CIVIL ENGINEERING / SURVEYING / UTILITIES

Traffic Impact Study

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East Village

Lee's Summit, Missouri



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1.0 INTRODUCTION

This traffic impact study has been prepared for the East Village development, located in the southeast quadrant of the US-50 Highway (US-50) and M-291 Highway (M-291) interchange in Lee's Summit, Missouri. The site is bounded by M-291 to the west, a railroad to 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 the impacts of the proposed development on the surrounding street network and intersections. The study was prepared in accordance with the City of Lee's Summit Access Management Code and the Missouri Department of Transportation (MoDOT) Engineering Policy Guide.

The study includes the following components:

- 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) prepared by Kimley-Horn.
- Trip Generation: Estimation of trip generation rates based on the Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition, by development phase. A supplemental trip generation recommendation from Kittelson & Associates was incorporated for the Warehouse Retailer land use. Kittelson evaluated more than 40 comparable Warehouse Retailer sites to provide a more accurate estimate than the standard ITE rates.
- Trip Distribution and Assignment: Determination of trip distribution and assignment by project phase, including:
    - *Phase 1:* Oldham Parkway North
    - *Phase 2:* Bailey Road North
    - *Phase 3:* 16th Street North = Full Development
- Traffic Operations Analysis: Evaluation of traffic impacts from the proposed development on the surrounding street network, including peak-hour levels of service (LOS), delay times, and 95th-percentile queue lengths.
- Site Access Review: Assessment of proposed access points relative to the City's Access Management Guidelines.
- Mitigation Measures: Identification of potential roadway or traffic control improvements to address operational concerns.
- Signal Warrant Analysis: Evaluation of signal warrants for the intersections of Oldham Parkway & Intersection Node 6 and Bailey Road & Drive 8.
- Future Year Projections: Development of 2045 traffic volume projections.

A summary of the final recommendations and their phasing can be viewed in **Figure 33**.

2.0 EXISTING CONDITIONS

2.1 STUDY AREA

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

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

In coordination with City of Lee's Summit and Missouri Department of Transportation (MoDOT) staff, the following intersections were included in the study for traffic analysis:

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

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

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

The base condition for this study were established using the preceding Oldham Village "West" Traffic Impact Study prepared by Kimley Horn in August 2024. That study included traffic counts collected in October 2022. The existing and projected peak hour traffic volumes entering and exiting Oldham Parkway and Persels Road, along with the Full Development peak hour volumes shown in Exhibit 16 of that study (Existing + Full Development Peak Hour Traffic Volumes), were utilized in this study.

This study also includes two additional M-291 intersections at 16th Street and at Scherer Road/Thompson Drive. To maintain consistency with existing M-291 traffic volumes, the northbound and southbound through volumes collected in 2025 were used.

3.1 OLDHAM VILLAGE "WEST" SITE PLAN

The Oldham Village "West" Traffic Impact Study included 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**.

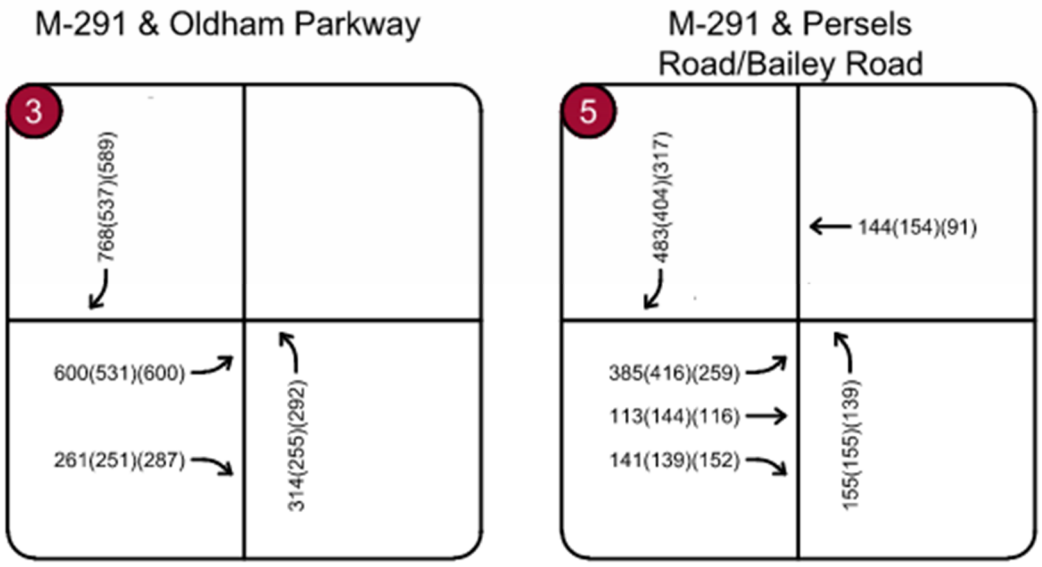
The estimated trips generated by that development were assigned to the street network based on the trip distribution summarized in **Table 1**. That distribution was based on existing traffic patterns, the surrounding street network, population density, and engineering judgement. The distributions were 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 Existing + Full Development Peak Hour Traffic Volumes from Exhibit 16, from the Oldham Village "West" study were used for all entering and exiting trips to and from Oldham Parkway and Persels. These values are provided below.



The existing M-291 through volume peak hour traffic counts, collected in 2025 were, added to these volumes to establish the Base Condition Peak Hour Volumes in **Figure 4**.

3.3 BASE CONDITIONS

For this traffic study, the base conditions include the existing peak hour traffic volumes entering and exiting Oldham Parkway and Persels Road, the proposed Full Development peak hour volumes from Exhibit 16 of that study, and the M-291 through volumes collected in July 2025.

The resulting base condition peak hour volumes are shown in **Figure 4**. All subsequent traffic volume exhibits and analyses are based on these volumes.

Figure 5 illustrates the base condition geometry, lane use, and intersection control, while **Figure 6** presents the base condition 95th percentile queue lengths.

4.0 PROPOSED CONDITIONS

4.1 EAST VILLAGE: OVERALL SITE PLAN

The proposed East Village development is planned to include 22 individual lots, as shown in **Figure 7**. The project will be developed in three phases, 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, curbed Oldham Parkway east of M-291, with a sidewalk along the south side. Three intersections are proposed along the Oldham Parkway extension:

1. The first is an westbound right-out (RO) located approximately 300 feet east of M-291.

2. The second intersection will provide signalized access for Oldham Parkway and a new north–south collector street (Node 6) to service the development area. With Phase 1, the intersection will be constructed to its final configuration and signalized, while the south leg of the intersection will be constructed in Phase 2. Lane configurations for the second intersection are as follows:
    - West leg: 4 lanes (2 EBL, 1 EBT, 1 EBR)
    - East leg: 3 lanes (1 WBL, 1 WBT, 1 WBR)
    - North leg: 3 lanes (1 SBL, 1 SBT, 1 SBR)

3. The third intersection, located approximately 330 feet east of the second intersection, will provide access to the fueling stations for the warehouse retailer.

Phase 2 provides access to Lots 2–13, which include two multifamily housing units totaling 570 units, eight restaurants, one 14,500-square-foot strip retail plaza, and a 3.4-acre public park with a coffee kiosk. Phase 2 proposes a new north–south collector street between Oldham Parkway and Bailey Road. This street will be median-divided with curb and sidewalks on both sides, providing one lane in each direction with additional dedicated left-turn lanes at each intersection. Three intersections are proposed along this collector for internal circulation to the various lots.

Phase 2 also includes two new east–west median-divided internal streets with curb and sidewalks on both sides. These streets provide internal access from the new north–south collector to Lots 2–3 and Lots 12–13.

The new north–south collector will form a T-intersection with Bailey Road approximately 560 feet east of M-291. This intersection will be designed as a westbound RIRO, with median improvements along Bailey Road to allow an eastbound left turn. No southbound through or left-turn movements will be provided.

A second intersection with Bailey Road is also planned in Phase 2, approximately 420 feet east of the new north–south collector. This intersection will initially be constructed as a T-intersection with the south leg built in Phase 3. It will become signalized in Phase 3.

Bailey Road will be improved with Phase 2 from M-291 to the eastern project limit, including an additional eastbound through lane between M-291 and the north–south collector. The existing sidewalk on the south side of Bailey Road will be maintained.

Phase 3 provides access to Lots 14–22, which include two multifamily housing units totaling 350 units, six restaurants, and an open space area.

Phase 3 also constructs a new north–south collector street between Bailey Road and 16th Street. Five intersections are proposed along this collector for internal circulation to the various lots. The collector will be a three-lane section with a center two-way left-turn lane. The new north–south collector will form a T-intersection with 16th Street approximately 290 feet east of M-291.

In addition to the north–south collector, a second collector street with a two-way left-turn lane will connect to a signalized intersection at Bailey Road. This new traffic signal allows vehicles in Phase 3 to make a northbound left turn onto westbound Bailey Road. The signal also provides a protected U-turn movement for vehicles accessing Bailey from the western north–south collector to return to M-291.

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 & Westbound right-out (RO)
  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 560’ east of M-291.
- Node 10: Oldham Parkway & Fueling Stations
  This access is approximately 330’ 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 2** 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**. This distribution was developed through a review of existing traffic patterns, the available surrounding street network, the previous study, and warehouse retailer market data.

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 are shown in **Figure 9**. Pass-by trip volumes from **Table 2** were applied to the Phase 1 intersections in **Figure 10**. **Figure 11** presents the total site trips generated and distributed with pass-by trips for Phase 1.

Figure 12 illustrates the Base Conditions plus Phase 1 peak hour traffic volumes, representing the addition of **Figure 4** to **Figure 11**. These peak hour volumes 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 are shown in **Figure 13**. The 95th percentile queue lengths by lane group, based on analyses conducted in this study, are shown 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 (Node 6). The peak hour volumes for Node 6 for the Base + Phase 1 condition are shown in **Figure 12**. These 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 indicates 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 90’ 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 320’ 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.

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	320 Units	2157	128	31	97	163	103	60	131	66	65
3	Multifamily Housing (Low-Rise)	220	250 Units	1685	100	24	76	125	80	45	103	52	51
4	Fine Dining Restaurant	931	7020 SF	589	5	3	2	55	37	18	75	44	31
5	Fine Dining Restaurant	931	7020 SF	589	5	3	2	55	37	18	75	44	31
6	High-Turnover (Sit-Down) Restaurant	932	8380 SF	898	80	44	36	76	46	30	94	48	46
7	Fast-Food with DTW	934	2700 SF	1262	120	61	59	89	46	43	149	76	73
8	Fine Dining Restaurant	931	7020 SF	589	5	3	2	55	37	18	75	44	31
9	Fast-Food with DTW	934	2700 SF	1262	120	61	59	89	46	43	149	76	73
10	Fast Casual Restaurant	934	7020 SF	682	10	5	5	88	48	40	229	126	103
11	Strip Retail Plaza (<40k)	822	14500 SF	790	34	21	13	96	48	48	65	49	46
12-a	Coffee/Donut Shop w/o DTW	936	250 SF	0	23	12	11	8	4	4	14	7	7
12-b	Public Park	411	3.42 Acres	3	0	0	0	0	0	0	1	1	0
13	Fine Dining Restaurant	931	7640 SF	641	6	3	3	60	40	20	82	48	34
	Phase 2 Trips (unreduced)			11,147	636	271	365	959	572	387	1272	681	591
	Phase 2 Internal Capture Reduce			0	66	34	32	115	71	44	0	0	0
	Phase 2 Pass-By Trips Reduce			0	122	62	60	230	136	94	0	0	0
	Phase 2 Primary Trips			**11,147**	448	175	273	614	365	249	1272	681	591

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 was developed through a review of existing traffic patterns, previous studies, City and State comments, and the additional site access provided by the construction of a new north–south collector street between Oldham Parkway and Bailey Road. Generally, lots in the northern half of the site are assigned more trips to Oldham Parkway, while the southern half is assigned more trips to Persels/Bailey. Pass-by trips were generally directed back along the path from which they originated, with some exceptions.

The new north–south collector provides access to Phase 2 from both Oldham Parkway and Bailey Road, which justifies reducing the proportion of traffic coming to and 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 are shown in **Figure 16**. Pass-by trip volumes from Table 4 were applied to the study intersections in **Figure 17**. **Figure 18** presents the total site trips generated and distributed with pass-by trips for Phase 2.

Figure 19 illustrates the Base Conditions plus Phase 1 and Phase 2 peak hour traffic volumes, representing the addition of **Figure 11** to **Figure 18**. These peak hour volumes 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 are shown in **Figure 20**. The 95th percentile queue lengths by lane group, based on analyses conducted in this study, are shown 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 240’ south of Node 7.
- Node 22: North/South Collector & Drive 10
  This access is approximately 270’ south of Node 21.
- Node 26: North/South Collector & Drive 13
  This access is approximately 220’ south of Node 22.
- Node 23: North/South Collector & Drive 11
  This access is approximately 370’ south of Node 26.
- Node 8: North/South Collector & 16th Street
  This access is approximately 380’ south of Node 23.
- Node 24: 16th Street and Park Driveway
  This access is approximately 1170’ east of Node 8.
- Node 25: Drive 12
  This access is approximately 380 south of Node 20.

4.4.2 PHASE 3 TRIP GENERATION

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

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	Fast Casual Restaurant	930	7020 SF	682	10	5	5	88	48	40	229	126	103
18	Fast-Food with DTW	934	2700 SF	1262	120	61	59	89	43	43	149	79	73
19	Fast-Food with DTW	934	3000 SF	1402	134	68	66	99	52	47	166	85	81
20	Multifamily Housing (Low-Rise)	220	250 Units	1685	100	24	76	125	80	45	103	52	51
21	Single-Family Attached Housing	215	100 Units	720	48	12	36	57	34	23	57	27	30
22	Public Park	411	1.05 Acres	1	0	0	0	0	0	0	0	0	0
	Phase 3 Trips (unreduced)			9,818	800	367	433	745	410	335	1185	612	573
	Phase 3 Internal Capture Reduce			0	177	91	86	91	48	43	0	0	0
	Phase 3 Pass-By Trips Reduce			0	323	164	159	263	137	126	0	0	0
	Phase 3 Primary Trips			**9,818**	**300**	**112**	**188**	**391**	**225**	**166**	**1185**	**612**	**573**

4.4.3 PHASE 3 TRIP DISTRIBUTION AND ASSIGNMENT

For Phase 3, the trips generated were assigned to the street network using the same trip distribution as Phase 2, summarized in **Table 5**.

The extension of the new north–south collector from Phase 2 continues from Bailey Road, where it currently has RIRO access, to 16th Street. Within Phase 3, traffic is generally routed into the site via Persels/Bailey, with northbound M-291 vehicles arriving at 16th Street. Exiting vehicles from Lots 14 and 15 are routed eastbound on Bailey Road to the traffic signal, where they make a U-turn to return to M-291. Most other Phase 3 lots route their traffic to this signalized intersection.

The Phase 3 street network, study intersections, and primary trip distribution are shown in **Figure 22**. Pass-by trip volumes from **Table 6** were applied to the study intersections in **Figure 23**. **Figure 24** presents the total site trips generated and distributed with pass-by trips for Phase 3.

Figure 25 illustrates the Base Conditions plus Phase 1–3 peak hour traffic volumes, representing the East Village full development traffic. This figure results from 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	320 Units	2157	128	31	97	163	103	60	131	66	65
3	Multifamily Housing (Low-Rise)	220	250 Units	1685	100	24	76	125	80	45	103	52	51
4	Fine Dining Restaurant	931	7020 SF	589	5	3	2	55	37	18	75	44	31
5	Fine Dining Restaurant	931	7020 SF	589	5	3	2	55	37	18	75	44	31
6	High-Turnover (Sit-Down) Restaurant	932	8380 SF	898	80	44	36	76	46	30	94	48	46
7	Fast-Food with DTW	934	2700 SF	1262	120	61	59	89	46	43	149	76	73
8	Fine Dining Restaurant	931	7020 SF	589	5	3	2	55	37	18	75	44	31
9	Fast-Food with DTW	934	2700 SF	1262	120	61	59	89	46	43	149	76	73
10	Fast Casual Restaurant	930	7020 SF	682	10	5	5	88	48	40	229	126	103
11	Strip Retail Plaza (<40k)	822	14500 SF	790	34	21	13	96	48	48	95	49	46
12-a	Coffee/Donut Shop w/o DTW	936	250 SF	0	23	12	11	8	4	4	14	7	7
12-b	Public Park	411	3.42 Acres	3	0	0	0	0	0	0	1	1	0
13	Fine Dining Restaurant	931	7640 SF	641	6	3	3	60	40	20	82	48	34
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	Fast Casual Restaurant	930	7020 SF	682	10	5	5	88	48	40	229	126	103
18	Fast-Food with DTW	934	2700 SF	1262	120	61	59	89	46	43	149	76	73
19	Fast-Food with DTW	934	3000 SF	1402	134	68	66	99	52	47	166	85	81
20	Multifamily Housing (Low-Rise)	220	250 Units	1685	100	24	76	125	80	45	103	52	51

21	Single-Family Attached Housing	215	100 Units	720	48	12	36	57	34	23	57	27	30
22	Public Park	411	1.05 Acres	1	0	0	0	0	0	0	0	0	0
	Phase 1-3 Trips (unreduced)			32,669	1758	817	941	2798	1508	1290	3984	2051	1933
	Phase 1-3 Internal Capture Reduce			0	243	125	118	206	119	87	0	0	0
	Phase 1-3 Pass-By Trips Reduce			0	445	226	219	811	426	385	320	159	161
	Phase 1-3 Primary Trips			**32,669**	**1070**	**466**	**604**	**1781**	**963**	**818**	**3664**	**1892**	**1772**

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) establishes minimum spacing requirements between intersections based on street classification and type of access. Along commercial collector streets such as Oldham Parkway and the new north–south (N/S) Collector, the minimum spacing for full access is 300 feet, measured between centerlines.

The spacing criteria are met along Oldham Parkway from M-291 eastward and along the N/S Collector from Oldham Parkway to Bailey Road.

The Oldham Parkway & RO driveway (Node 9) is located approximately 350 feet east of M-291, placing it within the functional area of the intersection.

Along the N/S Collector from Bailey Road (Node 7) to 16th Street (Node 8), several access points do not meet the 300-foot spacing requirement. Efforts have been made to provide shared access between the small lots within the proposed development wherever possible. These lots do not have alternative access opportunities. The City and the Developer may wish to consider classifying this segment as a private collector street.

Figure 29 illustrates intersection spacing distances along the collector streets.

For driveways along Bailey Road, a minor arterial, the minimum required spacing is 400 feet. The spacing between Bailey Road and Drive 8 (Node 20) and the intersection of Bailey Road and the N/S Collector (Node 7) is approximately 420 feet, which meets this criterion.

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 Full 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 & RO	SB	43	216	279	200’	100’
10	Oldham Parkway & Fuel Sta	NB	34	20	22	40’	50’
		SB	29	145	186	125’	100’
11	N/S Collector & Drive 1	EB	110	102	119	75’	100’
		WB	4	52	56	50’	75’
12	N/S Collector & North EW Drive	EB	76	90	127	100’	100’
13	North EW Drive & Drive 2	NB	6	2	4	50’	50’
		SB	4	2	3	70’	50’
14	North EW Drive & Drive 3	WB	69	42	46	80’	75’
16	N/S Collector & South EW Drive	EB	19	88	149	100’	100’
17	South EW Drive & Drive 5	NB	3	34	34	130’	50’
		SB	5	1	3	50’	50’
18	South EW Drive & Drive 6	WB	32	20	22	50’	50’
21	N/S Collector & Drive 9	EB	164	134	162	50’	100’
		WB	31	26	0	70’	60’
22	N/S Collector & Drive 10	EB	80	101	176	70’	100’
23	N/S Collector & Drive 11	EB	74	61	73	60’	75’
		WB	2	1	2	160’	75’
25	Drive 12	EB	51	41	81	130’	75’
		WB	76	45	51	70’	75’

Table 8 identifies six intersection approaches where the proposed site plan does not currently meet the AMC throat distance requirements. It is recommended that the development revisit their site plan to see what accommodations can be made for throat lengths at these locations.

5.3 TURN LANE ANALYSIS

Left-Turn Lanes

Per the City AMC, left-turn lanes are to be provided on collector streets at intersections where the left-turn volume reaches at least 30 vehicles per hour.

The proposed plan provides median-divided left-turn lanes of at least 150 feet in length at all locations along the north–south (N/S) collector between Oldham Parkway (Node 6) and Bailey Road (Node 7). South of Bailey Road (Node 7), the N/S collector transitions to a two-way left-turn (TWLT) lane extending to 16th Street (Node 8).

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 four intersections along the N/S collector that meet this volume criterion (all occur during the Saturday peak hour only):

1. Southbound right-turn at N/S Collector & Drive 1 = 124 vph (Node 11)
2. Southbound right-turn at N/S Collector & N EW Drive = 108 vph (Node 12)
3. Southbound right-turn at N/S Collector & Drive 9 = 154 vph (Node 21)
4. Southbound right-turn at N/S Collector & Drive 10 = 122 vph (Node 22)

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

For minor arterial streets, the AMC requires right-turn lanes where volumes reach at least 60 vehicles per hour. The minimum lane length for an arterial is 150 feet plus taper at intersections with a collector or other streets.

There are two intersections along Bailey Road that meet this criterion:

1. Eastbound right-turn at Bailey Road & N/S Collector = 329 vph (Node 7)
2. Westbound right-turn at Bailey Road & N/S Collector = 114 vph (Node 7)

The proposed site plan accommodates right-turn lanes for both eastbound and westbound movements at Bailey Road & N/S Collector.

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	43.6	D	20.6	C	28.0	C
2	M-291 & Persels/Bailey	Signalized	31.3	C	57.2	E	33.4	C
3	M-291 & 16th Street	WB	21.8	C	20.9	C	16.7	C
4	M-291 & Scherer	Signalized	27.8	C	38.2	D	16.5	C
5	Bailey Road & Hamblen Road	Signalized	13.3	B	14.3	B	14.6	B

The Base Condition delays and levels of service (LOS) for the M-291 intersections with Oldham Parkway and Persels/Bailey Road shown in **Table 10** differ slightly from the Existing + Full Development Peak Hour Conditions reported in the previous study. This is due to two primary factors:

1. The existing M-291 through-traffic volumes were collected three years apart.
2. The long-term car storage land use west of Jefferson Street is now vacant.

Some signal timing adjustments were made to optimize intersection operations, the primary adjustment being an increase in the Saturday cycle length along M-291 from 100 seconds to 120 seconds, and to 130 seconds at M-291 & Scherer.

The results in **Table 10** indicate that the study intersections are projected to operate at acceptable levels of service (LOS D or better) during the AM and Saturday peak hours. During the PM peak hour, the intersections of M-291 & Persels and M-291 & Scherer are projected to operate at LOS E. This is primarily due to the projected M-291 southbound through movement on the two existing southbound lanes.

Intersections of interest:

M-291 & Oldham Parkway (Node 1)

This intersection is expected to operate at LOS D 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 E. It is not uncommon for intersections on high volume roadways to operate at LOS D or worse during peak periods. At this intersection, the eastbound left-turn movement has a 95th percentile queue length of 291 feet, which exceeds the newly constructed eastbound left-turn storage provided with the Oldham Village improvements. The southbound through movement has a 95th percentile queue length of 952 feet. While long, storage is available.

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 1230', which is long, but storage is available.

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 analyses 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	42.8	D	49.0	D	46.5	D
2	M-291 & Persels/Bailey	Signalized	33.2	C	64.9	E	35.7	D
3	M-291 & 16th Street	WB	22.3	C	23.5	C	17.7	C
4	M-291 & Scherer	Signalized	29.5	C	44.3	D	17.9	B
5	Bailey Road & Hamblen Road	Signalized	13.4	B	25.7	C	16.3	B
6	Oldham Pkwy & N/S Collector	Signalized	10.1	B	15.1	B	18.8	B
9	Oldham Pkwy & RO	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 the intersections are projected to operate at acceptable levels of service (LOS D or better) during the AM and Saturday peak hours. During the PM peak hour, the intersection of M-291 & Persels is projected to operate at LOS E, primarily due to the projected M-291 southbound through movement on the two existing southbound lanes.

Intersections of interest:

M-291 & Oldham Parkway (Node 1)

With Phase 1 added, the intersection is projected to operate at LOS D during the PM peak hour. The longest 95th percentile queues identified in **Figure 14** for critical movements are as follows:

Movement	Queue Length	Peak Hour	Storage Available
Northbound Left	170’	SAT peak	250’
Northbound Thru	434’	AM peak	1500’
Southbound Left	326’	SAT peak	310’
Southbound Thru	438’	PM peak	500’
Eastbound Left	364’	SAT peak	300’
Westbound Left	187’	SAT peak	250’
Westbound Right	811’	SAT Peak	720’ (290’ WB stop bar to RO + 255’ RO to east signal + 175’ storage in RO)

- The southbound left queue is projected to exceed its storage by 16’. As a result, the existing southbound M-291 left-turn lanes will be lengthened prior to the opening of the warehouse retailer.
- The eastbound left queue is projected to exceed its storage by 64’. This lane has been approved and is being constructed as part of the Oldham West development.
- The westbound right queue is projected to exceed its total potential capacity by 91’. This occurs in all peak hour scenarios and is primarily due to heavy exiting traffic from the warehouse retailer returning to northbound M-291. The distance from the westbound stop bar to the eastern signalized intersection is 545’, and the right-out lane measures 175’ and can function as storage during peak hours.

To mitigate the westbound right-turn expectations, the retailer could consider internally signing the right-out as “Exit for Northbound M-291 Patrons Only.” This would encourage patrons traveling east or south on M-291 to use the eastern exit.

M-291 & Persels/Bailey (Node 2)

As in the Base Conditions scenario, the intersection of M-291 & Persels/Bailey is projected to operate at LOS E during the PM peak hour. The eastbound left-turn movement has a projected 95th percentile queue length of 309 feet, exceeding the newly constructed eastbound left-turn storage provided with the Oldham Village improvements. The southbound through movement has a 95th percentile queue length of 993 feet. While long, storage is available. Improvements to this intersection, primarily the addition of a third southbound M-291 through lane, will be necessary if all traffic projections are realized.

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 through movement has a projected 95th percentile queue length of 1,281 feet, which would extend up to the RO intersection at 16th Street.

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 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 analyses 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	45.3	D	51.3	D	50.2	D
2	M-291 & Persels/Bailey	Signalized	40.9	D	34.0	C	43.5	D
3	M-291 & 16th Street	WB	23.7	C	24.7	C	21.4	C
4	M-291 & Scherer	Signalized	34.7	C	28.1	C	21.9	C
5	Bailey Road & Hamblen Road	Signalized	13.5	B	31.5	C	19.1	B
6	Oldham Pkwy & N/S Collector	Signalized	15.3	B	19.0	B	23.2	C
7	Bailey Road & N/S Collector	SB	11.0	B	17.4	C	13.8	B
9	Oldham Pkwy & RO	SB	9.6	A	14.4	B	20.5	C
10	Oldham Pkwy & Fuel Station	NB	9.9	A	13.2	B	15.7	C
		SB	8.6	A	9.0	A	9.2	A
11	N/S Collector & Drive 1	EB	10.9	B	15.4	C	25.3	D
		WB	8.8	A	9.6	B	10.4	B
12	N/S Collector & North EW Drive	EB	9.6	A	11.2	B	14.3	B
		WB	8.5	A	8.7	A	8.8	A
13	North EW Drive & Drive 2	SB	8.8	A	9.1	A	9.3	A
14	North EW Drive & Drive 3	NB	8.6	A	8.8	A	8.9	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	8.6	A	9.3	A	9.8	A
		WB	9.4	A	12.7	B	18.1	C
17	South EW Drive & Drive 5	NB	8.6	A	0.0	A	9.0	A
		SB	8.4	A	0.0	A	8.5	A
18	South EW Drive & Drive 6	EB	8.7	A	8.9	A	9.1	A
		WB	9.3	A	9.8	A	10.0	B
19	Drive 7	WB	0.0	A	0.0	A	0.0	A
20	Bailey Road & Drive 8	SB	12.8	B	57.0	F	26.5	D

The analyses in Table 12 include an additional southbound M-291 thru-lane between Oldham Parkway through Scherer Road.

The results in **Table 12** indicate that all intersections are projected to operate at overall LOS D or better with the M-291 improvement and 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 95th percentile queues identified in **Figure 21** for critical movements are as follows:

Movement	Queue Length	Peak Hour	Storage Available
Northbound Left	187’	AM peak	250’
Northbound Thru	478’	SAT peak	1500’
Southbound Left	389’	SAT peak	430’
Southbound Thru	459’	PM peak	530’
Eastbound Left	376’	SAT peak	300’
Westbound Left	265’	SAT peak	250’
Westbound Right	889’	SAT Peak	720’

- The eastbound left queue is projected to exceed its storage by 76’. This lane has been approved and is currently under construction as part of the Oldham West development.

- The westbound left queue is projected to exceed its storage by 15’. Consideration was given to lengthening this lane; however, site constraints limit this option.

- The westbound right queue is projected to exceed its total potential capacity by 169’. This occurs in all peak hour scenarios and is primarily due to heavy exiting traffic from the warehouse retailer returning to northbound M-291. The distance from the westbound stop bar to the eastern signalized intersection is 545’, and the right-out lane measures 175’, which can function as storage during peak hours.

To mitigate the westbound right-turn congestion, the retailer could consider internally signing the right-out as “Exit for Northbound M-291 Patrons Only.” This would encourage patrons traveling east or south on M-291 to use the eastern exit.

M-291 & Persels/Bailey (Node 2)

Operations improve to LOS D or better with the addition of a third southbound M-291 through lane at the intersection. During the PM peak hour, the eastbound left-turn movement has a projected 95th percentile queue length of 279 feet, slightly exceeding the newly constructed eastbound left-turn storage provided with the Oldham Village improvements. Notable improvements were observed in the PM southbound M-291 through movement, with the 95th percentile queue reduced from 993 feet in Phase 1 to 615 feet in Phase 2.

M-291 & Scherer (Node 4)

Operations improve to LOS C or better with the addition of a third southbound M-291 through lane. During the PM peak hour, the projected 95th percentile queue for the southbound through movement decreases from 1,281 feet in Phase 1 to 667 feet in Phase 2.

Oldham Parkway and N/S Collector (Node 6)

With Phase 2, the proposed signalized intersection of Oldham Parkway and the N/S collector will have its southern approach opened, forming a four-legged intersection. The eastbound right-turn volume during the Saturday peak hour is projected to be 329 vehicles, with a corresponding northbound left-turn projection of 285 vehicles. Capacity analysis indicates that the intersection will operate at LOS C or better. The projected Saturday 95th percentile queue for the northbound left-turn is 194 feet, which is close to the provided storage of 192 feet.

Bailey Road & N/S Collector (Node 7)

Median improvements along Bailey Road east of M-291 are proposed to allow the new T-intersection of Bailey Road & N/S Collector to operate as a westbound RIRO with an eastbound left-turn permitted. Southbound left turns from the N/S collector will not be allowed.

As shown in **Figure 19**, the largest peak hour eastbound left-turn movement occurs during the Saturday peak at 202 vehicles. This movement opposes 413 westbound through vehicles and an additional 114 westbound right-turn vehicles. Unsignalized capacity analyses for Node 7 indicate small 95th percentile queue lengths, as illustrated in **Figure 21**.

