0	0	-	-	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	-	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	-	-	-	-	-	-
Pot Cap-1 Maneuver	0	0	288	0	0	311	0	-	-	0	-	-
Stage 1	0	0	-	0	0	-	0	-	-	0	-	-
Stage 2	0	0	-	0	0	-	0	-	-	0	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	288	-	-	311	-	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	19.3	24.5	0	0
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	SBT	SBR
Capacity (veh/h)	-	-	288	311	-	-
HCM Lane V/C Ratio	-	-	0.127	0.412	-	-
HCM Control Delay (s)	-	-	19.3	24.5	-	-
HCM Lane LOS	-	-	C	C	-	-
HCM 95th %tile Q(veh)	-	-	0.4	1.9	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	14	0	0	65	0	2006	102	0	1466	12
Future Vol, veh/h	0	0	14	0	0	65	0	2006	102	0	1466	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	15	0	0	71	0	2204	112	0	1611	13

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	806	-	-	1102	-	0	0	-	-	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	-	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	-	-	-	-	-	-
Pot Cap-1 Maneuver	0	0	325	0	0	206	0	-	-	0	-	-
Stage 1	0	0	-	0	0	-	0	-	-	0	-	-
Stage 2	0	0	-	0	0	-	0	-	-	0	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	325	-	-	206	-	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.6	31.5	0	0
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	SBT	SBR
Capacity (veh/h)	-	-	325	206	-	-
HCM Lane V/C Ratio	-	-	0.047	0.347	-	-
HCM Control Delay (s)	-	-	16.6	31.5	-	-
HCM Lane LOS	-	-	C	D	-	-
HCM 95th %tile Q(veh)	-	-	0.1	1.5	-	-

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	63	0	0	116	0	2031	130	0	2548	20
Future Vol, veh/h	0	0	63	0	0	116	0	2031	130	0	2548	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	65	0	0	120	0	2094	134	0	2627	21

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	1314	-	-	1047	-	0	0	-	-	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	-	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	-	-	-	-	-	-
Pot Cap-1 Maneuver	0	0	149	0	0	225	0	-	-	0	-	-
Stage 1	0	0	-	0	0	-	0	-	-	0	-	-
Stage 2	0	0	-	0	0	-	0	-	-	0	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	149	-	-	225	-	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	46.6	37.8	0	0
HCM LOS	E	E		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	SBT	SBR
Capacity (veh/h)	-	-	149	225	-	-
HCM Lane V/C Ratio	-	-	0.436	0.532	-	-
HCM Control Delay (s)	-	-	46.6	37.8	-	-
HCM Lane LOS	-	-	E	E	-	-
HCM 95th %tile Q(veh)	-	-	2	2.8	-	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	35	0	0	123	0	1870	166	0	1961	22
Future Vol, veh/h	0	0	35	0	0	123	0	1870	166	0	1961	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	36	0	0	128	0	1948	173	0	2043	23

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	1022	-	-	974	-	0	0	-	-	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	-	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	-	-	-	-	-	-
Pot Cap-1 Maneuver	0	0	233	0	0	251	0	-	-	0	-	-
Stage 1	0	0	-	0	0	-	0	-	-	0	-	-
Stage 2	0	0	-	0	0	-	0	-	-	0	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	233	-	-	251	-	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	23.3	33.4	0	0
HCM LOS	C	D		

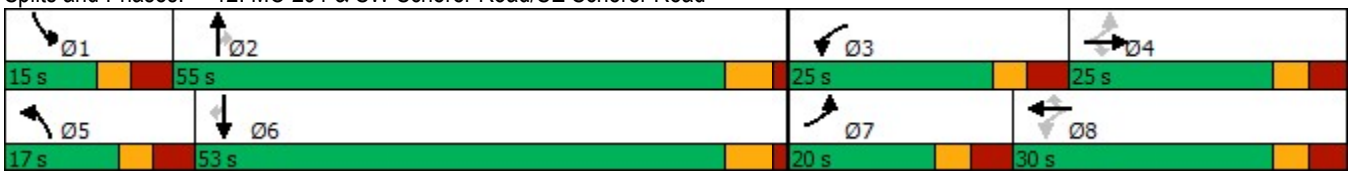
Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	SBT	SBR
Capacity (veh/h)	-	-	233	251	-	-
HCM Lane V/C Ratio	-	-	0.156	0.51	-	-
HCM Control Delay (s)	-	-	23.3	33.4	-	-
HCM Lane LOS	-	-	C	D	-	-
HCM 95th %tile Q(veh)	-	-	0.5	2.7	-	-

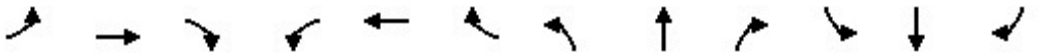
Intersection 4
M-291 & Scherer Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	8	14	14	9	31	37	1447	17	61	922	47
Future Volume (vph)	70	8	14	14	9	31	37	1447	17	61	922	47
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	20.0	25.0	25.0	25.0	30.0	30.0	17.0	55.0	55.0	15.0	53.0	53.0
Total Split (s)	20.0	25.0	25.0	25.0	30.0	30.0	17.0	55.0	55.0	15.0	53.0	53.0
Total Split (%)	16.7%	20.8%	20.8%	20.8%	25.0%	25.0%	14.2%	45.8%	45.8%	12.5%	44.2%	44.2%
Yellow Time (s)	3.2	3.2	3.2	3.0	3.2	3.2	3.0	4.3	4.3	3.0	4.3	4.3
All-Red Time (s)	3.7	3.6	3.6	3.8	3.6	3.6	3.8	1.4	1.4	3.8	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.9	6.8	6.8	6.8	6.8	6.8	6.8	5.7	5.7	6.8	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Min	Min
Act Effct Green (s)	16.2	12.1	12.1	11.1	7.2	7.2	8.2	55.8	55.8	7.9	58.5	58.5
Actuated g/C Ratio	0.18	0.13	0.13	0.12	0.08	0.08	0.09	0.61	0.61	0.09	0.64	0.64
v/c Ratio	0.34	0.04	0.05	0.08	0.07	0.13	0.27	0.76	0.02	0.45	0.46	0.05
Control Delay	35.5	39.2	0.3	30.9	45.9	1.1	47.4	23.3	0.1	54.1	15.6	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.5	39.2	0.3	30.9	45.9	1.1	47.4	23.3	0.1	54.1	15.6	0.1
LOS	D	D	A	C	D	A	D	C	A	D	B	A
Approach Delay		30.4			16.2			23.7			17.1	
Approach LOS		C			B			C			B	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 91.9	
Natural Cycle: 130	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.76	
Intersection Signal Delay: 21.2	Intersection LOS: C
Intersection Capacity Utilization 71.7%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 12: MO 291 & SW Scherer Road/SE Scherer Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	80	9	16	16	10	35	42	1644	19	69	1048	53
v/c Ratio	0.34	0.04	0.05	0.08	0.07	0.13	0.27	0.76	0.02	0.45	0.46	0.05
Control Delay	35.5	39.2	0.3	30.9	45.9	1.1	47.4	23.3	0.1	54.1	15.6	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.5	39.2	0.3	30.9	45.9	1.1	47.4	23.3	0.1	54.1	15.6	0.1
Queue Length 50th (ft)	41	4	0	8	6	0	26	509	0	43	244	0
Queue Length 95th (ft)	79	20	0	24	23	0	59	#692	0	89	334	0
Internal Link Dist (ft)		198			1737			150			1417	
Turn Bay Length (ft)												
Base Capacity (vph)	305	397	456	413	480	519	200	2150	1024	161	2254	1066
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.02	0.04	0.04	0.02	0.07	0.21	0.76	0.02	0.43	0.46	0.05

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	8	14	14	9	31	37	1447	17	61	922	47
Future Volume (veh/h)	70	8	14	14	9	31	37	1447	17	61	922	47
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	80	9	0	16	10	0	42	1644	0	69	1048	0
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	252	162	138	187	84	71	89	1905	852	112	1951	873
Arrive On Green	0.07	0.09	0.00	0.03	0.05	0.00	0.05	0.54	0.00	0.06	0.55	0.00
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	80	9	0	16	10	0	42	1644	0	69	1048	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	3.8	0.4	0.0	0.8	0.5	0.0	2.1	36.7	0.0	3.5	17.3	0.0
Cycle Q Clear(g_c), s	3.8	0.4	0.0	0.8	0.5	0.0	2.1	36.7	0.0	3.5	17.3	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	252	162	138	187	84	71	89	1905	852	112	1951	873
V/C Ratio(X)	0.32	0.06	0.00	0.09	0.12	0.00	0.47	0.86	0.00	0.62	0.54	0.00
Avail Cap(c_a), veh/h	388	370	315	494	472	401	198	1905	852	159	1951	873
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	37.9	38.4	0.0	39.9	42.0	0.0	42.3	18.2	0.0	41.8	13.1	0.0
Incr Delay (d2), s/veh	0.7	0.1	0.0	0.2	0.6	0.0	3.8	5.5	0.0	5.4	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.2	0.0	0.4	0.3	0.0	1.1	19.3	0.0	1.9	8.5	0.0
LnGrp Delay(d),s/veh	38.6	38.5	0.0	40.1	42.6	0.0	46.2	23.7	0.0	47.2	13.4	0.0
LnGrp LOS	D	D		D	D		D	C		D	B	
Approach Vol, veh/h		89			26			1686			1117	
Approach Delay, s/veh		38.6			41.1			24.3			15.5	
Approach LOS		D			D			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.6	55.1	9.1	14.8	11.4	56.3	13.0	10.9
Change Period (Y+Rc), s	* 6.8	* 5.8	* 6.8	* 6.8	* 6.8	5.8	6.9	* 6.8
Max Green Setting (Gmax), s	* 8.2	* 49	* 18	* 18	* 10	47.2	13.1	* 23
Max Q Clear Time (g_c+I1), s	5.5	38.7	2.8	2.4	4.1	19.3	5.8	2.5
Green Ext Time (p_c), s	0.0	7.5	0.0	0.0	0.0	7.8	0.1	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	21.5
HCM 2010 LOS	C

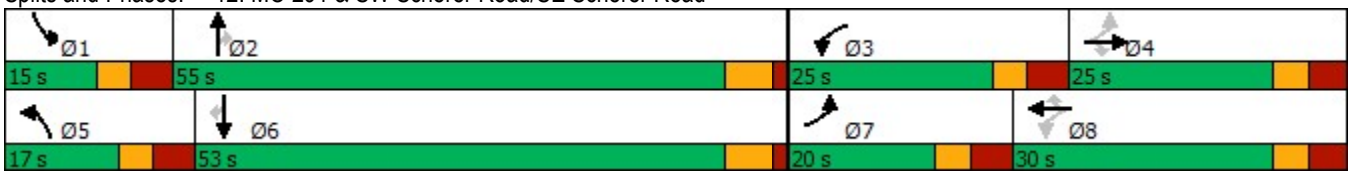
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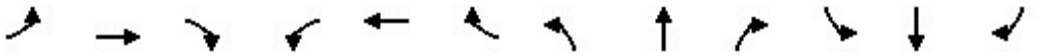
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	130	5	46	25	5	60	39	1354	9	20	1852	45
Future Volume (vph)	130	5	46	25	5	60	39	1354	9	20	1852	45
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	20.0	25.0	25.0	25.0	30.0	30.0	17.0	55.0	55.0	15.0	53.0	53.0
Total Split (s)	20.0	25.0	25.0	25.0	30.0	30.0	17.0	55.0	55.0	15.0	53.0	53.0
Total Split (%)	16.7%	20.8%	20.8%	20.8%	25.0%	25.0%	14.2%	45.8%	45.8%	12.5%	44.2%	44.2%
Yellow Time (s)	3.2	3.2	3.2	3.0	3.2	3.2	3.0	4.3	4.3	3.0	4.3	4.3
All-Red Time (s)	3.7	3.6	3.6	3.8	3.6	3.6	3.8	1.4	1.4	3.8	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.9	6.8	6.8	6.8	6.8	6.8	6.8	5.7	5.7	6.8	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Min	Min
Act Effct Green (s)	21.4	16.8	16.8	12.7	7.2	7.2	8.2	52.8	52.8	7.5	49.4	49.4
Actuated g/C Ratio	0.23	0.18	0.18	0.14	0.08	0.08	0.09	0.57	0.57	0.08	0.53	0.53
v/c Ratio	0.46	0.01	0.12	0.12	0.03	0.24	0.26	0.71	0.01	0.15	1.04	0.05
Control Delay	35.1	39.0	0.6	30.2	45.6	2.2	47.8	19.9	0.0	47.0	56.2	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.1	39.0	0.6	30.2	45.6	2.2	47.8	19.9	0.0	47.0	56.2	0.1
LOS	D	D	A	C	D	A	D	B	A	D	E	A
Approach Delay		26.5			12.3			20.5			54.8	
Approach LOS		C			B			C			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 92.8	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.04	
Intersection Signal Delay: 38.9	Intersection LOS: D
Intersection Capacity Utilization 79.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 12: MO 291 & SW Scherer Road/SE Scherer Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	137	5	48	26	5	63	41	1425	9	21	1949	47
v/c Ratio	0.46	0.01	0.12	0.12	0.03	0.24	0.26	0.71	0.01	0.15	1.04	0.05
Control Delay	35.1	39.0	0.6	30.2	45.6	2.2	47.8	19.9	0.0	47.0	56.2	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.1	39.0	0.6	30.2	45.6	2.2	47.8	19.9	0.0	47.0	56.2	0.1
Queue Length 50th (ft)	71	2	0	13	3	0	26	292	0	13	~800	0
Queue Length 95th (ft)	127	15	0	35	15	0	60	524	0	38	#974	0
Internal Link Dist (ft)		198			1737			150			1417	
Turn Bay Length (ft)												
Base Capacity (vph)	332	435	484	434	476	516	199	2012	968	160	1883	916
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.01	0.10	0.06	0.01	0.12	0.21	0.71	0.01	0.13	1.04	0.05

Intersection Summary

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

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	130	5	46	25	5	60	39	1354	9	20	1852	45
Future Volume (veh/h)	130	5	46	25	5	60	39	1354	9	20	1852	45
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	137	5	0	26	5	0	41	1425	0	21	1949	0
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	304	191	162	209	86	73	88	1916	857	56	1852	829
Arrive On Green	0.09	0.10	0.00	0.04	0.05	0.00	0.05	0.54	0.00	0.03	0.52	0.00
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	137	5	0	26	5	0	41	1425	0	21	1949	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	6.5	0.2	0.0	1.2	0.2	0.0	2.0	28.2	0.0	1.1	47.7	0.0
Cycle Q Clear(g_c), s	6.5	0.2	0.0	1.2	0.2	0.0	2.0	28.2	0.0	1.1	47.7	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	304	191	162	209	86	73	88	1916	857	56	1852	829
V/C Ratio(X)	0.45	0.03	0.00	0.12	0.06	0.00	0.47	0.74	0.00	0.37	1.05	0.00
Avail Cap(c_a), veh/h	395	372	316	498	475	403	199	1916	857	160	1852	829
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	36.4	36.8	0.0	38.9	41.6	0.0	42.1	16.0	0.0	43.2	21.7	0.0
Incr Delay (d2), s/veh	1.0	0.1	0.0	0.3	0.3	0.0	3.8	2.7	0.0	4.1	36.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	0.1	0.0	0.6	0.1	0.0	1.1	14.4	0.0	0.6	32.5	0.0
LnGrp Delay(d),s/veh	37.5	36.9	0.0	39.1	41.8	0.0	45.9	18.7	0.0	47.3	57.9	0.0
LnGrp LOS	D	D		D	D		D	B		D	F	
Approach Vol, veh/h		142			31			1466			1970	
Approach Delay, s/veh		37.5			39.6			19.5			57.8	
Approach LOS		D			D			B			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.7	55.1	10.2	16.1	11.3	53.5	15.3	11.0
Change Period (Y+Rc), s	* 6.8	* 5.8	* 6.8	* 6.8	* 6.8	5.8	6.9	* 6.8
Max Green Setting (Gmax), s	* 8.2	* 49	* 18	* 18	* 10	47.2	13.1	* 23
Max Q Clear Time (g_c+I1), s	3.1	30.2	3.2	2.2	4.0	49.7	8.5	2.2
Green Ext Time (p_c), s	0.0	9.8	0.0	0.0	0.0	0.0	0.1	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	41.3
HCM 2010 LOS	D

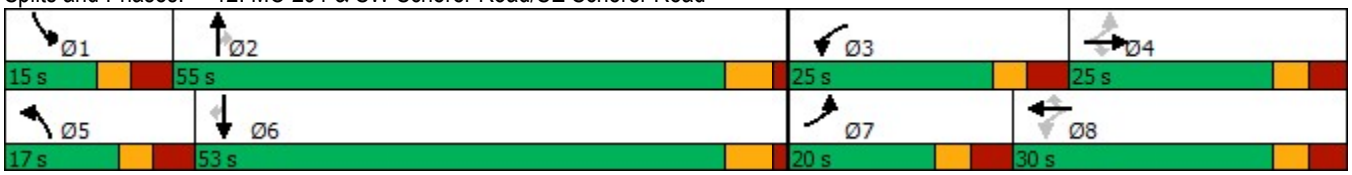
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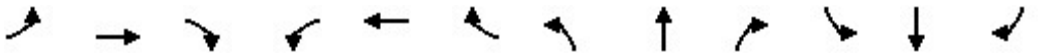
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	41	5	23	12	7	16	14	1128	14	24	1150	34
Future Volume (vph)	41	5	23	12	7	16	14	1128	14	24	1150	34
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	20.0	25.0	25.0	25.0	30.0	30.0	17.0	55.0	55.0	15.0	53.0	53.0
Total Split (s)	20.0	25.0	25.0	25.0	30.0	30.0	17.0	55.0	55.0	15.0	53.0	53.0
Total Split (%)	16.7%	20.8%	20.8%	20.8%	25.0%	25.0%	14.2%	45.8%	45.8%	12.5%	44.2%	44.2%
Yellow Time (s)	3.2	3.2	3.2	3.0	3.2	3.2	3.0	4.3	4.3	3.0	4.3	4.3
All-Red Time (s)	3.7	3.6	3.6	3.8	3.6	3.6	3.8	1.4	1.4	3.8	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.9	6.8	6.8	6.8	6.8	6.8	6.8	5.7	5.7	6.8	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Min	Min
Act Effct Green (s)	11.9	10.4	10.4	9.6	7.4	7.4	7.5	58.3	58.3	7.6	60.6	60.6
Actuated g/C Ratio	0.15	0.13	0.13	0.12	0.09	0.09	0.10	0.74	0.74	0.10	0.77	0.77
v/c Ratio	0.18	0.02	0.07	0.06	0.04	0.06	0.09	0.45	0.01	0.15	0.44	0.03
Control Delay	31.4	36.2	0.4	30.5	41.9	0.4	42.1	11.3	0.0	41.8	9.1	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.4	36.2	0.4	30.5	41.9	0.4	42.1	11.3	0.0	41.8	9.1	0.0
LOS	C	D	A	C	D	A	D	B	A	D	A	A
Approach Delay		21.4			18.8			11.5			9.5	
Approach LOS		C			B			B			A	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 78.7	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.45	
Intersection Signal Delay: 10.9	Intersection LOS: B
Intersection Capacity Utilization 59.6%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 12: MO 291 & SW Scherer Road/SE Scherer Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	43	5	24	13	7	17	15	1187	15	25	1211	36
v/c Ratio	0.18	0.02	0.07	0.06	0.04	0.06	0.09	0.45	0.01	0.15	0.44	0.03
Control Delay	31.4	36.2	0.4	30.5	41.9	0.4	42.1	11.3	0.0	41.8	9.1	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.4	36.2	0.4	30.5	41.9	0.4	42.1	11.3	0.0	41.8	9.1	0.0
Queue Length 50th (ft)	17	2	0	5	3	0	6	91	0	10	94	0
Queue Length 95th (ft)	51	14	0	22	19	0	30	370	0	42	377	0
Internal Link Dist (ft)		198			1737			150			1417	
Turn Bay Length (ft)												
Base Capacity (vph)	352	471	512	469	578	595	241	2619	1213	194	2723	1254
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.01	0.05	0.03	0.01	0.03	0.06	0.45	0.01	0.13	0.44	0.03

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	5	23	12	7	16	14	1128	14	24	1150	34
Future Volume (veh/h)	41	5	23	12	7	16	14	1128	14	24	1150	34
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	43	5	0	13	7	0	15	1187	0	25	1211	0
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	222	127	108	173	68	58	43	2019	903	65	2062	922
Arrive On Green	0.05	0.07	0.00	0.02	0.04	0.00	0.02	0.57	0.00	0.04	0.58	0.00
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	43	5	0	13	7	0	15	1187	0	25	1211	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	2.0	0.2	0.0	0.6	0.3	0.0	0.7	18.7	0.0	1.2	18.8	0.0
Cycle Q Clear(g_c), s	2.0	0.2	0.0	0.6	0.3	0.0	0.7	18.7	0.0	1.2	18.8	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	222	127	108	173	68	58	43	2019	903	65	2062	922
V/C Ratio(X)	0.19	0.04	0.00	0.08	0.10	0.00	0.35	0.59	0.00	0.39	0.59	0.00
Avail Cap(c_a), veh/h	398	392	333	508	500	425	209	2019	903	168	2062	922
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	36.8	37.6	0.0	38.6	40.3	0.0	41.5	12.0	0.0	40.7	11.5	0.0
Incr Delay (d2), s/veh	0.4	0.1	0.0	0.2	0.7	0.0	4.6	1.3	0.0	3.7	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.1	0.0	0.3	0.2	0.0	0.4	9.4	0.0	0.7	9.2	0.0
LnGrp Delay(d),s/veh	37.2	37.8	0.0	38.8	40.9	0.0	46.1	13.3	0.0	44.4	11.9	0.0
LnGrp LOS	D	D		D	D		D	B		D	B	
Approach Vol, veh/h		48			20			1202			1236	
Approach Delay, s/veh		37.3			39.5			13.7			12.5	
Approach LOS		D			D			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	55.1	8.7	12.7	8.9	56.1	11.4	10.0
Change Period (Y+Rc), s	* 6.8	* 5.8	* 6.8	* 6.8	* 6.8	5.8	6.9	* 6.8
Max Green Setting (Gmax), s	* 8.2	* 49	* 18	* 18	* 10	47.2	13.1	* 23
Max Q Clear Time (g_c+I1), s	3.2	20.7	2.6	2.2	2.7	20.8	4.0	2.3
Green Ext Time (p_c), s	0.0	9.3	0.0	0.0	0.0	9.3	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	13.8
HCM 2010 LOS	B

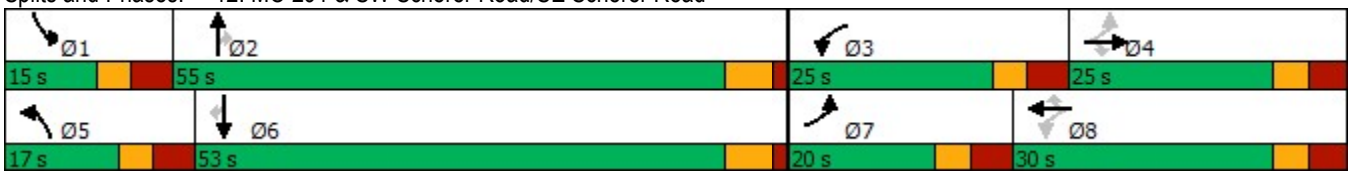
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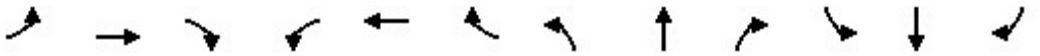
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	71	8	14	14	9	32	37	1472	17	61	942	48
Future Volume (vph)	71	8	14	14	9	32	37	1472	17	61	942	48
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	20.0	25.0	25.0	25.0	30.0	30.0	17.0	55.0	55.0	15.0	53.0	53.0
Total Split (s)	20.0	25.0	25.0	25.0	30.0	30.0	17.0	55.0	55.0	15.0	53.0	53.0
Total Split (%)	16.7%	20.8%	20.8%	20.8%	25.0%	25.0%	14.2%	45.8%	45.8%	12.5%	44.2%	44.2%
Yellow Time (s)	3.2	3.2	3.2	3.0	3.2	3.2	3.0	4.3	4.3	3.0	4.3	4.3
All-Red Time (s)	3.7	3.6	3.6	3.8	3.6	3.6	3.8	1.4	1.4	3.8	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.9	6.8	6.8	6.8	6.8	6.8	6.8	5.7	5.7	6.8	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Min	Min
Act Effct Green (s)	16.2	12.1	12.1	11.1	7.2	7.2	8.2	55.9	55.9	7.9	58.6	58.6
Actuated g/C Ratio	0.18	0.13	0.13	0.12	0.08	0.08	0.09	0.61	0.61	0.09	0.64	0.64
v/c Ratio	0.34	0.04	0.05	0.08	0.07	0.14	0.27	0.78	0.02	0.45	0.47	0.05
Control Delay	35.6	39.2	0.3	30.9	45.9	1.1	47.4	23.9	0.1	54.1	15.7	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.6	39.2	0.3	30.9	45.9	1.1	47.4	23.9	0.1	54.1	15.7	0.1
LOS	D	D	A	C	D	A	D	C	A	D	B	A
Approach Delay		30.6			16.0			24.2			17.2	
Approach LOS		C			B			C			B	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 92	
Natural Cycle: 130	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 21.5	Intersection LOS: C
Intersection Capacity Utilization 71.8%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 12: MO 291 & SW Scherer Road/SE Scherer Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	81	9	16	16	10	36	42	1673	19	69	1070	55
v/c Ratio	0.34	0.04	0.05	0.08	0.07	0.14	0.27	0.78	0.02	0.45	0.47	0.05
Control Delay	35.6	39.2	0.3	30.9	45.9	1.1	47.4	23.9	0.1	54.1	15.7	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.6	39.2	0.3	30.9	45.9	1.1	47.4	23.9	0.1	54.1	15.7	0.1
Queue Length 50th (ft)	42	4	0	8	6	0	26	525	0	43	251	0
Queue Length 95th (ft)	80	20	0	24	23	0	59	#713	0	89	343	0
Internal Link Dist (ft)		198			1737			150			1417	
Turn Bay Length (ft)												
Base Capacity (vph)	305	397	456	413	480	519	200	2150	1024	161	2253	1065
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.02	0.04	0.04	0.02	0.07	0.21	0.78	0.02	0.43	0.47	0.05

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	71	8	14	14	9	32	37	1472	17	61	942	48
Future Volume (veh/h)	71	8	14	14	9	32	37	1472	17	61	942	48
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	81	9	0	16	10	0	42	1673	0	69	1070	0
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	253	163	138	187	84	71	89	1904	852	112	1950	873
Arrive On Green	0.07	0.09	0.00	0.03	0.05	0.00	0.05	0.54	0.00	0.06	0.55	0.00
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	81	9	0	16	10	0	42	1673	0	69	1070	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	3.9	0.4	0.0	0.8	0.5	0.0	2.1	37.9	0.0	3.5	17.8	0.0
Cycle Q Clear(g_c), s	3.9	0.4	0.0	0.8	0.5	0.0	2.1	37.9	0.0	3.5	17.8	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	253	163	138	187	84	71	89	1904	852	112	1950	873
V/C Ratio(X)	0.32	0.06	0.00	0.09	0.12	0.00	0.47	0.88	0.00	0.62	0.55	0.00
Avail Cap(c_a), veh/h	388	370	314	494	472	401	197	1904	852	159	1950	873
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	37.9	38.4	0.0	39.9	42.0	0.0	42.3	18.5	0.0	41.8	13.2	0.0
Incr Delay (d2), s/veh	0.7	0.1	0.0	0.2	0.6	0.0	3.8	6.1	0.0	5.4	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.2	0.0	0.4	0.3	0.0	1.1	20.0	0.0	1.9	8.7	0.0
LnGrp Delay(d),s/veh	38.6	38.5	0.0	40.1	42.6	0.0	46.2	24.7	0.0	47.2	13.6	0.0
LnGrp LOS	D	D		D	D		D	C		D	B	
Approach Vol, veh/h		90			26			1715			1139	
Approach Delay, s/veh		38.6			41.1			25.2			15.6	
Approach LOS		D			D			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.6	55.1	9.1	14.8	11.4	56.3	13.0	10.9
Change Period (Y+Rc), s	* 6.8	* 5.8	* 6.8	* 6.8	* 6.8	5.8	6.9	* 6.8
Max Green Setting (Gmax), s	* 8.2	* 49	* 18	* 18	* 10	47.2	13.1	* 23
Max Q Clear Time (g_c+I1), s	5.5	39.9	2.8	2.4	4.1	19.8	5.9	2.5
Green Ext Time (p_c), s	0.0	6.8	0.0	0.0	0.0	7.9	0.1	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	22.1
HCM 2010 LOS	C

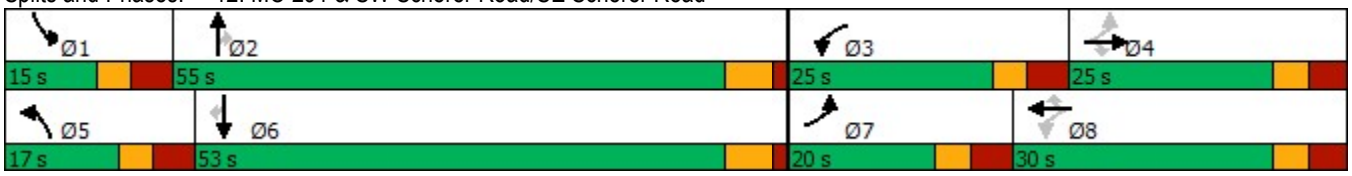
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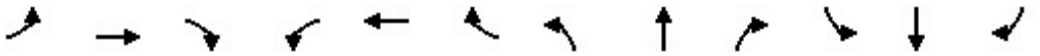
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	135	5	46	25	5	62	39	1403	9	22	1905	50
Future Volume (vph)	135	5	46	25	5	62	39	1403	9	22	1905	50
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	20.0	25.0	25.0	25.0	30.0	30.0	17.0	55.0	55.0	15.0	53.0	53.0
Total Split (s)	20.0	25.0	25.0	25.0	30.0	30.0	17.0	55.0	55.0	15.0	53.0	53.0
Total Split (%)	16.7%	20.8%	20.8%	20.8%	25.0%	25.0%	14.2%	45.8%	45.8%	12.5%	44.2%	44.2%
Yellow Time (s)	3.2	3.2	3.2	3.0	3.2	3.2	3.0	4.3	4.3	3.0	4.3	4.3
All-Red Time (s)	3.7	3.6	3.6	3.8	3.6	3.6	3.8	1.4	1.4	3.8	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.9	6.8	6.8	6.8	6.8	6.8	6.8	5.7	5.7	6.8	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Min	Min
Act Effct Green (s)	21.5	16.9	16.9	12.7	7.2	7.2	8.2	52.8	52.8	7.5	49.4	49.4
Actuated g/C Ratio	0.23	0.18	0.18	0.14	0.08	0.08	0.09	0.57	0.57	0.08	0.53	0.53
v/c Ratio	0.47	0.01	0.12	0.12	0.03	0.25	0.26	0.74	0.01	0.16	1.07	0.06
Control Delay	35.4	39.0	0.6	30.3	45.8	2.3	47.9	20.7	0.0	47.2	66.4	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.4	39.0	0.6	30.3	45.8	2.3	47.9	20.7	0.0	47.2	66.4	0.1
LOS	D	D	A	C	D	A	D	C	A	D	E	A
Approach Delay		26.9			12.1			21.3			64.5	
Approach LOS		C			B			C			E	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 92.9	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.07	
Intersection Signal Delay: 44.4	Intersection LOS: D
Intersection Capacity Utilization 80.5%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 12: MO 291 & SW Scherer Road/SE Scherer Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	142	5	48	26	5	65	41	1477	9	23	2005	53
v/c Ratio	0.47	0.01	0.12	0.12	0.03	0.25	0.26	0.74	0.01	0.16	1.07	0.06
Control Delay	35.4	39.0	0.6	30.3	45.8	2.3	47.9	20.7	0.0	47.2	66.4	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.4	39.0	0.6	30.3	45.8	2.3	47.9	20.7	0.0	47.2	66.4	0.1
Queue Length 50th (ft)	73	2	0	13	3	0	26	310	0	14	~840	0
Queue Length 95th (ft)	131	15	0	35	15	0	60	556	0	40	#1014	0
Internal Link Dist (ft)		198			1737			150			1417	
Turn Bay Length (ft)												
Base Capacity (vph)	332	435	485	435	476	516	198	2009	967	159	1881	916
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.01	0.10	0.06	0.01	0.13	0.21	0.74	0.01	0.14	1.07	0.06

Intersection Summary

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

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	135	5	46	25	5	62	39	1403	9	22	1905	50
Future Volume (veh/h)	135	5	46	25	5	62	39	1403	9	22	1905	50
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	142	5	0	26	5	0	41	1477	0	23	2005	0
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	308	195	166	209	85	73	88	1905	852	60	1850	827
Arrive On Green	0.09	0.10	0.00	0.04	0.05	0.00	0.05	0.54	0.00	0.03	0.52	0.00
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	142	5	0	26	5	0	41	1477	0	23	2005	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	6.8	0.2	0.0	1.2	0.2	0.0	2.1	30.3	0.0	1.2	47.9	0.0
Cycle Q Clear(g_c), s	6.8	0.2	0.0	1.2	0.2	0.0	2.1	30.3	0.0	1.2	47.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	308	195	166	209	85	73	88	1905	852	60	1850	827
V/C Ratio(X)	0.46	0.03	0.00	0.12	0.06	0.00	0.47	0.78	0.00	0.38	1.08	0.00
Avail Cap(c_a), veh/h	393	370	315	496	472	401	198	1905	852	159	1850	827
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	36.3	36.8	0.0	39.1	41.8	0.0	42.4	16.8	0.0	43.3	21.9	0.0
Incr Delay (d2), s/veh	1.1	0.1	0.0	0.3	0.3	0.0	3.8	3.2	0.0	4.0	47.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	0.1	0.0	0.6	0.1	0.0	1.1	15.4	0.0	0.6	35.4	0.0
LnGrp Delay(d),s/veh	37.4	36.8	0.0	39.4	42.1	0.0	46.2	19.9	0.0	47.3	69.6	0.0
LnGrp LOS	D	D		D	D		D	B		D	F	
Approach Vol, veh/h		147			31			1518			2028	
Approach Delay, s/veh		37.4			39.8			20.6			69.3	
Approach LOS		D			D			C			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.9	55.1	10.2	16.4	11.3	53.7	15.6	11.0
Change Period (Y+Rc), s	* 6.8	* 5.8	* 6.8	* 6.8	* 6.8	5.8	6.9	* 6.8
Max Green Setting (Gmax), s	* 8.2	* 49	* 18	* 18	* 10	47.2	13.1	* 23
Max Q Clear Time (g_c+I1), s	3.2	32.3	3.2	2.2	4.1	49.9	8.8	2.2
Green Ext Time (p_c), s	0.0	9.5	0.0	0.0	0.0	0.0	0.1	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	48.0
HCM 2010 LOS	D

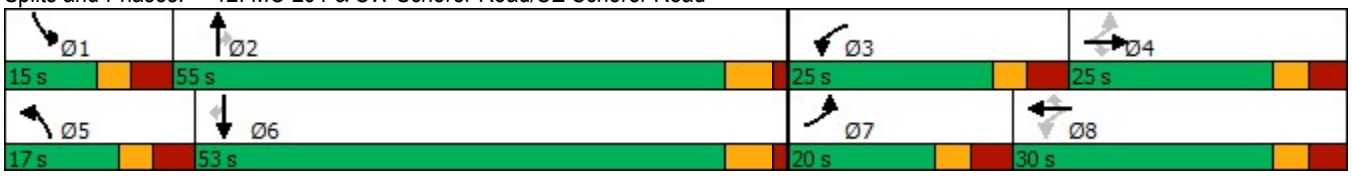
Notes

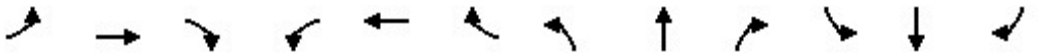
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	5	23	12	7	18	14	1213	14	26	1237	37
Future Volume (vph)	44	5	23	12	7	18	14	1213	14	26	1237	37
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	20.0	25.0	25.0	25.0	30.0	30.0	17.0	55.0	55.0	15.0	53.0	53.0
Total Split (s)	20.0	25.0	25.0	25.0	30.0	30.0	17.0	55.0	55.0	15.0	53.0	53.0
Total Split (%)	16.7%	20.8%	20.8%	20.8%	25.0%	25.0%	14.2%	45.8%	45.8%	12.5%	44.2%	44.2%
Yellow Time (s)	3.2	3.2	3.2	3.0	3.2	3.2	3.0	4.3	4.3	3.0	4.3	4.3
All-Red Time (s)	3.7	3.6	3.6	3.8	3.6	3.6	3.8	1.4	1.4	3.8	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.9	6.8	6.8	6.8	6.8	6.8	6.8	5.7	5.7	6.8	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Min	Min
Act Effct Green (s)	12.1	10.6	10.6	9.6	7.4	7.4	7.5	58.3	58.3	7.7	60.6	60.6
Actuated g/C Ratio	0.15	0.13	0.13	0.12	0.09	0.09	0.10	0.74	0.74	0.10	0.77	0.77
v/c Ratio	0.19	0.02	0.07	0.06	0.04	0.07	0.09	0.49	0.01	0.16	0.48	0.03
Control Delay	31.5	36.0	0.4	30.6	42.0	0.4	42.1	11.9	0.0	42.0	9.7	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.5	36.0	0.4	30.6	42.0	0.4	42.1	11.9	0.0	42.0	9.7	0.1
LOS	C	D	A	C	D	A	D	B	A	D	A	A
Approach Delay		21.8			17.9			12.1			10.0	
Approach LOS		C			B			B			B	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 78.9	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.49	
Intersection Signal Delay: 11.4	Intersection LOS: B
Intersection Capacity Utilization 62.0%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 12: MO 291 & SW Scherer Road/SE Scherer Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	46	5	24	13	7	19	15	1277	15	27	1302	39
v/c Ratio	0.19	0.02	0.07	0.06	0.04	0.07	0.09	0.49	0.01	0.16	0.48	0.03
Control Delay	31.5	36.0	0.4	30.6	42.0	0.4	42.1	11.9	0.0	42.0	9.7	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.5	36.0	0.4	30.6	42.0	0.4	42.1	11.9	0.0	42.0	9.7	0.1
Queue Length 50th (ft)	18	2	0	5	3	0	6	106	0	11	110	0
Queue Length 95th (ft)	53	14	0	22	19	0	30	414	0	44	424	0
Internal Link Dist (ft)		198			1737			150			1417	
Turn Bay Length (ft)												
Base Capacity (vph)	351	470	512	469	577	594	241	2614	1210	193	2718	1252
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.01	0.05	0.03	0.01	0.03	0.06	0.49	0.01	0.14	0.48	0.03

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	5	23	12	7	18	14	1213	14	26	1237	37
Future Volume (veh/h)	44	5	23	12	7	18	14	1213	14	26	1237	37
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	46	5	0	13	7	0	15	1277	0	27	1302	0
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	225	130	111	173	68	58	43	2010	899	68	2060	922
Arrive On Green	0.05	0.07	0.00	0.02	0.04	0.00	0.02	0.57	0.00	0.04	0.58	0.00
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	46	5	0	13	7	0	15	1277	0	27	1302	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	2.1	0.2	0.0	0.6	0.3	0.0	0.7	21.2	0.0	1.3	21.1	0.0
Cycle Q Clear(g_c), s	2.1	0.2	0.0	0.6	0.3	0.0	0.7	21.2	0.0	1.3	21.1	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	225	130	111	173	68	58	43	2010	899	68	2060	922
V/C Ratio(X)	0.20	0.04	0.00	0.08	0.10	0.00	0.35	0.64	0.00	0.39	0.63	0.00
Avail Cap(c_a), veh/h	397	391	332	506	498	423	208	2010	899	168	2060	922
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	36.9	37.6	0.0	38.8	40.4	0.0	41.7	12.7	0.0	40.7	12.0	0.0
Incr Delay (d2), s/veh	0.4	0.1	0.0	0.2	0.7	0.0	4.7	1.5	0.0	3.7	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.1	0.0	0.3	0.2	0.0	0.4	10.7	0.0	0.7	10.3	0.0
LnGrp Delay(d),s/veh	37.3	37.8	0.0	39.0	41.1	0.0	46.3	14.2	0.0	44.4	12.6	0.0
LnGrp LOS	D	D		D	D		D	B		D	B	
Approach Vol, veh/h		51			20			1292			1329	
Approach Delay, s/veh		37.3			39.7			14.6			13.3	
Approach LOS		D			D			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.1	55.1	8.7	12.9	8.9	56.3	11.6	10.0
Change Period (Y+Rc), s	* 6.8	* 5.8	* 6.8	* 6.8	* 6.8	5.8	6.9	* 6.8
Max Green Setting (Gmax), s	* 8.2	* 49	* 18	* 18	* 10	47.2	13.1	* 23
Max Q Clear Time (g_c+I1), s	3.3	23.2	2.6	2.2	2.7	23.1	4.1	2.3
Green Ext Time (p_c), s	0.0	9.9	0.0	0.0	0.0	9.8	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	14.6
HCM 2010 LOS	B

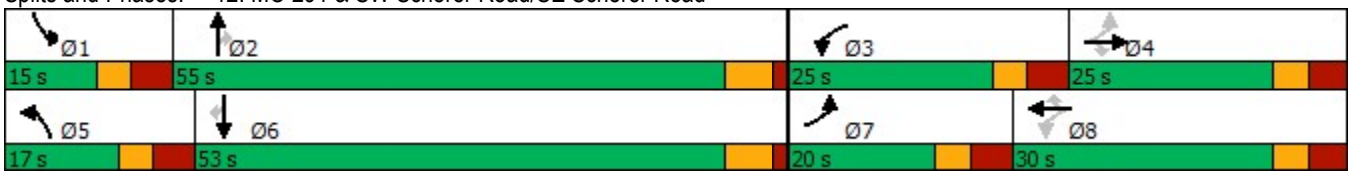
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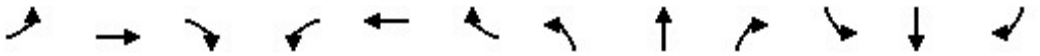
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	74	8	14	14	9	32	37	1529	17	63	1025	53
Future Volume (vph)	74	8	14	14	9	32	37	1529	17	63	1025	53
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	20.0	25.0	25.0	25.0	30.0	30.0	17.0	55.0	55.0	15.0	53.0	53.0
Total Split (s)	20.0	25.0	25.0	25.0	30.0	30.0	17.0	55.0	55.0	15.0	53.0	53.0
Total Split (%)	16.7%	20.8%	20.8%	20.8%	25.0%	25.0%	14.2%	45.8%	45.8%	12.5%	44.2%	44.2%
Yellow Time (s)	3.2	3.2	3.2	3.0	3.2	3.2	3.0	4.3	4.3	3.0	4.3	4.3
All-Red Time (s)	3.7	3.6	3.6	3.8	3.6	3.6	3.8	1.4	1.4	3.8	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.9	6.8	6.8	6.8	6.8	6.8	6.8	5.7	5.7	6.8	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Min	Min
Act Effct Green (s)	16.5	12.3	12.3	11.1	7.2	7.2	8.2	55.9	55.9	8.0	58.6	58.6
Actuated g/C Ratio	0.18	0.13	0.13	0.12	0.08	0.08	0.09	0.61	0.61	0.09	0.64	0.64
v/c Ratio	0.35	0.04	0.05	0.08	0.07	0.14	0.27	0.81	0.02	0.47	0.52	0.06
Control Delay	35.7	39.1	0.3	30.9	46.0	1.1	47.6	25.3	0.1	54.9	16.6	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.7	39.1	0.3	30.9	46.0	1.1	47.6	25.3	0.1	54.9	16.6	0.1
LOS	D	D	A	C	D	A	D	C	A	D	B	A
Approach Delay		30.8			16.0			25.6			17.9	
Approach LOS		C			B			C			B	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 92.2	
Natural Cycle: 130	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 22.5	Intersection LOS: C
Intersection Capacity Utilization 73.6%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 12: MO 291 & SW Scherer Road/SE Scherer Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	84	9	16	16	10	36	42	1738	19	72	1165	60
v/c Ratio	0.35	0.04	0.05	0.08	0.07	0.14	0.27	0.81	0.02	0.47	0.52	0.06
Control Delay	35.7	39.1	0.3	30.9	46.0	1.1	47.6	25.3	0.1	54.9	16.6	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.7	39.1	0.3	30.9	46.0	1.1	47.6	25.3	0.1	54.9	16.6	0.1
Queue Length 50th (ft)	43	4	0	8	6	0	26	~573	0	45	286	0
Queue Length 95th (ft)	82	20	0	24	23	0	59	#763	0	92	388	0
Internal Link Dist (ft)		198			1737			150			1417	
Turn Bay Length (ft)												
Base Capacity (vph)	305	397	455	414	479	518	200	2145	1022	160	2251	1064
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.02	0.04	0.04	0.02	0.07	0.21	0.81	0.02	0.45	0.52	0.06

Intersection Summary

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

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	74	8	14	14	9	32	37	1529	17	63	1025	53
Future Volume (veh/h)	74	8	14	14	9	32	37	1529	17	63	1025	53
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	84	9	0	16	10	0	42	1738	0	72	1165	0
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	254	164	139	187	84	71	89	1901	850	114	1950	872
Arrive On Green	0.07	0.09	0.00	0.03	0.05	0.00	0.05	0.54	0.00	0.06	0.55	0.00
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	84	9	0	16	10	0	42	1738	0	72	1165	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	4.0	0.4	0.0	0.8	0.5	0.0	2.1	41.0	0.0	3.6	20.2	0.0
Cycle Q Clear(g_c), s	4.0	0.4	0.0	0.8	0.5	0.0	2.1	41.0	0.0	3.6	20.2	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	254	164	139	187	84	71	89	1901	850	114	1950	872
V/C Ratio(X)	0.33	0.05	0.00	0.09	0.12	0.00	0.47	0.91	0.00	0.63	0.60	0.00
Avail Cap(c_a), veh/h	387	369	314	493	471	400	197	1901	850	158	1950	872
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	38.0	38.4	0.0	40.0	42.1	0.0	42.4	19.3	0.0	41.9	13.8	0.0
Incr Delay (d2), s/veh	0.8	0.1	0.0	0.2	0.6	0.0	3.9	8.3	0.0	5.7	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.2	0.0	0.4	0.3	0.0	1.1	22.0	0.0	2.0	10.0	0.0
LnGrp Delay(d),s/veh	38.7	38.5	0.0	40.2	42.7	0.0	46.3	27.6	0.0	47.6	14.3	0.0
LnGrp LOS	D	D		D	D		D	C		D	B	
Approach Vol, veh/h		93			26			1780			1237	
Approach Delay, s/veh		38.7			41.2			28.1			16.2	
Approach LOS		D			D			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.7	55.1	9.1	14.9	11.4	56.4	13.1	10.9
Change Period (Y+Rc), s	* 6.8	* 5.8	* 6.8	* 6.8	* 6.8	5.8	6.9	* 6.8
Max Green Setting (Gmax), s	* 8.2	* 49	* 18	* 18	* 10	47.2	13.1	* 23
Max Q Clear Time (g_c+I1), s	5.6	43.0	2.8	2.4	4.1	22.2	6.0	2.5
Green Ext Time (p_c), s	0.0	5.0	0.0	0.0	0.0	8.6	0.1	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	23.8
HCM 2010 LOS	C

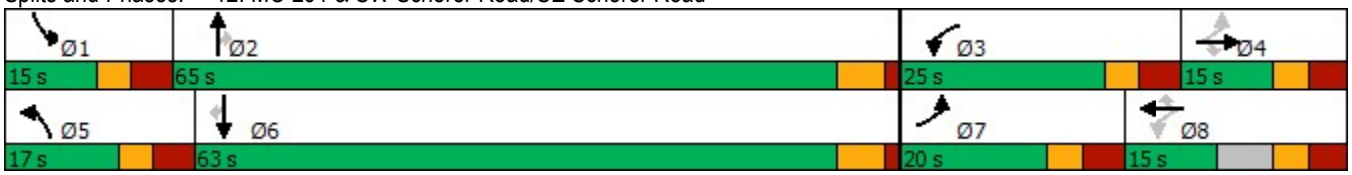
Notes

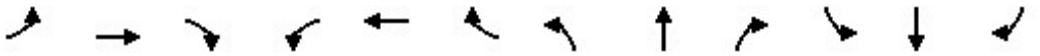
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	148	5	46	25	5	68	39	1536	9	28	2017	59
Future Volume (vph)	148	5	46	25	5	68	39	1536	9	28	2017	59
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	20.0	15.0	15.0	20.0	15.0	15.0	17.0	65.0	65.0	15.0	63.0	63.0
Total Split (s)	20.0	15.0	15.0	25.0	15.0	15.0	17.0	65.0	65.0	15.0	63.0	63.0
Total Split (%)	16.7%	12.5%	12.5%	20.8%	12.5%	12.5%	14.2%	54.2%	54.2%	12.5%	52.5%	52.5%
Yellow Time (s)	3.2	3.2	3.2	3.0	3.2	3.2	3.0	4.3	4.3	3.0	4.3	4.3
All-Red Time (s)	3.7	3.6	3.6	3.8	3.6	3.6	3.8	1.4	1.4	3.8	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.9	6.8	6.8	6.8	6.8	6.8	6.8	5.7	5.7	6.8	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Min	Min
Act Effct Green (s)	21.8	14.7	14.7	12.8	7.1	7.1	8.3	60.4	60.4	7.6	59.6	59.6
Actuated g/C Ratio	0.21	0.14	0.14	0.12	0.07	0.07	0.08	0.58	0.58	0.07	0.57	0.57
v/c Ratio	0.58	0.02	0.14	0.13	0.04	0.29	0.29	0.79	0.01	0.22	1.04	0.06
Control Delay	44.5	45.8	0.8	35.4	51.0	2.9	54.2	23.3	0.0	53.9	58.1	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.5	45.8	0.8	35.4	51.0	2.9	54.2	23.3	0.0	53.9	58.1	0.1
LOS	D	D	A	D	D	A	D	C	A	D	E	A
Approach Delay		34.5			13.5			23.9			56.5	
Approach LOS		C			B			C			E	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 103.8	
Natural Cycle: 135	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.04	
Intersection Signal Delay: 41.4	Intersection LOS: D
Intersection Capacity Utilization 83.6%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 12: MO 291 & SW Scherer Road/SE Scherer Road



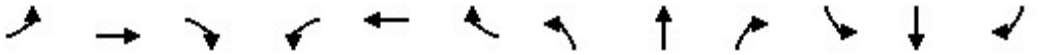


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	156	5	48	26	5	72	41	1617	9	29	2123	62
v/c Ratio	0.58	0.02	0.14	0.13	0.04	0.29	0.29	0.79	0.01	0.22	1.04	0.06
Control Delay	44.5	45.8	0.8	35.4	51.0	2.9	54.2	23.3	0.0	53.9	58.1	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.5	45.8	0.8	35.4	51.0	2.9	54.2	23.3	0.0	53.9	58.1	0.1
Queue Length 50th (ft)	95	3	0	15	4	0	29	517	0	20	~960	0
Queue Length 95th (ft)	160	16	0	39	16	0	64	642	0	51	#1127	0
Internal Link Dist (ft)		198			1737			150			1417	
Turn Bay Length (ft)												
Base Capacity (vph)	292	263	352	388	241	335	176	2058	987	142	2032	976
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.02	0.14	0.07	0.02	0.21	0.23	0.79	0.01	0.20	1.04	0.06

Intersection Summary

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

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	148	5	46	25	5	68	39	1536	9	28	2017	59
Future Volume (veh/h)	148	5	46	25	5	68	39	1536	9	28	2017	59
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	156	5	0	26	5	0	41	1617	0	29	2123	0
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	303	202	172	193	81	69	83	2007	898	68	1977	885
Arrive On Green	0.10	0.11	0.00	0.04	0.04	0.00	0.05	0.57	0.00	0.04	0.56	0.00
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	156	5	0	26	5	0	41	1617	0	29	2123	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	8.5	0.3	0.0	1.4	0.3	0.0	2.4	38.1	0.0	1.7	58.4	0.0
Cycle Q Clear(g_c), s	8.5	0.3	0.0	1.4	0.3	0.0	2.4	38.1	0.0	1.7	58.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	303	202	172	193	81	69	83	2007	898	68	1977	885
V/C Ratio(X)	0.51	0.02	0.00	0.13	0.06	0.00	0.50	0.81	0.00	0.43	1.07	0.00
Avail Cap(c_a), veh/h	349	202	172	439	146	124	173	2007	898	139	1977	885
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	40.3	41.6	0.0	45.0	48.0	0.0	48.6	18.0	0.0	49.2	23.1	0.0
Incr Delay (d2), s/veh	1.3	0.0	0.0	0.3	0.3	0.0	4.5	3.6	0.0	4.2	43.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	0.1	0.0	0.7	0.1	0.0	1.3	19.4	0.0	0.9	40.2	0.0
LnGrp Delay(d),s/veh	41.7	41.7	0.0	45.3	48.3	0.0	53.2	21.6	0.0	53.4	66.4	0.0
LnGrp LOS	D	D		D	D		D	C		D	F	
Approach Vol, veh/h		161			31			1658			2152	
Approach Delay, s/veh		41.7			45.8			22.4			66.2	
Approach LOS		D			D			C			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.8	65.1	10.5	18.2	11.7	64.2	17.3	11.3
Change Period (Y+Rc), s	* 6.8	* 5.8	* 6.8	* 6.8	* 6.8	5.8	6.9	* 6.8
Max Green Setting (Gmax), s	* 8.2	* 59	* 18	* 8.2	* 10	57.2	13.1	* 8.2
Max Q Clear Time (g_c+I1), s	3.7	40.1	3.4	2.3	4.4	60.4	10.5	2.3
Green Ext Time (p_c), s	0.0	11.3	0.0	0.0	0.0	0.0	0.1	0.0

Intersection Summary		
HCM 2010 Ctrl Delay		46.9
HCM 2010 LOS		D

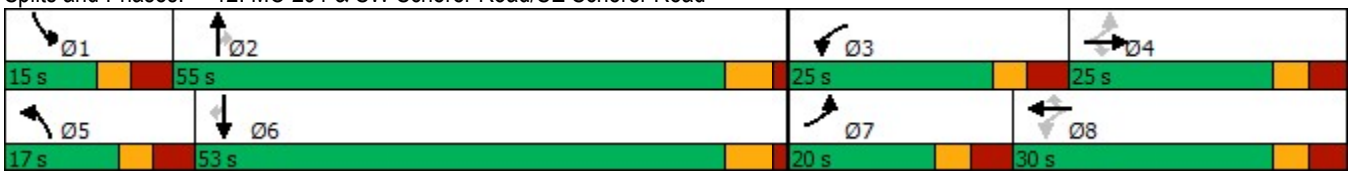
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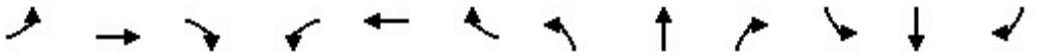
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	5	23	12	7	18	14	1473	14	26	1474	46
Future Volume (vph)	54	5	23	12	7	18	14	1473	14	26	1474	46
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	20.0	25.0	25.0	25.0	30.0	30.0	17.0	55.0	55.0	15.0	53.0	53.0
Total Split (s)	20.0	25.0	25.0	25.0	30.0	30.0	17.0	55.0	55.0	15.0	53.0	53.0
Total Split (%)	16.7%	20.8%	20.8%	20.8%	25.0%	25.0%	14.2%	45.8%	45.8%	12.5%	44.2%	44.2%
Yellow Time (s)	3.2	3.2	3.2	3.0	3.2	3.2	3.0	4.3	4.3	3.0	4.3	4.3
All-Red Time (s)	3.7	3.6	3.6	3.8	3.6	3.6	3.8	1.4	1.4	3.8	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.9	6.8	6.8	6.8	6.8	6.8	6.8	5.7	5.7	6.8	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Min	Min
Act Effct Green (s)	12.6	11.0	11.0	9.6	7.4	7.4	7.5	58.4	58.4	7.7	60.7	60.7
Actuated g/C Ratio	0.16	0.14	0.14	0.12	0.09	0.09	0.09	0.74	0.74	0.10	0.76	0.76
v/c Ratio	0.23	0.02	0.07	0.06	0.04	0.07	0.09	0.60	0.01	0.16	0.57	0.04
Control Delay	31.7	35.8	0.4	30.4	42.4	0.4	42.6	14.4	0.0	42.4	11.6	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.7	35.8	0.4	30.4	42.4	0.4	42.6	14.4	0.0	42.4	11.6	0.1
LOS	C	D	A	C	D	A	D	B	A	D	B	A
Approach Delay		23.2			18.0			14.5			11.8	
Approach LOS		C			B			B			B	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 79.4	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.60	
Intersection Signal Delay: 13.4	Intersection LOS: B
Intersection Capacity Utilization 68.6%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 12: MO 291 & SW Scherer Road/SE Scherer Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	57	5	24	13	7	19	15	1551	15	27	1552	48
v/c Ratio	0.23	0.02	0.07	0.06	0.04	0.07	0.09	0.60	0.01	0.16	0.57	0.04
Control Delay	31.7	35.8	0.4	30.4	42.4	0.4	42.6	14.4	0.0	42.4	11.6	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.7	35.8	0.4	30.4	42.4	0.4	42.6	14.4	0.0	42.4	11.6	0.1
Queue Length 50th (ft)	23	2	0	5	3	0	6	152	0	11	154	0
Queue Length 95th (ft)	62	14	0	22	19	0	30	#596	0	44	#587	0
Internal Link Dist (ft)		198			1737			150			1417	
Turn Bay Length (ft)												
Base Capacity (vph)	350	471	512	473	574	592	240	2604	1207	193	2707	1248
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.01	0.05	0.03	0.01	0.03	0.06	0.60	0.01	0.14	0.57	0.04

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	54	5	23	12	7	18	14	1473	14	26	1474	46
Future Volume (veh/h)	54	5	23	12	7	18	14	1473	14	26	1474	46
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	57	5	0	13	7	0	15	1551	0	27	1552	0
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	235	141	120	172	68	58	43	1996	893	68	2046	915
Arrive On Green	0.06	0.08	0.00	0.02	0.04	0.00	0.02	0.56	0.00	0.04	0.58	0.00
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	57	5	0	13	7	0	15	1551	0	27	1552	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	2.6	0.2	0.0	0.6	0.3	0.0	0.7	29.7	0.0	1.3	28.8	0.0
Cycle Q Clear(g_c), s	2.6	0.2	0.0	0.6	0.3	0.0	0.7	29.7	0.0	1.3	28.8	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	235	141	120	172	68	58	43	1996	893	68	2046	915
V/C Ratio(X)	0.24	0.04	0.00	0.08	0.10	0.00	0.35	0.78	0.00	0.40	0.76	0.00
Avail Cap(c_a), veh/h	394	388	330	503	494	420	207	1996	893	166	2046	915
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	36.9	37.4	0.0	39.1	40.7	0.0	41.9	14.8	0.0	41.0	13.8	0.0
Incr Delay (d2), s/veh	0.5	0.1	0.0	0.2	0.7	0.0	4.7	3.0	0.0	3.7	1.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.1	0.0	0.3	0.2	0.0	0.4	15.3	0.0	0.7	14.3	0.0
LnGrp Delay(d),s/veh	37.4	37.5	0.0	39.2	41.4	0.0	46.6	17.8	0.0	44.7	15.5	0.0
LnGrp LOS	D	D		D	D		D	B		D	B	
Approach Vol, veh/h		62			20			1566			1579	
Approach Delay, s/veh		37.4			40.0			18.1			16.0	
Approach LOS		D			D			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.2	55.1	8.7	13.4	8.9	56.3	12.1	10.0
Change Period (Y+Rc), s	* 6.8	* 5.8	* 6.8	* 6.8	* 6.8	5.8	6.9	* 6.8
Max Green Setting (Gmax), s	* 8.2	* 49	* 18	* 18	* 10	47.2	13.1	* 23
Max Q Clear Time (g_c+I1), s	3.3	31.7	2.6	2.2	2.7	30.8	4.6	2.3
Green Ext Time (p_c), s	0.0	10.2	0.0	0.0	0.0	9.8	0.1	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	17.6
HCM 2010 LOS	B

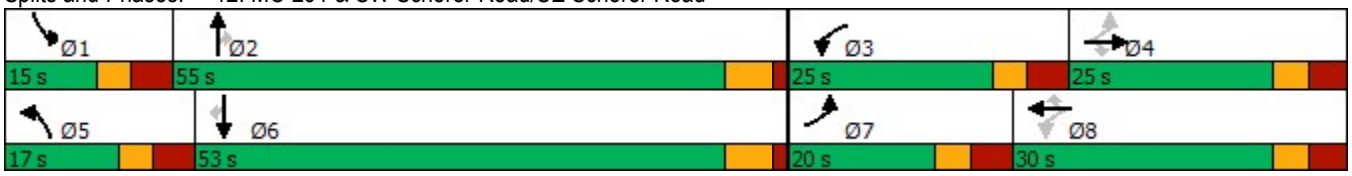
Notes

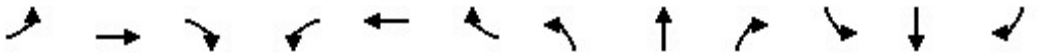
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	8	14	14	9	33	37	1583	17	63	1074	58
Future Volume (vph)	80	8	14	14	9	33	37	1583	17	63	1074	58
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	20.0	25.0	25.0	25.0	30.0	30.0	17.0	55.0	55.0	15.0	53.0	53.0
Total Split (s)	20.0	25.0	25.0	25.0	30.0	30.0	17.0	55.0	55.0	15.0	53.0	53.0
Total Split (%)	16.7%	20.8%	20.8%	20.8%	25.0%	25.0%	14.2%	45.8%	45.8%	12.5%	44.2%	44.2%
Yellow Time (s)	3.2	3.2	3.2	3.0	3.2	3.2	3.0	4.3	4.3	3.0	4.3	4.3
All-Red Time (s)	3.7	3.6	3.6	3.8	3.6	3.6	3.8	1.4	1.4	3.8	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.9	6.8	6.8	6.8	6.8	6.8	6.8	5.7	5.7	6.8	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Min	Min
Act Effct Green (s)	16.8	12.5	12.5	11.1	7.2	7.2	8.2	55.9	55.9	8.0	58.6	58.6
Actuated g/C Ratio	0.18	0.14	0.14	0.12	0.08	0.08	0.09	0.60	0.60	0.09	0.63	0.63
v/c Ratio	0.38	0.04	0.05	0.08	0.07	0.15	0.27	0.84	0.02	0.47	0.54	0.06
Control Delay	36.1	39.0	0.3	30.9	46.1	1.2	47.7	27.0	0.1	55.0	17.2	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.1	39.0	0.3	30.9	46.1	1.2	47.7	27.0	0.1	55.0	17.2	0.1
LOS	D	D	A	C	D	A	D	C	A	E	B	A
Approach Delay		31.4			15.6			27.1			18.3	
Approach LOS		C			B			C			B	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 92.4	
Natural Cycle: 140	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 23.6	Intersection LOS: C
Intersection Capacity Utilization 74.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 12: MO 291 & SW Scherer Road/SE Scherer Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	91	9	16	16	10	38	42	1799	19	72	1220	66
v/c Ratio	0.38	0.04	0.05	0.08	0.07	0.15	0.27	0.84	0.02	0.47	0.54	0.06
Control Delay	36.1	39.0	0.3	30.9	46.1	1.2	47.7	27.0	0.1	55.0	17.2	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.1	39.0	0.3	30.9	46.1	1.2	47.7	27.0	0.1	55.0	17.2	0.1
Queue Length 50th (ft)	47	4	0	8	6	0	26	~666	0	45	309	0
Queue Length 95th (ft)	87	20	0	24	23	0	59	#808	0	92	416	0
Internal Link Dist (ft)		198			1737			150			1417	
Turn Bay Length (ft)												
Base Capacity (vph)	304	398	456	414	478	518	199	2141	1020	160	2246	1063
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.02	0.04	0.04	0.02	0.07	0.21	0.84	0.02	0.45	0.54	0.06

Intersection Summary

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

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	8	14	14	9	33	37	1583	17	63	1074	58
Future Volume (veh/h)	80	8	14	14	9	33	37	1583	17	63	1074	58
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	91	9	0	16	10	0	42	1799	0	72	1220	0
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	256	166	141	187	84	71	89	1898	849	114	1947	871
Arrive On Green	0.07	0.09	0.00	0.03	0.04	0.00	0.05	0.54	0.00	0.06	0.55	0.00
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	91	9	0	16	10	0	42	1799	0	72	1220	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	4.4	0.4	0.0	0.8	0.5	0.0	2.1	44.1	0.0	3.6	21.8	0.0
Cycle Q Clear(g_c), s	4.4	0.4	0.0	0.8	0.5	0.0	2.1	44.1	0.0	3.6	21.8	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	256	166	141	187	84	71	89	1898	849	114	1947	871
V/C Ratio(X)	0.36	0.05	0.00	0.09	0.12	0.00	0.47	0.95	0.00	0.63	0.63	0.00
Avail Cap(c_a), veh/h	387	369	313	493	470	400	197	1898	849	158	1947	871
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	38.1	38.3	0.0	40.1	42.2	0.0	42.5	20.1	0.0	42.0	14.2	0.0
Incr Delay (d2), s/veh	0.8	0.1	0.0	0.2	0.6	0.0	3.9	11.6	0.0	5.7	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.2	0.0	0.4	0.3	0.0	1.1	24.3	0.0	2.0	10.7	0.0
LnGrp Delay(d),s/veh	38.9	38.5	0.0	40.3	42.8	0.0	46.3	31.7	0.0	47.7	14.8	0.0
LnGrp LOS	D	D		D	D		D	C		D	B	
Approach Vol, veh/h		100			26			1841			1292	
Approach Delay, s/veh		38.9			41.2			32.0			16.7	
Approach LOS		D			D			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.7	55.1	9.1	15.0	11.4	56.4	13.2	10.9
Change Period (Y+Rc), s	* 6.8	* 5.8	* 6.8	* 6.8	* 6.8	5.8	6.9	* 6.8
Max Green Setting (Gmax), s	* 8.2	* 49	* 18	* 18	* 10	47.2	13.1	* 23
Max Q Clear Time (g_c+I1), s	5.6	46.1	2.8	2.4	4.1	23.8	6.4	2.5
Green Ext Time (p_c), s	0.0	2.8	0.0	0.0	0.0	8.9	0.1	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	26.2
HCM 2010 LOS	C

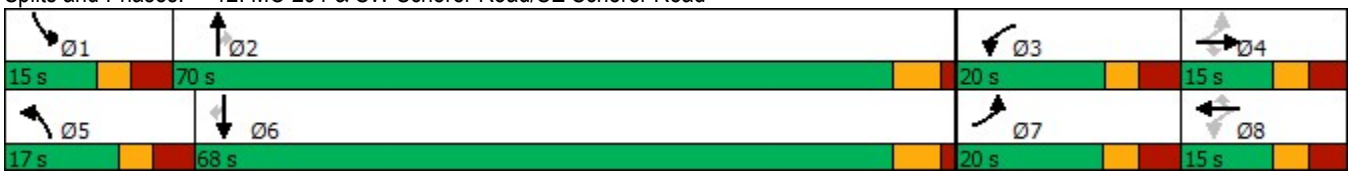
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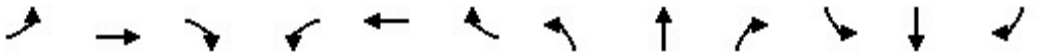
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	153	5	46	25	5	70	39	1590	9	30	2069	63
Future Volume (vph)	153	5	46	25	5	70	39	1590	9	30	2069	63
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	20.0	15.0	15.0	20.0	15.0	15.0	17.0	70.0	70.0	15.0	68.0	68.0
Total Split (s)	20.0	15.0	15.0	20.0	15.0	15.0	17.0	70.0	70.0	15.0	68.0	68.0
Total Split (%)	16.7%	12.5%	12.5%	16.7%	12.5%	12.5%	14.2%	58.3%	58.3%	12.5%	56.7%	56.7%
Yellow Time (s)	3.2	3.2	3.2	3.0	3.2	3.2	3.0	4.3	4.3	3.0	4.3	4.3
All-Red Time (s)	3.7	3.6	3.6	3.8	3.6	3.6	3.8	1.4	1.4	3.8	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.9	6.8	6.8	6.8	6.8	6.8	6.8	5.7	5.7	6.8	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Min	Min
Act Effct Green (s)	21.8	14.5	14.5	12.9	7.1	7.1	8.4	67.6	67.6	7.7	64.2	64.2
Actuated g/C Ratio	0.20	0.13	0.13	0.12	0.06	0.06	0.08	0.61	0.61	0.07	0.58	0.58
v/c Ratio	0.64	0.02	0.14	0.14	0.04	0.31	0.31	0.78	0.01	0.26	1.07	0.07
Control Delay	51.3	48.6	0.9	38.4	53.6	3.3	58.2	22.6	0.0	58.3	67.7	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.3	48.6	0.9	38.4	53.6	3.3	58.2	22.6	0.0	58.3	67.7	0.1
LOS	D	D	A	D	D	A	E	C	A	E	E	A
Approach Delay		39.9			14.4			23.3			65.6	
Approach LOS		D			B			C			E	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 111.4	
Natural Cycle: 140	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.07	
Intersection Signal Delay: 46.2	Intersection LOS: D
Intersection Capacity Utilization 85.0%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 12: MO 291 & SW Scherer Road/SE Scherer Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	161	5	48	26	5	74	41	1674	9	32	2178	66
v/c Ratio	0.64	0.02	0.14	0.14	0.04	0.31	0.31	0.78	0.01	0.26	1.07	0.07
Control Delay	51.3	48.6	0.9	38.4	53.6	3.3	58.2	22.6	0.0	58.3	67.7	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.3	48.6	0.9	38.4	53.6	3.3	58.2	22.6	0.0	58.3	67.7	0.1
Queue Length 50th (ft)	105	4	0	16	4	0	30	555	0	24	~1022	0
Queue Length 95th (ft)	172	16	0	40	17	0	67	680	0	57	#1187	0
Internal Link Dist (ft)		198			1737			150			1417	
Turn Bay Length (ft)												
Base Capacity (vph)	270	242	336	280	139	257	164	2148	1023	132	2038	979
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.02	0.14	0.09	0.04	0.29	0.25	0.78	0.01	0.24	1.07	0.07

Intersection Summary

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

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	153	5	46	25	5	70	39	1590	9	30	2069	63
Future Volume (veh/h)	153	5	46	25	5	70	39	1590	9	30	2069	63
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	161	5	0	26	5	0	41	1674	0	32	2178	0
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	301	205	174	186	79	67	80	2051	918	70	2031	909
Arrive On Green	0.10	0.11	0.00	0.03	0.04	0.00	0.05	0.58	0.00	0.04	0.57	0.00
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	161	5	0	26	5	0	41	1674	0	32	2178	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	9.3	0.3	0.0	1.5	0.3	0.0	2.5	41.9	0.0	2.0	63.7	0.0
Cycle Q Clear(g_c), s	9.3	0.3	0.0	1.5	0.3	0.0	2.5	41.9	0.0	2.0	63.7	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	301	205	174	186	79	67	80	2051	918	70	2031	909
V/C Ratio(X)	0.53	0.02	0.00	0.14	0.06	0.00	0.51	0.82	0.00	0.46	1.07	0.00
Avail Cap(c_a), veh/h	330	205	174	335	138	117	163	2051	918	131	2031	909
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	42.9	44.1	0.0	48.0	51.0	0.0	51.8	18.6	0.0	52.1	23.6	0.0
Incr Delay (d2), s/veh	1.5	0.0	0.0	0.3	0.3	0.0	4.9	3.7	0.0	4.6	42.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	0.1	0.0	0.8	0.2	0.0	1.3	21.3	0.0	1.0	42.8	0.0
LnGrp Delay(d),s/veh	44.4	44.1	0.0	48.3	51.4	0.0	56.7	22.3	0.0	56.7	66.3	0.0
LnGrp LOS	D	D		D	D		E	C		E	F	
Approach Vol, veh/h		166			31			1715			2210	
Approach Delay, s/veh		44.4			48.8			23.2			66.1	
Approach LOS		D			D			C			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.2	70.1	10.7	19.0	11.8	69.5	18.2	11.5
Change Period (Y+Rc), s	* 6.8	* 5.8	* 6.8	* 6.8	* 6.8	5.8	6.9	* 6.8
Max Green Setting (Gmax), s	* 8.2	* 64	* 13	* 8.2	* 10	62.2	13.1	* 8.2
Max Q Clear Time (g_c+I1), s	4.0	43.9	3.5	2.3	4.5	65.7	11.3	2.3
Green Ext Time (p_c), s	0.0	12.2	0.0	0.0	0.0	0.0	0.1	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	47.3
HCM 2010 LOS	D

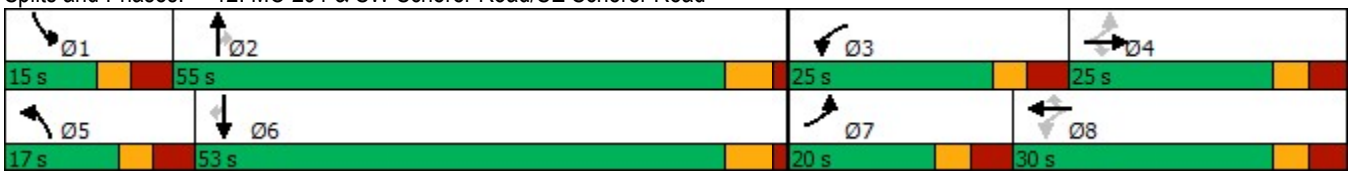
Notes

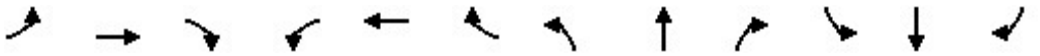
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	5	23	12	7	19	14	1640	14	27	1626	52
Future Volume (vph)	60	5	23	12	7	19	14	1640	14	27	1626	52
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	20.0	25.0	25.0	25.0	30.0	30.0	17.0	55.0	55.0	15.0	53.0	53.0
Total Split (s)	20.0	25.0	25.0	25.0	30.0	30.0	17.0	55.0	55.0	15.0	53.0	53.0
Total Split (%)	16.7%	20.8%	20.8%	20.8%	25.0%	25.0%	14.2%	45.8%	45.8%	12.5%	44.2%	44.2%
Yellow Time (s)	3.2	3.2	3.2	3.0	3.2	3.2	3.0	4.3	4.3	3.0	4.3	4.3
All-Red Time (s)	3.7	3.6	3.6	3.8	3.6	3.6	3.8	1.4	1.4	3.8	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.9	6.8	6.8	6.8	6.8	6.8	6.8	5.7	5.7	6.8	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Min	Min
Act Effct Green (s)	15.7	13.8	13.8	10.9	7.2	7.2	7.4	56.2	56.2	7.6	61.2	61.2
Actuated g/C Ratio	0.18	0.16	0.16	0.12	0.08	0.08	0.08	0.64	0.64	0.09	0.70	0.70
v/c Ratio	0.27	0.02	0.06	0.06	0.05	0.07	0.10	0.76	0.01	0.18	0.70	0.05
Control Delay	33.4	35.8	0.3	30.6	44.7	0.5	45.5	21.9	0.0	46.0	15.6	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.4	35.8	0.3	30.6	44.7	0.5	45.5	21.9	0.0	46.0	15.6	0.1
LOS	C	D	A	C	D	A	D	C	A	D	B	A
Approach Delay		24.9			18.0			21.9			15.6	
Approach LOS		C			B			C			B	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 88	
Natural Cycle: 130	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.76	
Intersection Signal Delay: 18.9	Intersection LOS: B
Intersection Capacity Utilization 73.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 12: MO 291 & SW Scherer Road/SE Scherer Road

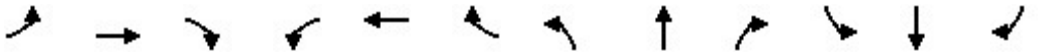




Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	63	5	24	13	7	20	15	1726	15	28	1712	55
v/c Ratio	0.27	0.02	0.06	0.06	0.05	0.07	0.10	0.76	0.01	0.18	0.70	0.05
Control Delay	33.4	35.8	0.3	30.6	44.7	0.5	45.5	21.9	0.0	46.0	15.6	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.4	35.8	0.3	30.6	44.7	0.5	45.5	21.9	0.0	46.0	15.6	0.1
Queue Length 50th (ft)	32	2	0	6	4	0	9	531	0	17	356	0
Queue Length 95th (ft)	67	14	0	22	19	0	30	#762	0	46	#747	0
Internal Link Dist (ft)		198			1737			150			1417	
Turn Bay Length (ft)												
Base Capacity (vph)	317	437	486	427	507	540	212	2258	1067	170	2459	1148
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.01	0.05	0.03	0.01	0.04	0.07	0.76	0.01	0.16	0.70	0.05

Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	5	23	12	7	19	14	1640	14	27	1626	52
Future Volume (veh/h)	60	5	23	12	7	19	14	1640	14	27	1626	52
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	63	5	0	13	7	0	15	1726	0	28	1712	0
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	239	146	124	172	68	58	43	1988	890	70	2042	913
Arrive On Green	0.06	0.08	0.00	0.02	0.04	0.00	0.02	0.56	0.00	0.04	0.58	0.00
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	63	5	0	13	7	0	15	1726	0	28	1712	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	2.9	0.2	0.0	0.6	0.3	0.0	0.7	36.6	0.0	1.4	34.8	0.0
Cycle Q Clear(g_c), s	2.9	0.2	0.0	0.6	0.3	0.0	0.7	36.6	0.0	1.4	34.8	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	239	146	124	172	68	58	43	1988	890	70	2042	913
V/C Ratio(X)	0.26	0.03	0.00	0.08	0.10	0.00	0.35	0.87	0.00	0.40	0.84	0.00
Avail Cap(c_a), veh/h	393	386	328	501	492	419	206	1988	890	166	2042	913
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	36.9	37.4	0.0	39.2	40.9	0.0	42.1	16.4	0.0	41.1	15.2	0.0
Incr Delay (d2), s/veh	0.6	0.1	0.0	0.2	0.7	0.0	4.7	5.5	0.0	3.7	3.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.1	0.0	0.3	0.2	0.0	0.4	19.2	0.0	0.7	17.8	0.0
LnGrp Delay(d),s/veh	37.5	37.5	0.0	39.4	41.6	0.0	46.8	21.9	0.0	44.8	18.5	0.0
LnGrp LOS	D	D		D	D		D	C		D	B	
Approach Vol, veh/h		68			20			1741			1740	
Approach Delay, s/veh		37.5			40.2			22.1			18.9	
Approach LOS		D			D			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.3	55.1	8.7	13.7	8.9	56.4	12.4	10.0
Change Period (Y+Rc), s	* 6.8	* 5.8	* 6.8	* 6.8	* 6.8	5.8	6.9	* 6.8
Max Green Setting (Gmax), s	* 8.2	* 49	* 18	* 18	* 10	47.2	13.1	* 23
Max Q Clear Time (g_c+I1), s	3.4	38.6	2.6	2.2	2.7	36.8	4.9	2.3
Green Ext Time (p_c), s	0.0	7.8	0.0	0.0	0.0	7.6	0.1	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	20.9
HCM 2010 LOS	C

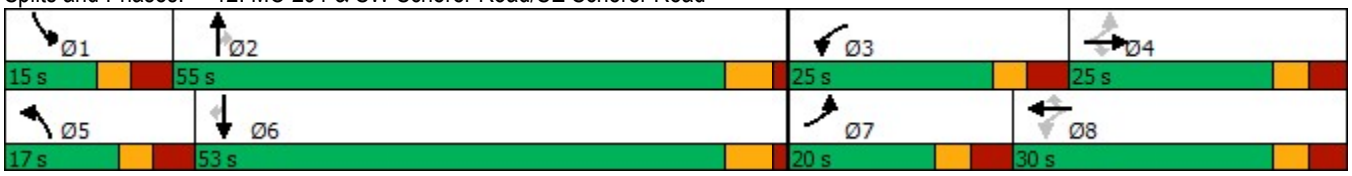
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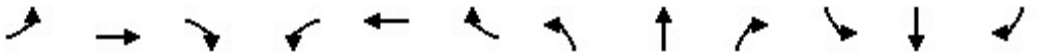
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	8	14	14	9	33	37	1902	17	63	1277	58
Future Volume (vph)	80	8	14	14	9	33	37	1902	17	63	1277	58
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	20.0	25.0	25.0	25.0	30.0	30.0	17.0	55.0	55.0	15.0	53.0	53.0
Total Split (s)	20.0	25.0	25.0	25.0	30.0	30.0	17.0	55.0	55.0	15.0	53.0	53.0
Total Split (%)	16.7%	20.8%	20.8%	20.8%	25.0%	25.0%	14.2%	45.8%	45.8%	12.5%	44.2%	44.2%
Yellow Time (s)	3.2	3.2	3.2	3.0	3.2	3.2	3.0	4.3	4.3	3.0	4.3	4.3
All-Red Time (s)	3.7	3.6	3.6	3.8	3.6	3.6	3.8	1.4	1.4	3.8	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.9	6.8	6.8	6.8	6.8	6.8	6.8	5.7	5.7	6.8	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Min	Min
Act Effct Green (s)	16.8	12.5	12.5	11.1	7.2	7.2	8.2	55.9	55.9	8.0	58.6	58.6
Actuated g/C Ratio	0.18	0.14	0.14	0.12	0.08	0.08	0.09	0.60	0.60	0.09	0.63	0.63
v/c Ratio	0.38	0.04	0.05	0.08	0.07	0.15	0.27	1.01	0.02	0.47	0.65	0.06
Control Delay	36.1	39.0	0.3	30.9	46.1	1.2	47.7	47.9	0.1	55.0	19.6	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.1	39.0	0.3	30.9	46.1	1.2	47.7	47.9	0.1	55.0	19.6	0.1
LOS	D	D	A	C	D	A	D	D	A	E	B	A
Approach Delay		31.4			15.6			47.4			20.4	
Approach LOS		C			B			D			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 92.4	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.01	
Intersection Signal Delay: 35.7	Intersection LOS: D
Intersection Capacity Utilization 80.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 12: MO 291 & SW Scherer Road/SE Scherer Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	91	9	16	16	10	38	42	2161	19	72	1451	66
v/c Ratio	0.38	0.04	0.05	0.08	0.07	0.15	0.27	1.01	0.02	0.47	0.65	0.06
Control Delay	36.1	39.0	0.3	30.9	46.1	1.2	47.7	47.9	0.1	55.0	19.6	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.1	39.0	0.3	30.9	46.1	1.2	47.7	47.9	0.1	55.0	19.6	0.1
Queue Length 50th (ft)	47	4	0	8	6	0	26	~923	0	45	408	0
Queue Length 95th (ft)	87	20	0	24	23	0	59	#1067	0	92	543	0
Internal Link Dist (ft)		198			1737			150			1417	
Turn Bay Length (ft)												
Base Capacity (vph)	304	398	456	414	478	518	199	2141	1020	160	2246	1063
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.02	0.04	0.04	0.02	0.07	0.21	1.01	0.02	0.45	0.65	0.06

Intersection Summary

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

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	8	14	14	9	33	37	1902	17	63	1277	58
Future Volume (veh/h)	80	8	14	14	9	33	37	1902	17	63	1277	58
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	91	9	0	16	10	0	42	2161	0	72	1451	0
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	256	166	141	187	84	71	89	1898	849	114	1947	871
Arrive On Green	0.07	0.09	0.00	0.03	0.04	0.00	0.05	0.54	0.00	0.06	0.55	0.00
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	91	9	0	16	10	0	42	2161	0	72	1451	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	4.4	0.4	0.0	0.8	0.5	0.0	2.1	49.3	0.0	3.6	28.7	0.0
Cycle Q Clear(g_c), s	4.4	0.4	0.0	0.8	0.5	0.0	2.1	49.3	0.0	3.6	28.7	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	256	166	141	187	84	71	89	1898	849	114	1947	871
V/C Ratio(X)	0.36	0.05	0.00	0.09	0.12	0.00	0.47	1.14	0.00	0.63	0.75	0.00
Avail Cap(c_a), veh/h	387	369	313	493	470	400	197	1898	849	158	1947	871
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	38.1	38.3	0.0	40.1	42.2	0.0	42.5	21.3	0.0	42.0	15.8	0.0
Incr Delay (d2), s/veh	0.8	0.1	0.0	0.2	0.6	0.0	3.9	69.4	0.0	5.7	1.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.2	0.0	0.4	0.3	0.0	1.1	42.0	0.0	2.0	14.3	0.0
LnGrp Delay(d),s/veh	38.9	38.5	0.0	40.3	42.8	0.0	46.3	90.7	0.0	47.7	17.4	0.0
LnGrp LOS	D	D		D	D		D	F		D	B	
Approach Vol, veh/h		100			26			2203			1523	
Approach Delay, s/veh		38.9			41.2			89.9			18.8	
Approach LOS		D			D			F			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.7	55.1	9.1	15.0	11.4	56.4	13.2	10.9
Change Period (Y+Rc), s	* 6.8	* 5.8	* 6.8	* 6.8	* 6.8	5.8	6.9	* 6.8
Max Green Setting (Gmax), s	* 8.2	* 49	* 18	* 18	* 10	47.2	13.1	* 23
Max Q Clear Time (g_c+I1), s	5.6	51.3	2.8	2.4	4.1	30.7	6.4	2.5
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	9.1	0.1	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	60.1
HCM 2010 LOS	E

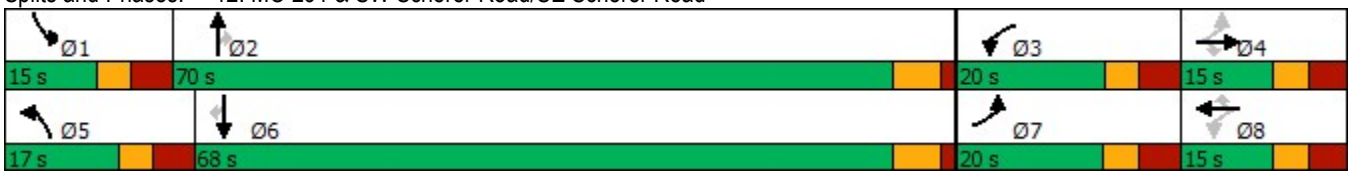
Notes

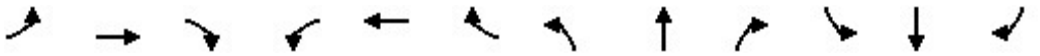
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	153	5	46	25	5	70	39	1888	9	30	2477	63
Future Volume (vph)	153	5	46	25	5	70	39	1888	9	30	2477	63
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	20.0	15.0	15.0	20.0	15.0	15.0	17.0	70.0	70.0	15.0	68.0	68.0
Total Split (s)	20.0	15.0	15.0	20.0	15.0	15.0	17.0	70.0	70.0	15.0	68.0	68.0
Total Split (%)	16.7%	12.5%	12.5%	16.7%	12.5%	12.5%	14.2%	58.3%	58.3%	12.5%	56.7%	56.7%
Yellow Time (s)	3.2	3.2	3.2	3.0	3.2	3.2	3.0	4.3	4.3	3.0	4.3	4.3
All-Red Time (s)	3.7	3.6	3.6	3.8	3.6	3.6	3.8	1.4	1.4	3.8	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.9	6.8	6.8	6.8	6.8	6.8	6.8	5.7	5.7	6.8	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Min	Min
Act Effct Green (s)	21.8	14.5	14.5	12.9	7.1	7.1	8.4	67.6	67.6	7.7	64.2	64.2
Actuated g/C Ratio	0.20	0.13	0.13	0.12	0.06	0.06	0.08	0.61	0.61	0.07	0.58	0.58
v/c Ratio	0.64	0.02	0.14	0.14	0.04	0.31	0.31	0.93	0.01	0.26	1.28	0.07
Control Delay	51.3	48.6	0.9	38.4	53.6	3.3	58.2	31.5	0.0	58.3	154.7	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.3	48.6	0.9	38.4	53.6	3.3	58.2	31.5	0.0	58.3	154.7	0.1
LOS	D	D	A	D	D	A	E	C	A	E	F	A
Approach Delay		39.9			14.4			31.9			149.8	
Approach LOS		D			B			C			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 111.4	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.28	
Intersection Signal Delay: 94.9	Intersection LOS: F
Intersection Capacity Utilization 96.3%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 12: MO 291 & SW Scherer Road/SE Scherer Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	161	5	48	26	5	74	41	1987	9	32	2607	66
v/c Ratio	0.64	0.02	0.14	0.14	0.04	0.31	0.31	0.93	0.01	0.26	1.28	0.07
Control Delay	51.3	48.6	0.9	38.4	53.6	3.3	58.2	31.5	0.0	58.3	154.7	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.3	48.6	0.9	38.4	53.6	3.3	58.2	31.5	0.0	58.3	154.7	0.1
Queue Length 50th (ft)	105	4	0	16	4	0	30	~854	0	24	~1380	0
Queue Length 95th (ft)	172	16	0	40	17	0	67	#1002	0	57	#1541	0
Internal Link Dist (ft)		198			1737			150			1417	
Turn Bay Length (ft)												
Base Capacity (vph)	270	242	336	280	139	257	164	2148	1023	132	2038	979
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.02	0.14	0.09	0.04	0.29	0.25	0.93	0.01	0.24	1.28	0.07

Intersection Summary

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

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	153	5	46	25	5	70	39	1888	9	30	2477	63
Future Volume (veh/h)	153	5	46	25	5	70	39	1888	9	30	2477	63
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	161	5	0	26	5	0	41	1987	0	32	2607	0
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	301	205	174	186	79	67	80	2051	918	70	2031	909
Arrive On Green	0.10	0.11	0.00	0.03	0.04	0.00	0.05	0.58	0.00	0.04	0.57	0.00
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	161	5	0	26	5	0	41	1987	0	32	2607	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	9.3	0.3	0.0	1.5	0.3	0.0	2.5	59.7	0.0	2.0	63.7	0.0
Cycle Q Clear(g_c), s	9.3	0.3	0.0	1.5	0.3	0.0	2.5	59.7	0.0	2.0	63.7	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	301	205	174	186	79	67	80	2051	918	70	2031	909
V/C Ratio(X)	0.53	0.02	0.00	0.14	0.06	0.00	0.51	0.97	0.00	0.46	1.28	0.00
Avail Cap(c_a), veh/h	330	205	174	335	138	117	163	2051	918	131	2031	909
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	42.9	44.1	0.0	48.0	51.0	0.0	51.8	22.4	0.0	52.1	23.6	0.0
Incr Delay (d2), s/veh	1.5	0.0	0.0	0.3	0.3	0.0	4.9	13.8	0.0	4.6	131.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	0.1	0.0	0.8	0.2	0.0	1.3	32.9	0.0	1.0	67.9	0.0
LnGrp Delay(d),s/veh	44.4	44.1	0.0	48.3	51.4	0.0	56.7	36.1	0.0	56.7	155.2	0.0
LnGrp LOS	D	D		D	D		E	D		E	F	
Approach Vol, veh/h		166			31			2028			2639	
Approach Delay, s/veh		44.4			48.8			36.5			154.0	
Approach LOS		D			D			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.2	70.1	10.7	19.0	11.8	69.5	18.2	11.5
Change Period (Y+Rc), s	* 6.8	* 5.8	* 6.8	* 6.8	* 6.8	5.8	6.9	* 6.8
Max Green Setting (Gmax), s	* 8.2	* 64	* 13	* 8.2	* 10	62.2	13.1	* 8.2
Max Q Clear Time (g_c+I1), s	4.0	61.7	3.5	2.3	4.5	65.7	11.3	2.3
Green Ext Time (p_c), s	0.0	2.3	0.0	0.0	0.0	0.0	0.1	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	100.6
HCM 2010 LOS	F

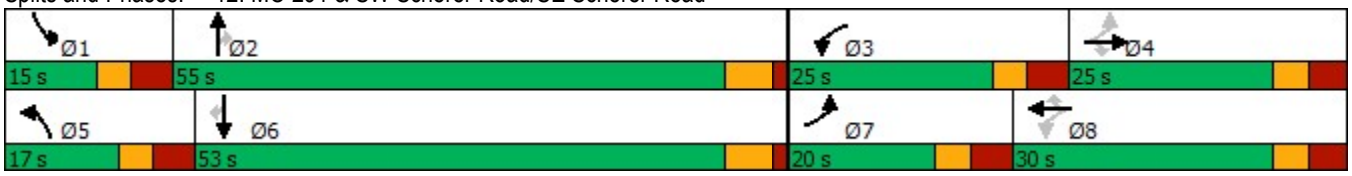
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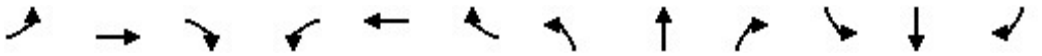
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	5	23	12	7	19	14	1888	14	27	1879	52
Future Volume (vph)	60	5	23	12	7	19	14	1888	14	27	1879	52
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	20.0	25.0	25.0	25.0	30.0	30.0	17.0	55.0	55.0	15.0	53.0	53.0
Total Split (s)	20.0	25.0	25.0	25.0	30.0	30.0	17.0	55.0	55.0	15.0	53.0	53.0
Total Split (%)	16.7%	20.8%	20.8%	20.8%	25.0%	25.0%	14.2%	45.8%	45.8%	12.5%	44.2%	44.2%
Yellow Time (s)	3.2	3.2	3.2	3.0	3.2	3.2	3.0	4.3	4.3	3.0	4.3	4.3
All-Red Time (s)	3.7	3.6	3.6	3.8	3.6	3.6	3.8	1.4	1.4	3.8	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.9	6.8	6.8	6.8	6.8	6.8	6.8	5.7	5.7	6.8	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Min	Min
Act Effct Green (s)	15.7	13.8	13.8	10.9	7.2	7.2	7.4	56.2	56.2	7.6	61.2	61.2
Actuated g/C Ratio	0.18	0.16	0.16	0.12	0.08	0.08	0.08	0.64	0.64	0.09	0.70	0.70
v/c Ratio	0.27	0.02	0.06	0.06	0.05	0.07	0.10	0.88	0.01	0.18	0.80	0.05
Control Delay	33.4	35.8	0.3	30.6	44.7	0.5	45.5	27.3	0.0	46.0	18.8	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.4	35.8	0.3	30.6	44.7	0.5	45.5	27.3	0.0	46.0	18.8	0.1
LOS	C	D	A	C	D	A	D	C	A	D	B	A
Approach Delay		24.9			18.0			27.3			18.6	
Approach LOS		C			B			C			B	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 88	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 22.9	Intersection LOS: C
Intersection Capacity Utilization 79.9%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 12: MO 291 & SW Scherer Road/SE Scherer Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	63	5	24	13	7	20	15	1987	15	28	1978	55
v/c Ratio	0.27	0.02	0.06	0.06	0.05	0.07	0.10	0.88	0.01	0.18	0.80	0.05
Control Delay	33.4	35.8	0.3	30.6	44.7	0.5	45.5	27.3	0.0	46.0	18.8	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.4	35.8	0.3	30.6	44.7	0.5	45.5	27.3	0.0	46.0	18.8	0.1
Queue Length 50th (ft)	32	2	0	6	4	0	9	~760	0	17	482	0
Queue Length 95th (ft)	67	14	0	22	19	0	30	#950	0	46	#940	0
Internal Link Dist (ft)		198			1737			150			1417	
Turn Bay Length (ft)												
Base Capacity (vph)	317	437	486	427	507	540	212	2258	1067	170	2459	1148
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.01	0.05	0.03	0.01	0.04	0.07	0.88	0.01	0.16	0.80	0.05

Intersection Summary

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

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	5	23	12	7	19	14	1888	14	27	1879	52
Future Volume (veh/h)	60	5	23	12	7	19	14	1888	14	27	1879	52
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	63	5	0	13	7	0	15	1987	0	28	1978	0
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	239	146	124	172	68	58	43	1988	890	70	2042	913
Arrive On Green	0.06	0.08	0.00	0.02	0.04	0.00	0.02	0.56	0.00	0.04	0.58	0.00
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	63	5	0	13	7	0	15	1987	0	28	1978	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	2.9	0.2	0.0	0.6	0.3	0.0	0.7	49.2	0.0	1.4	47.0	0.0
Cycle Q Clear(g_c), s	2.9	0.2	0.0	0.6	0.3	0.0	0.7	49.2	0.0	1.4	47.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	239	146	124	172	68	58	43	1988	890	70	2042	913
V/C Ratio(X)	0.26	0.03	0.00	0.08	0.10	0.00	0.35	1.00	0.00	0.40	0.97	0.00
Avail Cap(c_a), veh/h	393	386	328	501	492	419	206	1988	890	166	2042	913
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	36.9	37.4	0.0	39.2	40.9	0.0	42.1	19.2	0.0	41.1	17.8	0.0
Incr Delay (d2), s/veh	0.6	0.1	0.0	0.2	0.7	0.0	4.7	20.0	0.0	3.7	13.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.1	0.0	0.3	0.2	0.0	0.4	29.3	0.0	0.7	26.6	0.0
LnGrp Delay(d),s/veh	37.5	37.5	0.0	39.4	41.6	0.0	46.8	39.2	0.0	44.8	31.2	0.0
LnGrp LOS	D	D		D	D		D	D		D	C	
Approach Vol, veh/h		68			20			2002			2006	
Approach Delay, s/veh		37.5			40.2			39.3			31.4	
Approach LOS		D			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.3	55.1	8.7	13.7	8.9	56.4	12.4	10.0
Change Period (Y+Rc), s	* 6.8	* 5.8	* 6.8	* 6.8	* 6.8	5.8	6.9	* 6.8
Max Green Setting (Gmax), s	* 8.2	* 49	* 18	* 18	* 10	47.2	13.1	* 23
Max Q Clear Time (g_c+I1), s	3.4	51.2	2.6	2.2	2.7	49.0	4.9	2.3
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	35.4
HCM 2010 LOS	D

Notes

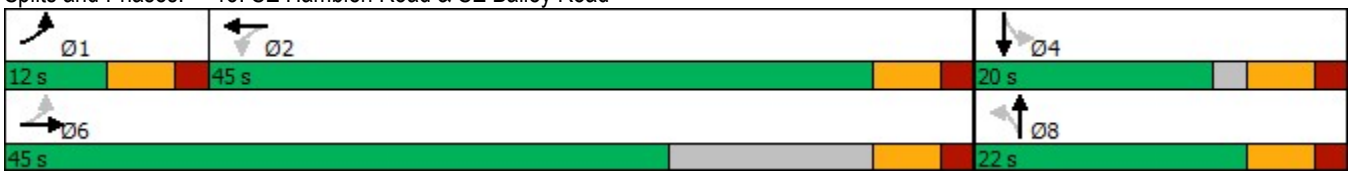
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

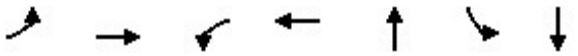
Intersection 5
Bailey Road & Hamblen Road

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	203	114	1	146	12	12	84	14
Future Volume (vph)	203	114	1	146	12	12	84	14
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	1	6		2		8		4
Permitted Phases	6		2		8		4	
Detector Phase	1	6	2	2	8	8	4	4
Switch Phase								
Minimum Initial (s)	6.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	12.0	45.0	45.0	45.0	22.0	22.0	20.0	20.0
Total Split (s)	12.0	45.0	45.0	45.0	22.0	22.0	20.0	20.0
Total Split (%)	15.2%	57.0%	57.0%	57.0%	27.8%	27.8%	25.3%	25.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	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)	6.0	6.0	6.0	6.0		6.0	6.0	6.0
Lead/Lag	Lead		Lag	Lag				
Lead-Lag Optimize?	Yes		Yes	Yes				
Recall Mode	None	Min	Min	Min	None	None	None	None
Act Effct Green (s)	25.2	25.2	13.0	13.0		9.6	9.6	9.6
Actuated g/C Ratio	0.54	0.54	0.28	0.28		0.20	0.20	0.20
v/c Ratio	0.52	0.14	0.00	0.65		0.10	0.36	0.39
Control Delay	10.4	6.0	12.0	17.1		17.1	21.2	7.6
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	10.4	6.0	12.0	17.1		17.1	21.2	7.6
LOS	B	A	B	B		B	C	A
Approach Delay		8.8		17.0		17.1		12.5
Approach LOS		A		B		B		B