Bailey Road & Drive 8 (Node 20)

A peak hour signal warrant analysis was run for the intersection of Bailey Road & Drive 8. The warrant was not met with Phase 2. This intersection is the only full-access point on Bailey between M-291 and the railroad bridge. It will need to be signalized before Phase 3 development is open.

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	49.5	D	54.0	D	58.5	E
2	M-291 & Persels/Bailey	Signalized	38.2	C	41.7	D	50.5	D
3	M-291 & 16th Street	WB	31.1	D	31.1	D	29.0	D
4	M-291 & Scherer	Signalized	37.6	D	31.3	C	34.5	C
5	Bailey Road & Hamblen Road	Signalized	13.5	B	34.8	C	24.0	C
6	Oldham Pkwy & N/S Collector	Signalized	16.1	B	19.0	B	23.2	C
7	Bailey Road & N/S Collector	NB	12.1	B	13.2	B	14.8	B
		SB	12.5	B	22.1	C	34.8	D
8	N/S Collector & 16th Street	SB	8.6	A	8.6	A	8.6	A
9	Oldham Pkwy & RO	SB	9.6	A	14.4	B	20.5	C
10	Oldham Pkwy & Fuel Station	NB	9.9	A	13.2	B	15.7	C
		SB	8.6	A	9.0	A	9.2	A
11	N/S Collector & Drive 1	EB	11.1	B	15.4	C	25.3	D
		WB	8.8	A	9.6	B	10.4	B
12	N/S Collector & North EW Drive	EB	9.6	A	11.2	B	14.3	B
		WB	8.5	A	8.7	A	8.8	A
13	North EW Drive & Drive 2	SB	8.8	A	9.1	A	9.3	A
14	North EW Drive & Drive 3	NB	8.6	A	8.8	A	8.8	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	8.6	A	9.3	A	9.8	A
		WB	9.4	A	12.7	B	18.1	C
17	South EW Drive & Drive 5	NB	8.6	A	7.3	A	9.0	A
18	South EW Drive & Drive 6	EB	8.7	A	8.9	A	9.1	A
		WB	9.3	A	9.8	A	10.0	B
19	Drive 7	WB	0.0	A	0.0	A	0.0	A
20	Bailey Road & Drive 8	Signalized	21.6	C	32.4	C	29.1	C
21	N/S Collector & Drive 9	EB	13.1	B	12.3	B	17.8	C
		WB	8.6	A	8.6	A	0.0	A
22	N/S Collector & Drive 10	EB	9.1	A	9.2	A	10.1	B
23	N/S Collector & Drive 11	EB	9.1	A	9.1	A	9.3	A
		WB	9.3	A	9.4	A	10.0	B
24	16th Street & Park Driveway	NB	8.8	A	8.8	A	8.7	A
25	Drive 12	EB	10.0	B	10.9	B	11.8	B
		WB	8.9	A	8.8	A	9.2	A
26	Drive 13	EB	9.7	A	10.3	B	12.7	B
		WB	8.5	A	8.5	A	8.6	A

The analyses in **Table 13** include the addition of a southbound M-291 left-turn lane to Bailey Road. The results indicate that nearly all intersections are projected to operate at overall LOS D or better with the additional trips assigned by Phase 3 of the development.

The intersection of M-291 & Oldham Parkway is projected to operate at LOS E during the Saturday peak hour.

Intersections of interest:

M-291 & Oldham Parkway (Node 1)

With the additional trips associated with Phase 3, all three peak hours at this intersection are projected to meet or exceed LOS D. The longest 95th percentile queues identified in **Figure 27** for critical movements are as follows:

Movement	Queue Length	Peak Hour	Storage Available
Northbound Left	177’	AM peak	250’
Northbound Thru	680’	SAT peak	1500’
Southbound Left	417’	SAT peak	430’
Southbound Thru	505’	PM peak	530’
Eastbound Left	413’	SAT peak	300’
Westbound Left	289’	SAT peak	250’
Westbound Right	1002’	SAT Peak	720’

- The eastbound left queue is projected to exceed its storage by 113’. This lane has been approved and is currently under construction as part of the Oldham West development.

- The westbound left queue is projected to exceed its storage by 39’. Consideration was given to lengthening this lane; however, site constraints limit this option.

- The westbound right queue is projected to exceed its total potential capacity by 282’. This occurs due to heavy exiting traffic from the warehouse retailer returning to northbound M-291. The distance from the westbound stop bar to the eastern signalized intersection is 545’, and the right-out lane measures 175’, which can function as storage during peak hours.

M-291 & Persels/Bailey (Node 2)

This intersection remains at an overall LOS D for all peak hours, with the addition of a second southbound left-turn lane. The longest 95% queues identified in **Figure 27** for critical movements are as follows:

Movement	Queue Length	Peak Hour	Storage Available
Northbound Left	251’	AM peak	310’
Northbound Thru	598’	SAT peak	1300’
Southbound Left	383’	SAT peak	330’
Southbound Thru	404’	PM peak	1300’
Eastbound Left	296’	AM peak	230’
Westbound Left	321’	PM peak	260’

- The southbound left queue is projected to exceed its storage by 53’. The existing southbound left-turn lane can be lengthened with the additional lane planned for the Phase 3 M-291 & Bailey improvements.
- The eastbound left queue is projected to exceed its storage by 66’. This lane has been approved and is currently under construction as part of the Oldham West development.
- The westbound left queue is projected to exceed its total potential capacity by 61’. Consideration was given to lengthening this lane; however, site constraints prevent this modification.

M-291 & Scherer (Node 4)

The intersection of M-291 & Scherer is projected to operate at LOS D or better during each peak hour.

Oldham Parkway and N/S Collector (Node 6)

With Phase 3, no additional trips are assigned to this intersection; it is expected to operate similarly to Phase 2.

Bailey Road & N/S Collector (Node 7)

This median-controlled T-intersection will have a southern leg added in Phase 3. The intersection will function as a RIRO for eastbound and westbound Bailey Road, while also allowing an eastbound left-turn in. No westbound left-turn or north/south through movements will be permitted.

As shown in **Figure 25**, the largest peak hour eastbound left-turn movement occurs during the Saturday peak, with 202 vehicles. This movement opposes 879 westbound through vehicles, plus an additional 114 westbound right-turn vehicles. Unsignalized capacity analyses for Node 7 indicate relatively small 95th percentile queue lengths, as illustrated in **Figure 27**.

Bailey Road & Drive 8 (Node 20)

A peak hour signal warrant analysis was run for the intersection of Bailey Road & Drive 8. The warrant was met with Phase 3 for the PM and Saturday peak hours. See **Figure 28**. This intersection is the only full-access point on Bailey between M-291 and the railroad bridge. It will need to be signalized before Phase 3 development is open.

N/S Collector & Drive 9 (Node 21)

The first driveway south of Bailey Road along the new N/S Collector 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, while only a 50-foot throat lane is 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 Road along the new N/S Collector provides shared access to Lots 16–17 to the west. During the Saturday peak hour, the projected eastbound exiting volume is 176 vehicles, while only a 70-foot throat lane is 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 assess the impact of site-generated traffic under 2045 conditions. To estimate background traffic growth, existing through volumes on M-291 were assumed to increase at a rate of 1% per year.

Signal cycle lengths were optimized for each study intersection. The analysis was performed for the weekday AM, PM, and Saturday peak hours based on the projected traffic volumes, existing plus recommended lane configurations, and traffic control devices shown on **Figures 30 and 31**. The 95th percentile queue lengths for each movement are presented in **Figure 32**, and the detailed Synchro reports are included in **Appendix D**.

Table 14 summarizes the level of service (LOS) and delay results for the analyzed intersections.

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	57.4	E	69.2	E	83.7	F
2	M-291 & Persels/Bailey	Signalized	37.5	D	62.2	E	71.6	E
3	M-291 & 16th Street	WB	48.4	E	46.9	E	39.2	E
4	M-291 & Scherer	Signalized	79.0	E	62.2	E	62.0	E

The results in **Table 14** indicate that the signalized intersections along M-291 are projected to operate at LOS D, E and F during peak hours under Year 2045 conditions.

If all projected traffic volumes are realized, opportunities for geometric improvements at M-291 & Oldham Parkway will be limited due to existing constraints. The intersection of M-291 & Persels/Bailey could benefit from the addition of eastbound and westbound through lanes and a dual northbound left-turn lane. Similarly, M-291 & Scherer Road could benefit from the construction of a third northbound through lane to improve future operations.

7.0 FINDINGS AND RECOMMENDATIONS

This traffic impact study for Village East evaluated existing and projected traffic conditions to assess the impacts of the proposed 22-lot development, which will be constructed in three phases. The analysis included collection of existing traffic counts, development of trip generation and distribution models, and intersection capacity analyses at 26 study intersections under 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

At full build-out, the Village East development is projected to generate approximately 32,669 daily trips, 1,758 AM peak hour trips, 2,798 PM peak hour trips, and 3,984 Saturday peak hour trips. These represent *primary site-generated trips.*

The analyses identified several locations where targeted intersection or roadway improvements will be necessary to maintain acceptable levels of service and to mitigate the additional traffic introduced by the project. The following summarizes recommended improvements by development phase and intersection.

Phase 1 Recommendations

1. M-291 & Oldham Parkway (Node 1)
    - Extend the existing southbound dual left-turn lanes to provide a minimum of 430 feet of storage, or as much as feasible within existing geometrics.
2. Oldham Parkway & N/S Collector (Node 6)
    - Construct a full intersection with traffic signal installation, including the future south leg and pedestrian facilities.
3. Lot 1 Access Drive
    - Retail tenant could post signage at the western right-out restricting use to northbound M-291 patrons to discourage Oldham Parkway weaving movements.

Phase 2 Recommendations

1. M-291 Corridor Improvements
    - Construct a third southbound through-lane from south of Oldham Parkway through Persels and continue to (or through) Scherer Road. This should include removal of existing shoulder, new paved lane, and new paved shoulder.
    - Include associated shoulder, lane, and signal modifications primarily along the western half of M-291.
2. Traffic Impact Study Update
    - Upon completion of Phase 1, update the TIA to confirm southbound widening limits and validate prior recommendations.
3. Bailey Road at N/S Collector (Node 7)
    - Implement center median and lane improvements to accommodate future Phase 3 traffic and establish this intersection as a westbound right-in/right-out with eastbound left-turn in capability.
4. Bailey Road at Drive 8 (Node 20)
    - Implement lane improvements to accommodate future Phase 3 traffic and the signalization of this intersection.

Phase 3 Recommendations (Full Development)

1. M-291 & Persels/Bailey (Node 2)
    - Add a second southbound left-turn lane (380 feet storage) and improve the westbound right-turn configuration. Westbound left-turn storage should strive for 320’ of storage pending an updated TIA.
    - Include shoulder, lane, and signal improvements along the eastern half of M-291 at Bailey Road.
2. Bailey Road & Drive 8 (Node 20)
    - Install a traffic signal to provide protected northbound left-turn and eastbound U-turn movements for Phase 3 traffic to provide full access to M-291.

Other Intersection-Specific Recommendations

- M-291 & Scherer (Node 4) – Continue monitoring corridor traffic growth; the additional southbound through-lane may be necessary in Phase 2 or Phase 3 or as traffic grows from other developments in the region.
- N/S Collector Intersections (Nodes 11, 21–23) – Provide southbound right-turn lanes (minimum 100’ + taper) and revise lot access throat lengths to accommodate projected Saturday peak-hour queues.
- Private Street Option: The City and Developer may consider classifying the N/S Collector from Bailey Road to 16th Street as a private street, which could alleviate spacing and access control issues under current AMC requirements.

A summary of these Recommendations can be viewed on **Figure 33**.

Summary

In total, this study recommends targeted intersection and corridor improvements primarily focused on:

- Expanding M-291 capacity through additional southbound lanes and turn lanes
- Installing new traffic signals where warranted
- Refining access spacing and driveway throat lengths within the development
- Updating the TIA between phases to validate and refine future-phase improvements

These phased improvements will maintain acceptable operations on the surrounding roadway network while supporting the safe and efficient build-out of the Village East development.

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

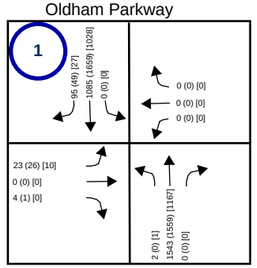
APPENDIX A - FIGURES	**Pages 41-74**
APPENDIX B – TRAFFIC COUNT DATA	**Pages 75-125**
APPENDIX C - ITE TRIP GENERATION REPORTS	**Pages 126-213**
APPENDIX D - CAPACITY AND QUEUING ANALYSES	**Pages 214-609**
APPENDIX E – KITTELSON and ASSOCIATES TRAFFIC MEMO	**Pages 610-612**
APPENDIX F – OLDHAM VILLAGE "WEST" TRAFFIC IMPACT STUDY	**Pages 613-643**

APPENDIX A
FIGURES

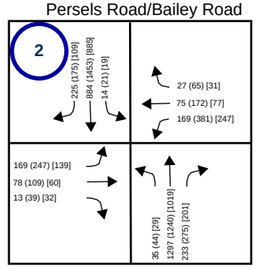

PROJECT LOCATION AND STUDY AREA
US-50
Oldham Pkwy
M-291
Hamblen Rd
Persels Rd
Bailey Rd
16th St
Scherer Rd
Image © 2025 A

FIGURE 1

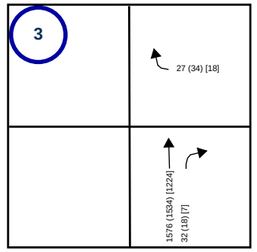
M-291 &
Oldham Parkway



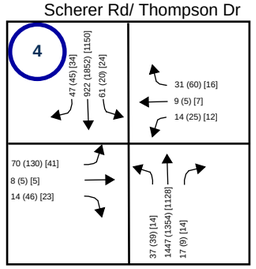
M-291 &
Persels Road/Bailey Road



M-291 &
16th Street



M-291 &
Scherer Rd/ Thompson Dr



Bailey Road &
Hamblen Road

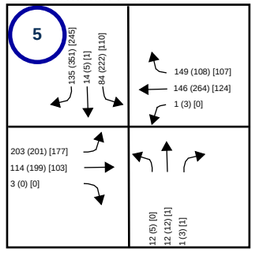
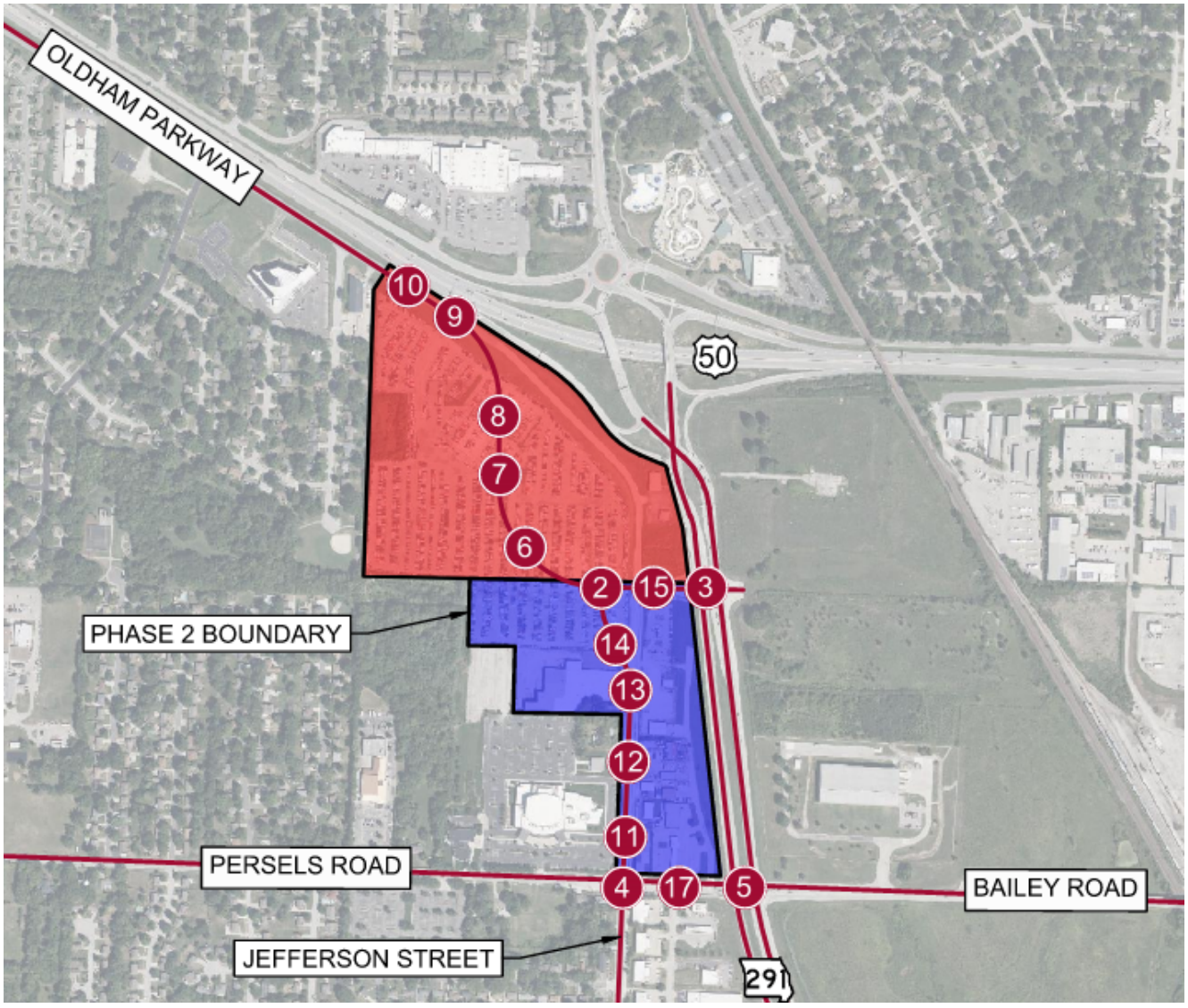


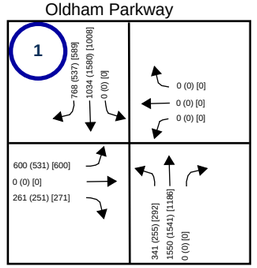


FIGURE 2

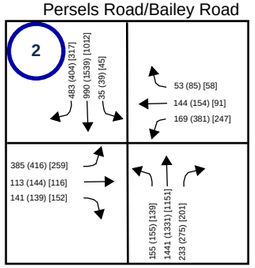
OLDHAM VILLAGE "WEST" STUDY AREA



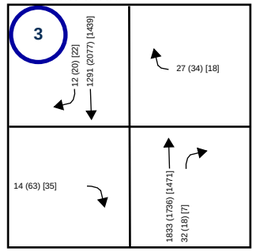
M-291 &
Oldham Parkway



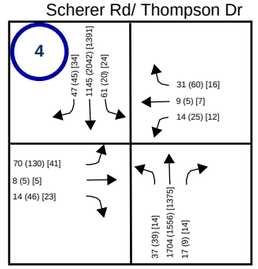
M-291 &
Persels Road/Bailey Road



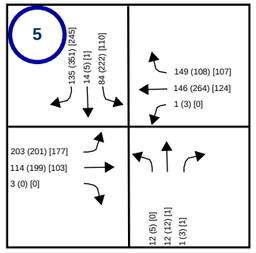
M-291 &
16th Street



M-291 &
Scherer Rd/ Thompson Dr



Bailey Road &
Hamblen Road

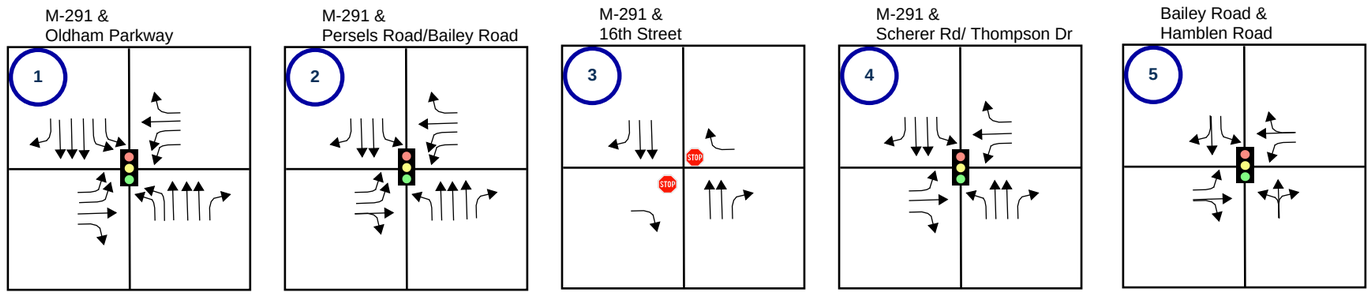


BASE CONDITION PEAK HOUR VOLUMES
EXISTING VOLUMES + OLDHAM VILLAGE "WEST" FULL DEVELOPMENT

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



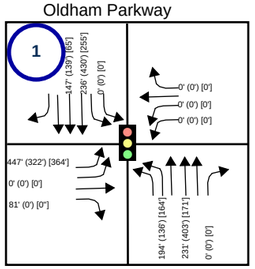
FIGURE 4


M-291 &
Oldham Parkway
1
M-291 &
Persels Road/Bailey Road
2
M-291 &
16th Street
3
STOP
STOP
M-291 &
Scherer Rd/ Thompson Dr
4
Bailey Road &
Hamblen Road
5

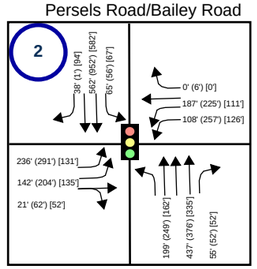

US-50
BASE CONDITIONS GEOMETRY AND INTERSECTION CONTROL
Signalized Intersection
Stop Controlled Intersection
STOP
1
Oldham Pkwy
2
Bailey Rd
5
Hamblen Rd
3
16th St
4
Scherer Rd

FIGURE 5

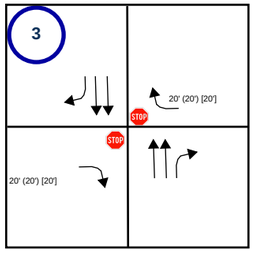
M-291 &
Oldham Parkway



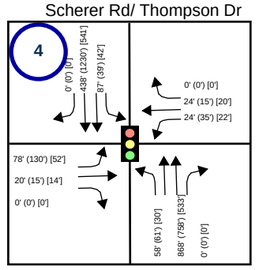
M-291 &
Persels Road/Bailey Road



M-291 &
16th Street



M-291 &
Scherer Rd/ Thompson Dr



Bailey Road &
Hamblen Road

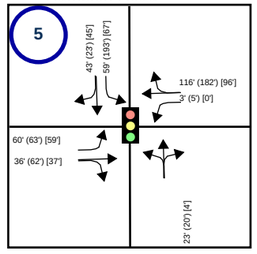




FIGURE 6

EAST VILLAGE SITE PLAN

Lot #	SF or Units	Land Use
1	161,562 SF	Warehouse Retailer
2	320 Units	Multifamily
3	250 Units	Multifamily
4	7,020 SF	Restaurant
5	7,020 SF	Restaurant
6	8,380 SF	Restaurant
7	2,700 SF	Restaurant DTW
8	7,020 SF	Restaurant
9	2,700 SF	Restaurant DTW
10	7,020 SF	Restaurant
11	14,500 SF	Strip Retail
12	3.42 ac	Park
13	7,640 SF	Restaurant
14	3,000 SF	Restaurant DTW
15	3,000 SF	Restaurant DTW
16	2,700 SF	Restaurant DTW
17	7,020 SF	Restaurant
18	2,700 SF	Restaurant DTW
19	3,000 SF	Restaurant DTW
20	250 Units	Multifamily
21	100 Units	Multifamily
22	1.05 ac	Park

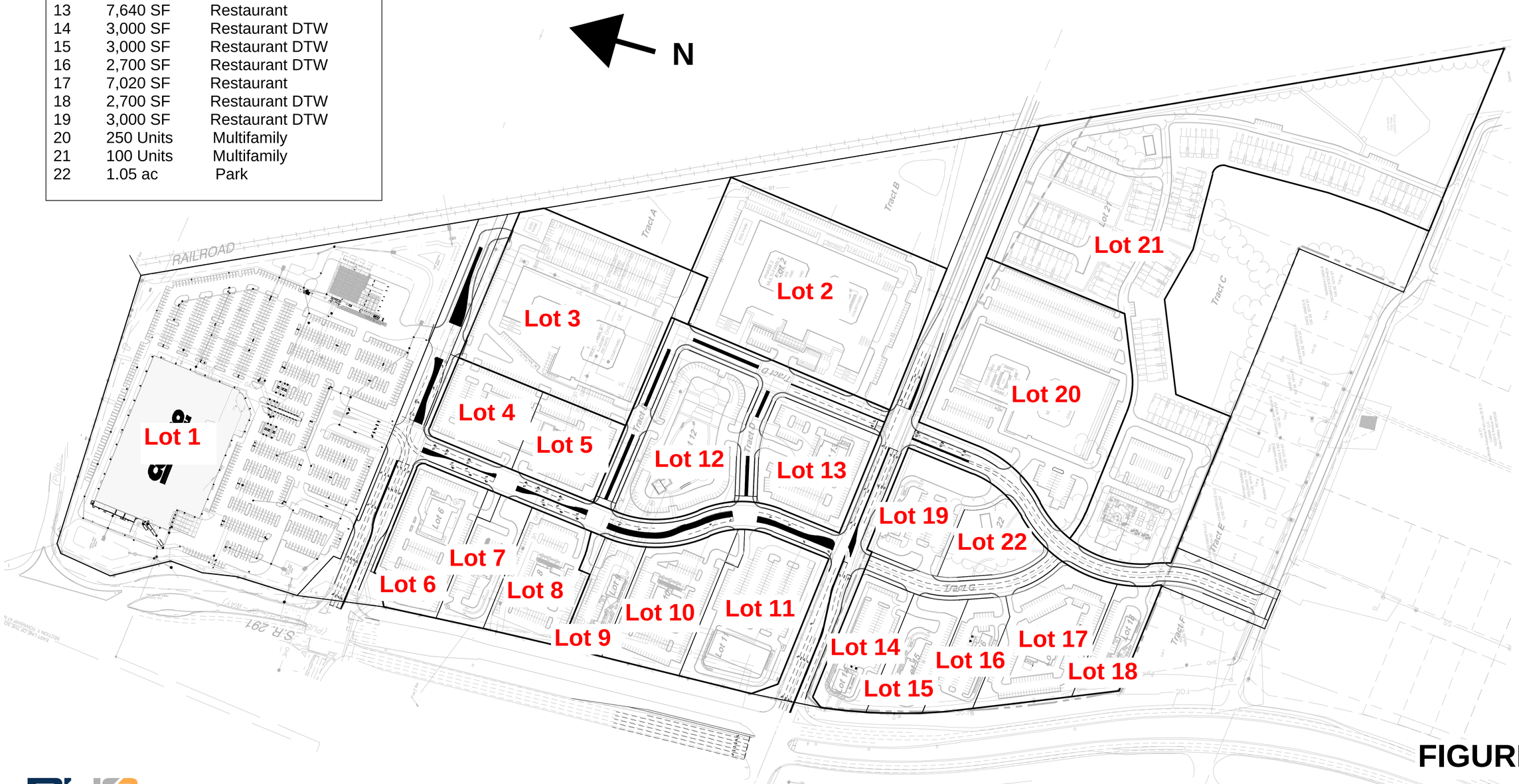
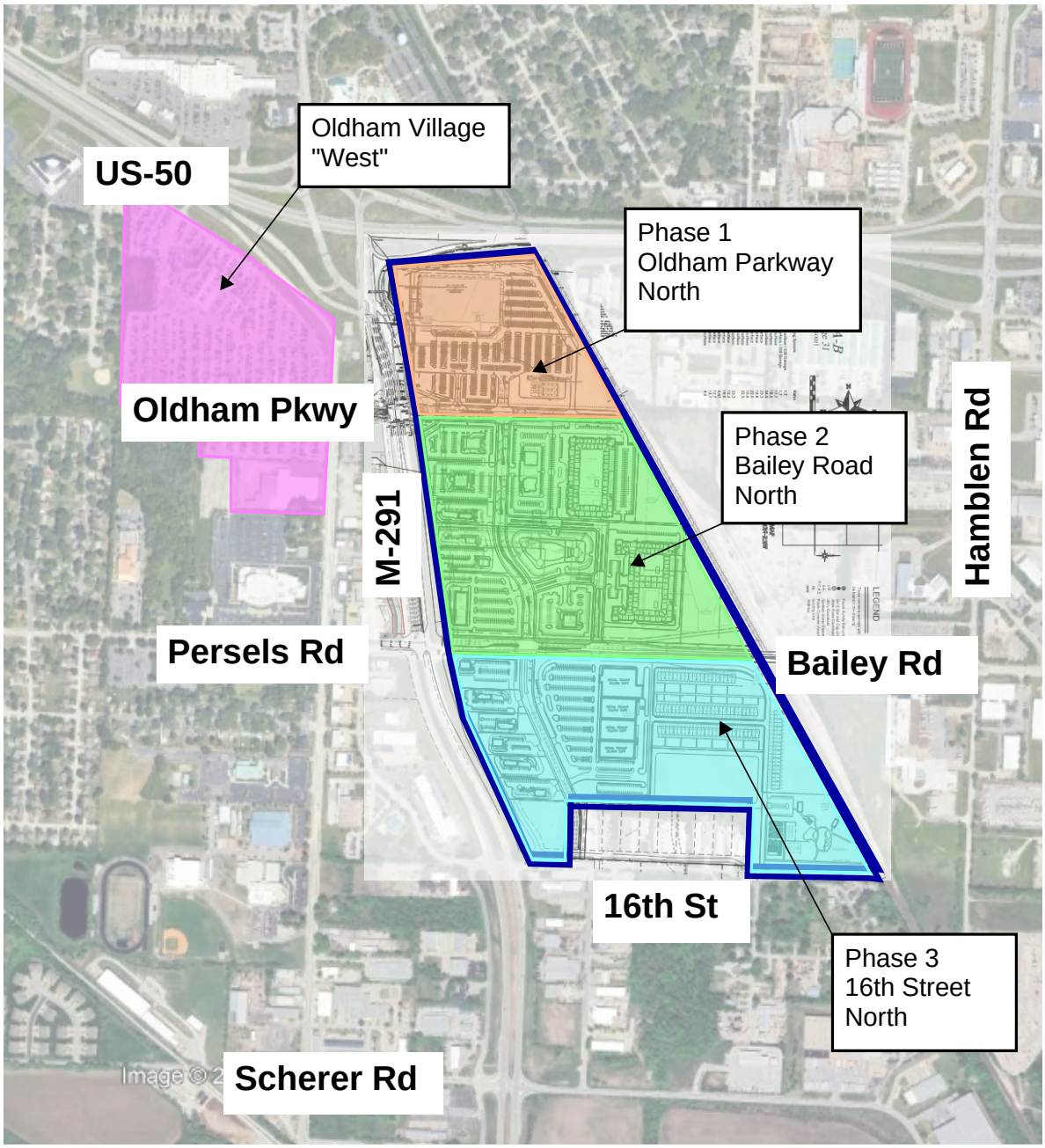
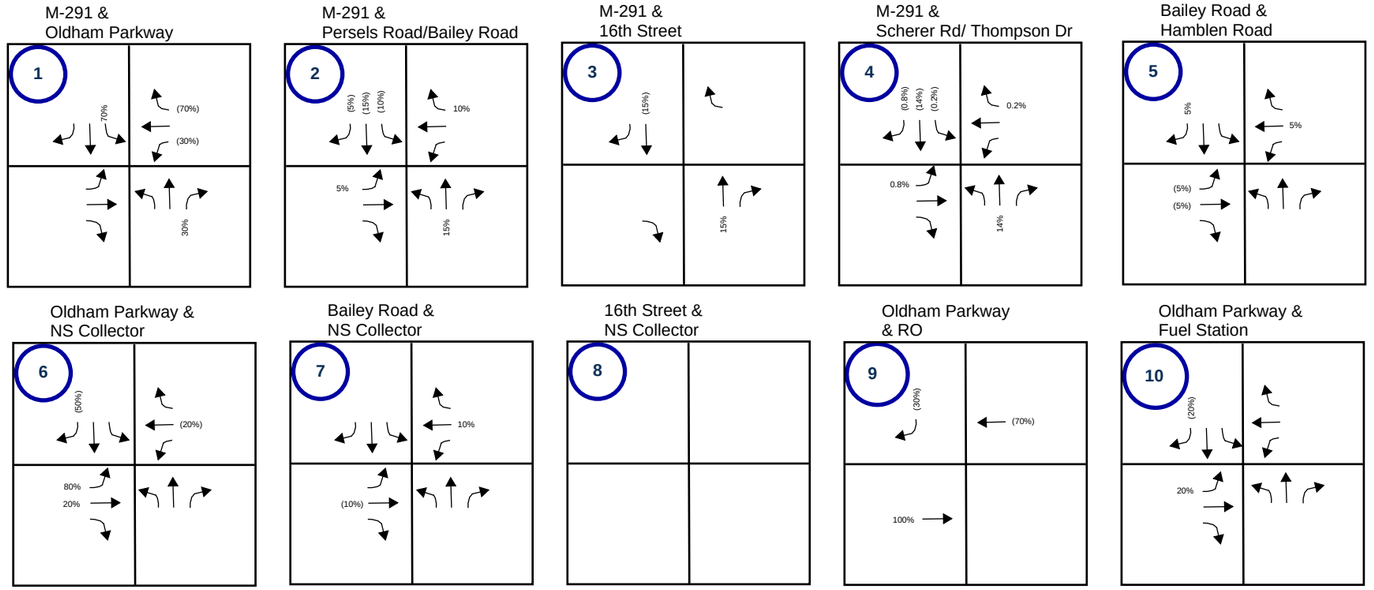