Intersection Summary	
Cycle Length: 79	
Actuated Cycle Length: 47	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.65	
Intersection Signal Delay: 12.8	Intersection LOS: B
Intersection Capacity Utilization 54.5%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 15: SE Hamblen Road & SE Bailey Road





Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	242	140	1	351	29	100	178
v/c Ratio	0.52	0.14	0.00	0.65	0.10	0.36	0.39
Control Delay	10.4	6.0	12.0	17.1	17.1	21.2	7.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.4	6.0	12.0	17.1	17.1	21.2	7.6
Queue Length 50th (ft)	29	15	0	56	6	23	4
Queue Length 95th (ft)	66	39	3	122	23	60	39
Internal Link Dist (ft)		1225		119	741		656
Turn Bay Length (ft)							
Base Capacity (vph)	467	1807	1049	1467	506	476	662
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.52	0.08	0.00	0.24	0.06	0.21	0.27

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	203	114	3	1	146	149	12	12	1	84	14	135
Future Volume (veh/h)	203	114	3	1	146	149	12	12	1	84	14	135
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	242	136	4	1	174	177	14	14	1	100	17	161
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	1	1	0
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	502	996	29	516	241	245	172	132	7	427	27	256
Arrive On Green	0.13	0.55	0.55	0.28	0.28	0.28	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	1774	1800	53	1244	848	863	295	748	37	1393	153	1453
Grp Volume(v), veh/h	242	0	140	1	0	351	29	0	0	100	0	178
Grp Sat Flow(s),veh/h/ln	1774	0	1853	1244	0	1711	1080	0	0	1393	0	1606
Q Serve(g_s), s	3.8	0.0	1.6	0.0	0.0	8.2	0.1	0.0	0.0	0.0	0.0	4.6
Cycle Q Clear(g_c), s	3.8	0.0	1.6	0.0	0.0	8.2	4.6	0.0	0.0	2.5	0.0	4.6
Prop In Lane	1.00		0.03	1.00		0.50	0.48		0.03	1.00		0.90
Lane Grp Cap(c), veh/h	502	0	1025	516	0	486	311	0	0	427	0	283
V/C Ratio(X)	0.48	0.00	0.14	0.00	0.00	0.72	0.09	0.00	0.00	0.23	0.00	0.63
Avail Cap(c_a), veh/h	504	0	1629	1256	0	1504	581	0	0	621	0	507
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	8.9	0.0	4.8	11.4	0.0	14.3	15.4	0.0	0.0	16.1	0.0	16.9
Incr Delay (d2), s/veh	0.7	0.0	0.1	0.0	0.0	2.1	0.1	0.0	0.0	0.3	0.0	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	0.8	0.0	0.0	4.1	0.3	0.0	0.0	1.1	0.0	2.2
LnGrp Delay(d),s/veh	9.7	0.0	4.8	11.4	0.0	16.4	15.5	0.0	0.0	16.3	0.0	19.2
LnGrp LOS	A		A	B		B	B			B		B
Approach Vol, veh/h		382			352			29			278	
Approach Delay, s/veh		7.9			16.3			15.5			18.2	
Approach LOS		A			B			B			B	

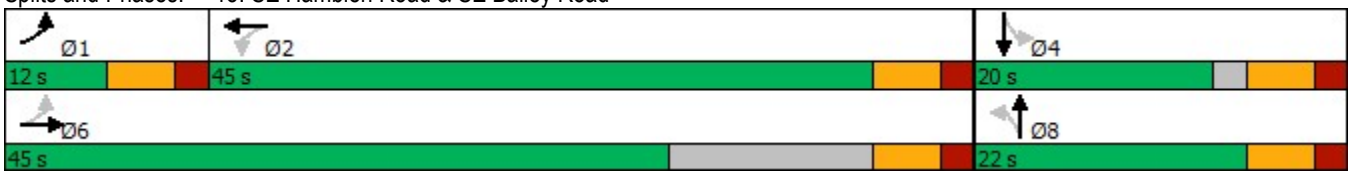
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	11.9	18.6		13.8		30.5		13.8
Change Period (Y+Rc), s	6.0	6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s	6.0	39.0		14.0		39.0		16.0
Max Q Clear Time (g_c+I1), s	5.8	10.2		6.6		3.6		6.6
Green Ext Time (p_c), s	0.0	2.4		0.8		0.8		0.0

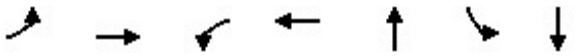
Intersection Summary	
HCM 2010 Ctrl Delay	13.7
HCM 2010 LOS	B

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	201	199	3	264	5	12	222	5
Future Volume (vph)	201	199	3	264	5	12	222	5
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	1	6		2		8		4
Permitted Phases	6		2		8		4	
Detector Phase	1	6	2	2	8	8	4	4
Switch Phase								
Minimum Initial (s)	6.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	12.0	45.0	45.0	45.0	22.0	22.0	20.0	20.0
Total Split (s)	12.0	45.0	45.0	45.0	22.0	22.0	20.0	20.0
Total Split (%)	15.2%	57.0%	57.0%	57.0%	27.8%	27.8%	25.3%	25.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	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)	6.0	6.0	6.0	6.0		6.0	6.0	6.0
Lead/Lag	Lead		Lag	Lag				
Lead-Lag Optimize?	Yes		Yes	Yes				
Recall Mode	None	Min	Min	Min	None	None	None	None
Act Effct Green (s)	28.5	28.5	16.4	16.4		13.3	13.3	13.3
Actuated g/C Ratio	0.53	0.53	0.30	0.30		0.25	0.25	0.25
v/c Ratio	0.51	0.22	0.01	0.70		0.05	0.69	0.10
Control Delay	11.4	7.3	12.3	22.1		16.8	33.6	8.9
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	11.4	7.3	12.3	22.1		16.8	33.6	8.9
LOS	B	A	B	C		B	C	A
Approach Delay		9.4		22.0		16.8		29.9
Approach LOS		A		C		B		C

Intersection Summary	
Cycle Length: 79	
Actuated Cycle Length: 53.9	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.70	
Intersection Signal Delay: 19.1	Intersection LOS: B
Intersection Capacity Utilization 65.6%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 15: SE Hamblen Road & SE Bailey Road





Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	214	212	3	396	21	236	42
v/c Ratio	0.51	0.22	0.01	0.70	0.05	0.69	0.10
Control Delay	11.4	7.3	12.3	22.1	16.8	33.6	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.4	7.3	12.3	22.1	16.8	33.6	8.9
Queue Length 50th (ft)	34	33	1	101	4	67	1
Queue Length 95th (ft)	62	61	5	177	20	#185	23
Internal Link Dist (ft)		1225		119	741		656
Turn Bay Length (ft)							
Base Capacity (vph)	416	1731	852	1313	519	416	511
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.12	0.00	0.30	0.04	0.57	0.08

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	201	199	0	3	264	108	5	12	3	222	5	35
Future Volume (veh/h)	201	199	0	3	264	108	5	12	3	222	5	35
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	214	212	0	3	281	115	5	13	3	236	5	37
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	1	1	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	464	1019	0	497	376	154	135	263	51	437	39	291
Arrive On Green	0.12	0.55	0.00	0.30	0.30	0.30	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	1774	1863	0	1165	1257	515	208	1285	249	1392	192	1420
Grp Volume(v), veh/h	214	212	0	3	0	396	21	0	0	236	0	42
Grp Sat Flow(s),veh/h/ln	1774	1863	0	1165	0	1772	1742	0	0	1392	0	1612
Q Serve(g_s), s	3.6	2.8	0.0	0.1	0.0	9.7	0.0	0.0	0.0	7.2	0.0	1.0
Cycle Q Clear(g_c), s	3.6	2.8	0.0	0.1	0.0	9.7	0.4	0.0	0.0	7.7	0.0	1.0
Prop In Lane	1.00		0.00	1.00		0.29	0.24		0.14	1.00		0.88
Lane Grp Cap(c), veh/h	464	1019	0	497	0	529	449	0	0	437	0	330
V/C Ratio(X)	0.46	0.21	0.00	0.01	0.00	0.75	0.05	0.00	0.00	0.54	0.00	0.13
Avail Cap(c_a), veh/h	465	1504	0	1090	0	1431	661	0	0	556	0	467
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.7	5.6	0.0	11.9	0.0	15.3	15.5	0.0	0.0	18.3	0.0	15.7
Incr Delay (d2), s/veh	0.7	0.1	0.0	0.0	0.0	2.1	0.0	0.0	0.0	1.0	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	1.4	0.0	0.0	0.0	5.0	0.2	0.0	0.0	3.1	0.0	0.5
LnGrp Delay(d),s/veh	10.4	5.7	0.0	11.9	0.0	17.4	15.5	0.0	0.0	19.3	0.0	15.9
LnGrp LOS	B	A		B		B	B			B		B
Approach Vol, veh/h		426			399			21			278	
Approach Delay, s/veh		8.1			17.4			15.5			18.8	
Approach LOS		A			B			B			B	

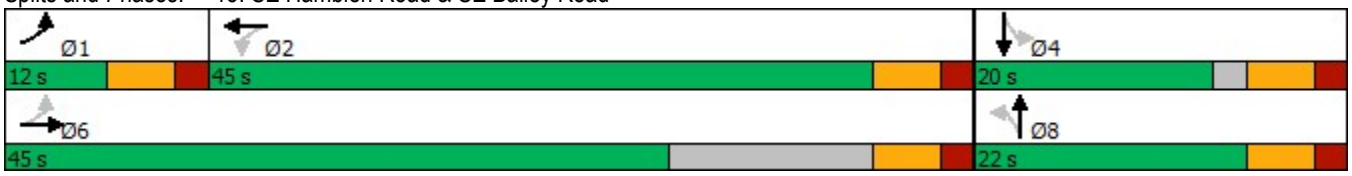
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	12.0	20.4		15.9		32.4		15.9
Change Period (Y+Rc), s	6.0	6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s	6.0	39.0		14.0		39.0		16.0
Max Q Clear Time (g_c+I1), s	5.6	11.7		9.7		4.8		2.4
Green Ext Time (p_c), s	0.0	2.7		0.4		1.3		0.0

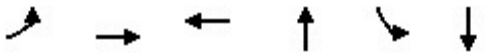
Intersection Summary	
HCM 2010 Ctrl Delay	14.2
HCM 2010 LOS	B

Lane Group	EBL	EBT	WBT	NBT	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	177	103	124	1	110	1
Future Volume (vph)	177	103	124	1	110	1
Turn Type	pm+pt	NA	NA	NA	Perm	NA
Protected Phases	1	6	2	8		4
Permitted Phases	6				4	
Detector Phase	1	6	2	8	4	4
Switch Phase						
Minimum Initial (s)	6.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	12.0	45.0	45.0	22.0	20.0	20.0
Total Split (s)	12.0	45.0	45.0	22.0	20.0	20.0
Total Split (%)	15.2%	57.0%	57.0%	27.8%	25.3%	25.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	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
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	None	Min	Min	None	None	None
Act Effct Green (s)	19.4	19.4	10.5	10.0	10.0	10.0
Actuated g/C Ratio	0.46	0.46	0.25	0.24	0.24	0.24
v/c Ratio	0.38	0.13	0.50	0.00	0.35	0.45
Control Delay	9.0	6.6	14.5	12.5	18.5	5.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.0	6.6	14.5	12.5	18.5	5.6
LOS	A	A	B	B	B	A
Approach Delay		8.1	14.5	12.5		9.6
Approach LOS		A	B	B		A

Intersection Summary	
Cycle Length: 79	
Actuated Cycle Length: 42	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.50	
Intersection Signal Delay: 10.4	Intersection LOS: B
Intersection Capacity Utilization 53.1%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 15: SE Hamblen Road & SE Bailey Road





Lane Group	EBL	EBT	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	188	110	246	2	117	262
v/c Ratio	0.38	0.13	0.50	0.00	0.35	0.45
Control Delay	9.0	6.6	14.5	12.5	18.5	5.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.0	6.6	14.5	12.5	18.5	5.6
Queue Length 50th (ft)	22	12	35	0	25	0
Queue Length 95th (ft)	58	36	94	4	65	44
Internal Link Dist (ft)		1225	119	741		656
Turn Bay Length (ft)						
Base Capacity (vph)	489	1853	1554	692	561	788
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.06	0.16	0.00	0.21	0.33

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	177	103	0	0	124	107	0	1	1	110	1	245
Future Volume (veh/h)	177	103	0	0	124	107	0	1	1	110	1	245
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	188	110	0	0	132	114	0	1	1	117	1	261
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	1	1	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	510	922	0	170	199	172	0	190	190	481	1	350
Arrive On Green	0.14	0.49	0.00	0.00	0.22	0.22	0.00	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1774	1863	0	1278	924	798	0	856	856	1409	6	1578
Grp Volume(v), veh/h	188	110	0	0	0	246	0	0	2	117	0	262
Grp Sat Flow(s),veh/h/ln	1774	1863	0	1278	0	1722	0	0	1712	1409	0	1584
Q Serve(g_s), s	3.0	1.3	0.0	0.0	0.0	5.5	0.0	0.0	0.0	3.0	0.0	6.5
Cycle Q Clear(g_c), s	3.0	1.3	0.0	0.0	0.0	5.5	0.0	0.0	0.0	3.0	0.0	6.5
Prop In Lane	1.00		0.00	1.00		0.46	0.00		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	510	922	0	170	0	371	0	0	379	481	0	351
V/C Ratio(X)	0.37	0.12	0.00	0.00	0.00	0.66	0.00	0.00	0.01	0.24	0.00	0.75
Avail Cap(c_a), veh/h	518	1717	0	1072	0	1587	0	0	647	635	0	524
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.3	5.7	0.0	0.0	0.0	15.2	0.0	0.0	12.8	14.0	0.0	15.4
Incr Delay (d2), s/veh	0.4	0.1	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.3	0.0	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.7	0.0	0.0	0.0	2.8	0.0	0.0	0.0	1.2	0.0	3.1
LnGrp Delay(d),s/veh	9.8	5.8	0.0	0.0	0.0	17.2	0.0	0.0	12.8	14.3	0.0	18.5
LnGrp LOS	A	A				B			B	B		B
Approach Vol, veh/h		298			246			2			379	
Approach Delay, s/veh		8.3			17.2			12.8			17.2	
Approach LOS		A			B			B			B	

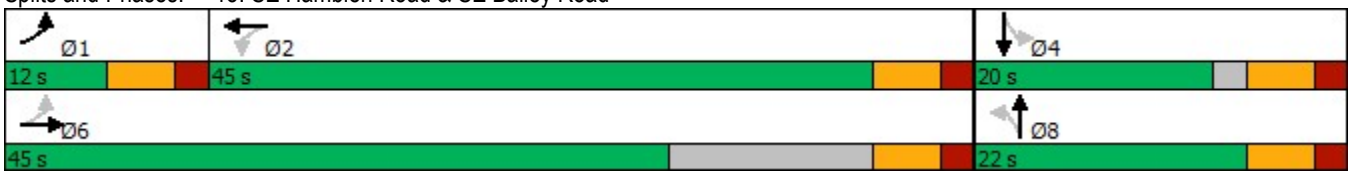
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	11.8	15.1		15.4		26.9		15.4
Change Period (Y+Rc), s	6.0	6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s	6.0	39.0		14.0		39.0		16.0
Max Q Clear Time (g_c+I1), s	5.0	7.5		8.5		3.3		2.0
Green Ext Time (p_c), s	0.1	1.6		1.0		0.6		0.0

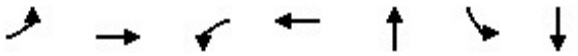
Intersection Summary	
HCM 2010 Ctrl Delay	14.3
HCM 2010 LOS	B

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	210	121	1	155	13	12	84	14
Future Volume (vph)	210	121	1	155	13	12	84	14
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	1	6		2		8		4
Permitted Phases	6		2		8		4	
Detector Phase	1	6	2	2	8	8	4	4
Switch Phase								
Minimum Initial (s)	6.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	12.0	45.0	45.0	45.0	22.0	22.0	20.0	20.0
Total Split (s)	12.0	45.0	45.0	45.0	22.0	22.0	20.0	20.0
Total Split (%)	15.2%	57.0%	57.0%	57.0%	27.8%	27.8%	25.3%	25.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	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)	6.0	6.0	6.0	6.0		6.0	6.0	6.0
Lead/Lag	Lead		Lag	Lag				
Lead-Lag Optimize?	Yes		Yes	Yes				
Recall Mode	None	Min	Min	Min	None	None	None	None
Act Effct Green (s)	25.6	25.6	13.4	13.4		9.7	9.7	9.7
Actuated g/C Ratio	0.54	0.54	0.28	0.28		0.20	0.20	0.20
v/c Ratio	0.54	0.15	0.00	0.66		0.10	0.36	0.40
Control Delay	10.9	5.9	12.0	17.6		17.5	21.6	7.7
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	10.9	5.9	12.0	17.6		17.5	21.6	7.7
LOS	B	A	B	B		B	C	A
Approach Delay		9.1		17.6		17.5		12.5
Approach LOS		A		B		B		B

Intersection Summary	
Cycle Length: 79	
Actuated Cycle Length: 47.5	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.66	
Intersection Signal Delay: 13.1	Intersection LOS: B
Intersection Capacity Utilization 56.3%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 15: SE Hamblen Road & SE Bailey Road





Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	250	149	1	362	30	100	187
v/c Ratio	0.54	0.15	0.00	0.66	0.10	0.36	0.40
Control Delay	10.9	5.9	12.0	17.6	17.5	21.6	7.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.9	5.9	12.0	17.6	17.5	21.6	7.7
Queue Length 50th (ft)	30	16	0	61	6	23	4
Queue Length 95th (ft)	68	41	3	128	24	61	40
Internal Link Dist (ft)		1225		119	741		656
Turn Bay Length (ft)							
Base Capacity (vph)	462	1801	1031	1458	494	472	663
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.08	0.00	0.25	0.06	0.21	0.28

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	210	121	4	1	155	149	13	12	1	84	14	143
Future Volume (veh/h)	210	121	4	1	155	149	13	12	1	84	14	143
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	250	144	5	1	185	177	15	14	1	100	17	170
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	1	1	0
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	498	997	35	518	254	243	169	119	6	419	26	256
Arrive On Green	0.13	0.56	0.56	0.29	0.29	0.29	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	1774	1790	62	1234	876	838	274	682	33	1393	146	1459
Grp Volume(v), veh/h	250	0	149	1	0	362	30	0	0	100	0	187
Grp Sat Flow(s),veh/h/ln	1774	0	1852	1234	0	1715	989	0	0	1393	0	1605
Q Serve(g_s), s	3.9	0.0	1.7	0.0	0.0	8.5	0.1	0.0	0.0	0.0	0.0	4.9
Cycle Q Clear(g_c), s	3.9	0.0	1.7	0.0	0.0	8.5	4.9	0.0	0.0	2.6	0.0	4.9
Prop In Lane	1.00		0.03	1.00		0.49	0.50		0.03	1.00		0.91
Lane Grp Cap(c), veh/h	498	0	1031	518	0	497	294	0	0	419	0	281
V/C Ratio(X)	0.50	0.00	0.14	0.00	0.00	0.73	0.10	0.00	0.00	0.24	0.00	0.67
Avail Cap(c_a), veh/h	500	0	1612	1235	0	1493	557	0	0	610	0	502
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.0	0.0	4.8	11.3	0.0	14.3	15.6	0.0	0.0	16.3	0.0	17.2
Incr Delay (d2), s/veh	0.8	0.0	0.1	0.0	0.0	2.1	0.2	0.0	0.0	0.3	0.0	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	0.9	0.0	0.0	4.3	0.3	0.0	0.0	1.1	0.0	2.3
LnGrp Delay(d),s/veh	9.8	0.0	4.8	11.3	0.0	16.4	15.7	0.0	0.0	16.6	0.0	19.9
LnGrp LOS	A		A	B		B	B			B		B
Approach Vol, veh/h		399			363			30			287	
Approach Delay, s/veh		8.0			16.4			15.7			18.8	
Approach LOS		A			B			B			B	

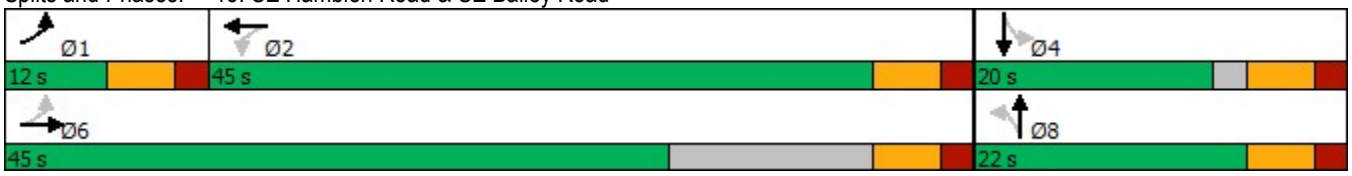
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	12.0	19.0		13.8		30.9		13.8
Change Period (Y+Rc), s	6.0	6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s	6.0	39.0		14.0		39.0		16.0
Max Q Clear Time (g_c+I1), s	5.9	10.5		6.9		3.7		6.9
Green Ext Time (p_c), s	0.0	2.5		0.8		0.9		0.0

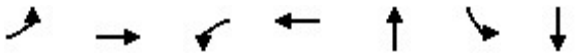
Intersection Summary	
HCM 2010 Ctrl Delay	13.9
HCM 2010 LOS	B

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	224	216	3	279	5	12	222	5
Future Volume (vph)	224	216	3	279	5	12	222	5
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	1	6		2		8		4
Permitted Phases	6		2		8		4	
Detector Phase	1	6	2	2	8	8	4	4
Switch Phase								
Minimum Initial (s)	6.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	12.0	45.0	45.0	45.0	22.0	22.0	20.0	20.0
Total Split (s)	12.0	45.0	45.0	45.0	22.0	22.0	20.0	20.0
Total Split (%)	15.2%	57.0%	57.0%	57.0%	27.8%	27.8%	25.3%	25.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	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)	6.0	6.0	6.0	6.0		6.0	6.0	6.0
Lead/Lag	Lead		Lag	Lag				
Lead-Lag Optimize?	Yes		Yes	Yes				
Recall Mode	None	Min	Min	Min	None	None	None	None
Act Effct Green (s)	29.2	29.2	17.0	17.0		13.3	13.3	13.3
Actuated g/C Ratio	0.53	0.53	0.31	0.31		0.24	0.24	0.24
v/c Ratio	0.58	0.23	0.01	0.71		0.06	0.70	0.58
Control Delay	13.0	7.4	12.0	22.4		17.2	34.4	6.8
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	13.0	7.4	12.0	22.4		17.2	34.4	6.8
LOS	B	A	B	C		B	C	A
Approach Delay		10.3		22.3		17.2		17.0
Approach LOS		B		C		B		B

Intersection Summary	
Cycle Length: 79	
Actuated Cycle Length: 54.7	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.71	
Intersection Signal Delay: 16.4	Intersection LOS: B
Intersection Capacity Utilization 72.0%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 15: SE Hamblen Road & SE Bailey Road





Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	238	230	3	412	21	236	401
v/c Ratio	0.58	0.23	0.01	0.71	0.06	0.70	0.58
Control Delay	13.0	7.4	12.0	22.4	17.2	34.4	6.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.0	7.4	12.0	22.4	17.2	34.4	6.8
Queue Length 50th (ft)	38	37	1	107	4	68	1
Queue Length 95th (ft)	69	65	5	186	21	#190	64
Internal Link Dist (ft)		1225		119	741		656
Turn Bay Length (ft)							
Base Capacity (vph)	409	1712	828	1299	458	410	749
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.13	0.00	0.32	0.05	0.58	0.54

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	224	216	0	3	279	108	5	12	3	222	5	372
Future Volume (veh/h)	224	216	0	3	279	108	5	12	3	222	5	372
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	238	230	0	3	297	115	5	13	3	236	5	396
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	1	1	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	396	946	0	466	379	147	92	190	34	343	6	440
Arrive On Green	0.11	0.51	0.00	0.30	0.30	0.30	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	1774	1863	0	1146	1280	496	48	678	121	1392	20	1567
Grp Volume(v), veh/h	238	230	0	3	0	412	21	0	0	236	0	401
Grp Sat Flow(s),veh/h/ln	1774	1863	0	1146	0	1775	846	0	0	1392	0	1586
Q Serve(g_s), s	4.9	3.9	0.0	0.1	0.0	12.1	0.1	0.0	0.0	2.0	0.0	13.8
Cycle Q Clear(g_c), s	4.9	3.9	0.0	0.1	0.0	12.1	13.9	0.0	0.0	15.9	0.0	13.8
Prop In Lane	1.00		0.00	1.00		0.28	0.24		0.14	1.00		0.99
Lane Grp Cap(c), veh/h	396	946	0	466	0	526	316	0	0	343	0	445
V/C Ratio(X)	0.60	0.24	0.00	0.01	0.00	0.78	0.07	0.00	0.00	0.69	0.00	0.90
Avail Cap(c_a), veh/h	396	1280	0	914	0	1220	318	0	0	343	0	445
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	12.7	7.8	0.0	14.1	0.0	18.3	15.4	0.0	0.0	21.8	0.0	19.6
Incr Delay (d2), s/veh	2.5	0.1	0.0	0.0	0.0	2.6	0.1	0.0	0.0	5.7	0.0	21.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	2.0	0.0	0.0	0.0	6.2	0.2	0.0	0.0	4.1	0.0	8.6
LnGrp Delay(d),s/veh	15.2	8.0	0.0	14.1	0.0	20.9	15.5	0.0	0.0	27.5	0.0	40.7
LnGrp LOS	B	A		B		C	B			C		D
Approach Vol, veh/h		468			415			21			637	
Approach Delay, s/veh		11.7			20.8			15.5			35.8	
Approach LOS		B			C			B			D	

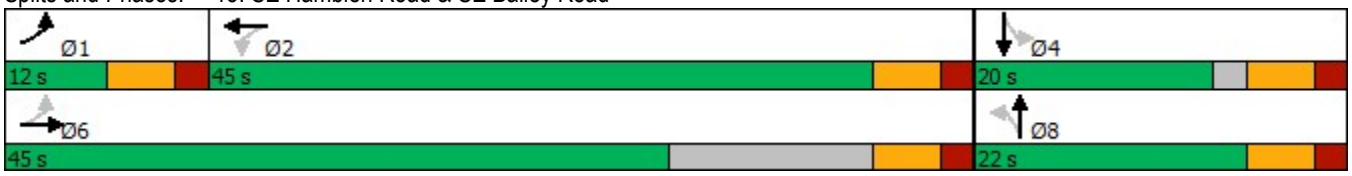
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	12.0	22.8		21.9		34.8		21.9
Change Period (Y+Rc), s	6.0	6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s	6.0	39.0		14.0		39.0		16.0
Max Q Clear Time (g_c+I1), s	6.9	14.1		17.9		5.9		15.9
Green Ext Time (p_c), s	0.0	2.8		0.0		1.4		0.0

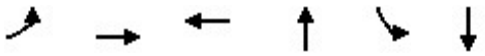
Intersection Summary	
HCM 2010 Ctrl Delay	24.2
HCM 2010 LOS	C

Lane Group	EBL	EBT	WBT	NBT	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	217	124	144	1	110	1
Future Volume (vph)	217	124	144	1	110	1
Turn Type	pm+pt	NA	NA	NA	Perm	NA
Protected Phases	1	6	2	8		4
Permitted Phases	6				4	
Detector Phase	1	6	2	8	4	4
Switch Phase						
Minimum Initial (s)	6.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	12.0	45.0	45.0	22.0	20.0	20.0
Total Split (s)	12.0	45.0	45.0	22.0	20.0	20.0
Total Split (%)	15.2%	57.0%	57.0%	27.8%	25.3%	25.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	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
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	None	Min	Min	None	None	None
Act Effct Green (s)	23.2	23.2	11.0	9.9	9.9	9.9
Actuated g/C Ratio	0.51	0.51	0.24	0.22	0.22	0.22
v/c Ratio	0.45	0.14	0.56	0.01	0.38	0.52
Control Delay	9.7	6.6	16.3	13.0	19.7	6.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.7	6.6	16.3	13.0	19.7	6.2
LOS	A	A	B	B	B	A
Approach Delay		8.6	16.3	13.0		10.0
Approach LOS		A	B	B		A

Intersection Summary	
Cycle Length: 79	
Actuated Cycle Length: 45.3	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.56	
Intersection Signal Delay: 11.1	Intersection LOS: B
Intersection Capacity Utilization 58.8%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 15: SE Hamblen Road & SE Bailey Road





Lane Group	EBL	EBT	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	231	132	267	2	117	303
v/c Ratio	0.45	0.14	0.56	0.01	0.38	0.52
Control Delay	9.7	6.6	16.3	13.0	19.7	6.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.7	6.6	16.3	13.0	19.7	6.2
Queue Length 50th (ft)	28	15	42	0	25	0
Queue Length 95th (ft)	70	42	106	4	67	48
Internal Link Dist (ft)		1225	119	741		656
Turn Bay Length (ft)						
Base Capacity (vph)	509	1844	1529	621	504	760
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.07	0.17	0.00	0.23	0.40

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	217	124	0	0	144	107	0	1	1	110	1	284
Future Volume (veh/h)	217	124	0	0	144	107	0	1	1	110	1	284
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	231	132	0	0	153	114	0	1	1	117	1	302
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	1	1	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	488	914	0	160	223	166	0	207	207	500	1	382
Arrive On Green	0.13	0.49	0.00	0.00	0.22	0.22	0.00	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	1774	1863	0	1253	993	740	0	856	856	1409	5	1579
Grp Volume(v), veh/h	231	132	0	0	0	267	0	0	2	117	0	303
Grp Sat Flow(s),veh/h/ln	1774	1863	0	1253	0	1732	0	0	1712	1409	0	1584
Q Serve(g_s), s	4.0	1.7	0.0	0.0	0.0	6.3	0.0	0.0	0.0	3.1	0.0	8.0
Cycle Q Clear(g_c), s	4.0	1.7	0.0	0.0	0.0	6.3	0.0	0.0	0.0	3.1	0.0	8.0
Prop In Lane	1.00		0.00	1.00		0.43	0.00		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	488	914	0	160	0	389	0	0	414	500	0	383
V/C Ratio(X)	0.47	0.14	0.00	0.00	0.00	0.69	0.00	0.00	0.00	0.23	0.00	0.79
Avail Cap(c_a), veh/h	490	1619	0	968	0	1505	0	0	610	599	0	494
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	10.2	6.3	0.0	0.0	0.0	16.0	0.0	0.0	12.9	14.1	0.0	16.0
Incr Delay (d2), s/veh	0.7	0.1	0.0	0.0	0.0	2.2	0.0	0.0	0.0	0.2	0.0	6.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.9	0.0	0.0	0.0	3.3	0.0	0.0	0.0	1.2	0.0	4.1
LnGrp Delay(d),s/veh	10.9	6.3	0.0	0.0	0.0	18.1	0.0	0.0	12.9	14.3	0.0	22.5
LnGrp LOS	B	A				B			B	B		C
Approach Vol, veh/h		363			267			2			420	
Approach Delay, s/veh		9.3			18.1			12.9			20.2	
Approach LOS		A			B			B			C	

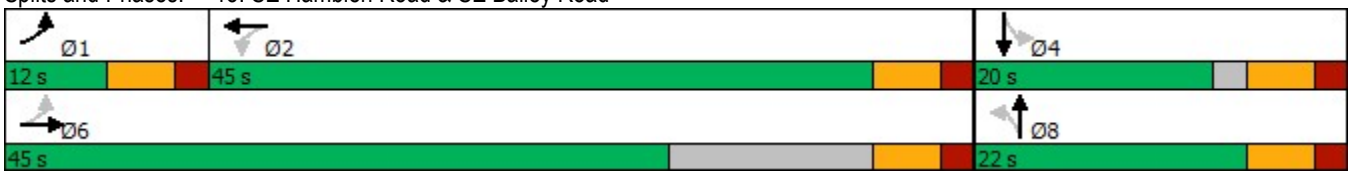
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	12.0	16.1		16.9		28.0		16.9
Change Period (Y+Rc), s	6.0	6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s	6.0	39.0		14.0		39.0		16.0
Max Q Clear Time (g_c+I1), s	6.0	8.3		10.0		3.7		2.0
Green Ext Time (p_c), s	0.0	1.7		0.9		0.7		0.0

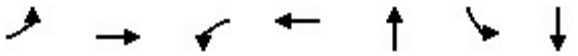
Intersection Summary	
HCM 2010 Ctrl Delay	15.9
HCM 2010 LOS	B

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	220	133	1	158	13	12	84	14
Future Volume (vph)	220	133	1	158	13	12	84	14
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	1	6		2		8		4
Permitted Phases	6		2		8		4	
Detector Phase	1	6	2	2	8	8	4	4
Switch Phase								
Minimum Initial (s)	6.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	12.0	45.0	45.0	45.0	22.0	22.0	20.0	20.0
Total Split (s)	12.0	45.0	45.0	45.0	22.0	22.0	20.0	20.0
Total Split (%)	15.2%	57.0%	57.0%	57.0%	27.8%	27.8%	25.3%	25.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	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)	6.0	6.0	6.0	6.0		6.0	6.0	6.0
Lead/Lag	Lead		Lag	Lag				
Lead-Lag Optimize?	Yes		Yes	Yes				
Recall Mode	None	Min	Min	Min	None	None	None	None
Act Effct Green (s)	25.7	25.7	13.5	13.5		9.7	9.7	9.7
Actuated g/C Ratio	0.54	0.54	0.28	0.28		0.20	0.20	0.20
v/c Ratio	0.57	0.16	0.00	0.66		0.10	0.36	0.41
Control Delay	11.6	6.0	12.0	17.8		17.6	21.8	7.7
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	11.6	6.0	12.0	17.8		17.6	21.8	7.7
LOS	B	A	B	B		B	C	A
Approach Delay		9.4		17.8		17.6		12.5
Approach LOS		A		B		B		B

Intersection Summary	
Cycle Length: 79	
Actuated Cycle Length: 47.6	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.66	
Intersection Signal Delay: 13.2	Intersection LOS: B
Intersection Capacity Utilization 57.0%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 15: SE Hamblen Road & SE Bailey Road





Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	262	163	1	365	30	100	193
v/c Ratio	0.57	0.16	0.00	0.66	0.10	0.36	0.41
Control Delay	11.6	6.0	12.0	17.8	17.6	21.8	7.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.6	6.0	12.0	17.8	17.6	21.8	7.7
Queue Length 50th (ft)	31	18	0	62	6	23	4
Queue Length 95th (ft)	70	44	3	130	24	61	41
Internal Link Dist (ft)		1225		119	741		656
Turn Bay Length (ft)							
Base Capacity (vph)	461	1800	1016	1455	492	471	666
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.57	0.09	0.00	0.25	0.06	0.21	0.29

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	220	133	4	1	158	149	13	12	1	84	14	148
Future Volume (veh/h)	220	133	4	1	158	149	13	12	1	84	14	148
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	262	158	5	1	188	177	15	14	1	100	17	176
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	1	1	0
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	498	1003	32	515	258	243	165	116	6	414	25	256
Arrive On Green	0.13	0.56	0.56	0.29	0.29	0.29	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	1774	1796	57	1218	884	832	255	664	32	1393	141	1463
Grp Volume(v), veh/h	262	0	163	1	0	365	30	0	0	100	0	193
Grp Sat Flow(s),veh/h/ln	1774	0	1853	1218	0	1716	951	0	0	1393	0	1605
Q Serve(g_s), s	4.1	0.0	1.9	0.0	0.0	8.6	0.1	0.0	0.0	0.0	0.0	5.1
Cycle Q Clear(g_c), s	4.1	0.0	1.9	0.0	0.0	8.6	5.1	0.0	0.0	2.7	0.0	5.1
Prop In Lane	1.00		0.03	1.00		0.48	0.50		0.03	1.00		0.91
Lane Grp Cap(c), veh/h	498	0	1035	515	0	500	286	0	0	414	0	280
V/C Ratio(X)	0.53	0.00	0.16	0.00	0.00	0.73	0.10	0.00	0.00	0.24	0.00	0.69
Avail Cap(c_a), veh/h	498	0	1607	1216	0	1488	547	0	0	604	0	500
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.1	0.0	4.8	11.3	0.0	14.3	15.7	0.0	0.0	16.4	0.0	17.4
Incr Delay (d2), s/veh	1.0	0.0	0.1	0.0	0.0	2.1	0.2	0.0	0.0	0.3	0.0	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	1.0	0.0	0.0	4.3	0.3	0.0	0.0	1.1	0.0	2.5
LnGrp Delay(d),s/veh	10.1	0.0	4.9	11.3	0.0	16.4	15.8	0.0	0.0	16.7	0.0	20.4
LnGrp LOS	B		A	B		B	B			B		C
Approach Vol, veh/h		425			366			30			293	
Approach Delay, s/veh		8.1			16.4			15.8			19.1	
Approach LOS		A			B			B			B	

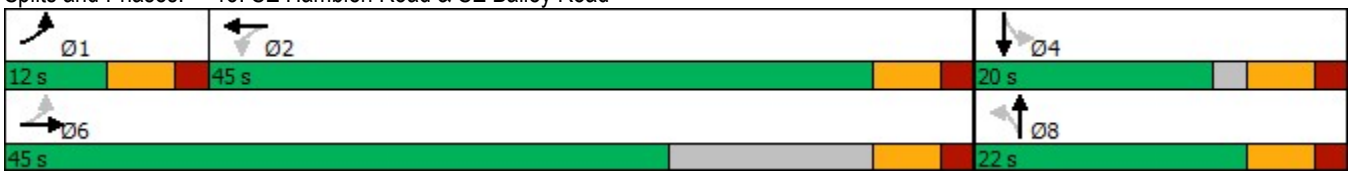
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	12.0	19.1		13.9		31.1		13.9
Change Period (Y+Rc), s	6.0	6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s	6.0	39.0		14.0		39.0		16.0
Max Q Clear Time (g_c+I1), s	6.1	10.6		7.1		3.9		7.1
Green Ext Time (p_c), s	0.0	2.5		0.8		1.0		0.0

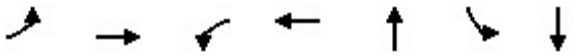
Intersection Summary	
HCM 2010 Ctrl Delay	13.9
HCM 2010 LOS	B

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	236	226	3	291	5	12	222	5
Future Volume (vph)	236	226	3	291	5	12	222	5
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	1	6		2		8		4
Permitted Phases	6		2		8		4	
Detector Phase	1	6	2	2	8	8	4	4
Switch Phase								
Minimum Initial (s)	6.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	12.0	45.0	45.0	45.0	22.0	22.0	20.0	20.0
Total Split (s)	12.0	45.0	45.0	45.0	22.0	22.0	20.0	20.0
Total Split (%)	15.2%	57.0%	57.0%	57.0%	27.8%	27.8%	25.3%	25.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	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)	6.0	6.0	6.0	6.0		6.0	6.0	6.0
Lead/Lag	Lead		Lag	Lag				
Lead-Lag Optimize?	Yes		Yes	Yes				
Recall Mode	None	Min	Min	Min	None	None	None	None
Act Effct Green (s)	29.7	29.7	17.6	17.6		13.3	13.3	13.3
Actuated g/C Ratio	0.54	0.54	0.32	0.32		0.24	0.24	0.24
v/c Ratio	0.62	0.24	0.01	0.72		0.06	0.71	0.60
Control Delay	14.3	7.4	12.0	22.7		17.6	35.3	7.0
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	14.3	7.4	12.0	22.7		17.6	35.3	7.0
LOS	B	A	B	C		B	D	A
Approach Delay		10.9		22.7		17.6		17.1
Approach LOS		B		C		B		B

Intersection Summary	
Cycle Length: 79	
Actuated Cycle Length: 55.2	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.72	
Intersection Signal Delay: 16.7	Intersection LOS: B
Intersection Capacity Utilization 74.4%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 15: SE Hamblen Road & SE Bailey Road





Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	251	240	3	425	21	236	421
v/c Ratio	0.62	0.24	0.01	0.72	0.06	0.71	0.60
Control Delay	14.3	7.4	12.0	22.7	17.6	35.3	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.3	7.4	12.0	22.7	17.6	35.3	7.0
Queue Length 50th (ft)	41	38	1	113	5	69	1
Queue Length 95th (ft)	72	68	5	193	22	#193	67
Internal Link Dist (ft)		1225		119	741		656
Turn Bay Length (ft)							
Base Capacity (vph)	403	1697	813	1287	421	407	759
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.14	0.00	0.33	0.05	0.58	0.55

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	236	226	0	3	291	108	5	12	3	222	5	391
Future Volume (veh/h)	236	226	0	3	291	108	5	12	3	222	5	391
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	251	240	0	3	310	115	5	13	3	236	5	416
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	1	1	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	392	954	0	470	393	146	84	171	30	319	5	437
Arrive On Green	0.10	0.51	0.00	0.30	0.30	0.30	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	1774	1863	0	1135	1297	481	23	612	106	1392	19	1567
Grp Volume(v), veh/h	251	240	0	3	0	425	21	0	0	236	0	421
Grp Sat Flow(s),veh/h/ln	1774	1863	0	1135	0	1778	741	0	0	1392	0	1586
Q Serve(g_s), s	5.3	4.1	0.0	0.1	0.0	12.6	0.1	0.0	0.0	0.9	0.0	15.0
Cycle Q Clear(g_c), s	5.3	4.1	0.0	0.1	0.0	12.6	15.1	0.0	0.0	16.0	0.0	15.0
Prop In Lane	1.00		0.00	1.00		0.27	0.24		0.14	1.00		0.99
Lane Grp Cap(c), veh/h	392	954	0	470	0	539	284	0	0	319	0	442
V/C Ratio(X)	0.64	0.25	0.00	0.01	0.00	0.79	0.07	0.00	0.00	0.74	0.00	0.95
Avail Cap(c_a), veh/h	392	1265	0	897	0	1208	284	0	0	319	0	442
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	12.9	7.8	0.0	14.0	0.0	18.3	15.9	0.0	0.0	22.5	0.0	20.3
Incr Delay (d2), s/veh	3.5	0.1	0.0	0.0	0.0	2.6	0.1	0.0	0.0	8.9	0.0	30.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	2.1	0.0	0.0	0.0	6.5	0.2	0.0	0.0	4.5	0.0	10.3
LnGrp Delay(d),s/veh	16.4	8.0	0.0	14.0	0.0	20.9	16.0	0.0	0.0	31.4	0.0	51.2
LnGrp LOS	B	A		B		C	B			C		D
Approach Vol, veh/h		491			428			21			657	
Approach Delay, s/veh		12.3			20.9			16.0			44.1	
Approach LOS		B			C			B			D	

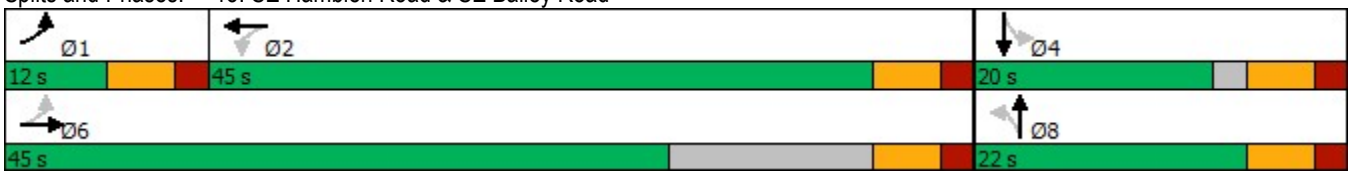
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	12.0	23.4		22.0		35.4		22.0
Change Period (Y+Rc), s	6.0	6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s	6.0	39.0		14.0		39.0		16.0
Max Q Clear Time (g_c+I1), s	7.3	14.6		18.0		6.1		17.1
Green Ext Time (p_c), s	0.0	2.8		0.0		1.5		0.0

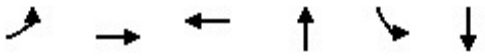
Intersection Summary	
HCM 2010 Ctrl Delay	27.7
HCM 2010 LOS	C

Lane Group	EBL	EBT	WBT	NBT	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	250	140	167	1	110	1
Future Volume (vph)	250	140	167	1	110	1
Turn Type	pm+pt	NA	NA	NA	Perm	NA
Protected Phases	1	6	2	8		4
Permitted Phases	6				4	
Detector Phase	1	6	2	8	4	4
Switch Phase						
Minimum Initial (s)	6.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	12.0	45.0	45.0	22.0	20.0	20.0
Total Split (s)	12.0	45.0	45.0	22.0	20.0	20.0
Total Split (%)	15.2%	57.0%	57.0%	27.8%	25.3%	25.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	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
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	None	Min	Min	None	None	None
Act Effct Green (s)	24.0	24.0	11.9	10.0	10.0	10.0
Actuated g/C Ratio	0.52	0.52	0.26	0.22	0.22	0.22
v/c Ratio	0.53	0.15	0.59	0.01	0.38	0.57
Control Delay	11.1	6.6	17.5	13.5	20.4	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.1	6.6	17.5	13.5	20.4	6.6
LOS	B	A	B	B	C	A
Approach Delay		9.5	17.5	13.5		10.1
Approach LOS		A	B	B		B

Intersection Summary	
Cycle Length: 79	
Actuated Cycle Length: 46.2	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.59	
Intersection Signal Delay: 11.7	Intersection LOS: B
Intersection Capacity Utilization 64.3%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 15: SE Hamblen Road & SE Bailey Road





Lane Group	EBL	EBT	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	266	149	292	2	117	346
v/c Ratio	0.53	0.15	0.59	0.01	0.38	0.57
Control Delay	11.1	6.6	17.5	13.5	20.4	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.1	6.6	17.5	13.5	20.4	6.6
Queue Length 50th (ft)	33	17	51	0	26	0
Queue Length 95th (ft)	80	46	120	4	69	53
Internal Link Dist (ft)		1225	119	741		656
Turn Bay Length (ft)						
Base Capacity (vph)	498	1835	1510	610	495	780
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.08	0.19	0.00	0.24	0.44

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	250	140	0	0	167	107	0	1	1	110	1	324
Future Volume (veh/h)	250	140	0	0	167	107	0	1	1	110	1	324
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	266	149	0	0	178	114	0	1	1	117	1	345
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	1	1	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	463	909	0	151	251	160	0	223	223	517	1	411
Arrive On Green	0.13	0.49	0.00	0.00	0.24	0.24	0.00	0.26	0.26	0.26	0.26	0.26
Sat Flow, veh/h	1774	1863	0	1234	1062	680	0	856	856	1409	5	1579
Grp Volume(v), veh/h	266	149	0	0	0	292	0	0	2	117	0	346
Grp Sat Flow(s),veh/h/ln	1774	1863	0	1234	0	1743	0	0	1712	1409	0	1584
Q Serve(g_s), s	5.0	2.1	0.0	0.0	0.0	7.3	0.0	0.0	0.0	3.2	0.0	9.8
Cycle Q Clear(g_c), s	5.0	2.1	0.0	0.0	0.0	7.3	0.0	0.0	0.0	3.2	0.0	9.8
Prop In Lane	1.00		0.00	1.00		0.39	0.00		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	463	909	0	151	0	411	0	0	446	517	0	412
V/C Ratio(X)	0.57	0.16	0.00	0.00	0.00	0.71	0.00	0.00	0.00	0.23	0.00	0.84
Avail Cap(c_a), veh/h	463	1525	0	870	0	1427	0	0	575	564	0	466
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	11.2	6.8	0.0	0.0	0.0	16.7	0.0	0.0	13.0	14.2	0.0	16.7
Incr Delay (d2), s/veh	1.7	0.1	0.0	0.0	0.0	2.3	0.0	0.0	0.0	0.2	0.0	11.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	1.1	0.0	0.0	0.0	3.7	0.0	0.0	0.0	1.3	0.0	5.6
LnGrp Delay(d),s/veh	12.9	6.9	0.0	0.0	0.0	19.0	0.0	0.0	13.1	14.5	0.0	28.4
LnGrp LOS	B	A				B			B	B		C
Approach Vol, veh/h		415			292			2			463	
Approach Delay, s/veh		10.7			19.0			13.1			24.9	
Approach LOS		B			B			B			C	

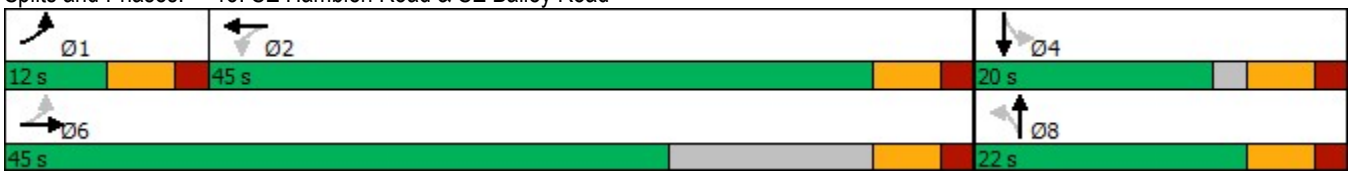
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	12.0	17.2		18.4		29.2		18.4
Change Period (Y+Rc), s	6.0	6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s	6.0	39.0		14.0		39.0		16.0
Max Q Clear Time (g_c+I1), s	7.0	9.3		11.8		4.1		2.0
Green Ext Time (p_c), s	0.0	1.9		0.6		0.9		0.0

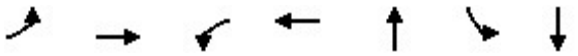
Intersection Summary	
HCM 2010 Ctrl Delay	18.4
HCM 2010 LOS	B

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	228	141	1	165	14	12	84	14
Future Volume (vph)	228	141	1	165	14	12	84	14
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	1	6		2		8		4
Permitted Phases	6		2		8		4	
Detector Phase	1	6	2	2	8	8	4	4
Switch Phase								
Minimum Initial (s)	6.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	12.0	45.0	45.0	45.0	22.0	22.0	20.0	20.0
Total Split (s)	12.0	45.0	45.0	45.0	22.0	22.0	20.0	20.0
Total Split (%)	15.2%	57.0%	57.0%	57.0%	27.8%	27.8%	25.3%	25.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	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)	6.0	6.0	6.0	6.0		6.0	6.0	6.0
Lead/Lag	Lead		Lag	Lag				
Lead-Lag Optimize?	Yes		Yes	Yes				
Recall Mode	None	Min	Min	Min	None	None	None	None
Act Effct Green (s)	26.1	26.1	13.9	13.9		9.7	9.7	9.7
Actuated g/C Ratio	0.54	0.54	0.29	0.29		0.20	0.20	0.20
v/c Ratio	0.59	0.17	0.00	0.67		0.11	0.36	0.43
Control Delay	12.2	6.0	12.0	18.1		17.9	22.1	7.7
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	12.2	6.0	12.0	18.1		17.9	22.1	7.7
LOS	B	A	B	B		B	C	A
Approach Delay		9.8		18.1		17.9		12.5
Approach LOS		A		B		B		B

Intersection Summary	
Cycle Length: 79	
Actuated Cycle Length: 48	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.67	
Intersection Signal Delay: 13.4	Intersection LOS: B
Intersection Capacity Utilization 58.7%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 15: SE Hamblen Road & SE Bailey Road





Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	271	173	1	373	32	100	204
v/c Ratio	0.59	0.17	0.00	0.67	0.11	0.36	0.43
Control Delay	12.2	6.0	12.0	18.1	17.9	22.1	7.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.2	6.0	12.0	18.1	17.9	22.1	7.7
Queue Length 50th (ft)	33	19	0	65	7	24	4
Queue Length 95th (ft)	73	46	3	135	26	62	42
Internal Link Dist (ft)		1225		119	741		656
Turn Bay Length (ft)							
Base Capacity (vph)	459	1799	999	1445	475	465	668
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.10	0.00	0.26	0.07	0.22	0.31

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	228	141	4	1	165	149	14	12	1	84	14	157
Future Volume (veh/h)	228	141	4	1	165	149	14	12	1	84	14	157
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	271	168	5	1	196	177	17	14	1	100	17	187
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	1	1	0
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	492	1005	30	514	267	241	165	103	5	412	24	263
Arrive On Green	0.13	0.56	0.56	0.30	0.30	0.30	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	1774	1800	54	1207	903	816	248	575	27	1393	134	1470
Grp Volume(v), veh/h	271	0	173	1	0	373	32	0	0	100	0	204
Grp Sat Flow(s),veh/h/ln	1774	0	1853	1207	0	1719	849	0	0	1393	0	1603
Q Serve(g_s), s	4.4	0.0	2.1	0.0	0.0	8.9	0.1	0.0	0.0	0.0	0.0	5.5
Cycle Q Clear(g_c), s	4.4	0.0	2.1	0.0	0.0	8.9	5.6	0.0	0.0	2.8	0.0	5.5
Prop In Lane	1.00		0.03	1.00		0.47	0.53		0.03	1.00		0.92
Lane Grp Cap(c), veh/h	492	0	1035	514	0	508	273	0	0	412	0	287
V/C Ratio(X)	0.55	0.00	0.17	0.00	0.00	0.73	0.12	0.00	0.00	0.24	0.00	0.71
Avail Cap(c_a), veh/h	492	0	1584	1189	0	1469	516	0	0	590	0	492
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.3	0.0	4.9	11.3	0.0	14.5	15.8	0.0	0.0	16.5	0.0	17.6
Incr Delay (d2), s/veh	1.3	0.0	0.1	0.0	0.0	2.1	0.2	0.0	0.0	0.3	0.0	3.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	1.1	0.0	0.0	4.4	0.4	0.0	0.0	1.1	0.0	2.6
LnGrp Delay(d),s/veh	10.7	0.0	5.0	11.3	0.0	16.6	16.0	0.0	0.0	16.8	0.0	20.9
LnGrp LOS	B		A	B		B	B			B		C
Approach Vol, veh/h		444			374			32			304	
Approach Delay, s/veh		8.4			16.5			16.0			19.6	
Approach LOS		A			B			B			B	

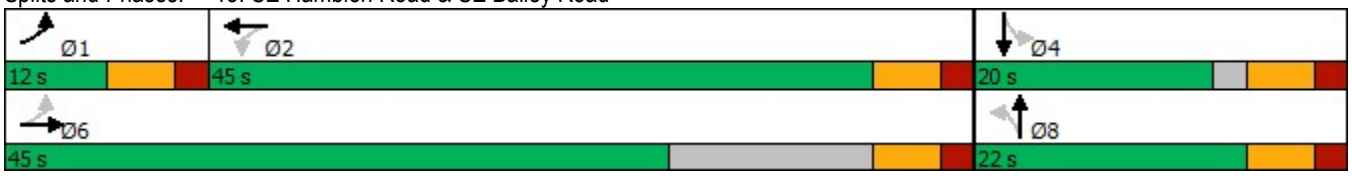
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	12.0	19.5		14.2		31.5		14.2
Change Period (Y+Rc), s	6.0	6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s	6.0	39.0		14.0		39.0		16.0
Max Q Clear Time (g_c+I1), s	6.4	10.9		7.5		4.1		7.6
Green Ext Time (p_c), s	0.0	2.6		0.8		1.0		0.0

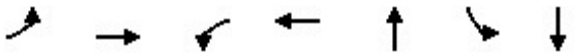
Intersection Summary	
HCM 2010 Ctrl Delay	14.2
HCM 2010 LOS	B

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	248	235	3	301	5	12	222	5
Future Volume (vph)	248	235	3	301	5	12	222	5
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	1	6		2		8		4
Permitted Phases	6		2		8		4	
Detector Phase	1	6	2	2	8	8	4	4
Switch Phase								
Minimum Initial (s)	6.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	12.0	45.0	45.0	45.0	22.0	22.0	20.0	20.0
Total Split (s)	12.0	45.0	45.0	45.0	22.0	22.0	20.0	20.0
Total Split (%)	15.2%	57.0%	57.0%	57.0%	27.8%	27.8%	25.3%	25.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	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)	6.0	6.0	6.0	6.0		6.0	6.0	6.0
Lead/Lag	Lead		Lag	Lag				
Lead-Lag Optimize?	Yes		Yes	Yes				
Recall Mode	None	Min	Min	Min	None	None	None	None
Act Effct Green (s)	30.3	30.3	18.1	18.1		13.3	13.3	13.3
Actuated g/C Ratio	0.54	0.54	0.32	0.32		0.24	0.24	0.24
v/c Ratio	0.66	0.25	0.01	0.72		0.06	0.71	0.61
Control Delay	15.9	7.3	11.7	22.7		18.2	36.3	7.2
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	15.9	7.3	11.7	22.7		18.2	36.3	7.2
LOS	B	A	B	C		B	D	A
Approach Delay		11.8		22.6		18.2		17.5
Approach LOS		B		C		B		B

Intersection Summary	
Cycle Length: 79	
Actuated Cycle Length: 55.8	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.72	
Intersection Signal Delay: 17.1	Intersection LOS: B
Intersection Capacity Utilization 76.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 15: SE Hamblen Road & SE Bailey Road





Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	264	250	3	435	21	236	433
v/c Ratio	0.66	0.25	0.01	0.72	0.06	0.71	0.61
Control Delay	15.9	7.3	11.7	22.7	18.2	36.3	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.9	7.3	11.7	22.7	18.2	36.3	7.2
Queue Length 50th (ft)	43	40	1	117	5	70	1
Queue Length 95th (ft)	#79	71	5	198	22	#200	70
Internal Link Dist (ft)		1225		119	741		656
Turn Bay Length (ft)							
Base Capacity (vph)	401	1683	797	1276	398	403	765
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.66	0.15	0.00	0.34	0.05	0.59	0.57

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	248	235	0	3	301	108	5	12	3	222	5	402
Future Volume (veh/h)	248	235	0	3	301	108	5	12	3	222	5	402
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	264	250	0	3	320	115	5	13	3	236	5	428
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	1	1	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	389	961	0	472	404	145	79	157	26	302	5	434
Arrive On Green	0.10	0.52	0.00	0.31	0.31	0.31	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	1774	1863	0	1125	1309	470	6	569	96	1392	18	1568
Grp Volume(v), veh/h	264	250	0	3	0	435	21	0	0	236	0	433
Grp Sat Flow(s),veh/h/ln	1774	1863	0	1125	0	1780	671	0	0	1392	0	1586
Q Serve(g_s), s	5.6	4.3	0.0	0.1	0.0	12.9	0.1	0.0	0.0	0.1	0.0	15.7
Cycle Q Clear(g_c), s	5.6	4.3	0.0	0.1	0.0	12.9	15.9	0.0	0.0	16.0	0.0	15.7
Prop In Lane	1.00		0.00	1.00		0.26	0.24		0.14	1.00		0.99
Lane Grp Cap(c), veh/h	389	961	0	472	0	549	263	0	0	302	0	439
V/C Ratio(X)	0.68	0.26	0.00	0.01	0.00	0.79	0.08	0.00	0.00	0.78	0.00	0.99
Avail Cap(c_a), veh/h	389	1256	0	883	0	1200	263	0	0	302	0	439
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.1	7.8	0.0	13.9	0.0	18.3	16.2	0.0	0.0	23.0	0.0	20.8
Incr Delay (d2), s/veh	4.7	0.1	0.0	0.0	0.0	2.6	0.1	0.0	0.0	12.4	0.0	39.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	2.3	0.0	0.0	0.0	6.7	0.3	0.0	0.0	4.7	0.0	11.5
LnGrp Delay(d),s/veh	17.7	8.0	0.0	13.9	0.0	20.9	16.3	0.0	0.0	35.4	0.0	60.3
LnGrp LOS	B	A		B		C	B			D		E
Approach Vol, veh/h		514			438			21			669	
Approach Delay, s/veh		13.0			20.9			16.3			51.5	
Approach LOS		B			C			B			D	

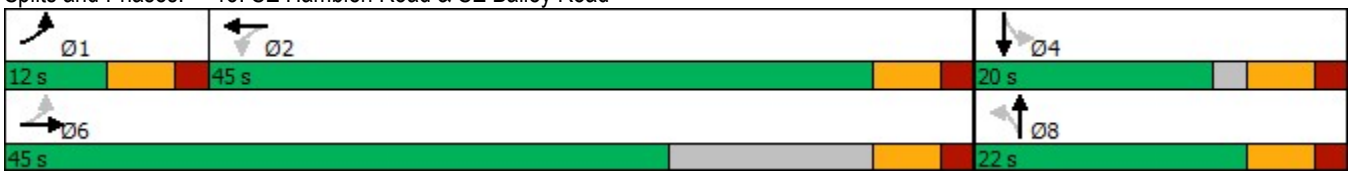
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	12.0	23.9		22.0		35.9		22.0
Change Period (Y+Rc), s	6.0	6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s	6.0	39.0		14.0		39.0		16.0
Max Q Clear Time (g_c+I1), s	7.6	14.9		18.0		6.3		17.9
Green Ext Time (p_c), s	0.0	2.9		0.0		1.5		0.0

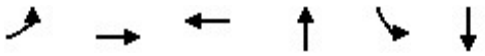
Intersection Summary	
HCM 2010 Ctrl Delay	30.8
HCM 2010 LOS	C

Lane Group	EBL	EBT	WBT	NBT	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	286	157	188	1	110	1
Future Volume (vph)	286	157	188	1	110	1
Turn Type	pm+pt	NA	NA	NA	Perm	NA
Protected Phases	1	6	2	8		4
Permitted Phases	6				4	
Detector Phase	1	6	2	8	4	4
Switch Phase						
Minimum Initial (s)	6.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	12.0	45.0	45.0	22.0	20.0	20.0
Total Split (s)	12.0	45.0	45.0	22.0	20.0	20.0
Total Split (%)	15.2%	57.0%	57.0%	27.8%	25.3%	25.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	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
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	None	Min	Min	None	None	None
Act Effct Green (s)	24.8	24.8	12.6	10.2	10.2	10.2
Actuated g/C Ratio	0.53	0.53	0.27	0.22	0.22	0.22
v/c Ratio	0.63	0.17	0.62	0.01	0.38	0.60
Control Delay	13.9	6.7	18.6	14.0	20.9	6.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.9	6.7	18.6	14.0	20.9	6.9
LOS	B	A	B	B	C	A
Approach Delay		11.3	18.6	14.0		10.2
Approach LOS		B	B	B		B

Intersection Summary	
Cycle Length: 79	
Actuated Cycle Length: 47.2	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.63	
Intersection Signal Delay: 12.6	Intersection LOS: B
Intersection Capacity Utilization 69.8%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 15: SE Hamblen Road & SE Bailey Road





Lane Group	EBL	EBT	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	304	167	314	2	117	387
v/c Ratio	0.63	0.17	0.62	0.01	0.38	0.60
Control Delay	13.9	6.7	18.6	14.0	20.9	6.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.9	6.7	18.6	14.0	20.9	6.9
Queue Length 50th (ft)	41	20	60	0	27	0
Queue Length 95th (ft)	#96	50	133	5	71	56
Internal Link Dist (ft)		1225	119	741		656
Turn Bay Length (ft)						
Base Capacity (vph)	486	1827	1487	598	485	797
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.09	0.21	0.00	0.24	0.49

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	286	157	0	0	188	107	0	1	1	110	1	363
Future Volume (veh/h)	286	157	0	0	188	107	0	1	1	110	1	363
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	304	167	0	0	200	114	0	1	1	117	1	386
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	1	1	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	442	904	0	144	274	156	0	236	236	531	1	435
Arrive On Green	0.12	0.49	0.00	0.00	0.25	0.25	0.00	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	1774	1863	0	1214	1115	636	0	856	856	1409	4	1580
Grp Volume(v), veh/h	304	167	0	0	0	314	0	0	2	117	0	387
Grp Sat Flow(s),veh/h/ln	1774	1863	0	1214	0	1751	0	0	1712	1409	0	1584
Q Serve(g_s), s	6.0	2.5	0.0	0.0	0.0	8.3	0.0	0.0	0.0	3.3	0.0	11.7
Cycle Q Clear(g_c), s	6.0	2.5	0.0	0.0	0.0	8.3	0.0	0.0	0.0	3.3	0.0	11.7
Prop In Lane	1.00		0.00	1.00		0.36	0.00		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	442	904	0	144	0	430	0	0	472	531	0	436
V/C Ratio(X)	0.69	0.18	0.00	0.00	0.00	0.73	0.00	0.00	0.00	0.22	0.00	0.89
Avail Cap(c_a), veh/h	442	1449	0	789	0	1362	0	0	546	536	0	442
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	12.4	7.3	0.0	0.0	0.0	17.4	0.0	0.0	13.2	14.4	0.0	17.4
Incr Delay (d2), s/veh	4.5	0.1	0.0	0.0	0.0	2.4	0.0	0.0	0.0	0.2	0.0	18.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	1.3	0.0	0.0	0.0	4.2	0.0	0.0	0.0	1.3	0.0	7.3
LnGrp Delay(d),s/veh	16.9	7.4	0.0	0.0	0.0	19.8	0.0	0.0	13.2	14.6	0.0	36.3
LnGrp LOS	B	A				B			B	B		D
Approach Vol, veh/h		471			314			2			504	
Approach Delay, s/veh		13.5			19.8			13.2			31.3	
Approach LOS		B			B			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	12.0	18.3		19.8		30.3		19.8
Change Period (Y+Rc), s	6.0	6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s	6.0	39.0		14.0		39.0		16.0
Max Q Clear Time (g_c+I1), s	8.0	10.3		13.7		4.5		2.0
Green Ext Time (p_c), s	0.0	2.1		0.1		1.0		0.0

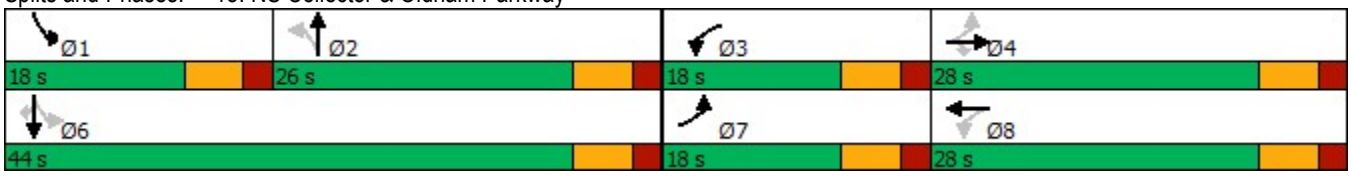
Intersection Summary	
HCM 2010 Ctrl Delay	22.0
HCM 2010 LOS	C

Intersection 6
Oldham Parkway
& N/S Collector

Lane Group	EBL	EBT	WBT	SBR	Ø1	Ø2	Ø3
Lane Configurations							
Traffic Volume (vph)	143	36	29	72			
Future Volume (vph)	143	36	29	72			
Turn Type	pm+pt	NA	NA	Perm			
Protected Phases	7	4	8		1	2	3
Permitted Phases	4			6			
Detector Phase	7	4	8	6			
Switch Phase							
Minimum Initial (s)	8.0	10.0	10.0	10.0	8.0	10.0	8.0
Minimum Split (s)	14.0	24.0	24.0	24.0	14.0	24.0	14.0
Total Split (s)	18.0	28.0	28.0	44.0	18.0	26.0	18.0
Total Split (%)	20.0%	31.1%	31.1%	48.9%	20%	29%	20%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0			
Total Lost Time (s)	6.0	6.0	6.0	6.0			
Lead/Lag	Lead	Lag	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	Min	None	Min	None
Act Effct Green (s)	11.9	12.4	10.2	15.1			
Actuated g/C Ratio	0.34	0.36	0.29	0.43			
v/c Ratio	0.14	0.06	0.03	0.06			
Control Delay	7.4	6.9	11.2	0.1			
Queue Delay	0.0	0.0	0.0	0.0			
Total Delay	7.4	6.9	11.2	0.1			
LOS	A	A	B	A			
Approach Delay		7.3	11.2				
Approach LOS		A	B				

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 34.8	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.14	
Intersection Signal Delay: 5.9	Intersection LOS: A
Intersection Capacity Utilization 26.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 18: NS Collector & Oldham Parkway





Lane Group	EBL	EBT	WBT	SBR
Lane Group Flow (vph)	155	39	32	78
v/c Ratio	0.14	0.06	0.03	0.06
Control Delay	7.4	6.9	11.2	0.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	7.4	6.9	11.2	0.1
Queue Length 50th (ft)	9	4	2	0
Queue Length 95th (ft)	19	14	11	0
Internal Link Dist (ft)		361	732	
Turn Bay Length (ft)				
Base Capacity (vph)	1313	1224	2288	1561
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.12	0.03	0.01	0.05

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	143	36	0	0	29	0	0	0	0	0	0	72
Future Volume (veh/h)	143	36	0	0	29	0	0	0	0	0	0	72
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	155	39	0	0	32	0	0	0	0	0	0	78
Adj No. of Lanes	2	1	1	1	2	0	0	2	0	1	1	1
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1267	839	713	370	483	0	0	884	0	535	465	396
Arrive On Green	0.16	0.45	0.00	0.00	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.25
Sat Flow, veh/h	3442	1863	1583	1774	3632	0	0	3725	0	1774	1863	1583
Grp Volume(v), veh/h	155	39	0	0	32	0	0	0	0	0	0	78
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1774	1770	0	0	1770	0	1774	1863	1583
Q Serve(g_s), s	1.2	0.5	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	1.6
Cycle Q Clear(g_c), s	1.2	0.5	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	1.6
Prop In Lane	1.00		1.00	1.00		0.00	0.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	1267	839	713	370	483	0	0	884	0	535	465	396
V/C Ratio(X)	0.12	0.05	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.20
Avail Cap(c_a), veh/h	1733	1024	870	898	1945	0	0	1768	0	1063	1768	1503
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	8.9	6.2	0.0	0.0	15.1	0.0	0.0	0.0	0.0	0.0	0.0	11.8
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.2	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.7
LnGrp Delay(d),s/veh	9.0	6.2	0.0	0.0	15.1	0.0	0.0	0.0	0.0	0.0	0.0	12.1
LnGrp LOS	A	A			B							B
Approach Vol, veh/h		194			32			0			78	
Approach Delay, s/veh		8.4			15.1			0.0			12.1	
Approach LOS		A			B						B	

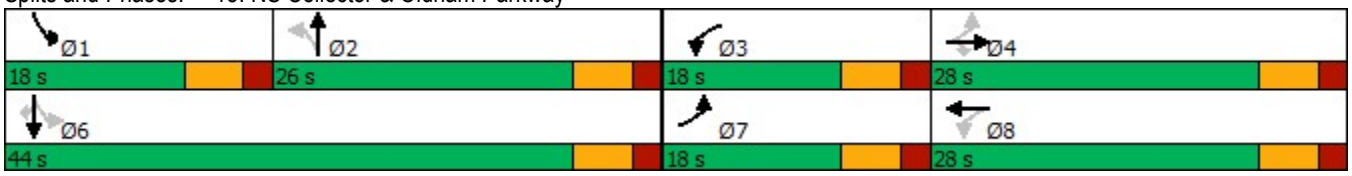
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4		6	7	8
Phs Duration (G+Y+Rc), s	0.0	16.0	0.0	24.0		16.0	12.6	11.5
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0		6.0	6.0	6.0
Max Green Setting (Gmax), s	12.0	20.0	12.0	22.0		38.0	12.0	22.0
Max Q Clear Time (g_c+I1), s	0.0	0.0	0.0	2.5		3.6	3.2	2.3
Green Ext Time (p_c), s	0.0	0.0	0.0	0.1		0.2	0.3	0.1

Intersection Summary	
HCM 2010 Ctrl Delay	10.1
HCM 2010 LOS	B

Lane Group	EBL	EBT	WBT	SBR	Ø1	Ø2	Ø3
Lane Configurations							
Traffic Volume (vph)	421	105	145	361			
Future Volume (vph)	421	105	145	361			
Turn Type	pm+pt	NA	NA	Perm			
Protected Phases	7	4	8		1	2	3
Permitted Phases	4			6			
Detector Phase	7	4	8	6			
Switch Phase							
Minimum Initial (s)	8.0	10.0	10.0	10.0	8.0	10.0	8.0
Minimum Split (s)	14.0	24.0	24.0	24.0	14.0	24.0	14.0
Total Split (s)	18.0	28.0	28.0	44.0	18.0	26.0	18.0
Total Split (%)	20.0%	31.1%	31.1%	48.9%	20%	29%	20%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0			
Total Lost Time (s)	6.0	6.0	6.0	6.0			
Lead/Lag	Lead	Lag	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	Min	None	Min	None
Act Effct Green (s)	23.2	23.2	10.3	10.3			
Actuated g/C Ratio	0.51	0.51	0.22	0.22			
v/c Ratio	0.39	0.12	0.20	0.44			
Control Delay	6.9	5.6	17.4	1.6			
Queue Delay	0.0	0.0	0.0	0.0			
Total Delay	6.9	5.6	17.4	1.6			
LOS	A	A	B	A			
Approach Delay		6.7	17.4				
Approach LOS		A	B				

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 45.9	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.44	
Intersection Signal Delay: 6.4	Intersection LOS: A
Intersection Capacity Utilization 40.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 18: NS Collector & Oldham Parkway





Lane Group	EBL	EBT	WBT	SBR
Lane Group Flow (vph)	458	114	158	392
v/c Ratio	0.39	0.12	0.20	0.44
Control Delay	6.9	5.6	17.4	1.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	6.9	5.6	17.4	1.6
Queue Length 50th (ft)	30	14	20	0
Queue Length 95th (ft)	48	30	40	0
Internal Link Dist (ft)		361	732	
Turn Bay Length (ft)				
Base Capacity (vph)	1249	1083	1747	1418
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.37	0.11	0.09	0.28

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	421	105	0	0	145	0	0	0	0	0	0	361
Future Volume (veh/h)	421	105	0	0	145	0	0	0	0	0	0	361
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	458	114	0	0	158	0	0	0	0	0	0	392
Adj No. of Lanes	2	1	1	1	2	0	0	2	0	1	1	1
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1189	869	739	389	680	0	0	1054	0	563	555	472
Arrive On Green	0.16	0.47	0.00	0.00	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.30
Sat Flow, veh/h	3442	1863	1583	1774	3632	0	0	3725	0	1774	1863	1583
Grp Volume(v), veh/h	458	114	0	0	158	0	0	0	0	0	0	392
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1774	1770	0	0	1770	0	1774	1863	1583
Q Serve(g_s), s	4.8	1.8	0.0	0.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0	11.8
Cycle Q Clear(g_c), s	4.8	1.8	0.0	0.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0	11.8
Prop In Lane	1.00		1.00	1.00		0.00	0.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	1189	869	739	389	680	0	0	1054	0	563	555	472
V/C Ratio(X)	0.39	0.13	0.00	0.00	0.23	0.00	0.00	0.00	0.00	0.00	0.00	0.83
Avail Cap(c_a), veh/h	1460	869	739	804	1528	0	0	1389	0	978	1389	1181
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	11.2	7.7	0.0	0.0	17.4	0.0	0.0	0.0	0.0	0.0	0.0	16.7
Incr Delay (d2), s/veh	0.2	0.1	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	3.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	0.9	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	5.6
LnGrp Delay(d),s/veh	11.4	7.8	0.0	0.0	17.6	0.0	0.0	0.0	0.0	0.0	0.0	20.6
LnGrp LOS	B	A			B							C
Approach Vol, veh/h		572			158			0			392	
Approach Delay, s/veh		10.7			17.6			0.0			20.6	
Approach LOS		B			B						C	

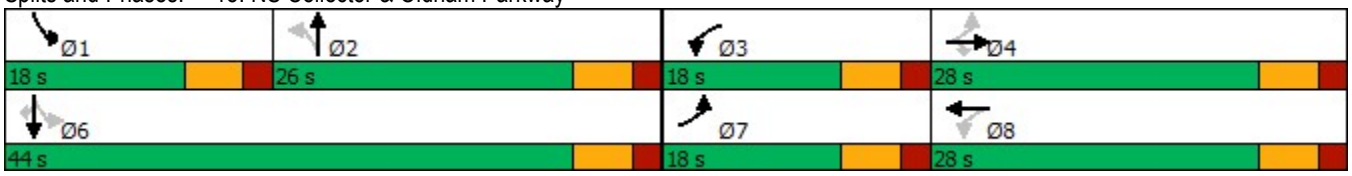
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4		6	7	8
Phs Duration (G+Y+Rc), s	0.0	21.2	0.0	29.8		21.2	14.0	15.8
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0		6.0	6.0	6.0
Max Green Setting (Gmax), s	12.0	20.0	12.0	22.0		38.0	12.0	22.0
Max Q Clear Time (g_c+I1), s	0.0	0.0	0.0	3.8		13.8	6.8	3.9
Green Ext Time (p_c), s	0.0	0.0	0.0	0.5		1.4	0.8	0.8

Intersection Summary	
HCM 2010 Ctrl Delay	15.1
HCM 2010 LOS	B

Lane Group	EBL	EBT	WBT	SBR	Ø1	Ø2	Ø3
Lane Configurations							
Traffic Volume (vph)	606	152	186	465			
Future Volume (vph)	606	152	186	465			
Turn Type	pm+pt	NA	NA	Perm			
Protected Phases	7	4	8		1	2	3
Permitted Phases	4			6			
Detector Phase	7	4	8	6			
Switch Phase							
Minimum Initial (s)	8.0	10.0	10.0	10.0	8.0	10.0	8.0
Minimum Split (s)	14.0	24.0	24.0	24.0	14.0	24.0	14.0
Total Split (s)	18.0	28.0	28.0	44.0	18.0	26.0	18.0
Total Split (%)	20.0%	31.1%	31.1%	48.9%	20%	29%	20%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0			
Total Lost Time (s)	6.0	6.0	6.0	6.0			
Lead/Lag	Lead	Lag	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	Min	None	Min	None
Act Effct Green (s)	27.9	27.9	10.0	10.0			
Actuated g/C Ratio	0.56	0.56	0.20	0.20			
v/c Ratio	0.52	0.16	0.29	0.62			
Control Delay	7.6	5.8	18.2	4.3			
Queue Delay	0.0	0.0	0.0	0.0			
Total Delay	7.6	5.8	18.2	4.3			
LOS	A	A	B	A			
Approach Delay		7.3	18.2				
Approach LOS		A	B				

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 49.9	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.62	
Intersection Signal Delay: 7.8	Intersection LOS: A
Intersection Capacity Utilization 47.1%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 18: NS Collector & Oldham Parkway





Lane Group	EBL	EBT	WBT	SBR
Lane Group Flow (vph)	659	165	202	505
v/c Ratio	0.52	0.16	0.29	0.62
Control Delay	7.6	5.8	18.2	4.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	7.6	5.8	18.2	4.3
Queue Length 50th (ft)	46	20	26	0
Queue Length 95th (ft)	71	41	50	28
Internal Link Dist (ft)		361	732	
Turn Bay Length (ft)				
Base Capacity (vph)	1276	1042	1559	1354
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.52	0.16	0.13	0.37

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	606	152	0	0	186	0	0	0	0	0	0	465
Future Volume (veh/h)	606	152	0	0	186	0	0	0	0	0	0	465
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	659	165	0	0	202	0	0	0	0	0	0	505
Adj No. of Lanes	2	1	1	1	2	0	0	2	0	1	1	1
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1123	827	703	317	574	0	0	1277	0	627	672	571
Arrive On Green	0.18	0.44	0.00	0.00	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.36
Sat Flow, veh/h	3442	1863	1583	1774	3632	0	0	3725	0	1774	1863	1583
Grp Volume(v), veh/h	659	165	0	0	202	0	0	0	0	0	0	505
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1774	1770	0	0	1770	0	1774	1863	1583
Q Serve(g_s), s	9.0	3.3	0.0	0.0	3.1	0.0	0.0	0.0	0.0	0.0	0.0	18.4
Cycle Q Clear(g_c), s	9.0	3.3	0.0	0.0	3.1	0.0	0.0	0.0	0.0	0.0	0.0	18.4
Prop In Lane	1.00		1.00	1.00		0.00	0.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	1123	827	703	317	574	0	0	1277	0	627	672	571
V/C Ratio(X)	0.59	0.20	0.00	0.00	0.35	0.00	0.00	0.00	0.00	0.00	0.00	0.88
Avail Cap(c_a), veh/h	1159	827	703	660	1265	0	0	1277	0	970	1150	978
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	15.0	10.4	0.0	0.0	22.9	0.0	0.0	0.0	0.0	0.0	0.0	18.5
Incr Delay (d2), s/veh	0.7	0.1	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	5.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	1.7	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	8.8
LnGrp Delay(d),s/veh	15.7	10.5	0.0	0.0	23.3	0.0	0.0	0.0	0.0	0.0	0.0	23.7
LnGrp LOS	B	B			C							C
Approach Vol, veh/h		824			202			0			505	
Approach Delay, s/veh		14.7			23.3			0.0			23.7	
Approach LOS		B			C						C	

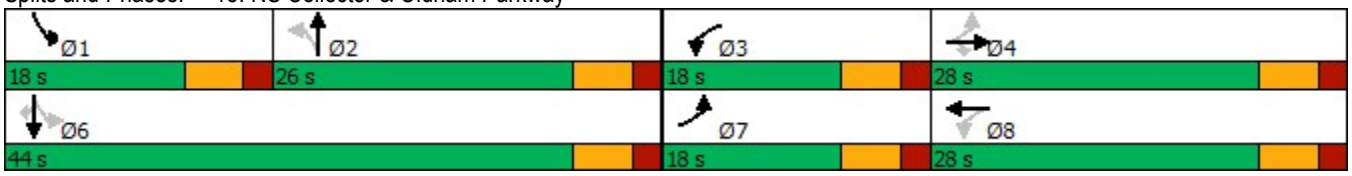
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4		6	7	8
Phs Duration (G+Y+Rc), s	0.0	28.2	0.0	33.3		28.2	17.4	16.0
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0		6.0	6.0	6.0
Max Green Setting (Gmax), s	12.0	20.0	12.0	22.0		38.0	12.0	22.0
Max Q Clear Time (g_c+I1), s	0.0	0.0	0.0	5.3		20.4	11.0	5.1
Green Ext Time (p_c), s	0.0	0.0	0.0	0.7		1.8	0.3	1.1

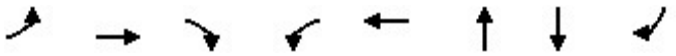
Intersection Summary	
HCM 2010 Ctrl Delay	18.8
HCM 2010 LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT	SBR	Ø1
Lane Configurations										
Traffic Volume (vph)	129	54	117	3	92	181	14	11	60	
Future Volume (vph)	129	54	117	3	92	181	14	11	60	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	NA	NA	Perm	
Protected Phases	7	4		3	8		2	6		1
Permitted Phases	4		4	8		2			6	
Detector Phase	7	4	4	3	8	2	2	6	6	
Switch Phase										
Minimum Initial (s)	8.0	10.0	10.0	8.0	10.0	10.0	10.0	10.0	10.0	8.0
Minimum Split (s)	14.0	24.0	24.0	14.0	24.0	24.0	24.0	24.0	24.0	14.0
Total Split (s)	18.0	28.0	28.0	18.0	28.0	26.0	26.0	44.0	44.0	18.0
Total Split (%)	20.0%	31.1%	31.1%	20.0%	31.1%	28.9%	28.9%	48.9%	48.9%	20%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	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	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag			Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes			Yes
Recall Mode	None	None	None	None	None	Min	Min	Min	Min	None
Act Effct Green (s)	19.1	18.2	18.2	15.7	10.3		16.3	16.3	16.3	
Actuated g/C Ratio	0.44	0.42	0.42	0.36	0.24		0.38	0.38	0.38	
v/c Ratio	0.13	0.08	0.16	0.01	0.12		0.22	0.02	0.10	
Control Delay	6.2	10.3	2.2	6.0	15.2		15.5	14.3	2.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	
Total Delay	6.2	10.3	2.2	6.0	15.2		15.5	14.3	2.1	
LOS	A	B	A	A	B		B	B	A	
Approach Delay		5.4			15.0		15.5	4.0		
Approach LOS		A			B		B	A		

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 43.1	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.22	
Intersection Signal Delay: 9.6	Intersection LOS: A
Intersection Capacity Utilization 41.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 18: NS Collector & Oldham Parkway





Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	140	59	127	3	100	216	12	65
v/c Ratio	0.13	0.08	0.16	0.01	0.12	0.22	0.02	0.10
Control Delay	6.2	10.3	2.2	6.0	15.2	15.5	14.3	2.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.2	10.3	2.2	6.0	15.2	15.5	14.3	2.1
Queue Length 50th (ft)	8	7	0	0	11	25	3	0
Queue Length 95th (ft)	18	36	18	3	26	48	12	12
Internal Link Dist (ft)		361			732	267	97	
Turn Bay Length (ft)								
Base Capacity (vph)	1334	1029	955	739	1861	1439	1597	1372
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.06	0.13	0.00	0.05	0.15	0.01	0.05

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	129	54	117	3	92	0	181	14	4	0	11	60
Future Volume (veh/h)	129	54	117	3	92	0	181	14	4	0	11	60
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	140	59	127	3	100	0	197	15	4	0	12	65
Adj No. of Lanes	2	1	1	1	2	0	0	2	0	1	1	1
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1328	673	572	436	776	0	453	291	78	467	421	358
Arrive On Green	0.15	0.36	0.36	0.01	0.22	0.00	0.23	0.23	0.23	0.00	0.23	0.23
Sat Flow, veh/h	3442	1863	1583	1774	3632	0	1288	1290	344	1774	1863	1583
Grp Volume(v), veh/h	140	59	127	3	100	0	197	0	19	0	12	65
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1774	1770	0	1288	0	1634	1774	1863	1583
Q Serve(g_s), s	1.1	0.9	2.5	0.1	1.0	0.0	6.1	0.0	0.4	0.0	0.2	1.5
Cycle Q Clear(g_c), s	1.1	0.9	2.5	0.1	1.0	0.0	6.3	0.0	0.4	0.0	0.2	1.5
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.21	1.00		1.00
Lane Grp Cap(c), veh/h	1328	673	572	436	776	0	453	0	369	467	421	358
V/C Ratio(X)	0.11	0.09	0.22	0.01	0.13	0.00	0.43	0.00	0.05	0.00	0.03	0.18
Avail Cap(c_a), veh/h	1750	925	787	905	1758	0	751	0	738	944	1598	1359
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	8.1	9.3	9.8	13.3	13.9	0.0	15.8	0.0	13.4	0.0	13.4	13.8
Incr Delay (d2), s/veh	0.0	0.1	0.2	0.0	0.1	0.0	0.7	0.0	0.1	0.0	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.5	1.1	0.0	0.5	0.0	2.3	0.0	0.2	0.0	0.1	0.7
LnGrp Delay(d),s/veh	8.1	9.4	10.0	13.3	14.0	0.0	16.5	0.0	13.5	0.0	13.4	14.1
LnGrp LOS	A	A	B	B	B		B		B		B	B
Approach Vol, veh/h		326			103			216			77	
Approach Delay, s/veh		9.1			13.9			16.2			14.0	
Approach LOS		A			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4		6	7	8
Phs Duration (G+Y+Rc), s	0.0	16.0	6.3	22.0		16.0	12.6	15.7
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0		6.0	6.0	6.0
Max Green Setting (Gmax), s	12.0	20.0	12.0	22.0		38.0	12.0	22.0
Max Q Clear Time (g_c+I1), s	0.0	8.3	2.1	4.5		3.5	3.1	3.0
Green Ext Time (p_c), s	0.0	0.9	0.0	0.6		0.2	0.3	0.5

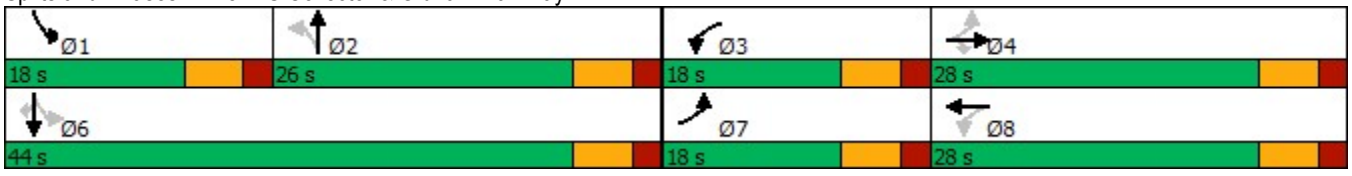
Intersection Summary	
HCM 2010 Ctrl Delay	12.4
HCM 2010 LOS	B

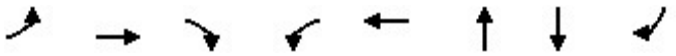
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT	SBR	Ø1
Lane Configurations										
Traffic Volume (vph)	379	164	251	14	171	303	42	57	303	
Future Volume (vph)	379	164	251	14	171	303	42	57	303	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	NA	NA	Perm	
Protected Phases	7	4		3	8		2	6		1
Permitted Phases	4		4	8		2			6	
Detector Phase	7	4	4	3	8	2	2	6	6	
Switch Phase										
Minimum Initial (s)	8.0	10.0	10.0	8.0	10.0	10.0	10.0	10.0	10.0	8.0
Minimum Split (s)	14.0	24.0	24.0	14.0	24.0	24.0	24.0	24.0	24.0	14.0
Total Split (s)	18.0	28.0	28.0	18.0	28.0	26.0	26.0	44.0	44.0	18.0
Total Split (%)	20.0%	31.1%	31.1%	20.0%	31.1%	28.9%	28.9%	48.9%	48.9%	20%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	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	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag			Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes			Yes
Recall Mode	None	None	None	None	None	Min	Min	Min	Min	None
Act Effct Green (s)	27.0	25.0	25.0	18.6	10.5		13.3	13.3	13.3	
Actuated g/C Ratio	0.51	0.47	0.47	0.35	0.20		0.25	0.25	0.25	
v/c Ratio	0.34	0.20	0.31	0.03	0.27		0.97dl	0.13	0.51	
Control Delay	8.3	11.9	3.6	8.4	20.3		21.5	16.1	5.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	
Total Delay	8.3	11.9	3.6	8.4	20.3		21.5	16.1	5.5	
LOS	A	B	A	A	C		C	B	A	
Approach Delay		7.6			19.4		21.5	7.2		
Approach LOS		A			B		C	A		

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 52.8	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.59	
Intersection Signal Delay: 11.7	Intersection LOS: B
Intersection Capacity Utilization 58.9%	ICU Level of Service B
Analysis Period (min) 15	

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

Splits and Phases: 18: NS Collector & Oldham Parkway

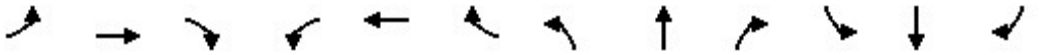




Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	412	178	273	15	186	387	62	329
v/c Ratio	0.34	0.20	0.31	0.03	0.27	0.97dl	0.13	0.51
Control Delay	8.3	11.9	3.6	8.4	20.3	21.5	16.1	5.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.3	11.9	3.6	8.4	20.3	21.5	16.1	5.5
Queue Length 50th (ft)	30	25	0	2	25	55	15	0
Queue Length 95th (ft)	66	103	49	11	56	96	40	49
Internal Link Dist (ft)		361			732	267	97	
Turn Bay Length (ft)								
Base Capacity (vph)	1255	916	917	644	1488	989	1353	1240
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.19	0.30	0.02	0.13	0.39	0.05	0.27

Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	379	164	251	14	171	0	303	42	11	0	57	303
Future Volume (veh/h)	379	164	251	14	171	0	303	42	11	0	57	303
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	412	178	273	15	186	0	329	46	12	0	62	329
Adj No. of Lanes	2	1	1	1	2	0	0	2	0	1	1	1
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1056	543	462	348	632	0	460	463	121	579	665	566
Arrive On Green	0.14	0.29	0.29	0.03	0.18	0.00	0.36	0.36	0.36	0.00	0.36	0.36
Sat Flow, veh/h	3442	1863	1583	1774	3632	0	928	1297	338	1774	1863	1583
Grp Volume(v), veh/h	412	178	273	15	186	0	329	0	58	0	62	329
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1774	1770	0	928	0	1635	1774	1863	1583
Q Serve(g_s), s	4.9	4.2	8.3	0.4	2.6	0.0	18.6	0.0	1.3	0.0	1.2	9.4
Cycle Q Clear(g_c), s	4.9	4.2	8.3	0.4	2.6	0.0	19.8	0.0	1.3	0.0	1.2	9.4
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.21	1.00		1.00
Lane Grp Cap(c), veh/h	1056	543	462	348	632	0	460	0	584	579	665	566
V/C Ratio(X)	0.39	0.33	0.59	0.04	0.29	0.00	0.72	0.00	0.10	0.00	0.09	0.58
Avail Cap(c_a), veh/h	1303	732	622	676	1391	0	460	0	584	956	1264	1075
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	13.4	15.5	17.0	17.7	19.9	0.0	18.5	0.0	12.0	0.0	12.0	14.6
Incr Delay (d2), s/veh	0.2	0.3	1.2	0.1	0.3	0.0	5.2	0.0	0.1	0.0	0.1	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	2.2	3.7	0.2	1.3	0.0	5.7	0.0	0.6	0.0	0.6	4.3
LnGrp Delay(d),s/veh	13.6	15.9	18.2	17.7	20.2	0.0	23.8	0.0	12.1	0.0	12.0	15.6
LnGrp LOS	B	B	B	B	C		C		B		B	B
Approach Vol, veh/h		863			201			387			391	
Approach Delay, s/veh		15.5			20.0			22.0			15.0	
Approach LOS		B			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4		6	7	8
Phs Duration (G+Y+Rc), s	0.0	26.0	7.7	22.3		26.0	14.0	16.0
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0		6.0	6.0	6.0
Max Green Setting (Gmax), s	12.0	20.0	12.0	22.0		38.0	12.0	22.0
Max Q Clear Time (g_c+I1), s	0.0	21.8	2.4	10.3		11.4	6.9	4.6
Green Ext Time (p_c), s	0.0	0.0	0.0	1.6		1.5	0.7	1.0

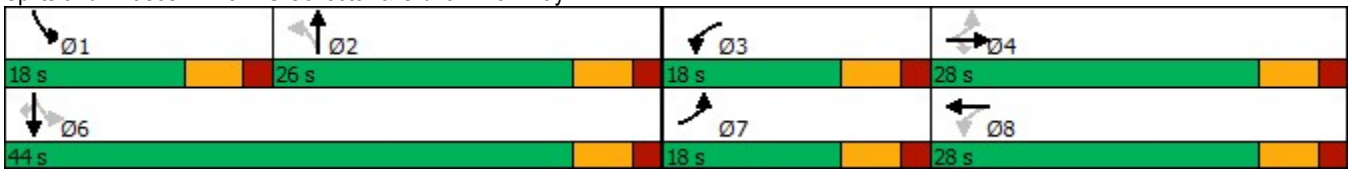
Intersection Summary	
HCM 2010 Ctrl Delay	17.3
HCM 2010 LOS	B

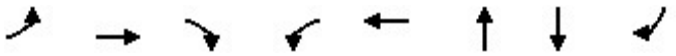
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT	SBR	Ø1
Lane Configurations										
Traffic Volume (vph)	546	180	404	18	211	334	61	75	390	
Future Volume (vph)	546	180	404	18	211	334	61	75	390	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	NA	NA	Perm	
Protected Phases	7	4		3	8		2	6		1
Permitted Phases	4		4	8		2			6	
Detector Phase	7	4	4	3	8	2	2	6	6	
Switch Phase										
Minimum Initial (s)	8.0	10.0	10.0	8.0	10.0	10.0	10.0	10.0	10.0	8.0
Minimum Split (s)	14.0	24.0	24.0	14.0	24.0	24.0	24.0	24.0	24.0	14.0
Total Split (s)	18.0	28.0	28.0	18.0	28.0	26.0	26.0	44.0	44.0	18.0
Total Split (%)	20.0%	31.1%	31.1%	20.0%	31.1%	28.9%	28.9%	48.9%	48.9%	20%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	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	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag			Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes			Yes
Recall Mode	None	None	None	None	None	Min	Min	Min	Min	None
Act Effct Green (s)	28.6	26.5	26.5	19.1	11.0		15.3	15.3	15.3	
Actuated g/C Ratio	0.51	0.47	0.47	0.34	0.20		0.27	0.27	0.27	
v/c Ratio	0.50	0.22	0.45	0.04	0.33		1.01dl	0.16	0.57	
Control Delay	10.2	12.5	3.7	8.9	21.7		22.6	16.5	5.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	
Total Delay	10.2	12.5	3.7	8.9	21.7		22.6	16.5	5.6	
LOS	B	B	A	A	C		C	B	A	
Approach Delay		8.2			20.7		22.6	7.4		
Approach LOS		A			C		C	A		

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 56.3	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.64	
Intersection Signal Delay: 12.0	Intersection LOS: B
Intersection Capacity Utilization 66.0%	ICU Level of Service C
Analysis Period (min) 15	

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

Splits and Phases: 18: NS Collector & Oldham Parkway

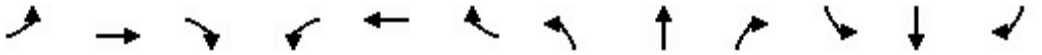




Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	593	196	439	20	229	445	82	424
v/c Ratio	0.50	0.22	0.45	0.04	0.33	1.01dl	0.16	0.57
Control Delay	10.2	12.5	3.7	8.9	21.7	22.6	16.5	5.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.2	12.5	3.7	8.9	21.7	22.6	16.5	5.6
Queue Length 50th (ft)	54	32	0	3	34	66	20	0
Queue Length 95th (ft)	97	112	59	13	66	119	52	57
Internal Link Dist (ft)		361			732	267	97	
Turn Bay Length (ft)								
Base Capacity (vph)	1206	892	987	611	1395	919	1269	1213
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.22	0.44	0.03	0.16	0.48	0.06	0.35

Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	546	180	404	18	211	0	334	61	15	0	75	390
Future Volume (veh/h)	546	180	404	18	211	0	334	61	15	0	75	390
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	593	196	439	20	229	0	363	66	16	0	82	424
Adj No. of Lanes	2	1	1	1	2	0	0	2	0	1	1	1
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1118	591	502	334	648	0	397	448	109	525	632	537
Arrive On Green	0.17	0.32	0.32	0.04	0.18	0.00	0.34	0.34	0.34	0.00	0.34	0.34
Sat Flow, veh/h	3442	1863	1583	1774	3632	0	810	1319	320	1774	1863	1583
Grp Volume(v), veh/h	593	196	439	20	229	0	363	0	82	0	82	424
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1774	1770	0	810	0	1639	1774	1863	1583
Q Serve(g_s), s	7.5	4.7	15.4	0.5	3.3	0.0	18.2	0.0	2.1	0.0	1.8	14.2
Cycle Q Clear(g_c), s	7.5	4.7	15.4	0.5	3.3	0.0	20.0	0.0	2.1	0.0	1.8	14.2
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.20	1.00		1.00
Lane Grp Cap(c), veh/h	1118	591	502	334	648	0	397	0	556	525	632	537
V/C Ratio(X)	0.53	0.33	0.87	0.06	0.35	0.00	0.91	0.00	0.15	0.00	0.13	0.79
Avail Cap(c_a), veh/h	1227	696	591	628	1321	0	397	0	556	883	1201	1021
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	13.6	15.4	19.0	18.1	21.0	0.0	22.6	0.0	13.5	0.0	13.4	17.6
Incr Delay (d2), s/veh	0.4	0.3	12.2	0.1	0.3	0.0	25.3	0.0	0.1	0.0	0.1	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	2.4	8.4	0.3	1.7	0.0	8.6	0.0	1.0	0.0	0.9	6.5
LnGrp Delay(d),s/veh	14.0	15.7	31.2	18.2	21.4	0.0	47.8	0.0	13.7	0.0	13.5	20.2
LnGrp LOS	B	B	C	B	C		D		B		B	C
Approach Vol, veh/h		1228			249			445			506	
Approach Delay, s/veh		20.4			21.1			41.5			19.1	
Approach LOS		C			C			D			B	