FIGURE 7

EAST VILLAGE PHASING




M-291 &
Oldham Parkway
1
70%
(70%)
(30%)
30%
M-291 &
Persels Road/Bailey Road
2
(5%)
(15%)
(10%)
10%
5%
15%
M-291 &
16th Street
3
(15%)
15%
M-291 &
Scherer Rd/ Thompson Dr
4
(0.8%)
(14%)
(0.2%)
0.2%
0.8%
14%
Bailey Road &
Hamblen Road
5
5%
5%
(5%)
(5%)
Oldham Parkway &
NS Collector
6
(50%)
(20%)
80%
20%
Bailey Road &
NS Collector
7
10%
(10%)
16th Street &
NS Collector
8
Oldham Parkway
& RO
9
(30%)
(70%)
100%
Oldham Parkway &
Fuel Station
10
(20%)
20%

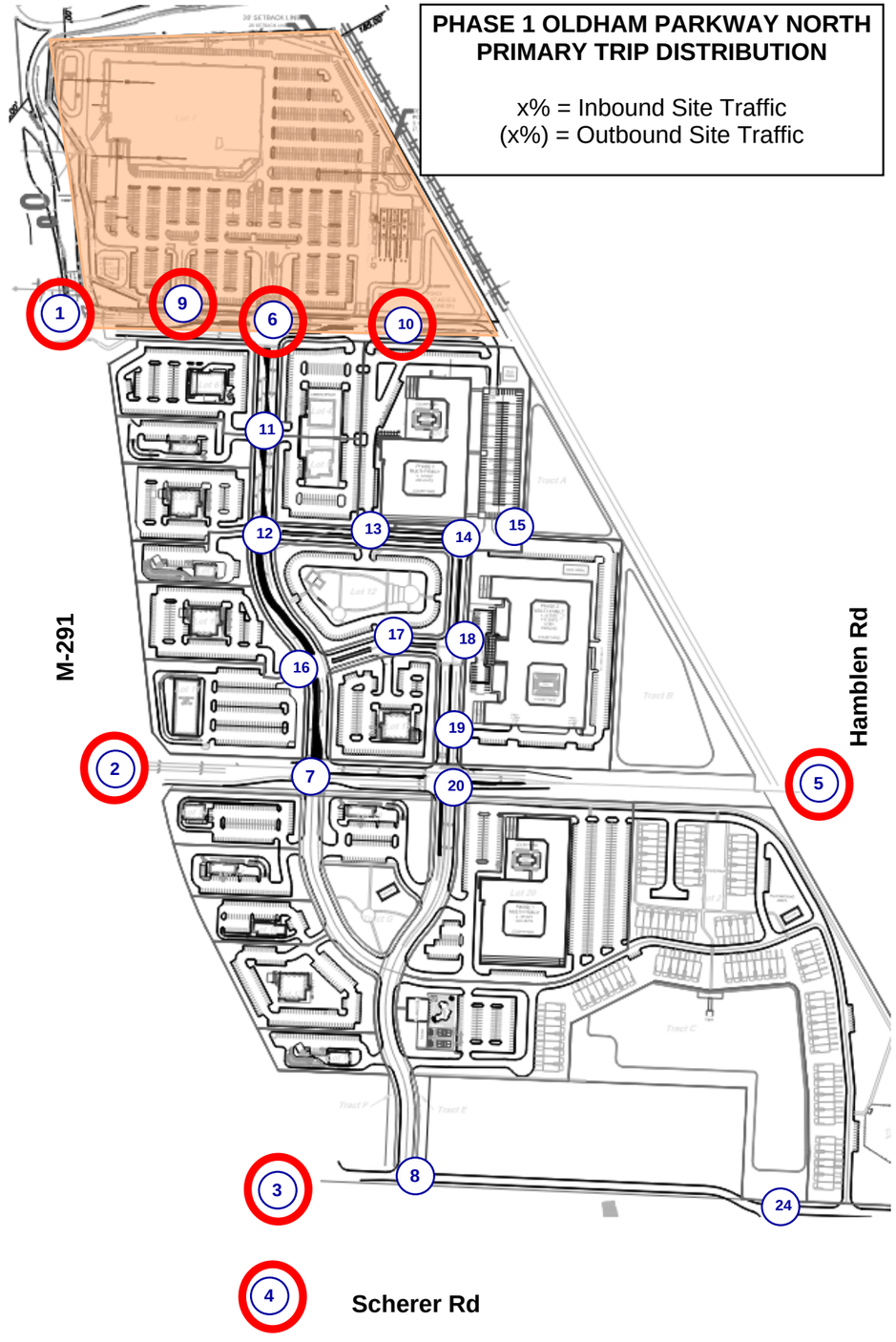
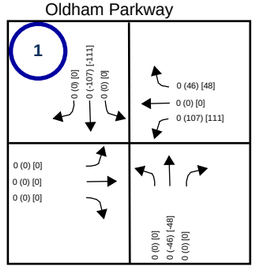
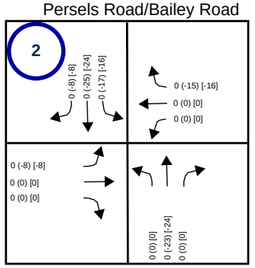

PHASE 1 OLDHAM PARKWAY NORTH
PRIMARY TRIP DISTRIBUTION
x% = Inbound Site Traffic
(x%) = Outbound Site Traffic
M-291
Hamblen Rd
Scherer Rd
1
9
6
10
11
12
13
14
15
16
17
18
19
20
2
7
5
3
8
24
4

FIGURE 9

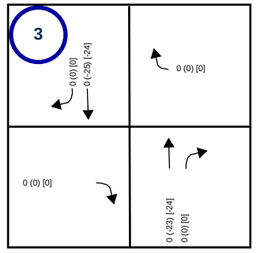
M-291 &
Oldham Parkway



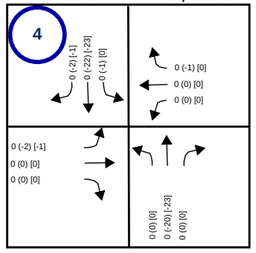
M-291 &
Persels Road/Bailey Road



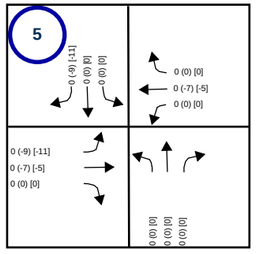
M-291 &
16th Street



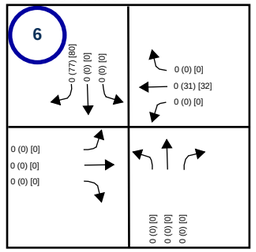
M-291 &
Scherer Rd/ Thompson Dr



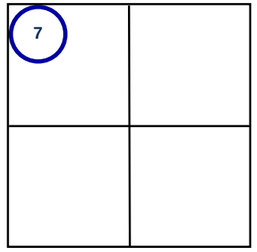
Bailey Road &
Hamblen Road



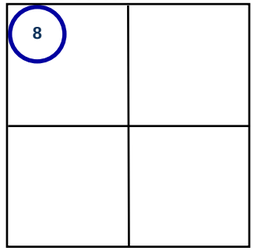
Oldham Parkway &
NS Collector



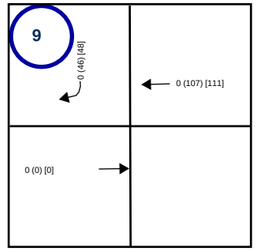
Bailey Road &
NS Collector



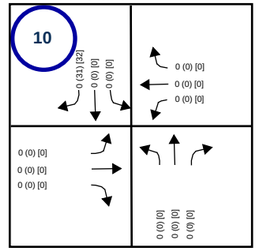
16th Street &
NS Collector



Oldham Parkway
& RO



Oldham Parkway &
Fuel Station



PHASE 1 OLDHAM PARKWAY NORTH
PASS-BY TRIP VOLUMES
AM(PM)[SAT] Traffic Volumes

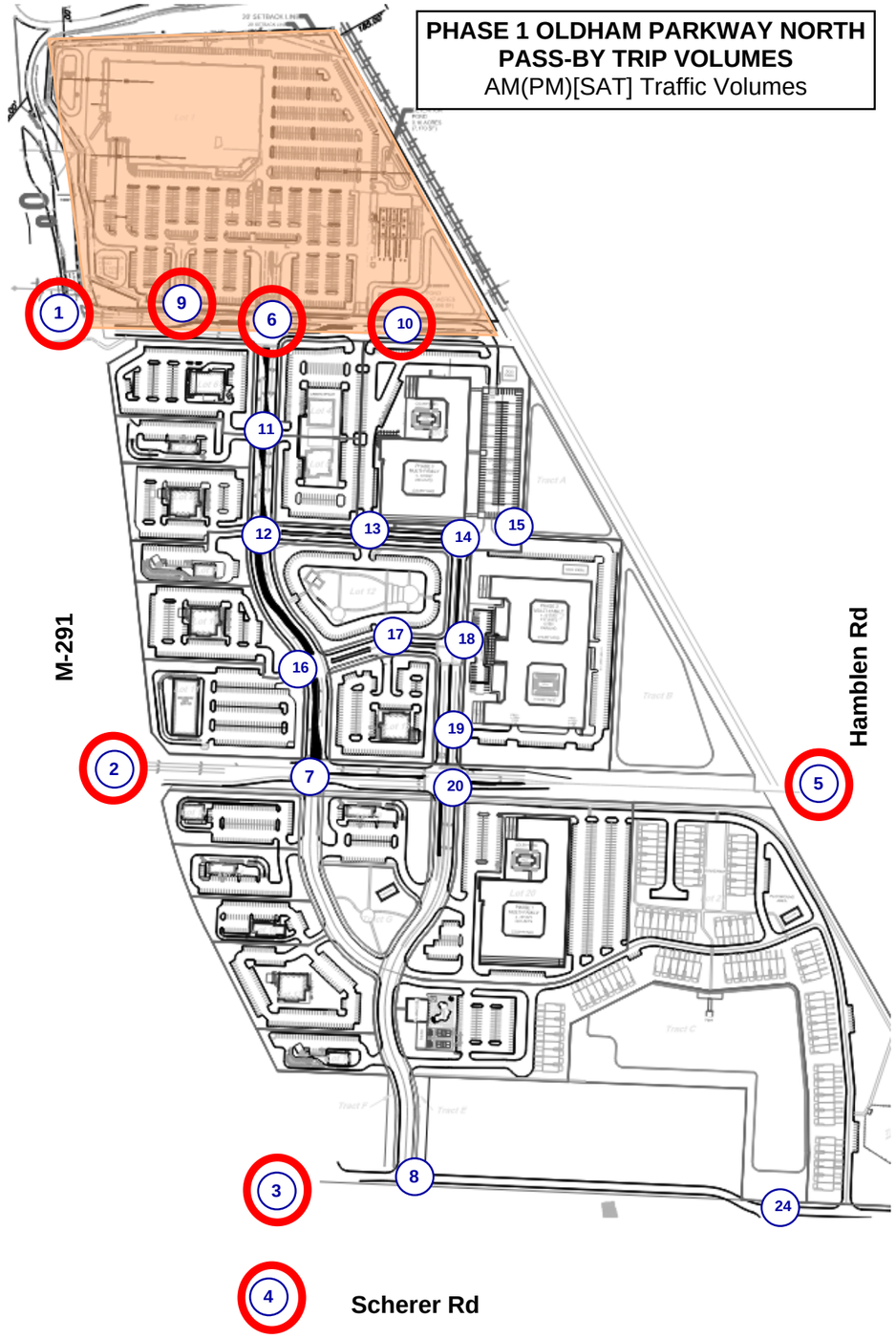
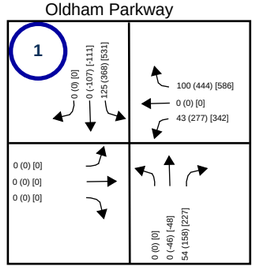
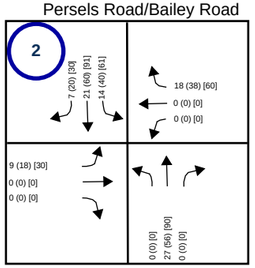


FIGURE 10

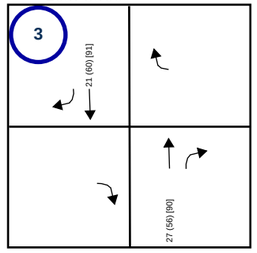
M-291 &
Oldham Parkway



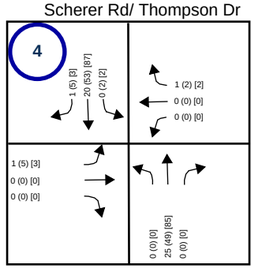
M-291 &
Persels Road/Bailey Road



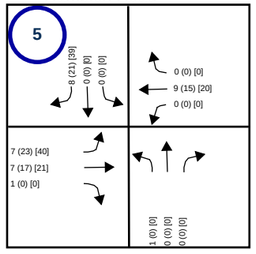
M-291 &
16th Street



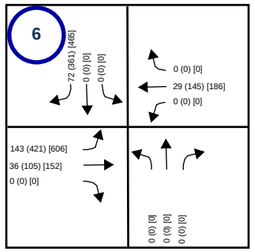
M-291 &
Scherer Rd/ Thompson Dr



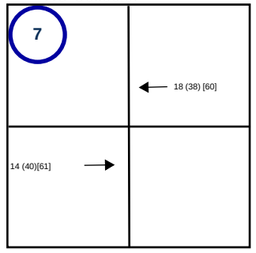
Bailey Road &
Hamblen Road



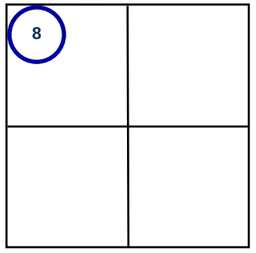
Oldham Parkway &
NS Collector



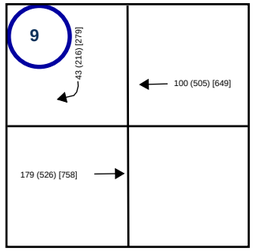
Bailey Road &
NS Collector



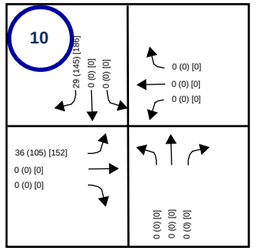
16th Street &
NS Collector



Oldham Parkway
& RO



Oldham Parkway &
Fuel Station



PHASE 1 OLDHAM PARKWAY NORTH TOTAL SITE TRIPS

AM(PM)[SAT] Traffic Volumes

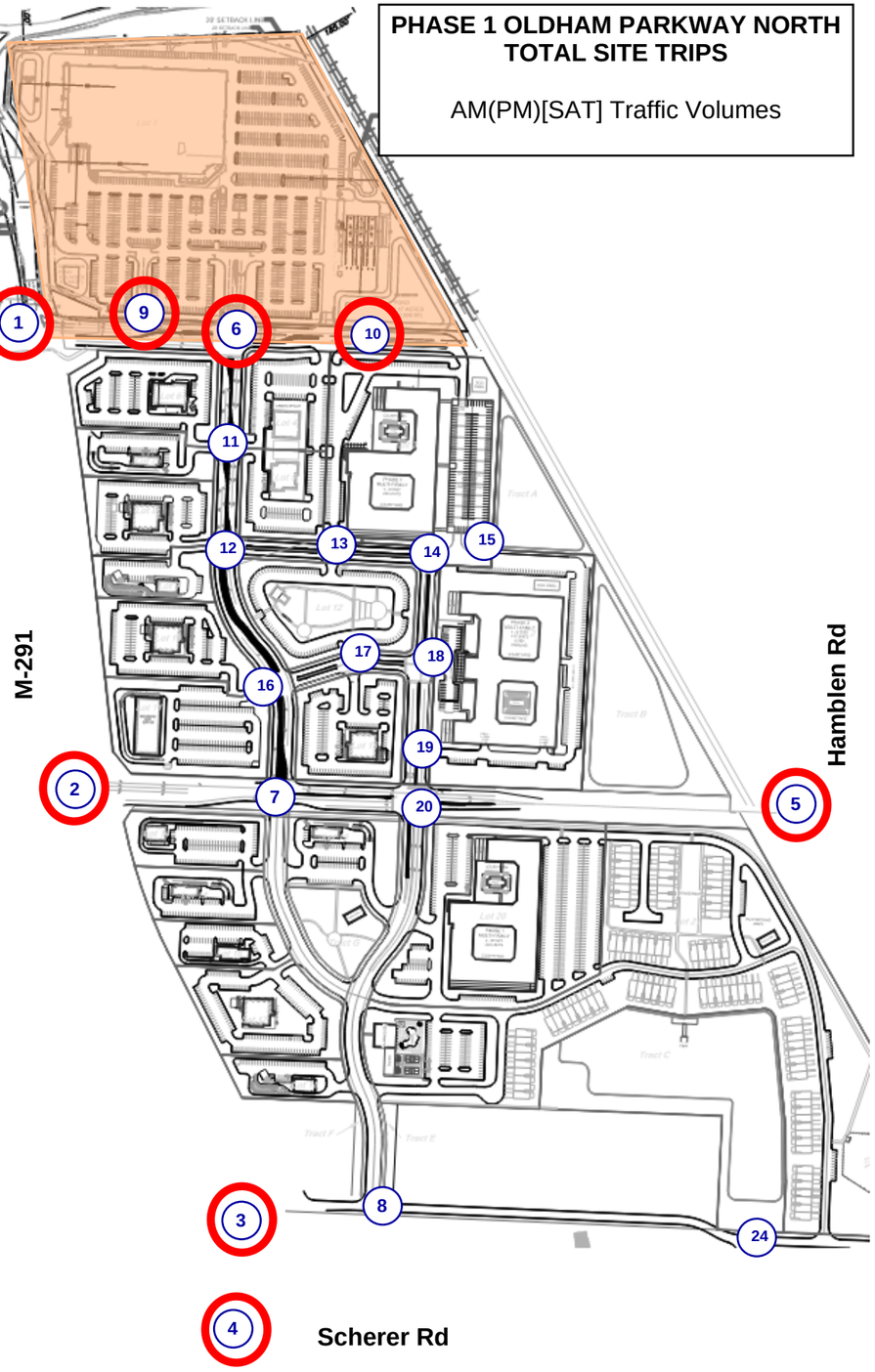


FIGURE 11

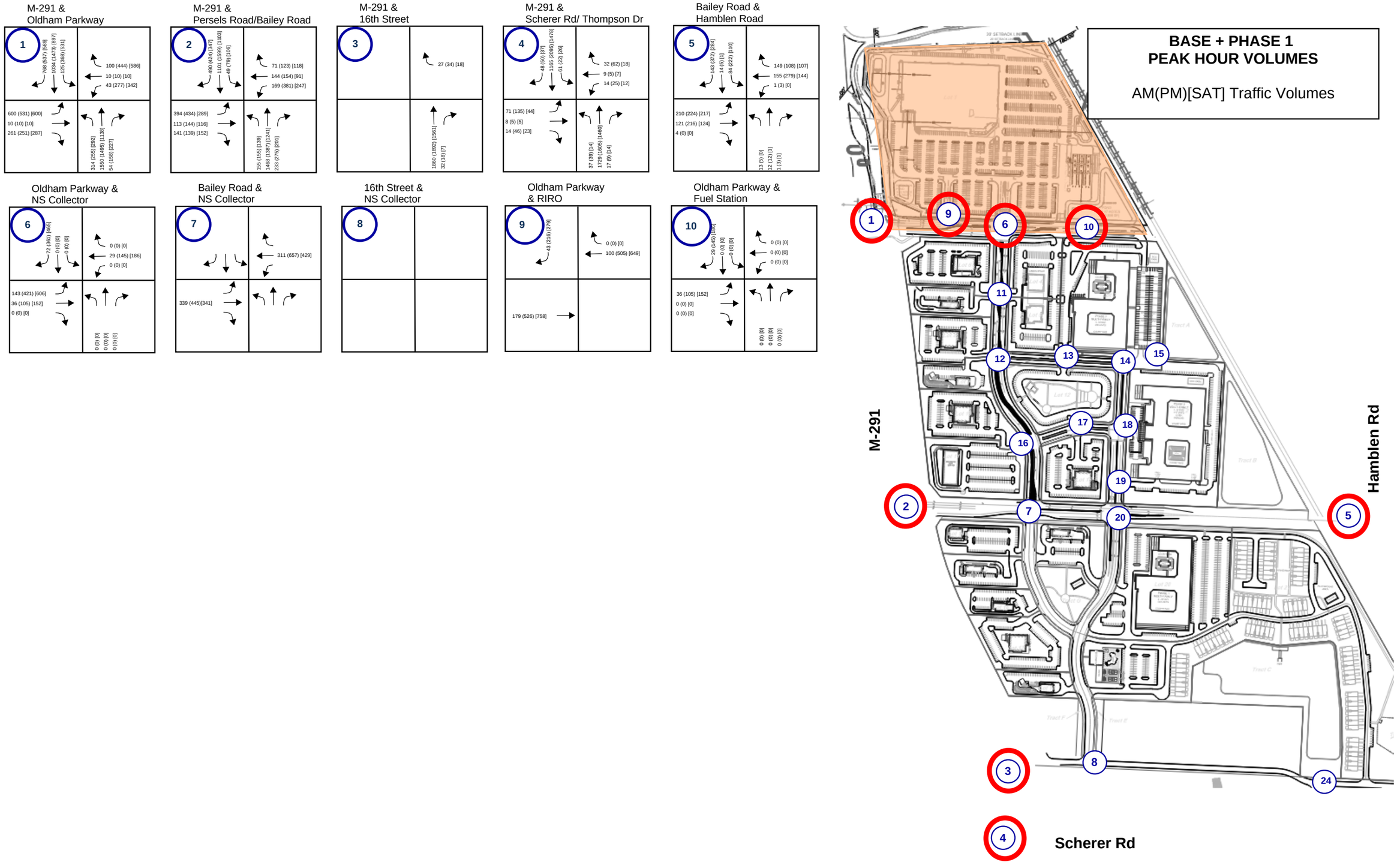
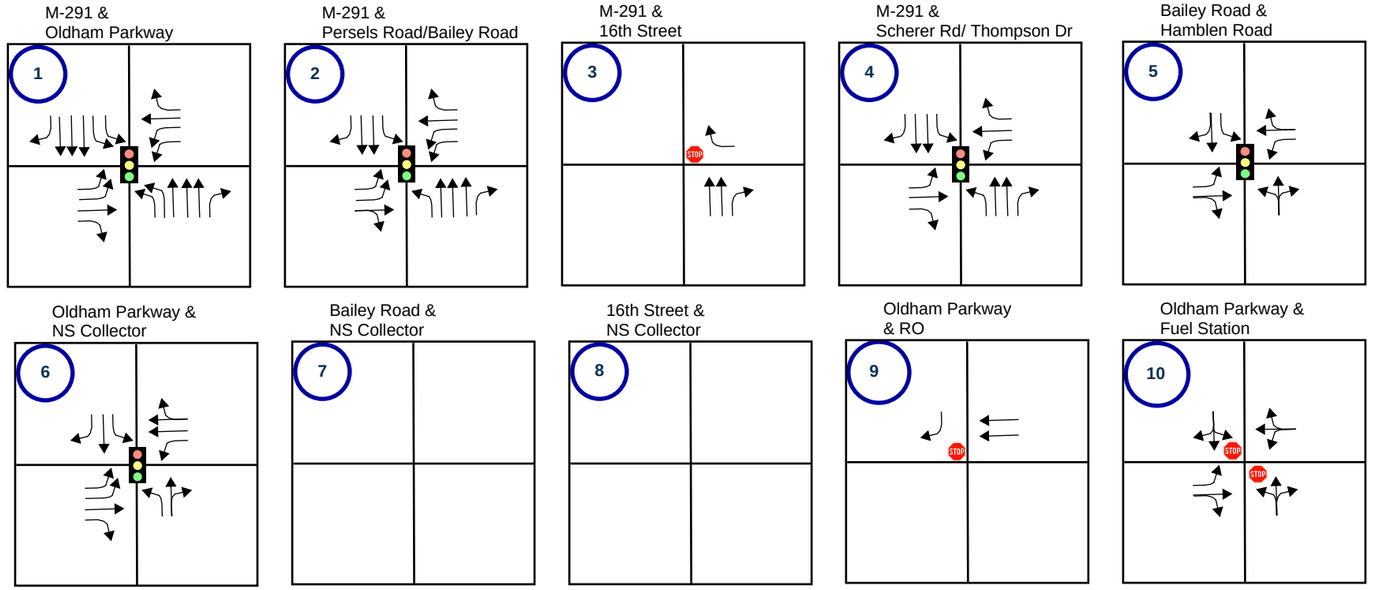

M-291 &
Oldham Parkway
1
768 (537) [898]
1034 (1479) [897]
125 (368) [531]
100 (444) [586]
10 (10) [10]
43 (277) [342]
600 (531) [600]
10 (10) [10]
261 (251) [287]
314 (255) [252]
1550 (1455) [1138]
54 (158) [227]
M-291 &
Persels Road/Bailey Road
2
490 (424) [347]
1101 (1599) [1103]
49 (79) [106]
71 (123) [118]
144 (154) [91]
169 (381) [247]
394 (434) [289]
113 (144) [116]
141 (139) [152]
155 (155) [136]
1214 (1367) [1214]
233 (275) [201]
M-291 &
16th Street
3
27 (34) [18]
1986 (1529) [1519]
32 (149) [87]
M-291 &
Scherer Rd/ Thompson Dr
4
48 (50) [37]
1165 (2095) [1478]
61 (23) [26]
32 (62) [18]
9 (5) [7]
14 (25) [12]
71 (135) [44]
8 (5) [5]
14 (46) [23]
37 (39) [14]
1729 (1605) [1460]
17 (9) [14]
Bailey Road &
Hamblen Road
5
143 (372) [284]
14 (5) [1]
84 (222) [110]
149 (108) [107]
155 (279) [144]
1 (3) [0]
210 (224) [217]
121 (216) [124]
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
1
9
6
10
11
12
13
14
15
16
17
18
19
20
2
7
5
3
8
24
4

FIGURE 12


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
& RO
9
Oldham Parkway &
Fuel Station
10