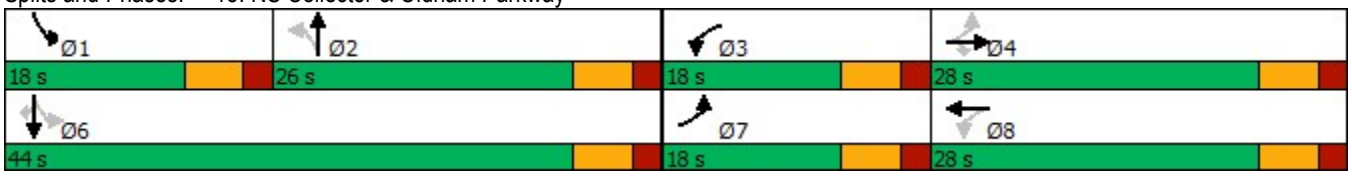
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4		6	7	8
Phs Duration (G+Y+Rc), s	0.0	26.0	8.2	24.7		26.0	16.1	16.8
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0		6.0	6.0	6.0
Max Green Setting (Gmax), s	12.0	20.0	12.0	22.0		38.0	12.0	22.0
Max Q Clear Time (g_c+I1), s	0.0	22.0	2.5	17.4		16.2	9.5	5.3
Green Ext Time (p_c), s	0.0	0.0	0.0	1.3		2.0	0.6	1.2

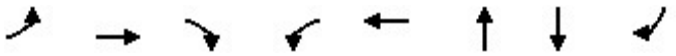
Intersection Summary	
HCM 2010 Ctrl Delay	24.1
HCM 2010 LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT	SBR	Ø1
Lane Configurations										
Traffic Volume (vph)	129	53	116	3	92	181	14	11	60	
Future Volume (vph)	129	53	116	3	92	181	14	11	60	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	NA	NA	Perm	
Protected Phases	7	4		3	8		2	6		1
Permitted Phases	4		4	8		2			6	
Detector Phase	7	4	4	3	8	2	2	6	6	
Switch Phase										
Minimum Initial (s)	8.0	10.0	10.0	8.0	10.0	10.0	10.0	10.0	10.0	8.0
Minimum Split (s)	14.0	24.0	24.0	14.0	24.0	24.0	24.0	24.0	24.0	14.0
Total Split (s)	18.0	28.0	28.0	18.0	28.0	26.0	26.0	44.0	44.0	18.0
Total Split (%)	20.0%	31.1%	31.1%	20.0%	31.1%	28.9%	28.9%	48.9%	48.9%	20%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	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	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag			Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes			Yes
Recall Mode	None	None	None	None	None	Min	Min	Min	Min	None
Act Effct Green (s)	19.1	18.2	18.2	15.7	10.3		16.3	16.3	16.3	
Actuated g/C Ratio	0.44	0.42	0.42	0.36	0.24		0.38	0.38	0.38	
v/c Ratio	0.13	0.07	0.16	0.01	0.12		0.22	0.02	0.10	
Control Delay	6.2	10.3	2.2	6.0	15.2		15.5	14.3	2.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	
Total Delay	6.2	10.3	2.2	6.0	15.2		15.5	14.3	2.1	
LOS	A	B	A	A	B		B	B	A	
Approach Delay		5.4			15.0		15.5	4.0		
Approach LOS		A			B		B	A		

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 43.1	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.22	
Intersection Signal Delay: 9.6	Intersection LOS: A
Intersection Capacity Utilization 41.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 18: NS Collector & Oldham Parkway





Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	140	58	126	3	100	216	12	65
v/c Ratio	0.13	0.07	0.16	0.01	0.12	0.22	0.02	0.10
Control Delay	6.2	10.3	2.2	6.0	15.2	15.5	14.3	2.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.2	10.3	2.2	6.0	15.2	15.5	14.3	2.1
Queue Length 50th (ft)	8	7	0	0	11	25	3	0
Queue Length 95th (ft)	18	36	17	3	26	48	12	12
Internal Link Dist (ft)		361			732	267	97	
Turn Bay Length (ft)								
Base Capacity (vph)	1332	1027	953	738	1858	1439	1597	1372
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.06	0.13	0.00	0.05	0.15	0.01	0.05

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	129	53	116	3	92	0	181	14	4	0	11	60
Future Volume (veh/h)	129	53	116	3	92	0	181	14	4	0	11	60
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	140	58	126	3	100	0	197	15	4	0	12	65
Adj No. of Lanes	2	1	1	1	2	0	0	2	0	1	1	1
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1328	673	572	436	776	0	453	291	78	467	421	358
Arrive On Green	0.15	0.36	0.36	0.01	0.22	0.00	0.23	0.23	0.23	0.00	0.23	0.23
Sat Flow, veh/h	3442	1863	1583	1774	3632	0	1288	1290	344	1774	1863	1583
Grp Volume(v), veh/h	140	58	126	3	100	0	197	0	19	0	12	65
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1774	1770	0	1288	0	1634	1774	1863	1583
Q Serve(g_s), s	1.1	0.9	2.4	0.1	1.0	0.0	6.1	0.0	0.4	0.0	0.2	1.5
Cycle Q Clear(g_c), s	1.1	0.9	2.4	0.1	1.0	0.0	6.3	0.0	0.4	0.0	0.2	1.5
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.21	1.00		1.00
Lane Grp Cap(c), veh/h	1328	673	572	436	776	0	453	0	369	467	421	358
V/C Ratio(X)	0.11	0.09	0.22	0.01	0.13	0.00	0.43	0.00	0.05	0.00	0.03	0.18
Avail Cap(c_a), veh/h	1750	926	787	905	1759	0	751	0	738	944	1599	1359
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	8.1	9.3	9.8	13.3	13.9	0.0	15.8	0.0	13.4	0.0	13.4	13.8
Incr Delay (d2), s/veh	0.0	0.1	0.2	0.0	0.1	0.0	0.7	0.0	0.1	0.0	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.5	1.1	0.0	0.5	0.0	2.3	0.0	0.2	0.0	0.1	0.7
LnGrp Delay(d),s/veh	8.1	9.4	10.0	13.3	14.0	0.0	16.5	0.0	13.5	0.0	13.4	14.1
LnGrp LOS	A	A	B	B	B		B		B		B	B
Approach Vol, veh/h		324			103			216			77	
Approach Delay, s/veh		9.1			13.9			16.2			14.0	
Approach LOS		A			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4		6	7	8
Phs Duration (G+Y+Rc), s	0.0	16.0	6.3	22.0		16.0	12.6	15.7
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0		6.0	6.0	6.0
Max Green Setting (Gmax), s	12.0	20.0	12.0	22.0		38.0	12.0	22.0
Max Q Clear Time (g_c+I1), s	0.0	8.3	2.1	4.4		3.5	3.1	3.0
Green Ext Time (p_c), s	0.0	0.9	0.0	0.6		0.2	0.3	0.5

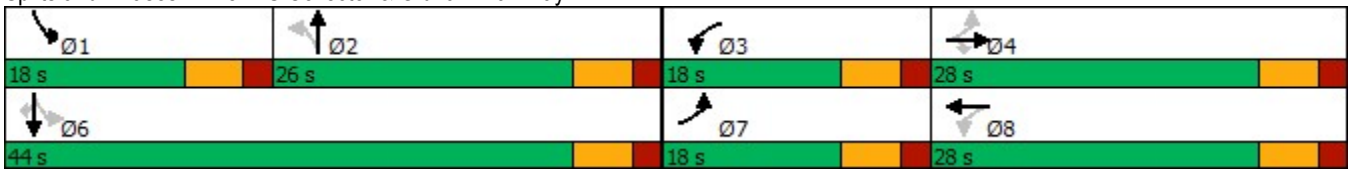
Intersection Summary	
HCM 2010 Ctrl Delay	12.4
HCM 2010 LOS	B

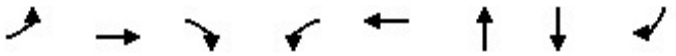
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT	SBR	Ø1
Lane Configurations										
Traffic Volume (vph)	379	164	251	14	171	303	42	57	303	
Future Volume (vph)	379	164	251	14	171	303	42	57	303	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	NA	NA	Perm	
Protected Phases	7	4		3	8		2	6		1
Permitted Phases	4		4	8		2			6	
Detector Phase	7	4	4	3	8	2	2	6	6	
Switch Phase										
Minimum Initial (s)	8.0	10.0	10.0	8.0	10.0	10.0	10.0	10.0	10.0	8.0
Minimum Split (s)	14.0	24.0	24.0	14.0	24.0	24.0	24.0	24.0	24.0	14.0
Total Split (s)	18.0	28.0	28.0	18.0	28.0	26.0	26.0	44.0	44.0	18.0
Total Split (%)	20.0%	31.1%	31.1%	20.0%	31.1%	28.9%	28.9%	48.9%	48.9%	20%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	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	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag			Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes			Yes
Recall Mode	None	None	None	None	None	Min	Min	Min	Min	None
Act Effct Green (s)	27.0	25.0	25.0	18.6	10.5		13.3	13.3	13.3	
Actuated g/C Ratio	0.51	0.47	0.47	0.35	0.20		0.25	0.25	0.25	
v/c Ratio	0.34	0.20	0.31	0.03	0.27		0.97dl	0.13	0.51	
Control Delay	8.3	11.9	3.6	8.4	20.3		21.5	16.1	5.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	
Total Delay	8.3	11.9	3.6	8.4	20.3		21.5	16.1	5.5	
LOS	A	B	A	A	C		C	B	A	
Approach Delay		7.6			19.4		21.5	7.2		
Approach LOS		A			B		C	A		

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 52.8	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.59	
Intersection Signal Delay: 11.7	Intersection LOS: B
Intersection Capacity Utilization 58.9%	ICU Level of Service B
Analysis Period (min) 15	

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

Splits and Phases: 18: NS Collector & Oldham Parkway

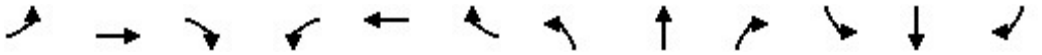




Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	412	178	273	15	186	387	62	329
v/c Ratio	0.34	0.20	0.31	0.03	0.27	0.97dl	0.13	0.51
Control Delay	8.3	11.9	3.6	8.4	20.3	21.5	16.1	5.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.3	11.9	3.6	8.4	20.3	21.5	16.1	5.5
Queue Length 50th (ft)	30	25	0	2	25	55	15	0
Queue Length 95th (ft)	66	103	49	11	56	96	40	49
Internal Link Dist (ft)		361			732	267	97	
Turn Bay Length (ft)								
Base Capacity (vph)	1255	916	917	644	1488	989	1353	1240
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.19	0.30	0.02	0.13	0.39	0.05	0.27

Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	379	164	251	14	171	0	303	42	11	0	57	303
Future Volume (veh/h)	379	164	251	14	171	0	303	42	11	0	57	303
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	412	178	273	15	186	0	329	46	12	0	62	329
Adj No. of Lanes	2	1	1	1	2	0	0	2	0	1	1	1
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1056	543	462	348	632	0	460	463	121	579	665	566
Arrive On Green	0.14	0.29	0.29	0.03	0.18	0.00	0.36	0.36	0.36	0.00	0.36	0.36
Sat Flow, veh/h	3442	1863	1583	1774	3632	0	928	1297	338	1774	1863	1583
Grp Volume(v), veh/h	412	178	273	15	186	0	329	0	58	0	62	329
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1774	1770	0	928	0	1635	1774	1863	1583
Q Serve(g_s), s	4.9	4.2	8.3	0.4	2.6	0.0	18.6	0.0	1.3	0.0	1.2	9.4
Cycle Q Clear(g_c), s	4.9	4.2	8.3	0.4	2.6	0.0	19.8	0.0	1.3	0.0	1.2	9.4
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.21	1.00		1.00
Lane Grp Cap(c), veh/h	1056	543	462	348	632	0	460	0	584	579	665	566
V/C Ratio(X)	0.39	0.33	0.59	0.04	0.29	0.00	0.72	0.00	0.10	0.00	0.09	0.58
Avail Cap(c_a), veh/h	1303	732	622	676	1391	0	460	0	584	956	1264	1075
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	13.4	15.5	17.0	17.7	19.9	0.0	18.5	0.0	12.0	0.0	12.0	14.6
Incr Delay (d2), s/veh	0.2	0.3	1.2	0.1	0.3	0.0	5.2	0.0	0.1	0.0	0.1	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	2.2	3.7	0.2	1.3	0.0	5.7	0.0	0.6	0.0	0.6	4.3
LnGrp Delay(d),s/veh	13.6	15.9	18.2	17.7	20.2	0.0	23.8	0.0	12.1	0.0	12.0	15.6
LnGrp LOS	B	B	B	B	C		C		B		B	B
Approach Vol, veh/h		863			201			387			391	
Approach Delay, s/veh		15.5			20.0			22.0			15.0	
Approach LOS		B			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4		6	7	8
Phs Duration (G+Y+Rc), s	0.0	26.0	7.7	22.3		26.0	14.0	16.0
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0		6.0	6.0	6.0
Max Green Setting (Gmax), s	12.0	20.0	12.0	22.0		38.0	12.0	22.0
Max Q Clear Time (g_c+I1), s	0.0	21.8	2.4	10.3		11.4	6.9	4.6
Green Ext Time (p_c), s	0.0	0.0	0.0	1.6		1.5	0.7	1.0

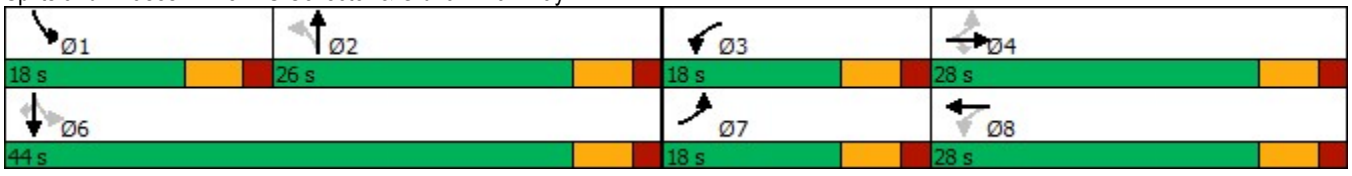
Intersection Summary	
HCM 2010 Ctrl Delay	17.3
HCM 2010 LOS	B

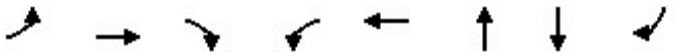
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT	SBR	Ø1
Lane Configurations										
Traffic Volume (vph)	546	180	404	18	511	334	61	75	390	
Future Volume (vph)	546	180	404	18	511	334	61	75	390	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	NA	NA	Perm	
Protected Phases	7	4		3	8		2	6		1
Permitted Phases	4		4	8		2			6	
Detector Phase	7	4	4	3	8	2	2	6	6	
Switch Phase										
Minimum Initial (s)	8.0	10.0	10.0	8.0	10.0	10.0	10.0	10.0	10.0	8.0
Minimum Split (s)	14.0	24.0	24.0	14.0	24.0	24.0	24.0	24.0	24.0	14.0
Total Split (s)	18.0	28.0	28.0	18.0	28.0	26.0	26.0	44.0	44.0	18.0
Total Split (%)	20.0%	31.1%	31.1%	20.0%	31.1%	28.9%	28.9%	48.9%	48.9%	20%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	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	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag			Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes			Yes
Recall Mode	None	None	None	None	None	Min	Min	Min	Min	None
Act Effct Green (s)	34.0	31.9	31.9	24.2	16.1		16.3	16.3	16.3	
Actuated g/C Ratio	0.54	0.51	0.51	0.39	0.26		0.26	0.26	0.26	
v/c Ratio	0.57	0.21	0.43	0.04	0.61		1.06dl	0.17	0.59	
Control Delay	10.6	11.5	3.2	8.2	24.0		26.6	19.7	6.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	
Total Delay	10.6	11.5	3.2	8.2	24.0		26.6	19.7	6.3	
LOS	B	B	A	A	C		C	B	A	
Approach Delay		8.1			23.5		26.6	8.5		
Approach LOS		A			C		C	A		

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 62.8	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.67	
Intersection Signal Delay: 14.4	Intersection LOS: B
Intersection Capacity Utilization 71.8%	ICU Level of Service C
Analysis Period (min) 15	

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

Splits and Phases: 18: NS Collector & Oldham Parkway





Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	593	196	439	20	555	445	82	424
v/c Ratio	0.57	0.21	0.43	0.04	0.61	1.06dl	0.17	0.59
Control Delay	10.6	11.5	3.2	8.2	24.0	26.6	19.7	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.6	11.5	3.2	8.2	24.0	26.6	19.7	6.3
Queue Length 50th (ft)	58	35	0	3	98	78	24	1
Queue Length 95th (ft)	95	109	55	12	152	135	59	64
Internal Link Dist (ft)		361			732	267	97	
Turn Bay Length (ft)								
Base Capacity (vph)	1037	944	1019	645	1256	826	1142	1132
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.57	0.21	0.43	0.03	0.44	0.54	0.07	0.37

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	546	180	404	18	511	0	334	61	15	0	75	390
Future Volume (veh/h)	546	180	404	18	511	0	334	61	15	0	75	390
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	593	196	439	20	555	0	363	66	16	0	82	424
Adj No. of Lanes	2	1	1	1	2	0	0	2	0	1	1	1
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	924	649	552	358	786	0	376	426	103	496	602	512
Arrive On Green	0.16	0.35	0.35	0.04	0.22	0.00	0.32	0.32	0.32	0.00	0.32	0.32
Sat Flow, veh/h	3442	1863	1583	1774	3632	0	804	1319	320	1774	1863	1583
Grp Volume(v), veh/h	593	196	439	20	555	0	363	0	82	0	82	424
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1774	1770	0	804	0	1639	1774	1863	1583
Q Serve(g_s), s	7.5	4.7	15.5	0.5	9.0	0.0	18.1	0.0	2.2	0.0	1.9	15.3
Cycle Q Clear(g_c), s	7.5	4.7	15.5	0.5	9.0	0.0	20.0	0.0	2.2	0.0	1.9	15.3
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.20	1.00		1.00
Lane Grp Cap(c), veh/h	924	649	552	358	786	0	376	0	530	496	602	512
V/C Ratio(X)	0.64	0.30	0.80	0.06	0.71	0.00	0.97	0.00	0.15	0.00	0.14	0.83
Avail Cap(c_a), veh/h	1028	662	563	636	1258	0	376	0	530	837	1144	972
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	14.1	14.7	18.2	17.1	22.2	0.0	24.5	0.0	14.9	0.0	14.8	19.4
Incr Delay (d2), s/veh	1.2	0.3	7.7	0.1	1.2	0.0	37.2	0.0	0.1	0.0	0.1	3.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	2.5	7.9	0.3	4.4	0.0	9.9	0.0	1.0	0.0	1.0	7.1
LnGrp Delay(d),s/veh	15.3	14.9	25.9	17.2	23.4	0.0	61.7	0.0	15.1	0.0	14.9	22.9
LnGrp LOS	B	B	C	B	C		E		B		B	C
Approach Vol, veh/h		1228			575			445			506	
Approach Delay, s/veh		19.0			23.2			53.1			21.6	
Approach LOS		B			C			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4		6	7	8
Phs Duration (G+Y+Rc), s	0.0	26.0	8.3	27.6		26.0	16.1	19.7
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0		6.0	6.0	6.0
Max Green Setting (Gmax), s	12.0	20.0	12.0	22.0		38.0	12.0	22.0
Max Q Clear Time (g_c+I1), s	0.0	22.0	2.5	17.5		17.3	9.5	11.0
Green Ext Time (p_c), s	0.0	0.0	0.0	1.2		2.0	0.6	2.8

Intersection Summary	
HCM 2010 Ctrl Delay	25.9
HCM 2010 LOS	C

Intersection 7
Bailey Road & N/S Collector

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	11	347	356	25	21	12
Future Vol, veh/h	11	347	356	25	21	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	377	387	27	23	13

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	414	0	-	0	802	401
Stage 1	-	-	-	-	401	-
Stage 2	-	-	-	-	401	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1145	-	-	-	353	649
Stage 1	-	-	-	-	676	-
Stage 2	-	-	-	-	676	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1145	-	-	-	349	649
Mov Cap-2 Maneuver	-	-	-	-	349	-
Stage 1	-	-	-	-	669	-
Stage 2	-	-	-	-	676	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	14.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1145	-	-	-	349	649
HCM Lane V/C Ratio	0.01	-	-	-	0.065	0.02
HCM Control Delay (s)	8.2	-	-	-	16	10.7
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0	-	-	-	0.2	0.1

Intersection	
Int Delay, s/veh	4.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	46	461	638	74	90	59
Future Vol, veh/h	46	461	638	74	90	59
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	50	501	693	80	98	64

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	773	0	-	0	1334	733
Stage 1	-	-	-	-	733	-
Stage 2	-	-	-	-	601	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	842	-	-	-	170	421
Stage 1	-	-	-	-	475	-
Stage 2	-	-	-	-	547	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	842	-	-	-	160	421
Mov Cap-2 Maneuver	-	-	-	-	160	-
Stage 1	-	-	-	-	447	-
Stage 2	-	-	-	-	547	-

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	40.8
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	842	-	-	-	160	421
HCM Lane V/C Ratio	0.059	-	-	-	0.611	0.152
HCM Control Delay (s)	9.5	-	-	-	57.7	15.1
HCM Lane LOS	A	-	-	-	F	C
HCM 95th %tile Q(veh)	0.2	-	-	-	3.3	0.5

Intersection	
Int Delay, s/veh	4.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	64	335	410	109	102	66
Future Vol, veh/h	64	335	410	109	102	66
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	70	364	446	118	111	72

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	564	0	-	0	1009	505
Stage 1	-	-	-	-	505	-
Stage 2	-	-	-	-	504	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1008	-	-	-	266	567
Stage 1	-	-	-	-	606	-
Stage 2	-	-	-	-	607	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1008	-	-	-	248	567
Mov Cap-2 Maneuver	-	-	-	-	248	-
Stage 1	-	-	-	-	564	-
Stage 2	-	-	-	-	607	-

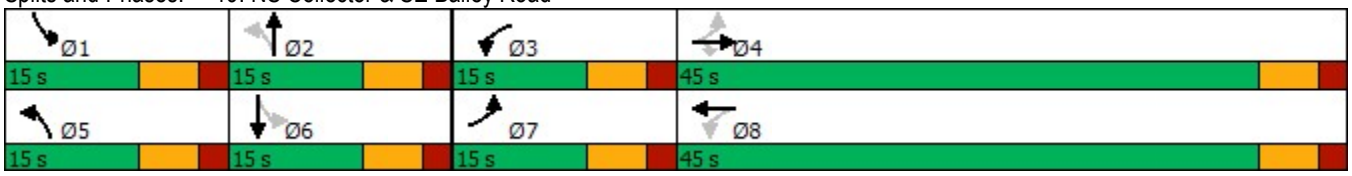
Approach	EB	WB	SB
HCM Control Delay, s	1.4	0	23.5
HCM LOS			C

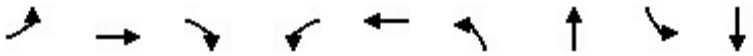
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1008	-	-	-	248	567
HCM Lane V/C Ratio	0.069	-	-	-	0.447	0.127
HCM Control Delay (s)	8.8	-	-	-	30.7	12.3
HCM Lane LOS	A	-	-	-	D	B
HCM 95th %tile Q(veh)	0.2	-	-	-	2.2	0.4

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	11	293	181	18	394	194	0	21	0
Future Volume (vph)	11	293	181	18	394	194	0	21	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	7	4		3	8	5	2	1	6
Permitted Phases	4		4	8		2		6	
Detector Phase	7	4	4	3	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	8.0	10.0	10.0	8.0	10.0	8.0	9.0	8.0	9.0
Minimum Split (s)	15.0	45.0	45.0	15.0	45.0	15.0	15.0	15.0	15.0
Total Split (s)	15.0	45.0	45.0	15.0	45.0	15.0	15.0	15.0	15.0
Total Split (%)	16.7%	50.0%	50.0%	16.7%	50.0%	16.7%	16.7%	16.7%	16.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	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)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min
Act Effct Green (s)	20.7	19.5	19.5	20.7	19.5	23.7	22.5	17.7	9.4
Actuated g/C Ratio	0.35	0.33	0.33	0.35	0.33	0.41	0.39	0.30	0.16
v/c Ratio	0.03	0.51	0.30	0.05	0.73	0.21	0.13	0.05	0.02
Control Delay	10.0	18.9	3.9	10.2	25.0	14.4	0.3	16.0	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.0	18.9	3.9	10.2	25.0	14.4	0.3	16.0	0.1
LOS	A	B	A	B	C	B	A	B	A
Approach Delay		13.1			24.4		9.0		10.3
Approach LOS		B			C		A		B

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 58.4	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay: 15.9	Intersection LOS: B
Intersection Capacity Utilization 44.5%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 19: NS Collector & SE Bailey Road





Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	12	318	197	20	455	211	128	23	13
v/c Ratio	0.03	0.51	0.30	0.05	0.73	0.21	0.13	0.05	0.02
Control Delay	10.0	18.9	3.9	10.2	25.0	14.4	0.3	16.0	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.0	18.9	3.9	10.2	25.0	14.4	0.3	16.0	0.1
Queue Length 50th (ft)	2	79	0	4	123	19	0	4	0
Queue Length 95th (ft)	9	186	39	13	281	70	0	26	0
Internal Link Dist (ft)		705			818		417		276
Turn Bay Length (ft)									
Base Capacity (vph)	368	1294	1159	443	1283	1024	982	485	596
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.25	0.17	0.05	0.35	0.21	0.13	0.05	0.02

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	293	181	18	394	25	194	0	118	21	0	12
Future Volume (veh/h)	11	293	181	18	394	25	194	0	118	21	0	12
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	12	318	197	20	428	27	211	0	128	23	0	13
Adj No. of Lanes	1	1	1	1	1	0	2	1	0	1	1	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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	236	548	466	316	534	34	1054	0	368	378	0	233
Arrive On Green	0.02	0.29	0.29	0.04	0.31	0.31	0.13	0.00	0.23	0.04	0.00	0.15
Sat Flow, veh/h	1774	1863	1583	1774	1734	109	3442	0	1583	1774	0	1583
Grp Volume(v), veh/h	12	318	197	20	0	455	211	0	128	23	0	13
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1843	1721	0	1583	1774	0	1583
Q Serve(g_s), s	0.3	8.9	6.1	0.5	0.0	13.8	2.8	0.0	4.1	0.6	0.0	0.4
Cycle Q Clear(g_c), s	0.3	8.9	6.1	0.5	0.0	13.8	2.8	0.0	4.1	0.6	0.0	0.4
Prop In Lane	1.00		1.00	1.00		0.06	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	236	548	466	316	0	568	1054	0	368	378	0	233
V/C Ratio(X)	0.05	0.58	0.42	0.06	0.00	0.80	0.20	0.00	0.35	0.06	0.00	0.06
Avail Cap(c_a), veh/h	455	1190	1011	511	0	1178	1123	0	368	565	0	233
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.7	18.3	17.4	14.4	0.0	19.4	16.2	0.0	19.6	20.3	0.0	22.4
Incr Delay (d2), s/veh	0.1	1.0	0.6	0.1	0.0	2.7	0.1	0.0	0.6	0.1	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	4.7	2.8	0.2	0.0	7.4	1.3	0.0	1.8	0.3	0.0	0.2
LnGrp Delay(d),s/veh	15.8	19.3	18.0	14.5	0.0	22.1	16.3	0.0	20.1	20.4	0.0	22.5
LnGrp LOS	B	B	B	B		C	B		C	C		C
Approach Vol, veh/h		527			475			339			36	
Approach Delay, s/veh		18.7			21.8			17.7			21.1	
Approach LOS		B			C			B			C	

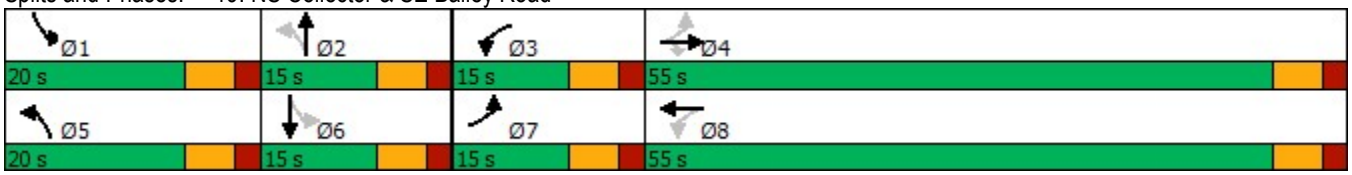
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.6	20.2	8.3	24.0	13.8	15.0	7.5	24.8
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	9.0	9.0	9.0	39.0	9.0	9.0	9.0	39.0
Max Q Clear Time (g_c+I1), s	2.6	6.1	2.5	10.9	4.8	2.4	2.3	15.8
Green Ext Time (p_c), s	0.0	0.2	0.0	2.7	0.3	0.0	0.0	3.0

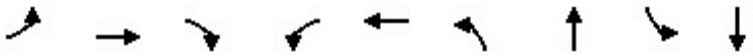
Intersection Summary	
HCM 2010 Ctrl Delay	19.6
HCM 2010 LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	46	386	208	19	671	268	10	90	10
Future Volume (vph)	46	386	208	19	671	268	10	90	10
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	7	4		3	8	5	2	1	6
Permitted Phases	4		4	8		2		6	
Detector Phase	7	4	4	3	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	8.0	10.0	10.0	8.0	10.0	8.0	9.0	8.0	9.0
Minimum Split (s)	15.0	55.0	55.0	15.0	55.0	20.0	15.0	20.0	15.0
Total Split (s)	15.0	55.0	55.0	15.0	55.0	20.0	15.0	20.0	15.0
Total Split (%)	14.3%	52.4%	52.4%	14.3%	52.4%	19.0%	14.3%	19.0%	14.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	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)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min
Act Effct Green (s)	53.9	50.8	50.8	51.3	45.3	24.8	15.2	19.5	9.3
Actuated g/C Ratio	0.56	0.53	0.53	0.53	0.47	0.26	0.16	0.20	0.10
v/c Ratio	0.22	0.43	0.24	0.04	0.93	0.43	0.37	0.32	0.35
Control Delay	10.8	16.5	2.8	8.5	43.0	31.0	13.8	32.4	20.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.8	16.5	2.8	8.5	43.0	31.0	13.8	32.4	20.0
LOS	B	B	A	A	D	C	B	C	B
Approach Delay		11.7			42.1		25.6		27.0
Approach LOS		B			D		C		C

Intersection Summary	
Cycle Length: 105	
Actuated Cycle Length: 95.9	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 27.6	Intersection LOS: C
Intersection Capacity Utilization 69.9%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 19: NS Collector & SE Bailey Road





Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	50	420	226	21	809	291	132	98	75
v/c Ratio	0.22	0.43	0.24	0.04	0.93	0.43	0.37	0.32	0.35
Control Delay	10.8	16.5	2.8	8.5	43.0	31.0	13.8	32.4	20.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.8	16.5	2.8	8.5	43.0	31.0	13.8	32.4	20.0
Queue Length 50th (ft)	12	127	0	5	474	78	7	50	7
Queue Length 95th (ft)	27	270	40	15	#763	116	65	94	51
Internal Link Dist (ft)		705			818		417		276
Turn Bay Length (ft)									
Base Capacity (vph)	239	1086	1017	545	969	732	355	387	214
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.39	0.22	0.04	0.83	0.40	0.37	0.25	0.35

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	386	208	19	671	74	268	10	111	90	10	59
Future Volume (veh/h)	46	386	208	19	671	74	268	10	111	90	10	59
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	50	420	226	21	729	80	291	11	121	98	11	64
Adj No. of Lanes	1	1	1	1	1	0	2	1	0	1	1	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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	233	939	798	424	788	86	642	16	175	270	23	135
Arrive On Green	0.06	0.50	0.50	0.04	0.48	0.48	0.10	0.12	0.12	0.08	0.10	0.10
Sat Flow, veh/h	1774	1863	1583	1774	1650	181	3442	134	1470	1774	237	1382
Grp Volume(v), veh/h	50	420	226	21	0	809	291	0	132	98	0	75
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1831	1721	0	1603	1774	0	1619
Q Serve(g_s), s	1.2	13.3	7.6	0.5	0.0	38.0	6.8	0.0	7.3	4.4	0.0	4.0
Cycle Q Clear(g_c), s	1.2	13.3	7.6	0.5	0.0	38.0	6.8	0.0	7.3	4.4	0.0	4.0
Prop In Lane	1.00		1.00	1.00		0.10	1.00		0.92	1.00		0.85
Lane Grp Cap(c), veh/h	233	939	798	424	0	874	642	0	190	270	0	158
V/C Ratio(X)	0.21	0.45	0.28	0.05	0.00	0.93	0.45	0.00	0.69	0.36	0.00	0.47
Avail Cap(c_a), veh/h	295	992	844	533	0	975	819	0	190	398	0	158
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.5	14.6	13.2	11.7	0.0	22.5	32.4	0.0	38.9	33.1	0.0	39.2
Incr Delay (d2), s/veh	0.5	0.3	0.2	0.0	0.0	13.3	0.5	0.0	10.3	0.8	0.0	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	6.9	3.4	0.3	0.0	22.3	3.2	0.0	3.8	2.2	0.0	1.9
LnGrp Delay(d),s/veh	19.0	14.9	13.4	11.7	0.0	35.8	32.9	0.0	49.2	33.9	0.0	41.4
LnGrp LOS	B	B	B	B		D	C		D	C		D
Approach Vol, veh/h		696			830			423			173	
Approach Delay, s/veh		14.7			35.2			38.0			37.2	
Approach LOS		B			D			D			D	

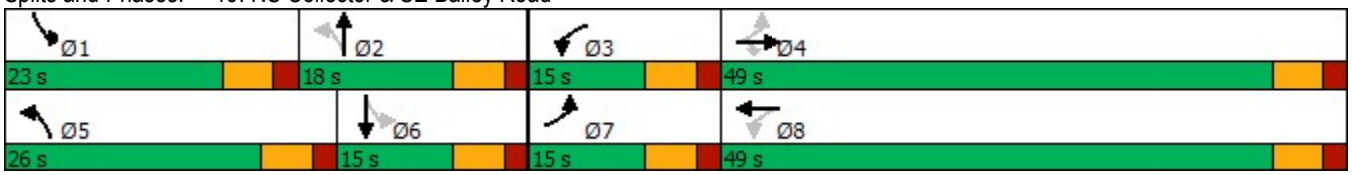
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.3	16.9	9.3	52.4	15.3	15.0	11.8	49.9
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	14.0	9.0	9.0	49.0	14.0	9.0	9.0	49.0
Max Q Clear Time (g_c+I1), s	6.4	9.3	2.5	15.3	8.8	6.0	3.2	40.0
Green Ext Time (p_c), s	0.1	0.0	0.0	3.7	0.5	0.1	0.0	3.9

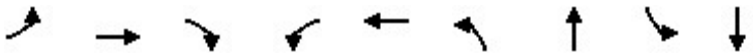
Intersection Summary	
HCM 2010 Ctrl Delay	29.2
HCM 2010 LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	64	370	366	39	475	411	10	102	10
Future Volume (vph)	64	370	366	39	475	411	10	102	10
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	7	4		3	8	5	2	1	6
Permitted Phases	4		4	8		2		6	
Detector Phase	7	4	4	3	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	8.0	10.0	10.0	8.0	10.0	8.0	10.0	8.0	9.0
Minimum Split (s)	15.0	49.0	49.0	15.0	49.0	26.0	18.0	23.0	15.0
Total Split (s)	15.0	49.0	49.0	15.0	49.0	26.0	18.0	23.0	15.0
Total Split (%)	14.3%	46.7%	46.7%	14.3%	46.7%	24.8%	17.1%	21.9%	14.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	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)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min
Act Effct Green (s)	43.2	38.6	38.6	41.3	35.4	31.5	19.2	19.9	9.5
Actuated g/C Ratio	0.48	0.43	0.43	0.46	0.39	0.35	0.21	0.22	0.11
v/c Ratio	0.27	0.51	0.44	0.09	0.88	0.50	0.12	0.32	0.35
Control Delay	13.4	22.6	3.7	11.2	41.3	26.6	17.8	27.9	18.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.4	22.6	3.7	11.2	41.3	26.6	17.8	27.9	18.8
LOS	B	C	A	B	D	C	B	C	B
Approach Delay		13.2			39.4		25.8		24.0
Approach LOS		B			D		C		C

Intersection Summary	
Cycle Length: 105	
Actuated Cycle Length: 90.3	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 24.9	Intersection LOS: C
Intersection Capacity Utilization 71.7%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 19: NS Collector & SE Bailey Road





Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	70	402	398	42	634	447	47	111	83
v/c Ratio	0.27	0.51	0.44	0.09	0.88	0.50	0.12	0.32	0.35
Control Delay	13.4	22.6	3.7	11.2	41.3	26.6	17.8	27.9	18.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.4	22.6	3.7	11.2	41.3	26.6	17.8	27.9	18.8
Queue Length 50th (ft)	19	184	0	11	341	111	6	50	6
Queue Length 95th (ft)	42	288	55	28	#577	161	40	95	54
Internal Link Dist (ft)		705			818		417		276
Turn Bay Length (ft)									
Base Capacity (vph)	273	955	1005	461	912	994	379	489	234
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.42	0.40	0.09	0.70	0.45	0.12	0.23	0.35

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	64	370	366	39	475	109	411	10	33	102	10	66
Future Volume (veh/h)	64	370	366	39	475	109	411	10	33	102	10	66
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	70	402	398	42	516	118	447	11	36	111	11	72
Adj No. of Lanes	1	1	1	1	1	0	2	1	0	1	1	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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	270	765	650	357	578	132	814	63	207	379	22	147
Arrive On Green	0.08	0.41	0.41	0.06	0.39	0.39	0.15	0.16	0.16	0.09	0.10	0.10
Sat Flow, veh/h	1774	1863	1583	1774	1468	336	3442	384	1257	1774	214	1401
Grp Volume(v), veh/h	70	402	398	42	0	634	447	0	47	111	0	83
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1804	1721	0	1641	1774	0	1615
Q Serve(g_s), s	1.9	13.9	17.0	1.1	0.0	28.2	9.4	0.0	2.1	4.6	0.0	4.2
Cycle Q Clear(g_c), s	1.9	13.9	17.0	1.1	0.0	28.2	9.4	0.0	2.1	4.6	0.0	4.2
Prop In Lane	1.00		1.00	1.00		0.19	1.00		0.77	1.00		0.87
Lane Grp Cap(c), veh/h	270	765	650	357	0	710	814	0	270	379	0	169
V/C Ratio(X)	0.26	0.53	0.61	0.12	0.00	0.89	0.55	0.00	0.17	0.29	0.00	0.49
Avail Cap(c_a), veh/h	321	933	793	438	0	903	1113	0	270	577	0	169
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.7	19.0	19.9	14.1	0.0	24.3	26.9	0.0	30.9	29.9	0.0	36.3
Incr Delay (d2), s/veh	0.5	0.6	1.0	0.1	0.0	9.4	0.6	0.0	0.3	0.4	0.0	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	7.3	7.5	0.6	0.0	15.8	4.5	0.0	1.0	2.3	0.0	2.0
LnGrp Delay(d),s/veh	18.2	19.6	20.9	14.3	0.0	33.7	27.5	0.0	31.2	30.4	0.0	38.4
LnGrp LOS	B	B	C	B		C	C		C	C		D
Approach Vol, veh/h		870			676			494			194	
Approach Delay, s/veh		20.1			32.5			27.9			33.8	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.4	20.1	11.1	41.2	18.5	15.0	12.5	39.8
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	17.0	12.0	9.0	43.0	20.0	9.0	9.0	43.0
Max Q Clear Time (g_c+I1), s	6.6	4.1	3.1	19.0	11.4	6.2	3.9	30.2
Green Ext Time (p_c), s	0.2	0.1	0.0	4.1	1.1	0.1	0.0	3.6

Intersection Summary	
HCM 2010 Ctrl Delay	26.7
HCM 2010 LOS	C

Intersection 8
16th Street &
N/S Collector

Intersection	
Int Delay, s/veh	5.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	69	32	27	0	0	56
Future Vol, veh/h	69	32	27	0	0	56
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	75	35	29	0	0	61

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	29	0	-	0	214	29
Stage 1	-	-	-	-	29	-
Stage 2	-	-	-	-	185	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1584	-	-	-	774	1046
Stage 1	-	-	-	-	994	-
Stage 2	-	-	-	-	847	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1584	-	-	-	737	1046
Mov Cap-2 Maneuver	-	-	-	-	737	-
Stage 1	-	-	-	-	946	-
Stage 2	-	-	-	-	847	-

Approach	EB	WB	SB
HCM Control Delay, s	5	0	8.7
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1584	-	-	-	1046
HCM Lane V/C Ratio	0.047	-	-	-	0.058
HCM Control Delay (s)	7.4	0	-	-	8.7
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2

Intersection	
Int Delay, s/veh	6.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	111	19	34	0	0	116
Future Vol, veh/h	111	19	34	0	0	116
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	121	21	37	0	0	126

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	37	0	-	0	300	37
Stage 1	-	-	-	-	37	-
Stage 2	-	-	-	-	263	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1574	-	-	-	691	1035
Stage 1	-	-	-	-	985	-
Stage 2	-	-	-	-	781	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1574	-	-	-	637	1035
Mov Cap-2 Maneuver	-	-	-	-	637	-
Stage 1	-	-	-	-	908	-
Stage 2	-	-	-	-	781	-

Approach	EB	WB	SB
HCM Control Delay, s	6.4	0	9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1574	-	-	-	1035
HCM Lane V/C Ratio	0.077	-	-	-	0.122
HCM Control Delay (s)	7.5	0	-	-	9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.2	-	-	-	0.4

Intersection	
Int Delay, s/veh	7.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	158	8	18	0	0	122
Future Vol, veh/h	158	8	18	0	0	122
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	172	9	20	0	0	133

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	20	0	-	0	373	20
Stage 1	-	-	-	-	20	-
Stage 2	-	-	-	-	353	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1596	-	-	-	628	1058
Stage 1	-	-	-	-	1003	-
Stage 2	-	-	-	-	711	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1596	-	-	-	560	1058
Mov Cap-2 Maneuver	-	-	-	-	560	-
Stage 1	-	-	-	-	895	-
Stage 2	-	-	-	-	711	-

Approach	EB	WB	SB
HCM Control Delay, s	7.2	0	8.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1596	-	-	-	1058
HCM Lane V/C Ratio	0.108	-	-	-	0.125
HCM Control Delay (s)	7.5	0	-	-	8.9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.4	-	-	-	0.4

Intersection 9
Oldham Parkway
& RIRO

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	179	100	0	0	43
Future Vol, veh/h	0	179	100	0	0	43
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	195	109	0	0	47

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	55
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	1000
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	1000
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	8.8
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	1000
HCM Lane V/C Ratio	-	-	-	0.047
HCM Control Delay (s)	-	-	-	8.8
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	0.1

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	526	505	0	0	216
Future Vol, veh/h	0	526	505	0	0	216
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	572	549	0	0	235

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	275
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	722
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	722
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	12.4
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	722
HCM Lane V/C Ratio	-	-	-	0.325
HCM Control Delay (s)	-	-	-	12.4
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	1.4

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↱
Traffic Vol, veh/h	0	758	649	0	0	279
Future Vol, veh/h	0	758	649	0	0	279
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	824	705	0	0	303

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	353
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	643
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	643
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	15.5
HCM LOS			C

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	643
HCM Lane V/C Ratio	-	-	-	0.472
HCM Control Delay (s)	-	-	-	15.5
HCM Lane LOS	-	-	-	C
HCM 95th %tile Q(veh)	-	-	-	2.5

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	298	333	0	0	43
Future Vol, veh/h	0	298	333	0	0	43
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	324	362	0	0	47

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	181
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	831
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	831
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.6
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	831
HCM Lane V/C Ratio	-	-	-	0.056
HCM Control Delay (s)	-	-	-	9.6
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	0.2

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	793	777	0	0	216
Future Vol, veh/h	0	793	777	0	0	216
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	862	845	0	0	235

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	423
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	579
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	579
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	15.4
HCM LOS			C

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	579
HCM Lane V/C Ratio	-	-	-	0.405
HCM Control Delay (s)	-	-	-	15.4
HCM Lane LOS	-	-	-	C
HCM 95th %tile Q(veh)	-	-	-	2

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↱
Traffic Vol, veh/h	0	1130	934	0	0	279
Future Vol, veh/h	0	1130	934	0	0	279
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1228	1015	0	0	303

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	508
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	510
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	510
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	21.9
HCM LOS			C

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	510
HCM Lane V/C Ratio	-	-	-	0.595
HCM Control Delay (s)	-	-	-	21.9
HCM Lane LOS	-	-	-	C
HCM 95th %tile Q(veh)	-	-	-	3.8

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	298	333	0	0	43
Future Vol, veh/h	0	298	333	0	0	43
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	324	362	0	0	47

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	181
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	831
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	831
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.6
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	831
HCM Lane V/C Ratio	-	-	-	0.056
HCM Control Delay (s)	-	-	-	9.6
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	0.2

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	793	777	0	0	216
Future Vol, veh/h	0	793	777	0	0	216
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	862	845	0	0	235

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	423
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	579
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	579
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	15.4
HCM LOS			C

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	579
HCM Lane V/C Ratio	-	-	-	0.405
HCM Control Delay (s)	-	-	-	15.4
HCM Lane LOS	-	-	-	C
HCM 95th %tile Q(veh)	-	-	-	2

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	1130	934	0	0	279
Future Vol, veh/h	0	1130	934	0	0	279
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1228	1015	0	0	303

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	508
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	510
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	510
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	21.9
HCM LOS			C

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	510
HCM Lane V/C Ratio	-	-	-	0.595
HCM Control Delay (s)	-	-	-	21.9
HCM Lane LOS	-	-	-	C
HCM 95th %tile Q(veh)	-	-	-	3.8

Intersection 10
Oldham Parkway
& Fuel Station

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	36	0	0	0	0	0	0	0	0	0	0	29
Future Vol, veh/h	36	0	0	0	0	0	0	0	0	0	0	29
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	39	0	0	0	0	0	0	0	0	0	0	32

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1	0	0	0	0	0	95	79	0	79	79	1
Stage 1	-	-	-	-	-	-	78	78	-	1	1	-
Stage 2	-	-	-	-	-	-	17	1	-	78	78	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1622	-	-	-	-	-	888	811	-	910	811	1084
Stage 1	-	-	-	-	-	-	931	830	-	1022	895	-
Stage 2	-	-	-	-	-	-	1002	895	-	931	830	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1622	-	-	-	-	-	846	792	-	-	792	1084
Mov Cap-2 Maneuver	-	-	-	-	-	-	846	792	-	-	792	-
Stage 1	-	-	-	-	-	-	909	810	-	997	895	-
Stage 2	-	-	-	-	-	-	973	895	-	909	810	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	7.3	0	0	
HCM LOS			A	-

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1622	-	-	-	-	-	-
HCM Lane V/C Ratio	-	0.024	-	-	-	-	-	-
HCM Control Delay (s)	0	7.3	-	-	0	-	-	-
HCM Lane LOS	A	A	-	-	A	-	-	-
HCM 95th %tile Q(veh)	-	0.1	-	-	-	-	-	-

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	105	0	0	0	0	0	0	0	0	0	0	145
Future Vol, veh/h	105	0	0	0	0	0	0	0	0	0	0	145
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	114	0	0	0	0	0	0	0	0	0	0	158

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1	0	0	0	0	0	308	229	0	229	229	1
Stage 1	-	-	-	-	-	-	228	228	-	1	1	-
Stage 2	-	-	-	-	-	-	80	1	-	228	228	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1622	-	-	-	-	-	644	671	-	726	671	1084
Stage 1	-	-	-	-	-	-	775	715	-	1022	895	-
Stage 2	-	-	-	-	-	-	929	895	-	775	715	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1622	-	-	-	-	-	521	624	-	-	624	1084
Mov Cap-2 Maneuver	-	-	-	-	-	-	521	624	-	-	624	-
Stage 1	-	-	-	-	-	-	721	665	-	950	895	-
Stage 2	-	-	-	-	-	-	794	895	-	721	665	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	7.4	0	0	
HCM LOS			A	-

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1622	-	-	-	-	-	-
HCM Lane V/C Ratio	-	0.07	-	-	-	-	-	-
HCM Control Delay (s)	0	7.4	-	-	0	-	-	-
HCM Lane LOS	A	A	-	-	A	-	-	-
HCM 95th %tile Q(veh)	-	0.2	-	-	-	-	-	-

Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	152	0	0	0	0	0	0	0	0	0	0	186
Future Vol, veh/h	152	0	0	0	0	0	0	0	0	0	0	186
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	165	0	0	0	0	0	0	0	0	0	0	202

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1	0	0	0	0	0	432	331	0	331	331	1
Stage 1	-	-	-	-	-	-	330	330	-	1	1	-
Stage 2	-	-	-	-	-	-	102	1	-	330	330	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1622	-	-	-	-	-	534	588	-	622	588	1084
Stage 1	-	-	-	-	-	-	683	646	-	1022	895	-
Stage 2	-	-	-	-	-	-	904	895	-	683	646	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1622	-	-	-	-	-	401	528	-	-	528	1084
Mov Cap-2 Maneuver	-	-	-	-	-	-	401	528	-	-	528	-
Stage 1	-	-	-	-	-	-	613	580	-	918	895	-
Stage 2	-	-	-	-	-	-	735	895	-	614	580	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	7.5	0	0	
HCM LOS			A	-

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1622	-	-	-	-	-	-
HCM Lane V/C Ratio	-	0.102	-	-	-	-	-	-
HCM Control Delay (s)	0	7.5	-	-	0	-	-	-
HCM Lane LOS	A	A	-	-	A	-	-	-
HCM 95th %tile Q(veh)	-	0.3	-	-	-	-	-	-

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	36	10	10	0	33	0	33	0	0	0	0	29
Future Vol, veh/h	36	10	10	0	33	0	33	0	0	0	0	29
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	39	11	11	0	36	0	36	0	0	0	0	32

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	36	0	0	22	0	0	147	131	17	131	136	36
Stage 1	-	-	-	-	-	-	95	95	-	36	36	-
Stage 2	-	-	-	-	-	-	52	36	-	95	100	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1575	-	-	1593	-	-	821	760	1062	841	755	1037
Stage 1	-	-	-	-	-	-	912	816	-	980	865	-
Stage 2	-	-	-	-	-	-	961	865	-	912	812	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1575	-	-	1593	-	-	781	741	1062	825	736	1037
Mov Cap-2 Maneuver	-	-	-	-	-	-	781	741	-	825	736	-
Stage 1	-	-	-	-	-	-	889	796	-	956	865	-
Stage 2	-	-	-	-	-	-	932	865	-	889	792	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	4.7	0	9.8	8.6
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	781	1575	-	-	1593	-	-	1037
HCM Lane V/C Ratio	0.046	0.025	-	-	-	-	-	0.03
HCM Control Delay (s)	9.8	7.3	-	-	0	-	-	8.6
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	6.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	105	35	35	0	20	0	20	0	0	0	0	145
Future Vol, veh/h	105	35	35	0	20	0	20	0	0	0	0	145
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	114	38	38	0	22	0	22	0	0	0	0	158

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	22	0	0	76	0	0	386	307	57	307	326	22
Stage 1	-	-	-	-	-	-	285	285	-	22	22	-
Stage 2	-	-	-	-	-	-	101	22	-	285	304	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1593	-	-	1523	-	-	573	607	1009	645	592	1055
Stage 1	-	-	-	-	-	-	722	676	-	996	877	-
Stage 2	-	-	-	-	-	-	905	877	-	722	663	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1593	-	-	1523	-	-	461	563	1009	610	549	1055
Mov Cap-2 Maneuver	-	-	-	-	-	-	461	563	-	610	549	-
Stage 1	-	-	-	-	-	-	670	627	-	924	877	-
Stage 2	-	-	-	-	-	-	770	877	-	670	615	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	4.5	0	13.2	9
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	461	1593	-	-	1523	-	-	1055
HCM Lane V/C Ratio	0.047	0.072	-	-	-	-	-	0.149
HCM Control Delay (s)	13.2	7.4	-	-	0	-	-	9
HCM Lane LOS	B	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.1	0.2	-	-	0	-	-	0.5

Intersection	
Int Delay, s/veh	7.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	152	22	22	0	22	0	22	0	0	0	0	186
Future Vol, veh/h	152	22	22	0	22	0	22	0	0	0	0	186
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	165	24	24	0	24	0	24	0	0	0	0	202

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	24	0	0	48	0	0	491	390	36	390	402	24
Stage 1	-	-	-	-	-	-	366	366	-	24	24	-
Stage 2	-	-	-	-	-	-	125	24	-	366	378	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1591	-	-	1559	-	-	488	545	1037	569	537	1052
Stage 1	-	-	-	-	-	-	653	623	-	994	875	-
Stage 2	-	-	-	-	-	-	879	875	-	653	615	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1591	-	-	1559	-	-	363	488	1037	524	481	1052
Mov Cap-2 Maneuver	-	-	-	-	-	-	363	488	-	524	481	-
Stage 1	-	-	-	-	-	-	585	558	-	891	875	-
Stage 2	-	-	-	-	-	-	710	875	-	585	551	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	5.8	0	15.6	9.2
HCM LOS			C	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	363	1591	-	-	1559	-	-	1052
HCM Lane V/C Ratio	0.066	0.104	-	-	-	-	-	0.192
HCM Control Delay (s)	15.6	7.5	-	-	0	-	-	9.2
HCM Lane LOS	C	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.2	0.3	-	-	0	-	-	0.7

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	36	10	10	0	33	0	33	0	0	0	0	29
Future Vol, veh/h	36	10	10	0	33	0	33	0	0	0	0	29
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	39	11	11	0	36	0	36	0	0	0	0	32

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	36	0	0	22	0	0	147	131	17	131	136	36
Stage 1	-	-	-	-	-	-	95	95	-	36	36	-
Stage 2	-	-	-	-	-	-	52	36	-	95	100	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1575	-	-	1593	-	-	821	760	1062	841	755	1037
Stage 1	-	-	-	-	-	-	912	816	-	980	865	-
Stage 2	-	-	-	-	-	-	961	865	-	912	812	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1575	-	-	1593	-	-	781	741	1062	825	736	1037
Mov Cap-2 Maneuver	-	-	-	-	-	-	781	741	-	825	736	-
Stage 1	-	-	-	-	-	-	889	796	-	956	865	-
Stage 2	-	-	-	-	-	-	932	865	-	889	792	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	4.7	0	9.8	8.6
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	781	1575	-	-	1593	-	-	1037
HCM Lane V/C Ratio	0.046	0.025	-	-	-	-	-	0.03
HCM Control Delay (s)	9.8	7.3	-	-	0	-	-	8.6
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	6.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	105	35	35	0	20	0	20	0	0	0	0	145
Future Vol, veh/h	105	35	35	0	20	0	20	0	0	0	0	145
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	114	38	38	0	22	0	22	0	0	0	0	158

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	22	0	0	76	0	0	386	307	57	307	326	22
Stage 1	-	-	-	-	-	-	285	285	-	22	22	-
Stage 2	-	-	-	-	-	-	101	22	-	285	304	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1593	-	-	1523	-	-	573	607	1009	645	592	1055
Stage 1	-	-	-	-	-	-	722	676	-	996	877	-
Stage 2	-	-	-	-	-	-	905	877	-	722	663	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1593	-	-	1523	-	-	461	563	1009	610	549	1055
Mov Cap-2 Maneuver	-	-	-	-	-	-	461	563	-	610	549	-
Stage 1	-	-	-	-	-	-	670	627	-	924	877	-
Stage 2	-	-	-	-	-	-	770	877	-	670	615	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	4.5	0	13.2	9
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	461	1593	-	-	1523	-	-	1055
HCM Lane V/C Ratio	0.047	0.072	-	-	-	-	-	0.149
HCM Control Delay (s)	13.2	7.4	-	-	0	-	-	9
HCM Lane LOS	B	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.1	0.2	-	-	0	-	-	0.5

Intersection	
Int Delay, s/veh	7.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	152	22	22	0	22	0	22	0	0	0	0	186
Future Vol, veh/h	152	22	22	0	22	0	22	0	0	0	0	186
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	165	24	24	0	24	0	24	0	0	0	0	202

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	24	0	0	48	0	0	491	390	36	390	402	24
Stage 1	-	-	-	-	-	-	366	366	-	24	24	-
Stage 2	-	-	-	-	-	-	125	24	-	366	378	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1591	-	-	1559	-	-	488	545	1037	569	537	1052
Stage 1	-	-	-	-	-	-	653	623	-	994	875	-
Stage 2	-	-	-	-	-	-	879	875	-	653	615	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1591	-	-	1559	-	-	363	488	1037	524	481	1052
Mov Cap-2 Maneuver	-	-	-	-	-	-	363	488	-	524	481	-
Stage 1	-	-	-	-	-	-	585	558	-	891	875	-
Stage 2	-	-	-	-	-	-	710	875	-	585	551	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	5.8	0	15.6	9.2
HCM LOS			C	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	363	1591	-	-	1559	-	-	1052
HCM Lane V/C Ratio	0.066	0.104	-	-	-	-	-	0.192
HCM Control Delay (s)	15.6	7.5	-	-	0	-	-	9.2
HCM Lane LOS	C	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.2	0.3	-	-	0	-	-	0.7

Intersection 11
N/S Collector
& Drive 1

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	77	0	0	1	0	5	0	117	1	5	78	47
Future Vol, veh/h	77	0	0	1	0	5	0	117	1	5	78	47
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	84	0	0	1	0	5	0	127	1	5	85	51

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	251	249	111	249	274	128	136	0	0	128	0	0
Stage 1	121	121	-	128	128	-	-	-	-	-	-	-
Stage 2	130	128	-	121	146	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	702	654	942	705	633	922	1448	-	-	1458	-	-
Stage 1	883	796	-	876	790	-	-	-	-	-	-	-
Stage 2	874	790	-	883	776	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	696	652	942	703	631	922	1448	-	-	1458	-	-
Mov Cap-2 Maneuver	696	652	-	703	631	-	-	-	-	-	-	-
Stage 1	883	794	-	876	790	-	-	-	-	-	-	-
Stage 2	869	790	-	880	774	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.9	9.1	0	0.3
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1448	-	-	696	876	1458	-	-
HCM Lane V/C Ratio	-	-	-	0.12	0.007	0.004	-	-
HCM Control Delay (s)	0	-	-	10.9	9.1	7.5	-	-
HCM Lane LOS	A	-	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.4	0	0	-	-

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	94	0	0	6	0	53	0	209	5	48	206	69
Future Vol, veh/h	94	0	0	6	0	53	0	209	5	48	206	69
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	102	0	0	7	0	58	0	227	5	52	224	75

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	625	598	262	596	633	230	299	0	0	232	0	0
Stage 1	366	366	-	230	230	-	-	-	-	-	-	-
Stage 2	259	232	-	366	403	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	397	416	777	415	397	809	1262	-	-	1336	-	-
Stage 1	653	623	-	773	714	-	-	-	-	-	-	-
Stage 2	746	713	-	653	600	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	358	400	777	403	382	809	1262	-	-	1336	-	-
Mov Cap-2 Maneuver	358	400	-	403	382	-	-	-	-	-	-	-
Stage 1	653	599	-	773	714	-	-	-	-	-	-	-
Stage 2	693	713	-	628	577	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	19	10.4	0	1.2
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1262	-	-	358	734	1336	-	-
HCM Lane V/C Ratio	-	-	-	0.285	0.087	0.039	-	-
HCM Control Delay (s)	0	-	-	19	10.4	7.8	-	-
HCM Lane LOS	A	-	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	1.2	0.3	0.1	-	-

Intersection	
Int Delay, s/veh	5.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	109	0	0	6	0	56	0	245	9	79	289	129
Future Vol, veh/h	109	0	0	6	0	56	0	245	9	79	289	129
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	118	0	0	7	0	61	0	266	10	86	314	140

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	858	832	384	827	897	271	454	0	0	276	0	0
Stage 1	556	556	-	271	271	-	-	-	-	-	-	-
Stage 2	302	276	-	556	626	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	277	305	664	291	279	768	1107	-	-	1287	-	-
Stage 1	515	513	-	735	685	-	-	-	-	-	-	-
Stage 2	707	682	-	515	477	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	242	285	664	276	260	768	1107	-	-	1287	-	-
Mov Cap-2 Maneuver	242	285	-	276	260	-	-	-	-	-	-	-
Stage 1	515	479	-	735	685	-	-	-	-	-	-	-
Stage 2	651	682	-	481	445	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	33.4	11.1	0	1.3
HCM LOS	D	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1107	-	-	242	655	1287	-	-
HCM Lane V/C Ratio	-	-	-	0.49	0.103	0.067	-	-
HCM Control Delay (s)	0	-	-	33.4	11.1	8	-	-
HCM Lane LOS	A	-	-	D	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	2.5	0.3	0.2	-	-

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	77	0	0	1	0	5	0	117	1	5	78	47
Future Vol, veh/h	77	0	0	1	0	5	0	117	1	5	78	47
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	84	0	0	1	0	5	0	127	1	5	85	51

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	251	249	111	249	274	128	136	0	0	128	0	0
Stage 1	121	121	-	128	128	-	-	-	-	-	-	-
Stage 2	130	128	-	121	146	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	702	654	942	705	633	922	1448	-	-	1458	-	-
Stage 1	883	796	-	876	790	-	-	-	-	-	-	-
Stage 2	874	790	-	883	776	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	696	652	942	703	631	922	1448	-	-	1458	-	-
Mov Cap-2 Maneuver	696	652	-	703	631	-	-	-	-	-	-	-
Stage 1	883	794	-	876	790	-	-	-	-	-	-	-
Stage 2	869	790	-	880	774	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.9	9.1	0	0.3
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1448	-	-	696	876	1458	-	-
HCM Lane V/C Ratio	-	-	-	0.12	0.007	0.004	-	-
HCM Control Delay (s)	0	-	-	10.9	9.1	7.5	-	-
HCM Lane LOS	A	-	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.4	0	0	-	-

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	94	0	0	6	0	53	0	209	5	48	206	69
Future Vol, veh/h	94	0	0	6	0	53	0	209	5	48	206	69
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	102	0	0	7	0	58	0	227	5	52	224	75

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	625	598	262	596	633	230	299	0	0	232	0	0
Stage 1	366	366	-	230	230	-	-	-	-	-	-	-
Stage 2	259	232	-	366	403	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	397	416	777	415	397	809	1262	-	-	1336	-	-
Stage 1	653	623	-	773	714	-	-	-	-	-	-	-
Stage 2	746	713	-	653	600	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	358	400	777	403	382	809	1262	-	-	1336	-	-
Mov Cap-2 Maneuver	358	400	-	403	382	-	-	-	-	-	-	-
Stage 1	653	599	-	773	714	-	-	-	-	-	-	-
Stage 2	693	713	-	628	577	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	19	10.4	0	1.2
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1262	-	-	358	734	1336	-	-
HCM Lane V/C Ratio	-	-	-	0.285	0.087	0.039	-	-
HCM Control Delay (s)	0	-	-	19	10.4	7.8	-	-
HCM Lane LOS	A	-	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	1.2	0.3	0.1	-	-

Intersection	
Int Delay, s/veh	5.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↰	↱		↰	↱	
Traffic Vol, veh/h	109	0	0	6	0	56	0	245	9	79	289	129
Future Vol, veh/h	109	0	0	6	0	56	0	245	9	79	289	129
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	118	0	0	7	0	61	0	266	10	86	314	140

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	858	832	384	827	897	271	454	0	0	276	0	0
Stage 1	556	556	-	271	271	-	-	-	-	-	-	-
Stage 2	302	276	-	556	626	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	277	305	664	291	279	768	1107	-	-	1287	-	-
Stage 1	515	513	-	735	685	-	-	-	-	-	-	-
Stage 2	707	682	-	515	477	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	242	285	664	276	260	768	1107	-	-	1287	-	-
Mov Cap-2 Maneuver	242	285	-	276	260	-	-	-	-	-	-	-
Stage 1	515	479	-	735	685	-	-	-	-	-	-	-
Stage 2	651	682	-	481	445	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	33.4	11.1	0	1.3
HCM LOS	D	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1107	-	-	242	655	1287	-	-
HCM Lane V/C Ratio	-	-	-	0.49	0.103	0.067	-	-
HCM Control Delay (s)	0	-	-	33.4	11.1	8	-	-
HCM Lane LOS	A	-	-	D	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	2.5	0.3	0.2	-	-

Intersection 12
N/S Collector &
North E/W Drive

Intersection	
Int Delay, s/veh	4.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	73	0	7	0	0	17	4	28	0	5	28	46
Future Vol, veh/h	73	0	7	0	0	17	4	28	0	5	28	46
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	79	0	8	0	0	18	4	30	0	5	30	50

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	112	103	55	107	128	30	80	0	0	30	0	0
Stage 1	65	65	-	38	38	-	-	-	-	-	-	-
Stage 2	47	38	-	69	90	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	866	787	1012	872	763	1044	1518	-	-	1583	-	-
Stage 1	946	841	-	977	863	-	-	-	-	-	-	-
Stage 2	967	863	-	941	820	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	847	782	1012	862	758	1044	1518	-	-	1583	-	-
Mov Cap-2 Maneuver	847	782	-	862	758	-	-	-	-	-	-	-
Stage 1	943	838	-	974	860	-	-	-	-	-	-	-
Stage 2	947	860	-	931	818	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.7	8.5	0.9	0.5
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1518	-	-	859	1044	1583	-	-
HCM Lane V/C Ratio	0.003	-	-	0.101	0.018	0.003	-	-
HCM Control Delay (s)	7.4	-	-	9.7	8.5	7.3	-	-
HCM Lane LOS	A	-	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.1	0	-	-

Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↰	↱		↰	↱	
Traffic Vol, veh/h	115	0	15	0	0	10	10	89	0	18	109	85
Future Vol, veh/h	115	0	15	0	0	10	10	89	0	18	109	85
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	125	0	16	0	0	11	11	97	0	20	118	92

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	329	323	164	331	369	97	210	0	0	97	0	0
Stage 1	204	204	-	119	119	-	-	-	-	-	-	-
Stage 2	125	119	-	212	250	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	624	595	881	622	560	959	1361	-	-	1496	-	-
Stage 1	798	733	-	885	797	-	-	-	-	-	-	-
Stage 2	879	797	-	790	700	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	607	583	881	601	548	959	1361	-	-	1496	-	-
Mov Cap-2 Maneuver	607	583	-	601	548	-	-	-	-	-	-	-
Stage 1	792	723	-	878	791	-	-	-	-	-	-	-
Stage 2	862	791	-	765	691	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.4	8.8	0.8	0.6
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1361	-	-	630	959	1496	-	-
HCM Lane V/C Ratio	0.008	-	-	0.224	0.011	0.013	-	-
HCM Control Delay (s)	7.7	-	-	12.4	8.8	7.4	-	-
HCM Lane LOS	A	-	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.9	0	0	-	-

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↰	↱		↰	↱	
Traffic Vol, veh/h	128	0	13	0	0	11	18	115	0	11	130	154
Future Vol, veh/h	128	0	13	0	0	11	18	115	0	11	130	154
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	139	0	14	0	0	12	20	125	0	12	141	167

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	420	414	225	421	497	125	308	0	0	125	0	0
Stage 1	249	249	-	165	165	-	-	-	-	-	-	-
Stage 2	171	165	-	256	332	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	544	529	814	543	475	926	1253	-	-	1462	-	-
Stage 1	755	701	-	837	762	-	-	-	-	-	-	-
Stage 2	831	762	-	749	644	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	527	516	814	524	464	926	1253	-	-	1462	-	-
Mov Cap-2 Maneuver	527	516	-	524	464	-	-	-	-	-	-	-
Stage 1	743	695	-	824	750	-	-	-	-	-	-	-
Stage 2	807	750	-	730	639	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.2	8.9	1.1	0.3
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1253	-	-	545	926	1462	-	-
HCM Lane V/C Ratio	0.016	-	-	0.281	0.013	0.008	-	-
HCM Control Delay (s)	7.9	-	-	14.2	8.9	7.5	-	-
HCM Lane LOS	A	-	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	1.1	0	0	-	-

Intersection	
Int Delay, s/veh	4.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↰	↱		↰	↱	
Traffic Vol, veh/h	73	0	7	0	0	17	4	28	0	5	28	46
Future Vol, veh/h	73	0	7	0	0	17	4	28	0	5	28	46
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	79	0	8	0	0	18	4	30	0	5	30	50

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	112	103	55	107	128	30	80	0	0	30	0	0
Stage 1	65	65	-	38	38	-	-	-	-	-	-	-
Stage 2	47	38	-	69	90	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	866	787	1012	872	763	1044	1518	-	-	1583	-	-
Stage 1	946	841	-	977	863	-	-	-	-	-	-	-
Stage 2	967	863	-	941	820	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	847	782	1012	862	758	1044	1518	-	-	1583	-	-
Mov Cap-2 Maneuver	847	782	-	862	758	-	-	-	-	-	-	-
Stage 1	943	838	-	974	860	-	-	-	-	-	-	-
Stage 2	947	860	-	931	818	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.7	8.5	0.9	0.5
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1518	-	-	859	1044	1583	-	-
HCM Lane V/C Ratio	0.003	-	-	0.101	0.018	0.003	-	-
HCM Control Delay (s)	7.4	-	-	9.7	8.5	7.3	-	-
HCM Lane LOS	A	-	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.1	0	-	-

Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	115	0	15	0	0	10	10	89	0	18	109	85
Future Vol, veh/h	115	0	15	0	0	10	10	89	0	18	109	85
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	125	0	16	0	0	11	11	97	0	20	118	92

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	329	323	164	331	369	97	210	0	0	97	0	0
Stage 1	204	204	-	119	119	-	-	-	-	-	-	-
Stage 2	125	119	-	212	250	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	624	595	881	622	560	959	1361	-	-	1496	-	-
Stage 1	798	733	-	885	797	-	-	-	-	-	-	-
Stage 2	879	797	-	790	700	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	607	583	881	601	548	959	1361	-	-	1496	-	-
Mov Cap-2 Maneuver	607	583	-	601	548	-	-	-	-	-	-	-
Stage 1	792	723	-	878	791	-	-	-	-	-	-	-
Stage 2	862	791	-	765	691	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.4	8.8	0.8	0.6
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1361	-	-	630	959	1496	-	-
HCM Lane V/C Ratio	0.008	-	-	0.224	0.011	0.013	-	-
HCM Control Delay (s)	7.7	-	-	12.4	8.8	7.4	-	-
HCM Lane LOS	A	-	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.9	0	0	-	-

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	128	0	13	0	0	11	18	115	0	11	130	154
Future Vol, veh/h	128	0	13	0	0	11	18	115	0	11	130	154
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	139	0	14	0	0	12	20	125	0	12	141	167

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	420	414	225	421	497	125	308	0	0	125	0	0
Stage 1	249	249	-	165	165	-	-	-	-	-	-	-
Stage 2	171	165	-	256	332	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	544	529	814	543	475	926	1253	-	-	1462	-	-
Stage 1	755	701	-	837	762	-	-	-	-	-	-	-
Stage 2	831	762	-	749	644	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	527	516	814	524	464	926	1253	-	-	1462	-	-
Mov Cap-2 Maneuver	527	516	-	524	464	-	-	-	-	-	-	-
Stage 1	743	695	-	824	750	-	-	-	-	-	-	-
Stage 2	807	750	-	730	639	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.2	8.9	1.1	0.3
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1253	-	-	545	926	1462	-	-
HCM Lane V/C Ratio	0.016	-	-	0.281	0.013	0.008	-	-
HCM Control Delay (s)	7.9	-	-	14.2	8.9	7.5	-	-
HCM Lane LOS	A	-	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	1.1	0	0	-	-

Intersection 13
North E/W Drive & Drive 2

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	5	0	0	18	1	0	0	0	4	0	0
Future Vol, veh/h	0	5	0	0	18	1	0	0	0	4	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	5	0	0	20	1	0	0	0	4	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	21	0	0	5	0	0	26	26	5	26	26	21
Stage 1	-	-	-	-	-	-	5	5	-	21	21	-
Stage 2	-	-	-	-	-	-	21	21	-	5	5	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1595	-	-	1616	-	-	984	867	1078	984	867	1056
Stage 1	-	-	-	-	-	-	1017	892	-	998	878	-
Stage 2	-	-	-	-	-	-	998	878	-	1017	892	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1595	-	-	1616	-	-	984	867	1078	984	867	1056
Mov Cap-2 Maneuver	-	-	-	-	-	-	984	867	-	984	867	-
Stage 1	-	-	-	-	-	-	1017	892	-	998	878	-
Stage 2	-	-	-	-	-	-	998	878	-	1017	892	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	0	8.7
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1595	-	-	1616	-	-	984
HCM Lane V/C Ratio	-	-	-	-	-	-	-	0.004
HCM Control Delay (s)	0	0	-	-	0	-	-	8.7
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	18	0	0	10	4	0	0	0	2	0	0
Future Vol, veh/h	0	18	0	0	10	4	0	0	0	2	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	20	0	0	11	4	0	0	0	2	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	15	0	0	20	0	0	33	35	20	33	33	13
Stage 1	-	-	-	-	-	-	20	20	-	13	13	-
Stage 2	-	-	-	-	-	-	13	15	-	20	20	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1603	-	-	1596	-	-	974	857	1058	974	860	1067
Stage 1	-	-	-	-	-	-	999	879	-	1007	885	-
Stage 2	-	-	-	-	-	-	1007	883	-	999	879	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1603	-	-	1596	-	-	974	857	1058	974	860	1067
Mov Cap-2 Maneuver	-	-	-	-	-	-	974	857	-	974	860	-
Stage 1	-	-	-	-	-	-	999	879	-	1007	885	-
Stage 2	-	-	-	-	-	-	1007	883	-	999	879	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	0	8.7
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1603	-	-	1596	-	-	974
HCM Lane V/C Ratio	-	-	-	-	-	-	-	0.002
HCM Control Delay (s)	0	0	-	-	0	-	-	8.7
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	11	0	0	11	2	0	0	0	2	0	0
Future Vol, veh/h	0	11	0	0	11	2	0	0	0	2	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	12	0	0	12	2	0	0	0	2	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	14	0	0	12	0	0	25	26	12	25	25	13
Stage 1	-	-	-	-	-	-	12	12	-	13	13	-
Stage 2	-	-	-	-	-	-	13	14	-	12	12	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1604	-	-	1607	-	-	986	867	1069	986	868	1067
Stage 1	-	-	-	-	-	-	1009	886	-	1007	885	-
Stage 2	-	-	-	-	-	-	1007	884	-	1009	886	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1604	-	-	1607	-	-	986	867	1069	986	868	1067
Mov Cap-2 Maneuver	-	-	-	-	-	-	986	867	-	986	868	-
Stage 1	-	-	-	-	-	-	1009	886	-	1007	885	-
Stage 2	-	-	-	-	-	-	1007	884	-	1009	886	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	0	8.7
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1604	-	-	1607	-	-	986
HCM Lane V/C Ratio	-	-	-	-	-	-	-	0.002
HCM Control Delay (s)	0	0	-	-	0	-	-	8.7
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	5	0	0	17	1	0	0	0	4	0	0
Future Vol, veh/h	0	5	0	0	17	1	0	0	0	4	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	5	0	0	18	1	0	0	0	4	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	19	0	0	5	0	0	24	24	5	24	24	19
Stage 1	-	-	-	-	-	-	5	5	-	19	19	-
Stage 2	-	-	-	-	-	-	19	19	-	5	5	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1597	-	-	1616	-	-	987	869	1078	987	869	1059
Stage 1	-	-	-	-	-	-	1017	892	-	1000	880	-
Stage 2	-	-	-	-	-	-	1000	880	-	1017	892	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1597	-	-	1616	-	-	987	869	1078	987	869	1059
Mov Cap-2 Maneuver	-	-	-	-	-	-	987	869	-	987	869	-
Stage 1	-	-	-	-	-	-	1017	892	-	1000	880	-
Stage 2	-	-	-	-	-	-	1000	880	-	1017	892	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	0	8.7
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1597	-	-	1616	-	-	987
HCM Lane V/C Ratio	-	-	-	-	-	-	-	0.004
HCM Control Delay (s)	0	0	-	-	0	-	-	8.7
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	18	0	0	10	4	0	0	0	2	0	0
Future Vol, veh/h	0	18	0	0	10	4	0	0	0	2	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	20	0	0	11	4	0	0	0	2	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	15	0	0	20	0	0	33	35	20	33	33	13
Stage 1	-	-	-	-	-	-	20	20	-	13	13	-
Stage 2	-	-	-	-	-	-	13	15	-	20	20	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1603	-	-	1596	-	-	974	857	1058	974	860	1067
Stage 1	-	-	-	-	-	-	999	879	-	1007	885	-
Stage 2	-	-	-	-	-	-	1007	883	-	999	879	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1603	-	-	1596	-	-	974	857	1058	974	860	1067
Mov Cap-2 Maneuver	-	-	-	-	-	-	974	857	-	974	860	-
Stage 1	-	-	-	-	-	-	999	879	-	1007	885	-
Stage 2	-	-	-	-	-	-	1007	883	-	999	879	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	0	8.7
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1603	-	-	1596	-	-	974
HCM Lane V/C Ratio	-	-	-	-	-	-	-	0.002
HCM Control Delay (s)	0	0	-	-	0	-	-	8.7
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	11	0	0	11	2	0	0	0	2	0	0
Future Vol, veh/h	0	11	0	0	11	2	0	0	0	2	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	12	0	0	12	2	0	0	0	2	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	14	0	0	12	0	0	25	26	12	25	25	13
Stage 1	-	-	-	-	-	-	12	12	-	13	13	-
Stage 2	-	-	-	-	-	-	13	14	-	12	12	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1604	-	-	1607	-	-	986	867	1069	986	868	1067
Stage 1	-	-	-	-	-	-	1009	886	-	1007	885	-
Stage 2	-	-	-	-	-	-	1007	884	-	1009	886	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1604	-	-	1607	-	-	986	867	1069	986	868	1067
Mov Cap-2 Maneuver	-	-	-	-	-	-	986	867	-	986	868	-
Stage 1	-	-	-	-	-	-	1009	886	-	1007	885	-
Stage 2	-	-	-	-	-	-	1007	884	-	1009	886	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	0	8.7
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1604	-	-	1607	-	-	986
HCM Lane V/C Ratio	-	-	-	-	-	-	-	0.002
HCM Control Delay (s)	0	0	-	-	0	-	-	8.7
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0

Intersection 14
North E/W Drive & Drive 3

Intersection	
Int Delay, s/veh	3.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	5	4	18	17	1	5
Future Vol, veh/h	5	4	18	17	1	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	4	20	18	1	5

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	9	0	65	7
Stage 1	-	-	-	-	7	-
Stage 2	-	-	-	-	58	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1611	-	941	1075
Stage 1	-	-	-	-	1016	-
Stage 2	-	-	-	-	965	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1611	-	929	1075
Mov Cap-2 Maneuver	-	-	-	-	929	-
Stage 1	-	-	-	-	1016	-
Stage 2	-	-	-	-	952	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.7	8.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1048	-	-	1611	-
HCM Lane V/C Ratio	0.006	-	-	0.012	-
HCM Control Delay (s)	8.5	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	4.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	18	2	11	10	4	18
Future Vol, veh/h	18	2	11	10	4	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	20	2	12	11	4	20

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	22	0	56	21
Stage 1	-	-	-	-	21	-
Stage 2	-	-	-	-	35	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1593	-	952	1056
Stage 1	-	-	-	-	1002	-
Stage 2	-	-	-	-	987	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1593	-	944	1056
Mov Cap-2 Maneuver	-	-	-	-	944	-
Stage 1	-	-	-	-	1002	-
Stage 2	-	-	-	-	979	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.8	8.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1034	-	-	1593	-
HCM Lane V/C Ratio	0.023	-	-	0.008	-
HCM Control Delay (s)	8.6	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	11	2	11	11	2	11
Future Vol, veh/h	11	2	11	11	2	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	2	12	12	2	12

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	14	0	49	13
Stage 1	-	-	-	-	13	-
Stage 2	-	-	-	-	36	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1604	-	960	1067
Stage 1	-	-	-	-	1010	-
Stage 2	-	-	-	-	986	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1604	-	952	1067
Mov Cap-2 Maneuver	-	-	-	-	952	-
Stage 1	-	-	-	-	1010	-
Stage 2	-	-	-	-	978	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.6	8.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1048	-	-	1604	-
HCM Lane V/C Ratio	0.013	-	-	0.007	-
HCM Control Delay (s)	8.5	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	3.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	5	4	18	17	1	5
Future Vol, veh/h	5	4	18	17	1	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	4	20	18	1	5

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	9	0	65	7
Stage 1	-	-	-	-	7	-
Stage 2	-	-	-	-	58	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1611	-	941	1075
Stage 1	-	-	-	-	1016	-
Stage 2	-	-	-	-	965	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1611	-	929	1075
Mov Cap-2 Maneuver	-	-	-	-	929	-
Stage 1	-	-	-	-	1016	-
Stage 2	-	-	-	-	952	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.7	8.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1048	-	-	1611	-
HCM Lane V/C Ratio	0.006	-	-	0.012	-
HCM Control Delay (s)	8.5	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	4.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	18	2	11	10	4	18
Future Vol, veh/h	18	2	11	10	4	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	20	2	12	11	4	20

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	22	0	56	21
Stage 1	-	-	-	-	21	-
Stage 2	-	-	-	-	35	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1593	-	952	1056
Stage 1	-	-	-	-	1002	-
Stage 2	-	-	-	-	987	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1593	-	944	1056
Mov Cap-2 Maneuver	-	-	-	-	944	-
Stage 1	-	-	-	-	1002	-
Stage 2	-	-	-	-	979	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.8	8.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1034	-	-	1593	-
HCM Lane V/C Ratio	0.023	-	-	0.008	-
HCM Control Delay (s)	8.6	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	11	2	11	11	2	11
Future Vol, veh/h	11	2	11	11	2	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	2	12	12	2	12

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	14	0	49	13
Stage 1	-	-	-	-	13	-
Stage 2	-	-	-	-	36	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1604	-	960	1067
Stage 1	-	-	-	-	1010	-
Stage 2	-	-	-	-	986	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1604	-	952	1067
Mov Cap-2 Maneuver	-	-	-	-	952	-
Stage 1	-	-	-	-	1010	-
Stage 2	-	-	-	-	978	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.6	8.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1048	-	-	1604	-
HCM Lane V/C Ratio	0.013	-	-	0.007	-
HCM Control Delay (s)	8.5	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection 15
North E/W Drive
& Drive 4

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	10	30	0	0	4
Future Vol, veh/h	1	10	30	0	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Stop	Stop	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	-	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	11	33	0	0	4

Major/Minor	Major1		Minor2	
Conflicting Flow All	0	0	13	0
Stage 1	-	-	0	-
Stage 2	-	-	13	-
Critical Hdwy	4.12	-	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	5.52	-
Follow-up Hdwy	2.218	-	4.018	3.318
Pot Cap-1 Maneuver	-	-	881	-
Stage 1	-	-	-	-
Stage 2	-	-	885	-
Platoon blocked, %		-		
Mov Cap-1 Maneuver	-	-	0	-
Mov Cap-2 Maneuver	-	-	0	-
Stage 1	-	-	0	-
Stage 2	-	-	0	-

Approach	EB	WB
HCM Control Delay, s		
HCM LOS		-

Minor Lane/Major Mvmt	EBL	EBTWBLn1	
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	-	-	-
HCM Lane LOS	-	-	-
HCM 95th %tile Q(veh)	-	-	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	32	19	0	0	2
Future Vol, veh/h	4	32	19	0	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Stop	Stop	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	-	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	35	21	0	0	2

Major/Minor	Major1		Minor2	
Conflicting Flow All	0	0	43	0
Stage 1	-	-	0	-
Stage 2	-	-	43	-
Critical Hdwy	4.12	-	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	5.52	-
Follow-up Hdwy	2.218	-	4.018	3.318
Pot Cap-1 Maneuver	-	-	849	-
Stage 1	-	-	-	-
Stage 2	-	-	859	-
Platoon blocked, %		-		
Mov Cap-1 Maneuver	-	-	0	-
Mov Cap-2 Maneuver	-	-	0	-
Stage 1	-	-	0	-
Stage 2	-	-	0	-

Approach	EB	WB
HCM Control Delay, s		
HCM LOS		-

Minor Lane/Major Mvmt	EBL	EBTWBLn1	
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	-	-	-
HCM Lane LOS	-	-	-
HCM 95th %tile Q(veh)	-	-	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	21	20	0	0	2
Future Vol, veh/h	2	21	20	0	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Stop	Stop	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	-	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	23	22	0	0	2

Major/Minor	Major1		Minor2	
Conflicting Flow All	0	0	27	0
Stage 1	-	-	0	-
Stage 2	-	-	27	-
Critical Hdwy	4.12	-	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	5.52	-
Follow-up Hdwy	2.218	-	4.018	3.318
Pot Cap-1 Maneuver	-	-	866	-
Stage 1	-	-	-	-
Stage 2	-	-	873	-
Platoon blocked, %		-		
Mov Cap-1 Maneuver	-	-	0	-
Mov Cap-2 Maneuver	-	-	0	-
Stage 1	-	-	0	-
Stage 2	-	-	0	-

Approach	EB	WB
HCM Control Delay, s		
HCM LOS		-

Minor Lane/Major Mvmt	EBL	EBTWBLn1	
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	-	-	-
HCM Lane LOS	-	-	-
HCM 95th %tile Q(veh)	-	-	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	10	30	0	0	4
Future Vol, veh/h	1	10	30	0	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Stop	Stop	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	-	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	11	33	0	0	4

Major/Minor	Major1		Minor2	
Conflicting Flow All	0	0	13	0
Stage 1	-	-	0	-
Stage 2	-	-	13	-
Critical Hdwy	4.12	-	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	5.52	-
Follow-up Hdwy	2.218	-	4.018	3.318
Pot Cap-1 Maneuver	-	-	881	-
Stage 1	-	-	-	-
Stage 2	-	-	885	-
Platoon blocked, %		-		
Mov Cap-1 Maneuver	-	-	0	-
Mov Cap-2 Maneuver	-	-	0	-
Stage 1	-	-	0	-
Stage 2	-	-	0	-

Approach	EB	WB
HCM Control Delay, s		
HCM LOS		-

Minor Lane/Major Mvmt	EBL	EBTWBLn1	
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	-	-	-
HCM Lane LOS	-	-	-
HCM 95th %tile Q(veh)	-	-	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	32	19	0	0	2
Future Vol, veh/h	4	32	19	0	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Stop	Stop	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	-	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	35	21	0	0	2

Major/Minor	Major1		Minor2	
Conflicting Flow All	0	0	43	0
Stage 1	-	-	0	-
Stage 2	-	-	43	-
Critical Hdwy	4.12	-	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	5.52	-
Follow-up Hdwy	2.218	-	4.018	3.318
Pot Cap-1 Maneuver	-	-	849	-
Stage 1	-	-	-	-
Stage 2	-	-	859	-
Platoon blocked, %		-		
Mov Cap-1 Maneuver	-	-	0	-
Mov Cap-2 Maneuver	-	-	0	-
Stage 1	-	-	0	-
Stage 2	-	-	0	-

Approach	EB	WB
HCM Control Delay, s		
HCM LOS		-

Minor Lane/Major Mvmt	EBL	EBTWBLn1	
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	-	-	-
HCM Lane LOS	-	-	-
HCM 95th %tile Q(veh)	-	-	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	21	20	0	0	2
Future Vol, veh/h	2	21	20	0	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Stop	Stop	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	-	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	23	22	0	0	2

Major/Minor	Major1		Minor2	
Conflicting Flow All	0	0	27	0
Stage 1	-	-	0	-
Stage 2	-	-	27	-
Critical Hdwy	4.12	-	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	5.52	-
Follow-up Hdwy	2.218	-	4.018	3.318
Pot Cap-1 Maneuver	-	-	866	-
Stage 1	-	-	-	-
Stage 2	-	-	873	-
Platoon blocked, %		-		
Mov Cap-1 Maneuver	-	-	0	-
Mov Cap-2 Maneuver	-	-	0	-
Stage 1	-	-	0	-
Stage 2	-	-	0	-

Approach	EB	WB
HCM Control Delay, s		
HCM LOS		-

Minor Lane/Major Mvmt	EBL	EBTWBLn1	
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	-	-	-
HCM Lane LOS	-	-	-
HCM 95th %tile Q(veh)	-	-	-

Intersection 16
N/S Collector &
South E/W Drive

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	0	7	3	0	0	11	23	3	0	22	13
Future Vol, veh/h	9	0	7	3	0	0	11	23	3	0	22	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	10	0	8	3	0	0	12	25	3	0	24	14

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	82	83	31	86	89	27	38	0	0	28	0	0
Stage 1	31	31	-	51	51	-	-	-	-	-	-	-
Stage 2	51	52	-	35	38	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	905	807	1043	900	801	1048	1572	-	-	1585	-	-
Stage 1	986	869	-	962	852	-	-	-	-	-	-	-
Stage 2	962	852	-	981	863	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	900	801	1043	888	795	1048	1572	-	-	1585	-	-
Mov Cap-2 Maneuver	900	801	-	888	795	-	-	-	-	-	-	-
Stage 1	978	869	-	954	845	-	-	-	-	-	-	-
Stage 2	955	845	-	974	863	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.8	9.1	2.2	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1572	-	-	957	888	1585	-	-
HCM Lane V/C Ratio	0.008	-	-	0.018	0.004	-	-	-
HCM Control Delay (s)	7.3	-	-	8.8	9.1	0	-	-
HCM Lane LOS	A	-	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	31	0	25	30	0	0	25	68	26	0	93	31
Future Vol, veh/h	31	0	25	30	0	0	25	68	26	0	93	31
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	34	0	27	33	0	0	27	74	28	0	101	34

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	260	274	118	274	277	88	135	0	0	102	0	0
Stage 1	118	118	-	142	142	-	-	-	-	-	-	-
Stage 2	142	156	-	132	135	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	693	633	934	678	631	970	1449	-	-	1490	-	-
Stage 1	887	798	-	861	779	-	-	-	-	-	-	-
Stage 2	861	769	-	871	785	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	683	621	934	649	619	970	1449	-	-	1490	-	-
Mov Cap-2 Maneuver	683	621	-	649	619	-	-	-	-	-	-	-
Stage 1	870	798	-	845	764	-	-	-	-	-	-	-
Stage 2	845	754	-	846	785	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10	10.8	1.6	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1449	-	-	776	649	1490	-	-
HCM Lane V/C Ratio	0.019	-	-	0.078	0.05	-	-	-
HCM Control Delay (s)	7.5	-	-	10	10.8	0	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0.2	0	-	-

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	0	25	31	0	0	26	103	44	0	112	31
Future Vol, veh/h	30	0	25	31	0	0	26	103	44	0	112	31
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	33	0	27	34	0	0	28	112	48	0	122	34

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	331	355	139	345	348	136	156	0	0	160	0	0
Stage 1	139	139	-	192	192	-	-	-	-	-	-	-
Stage 2	192	216	-	153	156	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	622	571	909	609	576	913	1424	-	-	1419	-	-
Stage 1	864	782	-	810	742	-	-	-	-	-	-	-
Stage 2	810	724	-	849	769	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	613	560	909	582	564	913	1424	-	-	1419	-	-
Mov Cap-2 Maneuver	613	560	-	582	564	-	-	-	-	-	-	-
Stage 1	847	782	-	794	727	-	-	-	-	-	-	-
Stage 2	794	710	-	824	769	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.5	11.6	1.1	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1424	-	-	719	582	1419	-	-
HCM Lane V/C Ratio	0.02	-	-	0.083	0.058	-	-	-
HCM Control Delay (s)	7.6	-	-	10.5	11.6	0	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0.2	0	-	-

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	0	7	3	0	0	11	23	3	0	22	13
Future Vol, veh/h	9	0	7	3	0	0	11	23	3	0	22	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	10	0	8	3	0	0	12	25	3	0	24	14

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	82	83	31	86	89	27	38	0	0	28	0	0
Stage 1	31	31	-	51	51	-	-	-	-	-	-	-
Stage 2	51	52	-	35	38	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	905	807	1043	900	801	1048	1572	-	-	1585	-	-
Stage 1	986	869	-	962	852	-	-	-	-	-	-	-
Stage 2	962	852	-	981	863	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	900	801	1043	888	795	1048	1572	-	-	1585	-	-
Mov Cap-2 Maneuver	900	801	-	888	795	-	-	-	-	-	-	-
Stage 1	978	869	-	954	845	-	-	-	-	-	-	-
Stage 2	955	845	-	974	863	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.8	9.1	2.2	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1572	-	-	957	888	1585	-	-
HCM Lane V/C Ratio	0.008	-	-	0.018	0.004	-	-	-
HCM Control Delay (s)	7.3	-	-	8.8	9.1	0	-	-
HCM Lane LOS	A	-	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	31	0	25	30	0	0	25	68	26	0	93	31
Future Vol, veh/h	31	0	25	30	0	0	25	68	26	0	93	31
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	34	0	27	33	0	0	27	74	28	0	101	34

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	260	274	118	274	277	88	135	0	0	102	0	0
Stage 1	118	118	-	142	142	-	-	-	-	-	-	-
Stage 2	142	156	-	132	135	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	693	633	934	678	631	970	1449	-	-	1490	-	-
Stage 1	887	798	-	861	779	-	-	-	-	-	-	-
Stage 2	861	769	-	871	785	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	683	621	934	649	619	970	1449	-	-	1490	-	-
Mov Cap-2 Maneuver	683	621	-	649	619	-	-	-	-	-	-	-
Stage 1	870	798	-	845	764	-	-	-	-	-	-	-
Stage 2	845	754	-	846	785	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10	10.8	1.6	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1449	-	-	776	649	1490	-	-
HCM Lane V/C Ratio	0.019	-	-	0.078	0.05	-	-	-
HCM Control Delay (s)	7.5	-	-	10	10.8	0	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0.2	0	-	-

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	0	25	31	0	0	26	103	44	0	112	31
Future Vol, veh/h	30	0	25	31	0	0	26	103	44	0	112	31
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	33	0	27	34	0	0	28	112	48	0	122	34

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	331	355	139	345	348	136	156	0	0	160	0	0
Stage 1	139	139	-	192	192	-	-	-	-	-	-	-
Stage 2	192	216	-	153	156	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	622	571	909	609	576	913	1424	-	-	1419	-	-
Stage 1	864	782	-	810	742	-	-	-	-	-	-	-
Stage 2	810	724	-	849	769	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	613	560	909	582	564	913	1424	-	-	1419	-	-
Mov Cap-2 Maneuver	613	560	-	582	564	-	-	-	-	-	-	-
Stage 1	847	782	-	794	727	-	-	-	-	-	-	-
Stage 2	794	710	-	824	769	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.5	11.6	1.1	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1424	-	-	719	582	1419	-	-
HCM Lane V/C Ratio	0.02	-	-	0.083	0.058	-	-	-
HCM Control Delay (s)	7.6	-	-	10.5	11.6	0	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0.2	0	-	-

Intersection 17
South E/W Drive
& Drive 5

Intersection	
Int Delay, s/veh	3.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	0	0	30	0	0	0	6	10	0	21	0
Future Vol, veh/h	0	0	0	30	0	0	0	6	10	0	21	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	33	0	0	0	7	11	0	23	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	36	41	23	36	36	13	23	0	0	18	0	0
Stage 1	23	23	-	13	13	-	-	-	-	-	-	-
Stage 2	13	18	-	23	23	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	970	851	1054	970	856	1067	1592	-	-	1599	-	-
Stage 1	995	876	-	1007	885	-	-	-	-	-	-	-
Stage 2	1007	880	-	995	876	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	970	851	1054	970	856	1067	1592	-	-	1599	-	-
Mov Cap-2 Maneuver	970	851	-	970	856	-	-	-	-	-	-	-
Stage 1	995	876	-	1007	885	-	-	-	-	-	-	-
Stage 2	1007	880	-	995	876	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	8.8	0	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1592	-	-	-	970	1599	-	-
HCM Lane V/C Ratio	-	-	-	-	0.034	-	-	-
HCM Control Delay (s)	0	-	-	0	8.8	0	-	-
HCM Lane LOS	A	-	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	0.1	0	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	26	3	0	0	30	0	4	0	0	0
Future Vol, veh/h	0	0	26	3	0	0	30	0	4	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	28	3	0	0	33	0	4	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	0	0	0	28	0	0	20	20	14	22	34	0
Stage 1	-	-	-	-	-	-	14	14	-	6	6	-
Stage 2	-	-	-	-	-	-	6	6	-	16	28	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	-	-	-	1585	-	-	993	874	1066	990	859	-
Stage 1	-	-	-	-	-	-	1006	884	-	1016	891	-
Stage 2	-	-	-	-	-	-	1016	891	-	1004	872	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	1585	-	-	-	872	1066	984	857	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	872	-	984	857	-
Stage 1	-	-	-	-	-	-	1006	884	-	1016	889	-
Stage 2	-	-	-	-	-	-	1014	889	-	1000	872	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	7.3		0
HCM LOS			-	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	-	1585	-	-	-
HCM Lane V/C Ratio	-	-	-	-	0.002	-	-	-
HCM Control Delay (s)	-	0	-	-	7.3	0	-	0
HCM Lane LOS	-	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	-	-	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	0	43	5	0	0	31	0	3	0	0	0
Future Vol, veh/h	1	0	43	5	0	0	31	0	3	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	47	5	0	0	34	0	3	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	0	0	0	47	0	0	36	36	24	37	59	0
Stage 1	-	-	-	-	-	-	26	26	-	10	10	-
Stage 2	-	-	-	-	-	-	10	10	-	27	49	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	-	-	-	1560	-	-	970	856	1052	968	832	-
Stage 1	-	-	-	-	-	-	992	874	-	1011	887	-
Stage 2	-	-	-	-	-	-	1011	887	-	990	854	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	1560	-	-	-	853	1052	963	830	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	853	-	963	830	-
Stage 1	-	-	-	-	-	-	992	874	-	1011	884	-
Stage 2	-	-	-	-	-	-	1008	884	-	987	854	-

Approach	EB	WB	NB	SB
HCM Control Delay, s		7.3		0
HCM LOS			-	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	-	1560	-	-	-
HCM Lane V/C Ratio	-	-	-	-	0.003	-	-	-
HCM Control Delay (s)	-	-	-	-	7.3	0	-	0
HCM Lane LOS	-	-	-	-	A	A	-	A
HCM 95th %tile Q(veh)	-	-	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	3.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	0	3	0	0	0	3	0	0	0	0	0
Future Vol, veh/h	0	0	3	0	0	0	3	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	3	0	0	0	3	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1	0	0	3	0	0	3	3	2	3	4	1
Stage 1	-	-	-	-	-	-	2	2	-	1	1	-
Stage 2	-	-	-	-	-	-	1	1	-	2	3	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1622	-	-	1619	-	-	1019	893	1082	1019	891	1084
Stage 1	-	-	-	-	-	-	1021	894	-	1022	895	-
Stage 2	-	-	-	-	-	-	1022	895	-	1021	893	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1622	-	-	1619	-	-	1019	893	1082	1019	891	1084
Mov Cap-2 Maneuver	-	-	-	-	-	-	1019	893	-	1019	891	-
Stage 1	-	-	-	-	-	-	1021	894	-	1022	895	-
Stage 2	-	-	-	-	-	-	1022	895	-	1021	893	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	8.5	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1019	1622	-	-	1619	-	-	-
HCM Lane V/C Ratio	0.003	-	-	-	-	-	-	-
HCM Control Delay (s)	8.5	0	-	-	0	-	-	0
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	26	3	0	0	30	0	4	0	0	0
Future Vol, veh/h	0	0	26	3	0	0	30	0	4	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	28	3	0	0	33	0	4	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	0	0	0	28	0	0	20	20	14	22	34	0
Stage 1	-	-	-	-	-	-	14	14	-	6	6	-
Stage 2	-	-	-	-	-	-	6	6	-	16	28	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	-	-	-	1585	-	-	993	874	1066	990	859	-
Stage 1	-	-	-	-	-	-	1006	884	-	1016	891	-
Stage 2	-	-	-	-	-	-	1016	891	-	1004	872	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	1585	-	-	-	872	1066	984	857	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	872	-	984	857	-
Stage 1	-	-	-	-	-	-	1006	884	-	1016	889	-
Stage 2	-	-	-	-	-	-	1014	889	-	1000	872	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	7.3		0
HCM LOS			-	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	-	1585	-	-	-
HCM Lane V/C Ratio	-	-	-	-	0.002	-	-	-
HCM Control Delay (s)	-	0	-	-	7.3	0	-	0
HCM Lane LOS	-	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	-	-	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	0	43	5	0	0	31	0	3	0	0	0
Future Vol, veh/h	1	0	43	5	0	0	31	0	3	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	47	5	0	0	34	0	3	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	0	0	0	47	0	0	36	36	24	37	59	0
Stage 1	-	-	-	-	-	-	26	26	-	10	10	-
Stage 2	-	-	-	-	-	-	10	10	-	27	49	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	-	-	-	1560	-	-	970	856	1052	968	832	-
Stage 1	-	-	-	-	-	-	992	874	-	1011	887	-
Stage 2	-	-	-	-	-	-	1011	887	-	990	854	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	1560	-	-	-	853	1052	963	830	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	853	-	963	830	-
Stage 1	-	-	-	-	-	-	992	874	-	1011	884	-
Stage 2	-	-	-	-	-	-	1008	884	-	987	854	-