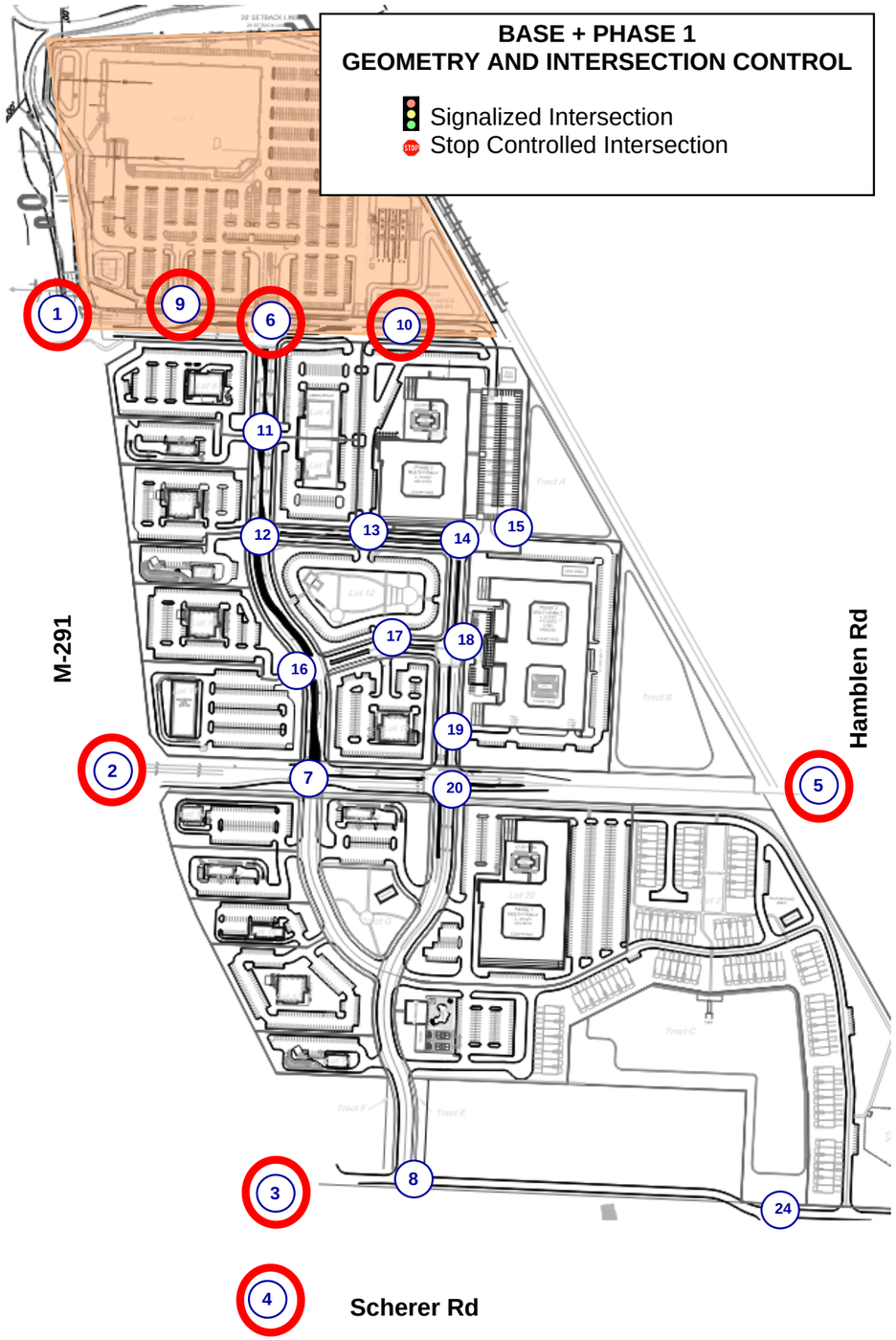
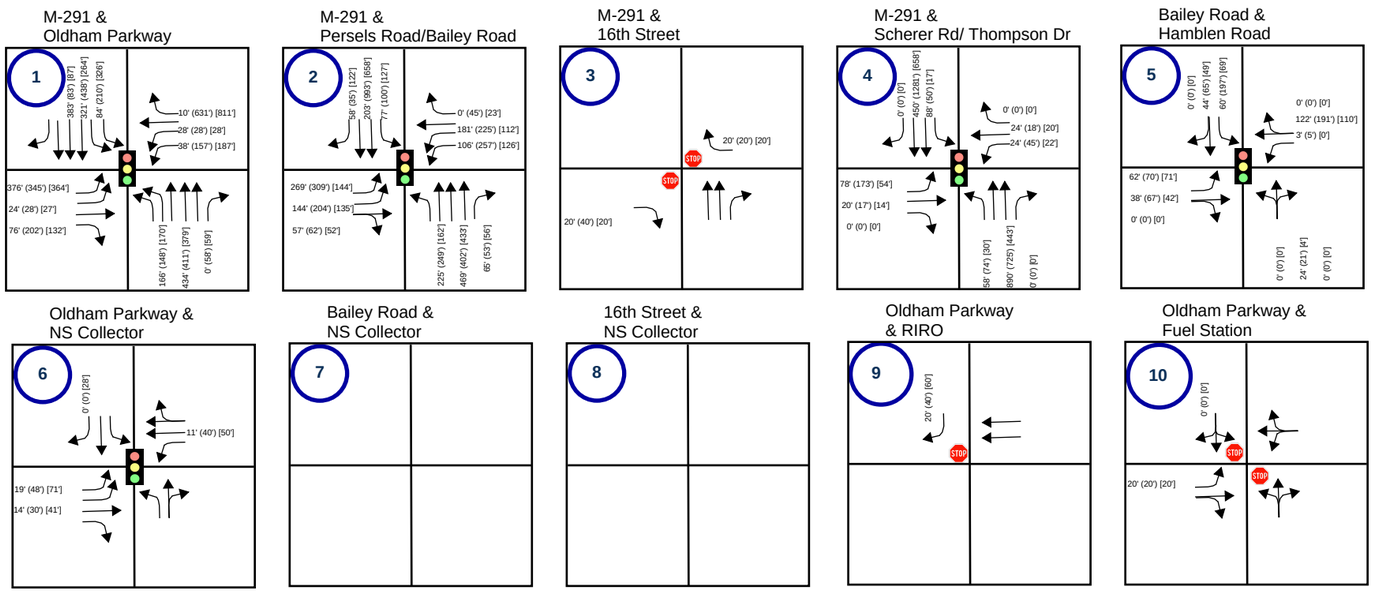

BASE + PHASE 1
GEOMETRY AND INTERSECTION CONTROL
Signalized Intersection
Stop Controlled Intersection
M-291
Hamblen Rd
Scherer Rd
1
9
6
10
11
12
13
14
15
16
17
18
19
20
2
7
5
3
8
24
4

FIGURE 13


M-291 &
Oldham Parkway
1
383' (85') [87']
321' (438') [264']
84' (210') [206']
10' (631') [811']
28' (28') [28]
38' (157') [187']
376' (345') [364']
24' (28') [27']
76' (202') [132']
16' (148') [170']
434' (411') [379']
0' (58') [59']
M-291 &
Persels Road/Bailey Road
2
58' (85') [122']
200' (993') [658']
77' (100') [127']
0' (45') [23']
181' (225') [112']
106' (257') [126']
269' (309') [144']
144' (204') [135']
57' (62') [52']
225' (249') [162']
469' (402') [433']
65' (53') [56']
M-291 &
16th Street
3
20' (20') [20']
STOP
STOP
20' (40') [20']
M-291 &
Scherer Rd/ Thompson Dr
4
0' (0') [0']
450' (1281') [658']
86' (50') [17']
0' (0') [0']
24' (18') [20']
24' (45') [22']
78' (173') [54']
20' (17') [14']
0' (0') [0']
58' (74') [30']
890' (725') [443']
0' (0') [0']
Bailey Road &
Hamblen Road
5
0' (0') [0']
44' (65') [49']
60' (197') [69']
0' (0') [0']
122' (191') [110']
3' (5') [0']
62' (70') [71']
38' (67') [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

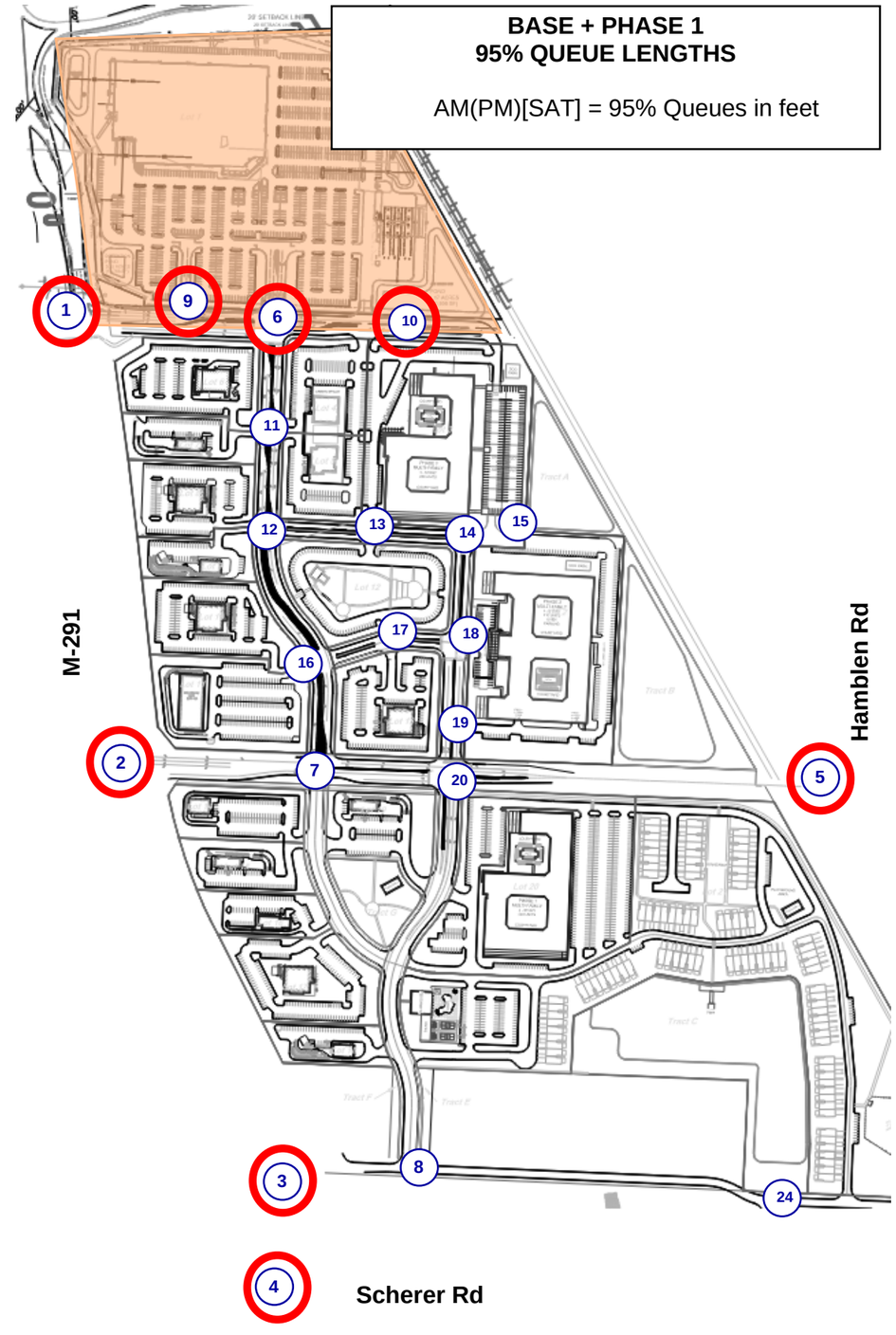
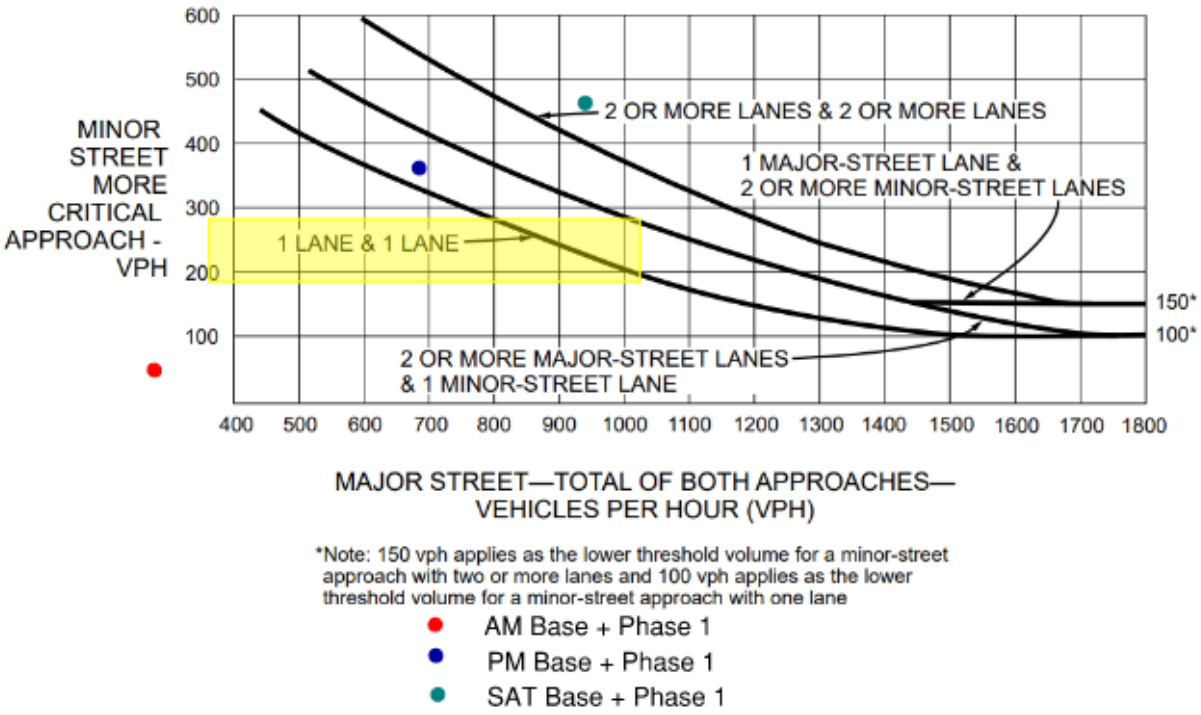

BASE + PHASE 1
95% QUEUE LENGTHS
AM(PM)[SAT] = 95% Queues in feet
M-291
Hamblen Rd
Scherer Rd
1
9
6
10
11
12
13
14
15
16
17
18
19
20
2
7
5
3
8
24
4

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

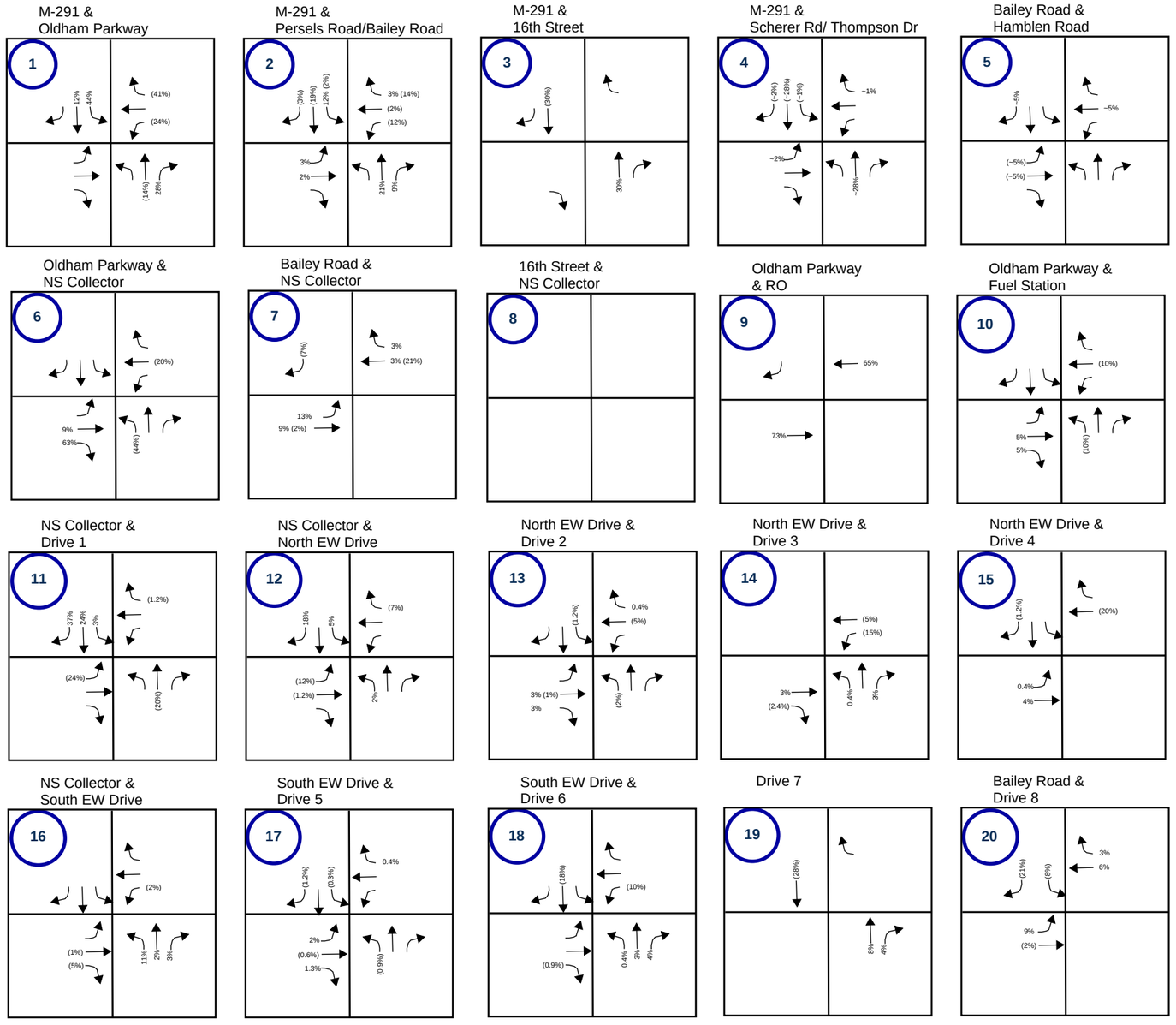
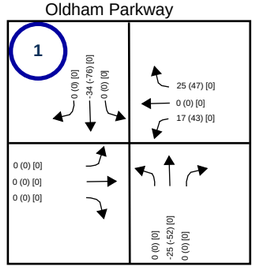
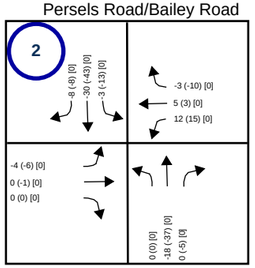

M-291 &
Oldham Parkway
1
12%
44%
(41%)
(24%)
(14%)
28%
M-291 &
Persels Road/Bailey Road
2
(3%)
(19%)
12% (2%)
3% (14%)
(2%)
(12%)
3%
2%
21%
9%
M-291 &
16th Street
3
(30%)
30%
M-291 &
Scherer Rd/ Thompson Dr
4
(~2%)
(~28%)
(~1%)
~1%
~2%
~28%
Bailey Road &
Hamblen Road
5
~5%
~5%
(~5%)
(~5%)
Oldham Parkway &
NS Collector
6
(20%)
9%
63%
(44%)
Bailey Road &
NS Collector
7
(7%)
3%
3% (21%)
13%
9% (2%)
16th Street &
NS Collector
8
Oldham Parkway
& RO
9
65%
73%
Oldham Parkway &
Fuel Station
10
(10%)
5%
5%
(10%)
NS Collector &
Drive 1
11
37%
24%
3%
(1.2%)
(24%)
(20%)
NS Collector &
North EW Drive
12
18%
5%
(7%)
(12%)
(1.2%)
2%
North EW Drive &
Drive 2
13
(1.2%)
0.4%
(5%)
3% (1%)
3%
(2%)
North EW Drive &
Drive 3
14
(5%)
(15%)
3%
(2.4%)
0.4%
3%
North EW Drive &
Drive 4
15
(1.2%)
(20%)
0.4%
4%
NS Collector &
South EW Drive
16
(2%)
(1%)
(5%)
11%
2%
3%
South EW Drive &
Drive 5
17
(1.2%)
(0.3%)
0.4%
2%
(0.6%)
1.3%
(0.9%)
South EW Drive &
Drive 6
18
(18%)
(10%)
(0.9%)
0.4%
3%
4%
Drive 7
19
(28%)
8%
4%
Bailey Road &
Drive 8
20
(21%)
(8%)
3%
6%
9%
(2%)
PHASE 2 BAILEY ROAD NORTH
PRIMARY TRIP DISTRIBUTION
x% = Inbound Site Traffic
(x%) = Outbound Site Traffic
M-291
Hamblen Rd
Scherer Rd

FIGURE 16

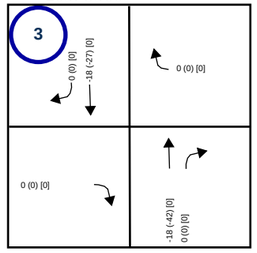
M-291 & Oldham Parkway



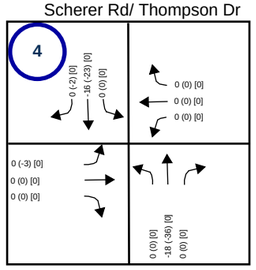
M-291 & Persels Road/Bailey Road



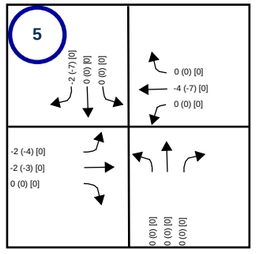
M-291 & 16th Street



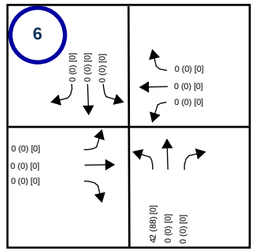
M-291 & Scherer Rd/ Thompson Dr



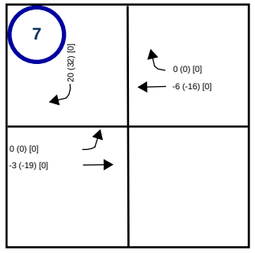
Bailey Road & Hamblen Road



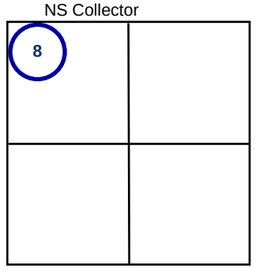
Oldham Parkway & NS Collector



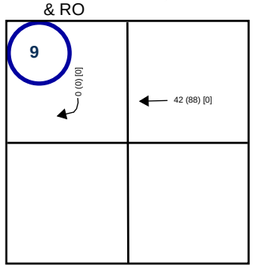
Bailey Road & NS Collector



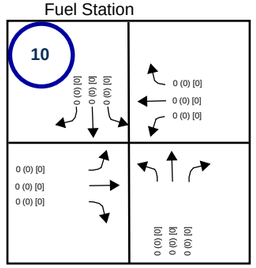
16th Street & NS Collector



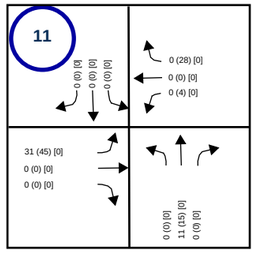
Oldham Parkway & RO



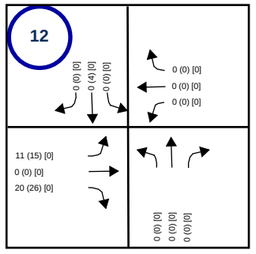
Oldham Parkway & Fuel Station



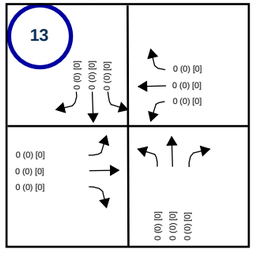
NS Collector & Drive 1



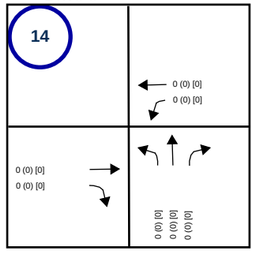
NS Collector & North EW Drive



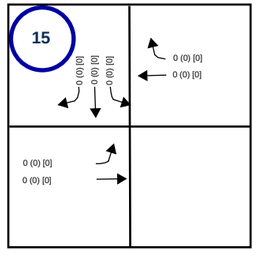
North EW Drive & Drive 2



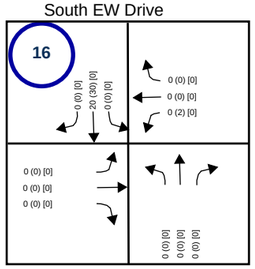
North EW Drive & Drive 3



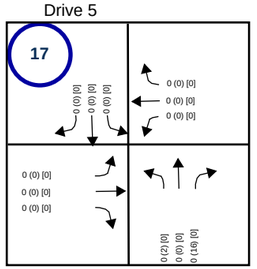
North EW Drive & Drive 4



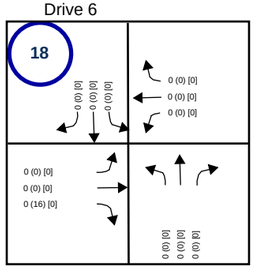
NS Collector & South EW Drive



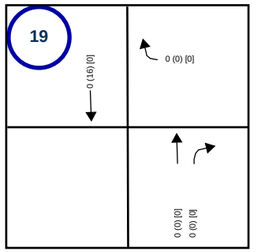
South EW Drive & Drive 5



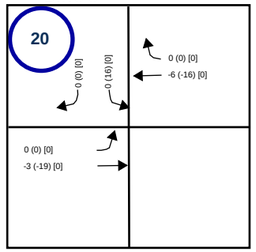
South EW Drive & Drive 6



Drive 7



Bailey Road & Drive 8



PHASE 2 BAILEY ROAD NORTH PASS-BY TRIP VOLUMES

AM(PM)[SAT] Traffic Volumes

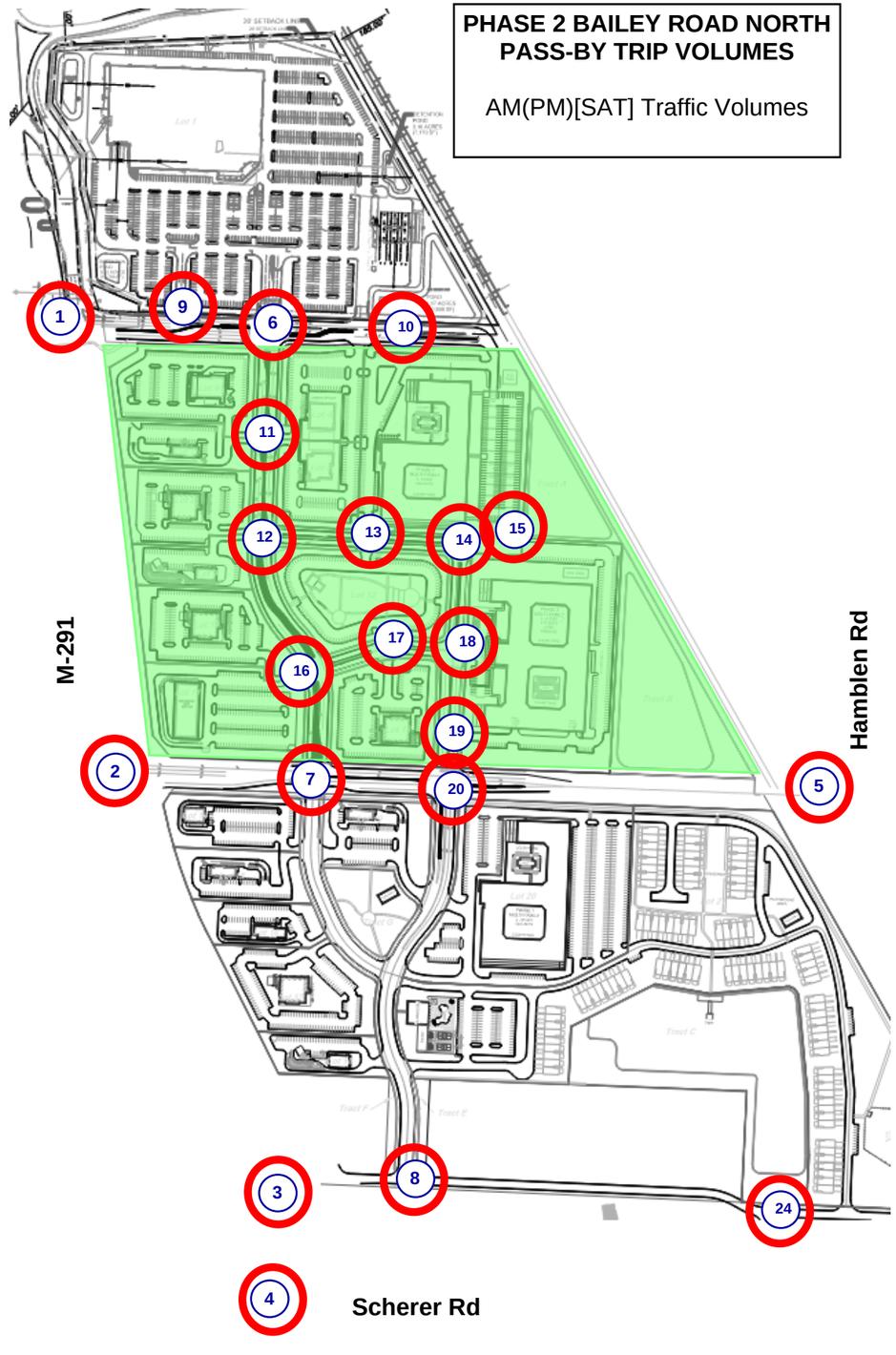
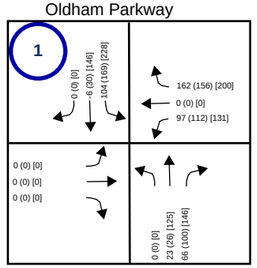
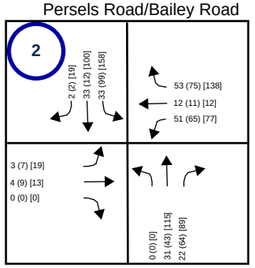