Approach	EB	WB	NB	SB
HCM Control Delay, s		7.3		0
HCM LOS			-	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	-	1560	-	-	-
HCM Lane V/C Ratio	-	-	-	-	0.003	-	-	-
HCM Control Delay (s)	-	-	-	-	7.3	0	-	0
HCM Lane LOS	-	-	-	-	A	A	-	A
HCM 95th %tile Q(veh)	-	-	-	-	0	-	-	-

Intersection 18
South E/W Drive
& Drive 6

Intersection	
Int Delay, s/veh	3.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	0	0	30	0	0	0	6	10	0	21	0
Future Vol, veh/h	0	0	0	30	0	0	0	6	10	0	21	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	33	0	0	0	7	11	0	23	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	36	41	23	36	36	13	23	0	0	18	0	0
Stage 1	23	23	-	13	13	-	-	-	-	-	-	-
Stage 2	13	18	-	23	23	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	970	851	1054	970	856	1067	1592	-	-	1599	-	-
Stage 1	995	876	-	1007	885	-	-	-	-	-	-	-
Stage 2	1007	880	-	995	876	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	970	851	1054	970	856	1067	1592	-	-	1599	-	-
Mov Cap-2 Maneuver	970	851	-	970	856	-	-	-	-	-	-	-
Stage 1	995	876	-	1007	885	-	-	-	-	-	-	-
Stage 2	1007	880	-	995	876	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	8.8	0	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1592	-	-	-	970	1599	-	-
HCM Lane V/C Ratio	-	-	-	-	0.034	-	-	-
HCM Control Delay (s)	0	-	-	0	8.8	0	-	-
HCM Lane LOS	A	-	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	0.1	0	-	-

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	0	4	19	0	0	3	22	32	0	14	0
Future Vol, veh/h	0	0	4	19	0	0	3	22	32	0	14	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	4	21	0	0	3	24	35	0	15	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	63	80	15	65	63	42	15	0	0	59	0	0
Stage 1	15	15	-	48	48	-	-	-	-	-	-	-
Stage 2	48	65	-	17	15	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	932	810	1065	929	828	1029	1603	-	-	1545	-	-
Stage 1	1005	883	-	965	855	-	-	-	-	-	-	-
Stage 2	965	841	-	1002	883	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	930	808	1065	923	826	1029	1603	-	-	1545	-	-
Mov Cap-2 Maneuver	930	808	-	923	826	-	-	-	-	-	-	-
Stage 1	1003	883	-	963	853	-	-	-	-	-	-	-
Stage 2	963	839	-	998	883	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.4	9	0.4	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1603	-	-	1065	923	1545	-	-
HCM Lane V/C Ratio	0.002	-	-	0.004	0.022	-	-	-
HCM Control Delay (s)	7.2	0	-	8.4	9	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	0	3	20	0	0	5	14	21	0	14	0
Future Vol, veh/h	0	0	3	20	0	0	5	14	21	0	14	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	3	22	0	0	5	15	23	0	15	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	52	63	15	54	52	27	15	0	0	38	0	0
Stage 1	15	15	-	37	37	-	-	-	-	-	-	-
Stage 2	37	48	-	17	15	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	947	828	1065	944	839	1048	1603	-	-	1572	-	-
Stage 1	1005	883	-	978	864	-	-	-	-	-	-	-
Stage 2	978	855	-	1002	883	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	945	826	1065	939	836	1048	1603	-	-	1572	-	-
Mov Cap-2 Maneuver	945	826	-	939	836	-	-	-	-	-	-	-
Stage 1	1002	883	-	975	861	-	-	-	-	-	-	-
Stage 2	975	852	-	999	883	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.4	8.9	0.9	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1603	-	-	1065	939	1572	-	-
HCM Lane V/C Ratio	0.003	-	-	0.003	0.023	-	-	-
HCM Control Delay (s)	7.3	0	-	8.4	8.9	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-

Intersection	
Int Delay, s/veh	3.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	0	0	30	0	0	0	6	10	0	21	0
Future Vol, veh/h	0	0	0	30	0	0	0	6	10	0	21	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	33	0	0	0	7	11	0	23	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	36	41	23	36	36	13	23	0	0	18	0	0
Stage 1	23	23	-	13	13	-	-	-	-	-	-	-
Stage 2	13	18	-	23	23	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	970	851	1054	970	856	1067	1592	-	-	1599	-	-
Stage 1	995	876	-	1007	885	-	-	-	-	-	-	-
Stage 2	1007	880	-	995	876	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	970	851	1054	970	856	1067	1592	-	-	1599	-	-
Mov Cap-2 Maneuver	970	851	-	970	856	-	-	-	-	-	-	-
Stage 1	995	876	-	1007	885	-	-	-	-	-	-	-
Stage 2	1007	880	-	995	876	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	8.8	0	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1592	-	-	-	970	1599	-	-
HCM Lane V/C Ratio	-	-	-	-	0.034	-	-	-
HCM Control Delay (s)	0	-	-	0	8.8	0	-	-
HCM Lane LOS	A	-	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	0.1	0	-	-

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	4	19	0	0	3	22	32	0	14	0
Future Vol, veh/h	0	0	4	19	0	0	3	22	32	0	14	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	4	21	0	0	3	24	35	0	15	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	63	80	15	65	63	42	15	0	0	59	0	0
Stage 1	15	15	-	48	48	-	-	-	-	-	-	-
Stage 2	48	65	-	17	15	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	932	810	1065	929	828	1029	1603	-	-	1545	-	-
Stage 1	1005	883	-	965	855	-	-	-	-	-	-	-
Stage 2	965	841	-	1002	883	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	930	808	1065	923	826	1029	1603	-	-	1545	-	-
Mov Cap-2 Maneuver	930	808	-	923	826	-	-	-	-	-	-	-
Stage 1	1003	883	-	963	853	-	-	-	-	-	-	-
Stage 2	963	839	-	998	883	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.4	9	0.4	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1603	-	-	1065	923	1545	-	-
HCM Lane V/C Ratio	0.002	-	-	0.004	0.022	-	-	-
HCM Control Delay (s)	7.2	0	-	8.4	9	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-

Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	0	3	30	0	0	5	14	21	0	14	0
Future Vol, veh/h	0	0	3	30	0	0	5	14	21	0	14	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	3	33	0	0	5	15	23	0	15	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	52	63	15	54	52	27	15	0	0	38	0	0
Stage 1	15	15	-	37	37	-	-	-	-	-	-	-
Stage 2	37	48	-	17	15	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	947	828	1065	944	839	1048	1603	-	-	1572	-	-
Stage 1	1005	883	-	978	864	-	-	-	-	-	-	-
Stage 2	978	855	-	1002	883	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	945	826	1065	939	836	1048	1603	-	-	1572	-	-
Mov Cap-2 Maneuver	945	826	-	939	836	-	-	-	-	-	-	-
Stage 1	1002	883	-	975	861	-	-	-	-	-	-	-
Stage 2	975	852	-	999	883	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.4	9	0.9	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1603	-	-	1065	939	1572	-	-
HCM Lane V/C Ratio	0.003	-	-	0.003	0.035	-	-	-
HCM Control Delay (s)	7.3	0	-	8.4	9	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-

Intersection 19
Drive 7

Intersection	
Int Delay, s/veh	2.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	30	0	16	10	0	51
Future Vol, veh/h	30	0	16	10	0	51
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	33	0	17	11	0	55

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	78	23	0	0	28	0
Stage 1	23	-	-	-	-	-
Stage 2	55	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	925	1054	-	-	1585	-
Stage 1	1000	-	-	-	-	-
Stage 2	968	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	925	1054	-	-	1585	-
Mov Cap-2 Maneuver	925	-	-	-	-	-
Stage 1	1000	-	-	-	-	-
Stage 2	968	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	925	1585	-
HCM Lane V/C Ratio	-	-	0.035	-	-
HCM Control Delay (s)	-	-	9	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	1.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	19	0	57	32	0	37
Future Vol, veh/h	19	0	57	32	0	37
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	21	0	62	35	0	40

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	120	80	0	0	97	0
Stage 1	80	-	-	-	-	-
Stage 2	40	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	876	980	-	-	1496	-
Stage 1	943	-	-	-	-	-
Stage 2	982	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	876	980	-	-	1496	-
Mov Cap-2 Maneuver	876	-	-	-	-	-
Stage 1	943	-	-	-	-	-
Stage 2	982	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.2	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	876	1496	-
HCM Lane V/C Ratio	-	-	0.024	-	-
HCM Control Delay (s)	-	-	9.2	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	1.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	20	0	40	21	0	37
Future Vol, veh/h	20	0	40	21	0	37
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	0	43	23	0	40

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	95	55	0	0	66	0
Stage 1	55	-	-	-	-	-
Stage 2	40	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	905	1012	-	-	1536	-
Stage 1	968	-	-	-	-	-
Stage 2	982	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	905	1012	-	-	1536	-
Mov Cap-2 Maneuver	905	-	-	-	-	-
Stage 1	968	-	-	-	-	-
Stage 2	982	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.1	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	905	1536	-
HCM Lane V/C Ratio	-	-	0.024	-	-
HCM Control Delay (s)	-	-	9.1	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	2.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	30	0	16	10	0	51
Future Vol, veh/h	30	0	16	10	0	51
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	33	0	17	11	0	55

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	78	23	0	0	28	0
Stage 1	23	-	-	-	-	-
Stage 2	55	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	925	1054	-	-	1585	-
Stage 1	1000	-	-	-	-	-
Stage 2	968	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	925	1054	-	-	1585	-
Mov Cap-2 Maneuver	925	-	-	-	-	-
Stage 1	1000	-	-	-	-	-
Stage 2	968	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	925	1585	-
HCM Lane V/C Ratio	-	-	0.035	-	-
HCM Control Delay (s)	-	-	9	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	1.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	20	0	57	32	0	37
Future Vol, veh/h	20	0	57	32	0	37
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	0	62	35	0	40

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	120	80	0	0	97	0
Stage 1	80	-	-	-	-	-
Stage 2	40	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	876	980	-	-	1496	-
Stage 1	943	-	-	-	-	-
Stage 2	982	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	876	980	-	-	1496	-
Mov Cap-2 Maneuver	876	-	-	-	-	-
Stage 1	943	-	-	-	-	-
Stage 2	982	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.2	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	876	1496	-
HCM Lane V/C Ratio	-	-	0.025	-	-
HCM Control Delay (s)	-	-	9.2	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	1.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	20	0	40	21	0	37
Future Vol, veh/h	20	0	40	21	0	37
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	0	43	23	0	40

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	95	55	0	0	66	0
Stage 1	55	-	-	-	-	-
Stage 2	40	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	905	1012	-	-	1536	-
Stage 1	968	-	-	-	-	-
Stage 2	982	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	905	1012	-	-	1536	-
Mov Cap-2 Maneuver	905	-	-	-	-	-
Stage 1	968	-	-	-	-	-
Stage 2	982	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.1	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	905	1536	-
HCM Lane V/C Ratio	-	-	0.024	-	-
HCM Control Delay (s)	-	-	9.1	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection 20
Bailey Road & Drive 8

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	21	344	316	5	16	65
Future Vol, veh/h	21	344	316	5	16	65
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	0	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	374	343	5	17	71

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	348	0	-	0	763	343
Stage 1	-	-	-	-	343	-
Stage 2	-	-	-	-	420	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1211	-	-	-	372	700
Stage 1	-	-	-	-	719	-
Stage 2	-	-	-	-	663	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1211	-	-	-	363	700
Mov Cap-2 Maneuver	-	-	-	-	363	-
Stage 1	-	-	-	-	702	-
Stage 2	-	-	-	-	663	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	11.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1211	-	-	-	363	700
HCM Lane V/C Ratio	0.019	-	-	-	0.048	0.101
HCM Control Delay (s)	8	0	-	-	15.4	10.7
HCM Lane LOS	A	A	-	-	C	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1	0.3

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	69	459	669	21	13	43
Future Vol, veh/h	69	459	669	21	13	43
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	0	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	75	499	727	23	14	47

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	750	0	-	0	1376	727
Stage 1	-	-	-	-	727	-
Stage 2	-	-	-	-	649	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	859	-	-	-	160	424
Stage 1	-	-	-	-	478	-
Stage 2	-	-	-	-	520	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	859	-	-	-	141	424
Mov Cap-2 Maneuver	-	-	-	-	141	-
Stage 1	-	-	-	-	420	-
Stage 2	-	-	-	-	520	-

Approach	EB	WB	SB
HCM Control Delay, s	1.3	0	18.9
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	859	-	-	-	141	424
HCM Lane V/C Ratio	0.087	-	-	-	0.1	0.11
HCM Control Delay (s)	9.6	0	-	-	33.4	14.5
HCM Lane LOS	A	A	-	-	D	B
HCM 95th %tile Q(veh)	0.3	-	-	-	0.3	0.4

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	44	377	475	16	14	44
Future Vol, veh/h	44	377	475	16	14	44
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	0	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	48	410	516	17	15	48

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	533	0	-	0	1022	516
Stage 1	-	-	-	-	516	-
Stage 2	-	-	-	-	506	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1035	-	-	-	261	559
Stage 1	-	-	-	-	599	-
Stage 2	-	-	-	-	606	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1035	-	-	-	245	559
Mov Cap-2 Maneuver	-	-	-	-	245	-
Stage 1	-	-	-	-	563	-
Stage 2	-	-	-	-	606	-

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	14.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1035	-	-	-	245	559
HCM Lane V/C Ratio	0.046	-	-	-	0.062	0.086
HCM Control Delay (s)	8.6	0	-	-	20.7	12
HCM Lane LOS	A	A	-	-	C	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2	0.3

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	21	350	46	14	322	5	50	0	12	16	0	65
Future Vol, veh/h	21	350	46	14	322	5	50	0	12	16	0	65
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	0	-	0	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	23	380	50	15	350	5	54	0	13	17	0	71

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	355	0	0	430	0	0	869	836	405	838	856	350
Stage 1	-	-	-	-	-	-	451	451	-	380	380	-
Stage 2	-	-	-	-	-	-	418	385	-	458	476	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1204	-	-	1129	-	-	272	303	646	286	295	693
Stage 1	-	-	-	-	-	-	588	571	-	642	614	-
Stage 2	-	-	-	-	-	-	612	611	-	583	557	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1204	-	-	1129	-	-	237	291	646	272	284	693
Mov Cap-2 Maneuver	-	-	-	-	-	-	237	291	-	272	284	-
Stage 1	-	-	-	-	-	-	573	557	-	626	606	-
Stage 2	-	-	-	-	-	-	542	603	-	557	543	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.3	22.7	12.4
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	270	1204	-	-	1129	-	-	272	693
HCM Lane V/C Ratio	0.25	0.019	-	-	0.013	-	-	0.064	0.102
HCM Control Delay (s)	22.7	8	0	-	8.2	-	-	19.1	10.8
HCM Lane LOS	C	A	A	-	A	-	-	C	B
HCM 95th %tile Q(veh)	1	0.1	-	-	0	-	-	0.2	0.3

Intersection	
Int Delay, s/veh	28.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	69	393	91	27	662	21	88	0	100	13	0	43
Future Vol, veh/h	69	393	91	27	662	21	88	0	100	13	0	43
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	0	-	0	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	75	427	99	29	720	23	96	0	109	14	0	47

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	743	0	0	526	0	0	1440	1428	477	1459	1454	720
Stage 1	-	-	-	-	-	-	627	627	-	778	778	-
Stage 2	-	-	-	-	-	-	813	801	-	681	676	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	864	-	-	1041	-	-	111	135	588	107	130	428
Stage 1	-	-	-	-	-	-	471	476	-	389	407	-
Stage 2	-	-	-	-	-	-	372	397	-	440	453	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	864	-	-	1041	-	-	~ 88	115	588	77	111	428
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 88	115	-	77	111	-
Stage 1	-	-	-	-	-	-	412	417	-	340	396	-
Stage 2	-	-	-	-	-	-	322	386	-	314	396	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.2	0.3	216.2	25.5
HCM LOS			F	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	161	864	-	-	1041	-	-	77	428
HCM Lane V/C Ratio	1.269	0.087	-	-	0.028	-	-	0.184	0.109
HCM Control Delay (s)	216.2	9.6	0	-	8.6	-	-	62	14.4
HCM Lane LOS	F	A	A	-	A	-	-	F	B
HCM 95th %tile Q(veh)	11.9	0.3	-	-	0.1	-	-	0.6	0.4

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	16.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	44	338	107	33	502	16	102	0	103	14	0	44
Future Vol, veh/h	44	338	107	33	502	16	102	0	103	14	0	44
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	0	-	0	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	48	367	116	36	546	17	111	0	112	15	0	48

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	563	0	0	483	0	0	1172	1156	425	1195	1197	546
Stage 1	-	-	-	-	-	-	521	521	-	618	618	-
Stage 2	-	-	-	-	-	-	651	635	-	577	579	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1008	-	-	1080	-	-	169	197	629	163	186	538
Stage 1	-	-	-	-	-	-	539	532	-	477	481	-
Stage 2	-	-	-	-	-	-	457	472	-	502	501	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1008	-	-	1080	-	-	142	178	629	124	168	538
Mov Cap-2 Maneuver	-	-	-	-	-	-	142	178	-	124	168	-
Stage 1	-	-	-	-	-	-	503	497	-	446	465	-
Stage 2	-	-	-	-	-	-	402	456	-	385	468	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0.5	94	18.5
HCM LOS			F	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	232	1008	-	-	1080	-	-	124	538
HCM Lane V/C Ratio	0.96	0.047	-	-	0.033	-	-	0.123	0.089
HCM Control Delay (s)	94	8.7	0	-	8.4	-	-	38.1	12.3
HCM Lane LOS	F	A	A	-	A	-	-	E	B
HCM 95th %tile Q(veh)	8.6	0.1	-	-	0.1	-	-	0.4	0.3

Intersection 21
N/S Collector
& Drive 9

Intersection	
Int Delay, s/veh	5.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	164	0	0	0	0	18	0	131	0	39	64	98
Future Vol, veh/h	164	0	0	0	0	18	0	131	0	39	64	98
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	178	0	0	0	0	20	0	142	0	42	70	107

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	360	350	124	350	403	142	177	0	0	142	0	0
Stage 1	208	208	-	142	142	-	-	-	-	-	-	-
Stage 2	152	142	-	208	261	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	596	574	927	605	536	906	1399	-	-	1441	-	-
Stage 1	794	730	-	861	779	-	-	-	-	-	-	-
Stage 2	850	779	-	794	692	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	570	557	927	592	520	906	1399	-	-	1441	-	-
Mov Cap-2 Maneuver	570	557	-	592	520	-	-	-	-	-	-	-
Stage 1	794	709	-	861	779	-	-	-	-	-	-	-
Stage 2	832	779	-	771	672	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.2	9.1	0	1.5
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1399	-	-	570	906	1441	-	-
HCM Lane V/C Ratio	-	-	-	0.313	0.022	0.029	-	-
HCM Control Delay (s)	0	-	-	14.2	9.1	7.6	-	-
HCM Lane LOS	A	-	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	1.3	0.1	0.1	-	-

Intersection	
Int Delay, s/veh	5.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↰	↱		↰	↱	
Traffic Vol, veh/h	134	0	0	0	0	55	0	187	0	71	72	84
Future Vol, veh/h	134	0	0	0	0	55	0	187	0	71	72	84
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	146	0	0	0	0	60	0	203	0	77	78	91

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	511	481	124	481	526	203	169	0	0	203	0	0
Stage 1	278	278	-	203	203	-	-	-	-	-	-	-
Stage 2	233	203	-	278	323	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	473	485	927	495	457	838	1409	-	-	1369	-	-
Stage 1	728	680	-	799	733	-	-	-	-	-	-	-
Stage 2	770	733	-	728	650	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	420	458	927	474	431	838	1409	-	-	1369	-	-
Mov Cap-2 Maneuver	420	458	-	474	431	-	-	-	-	-	-	-
Stage 1	728	642	-	799	733	-	-	-	-	-	-	-
Stage 2	715	733	-	687	614	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	18.1	9.6	0	2.4
HCM LOS	C	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1409	-	-	420	838	1369	-	-
HCM Lane V/C Ratio	-	-	-	0.347	0.071	0.056	-	-
HCM Control Delay (s)	0	-	-	18.1	9.6	7.8	-	-
HCM Lane LOS	A	-	-	C	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	1.5	0.2	0.2	-	-

Intersection	
Int Delay, s/veh	8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↰	↱		↰	↱	
Traffic Vol, veh/h	162	0	0	0	0	63	0	220	0	91	140	170
Future Vol, veh/h	162	0	0	0	0	63	0	220	0	91	140	170
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	176	0	0	0	0	68	0	239	0	99	152	185

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	716	682	245	682	774	239	337	0	0	239	0	0
Stage 1	443	443	-	239	239	-	-	-	-	-	-	-
Stage 2	273	239	-	443	535	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	345	372	794	364	329	800	1222	-	-	1328	-	-
Stage 1	594	576	-	764	708	-	-	-	-	-	-	-
Stage 2	733	708	-	594	524	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	297	344	794	343	304	800	1222	-	-	1328	-	-
Mov Cap-2 Maneuver	297	344	-	343	304	-	-	-	-	-	-	-
Stage 1	594	533	-	764	708	-	-	-	-	-	-	-
Stage 2	670	708	-	550	485	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	33.3	9.9	0	1.8
HCM LOS	D	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1222	-	-	297	800	1328	-	-
HCM Lane V/C Ratio	-	-	-	0.593	0.086	0.074	-	-
HCM Control Delay (s)	0	-	-	33.3	9.9	7.9	-	-
HCM Lane LOS	A	-	-	D	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	3.5	0.3	0.2	-	-

Intersection 22
N/S Collector
& Drive 10

Intersection	
Int Delay, s/veh	4.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	68	0	9	0	0	18	14	45	0	0	31	33
Future Vol, veh/h	68	0	9	0	0	18	14	45	0	0	31	33
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	74	0	10	0	0	20	15	49	0	0	34	36

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	141	131	52	136	149	49	70	0	0	49	0	0
Stage 1	52	52	-	79	79	-	-	-	-	-	-	-
Stage 2	89	79	-	57	70	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	829	760	1016	835	743	1020	1531	-	-	1558	-	-
Stage 1	961	852	-	930	829	-	-	-	-	-	-	-
Stage 2	918	829	-	955	837	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	807	752	1016	821	736	1020	1531	-	-	1558	-	-
Mov Cap-2 Maneuver	807	752	-	821	736	-	-	-	-	-	-	-
Stage 1	951	852	-	921	821	-	-	-	-	-	-	-
Stage 2	892	821	-	946	837	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.8	8.6	1.8	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1531	-	-	827	1020	1558	-	-
HCM Lane V/C Ratio	0.01	-	-	0.101	0.019	-	-	-
HCM Control Delay (s)	7.4	-	-	9.8	8.6	0	-	-
HCM Lane LOS	A	-	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.1	0	-	-

Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	81	0	13	0	0	55	20	50	0	0	26	46
Future Vol, veh/h	81	0	13	0	0	55	20	50	0	0	26	46
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	88	0	14	0	0	60	22	54	0	0	28	50

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	181	151	53	158	176	54	78	0	0	54	0	0
Stage 1	53	53	-	98	98	-	-	-	-	-	-	-
Stage 2	128	98	-	60	78	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	781	741	1014	808	717	1013	1520	-	-	1551	-	-
Stage 1	960	851	-	908	814	-	-	-	-	-	-	-
Stage 2	876	814	-	951	830	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	727	731	1014	788	707	1013	1520	-	-	1551	-	-
Mov Cap-2 Maneuver	727	731	-	788	707	-	-	-	-	-	-	-
Stage 1	947	851	-	895	803	-	-	-	-	-	-	-
Stage 2	812	803	-	938	830	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.5	8.8	2.1	0
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1520	-	-	757	1013	1551	-	-
HCM Lane V/C Ratio	0.014	-	-	0.135	0.059	-	-	-
HCM Control Delay (s)	7.4	-	-	10.5	8.8	0	-	-
HCM Lane LOS	A	-	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.5	0.2	0	-	-

Intersection	
Int Delay, s/veh	5.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	107	0	0	0	0	63	37	50	0	0	53	87
Future Vol, veh/h	107	0	0	0	0	63	37	50	0	0	53	87
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	116	0	0	0	0	68	40	54	0	0	58	95

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	274	240	106	240	287	54	153	0	0	54	0	0
Stage 1	106	106	-	134	134	-	-	-	-	-	-	-
Stage 2	168	134	-	106	153	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	678	661	948	714	623	1013	1428	-	-	1551	-	-
Stage 1	900	807	-	869	785	-	-	-	-	-	-	-
Stage 2	834	785	-	900	771	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	618	642	948	699	606	1013	1428	-	-	1551	-	-
Mov Cap-2 Maneuver	618	642	-	699	606	-	-	-	-	-	-	-
Stage 1	875	807	-	845	763	-	-	-	-	-	-	-
Stage 2	756	763	-	900	771	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.2	8.8	3.2	0
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1428	-	-	618	1013	1551	-	-
HCM Lane V/C Ratio	0.028	-	-	0.188	0.068	-	-	-
HCM Control Delay (s)	7.6	-	-	12.2	8.8	0	-	-
HCM Lane LOS	A	-	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.7	0.2	0	-	-

Intersection 23
N/S Collector
& Drive 11

Intersection	
Int Delay, s/veh	4.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	39	0	35	12	0	6	13	14	42	0	9	31
Future Vol, veh/h	39	0	35	12	0	6	13	14	42	0	9	31
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	42	0	38	13	0	7	14	15	46	0	10	34

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	97	116	27	112	110	38	44	0	0	61	0	0
Stage 1	27	27	-	66	66	-	-	-	-	-	-	-
Stage 2	70	89	-	46	44	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	885	774	1048	866	780	1034	1564	-	-	1542	-	-
Stage 1	990	873	-	945	840	-	-	-	-	-	-	-
Stage 2	940	821	-	968	858	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	873	767	1048	829	773	1034	1564	-	-	1542	-	-
Mov Cap-2 Maneuver	873	767	-	829	773	-	-	-	-	-	-	-
Stage 1	981	873	-	936	832	-	-	-	-	-	-	-
Stage 2	926	814	-	933	858	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.1	9.1	1.4	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1564	-	-	948	888	1542	-	-
HCM Lane V/C Ratio	0.009	-	-	0.085	0.022	-	-	-
HCM Control Delay (s)	7.3	-	-	9.1	9.1	0	-	-
HCM Lane LOS	A	-	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.1	0	-	-

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↰	↱		↰	↱	
Traffic Vol, veh/h	32	0	29	74	0	18	11	20	80	0	13	26
Future Vol, veh/h	32	0	29	74	0	18	11	20	80	0	13	26
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	35	0	32	80	0	20	12	22	87	0	14	28

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	128	161	28	134	132	66	42	0	0	109	0	0
Stage 1	28	28	-	90	90	-	-	-	-	-	-	-
Stage 2	100	133	-	44	42	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	845	731	1047	838	759	998	1567	-	-	1481	-	-
Stage 1	989	872	-	917	820	-	-	-	-	-	-	-
Stage 2	906	786	-	970	860	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	824	725	1047	808	753	998	1567	-	-	1481	-	-
Mov Cap-2 Maneuver	824	725	-	808	753	-	-	-	-	-	-	-
Stage 1	981	872	-	910	813	-	-	-	-	-	-	-
Stage 2	881	780	-	941	860	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.2	9.9	0.7	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1567	-	-	917	839	1481	-	-
HCM Lane V/C Ratio	0.008	-	-	0.072	0.119	-	-	-
HCM Control Delay (s)	7.3	-	-	9.2	9.9	0	-	-
HCM Lane LOS	A	-	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.4	0	-	-

Intersection	
Int Delay, s/veh	5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↰	↱		↰	↱	
Traffic Vol, veh/h	29	0	44	78	0	21	23	37	98	0	0	53
Future Vol, veh/h	29	0	44	78	0	21	23	37	98	0	0	53
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	32	0	48	85	0	23	25	40	107	0	0	58

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	184	226	29	197	202	94	58	0	0	147	0	0
Stage 1	29	29	-	144	144	-	-	-	-	-	-	-
Stage 2	155	197	-	53	58	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	777	673	1046	762	694	963	1546	-	-	1435	-	-
Stage 1	988	871	-	859	778	-	-	-	-	-	-	-
Stage 2	847	738	-	960	847	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	749	662	1046	719	683	963	1546	-	-	1435	-	-
Mov Cap-2 Maneuver	749	662	-	719	683	-	-	-	-	-	-	-
Stage 1	972	871	-	845	766	-	-	-	-	-	-	-
Stage 2	814	726	-	916	847	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.4	10.5	1.1	0
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1546	-	-	904	760	1435	-	-
HCM Lane V/C Ratio	0.016	-	-	0.088	0.142	-	-	-
HCM Control Delay (s)	7.4	-	-	9.4	10.5	0	-	-
HCM Lane LOS	A	-	-	A	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.5	0	-	-

Intersection 24
16th Street &
Park Driveway

Intersection	
Int Delay, s/veh	2.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	16	16	0	14	14	0
Future Vol, veh/h	16	16	0	14	14	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	17	17	0	15	15	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	34	0	41	26
Stage 1	-	-	-	-	26	-
Stage 2	-	-	-	-	15	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1578	-	970	1050
Stage 1	-	-	-	-	997	-
Stage 2	-	-	-	-	1008	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1578	-	970	1050
Mov Cap-2 Maneuver	-	-	-	-	970	-
Stage 1	-	-	-	-	997	-
Stage 2	-	-	-	-	1008	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	970	-	-	1578	-
HCM Lane V/C Ratio	0.016	-	-	-	-
HCM Control Delay (s)	8.8	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	2.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	9	9	0	17	17	0
Future Vol, veh/h	9	9	0	17	17	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	10	0	18	18	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	20	0	33	15
Stage 1	-	-	-	-	15	-
Stage 2	-	-	-	-	18	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1596	-	980	1065
Stage 1	-	-	-	-	1008	-
Stage 2	-	-	-	-	1005	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1596	-	980	1065
Mov Cap-2 Maneuver	-	-	-	-	980	-
Stage 1	-	-	-	-	1008	-
Stage 2	-	-	-	-	1005	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	980	-	-	1596	-
HCM Lane V/C Ratio	0.019	-	-	-	-
HCM Control Delay (s)	8.7	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	4	4	0	9	9	0
Future Vol, veh/h	4	4	0	9	9	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	4	0	10	10	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	8	0	16	6
Stage 1	-	-	-	-	6	-
Stage 2	-	-	-	-	10	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1612	-	1002	1077
Stage 1	-	-	-	-	1017	-
Stage 2	-	-	-	-	1013	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1612	-	1002	1077
Mov Cap-2 Maneuver	-	-	-	-	1002	-
Stage 1	-	-	-	-	1017	-
Stage 2	-	-	-	-	1013	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1002	-	-	1612	-
HCM Lane V/C Ratio	0.01	-	-	-	-
HCM Control Delay (s)	8.6	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	16	16	0	14	0	14	0	0	0	0	0
Future Vol, veh/h	0	16	16	0	14	0	14	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	17	17	0	15	0	15	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	15	0	0	34	0	0	41	41	26	41	49	15
Stage 1	-	-	-	-	-	-	26	26	-	15	15	-
Stage 2	-	-	-	-	-	-	15	15	-	26	34	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1603	-	-	1578	-	-	963	851	1050	963	843	1065
Stage 1	-	-	-	-	-	-	992	874	-	1005	883	-
Stage 2	-	-	-	-	-	-	1005	883	-	992	867	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1603	-	-	1578	-	-	963	851	1050	963	843	1065
Mov Cap-2 Maneuver	-	-	-	-	-	-	963	851	-	963	843	-
Stage 1	-	-	-	-	-	-	992	874	-	1005	883	-
Stage 2	-	-	-	-	-	-	1005	883	-	992	867	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	8.8	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	963	1603	-	-	1578	-	-	-
HCM Lane V/C Ratio	0.016	-	-	-	-	-	-	-
HCM Control Delay (s)	8.8	0	-	-	0	-	-	0
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	9	9	0	17	0	17	0	0	0	0	0
Future Vol, veh/h	1	9	9	0	17	0	17	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	10	10	0	18	0	18	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	18	0	0	20	0	0	35	35	15	35	40	18
Stage 1	-	-	-	-	-	-	17	17	-	18	18	-
Stage 2	-	-	-	-	-	-	18	18	-	17	22	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1599	-	-	1596	-	-	971	857	1065	971	852	1061
Stage 1	-	-	-	-	-	-	1002	881	-	1001	880	-
Stage 2	-	-	-	-	-	-	1001	880	-	1002	877	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1599	-	-	1596	-	-	970	856	1065	970	851	1061
Mov Cap-2 Maneuver	-	-	-	-	-	-	970	856	-	970	851	-
Stage 1	-	-	-	-	-	-	1001	880	-	1000	880	-
Stage 2	-	-	-	-	-	-	1001	880	-	1001	876	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0	8.8	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	970	1599	-	-	1596	-	-	-
HCM Lane V/C Ratio	0.019	0.001	-	-	-	-	-	-
HCM Control Delay (s)	8.8	7.3	0	-	0	-	-	0
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	4	4	0	9	0	9	0	0	0	0	0
Future Vol, veh/h	1	4	4	0	9	0	9	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	4	4	0	10	0	10	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	10	0	0	8	0	0	18	18	6	18	20	10
Stage 1	-	-	-	-	-	-	8	8	-	10	10	-
Stage 2	-	-	-	-	-	-	10	10	-	8	10	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1610	-	-	1612	-	-	996	876	1077	996	874	1071
Stage 1	-	-	-	-	-	-	1013	889	-	1011	887	-
Stage 2	-	-	-	-	-	-	1011	887	-	1013	887	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1610	-	-	1612	-	-	995	875	1077	995	873	1071
Mov Cap-2 Maneuver	-	-	-	-	-	-	995	875	-	995	873	-
Stage 1	-	-	-	-	-	-	1012	888	-	1010	887	-
Stage 2	-	-	-	-	-	-	1011	887	-	1012	886	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0	8.7	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	995	1610	-	-	1612	-	-	-
HCM Lane V/C Ratio	0.01	0.001	-	-	-	-	-	-
HCM Control Delay (s)	8.7	7.2	0	-	0	-	-	0
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	-

APPENDIX E
KITTELSON AND ASSOCIATES TRAFFIC MEMO

KITTELSON & ASSOCIATES
143 N Woodland Blvd, Second Floor
DeLand, FL 32720
P 386.232.9469

TECHNICAL MEMORANDUM

July 9, 2025 Project# 31982

To: Stephen Cross, PE, Consultant - Real Estate Development
Costco Real Estate
1955 Raymond Drive, Suite 119
Northbrook, IL 60062

From: Adam Burghdoff

RE: Costco Warehouse Trip Generation - Lee's Summit, MO

This memorandum provides trip generation information associated with Costco Wholesale developments in the United States for use as part of the proposed Costco warehouse and fuel development in Lee's Summit, MO. Costco has developed sites and operated business throughout the United States for close to 40 years. Over time, the Costco prototype has evolved to meet their member demands and provide new services (such as fuel stations and carwashes).

For over 20 years, Kittelson & Associates, Inc. (Kittelson) has maintained a database of transportation data and travel characteristics for Costco Wholesale. The database contains transportation information such as trip rates, trip type percentages, and parking demand for Costco locations throughout the United States, Mexico, and Canada. Costco is a unique use due to its successful business model and membership requirements. Costco has entrusted this on-going effort to Kittelson to ensure that their site planning and development work is based upon the best possible information related to the unique travel patterns and operations associated with Costco warehouses and their associated uses. Kittelson has collected, analyzed, and refined transportation data for Costco related to trip generation, trip type (primary, pass-by, diverted, internal trips), parking demand, gasoline service rates, car wash service rates, and vehicle queuing. The database contains large data sample sizes and is continually updated and refined as new data is collected. The transportation information within the database has been approved in numerous jurisdictions in the U.S., Canada, and Mexico and has been validated by jurisdiction staff in several cases through independent peer study during the development review process. The Costco transportation database is the best source of information to use in developing trip generation estimates for Costco developments since it provides use-specific data that most accurately represents the anticipated traffic characteristics of the unique development type.

Costco requested a trip generation estimate for use for the proposed Costco development using the latest and relevant data from the Costco transportation database. The trip generation estimate is summarized in **Table 1**.

If you have any additional questions, or require additional information, please contact us at 407.373.1116 or aburghdoff@kittelson.com.

WH City	WH State	WH Size (SF)	Data Year	Weekday AM Peak Rate/KSF	Weekday AM Peak % In	Weekday AM Peak % Out	Weekday AM Peak Pass-By	Weekday AM Peak Diverted	Weekday PM Peak Rate/KSF	Weekday PM Peak % In	Weekday PM Peak % Out	Weekday PM Peak Pass-By	Weekday PM Peak Diverted	Saturday Midday Peak Rate/KSF	Saturday Midday Peak % In	Saturday Midday Peak % Out	Saturday Midday Peak Pass-By	Saturday Midday Peak Diverted	Weekday Daily Rate/KSF	Saturday Daily Rate/KSF
Aurora	CO	147,569	2020	1.5	55%	45%			7.6	50%	50%			9.8	50%	50%			75.1	80.6
Arvada	CO	150,571	2020	1.3	51%	49%			6.7	49%	51%			9.6	49%	51%			64.8	71.5
Fairfax	VA	139,270	2021	3.8	58%	42%			8.7	50%	50%	7%	28%	12.8	49%	51%	9%	23%	115.2	121.7
Dedham	MA	128,765	2021	1.6	60%	40%			5.5	50%	50%	1%	41%	9.6	49%	51%	4%	34%	66.6	90.1
Thornton	CO	157,379	2020	1.1	53%	47%			6.6	49%	51%			12.7	50%	50%			54.8	78.3
Raleigh	NC	148,812	2021	2.0	54%	46%			6.4	46%	54%	14%	32%	8.3	52%	48%	10%	24%	76.5	73.1
Southlake	TX	148,663	2019	1.0	55%	45%			5.3	46%	54%			9.9	51%	49%				
Montclair	CA	149,705	2019	2.9	54%	46%			8.3	49%	51%			10.0	51%	49%				
Hillsboro	OR	205,757	2021	1.2	41%	59%			5.0	41%	59%	12%	42%	6.2	43%	57%	25%	11%	44.6	51.8
Murray	UT	148,663	2019	1.7	55%	45%			7.7	50%	50%			10.7	50%	50%			86.1	95.83
San Jose	CA	146,843	2017	3.8	51%	49%			6.9	47%	53%			11.8	51%	49%				
South Jordan	UT	153,570	2019	2.1	49%	51%			7.6	53%	47%			12.6	51%	49%			79.1	112.37
Kapolei	HI	166,416	2024	3.56	51%	49%			9.33	52%	48%			9.72	52%	48%			98.8	93.5
Spanish Fork	UT	151,818	2019	1.0	83%	17%			7.5	48%	52%			12.2	50%	50%			73.8	118.5
West Fargo	ND	149,578	2024	0.96	55%	45%			6.24	52%	48%	22%	43%	10.02	51%	49%	21%	26%	57.6	82
Washington	DC	160,638	2021	2.7	53%	47%			7.2	50%	50%	3%	33%	9.3	52%	48%	1%	16%	90	89.2
Timnath	CO	153,783	2020	1.4	53%	47%			7.6	49%	51%			11.9	50%	50%			63.3	83.4
Charlottesville	VA	154,136	2021	1.3	69%	60%			5.3	48%	52%	23%	37%	6.1	50%	50%	23%	34%	53.7	51.2
Columbia	SC	154,493	2021	1.6	58%	42%			4.5	46%	54%	13%	43%	7.9	50%	50%	13%	46%	52.2	62.8
Bayonne	NJ	158,291	2021	1.7	53%	47%			5.1	49%	51%	38%	8%	6.8	51%	49%	14%	8%	53.5	59.1
East Lyme	CT	160,689	2021	1.0	56%	44%			4.3	49%	51%	6%	46%	5.3	48%	52%	5%	27%	40.1	46
Tumwater	WA	143,916	2021	2.0	60%	40%			9.8	49%	51%	18%	17%	12.2	50%	50%	19%	19%		
Boca Raton	FL	149,744	2021	1.9	55%	45%			6.9	51%	49%	21%	16%	8.1	51%	49%	9%	17%	73.3	70.2
Tucson	AZ	148,617	2011	1.4	66%	34%			6.4	50%	50%			9.5	54%	46%			71.6	
Folsom	CA	148,663	2020	4.3	69%	31%			8.0	45%	55%			13.1	50%	50%			104.1	114.8
Portland	OR	169,617	2017	1.3	54%	46%			5.8	49%	51%			10.4	50%	50%				
Salt Lake City	UT	235,298	2021	2.6	55%	45%			5.7	50%	50%	12%	43%	7.4	51%	49%	4%	43%	63.1	65.2
Rohnert Park	CA	156,728	2018	1.8	53%	47%			6.7	48%	52%			9.1	51%	49%				
Wilsonville	OR	148,663	2021	1.8	58%	42%			6.6	49%	51%	18%	41%	9.7	50%	50%	11%	21%	81	78.3
Granger	IN	153,475	2021	1.9	58%	42%			7.4	51%	49%	19%	30%	7.8	51%	49%	16%	31%	76.7	69.4
Redmond	WA	155,754	2021	3.3	29%	71%			11.7	33%	67%	14%	16%	15.1	33%	67%	7%	10%		
Elk Grove	CA	150,178	2020	4.1	43%	57%			12.1	42%	58%			14.0	42%	58%			126.5	143
Bonney Lake	WA	155,714	2021	1.6	59%	41%			6.3	48%	52%	14%	25%	9.5	50%	50%	10%	21%		
Central Point	OR	164,013	2021	2.2	61%	39%			7.7	48%	52%	20%	35%	9.8	48%	52%	15%	31%	81.5	79.7
Meridian	ID	157,474	2021	1.2	57%	43%			5.2	47%	53%	20%	30%	8.0	52%	48%	24%	30%	55.4	74.2
Eagan	MN	160,458	2021	0.9	61%	39%			5.6	50%	50%	17%	27%	6.2	49%	51%	12%	27%	54.3	50.3
Idaho Falls	ID	180,573	2021	0.7	62%	38%			3.7	48%	52%	19%	27%	5.5	52%	48%	18%	20%	36.61	54.6
Saratoga Springs	UT	158,492	2021	1.1	53%	47%			5.7	48%	52%	35%	18%	10.0	50%	50%	43%	13%	55.5	91.3
Temecula	CA	163,749	2021	6.2	57%	43%			10.1	49%	51%	24%	36%	13.1	51%	49%	18%	38%	140	134
Spokane	WA	160,333	2019	1.3	57%	43%			6.9	46%	54%			8.8	52%	48%			78.7	
Clovis	CA	152,218	2021	3.9	51%	49%			11.0	48%	52%	38%	18%	12.8	49%	51%	31%	11%	140.9	141.9
Average		***157,295***		***2.07***	***56%***	***44%***			***7.04***	***48%***	***52%***	***18%***	***30%***	***9.82***	***50%***	***50%***	***15%***	***24%***	***75.30***	***84.77***

Lee's Summit Costco Gross Trip Generation Potential

	AM Peak Hour			PM Peak Hour			Saturday Midday Peak Hour			Weekday	Saturday
	Total	In	Out	Total	In	Out	Total	In	Out	Total	Total
155,420 KSF	***322***	***179***	***143***	***1,094***	***526***	***568***	***1,527***	***758***	***769***	***11,704***	***13,175***

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7/9/2025

APPENDIX F
OLDHAM VILLAGE "WEST" TRAFFIC IMPACT STUDY

Traffic Impact Study

Oldham Village

Lee’s Summit, Missouri

Prepared For:

Engineering Solutions

Date:

August 2024

Kimley»Horn

Traffic Impact Study

Oldham Village

Lee's Summit, Missouri

Prepared for:
Engineering Solutions
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8/12/2024

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1.0 INTRODUCTION

This report serves as the traffic impact study for the Oldham Village development, generally located in the southwest quadrant of the US-50 Highway (US-50) and M-291 Highway (M-291) interchange in Lee's Summit, Missouri. The location of the development is shown on **Exhibit 1** in **Appendix A**.

1.1 REPORT PURPOSE AND OBJECTIVES

The purpose of this study is to address traffic and transportation impacts of the proposed development on surrounding streets and intersections. This traffic impact study was prepared based on criteria set forth by the City of Lee's Summit *Access Management Code* and the Missouri Department of Transportation (MoDOT) *Engineering Policy Guide*. The following information is provided:

- A description and map of the existing and proposed street network to be affected by the proposed development. This information includes existing roadway characteristics and existing traffic volumes.
- Trip generation calculations based on the Institute of Traffic Engineers (ITE) *Trip Generation Manual,* 11th Edition, for the proposed development. In addition, projected trip distributions onto the street network are provided.
- Development of future year (2044) traffic volume projections.
- Analysis of impacts of the traffic generated by the proposed development on the street network, including analysis of peak period levels of service (LOS), delay times, and queuing at study area intersections for the analysis scenarios.
- Review of site access points relative to the City's access management guidelines based on the *Access Management Code*.
- Discussion of potential improvements and traffic management measures identified to mitigate operational concerns.
- Signal warrant analysis for Oldham Parkway & Drive 2, based on the vehicular volume traffic signal warrants of the *Manual on Uniform Traffic Control Devices* (MUTCD).

In summary, the study is to determine the trip generation of the Oldham Village development, assign new development trips to the street network, analyze various scenarios to determine the impacts of proposed site traffic, and identify potential mitigation measures, if necessary, to achieve acceptable operations at the study intersections.

2.0 EXISTING CONDITIONS

2.1 STUDY AREA

The development site is generally located in the southwest quadrant of the M-291 & US-50 Interchange in Lee's Summit, Missouri. The entire site is approximately 45 acres. The northern portion of the site mostly consists of a paved parking lot currently used for long-term car storage. Two small, vacant commercial buildings are located in the northeast corner of the site, north of Oldham Parkway. South of the large parking lot is a large, vacant industrial building. The development site also includes several parcels between Jefferson Street and M-291, from Oldham Parkway to Persels Road. Land uses on these parcels currently include parking lots, contractor offices, auto repair businesses, and some commercial businesses located between Jefferson Street and M-291. Three of the small existing parcels in this area are not included in the proposed development.

The site is bounded on the north by Oldham Parkway, which is the frontage road along the south side of US-50. To the west of the site there is an office building owned by Summit Park Church along Oldham Parkway. South of the office building is a neighborhood of single-family homes and Pleasant Lea Park. To the south of the site undeveloped land and parking lots for Abundant Life Church. South of the site across Persels Road there is a business park and a gas station. The east edge of the site is bounded by Market Street and M-291. To the east of the site across M-291 is undeveloped land and one large industrial building.

Through discussion with City and MoDOT staff, the following intersections were included within the study area for the traffic analysis. The list provides the existing intersection control for each of the study intersections.

- Oldham Parkway & Ward Road (Traffic Signal)
- Oldham Parkway & Jefferson Street (Side Street Stop)
- M-291 & Oldham Parkway (Traffic Signal)
- Persels Road & Jefferson Street (Traffic Signal)
- M-291 & Persels Road/Bailey Road (Traffic Signal)

In 2015, MoDOT analyzed the US-50 & M-291 interchange prior to a major construction project that included reconfiguring the interchange. The project and analysis also included the M-291 corridor from US-50 to Persels Road, including the intersection at Oldham Parkway. As part of the analysis major commercial developments were assumed to be constructed to the west and the east of M-291 along Oldham Parkway. The assumptions made for the land uses west of the interchange were similar to the proposed development, therefore the interchange was not identified for analysis in this study.

2.2 STREET NETWORK

The existing street network within the study area includes US-50, M-291, Oldham Parkway, Jefferson Street, Persels Road, Bailey Road, and Ward Road. The following provides a summary of the existing street network within the study area:

US-50 is an east-west freeway that is part of the regional highway system. US-50 is a four-lane divided freeway with a posted speed limit of 60 miles per hour (mph). There is an interchange along US-50 at M-291. The interchange was reconstructed in 2018 as a diverging diamond interchange. The crossover on the north side of US-50 is a roundabout intersection and the crossover on the south side is signalized.

M-291 is a north-south expressway that connects the Kansas City metro area to Harrisonville to the south. M-291 is a six-lane divided roadway north of Persels/Bailey Road and a four-lane divided highway south of Persels/Bailey Road. M-291 has 12-foot travel lanes and 10-foot paved shoulders. The posted speed limit is 45 mph. Access is controlled along the portion of M-291 adjacent to the development site. There is a shared use path along the west side of M-291 extending south from the interchange to Oldham Parkway.

Oldham Parkway is a northwest-southeast commercial collector type street, according to the Lee's Summit Thoroughfare Master Plan. It serves as the frontage road along the south side of US-50, and it is maintained by MoDOT. Oldham Parkway is a two-lane undivided roadway with paved shoulders. No sidewalks are provided along Oldham Parkway. The posted speed limit is 35 mph. In the northeast corner of the development site, Oldham Parkway curves to become a north/south street that aligns with Jefferson Street at a T-intersection. Oldham Parkway follows an east/west alignment for a short distance between Jefferson Street and M-291. This east/west segment of Oldham Parkway was constructed with the interchange reconfiguration. This segment has two lanes in the westbound direction, a raised median, and four lanes in the eastbound direction. There are curbs and gutters with a shared use path along the south side of this street segment.