FIGURE 17

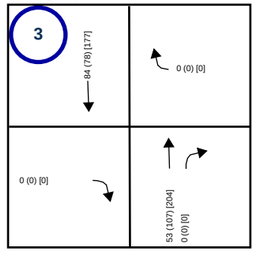
M-291 &
Oldham Parkway



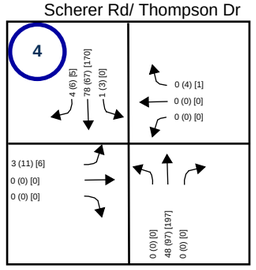
M-291 &
Persels Road/Bailey Road



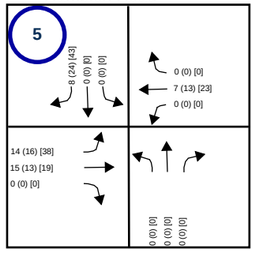
M-291 &
16th Street



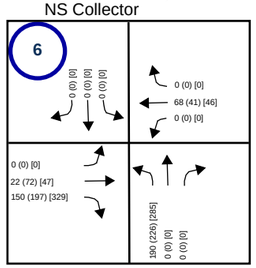
M-291 &
Scherer Rd/ Thompson Dr



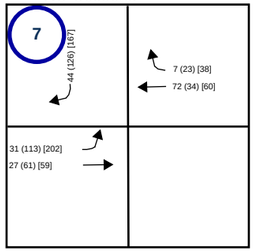
Bailey Road &
Hamblen Road



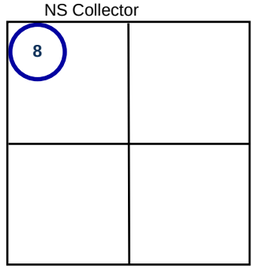
Oldham Parkway &
NS Collector



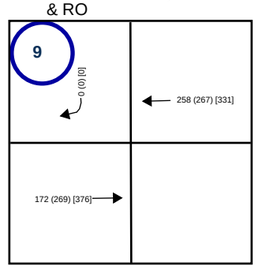
Bailey Road &
NS Collector



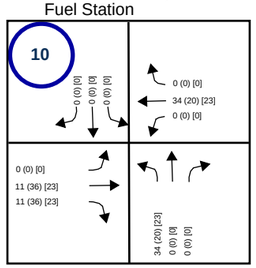
16th Street &
NS Collector



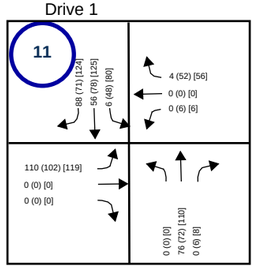
Oldham Parkway
& RO



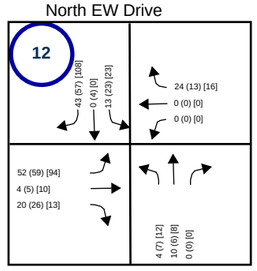
Oldham Parkway &
Fuel Station



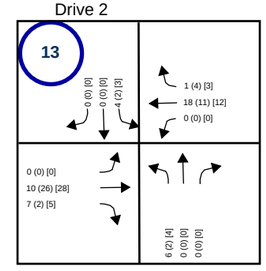
NS Collector &
Drive 1



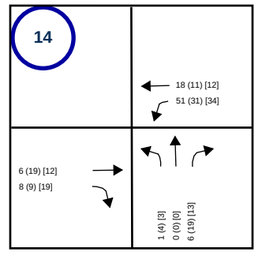
NS Collector &
North EW Drive



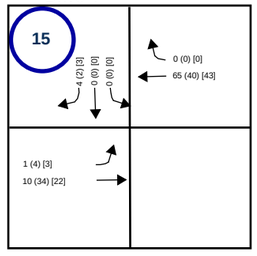
North EW Drive &
Drive 2



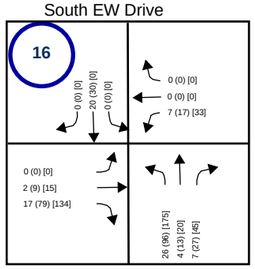
North EW Drive &
Drive 3



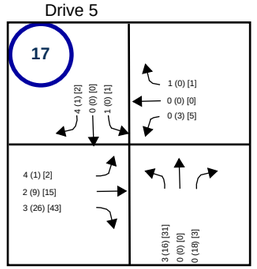
North EW Drive &
Drive 4



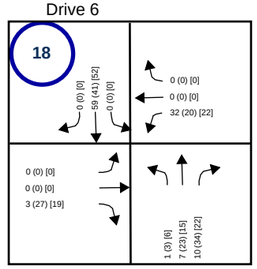
NS Collector &
South EW Drive



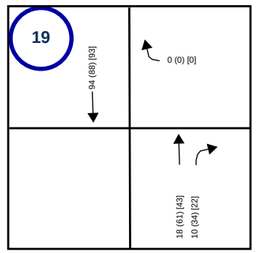
South EW Drive &
Drive 5



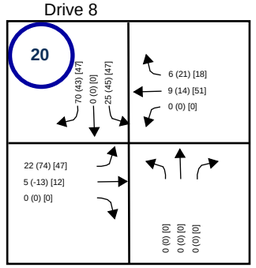
South EW Drive &
Drive 6



Drive 7



Bailey Road &
Drive 8



PHASE 2 BAILEY ROAD NORTH
TOTAL SITE TRIPS

AM(PM)[SAT] Traffic Volumes

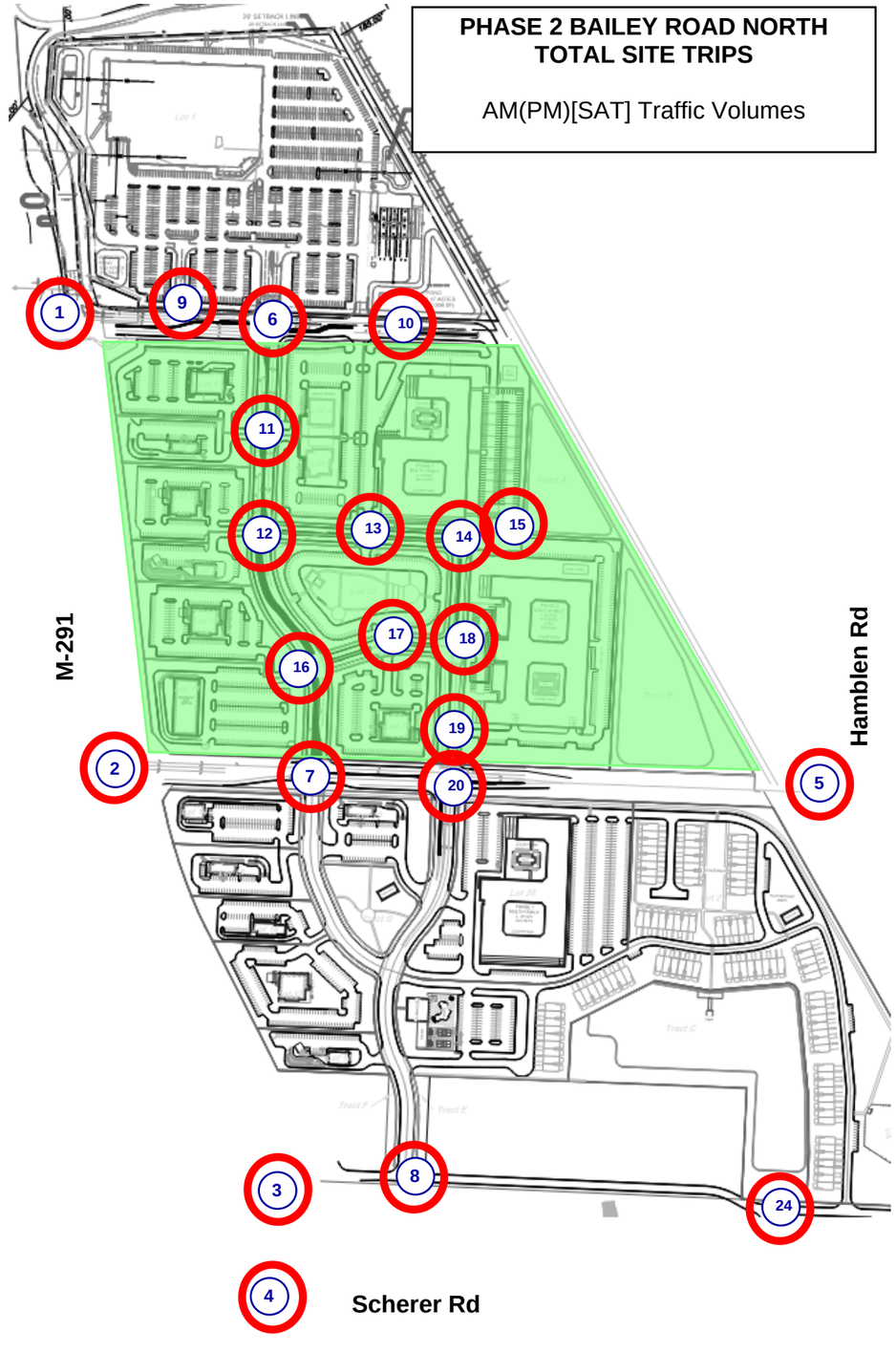
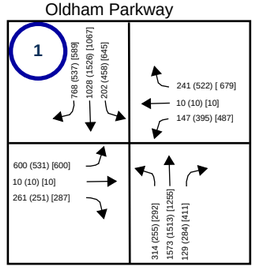
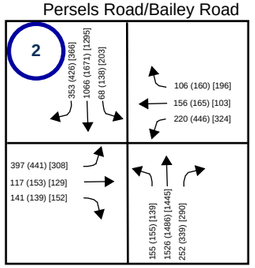


FIGURE 18

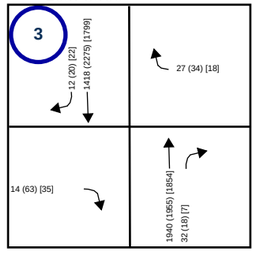
M-291 &
Oldham Parkway



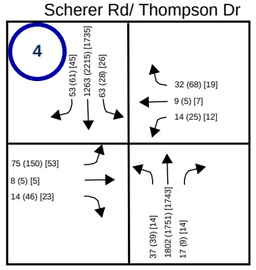
M-291 &
Persels Road/Bailey Road



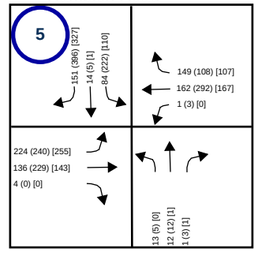
M-291 &
16th Street



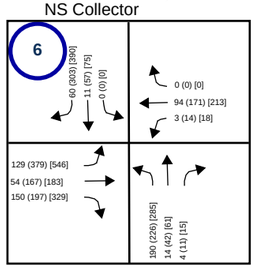
M-291 &
Scherer Rd/ Thompson Dr



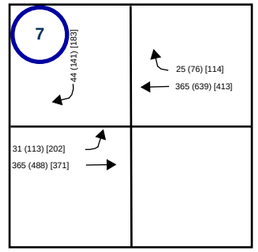
Bailey Road &
Hamblen Road



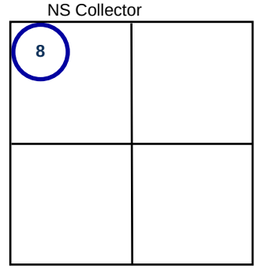
Oldham Parkway &
NS Collector



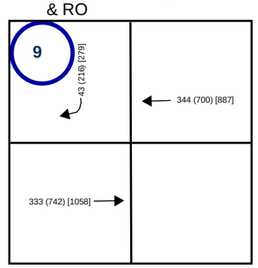
Bailey Road &
NS Collector



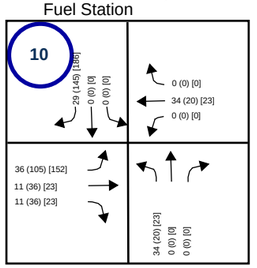
16th Street &
NS Collector



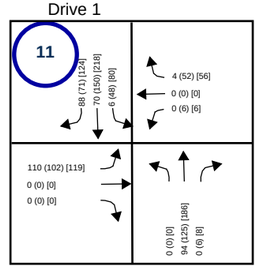
Oldham Parkway
& RO



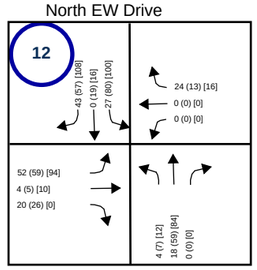
Oldham Parkway &
Fuel Station



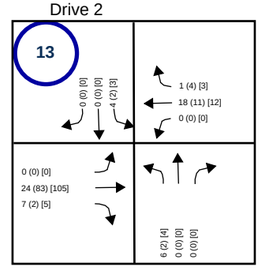
NS Collector &
Drive 1



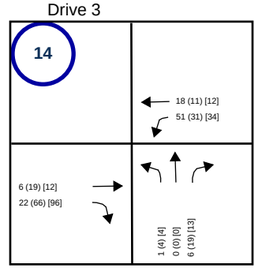
NS Collector &
North EW Drive



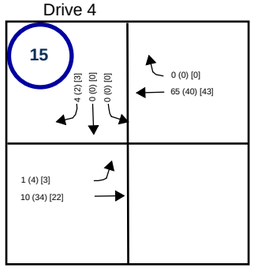
North EW Drive &
Drive 2



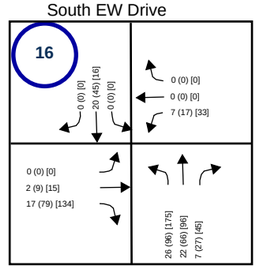
North EW Drive &
Drive 3



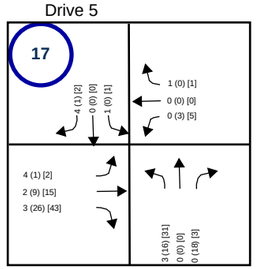
North EW Drive &
Drive 4



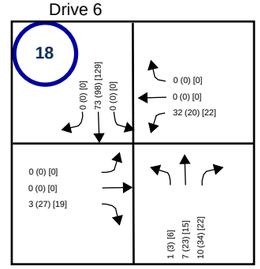
NS Collector &
South EW Drive



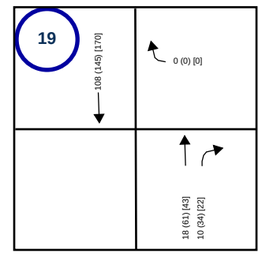
South EW Drive &
Drive 5



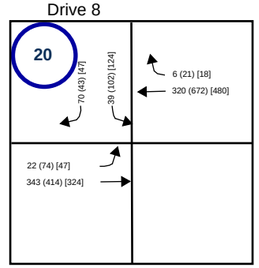
South EW Drive &
Drive 6



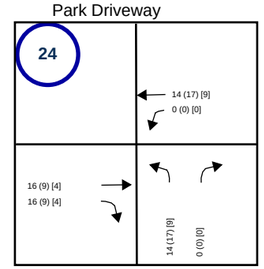
Drive 7



Bailey Road &
Drive 8



16th Street &
Park Driveway



BASE + PHASE 1-2
PEAK HOUR VOLUMES

AM(PM)[SAT] Traffic Volumes

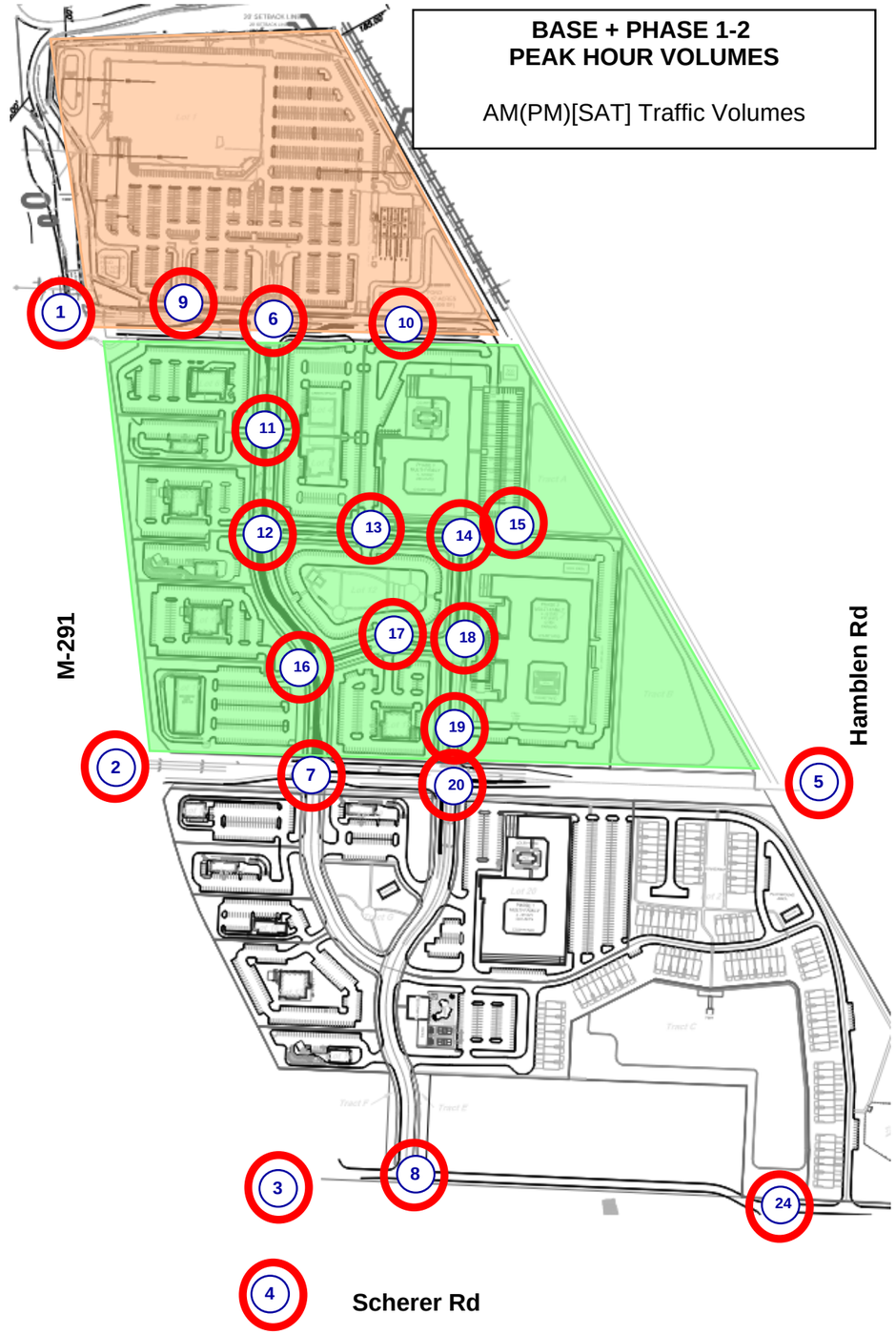
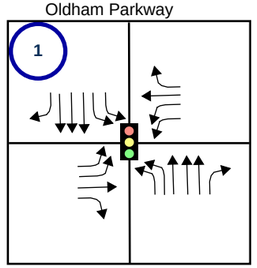
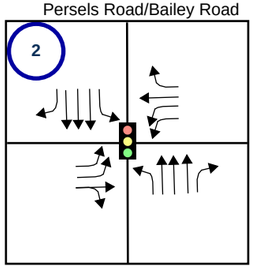


FIGURE 19

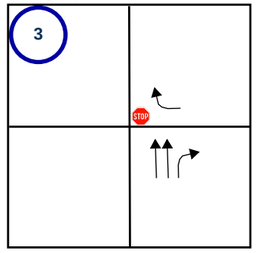
M-291 &
Oldham Parkway



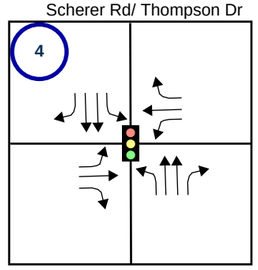
M-291 &
Persels Road/Bailey Road



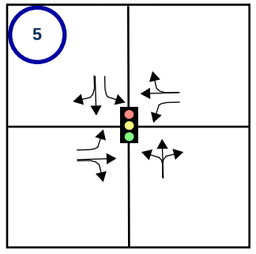
M-291 &
16th Street



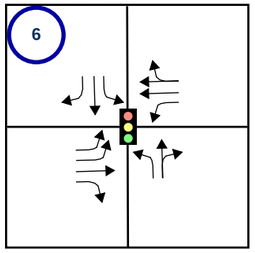
M-291 &
Scherer Rd/ Thompson Dr



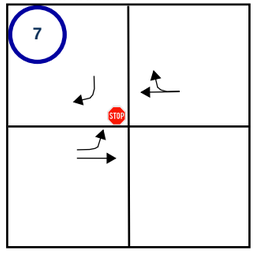
Bailey Road &
Hamblen Road



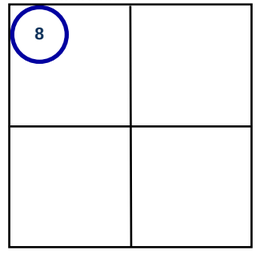
Oldham Parkway &
NS Collector



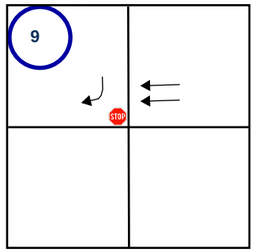
Bailey Road &
NS Collector



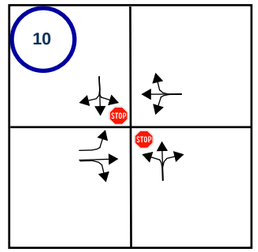
16th Street &
NS Collector



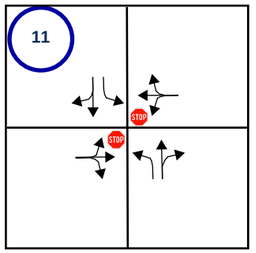
Oldham Parkway
& RO



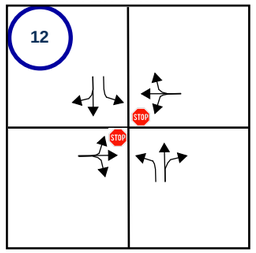
Oldham Parkway &
Fuel Station



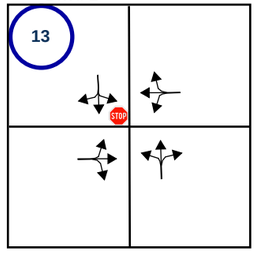
NS Collector &
Drive 1



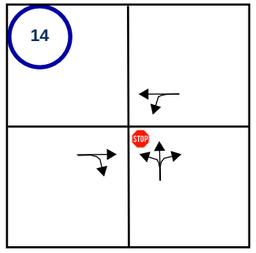
NS Collector &
North EW Drive



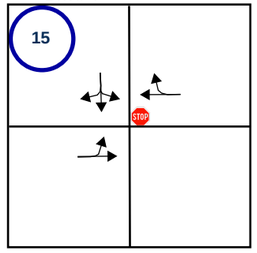
North EW Drive &
Drive 2



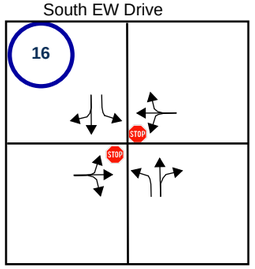
North EW Drive &
Drive 3



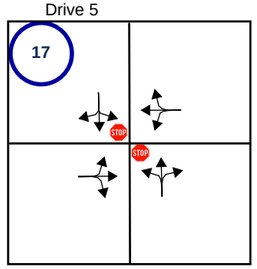
North EW Drive &
Drive 4



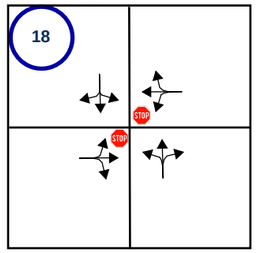
NS Collector &
South EW Drive



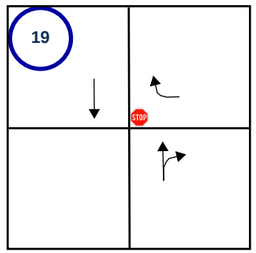
South EW Drive &
Drive 5



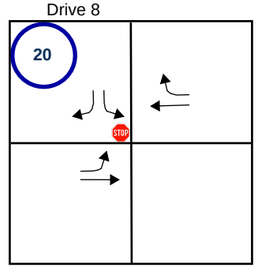
South EW Drive &
Drive 6



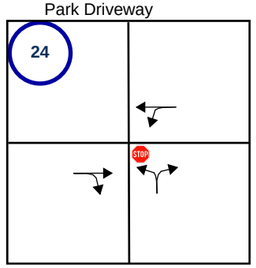
Drive 7



Bailey Road &
Drive 8



16th Street &
Park Driveway



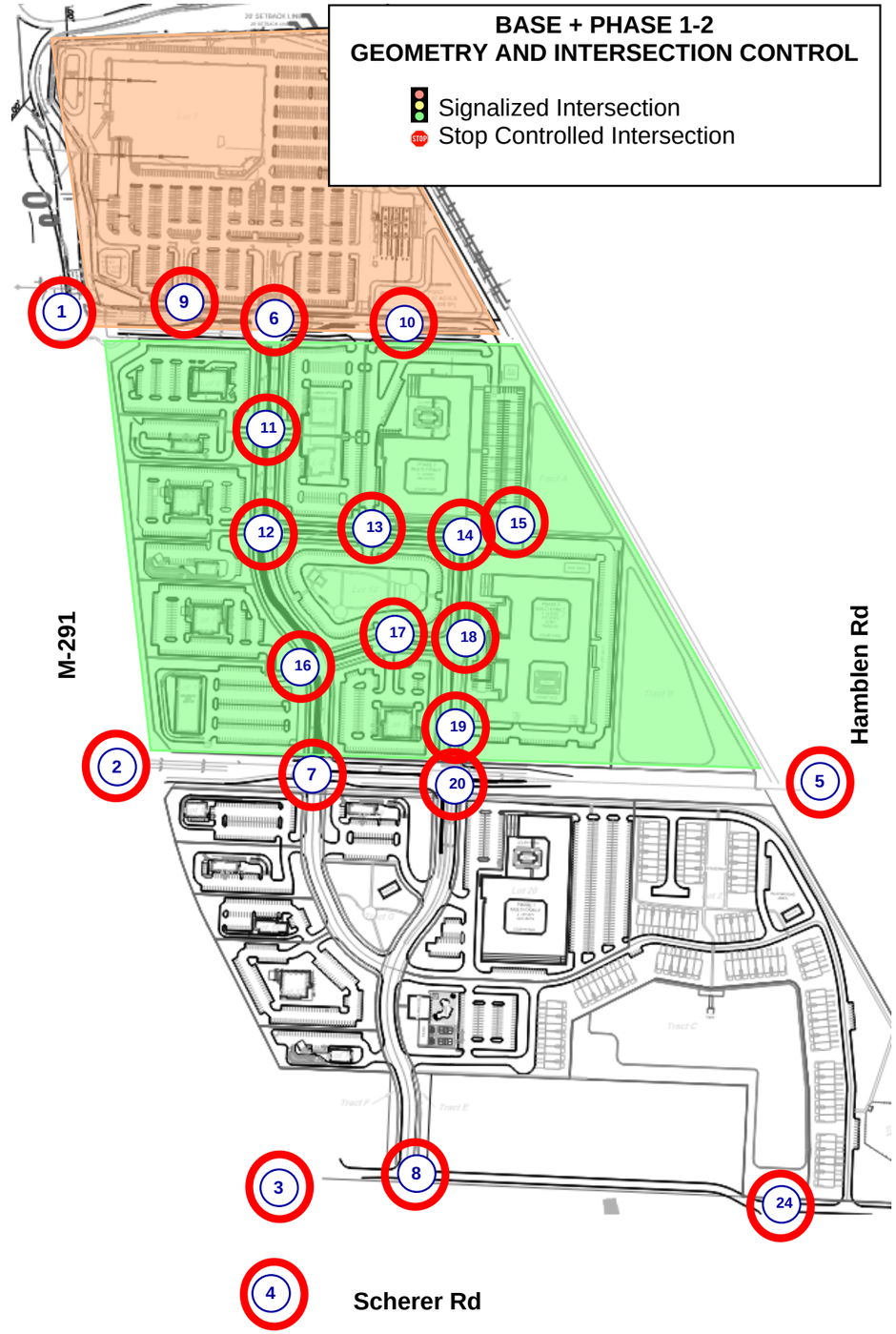
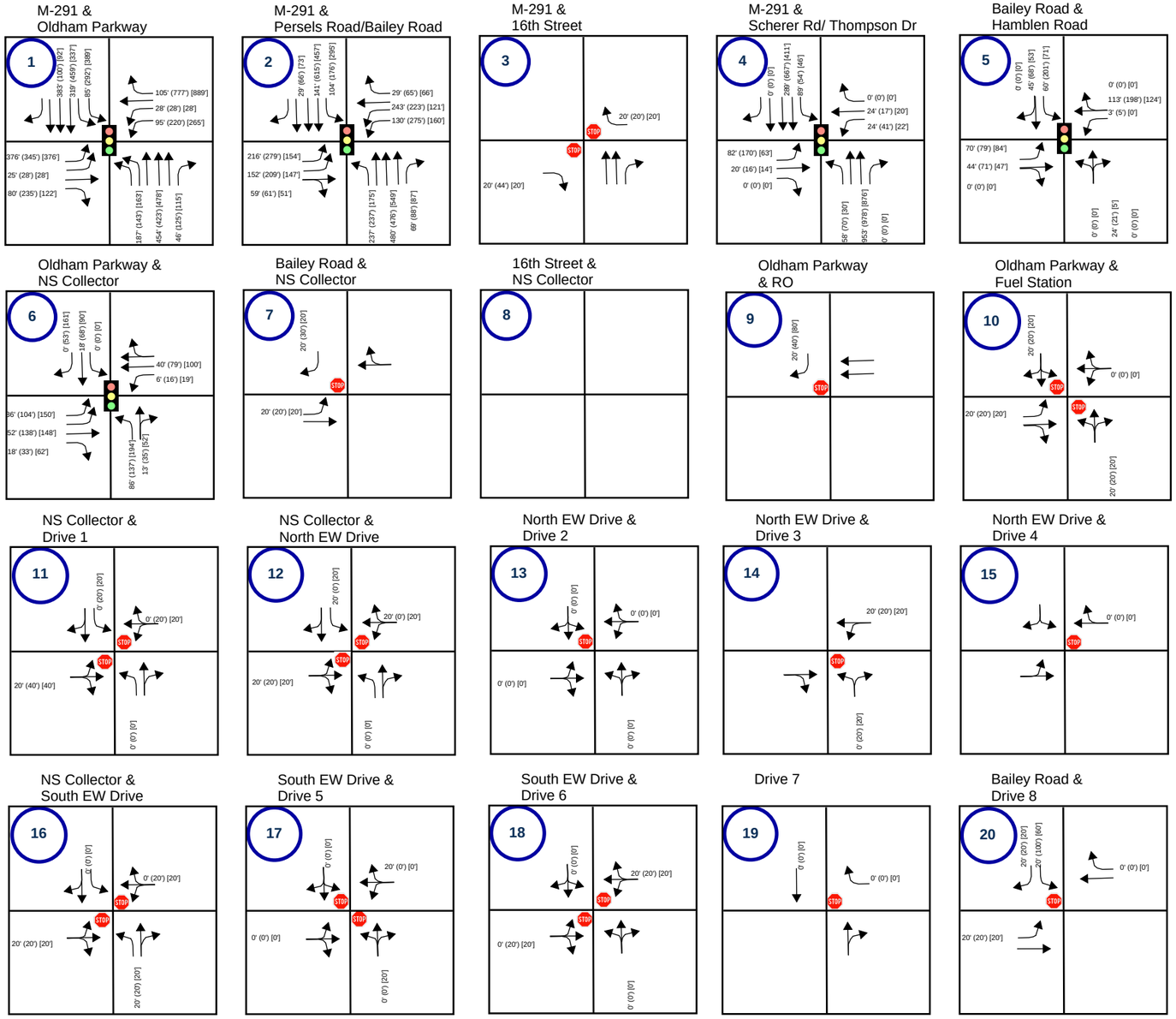


FIGURE 20


M-291 &
Oldham Parkway
1
383' (100') [82']
319' (459') [337']
85' (292') [389']
105' (777') [889']
28' (28') [28]
95' (220') [265']
376' (345') [376']
25' (28') [28]
80' (235') [122']
197' (145') [163']
454' (423') [478]
46' (125') [115]
M-291 &
Persels Road/Bailey Road
2
29' (65') [73']
141' (615') [457']
104' (176') [295']
29' (65') [66']
243' (223') [121']
130' (275') [160']
216' (279') [154']
152' (209') [147']
59' (61') [51']
237' (237') [175']
480' (476') [549']
69' (68') [87']
M-291 &
16th Street
3
20' (20') [20']
20' (44') [20']
M-291 &
Scherer Rd/ Thompson Dr
4
0' (0') [0']
288' (667') [411']
89' (54') [46']
0' (0') [0']
24' (17') [20']
24' (41') [22']
82' (170') [63']
20' (16') [14']
0' (0') [0']
58' (70') [36']
953' (976') [876']
0' (0') [0']
Bailey Road &
Hamblen Road
5
0' (0') [0']
45' (68') [53']
60' (201') [71']
0' (0') [0']
113' (198') [124']
3' (5') [0']
70' (79') [84']
44' (71') [47']
0' (0') [0']
0' (0') [0']
24' (21') [5]
0' (0') [0']
Oldham Parkway &
NS Collector
6
0' (53') [51']
109' (69') [90']
0' (0') [0']
40' (79') [100']
6' (16') [19']
36' (104') [150']
52' (138') [148']
18' (33') [62']
86' (137') [194']
13' (35') [52']
Bailey Road &
NS Collector
7
20' (30') [20']
20' (20') [20']
16th Street &
NS Collector
8
Oldham Parkway
& RO
9
20' (40') [80']
Oldham Parkway &
Fuel Station
10
20' (20') [20']
0' (0') [0']
20' (20') [20']
20' (20') [20']
NS Collector &
Drive 1
11
0' (20') [20']
0' (20') [20']
20' (40') [40']
0' (0') [0']
NS Collector &
North EW Drive
12
20' (0') [20']
20' (0') [20']
20' (20') [20']
0' (0') [0']
North EW Drive &
Drive 2
13
0' (0') [0']
0' (0') [0']
0' (0') [0']
0' (0') [0']
North EW Drive &
Drive 3
14
20' (20') [20']
0' (20') [20']
North EW Drive &
Drive 4
15
0' (0') [0']
0' (0') [0']
NS Collector &
South EW Drive
16
0' (0') [0']
0' (20') [20']
20' (20') [20']
20' (20') [20']
South EW Drive &
Drive 5
17
0' (0') [0']
20' (0') [0']
0' (0') [0']
0' (0') [20']
South EW Drive &
Drive 6
18
0' (0') [0']
20' (20') [20']
0' (20') [20']
0' (0') [0']
Drive 7
19
0' (0') [0']
0' (0') [0']
Bailey Road &
Drive 8
20
20' (20') [20']
20' (100') [60']
0' (0') [0']
20' (20') [20']

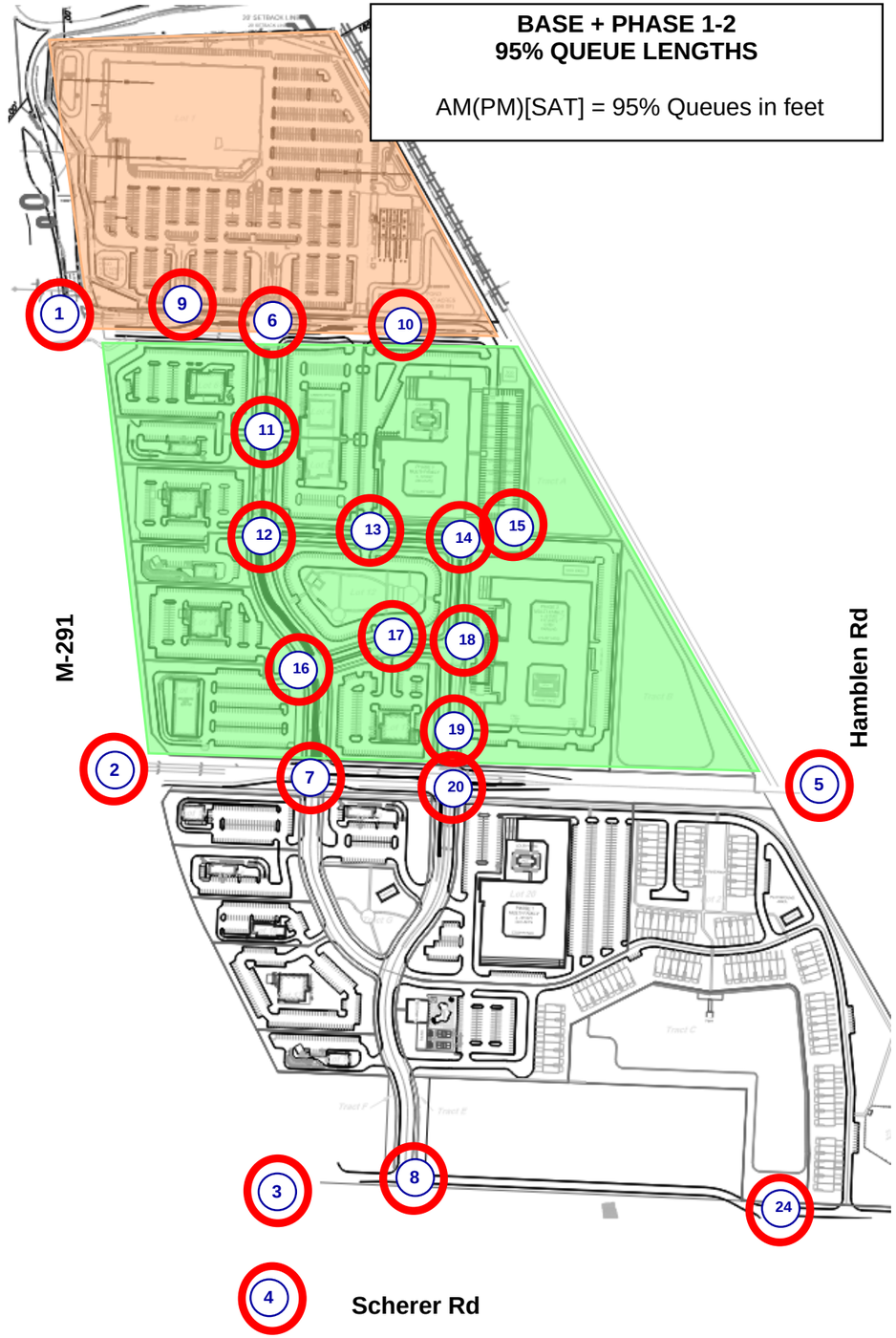
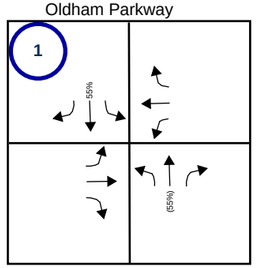
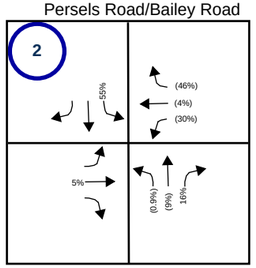

BASE + PHASE 1-2
95% QUEUE LENGTHS
AM(PM)[SAT] = 95% Queues in feet
M-291
Hamblen Rd
Scherer Rd
1
9
6
10
11
12
13
14
15
16
17
18
19
20
2
7
5
3
8
24
4

FIGURE 21

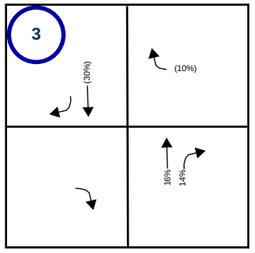
M-291 &
Oldham Parkway



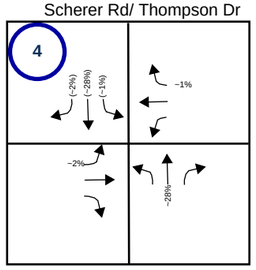
M-291 &
Persels Road/Bailey Road



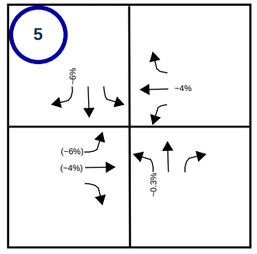
M-291 &
16th Street



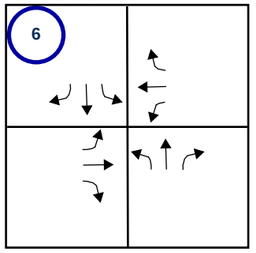
M-291 &
Scherer Rd/ Thompson Dr



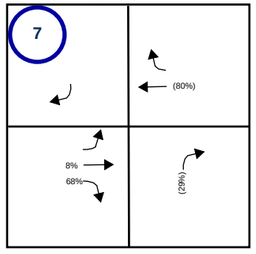
Bailey Road &
Hamblen Road



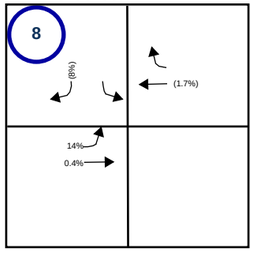
Oldham Parkway &
NS Collector



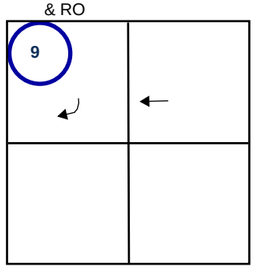
Bailey Road &
NS Collector



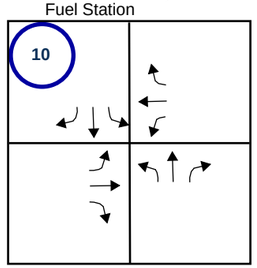
16th Street &
NS Collector



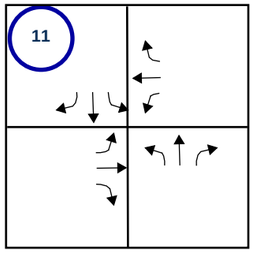
Oldham Parkway
& RO



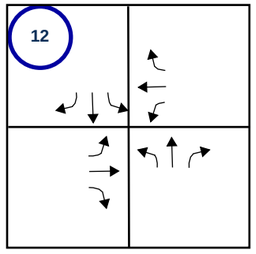
Oldham Parkway &
Fuel Station



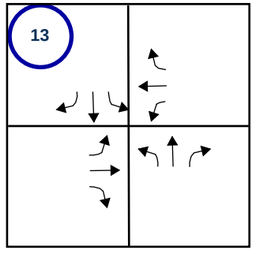
NS Collector &
Drive 1



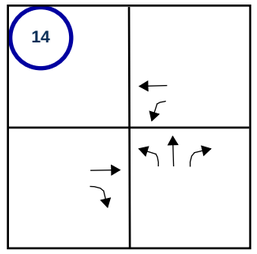
NS Collector &
North EW Drive



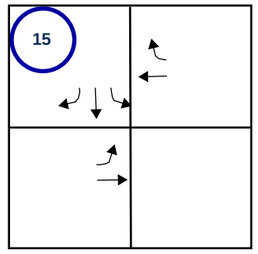
North EW Drive &
Drive 2



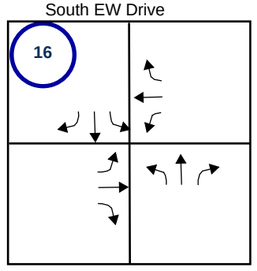
North EW Drive &
Drive 3



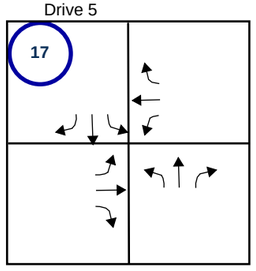
North EW Drive &
Drive 4



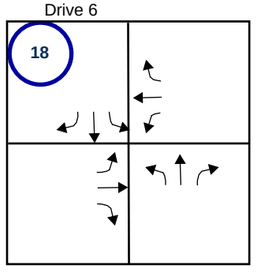
NS Collector &
South EW Drive



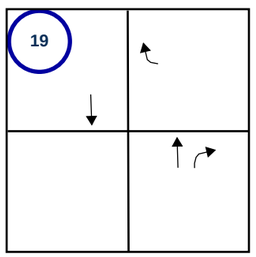
South EW Drive &
Drive 5



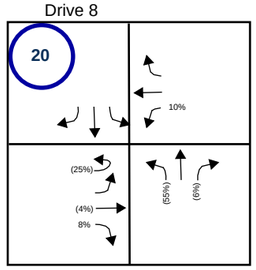
South EW Drive &
Drive 6



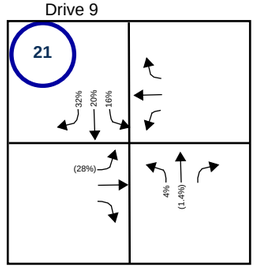
Drive 7



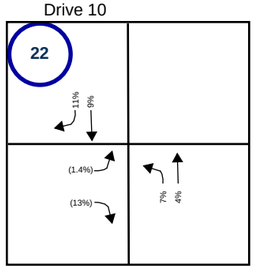
Bailey Road &
Drive 8



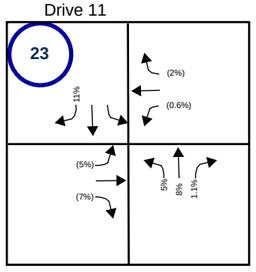
NS Collector &
Drive 9



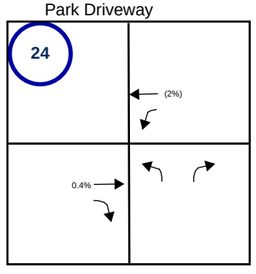
NS Collector &
Drive 10



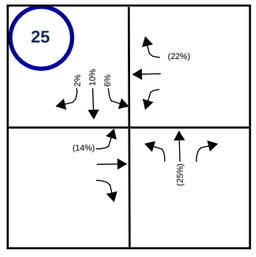
NS Collector &
Drive 11



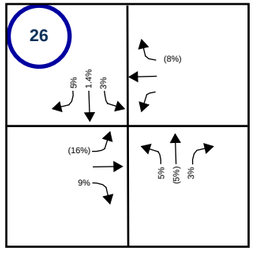
16th Street &
Park Driveway



Drive 12



Drive 13



PHASE 3 16th STREET NORTH
PRIMARY TRIP DISTRIBUTION

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

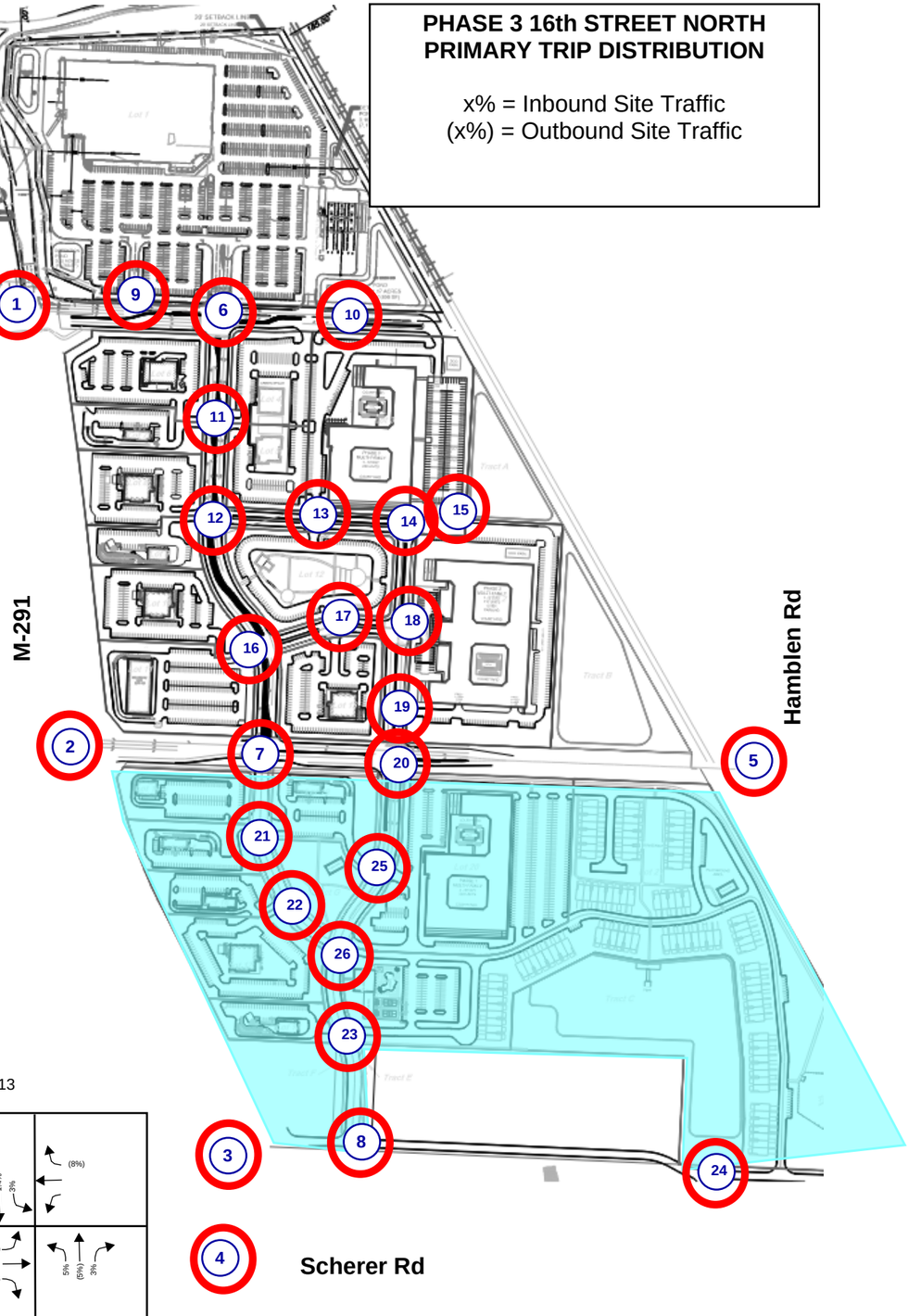
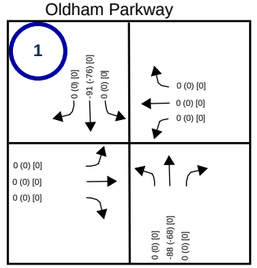


FIGURE 22

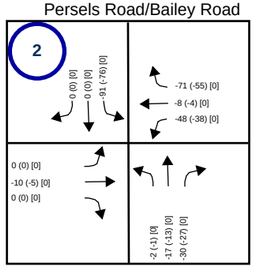
PHASE 3 16th STREET NORTH PASS-BY TRIP VOLUMES

AM(PM)[SAT] Traffic Volumes

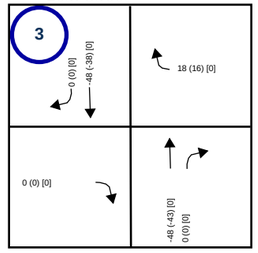
M-291 & Oldham Parkway



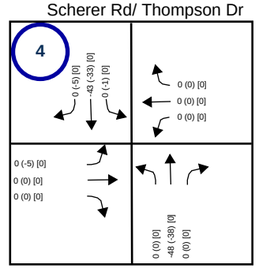
M-291 & Persels Road/Bailey Road



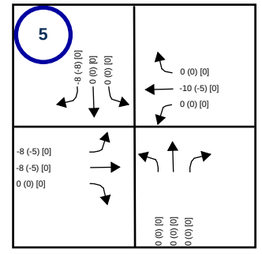
M-291 & 16th Street



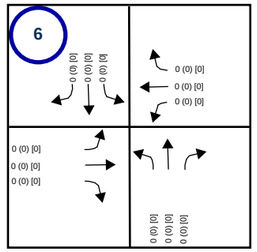
M-291 & Scherer Rd/ Thompson Dr



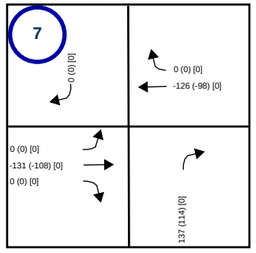
Bailey Road & Hamblen Road



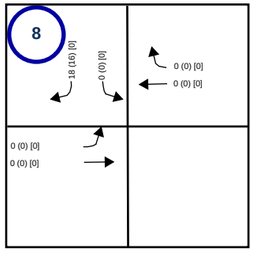
Oldham Parkway & NS Collector



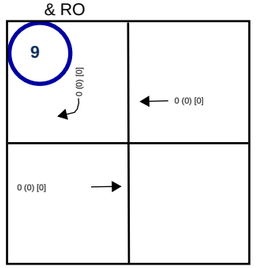
Bailey Road & NS Collector



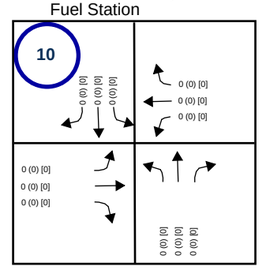
16th Street & NS Collector



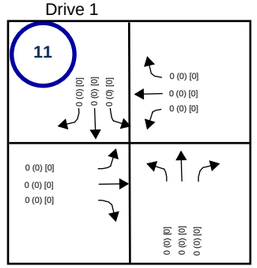
Oldham Parkway & RO



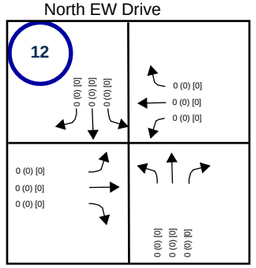
Oldham Parkway & Fuel Station



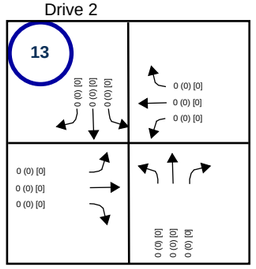
NS Collector & Drive 1



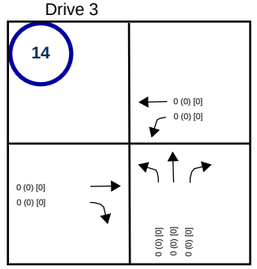
NS Collector & North EW Drive



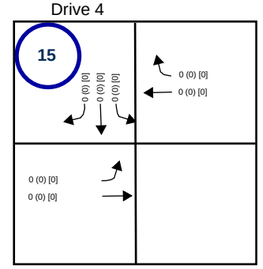
North EW Drive & Drive 2



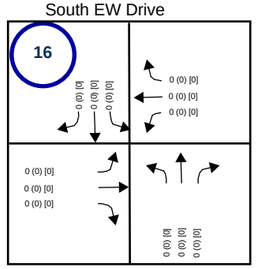
North EW Drive & Drive 3



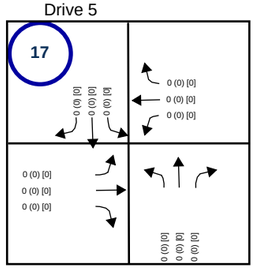
North EW Drive & Drive 4



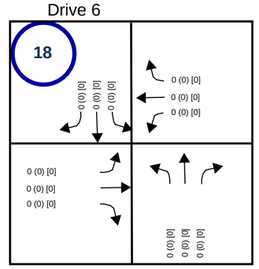
NS Collector & South EW Drive



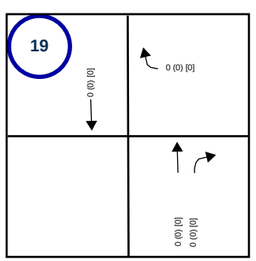
South EW Drive & Drive 5



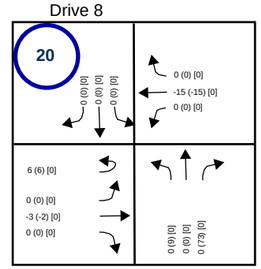
South EW Drive & Drive 6



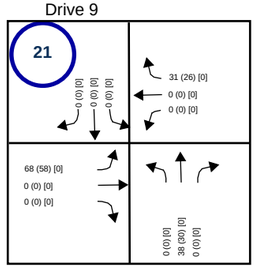
Drive 7



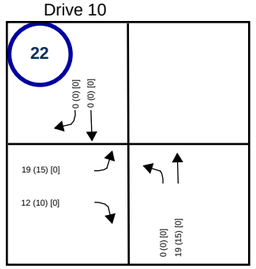
Bailey Road & Drive 8



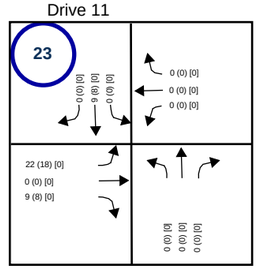
NS Collector & Drive 9



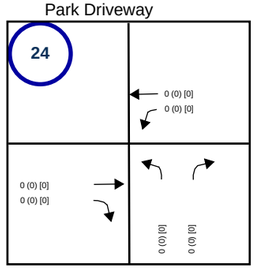
NS Collector & Drive 10



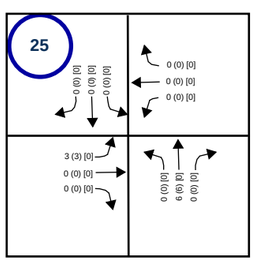
NS Collector & Drive 11



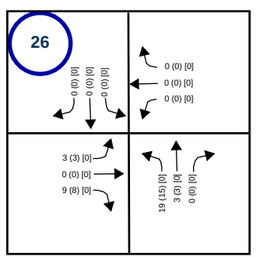
16th Street & Park Driveway



Drive 12



Drive 13



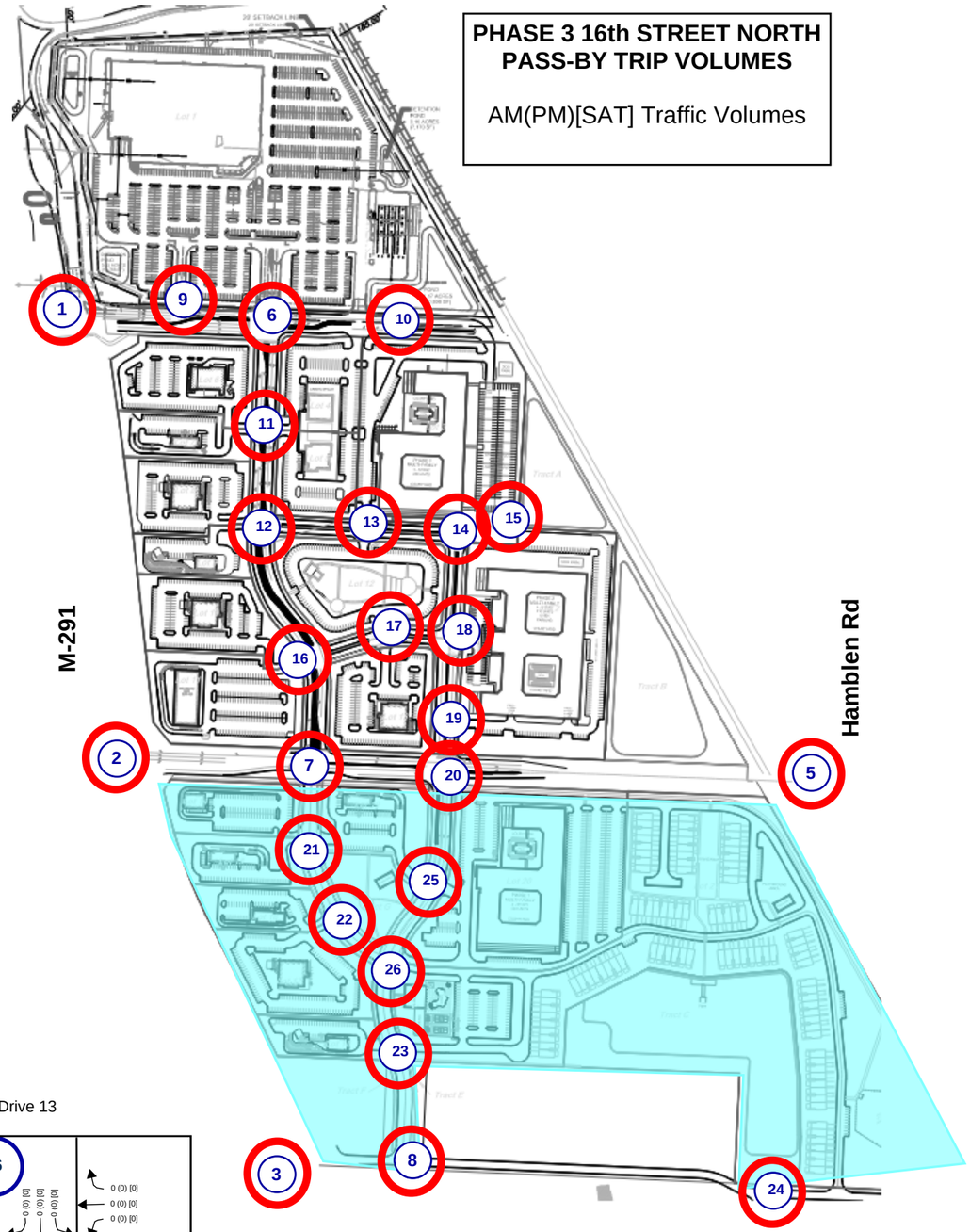
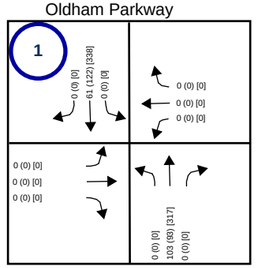
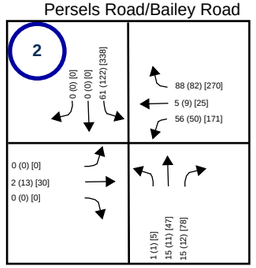


FIGURE 23

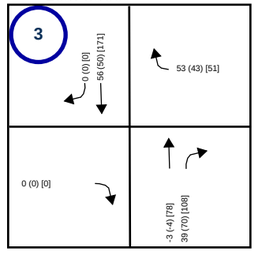
M-291 &
Oldham Parkway



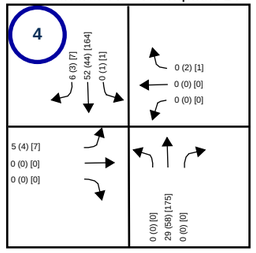
M-291 &
Persels Road/Bailey Road



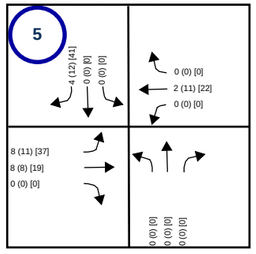
M-291 &
16th Street



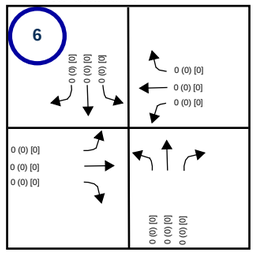
M-291 &
Scherer Rd/ Thompson Dr



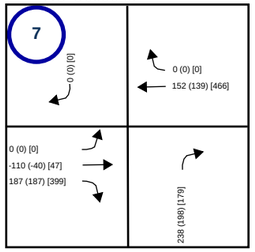
Bailey Road &
Hamblen Road



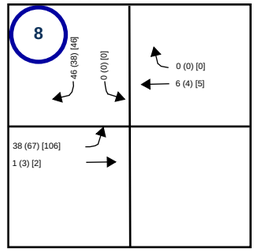
Oldham Parkway &
NS Collector



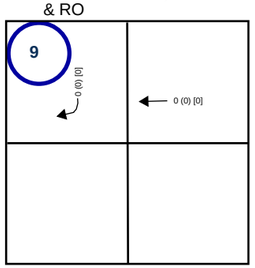
Bailey Road &
NS Collector



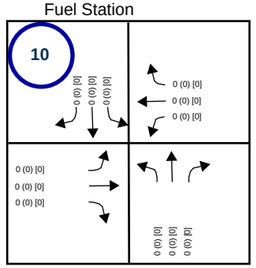
16th Street &
NS Collector



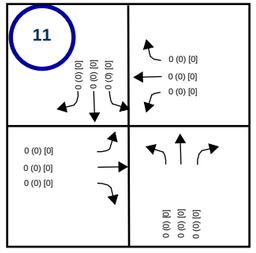
Oldham Parkway
& RO



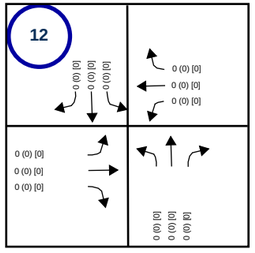
Oldham Parkway &
Fuel Station



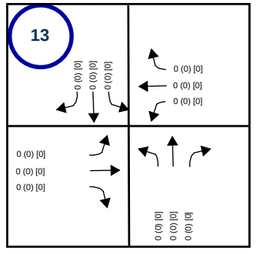
NS Collector &
Drive 1



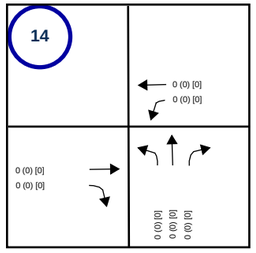
NS Collector &
North EW Drive



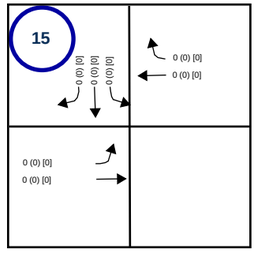
North EW Drive &
Drive 2



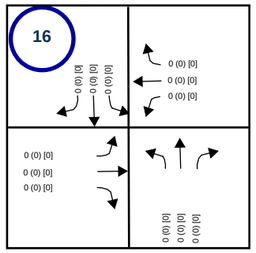
North EW Drive &
Drive 3



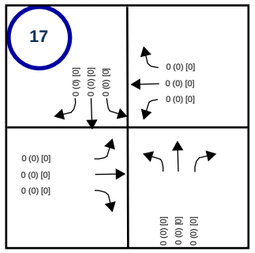
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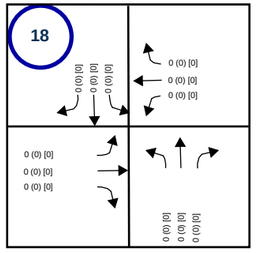
NS Collector &
South EW Drive



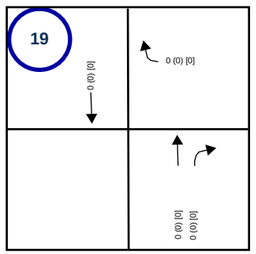
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Drive 5