Jefferson Street is a north-south commercial collector type street extending south of Oldham Parkway. The three-lane roadway is 40 feet wide, measured between the backs of curbs, with a center two-way-left-turn lane and one travel lane in each direction. The posted speed limit is 35 mph. There is sidewalk along the west side of Jefferson Street and a shared use path on the east side.

Persels Road/Bailey Road is an east-west minor arterial street located at the far south end of the proposed development site. West of M-291 the road is called Persels Road and east of M-291, the road is named Bailey Road. Persels Road generally has a two-lane cross section that widens to a four-lane cross section for the segment between Jefferson Street and M-291. The four-lane segment includes one through lane in each direction, and the two center lanes are configured as left-turn lanes. Bailey Road is also generally a two-lane roadway that widens for turn lanes at the intersection with M-291. The posted speed limit is 35 mph for Persels Road and for Bailey Road. A sidewalk of varying widths is provided on the south side of Persels Road/Bailey Road throughout the study area. There is sidewalk on the north side of the Persels Road to the west of the site, but no other sidewalks along the north side of either roadway.

Ward Road is a north-south major arterial street located approximately one mile west of the proposed development site. The four-lane, undivided roadway has curb and gutters with sidewalk on the east side of the street and a shared use path along the west side. Ward Road connects to 3rd Street near a diamond interchange with US-50. The posted speed limit is 35 mph.

2.3 DATA COLLECTION

Turning Movement Counts (TMCs) were collected the study intersections on Thursday, October 20th, 2022, and Saturday, October 22nd, 2022. The turning movement count data collected is included in **Appendix B**. The AM peak hour occurred between 7:15 AM and 8:15 AM, the PM peak hour occurred between 4:15 PM and 5:15 PM, and the Saturday peak hour occurred between 12:00 PM and 1:00 PM. The existing conditions peak hour turning movement volumes are shown on **Exhibit 2**. The existing geometry with lane configurations and intersection control at the study intersections is shown on **Exhibit 3**.

3.0 PROPOSED DEVELOPMENT

3.1 SITE PLAN DESCRIPTION

The proposed Oldham Village development is anticipated to be constructed in two phases. Phase 1 includes the realignment of Oldham Parkway through the northern portion of the site. At the northwest corner of the site, the roadway will be reconstructed as a two-lane roadway with curbs and gutters and sidewalk along the south side of the street. A large surface parking lot and a small retail building are to be located south of the street. A connection is shown between the parking lot and the adjacent existing office building in the northwest corner of the site. It is intended that the Summit Park Church will also use the large surface parking lot. The proposed site plan is included in **Appendix C** for reference.

Oldham Parkway will then curve to the south and widen for a raised median and left-turn lanes at intersections. Curbs and gutters and sidewalks will be provided along both sides of this street segment. The realignment of Oldham Parkway creates a larger area on the east side of the street for pad sites. The pad sites to the east of Oldham Parkway include a sit-down restaurant, two fast-food restaurants with drive through windows, a drive-through car wash, and two small buildings with retail space and drive-through coffee shops. West of Oldham Parkway, a sit-down restaurant with outdoor entertainment areas and a 120,000 square foot building for fitness and athletic events are to be located adjacent to the large surface parking lot.

Oldham Parkway will then curve to the east to align with the existing east/west segment of Oldham Parkway that intersects M-291. The roadway will widen for additional through lanes and turn lanes. Curbs and gutters and sidewalks will be provided along both sides of the street. The posted speed limit on Oldham Parkway will remain at 35 mph. The reconstructed and realigned section of Oldham Parkway will then be maintained by the City of Lee's Summit.

A portion of Jefferson Street will also be realigned to the west to create greater separation from M-291. Jefferson Street will intersect Oldham Parkway 260 feet west of the existing intersection. Access will be restricted to left-in/right-in/right-out (LIRIRO) only at this intersection. The raised median on Oldham Parkway will allow east/west left-turn movements, but north/south left-turn and through movements will be restricted. This restriction is due to the close proximity to the Oldham Parkway & M-291 intersection.

Phase 2 includes a four-story apartment building with 307 units located west of Jefferson Street and south of the fitness and athletic building. The parking lot for the apartments will also connect to the parking area for the fitness and athletic building near Access 1 providing circulation around the apartment building.

A number of pad sites are planned in the Phase 2 portion of the site between Jefferson Street and M-291, to the south of Oldham Parkway. The pad sites include two small buildings with retail space and coffee shops with drive through windows, a small grocery store and two fast-food restaurants with drive-through windows.

Market Street is an existing dead-end local street that will be almost fully removed to create more space for these pad sites. A small portion of Market Street will remain to provide access to two small existing properties that are not part of the proposed development. The existing properties will be accessed from a new east/west public street that connects Jefferson Street to the small remaining segment of Market Street that will remain. South of the new public street is a gas station with 10 fueling positions and a 4,500 square foot convenience store. A small existing office building in the northeast corner of Persels Road & Jefferson Street will remain, adjacent to the gas station.

3.2 SITE ACCESS

The Phase 1 portion of the site will be accessed from six driveway intersections with public streets. The Phase 1 accesses are described below. All access spacing distances provided are measured between centerlines of streets or driveways.

- The north leg of the realigned Oldham Parkway & Jefferson Street intersection will be the primary entrance to the pad sites located north and east of Oldham Parkway. This is a LIRIRO access and is approximately 600 feet west of M-291.
- Access 1 is a RIRO access on the west side of Oldham Parkway approximately 320 feet west of Jefferson Street, near the south end of the fitness and athletic building.
- Access 2 is a full-access intersection along Oldham Parkway approximately 345 feet north of Access 1. Access 2 serves the fitness and athletic building and the pad sites north and east of Oldham Parkway. Given the LIRIRO restriction at Jefferson Street, Access 2 will be the primary exit from the pad sites north and east of Oldham Parkway.
- Access 3 is a full-access driveway along Oldham Parkway located 375 feet north of Access 2. This driveway serves the restaurants on the east and west sides of Oldham Parkway.
- Access 4 is a full-access driveway along Oldham Parkway approximately 375 feet north and west of Access 3. It provides access to the small retail building and surface parking lot south of Oldham Parkway.
- Access 5 is a full-access driveway along Oldham Parkway located 380 feet west of Access 4 and 200 feet east of an existing access point to an office building.

The Phase 2 portion will be accessed primarily from four intersections along Jefferson Street, one access along Oldham Parkway, and one access along Persels Road. The Phase 2 accesses are described below. All access spacing distances provided are measured between centerlines of streets or driveways.

- A new full-access public street connection is proposed along the east side of Jefferson Street, approximately 375 feet north of Persels Road. This intersection would be 100 feet north of an existing private driveway on the east side of the street, and 120 feet south of a driveway for Abundant Life Church on the west side of the street. This public street would provide access to the gas station and to existing properties that are not part of the proposed development.
- Access 10 is a full-access driveway on the east side of Jefferson Street located 300 feet north of the proposed public street connection. This driveway provides access to two fast-food restaurants.
- Access 6 is a full-access driveway and is located approximately 275 feet north of Access 6. This driveway serves the apartments on the west side of Jefferson Street and serves two fast-food restaurants and one coffee shop.
- Access 7 is a full-access driveway on the east side of Jefferson Street located approximately 160 feet north of Access 6 and 430 feet south of Oldham Parkway. This driveway serves a coffee shop and small retail building as well as the small grocery store. This access continues north to Oldham Parkway as Access 8.
- Access 8 is a right-in/right-out driveway on the south side of Oldham Parkway located approximately 275 feet east of Jefferson Street intersection and 325 feet west of M-291.
- Access 9 is a right-in only driveway serving the gas station with convenience store and is located approximately 175 feet east of the intersection at Jefferson Street & Persels Road and 400 feet west of M-291.

3.3 TRIP GENERATION

Trip generation estimates were prepared using the ITE *Trip Generation Manual*, 11th Edition. **Table 1** shows the expected trips to be generated by each phase of the proposed development.

TABLE 1: PROPOSED DEVELOPMENT TRIP GENERATION

Land Use Description	ITE LUC	Intensity / Units	Daily	AM Peak Hour			PM Peak Hour			Saturday Peak Hour		
				In	Out	Total	In	Out	Total	In	Out	Total
Phase 1												
Recreational Community Center	495	120,000 SF	3,458	151	78	229	141	159	300	69	59	128
Strip Retail Plaza (<40k)	822	7,500 SF	546	11	7	18	25	24	49	25	24	49
High Turnover Sit-Down Restaurant	932	17,696 SF	1,896	93	76	169	98	62	160	101	97	198
Fast Food Restaurant with Drive-Through	934	7,955 SF	3,716	181	174	355	137	126	263	224	215	439
Coffee Shop with Drive-Through	937	4,075 SF	2,172	178	172	350	79	80	159	179	179	358
Automated Car Wash	948	1 Tunnel	780	20	20	40	39	39	78	19	22	41
Phase 1 Trips (unreduced)			12,568	634	527	1,161	519	490	1,009	617	596	1,213
Phase 1 Pass-By Trips			3,107	106	106	212	128	128	256	82	82	164
Phase 1 Primary Trips			9,462	528	421	949	391	362	753	535	514	1,049
Phase 2												
Multifamily Housing (Mid-Rise)	221	307 Dwelling Units	1,418	28	95	123	73	47	120	63	61	124
Strip Retail Plaza (<40k)	822	2,700 SF	344	4	2	6	9	9	18	9	9	18
Supermarket	850	9,300 SF	1,315	16	11	27	42	41	83	47	47	94
Fast Food Restaurant with Drive-Through	934	7,800 SF	3,646	177	171	348	134	124	258	220	211	431
Coffee Shop with Drive-Through	937	3,075 SF	1,641	135	129	264	60	60	120	135	135	270
Convenience Store/Gas Station	945	10 Fueling Positions	2,571	135	135	270	114	114	228	104	100	204
Phase 2 Trips (unreduced)			10,935	495	543	1,038	432	395	827	578	563	1,141
Phase 2 Pass-By Trips			3,107	106	106	212	128	128	256	82	82	164
Phase 2 Primary Trips			7,829	389	437	826	304	267	571	496	481	977
Full Development												
Total Pass-By Trips			6,214	212	212	424	256	256	512	164	164	328
Total Primary Trips			17,291	917	858	1,775	695	629	1,324	1,031	995	2,026

Appendix D includes the calculations used to determine the trip generation of the proposed development.

Pass-by trip calculation was included in the trip generation estimates in **Table 1** because of the gas station, restaurant, and retail land uses. Pass-by trips occur when a driver already traveling on the street adjacent to the development makes a trip to the development while in route to another destination. Therefore, pass-by trips do not add new trips to the street network, but they do increase turning movements in and out of the development site accesses.

According to the *Trip Generation Handbook*, gas stations and restaurants can have pass-by rates that account for more than 50 percent of trips generated by the land use. This would equate to a significant portion of the existing traffic volume on M-291 being pass-by traffic. Therefore, the total pass-by trips in **Table 1** were estimated to be 15% of the existing volume along M-291 during each peak hour. The total number of total pass-by trips were divided equally between Phase 1 and Phase 2.

Table 2 provides a comparison of the peak hour trips assumed for the site in the analysis MoDOT prepared for the US-50 & M-291 interchange in 2015 and the trip generation for the proposed development. In the MoDOT analysis, the Saturday peak hour was not evaluated.

TABLE 2: COMPARISON OF DEVELOPMENT TRIPS

Study	Trip Type	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Proposed Development Trips	Primary	917	858	1,775	695	629	1,324
	Pass-By	212	212	424	256	256	212
	Total	1,129	1,070	2,199	951	885	1,836
US-50/M-291 Interchange Analysis	Primary	190	182	372	562	575	1,137
	Pass-By	80	51	131	270	280	550
	Total	270	233	503	832	855	1,687
Total Difference		859	837	1,696	119	30	149

The difference in trips in **Table 2** indicates a much higher AM peak hour trip generation than was assumed for the interchange analysis. In the interchange study, a high level of retail land uses was assumed for this site. With all of the restaurant land uses proposed in the development plan, the trip generation in **Table 1** indicates a high level of trip generation during the AM peak hour.

The PM peak hour has a much higher volume existing traffic already traveling through the study intersections than the AM peak hour. Therefore, the PM peak hour is the critical time period for analysis of the study area. During the PM peak hour, the proposed trip generation is slightly higher than what was assumed in the interchange analysis. Therefore, the analysis performed by MoDOT in 2015 is still valid for the interchange and the interchange was not evaluated in this study.

3.4 PROJECT TRIP DISTRIBUTION AND ASSIGNMENT

The estimated trips generated by the proposed development were assigned to the street network based on the trip distribution summarized in **Table 3**. This distribution is based on existing traffic patterns, the surrounding street network, population density, and engineering judgment. These distributions generally follow what was used for MoDOT's analysis for the US-50 & 291 interchange.

TABLE 3: PROPOSED DEVELOPMENT TRIP DISTRIBUTION

Direction To/From	Percentage
North on M-291	50%
South on M-291	20%
East on Bailey Road	5%
West on Persels Road	10%
South on Ward Road	5%
South on Jefferson Street	5%
North on Ward Road	5%
Total	100%

Peak hour site trips are predominately expected to be traveling to/from the north and south on M-291 as it is an expressway that connects to the regional highway system. Likewise, pass-by trips are expected to be from drivers traveling along M-291.

Detailed distribution patterns through the study intersections were developed for each phase of the proposed development. The Phase 1 street network and study intersections are shown on **Exhibit 5**. The Phase 1 primary trip distribution in shown on **Exhibit 6** and the Phase 1 pass-by trip distribution in shown on **Exhibit 7**. The proposed Phase 1 site trip assignments are illustrated on **Exhibit 8**. The proposed Phase 1 site trip assignments were added to the Existing Conditions traffic volumes. **Exhibit 9** illustrates the Existing plus Phase 1 Development peak hour traffic volumes.

For **Exhibit 9**, the Existing Conditions traffic volumes were adjusted for the realignment and change to LIRIRO access at Oldham Parkway & Jefferson Street. Westbound right-turn and southbound left-turn movements were changed to be east/west through movements. Southbound through movements were adjusted to be eastbound right-turn movements. Northbound through movements were adjusted to become northbound right-turn movements. These adjusted movements were then assigned to be eastbound U-turn movements at Oldham Parkway & M-291.

The Phase 1 and 2 street network and study intersections are shown on **Exhibit 12**. The Phase 2 primary trip distribution in shown on **Exhibit 13** and the Phase 2 pass-by trip distribution in shown on **Exhibit 14**. The proposed Phase 2 site trip assignments are illustrated on **Exhibit 15**. The proposed Phase 2 site trip assignments were added to the Existing plus Phase 1 Development traffic volumes. **Exhibit 16** illustrates the Existing plus Phase Full Development peak hour traffic volumes.

4.0 ACCESS MANAGEMENT

The City of Lee's Summit's *Access Management Code* (AMC) provides criteria for minimum spacing between intersections and driveways, throat lengths, and the need for turn lanes at intersections. These items are discussed in the following paragraphs.

4.1 ACCESS SPACING

The AMC includes requirements for minimum spacing between street connections, depending on street classification and the type of access. Along commercial collector streets such as Oldham Parkway and Jefferson Street, the minimum spacing for full access intersections is 300 feet, measured between centerlines. Based on the intersection spacings described in Section 3.2 of this study, the relocated Oldham Parkway & Jefferson Street intersection meets the minimum spacing requirements. Accesses 1 through 4 along Oldham Parkway also meet the minimum spacing requirements. Access 5 in the northwest corner of the site is spaced 200 feet east of an existing driveway to an office building, which does not meet the minimum spacing requirement. It is worth noting that Access 5 is in the location of an existing driveway and is expected to have a low volume of traffic.

Access 8 is a RIRO access along the south side of Oldham Parkway. This access is located 325 feet west of M-291, which is within the functional area of the intersection.

Along Jefferson Street, none of the proposed accesses meet the minimum spacing requirements. Closely spaced driveways are proposed due to the small lot sizes of the proposed development and the lack of access from other sides of the sites. Efforts have been made to share access with adjoining properties wherever possible.

For driveways along minor arterial streets such as Persels Road the minimum spacing is 400 feet. Access 9 is a right-in only driveway that just meets the minimum spacing from M-291, however the spacing to Jefferson Street is not met. As a right-in only driveway with a separate right-turn lane, the spacing from Jefferson Street should not cause any safety or operational concerns. To ensure that the driveway operates as right-in only, a raised median on Persels Road would be appropriate.

4.2 THROAT LENGTH

A driveway's throat length is the distance along a driveway from the intersecting roadway to the first location on site where a driver can make a turn. Adequate throat lengths minimize the potential for inbound traffic to queue onto the public street. The throat length also provides space for outbound traffic to queue without adversely impacting site circulation.

The throat length requirements in the *Access Management Code* are based on the number of trips generated by a development and the amount of stacking that will occur at the access driveway. The provided and required throat lengths at each site access point are provided in **Table 4** and are based on the Existing Plus Full Development traffic volumes shown on **Exhibit 16**.

TABLE 4: DRIVEWAY THROAT LENGTH

Site Driveway		Approach	Peak Hour Trips			Provided Throat Length	Required Throat Length
			AM	PM	Sat		
2	Jefferson Street	SB	326	280	310	290 feet	100 feet
6	Access 1	EB	21	18	26	75 feet	50 feet
7	Access 2	EB	294	169	319	250 feet	100 feet
		WB	382	364	408	300 feet	125 feet
8	Access 3	EB	88	79	89	100 feet	75 feet
		WB	91	75	98	50 feet	75 feet
9	Access 4	NB	19	16	20	65 feet	50 feet
10	Access 5	NB	18	16	20	100 feet	50 feet
11	Public Street	WB	238	182	256	105 feet	100 feet
12	Access 10	WB	93	70	106	280 feet	100 feet
13	Access 6	EB	125	85	147	90 feet	100 feet
		WB	229	190	244	60 feet	100 feet
14	Access 7	WB	142	137	169	235 feet	100 feet
15	Access 8	NB	65	47	68	90 feet	75 feet
16	Access 9	NB	146	134	161	110 feet	100 feet

The throat lengths provided in **Table 4** indicate that nearly all driveways meet the minimum throat length requirements. At the westbound approach of Access 3, the throat length is just below the required throat length. At Access 6, both the eastbound and westbound approaches have throat lengths that are less than the required throat length. Access 10 also has a throat length less than the required throat length. Queuing within the throat length of the driveways will be discussed in the Intersection Capacity Analysis section of this study.

The *Access Management Code* states that for driveways with 100 vehicles per hour, the minimum throat length may be longer if necessary to accommodate queue storage. Queue storage for the applicable driveways is discussed in the Existing plus Development Analysis section of this study.

4.3 TURN LANE ANALYSIS

Left-turn lanes are to be provided on collector streets at connections where the left-turn volume is at least 30 vehicles in any hour. The site plan indicates that left-turn lanes are provided on Oldham Parkway at all such locations, except for Access 3. At Access 3, the northbound left-turn volume exceeds 30 during each peak hour. With only 300 feet of separation between Access 2 and 3, there is not enough distance along Oldham Parkway to provide left-turn lanes of at least 150 feet for both of these intersections. Access 3 should be shifted north and a northbound left-turn lane with a minimum storage length of 150 feet should be provided. All proposed left-turn lanes on Oldham Parkway should have a minimum storage length of 150 feet.

Jefferson Street is currently a three-lane street with a center two-way left-turn lane. The realigned portion of Jefferson Street should also be a three-lane street. This provides left-turn lanes at all accesses proposed along Jefferson Street.

The AMC states that right-turn lanes are required on collector streets where the right-turn volume is at least 100 vehicles in any hour. All right-turn lanes should have a minimum storage length of 150 feet plus an appropriate taper.

For the proposed development, right-turn lanes are shown on the site plan at all locations with 100 right-turns in a peak hour, except for the westbound right-turn movement at Oldham Parkway & Jefferson Street. At this intersection there are two westbound lanes proposed. The right lane terminates as a right-turn lane at Access 2. There is minimal right-turn volume at Access 2. Therefore, the right lane on Oldham Parkway will essentially function as the right-turn lane at Jefferson Street, since nearly all the volume in this lane will be turning right at Jefferson Street.

Exhibit 10 shows the Existing plus Phase 1 geometry and intersection controls, which includes the turn lanes shown on the site plan and the turn lanes identified based on access management requirements. Similarly, **Exhibit 17** shows the Existing plus Full Development geometry and intersection controls.

5.0 INTERSECTION CAPACITY ANALYSIS

5.1 LEVEL OF SERVICE OVERVIEW

Intersection capacity analysis was performed at the study intersections for the following three scenarios:

- Existing Conditions
- Existing + Phase 1 Development Conditions
- Existing + Full Development Conditions
- Future Conditions

The capacity analysis was performed for the weekday AM and PM peak hours using Synchro traffic modeling software to determine intersection delay and level of service (LOS). Calculations were performed based on the methodologies outlined in the *Highway Capacity Manual (HCM)*, 7th Edition, which is published by the Transportation Research Board.

LOS is a qualitative measure used by traffic engineers to describe the operations of an intersection. It ranges from A to F, with A being the best and F being the worst level of operation. LOS A conditions are characterized by minimal vehicle delay and free-flow conditions, while LOS F is characterized by long vehicle delay – usually when demand exceeds available roadway capacity. **Table 5** shows the definition of LOS for unsignalized and signalized intersections.

TABLE 5: LEVEL OF SERVICE

Level of Service	Average Control Delay (seconds/vehicle) at:	
	Unsignalized Intersections	Signalized Intersections
A	0 – 10	0 – 10
B	> 10 – 15	> 10 – 20
C	> 15 – 25	> 20 – 35
D	> 25 – 35	> 35 – 55
E	> 35 – 50	> 55 – 80
F	> 50	> 80

Levels of service are evaluated based on the movement groupings which are required to yield to other traffic. Typically, these are left turns off the major street and the side street approaches for two-way stop-controlled intersections. For signalized intersections each movement grouping is evaluated, and LOS is evaluated for the intersection as a whole.

The City of Lee's Summit has adopted LOS C as the minimum desirable LOS. However, LOS D and E may be considered acceptable for low to moderate traffic volumes, the availability of alternate routes, and the duration of activity resulting in lower LOS.

Traffic queues were also evaluated as part of the analyses. Long traffic queues which extend beyond the amount of storage available, either between intersections or within turn lanes, can have significant impacts on operations. The 95th percentile vehicular queues were analyzed to ensure the analyses are reflective of the physical constraints of the study intersections and to identify if additional storage is needed for turn

lanes. The 95th percentile queue represents the queue length that has only a 5% chance of being exceeded during the analysis period.

5.2 EXISTING CONDITIONS ANALYSIS

Capacity analysis was conducted for existing traffic conditions at the study intersections to determine baseline conditions for the existing analysis year and to calibrate the models. The analysis was performed for weekday AM, PM, and Saturday peak hours and is based on the traffic volumes, lane configurations, and traffic controls shown in **Exhibits 2** and **3**. The 95th percentile queues for each movement are shown in **Exhibit 4**. The Synchro reports are provided in **Appendix E**.

Table 6 provides a summary of the capacity analysis at the study intersections.

TABLE 6: EXISTING PEAK HOUR CONDITIONS

Intersection		Movement	Operational Analysis Results					
			AM Peak Hour		PM Peak Hour		Sat Peak Hour	
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
1	Oldham Pkwy. & Ward Road	Signalized	19.1	B	17.7	B	17.9	B
2	Oldham Pkwy. & Jefferson Street	NB	11.6	B	9.6	A	9.2	A
		SB	15.0	B	11.1	B	9.4	A
3	M-291 & Oldham Parkway	Signalized	5.3	A	8.3	A	4.4	A
4	Persels Road & Jefferson Street	Signalized	27.2	C	28.5	C	17.0	B
5	M-291 & Persels Rd./ Bailey Rd.	Signalized	34.1	C	47.1	D	21.7	C

The results in **Table 6** indicate that most of the study intersections are projected to operate at acceptable levels of service. During the PM peak hour, the intersection at M-291 & Persels Road/Bailey Road is projected to operate at LOS D. This is primarily due to the long cycle length on M-291. It is not uncommon for intersections along high volume roadways such as M-291 with 8-phase signals to operate at LOS D. During the PM peak hour, the eastbound left-turn movement at the intersection has a 95th percentile queue length of 202 feet, which exceeds the available storage length of one of the two turn lanes for this movement. The westbound left-turn lane at the closely spaced Market Street intersection limits the available storage length for the westbound left-turn movement at the M-291 intersection. The southbound through movement has a 95th percentile queue length of 843 feet, which is a lengthy queue, but it does clear within one cycle of the signal.

Several other queue lengths are worth noting. At the Persels Road & Jefferson Street intersection, the westbound left-turn queue nearly fills the available storage during the AM peak hour. This is most likely due to school traffic arriving at Summit Christian Academy, which is located south of the intersection on Jefferson Street.

At Oldham Parkway and Ward Road, southbound left-turn queues slightly exceed the short storage length of the left-turn lane. There is no ability to lengthen this lane because that would reduce the length of the adjacent northbound left-turn lane at the Ward Road & 3rd Street intersection.

5.3 EXISTING + PHASE 1 DEVELOPMENT CONDITIONS ANALYSIS

Capacity analysis was conducted for Existing plus Phase 1 Development Conditions at the study intersections to determine the impact of site generated traffic from Phase 1 of the proposed development. The cycle lengths were optimized at the study intersections for the analysis. The analysis was performed for weekday AM, PM and Saturday peak hours and is based on the traffic volumes, lane configurations, and traffic controls shown in **Exhibits 9** and **10**. The 95th percentile queues for each movement are shown in **Exhibit 11**. The Synchro reports are provided in **Appendix E**.

Table 7 provides a summary of the capacity analysis at the study intersections.

TABLE 7: EXISTING + PHASE 1 DEVELOPMENT PEAK HOUR CONDITIONS

Intersection		Movement	Operational Analysis Results					
			AM Peak Hour		PM Peak Hour		SAT Peak Hour	
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
1	Oldham Pkwy. & Ward Road	Signalized	15.9	B	14.5	B	14.7	B
2	Oldham Pkwy. & Jefferson Street	NB	11.0	B	10.6	B	10.5	B
		SB	10.9	B	10.2	B	10.5	B
		EBL	9.3	A	8.7	A	8.9	A
		WBL	9.6	A	8.9	A	8.9	A
3	M-291 & Oldham Parkway	Signalized	16.8	B	24.2	C	17.6	B
4	Persels Road & Jefferson Street	Signalized	28.1	C	48.0	D	14.6	B
5	M-291 & Persels Rd./ Bailey Rd.	Signalized	25.4	C	44.3	D	20.3	C
6	Oldham Parkway & Access 1	EBR	12.4	B	12.1	B	12.8	B
7	Oldham Parkway & Access 2	NBL	7.9	A	7.9	A	7.9	A
		SBL	7.8	A	7.7	A	7.6	A
		EBL	18.4	C	15.6	C	16.8	C
		EBT	11.8	B	11.4	B	11.4	B
		WBL	151.4	F	64.1	F	136.1	F
		WBT	16.1	C	14.4	B	14.6	B
8	Oldham Parkway & Access 3	NBL	7.6	A	7.6	A	7.5	A
		SBL	7.7	A	7.6	A	7.5	A
		EB	9.7	A	9.6	A	9.6	A
		WB	12.7	B	11.8	B	11.5	B
9	Oldham Parkway & Access 4	NB	9.7	A	9.6	A	9.4	A
		WBL	7.5	A	7.5	A	7.5	A
10	Oldham Parkway & Access 5	NB	9.8	A	9.6	A	9.4	A
		WBL	7.5	A	7.5	A	7.5	A

The results in **Table 7** indicate that most intersections operate acceptably with the addition site trips generated from Phase 1 of the proposed development. As in the Existing Conditions scenario, the M-291 & Persels Road/Bailey Road is projected to operate at LOS D during the PM peak hour. The 95th percentile queue length for the eastbound left-turn movement is projected to be 264 feet, which will extend back through the Persels Road & Market Street intersection. Long queues of southbound through traffic are projected during the PM peak hour, similar to existing conditions at the intersection.

The intersection at Persels Road & Jefferson Street is also projected to operate at LOS D. Westbound left-turn queues are projected to slightly increase with the addition of development traffic but are expected to be contained within the storage length of the turn lane.

The 95th percentile queue lengths for the movements exiting the site driveways are projected to be contained within the available throat lengths. While the provided throat length at Access 3 does not meet the minimum requirement, it is not expected to have an adverse impact on operations at the site driveway intersection.

All movements at the site driveways are projected to operate at LOS A or B during all peak hours except for one. The westbound left-turn movement at the Oldham Parkway & Access 2 intersection is projected to operate at LOS F across all peak hours. Due to the lower level of service for the movement, the intersection was also evaluated with all-way stop control. Lengthy queues and delays are projected for some movements with all-way stop control. As a signalized intersection an overall LOS A is projected for each peak hour. The evaluation of traffic signal control is discussed in the paragraphs below.

The decision to install a traffic signal is based on an engineering study as described in the MUTCD. Signal warrants included in the MUTCD are to be considered. The peak hour traffic volumes at the intersection were compared to the warranting thresholds of the Peak Hour Warrant. The volumes were found to be just below the warranting thresholds for this warrant. The signal warrant analysis is included in **Appendix F**.

The peak hour traffic volumes were also compared to the warranting thresholds of the Four-Hour Warrant. Each of the peak hour volumes far exceeds the minimum warranting thresholds of the Four-Hour Warrant. The signal warrant analysis is included in **Appendix F**. Traffic projections have not been developed for other hours of the day, so four hours of traffic volumes are not shown in the warrant analysis. Some assumptions can be made about other hours of an average day. The AM and PM peak hour traffic counts show that the volumes during both count periods, totaling 4 hours, were very similar to the peak hour volumes. Likewise, the time-of-day distributions from the *Trip Generation Manual* indicate that the hourly trips from the proposed land uses are consistent from 7:00 to 9:00 AM and from 4:00 to 6:00 PM. Therefore, it is likely that at least one other hour in the morning would have a similar volume to the AM peak hour. Also at least one other hour in the afternoon would have a similar volume to the PM peak hour. This indicates that the Four-Hour Warrant is expected to be satisfied.

The City of Lee's Summit encourages complete street design concepts to enhance access and safety for all road users. Pedestrian volumes are not considered in conjunction with the vehicular volume traffic signal warrants, but pedestrian access should be considered when evaluating the need for traffic signal installation. The development should include sidewalks and facilities to encourage walking and pedestrian access. It is likely that pedestrians would cross Oldham Parkway at Drive 2 when walking between the restaurants on the east side of the street and the field house and eventually the apartments that will be built during Phase 2 of the development on the west side of the street. A signal at Drive 2 would provide the safest form of control for pedestrians, due to the width of the intersection and volume of turning traffic.

The MUTCD states that the safe and efficient movement of all road users is the primary consideration in the engineering study to determine whether to install a traffic control signal. As a signalized intersection, vehicular delays will be minimal. The Four-Hour Warrant is expected to be satisfied with Phase 1 development traffic. Signalization will provide the safest form of control for pedestrians crossing Oldham Parkway. Given these factors, traffic signal installation is recommended for the Oldham Parkway & Drive 2 intersection.

A number of lanes and access control medians are shown on the site plan for Oldham Parkway west of M-291. The analysis indicates that these improvements operate well during the peak hours. The following list documents these improvements:

Oldham Parkway & M-291

- Construct an eastbound left-turn lane with a minimum storage length of 350 feet plus taper.
- Construct a second eastbound left turn lane. This lane will extend at least 300 feet west of Jefferson Street plus taper.
- Construct an eastbound right-turn lane with a minimum storage length of 350 feet plus taper.
- Construct two westbound lanes on Oldham Parkway, extending east of the intersection. The right lane should terminate as a right-turn lane at Access 2, and the left lane will continue as the through lane.

Oldham Parkway & Jefferson Street

- Construct a raised median on Oldham Parkway to restrict Jefferson Street access to left-in/right-in/right-out.
- Construct an eastbound left-turn lane with a minimum storage length of 150 feet plus taper.
- Construct a westbound left-turn lane with a minimum storage length of 200 feet plus taper.

Oldham Parkway & Access 2

- Install a traffic signal.
- Construct a northbound left-turn lane with a minimum storage length of 150 feet plus taper.
- Construct a southbound left-turn lane with a minimum storage length of 150 feet plus taper.
- Construct the eastbound and westbound approaches with three lanes, to provide one inbound lane and two outbound lanes.

Oldham Parkway & Access 3

- Construct a northbound left-turn lane with a minimum storage length of 150 feet plus taper. This will require moving the access farther to the north to allow for a 150-foot southbound left-turn lane to be constructed at Access 2.

Jefferson Street

- Construct the realigned portion of Jefferson Street as a three-lane roadway with a center two-way left-turn lane.

5.4 EXISTING + FULL DEVELOPMENT CONDITIONS ANALYSIS

Capacity analysis was conducted for Existing plus Full Development Conditions at the study intersections to determine the impact of site generated traffic from Phases 1 and 2 of the proposed development. The cycle lengths were optimized at the study intersections for the analysis. The analysis was performed for weekday AM, PM and Saturday peak hours and is based on the traffic volumes, lane configurations, and traffic controls shown on **Exhibits 16** and **17**. The 95th percentile queues for each movement are shown on **Exhibit 18**. The Synchro reports are provided in **Appendix E**.

Table 8 provides a summary of the capacity analysis at the study intersections.

The results in **Table 8** indicate that the intersections along the Oldham Parkway and the Jefferson Street corridors are projected to operate acceptably with the addition of site trips generated from both phases of the proposed development. The exception is the intersection of M-291 & Persels Road/Bailey Road. The intersection is projected to operate at an overall LOS E during the PM peak hour, with 55.1 seconds of delay. This level of delay slightly exceeds the 55 second threshold for LOS D conditions. Long queues of 900 feet projected for the southbound through lanes, however these queues are projected to clear during each cycle of the signal.

On the eastbound Persels Road approach to the intersection, long queues are projected to extend back to the Jefferson Street intersection with a single shared right-turn/through lane. The need for an eastbound right-turn lane was identified to mitigate this level of queuing. With the separate eastbound right-turn lane, the queue lengths in **Exhibit 18** indicate that all queues in the eastbound through lane are projected to be less than 200 feet.

During the PM peak hour, the eastbound left-turn movement at the intersection is projected to have a 95th percentile queue length of 273 feet, extending through the Market Street intersection. To reduce the number of potential conflict points in this area and provide more queue storage, a raised median is recommended along Persels Road. The median will restrict left-turn movements at the intersection with Market Street; resulting in RIRO access only at Persels Road. Since a left-turn lane will no longer be needed for the Market Street intersection, the eastbound left-turn lane for the M-291 & Persels Road intersection and the westbound left-turn lane for the Persels Road & Jefferson Street intersection can be lengthened.

At the intersection of M-291 & Oldham Parkway, the 95th percentile queue in the southbound right-turn lane is projected to exceed the storage length of the existing turn lane during the PM peak hour. The southbound right-turn lane should be lengthened to provide a storage length equal to the left-turn lanes on the southbound approach.

A summary of the Phase 2 improvements identified is provided below:

Oldham Parkway & M-291

- Lengthen the southbound right-turn lane to provide a minimum storage length of 300 feet plus taper.

Persels Road & M-291

- Construct an eastbound right-turn lane with a minimum storage length of 150 feet plus taper.

Persels Road & Market Street

- Construct a raised median on Persels Road to restrict Market Street access to right-in/right-out.

Persels Road & Gas Station Access

- Construct a westbound right-turn lane with a minimum storage length of 150 feet plus taper.

The Persels Road & Jefferson Street intersection is projected to operate at LOS D during all peak hours. The queues for the westbound left-turn movement are projected to exceed the storage available for this movement. Some additional storage can be provided for this movement when the median is added to Persels Road.

At the site driveways, the 95th percentile queue lengths are expected to be contained within the available throat length, even for the driveways with throats that are less the lengths required by the *Access Management Code*. Therefore the short throat lengths are not expected to have an adverse impact on operations at the site driveway intersections.

TABLE 8: EXISTING + FULL DEVELOPMENT PEAK HOUR CONDITIONS

Intersection		Movement	Operational Analysis Results					
			AM Peak Hour		PM Peak Hour		SAT Peak Hour	
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
1	Oldham Pkwy. & Ward Road	Signalized	15.7	B	14.6	B	14.8	B
2	Oldham Pkwy. & Jefferson Street	NB	13.7	B	12.3	B	13.3	B
		SB	10.8	B	10.2	B	10.3	B
		EBL	9.2	A	8.7	A	8.8	A
		WBL	11.2	B	9.9	A	10.5	B
3	M-291 & Oldham Parkway	Signalized	24.9	C	27.7	C	27.4	C
4	Persels Road & Jefferson Street	Signalized	46.7	D	48.7	D	49.7	D
5	M-291 & Persels Rd./ Bailey Rd.	Signalized	35.0	D	55.1	E	32.1	C
6	Oldham Parkway & Access 1	EBR	12.3	B	12.2	B	12.8	B
7	Oldham Parkway & Access 2	Signalized	8.3	A	7.7	A	8.6	A
8	Oldham Parkway & Access 3	NBL	7.6	A	7.6	A	7.6	A
		SBL	7.7	A	7.6	A	7.5	A
		EB	9.7	A	9.7	A	9.6	A
		WB	12.6	B	11.9	B	11.6	B
9	Oldham Parkway & Access 4	NB	9.7	A	9.7	A	9.5	A
		WBL	7.5	A	7.6	A	7.5	A
10	Oldham Parkway & Access 5	NB	9.8	A	9.7	A	9.5	A
		WBL	7.5	A	7.6	A	7.5	A
11	Jefferson Street & Public Street	SBL	7.7	A	7.6	A	7.6	A
		WB	14.4	B	11.7	B	12.4	B
12	Jefferson Street & Access 10	SBL	7.7	A	7.6	A	7.6	A
		WB	10.6	B	9.8	B	10.0	B
13	Jefferson Street & Access 6	NBL	8.0	A	7.6	A	7.6	A
		SBL	7.7	A	7.6	A	7.7	A
		EB	15.8	C	12.1	B	13.2	B
		WB	12.6	B	10.9	B	11.1	B
14	Jefferson Street & Access 7	SBL	8.0	A	7.8	A	7.9	A
		WB	12.0	B	10.6	B	11.2	B
15	Oldham Parkway & Access 8	NBR	9.9	A	9.7	A	9.9	A

5.5 FUTURE (YEAR 2044) CONDITIONS ANALYSIS

For the future year, background traffic growth was added to the existing traffic volumes, then the proposed development and planned development site trips were added. To estimate background traffic growth, the existing traffic volumes at the study intersections were assumed to increase at a rate of 1% per year to estimate conditions in 2044. In the future, development is assumed on the undeveloped land to the east of M-291. The same development trip assumptions from the MoDOT traffic analysis for the US-50 & M-291 interchange were used.

The Future (Year 2044) peak hour traffic volumes are shown on **Exhibit 12**.

In the future additional capacity improvements are needed to achieve acceptable levels of service. These improvements are listed below:

M-291 & Oldham Parkway

- Extend the southbound right-turn lane to the M-291 southbound exit ramp from US-50. This is consistent with the future conditions analysis from the US-50 & M-291 interchange project.

M-291 & Persels Road/Bailey Road

- Construct an additional eastbound through lane.
- Construct an additional westbound through lane. This lane will terminate as a right-turn lane at Jefferson Street.
- Construct an additional northbound left-turn lane.
- Construct an additional southbound left-turn lane.
- Construct an additional southbound through lane.

Capacity analysis was conducted for Future Conditions at the study intersections to determine the need for capacity improvements within the study network in the future. The cycle lengths were optimized at the study intersections for the analysis. The analysis was performed for weekday AM, PM and Saturday peak hours and is based on the traffic volumes, lane configurations, and intersection controls shown on **Exhibits 19** and **20**. The 95th percentile queues for each movement are shown on **Exhibit 21**. The Synchro reports are provided in **Appendix F**.

Table 9 provides a summary of the capacity analysis at the study intersections.

The analysis results indicate that the signalized intersections along M-291 are projected to operate at LOS E in the future during the PM and Saturday peak hour. Several individual movements at these intersections are projected to operate over capacity in the future. Additional improvements will be needed to achieve acceptable levels of service at these intersections if the future volumes projected in this study are realized.

At the site driveways, all 95th percentile queue lengths are expected to be contained within the available throat length.

TABLE 9: FUTURE (YEAR 2044) PEAK HOUR CONDITIONS

Intersection		Movement	Operational Analysis Results					
			AM Peak Hour		PM Peak Hour		SAT Peak Hour	
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
1	Oldham Pkwy. & Ward Road	Signalized	18.3	B	17.0	B	17.6	B
2	Oldham Pkwy. & Jefferson Street	NB	14.5	B	12.7	B	13.5	B
		SB	10.9	B	10.3	B	10.4	B
		EBL	9.3	A	8.8	A	8.9	A
		WBL	12.0	B	9.9	A	10.2	B
3	M-291 & Oldham Parkway	Signalized	28.6	C	64.1	E	59.9	E
4	Persels Road & Jefferson Street	Signalized	46.0	D	44.7	D	46.9	D
5	M-291 & Persels Rd./ Bailey Rd.	Signalized	34.7	C	62.1	E	44.5	D
6	Oldham Parkway & Access 1	EBR	12.5	B	12.6	B	13.1	B
7	Oldham Parkway & Access 2	Signalized	8.5	A	7.9	A	8.8	A
8	Oldham Parkway & Access 3	NBL	7.6	A	7.7	A	7.6	A
		SBL	7.8	A	7.6	A	7.6	A
		EB	10.0	B	10.2	A	9.9	A
		WB	13.4	B	12.8	B	12.2	B
9	Oldham Parkway & Access 4	NB	10.0	A	10.1	B	9.7	A
		WBL	7.6	B	7.6	A	7.5	A
10	Oldham Parkway & Access 5	NB	10.1	B	10.0	B	9.7	A
		WBL	7.6	A	7.6	A	7.5	A
11	Jefferson Street & Public Street	SBL	7.7	A	7.6	A	7.6	A
		WB	15.3	C	11.4	B	11.6	B
12	Jefferson Street & Access 10	SBL	7.7	A	7.6	A	7.6	A
		WB	10.9	B	9.4	B	9.4	B
13	Jefferson Street & Access 6	NBL	8.7	A	7.6	A	7.5	A
		SBL	7.8	A	7.7	A	7.8	A
		EB	17.2	C	12.0	B	12.6	B
		WB	13.3	C	12.1	B	13.1	B
14	Jefferson Street & Access 7	SBL	8.0	A	7.8	A	7.9	A
		WB	12.4	B	10.6	B	11.0	B
15	Oldham Parkway & Access 8	NBR	9.9	A	9.7	A	10.0	A

6.0 CONCLUSIONS AND RECOMMENDATIONS

A traffic impact study for the Oldham Village development has been prepared by Kimley-Horn. The proposed site is generally located in the southwest quadrant of the US-50 and M-291 interchange in Lee's Summit, Missouri. The purpose of this study was to assess the impact of the proposed development on the surrounding transportation system. The following provides a summary of the analysis.

Intersection capacity analysis was performed at the study intersections for the following scenarios:

- Existing Conditions
- Existing + Phase 1 Development Conditions
- Existing + Full Development Conditions
- Future Conditions

All study intersections were found to currently be operating at acceptable levels of service. Some long queues were observed at several locations that exceed the exiting storage length of the turn lanes.

The proposed development is projected to generate 17,291 daily trips, 1,775 AM peak hour trips, 1,324 PM peak hour trips, and 2,026 Saturday peak hour trips. These trips represent primary trips generated by the site, and do not include pass-by trips. During the PM peak hour, the proposed trip generation is slightly higher than what was assumed in the interchange analysis prepared by MoDOT in 2015. The PM peak hour is the critical time period for analysis of the study area. Therefore, the analysis performed by MoDOT in 2015 is still valid for the interchange and the interchange was not evaluated in this study.

The proposed Oldham Village development is anticipated to be constructed in two phases. Phase 1 includes the realignment of Oldham Parkway through the northern portion of the site. A portion of Jefferson Street will also be realigned to the west to create greater separation from M-291. The Phase 1 portion of the site will be accessed from six driveway intersections with public streets. Phase 1 includes several restaurants and a large building for fitness and athletic events.

Phase 2 includes an apartment building in the southwest corner of Oldham Parkway & Jefferson Street. A number of pad sites are also proposed east of Jefferson Street in Phase 2. The Phase 2 portion will be accessed primarily from four intersections along Jefferson Street, one access along Oldham Parkway, and one access along Persels Road.

The proposed accesses along Oldham are generally spaced appropriately. Two of the accesses have throats that are shorter than required, but all queues are projected to be contained within the throat lengths. On Jefferson Street, the proposed accesses do not meet the minimum spacing requirements from the *Access Management Code*. However, all of the accesses are projected to operate acceptably, and all queues are projected to be contained within the available throat lengths.

Several improvements are shown on the site plan or have been identified in this study to mitigate the addition of Phase 1 development site traffic and achieve acceptable operations. These improvements are listed below:

Oldham Parkway & M-291

- Construct an eastbound left-turn lane with a minimum storage length of 350 feet plus taper.
- Construct a second eastbound left turn lane. This lane will extend at least 300 feet west of Jefferson Street plus taper.
- Construct an eastbound right-turn lane with a minimum storage length of 350 feet plus taper.
- Construct two westbound lanes on Oldham Parkway, extending east of the intersection. The right lane should terminate as a right-turn lane at Access 2, and the left lane will continue as the through lane.

Oldham Parkway & Jefferson Street

- Construct a raised median on Oldham Parkway to restrict Jefferson Street access to left-in/right-in/right-out.
- Construct an eastbound left-turn lane with a minimum storage length of 150 feet plus taper.
- Construct a westbound left-turn lane with a minimum storage length of 200 feet plus taper.

Oldham Parkway & Access 2

- Install a traffic signal.
- Construct a northbound left-turn lane with a minimum storage length of 150 feet plus taper.
- Construct a southbound left-turn lane with a minimum storage length of 150 feet plus taper.
- Construct the eastbound and westbound approaches with three lanes, to provide one inbound lane and two outbound lanes.

Oldham Parkway & Access 3

- Construct a northbound left-turn lane with a minimum storage length of 150 feet plus taper. This will require moving the access farther to the north to allow for a 150-foot southbound left-turn lane to be constructed at Access 2.

Jefferson Street

- Construct the realigned portion of Jefferson Street as a three-lane roadway with a center two-way left-turn lane.

Signal installation is recommended for the Oldham Parkway & Drive 2 intersection because it will be the most efficient form of control for vehicles, the Four-Hour Warrant is expected to be satisfied, and signalization will provide the safest form of control for pedestrians crossing Oldham Parkway.

Additional improvements are identified for Phase 2 of the development. These improvements are listed below:

Oldham Parkway & M-291

- Lengthen the southbound right-turn lane to provide a minimum storage length of 300 feet plus taper.

Persels Road & M-291

- *Construct an eastbound right-turn lane with a minimum storage length of 150 feet plus taper.*

Persels Road & Market Street

- Construct a raised median on Persels Road to restrict Market Street access to right-in/right-out.

Persels Road & Gas Station Access

- Construct a westbound right-turn lane with a minimum storage length of 150 feet plus taper.

Future Conditions were also analyzed to determine the need for capacity improvements within the study network. Additional improvements were identified for the future at the M-291 & Persels Road intersection, such as three southbound through lanes dual north/south left-turn lanes, and two east/west through lanes. The signalized intersections along M-291 are projected to operate at LOS E during the PM and Saturday peak hour. Additional improvements will be needed to achieve acceptable levels of service at these intersections if the future volumes projected in this study are realized.

Lot Number	Lot Area (Sq. Ft.)	Building Area	Parking	Ratio
1	209649.79	0	536	0
2	370916.90	120000	505	4.2
3	67271.42	5500	100	18.1
4	116312.91	9696	165	17
5	110033.60	8000	141	17.6
5-A	19459.32	0	26	0
6	43311.53	2850	40	14
7	44532.00	930	20	21.5
8	73114.12	5355	75	14
9	53805.91	3900	19	4.8
10	50513.21	4550	54	11.8
11	399182.25	80896	469	5.7
12	53907.80	2500	35	14
13	65150.44	9300	50	5.3
14	43517.73	2571	38	14.7
15	34649.16	973	8	8.2
16	54371.71	2600	40	15.3
17	50472.15	2850	40	14
18	96832.50	4500	46	10.2
TRACT A	98865.19	0	0	0

Access 5
10
Access 4
9
Access 3
8
Access 2
7
Access 1
6
Access 8
2
3
15
Access 7
14
Access 6
13
Access 10
12
11
17
Access 9

Lot 1
Lot 2
Lot 3
Lot 4
Lot 5
Lot 5-A
Lot 6
Lot 7
Lot 8
Lot 9
Lot 10
Lot 11
Lot 12
Lot 13
Lot 14
Lot 15
Lot 17
Lot 18
Tract A

PROPOSED BUILDING 5,500 SF
FITNESS TENANT 120,000 SQFT
Detention Basin
Access to Park
Access
Access
Access
Public R/W
PHASE 1 PL2023188
EXISTING
NOT PART OF PROJECT
NOT PART OF PROJECT
EXISTING
NOT PART OF PROJECT
Proposed Building
RW COR NE 1/4 SE 1/4 SEC 7, TWP 47 RGE 31
NORTH LINE NE 1/4 SE 1/4 SEC 7 TWP 47 RGE 31
NE COR SE 1/4 SEC 7, TV
EAST LINE NE 1/4 SE 1/4 SEC 7 TWP 47 RGE 31
WEST LINE NW 1/4 SW 1/4 SEC 8 TOWNSHIP 47 RANGE 31
EXISTING RESIDENTIAL TO REMAIN

North

SCALE: 1" = 100'
0 50' 100' 200'

SITE PLAN OVERALL

C: 100

REVISIONS	
1	REV. 6/25/2024
2	REV. 7/9/2024
	REV. 8/7/2024

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SITE PLAN OVERALL
Phase 2 Preliminary Development Plans for:
Oldham Village
LEE'S SUMMIT, JACKSON COUNTY, MISSOURI

Project:
OLDHAM VILLAGE

Issue Date:
June 10, 2024

Oldham Village
LEE'S SUMMIT, JACKSON COUNTY, MISSOURI

Professional Registration
Missouri
Engineering 2005002186-D
Surveying 2005003816-D
Kansas
Engineering E-1665
Surveying LS-218
Oklahoma
Engineering 6254
Nebraska
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