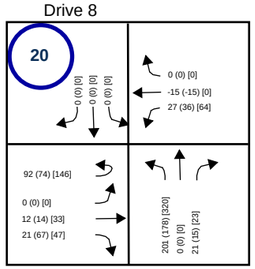
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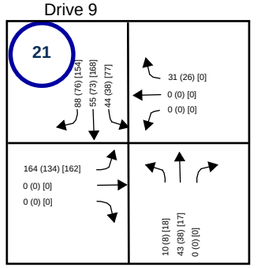
Drive 7



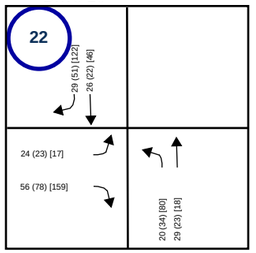
Bailey Road &
Drive 8



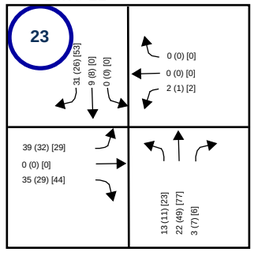
NS Collector &
Drive 9



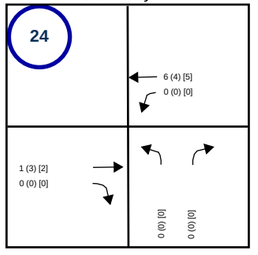
NS Collector &
Drive 10



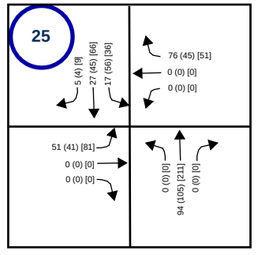
NS Collector &
Drive 11



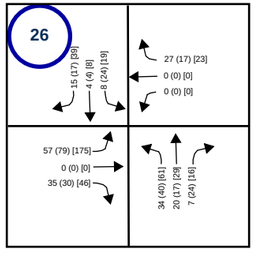
16th Street &
Park Driveway



Drive 12



Drive 13



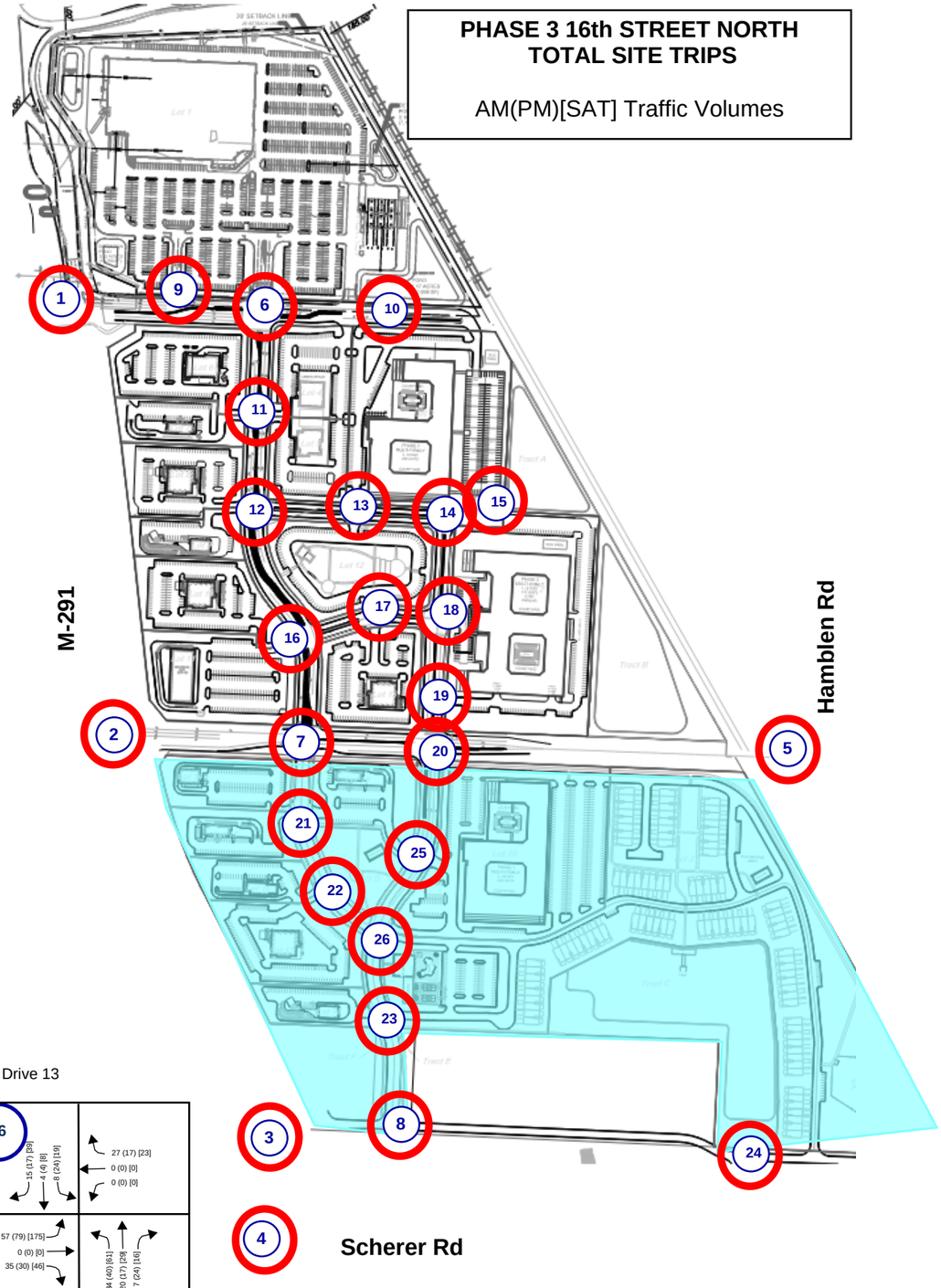
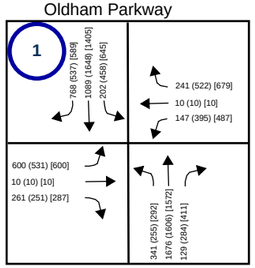
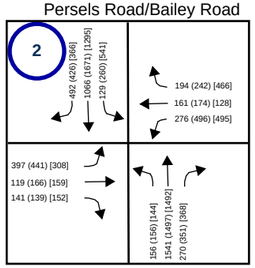


FIGURE 24

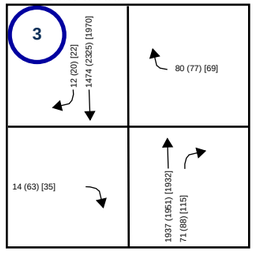
M-291 &
Oldham Parkway



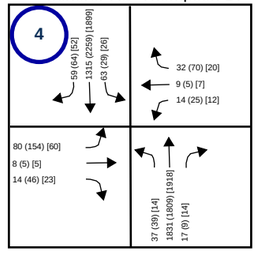
M-291 &
Persels Road/Bailey Road



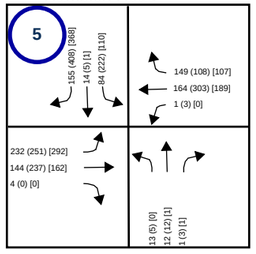
M-291 &
16th Street



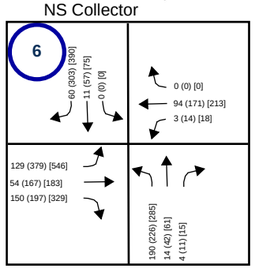
M-291 &
Scherer Rd/ Thompson Dr



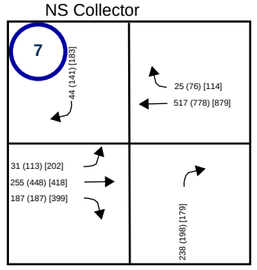
Bailey Road &
Hamblen Road



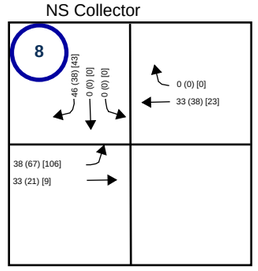
Oldham Parkway &
NS Collector



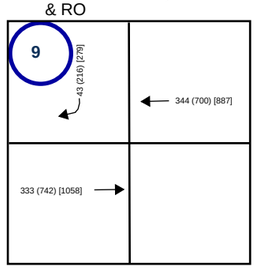
Bailey Road &
NS Collector



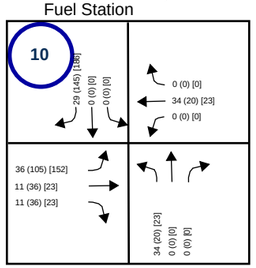
16th Street &
NS Collector



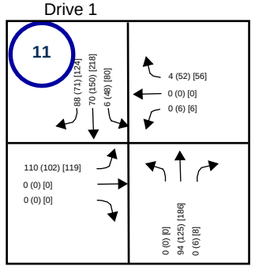
Oldham Parkway
& RO



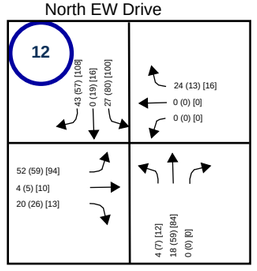
Oldham Parkway &
Fuel Station



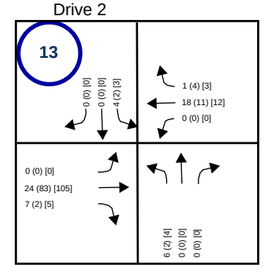
NS Collector &
Drive 1



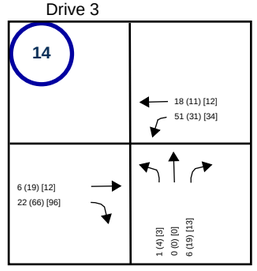
NS Collector &
North EW Drive



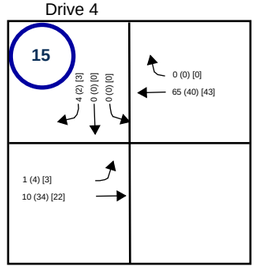
North EW Drive &
Drive 2



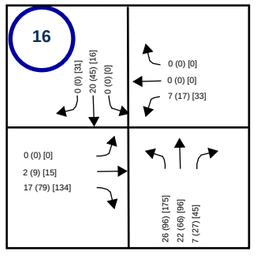
North EW Drive &
Drive 3



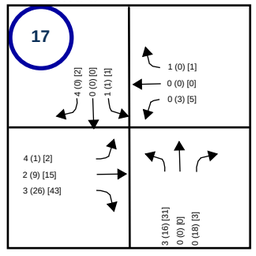
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Drive 4



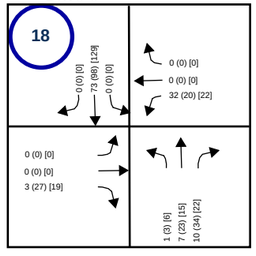
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South EW Drive



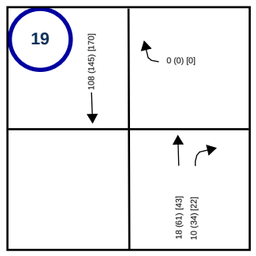
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Drive 5



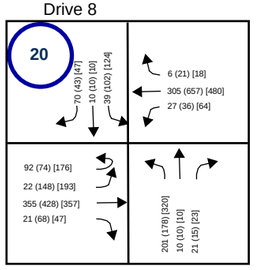
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Drive 6



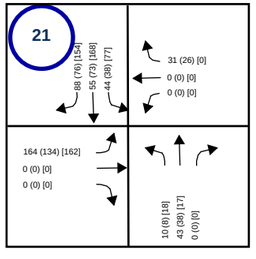
Drive 7



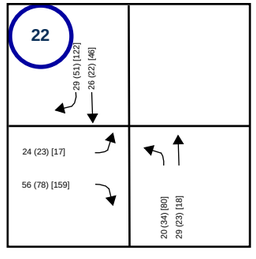
Bailey Road &
Drive 8



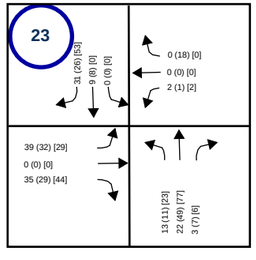
NS Collector &
Drive 9



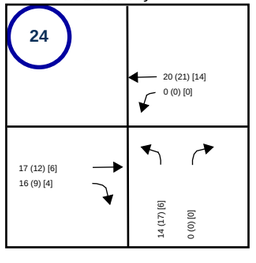
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Drive 10



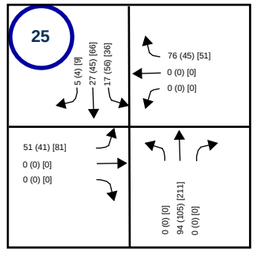
NS Collector &
Drive 11



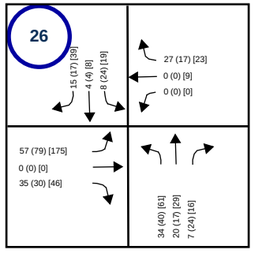
16th Street &
Park Driveway



Drive 12



Drive 13



BASE + FULL DEVELOPMENT PEAK HOUR VOLUMES

AM(PM)[SAT] Traffic Volumes

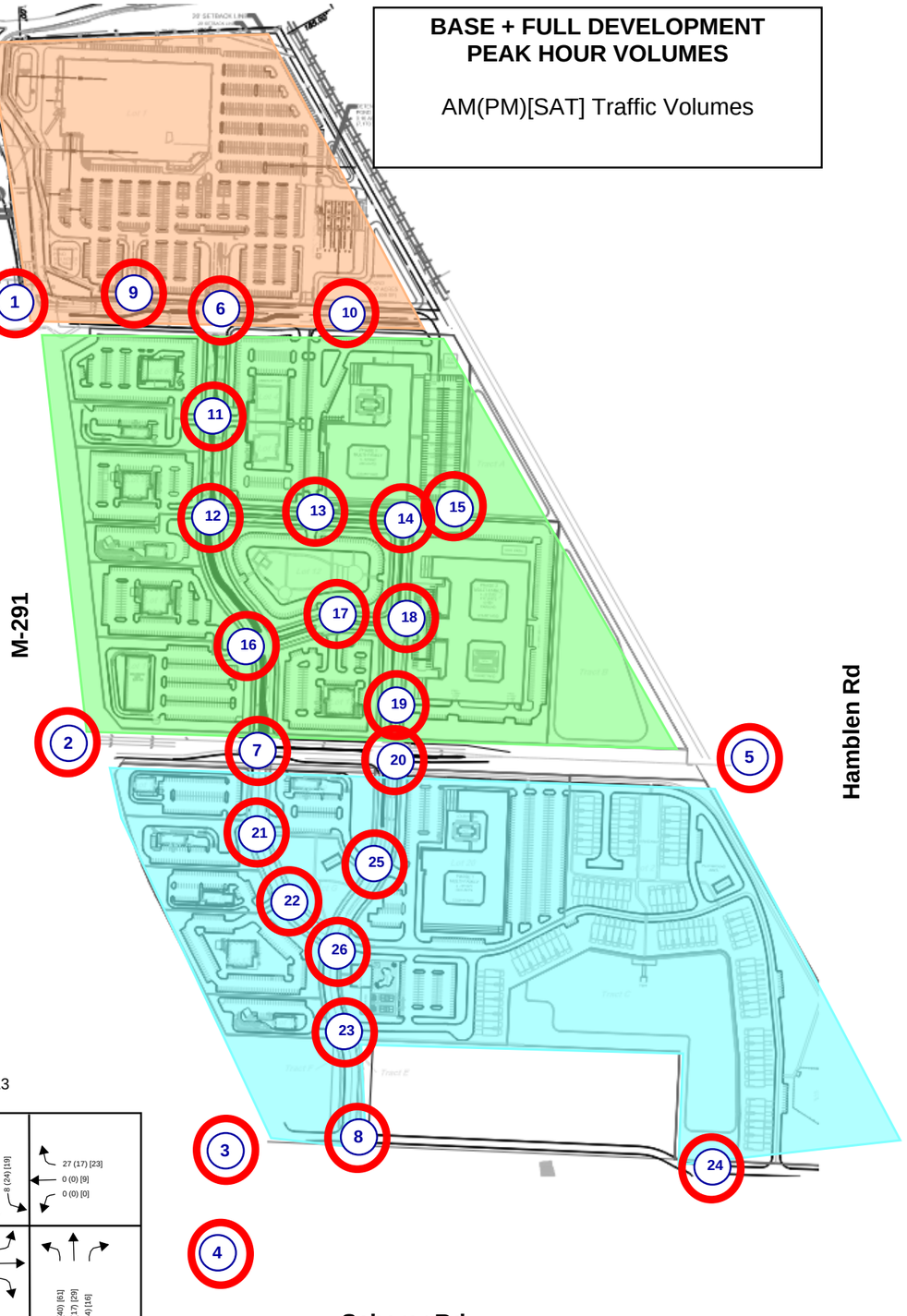
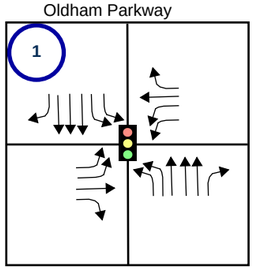
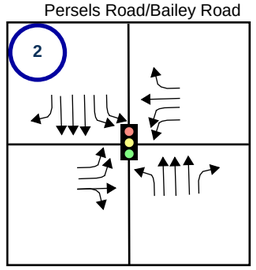


FIGURE 25

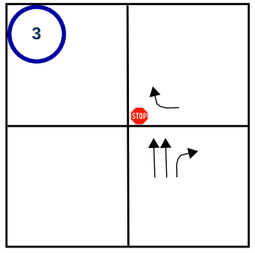
M-291 &
Oldham Parkway



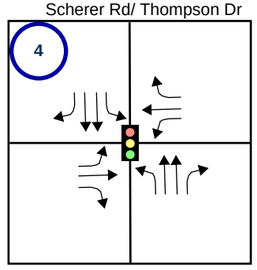
M-291 &
Persels Road/Bailey Road



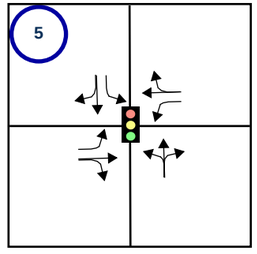
M-291 &
16th Street



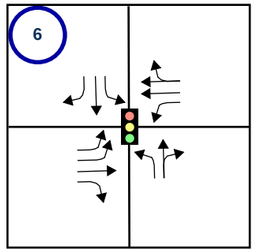
M-291 &
Scherer Rd/ Thompson Dr



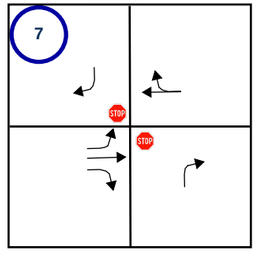
Bailey Road &
Hamblen Road



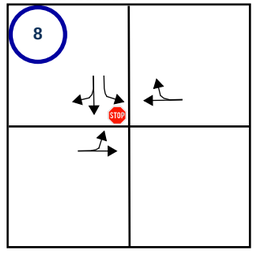
Oldham Parkway &
NS Collector



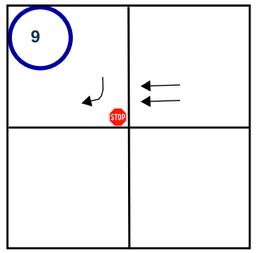
Bailey Road &
NS Collector



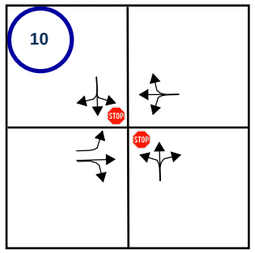
16th Street &
NS Collector



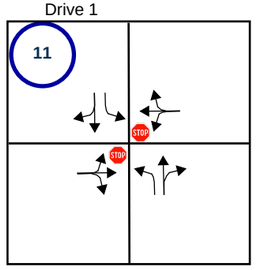
Oldham Parkway
& RO



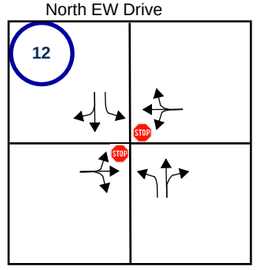
Oldham Parkway &
Fuel Station



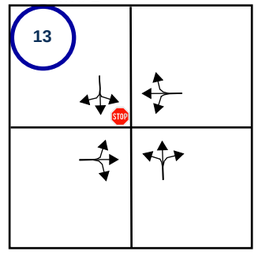
NS Collector &
Drive 1



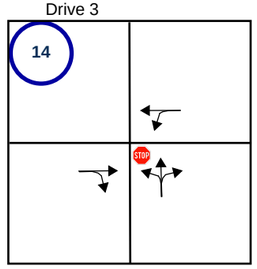
NS Collector &
North EW Drive



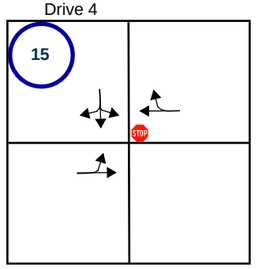
North EW Drive &
Drive 2



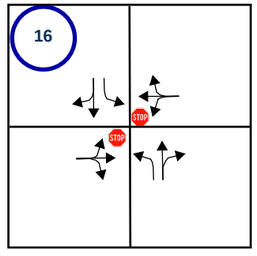
North EW Drive &
Drive 3



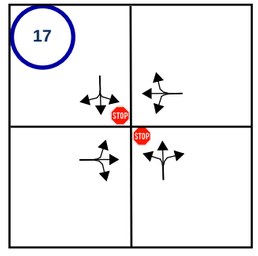
North EW Drive &
Drive 4



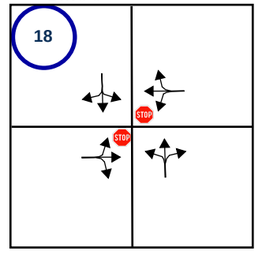
NS Collector &
South EW Drive



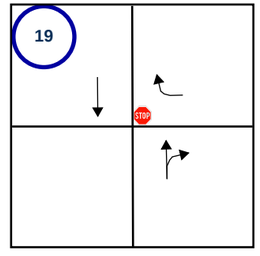
South EW Drive &
Drive 5



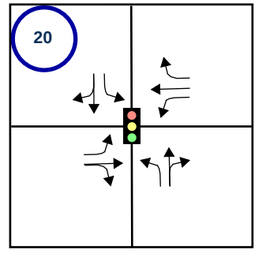
South EW Drive &
Drive 6



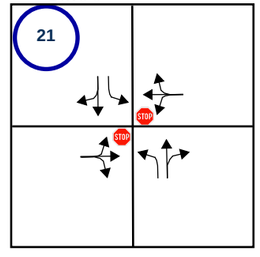
Drive 7



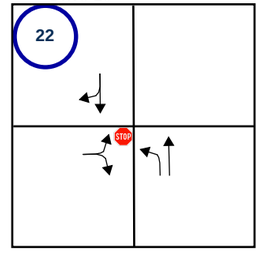
Bailey Road &
Drive 8



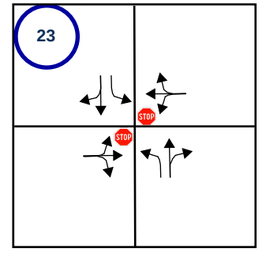
NS Collector &
Drive 9



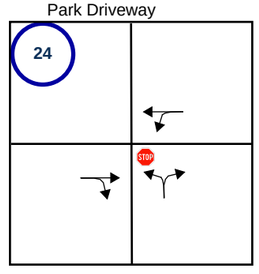
NS Collector &
Drive 10



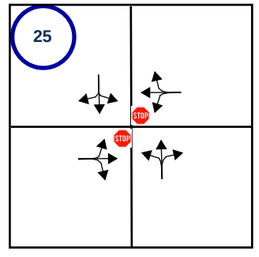
NS Collector &
Drive 11



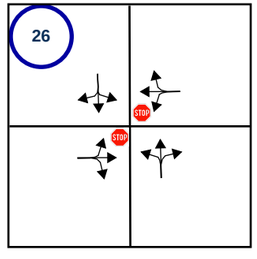
16th Street &
Park Driveway



Drive 12



Drive 13



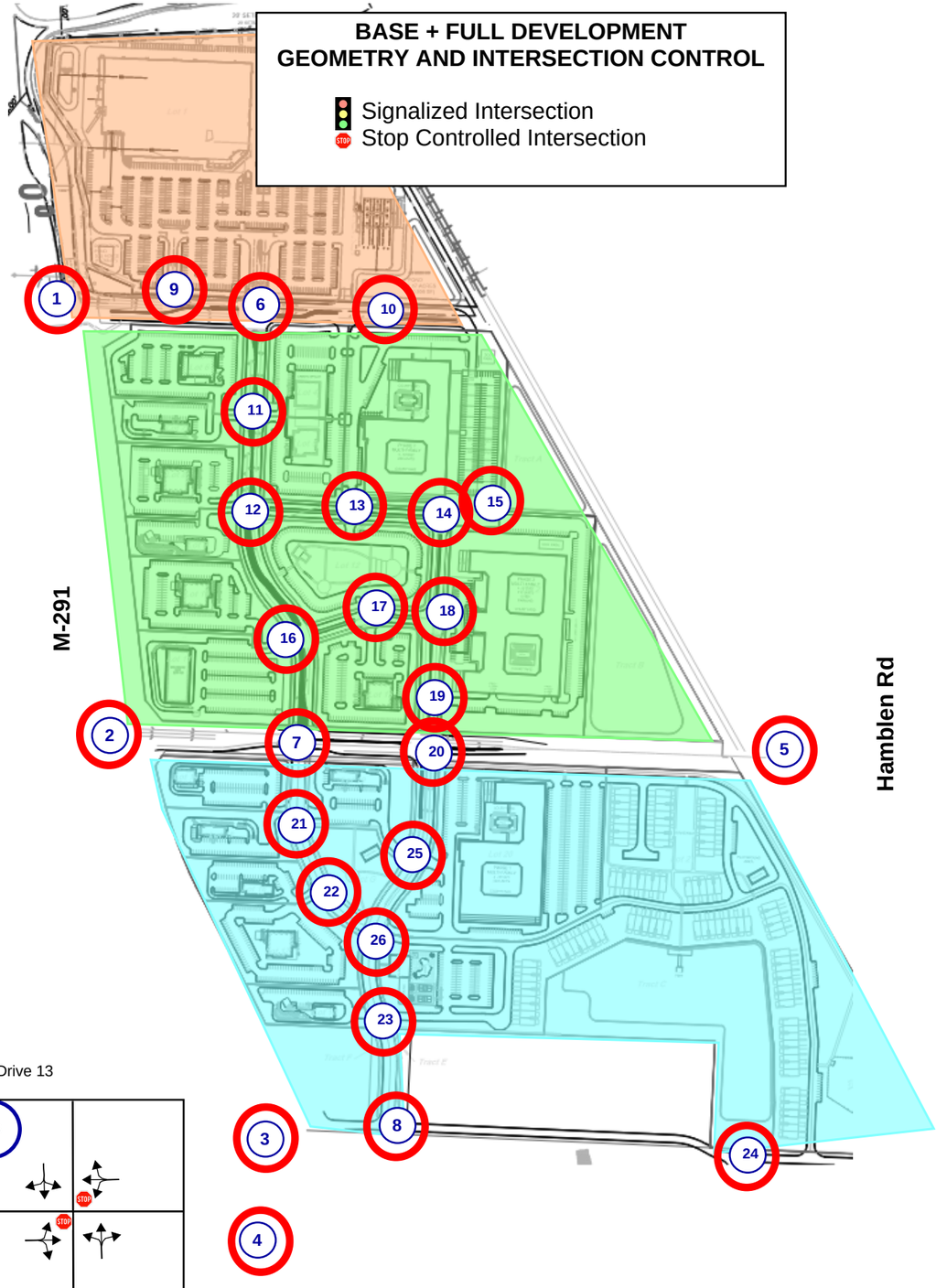
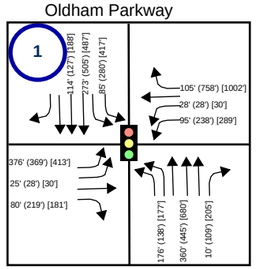
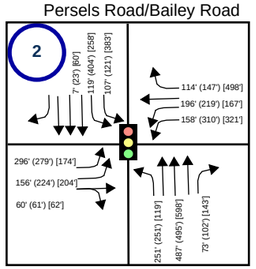


FIGURE 26

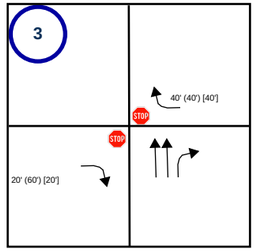
M-291 & Oldham Parkway



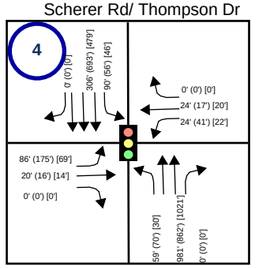
M-291 & Persels Road/Bailey Road



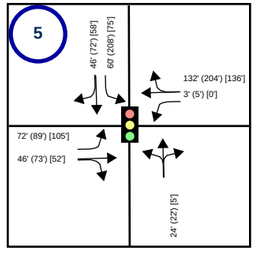
M-291 & 16th Street



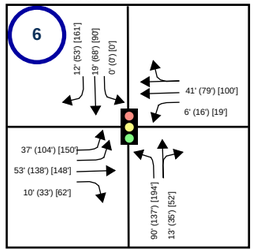
M-291 & Scherer Rd/ Thompson Dr



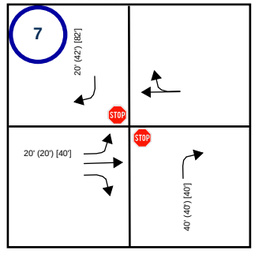
Bailey Road & Hamblen Road



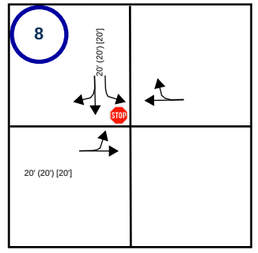
Oldham Parkway & NS Collector



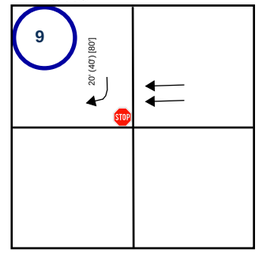
Bailey Road & NS Collector



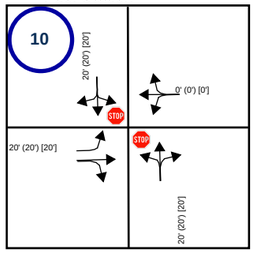
16th Street & NS Collector



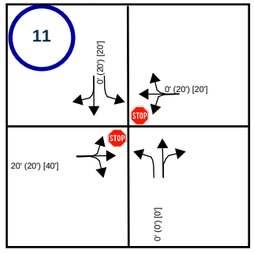
Oldham Parkway & RO



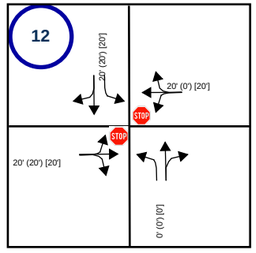
Oldham Parkway & Fuel Station



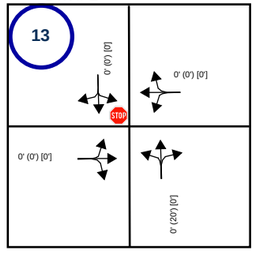
NS Collector & Drive 1



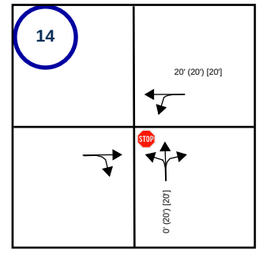
NS Collector & North EW Drive



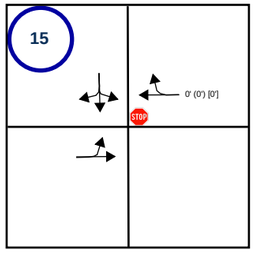
North EW Drive & Drive 2



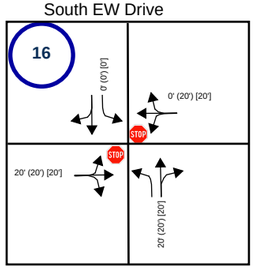
North EW Drive & Drive 3



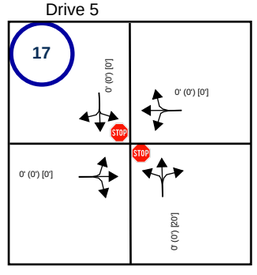
North EW Drive & Drive 4



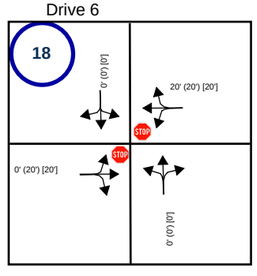
NS Collector & South EW Drive



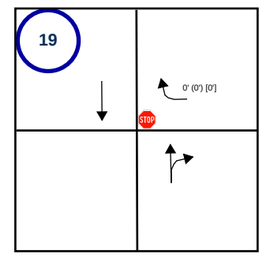
South EW Drive & Drive 5



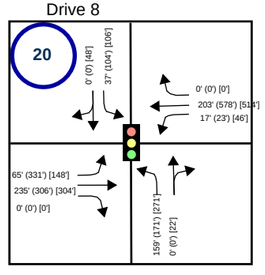
South EW Drive & Drive 6



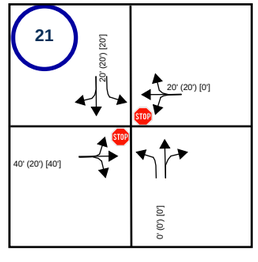
Drive 7



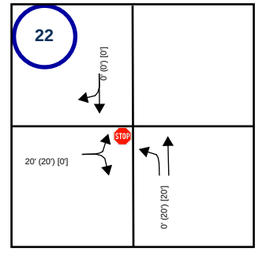
Bailey Road & Drive 8



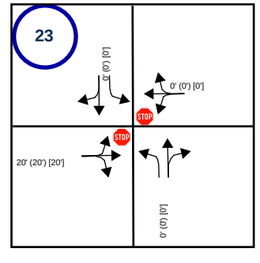
NS Collector & Drive 9



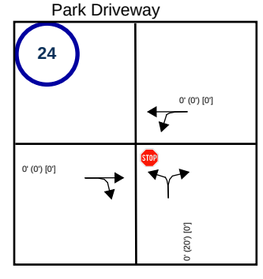
NS Collector & Drive 10



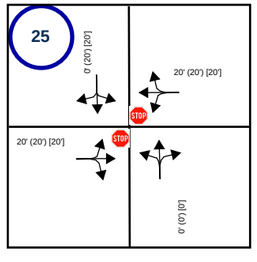
NS Collector & Drive 11



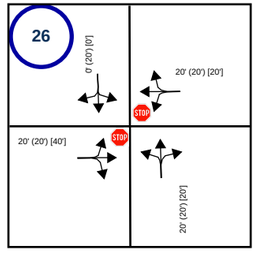
16th Street & Park Driveway



Drive 12



Drive 13



BASE + FULL DEVELOPMENT 95% QUEUE LENGTHS

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

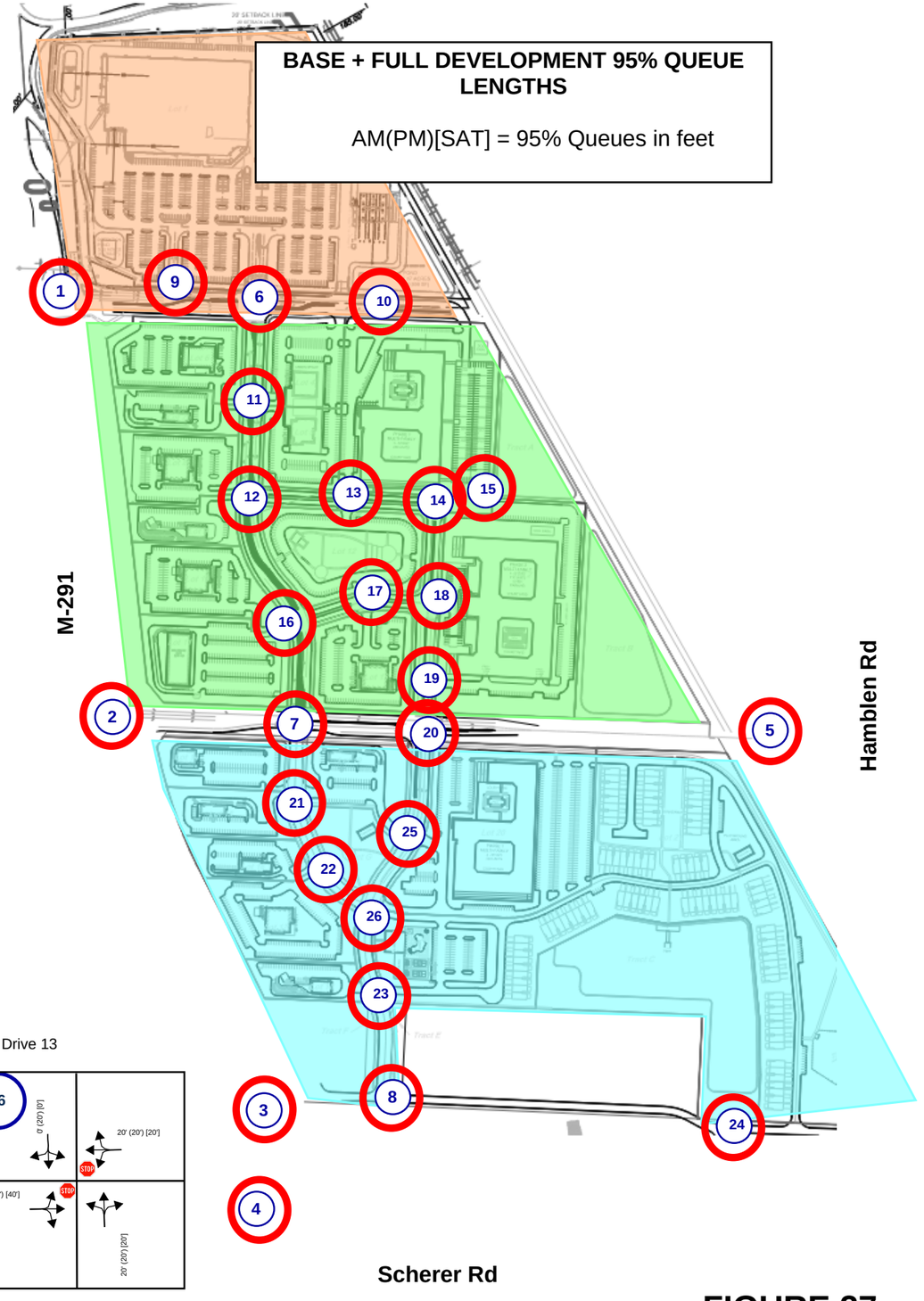
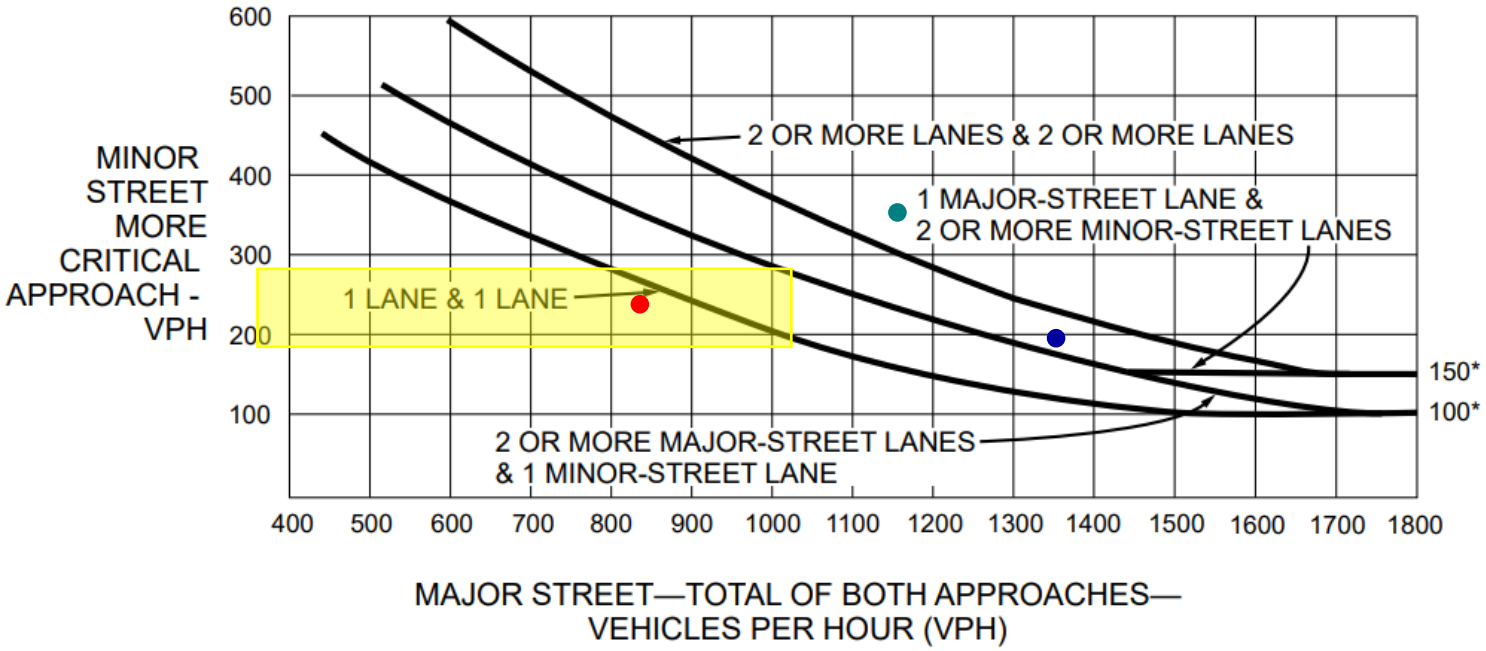


FIGURE 27

TRAFFIC SIGNAL WARRANT ANALYSIS
NODE #20: BAILEY ROAD AND DRIVE 8

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+2+3
- PM Base + Phase 1+2+3
- SAT Base + Phase 1+2+3

ACCESS SPACING

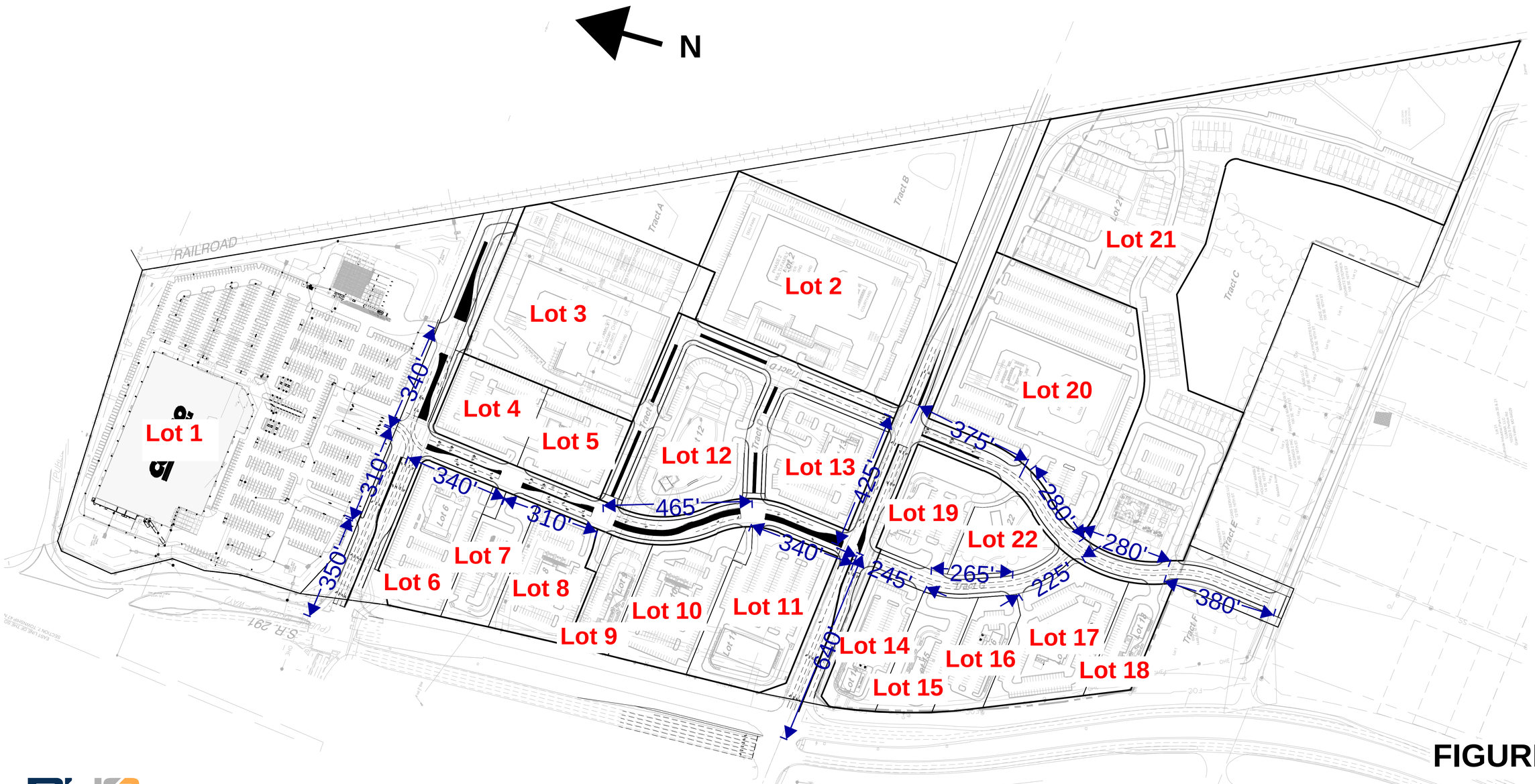


FIGURE 29

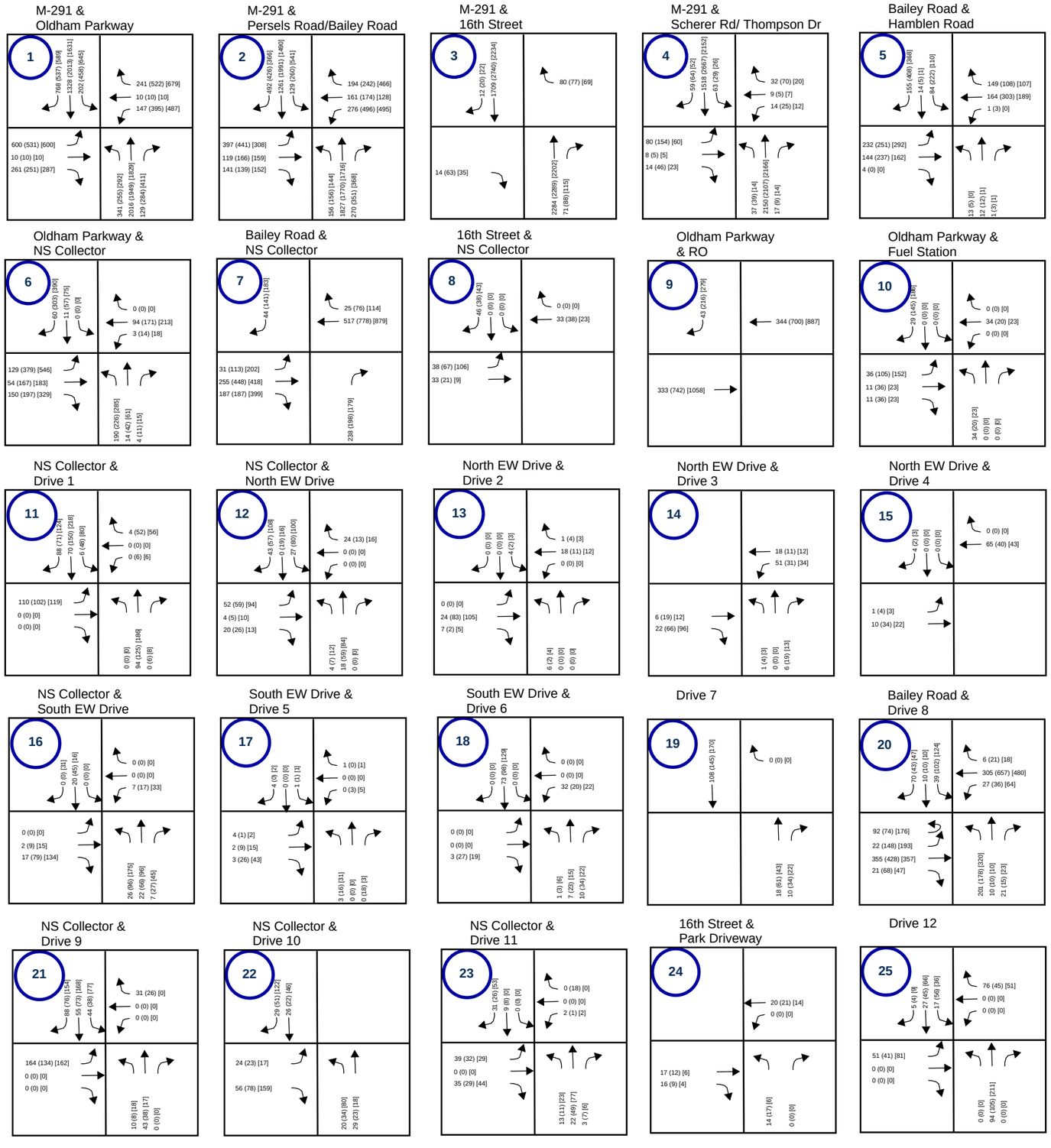
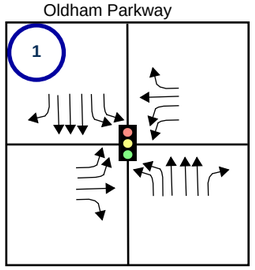
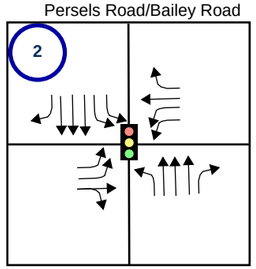

M-291 &
Oldham Parkway
1
768 (537) [589]
1328 (2019) [1631]
202 (458) [645]
241 (522) [679]
10 (10) [10]
147 (395) [487]
600 (531) [600]
10 (10) [10]
261 (251) [287]
341 (255) [252]
2016 (1949) [1829]
129 (284) [411]
M-291 &
Persels Road/Bailey Road
2
492 (426) [366]
1261 (1991) [1490]
129 (260) [541]
194 (242) [466]
161 (174) [128]
276 (496) [495]
397 (441) [308]
119 (166) [159]
141 (139) [152]
156 (156) [144]
1827 (1770) [1716]
270 (351) [368]
M-291 &
16th Street
3
12 (20) [22]
1709 (2740) [2234]
80 (77) [69]
14 (63) [35]
2284 (2289) [2202]
71 (88) [115]
M-291 &
Scherer Rd/ Thompson Dr
4
59 (64) [52]
1518 (2667) [2152]
63 (29) [26]
32 (70) [20]
9 (5) [7]
14 (25) [12]
80 (154) [60]
8 (5) [5]
14 (46) [23]
37 (39) [14]
2150 (2107) [2166]
17 (8) [14]
Bailey Road &
Hamblen Road
5
155 (409) [368]
14 (5) [1]
84 (222) [110]
149 (108) [107]
164 (303) [189]
1 (3) [0]
232 (251) [292]
144 (237) [162]
4 (0) [0]
13 (5) [0]
12 (12) [1]
1 (3) [1]
Oldham Parkway &
NS Collector
6
60 (303) [306]
11 (57) [75]
0 (0) [0]
0 (0) [0]
94 (171) [213]
3 (14) [18]
129 (379) [546]
54 (167) [183]
150 (197) [329]
190 (236) [285]
14 (42) [61]
4 (11) [15]
Bailey Road &
NS Collector
7
44 (141) [183]
25 (76) [114]
517 (778) [879]
31 (113) [202]
255 (448) [418]
187 (187) [399]
239 (198) [179]
16th Street &
NS Collector
8
46 (38) [43]
0 (0) [0]
0 (0) [0]
0 (0) [0]
33 (38) [23]
38 (67) [106]
33 (21) [9]
Oldham Parkway
& RO
9
43 (216) [279]
344 (700) [887]
333 (742) [1058]
Oldham Parkway &
Fuel Station
10
29 (145) [186]
0 (0) [0]
0 (0) [0]
0 (0) [0]
34 (20) [23]
0 (0) [0]
36 (105) [152]
11 (36) [23]
11 (36) [23]
34 (20) [23]
0 (0) [0]
0 (0) [0]
NS Collector &
Drive 1
11
88 (71) [124]
70 (150) [218]
0 (48) [80]
4 (52) [56]
0 (0) [0]
0 (6) [6]
110 (102) [119]
0 (0) [0]
0 (0) [0]
0 (0) [0]
94 (125) [186]
0 (6) [8]
NS Collector &
North EW Drive
12
43 (67) [108]
0 (19) [46]
27 (80) [100]
24 (13) [16]
0 (0) [0]
0 (0) [0]
52 (59) [94]
4 (5) [10]
20 (26) [13]
4 (7) [12]
18 (59) [84]
0 (0) [0]
North EW Drive &
Drive 2
13
0 (0) [0]
0 (0) [0]
4 (2) [3]
1 (4) [3]
18 (11) [12]
0 (0) [0]
0 (0) [0]
24 (83) [105]
7 (2) [5]
6 (2) [4]
0 (0) [0]
0 (0) [0]
North EW Drive &
Drive 3
14
18 (11) [12]
51 (31) [34]
6 (19) [12]
22 (66) [96]
1 (4) [3]
0 (0) [0]
6 (19) [13]
North EW Drive &
Drive 4
15
4 (2) [3]
0 (0) [0]
0 (0) [0]
0 (0) [0]
65 (40) [43]
1 (4) [3]
10 (34) [22]
NS Collector &
South EW Drive
16
0 (0) [31]
20 (45) [16]
0 (0) [0]
0 (0) [0]
0 (0) [0]
7 (17) [33]
0 (0) [0]
2 (9) [15]
17 (79) [134]
26 (66) [175]
22 (69) [94]
7 (27) [45]
South EW Drive &
Drive 5
17
4 (0) [2]
0 (0) [0]
1 (1) [1]
1 (0) [1]
0 (0) [0]
0 (3) [5]
4 (1) [2]
2 (9) [15]
3 (26) [43]
3 (16) [31]
0 (0) [0]
0 (18) [3]
South EW Drive &
Drive 6
18
0 (0) [0]
73 (69) [124]
0 (0) [0]
0 (0) [0]
0 (0) [0]
32 (20) [22]
0 (0) [0]
0 (0) [0]
3 (27) [19]
1 (3) [6]
7 (20) [15]
10 (34) [22]
Drive 7
19
108 (145) [170]
0 (0) [0]
18 (61) [43]
10 (34) [22]
Bailey Road &
Drive 8
20
70 (43) [47]
10 (10) [16]
89 (102) [124]
6 (21) [18]
305 (657) [480]
27 (36) [64]
92 (74) [176]
22 (148) [193]
355 (428) [357]
21 (68) [47]
203 (178) [320]
10 (10) [10]
21 (15) [23]
NS Collector &
Drive 9
21
88 (76) [154]
55 (73) [168]
44 (38) [77]
31 (26) [0]
0 (0) [0]
0 (0) [0]
164 (134) [162]
0 (0) [0]
0 (0) [0]
10 (8) [18]
43 (38) [17]
0 (0) [0]
NS Collector &
Drive 10
22
29 (51) [122]
26 (22) [46]
24 (23) [17]
56 (78) [159]
20 (34) [60]
29 (23) [18]
NS Collector &
Drive 11
23
31 (26) [53]
9 (8) [0]
0 (0) [0]
0 (18) [0]
0 (0) [0]
2 (1) [2]
39 (32) [29]
0 (0) [0]
35 (29) [44]
13 (11) [23]
22 (49) [77]
3 (7) [6]
16th Street &
Park Driveway
24
20 (21) [14]
0 (0) [0]
17 (12) [6]
16 (9) [4]
14 (17) [6]
0 (0) [0]
Drive 12
25
5 (4) [9]
27 (45) [66]
17 (56) [36]
76 (45) [51]
0 (0) [0]
0 (0) [0]
51 (41) [81]
0 (0) [0]
0 (0) [0]
0 (0) [0]
94 (205) [211]
0 (0) [0]
Drive 13
26
15 (17) [39]
4 (4) [8]
8 (24) [15]
27 (17) [23]
0 (0) [9]
0 (0) [0]
57 (79) [175]
0 (0) [0]
35 (30) [46]
34 (40) [61]
20 (17) [29]
7 (24) [16]
FUTURE CONDITIONS
PEAK HOUR VOLUMES
AM(PM)[SAT] Traffic Volumes
M-291
Hamblen Rd
Scherer Rd
1
9
6
10
11
12
13
14
15
16
17
18
19
2
7
20
5
21
25
22
26
23
3
8
24
4

FIGURE 30

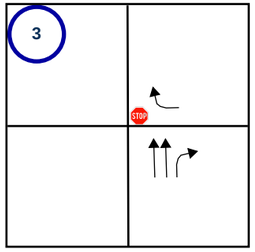
M-291 &
Oldham Parkway



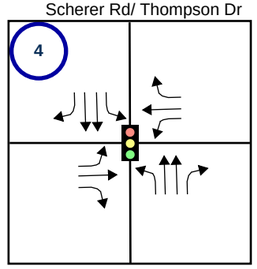
M-291 &
Persels Road/Bailey Road



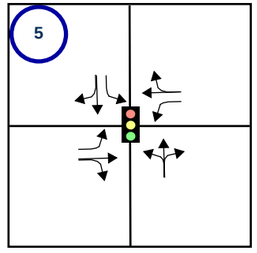
M-291 &
16th Street



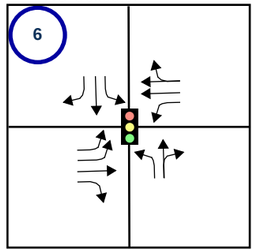
M-291 &
Scherer Rd/ Thompson Dr



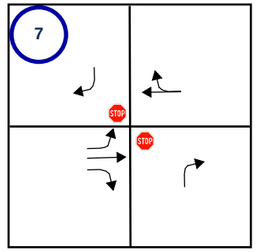
Bailey Road &
Hamblen Road



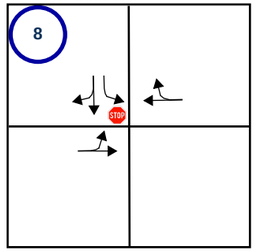
Oldham Parkway &
NS Collector



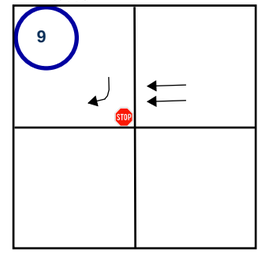
Bailey Road &
NS Collector



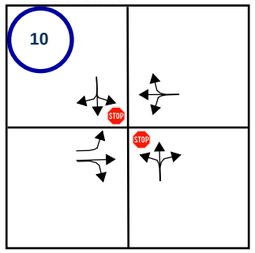
16th Street &
NS Collector



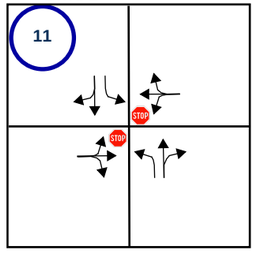
Oldham Parkway
& RO



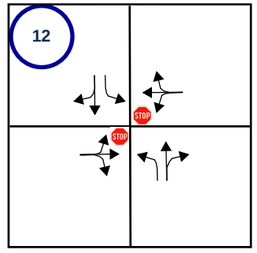
Oldham Parkway &
Fuel Station



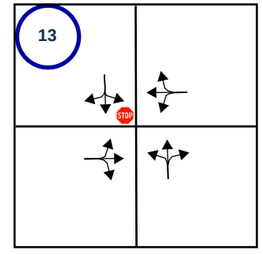
NS Collector &
Drive 1



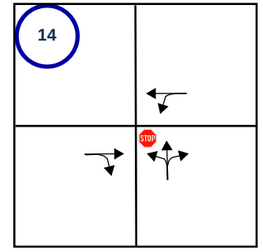
NS Collector &
North EW Drive



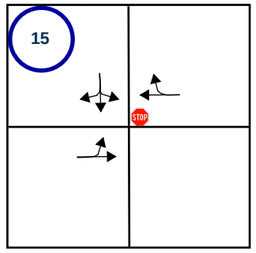
North EW Drive &
Drive 2



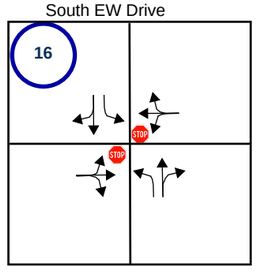
North EW Drive &
Drive 3



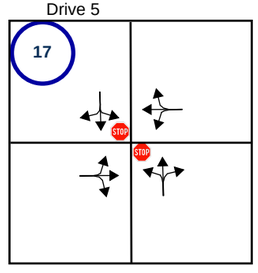
North EW Drive &
Drive 4



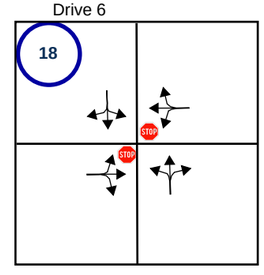
NS Collector &
South EW Drive



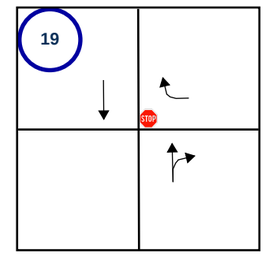
South EW Drive &
Drive 5



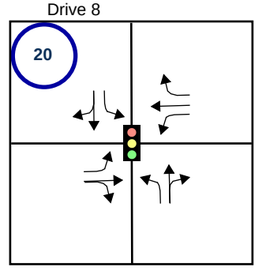
South EW Drive &
Drive 6



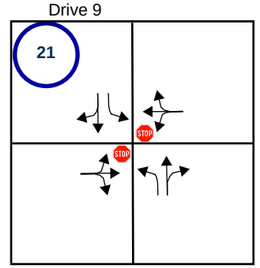
Drive 7



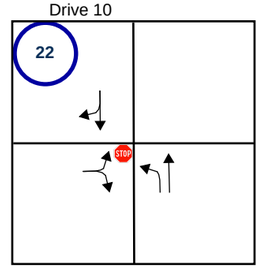
Bailey Road &
Drive 8



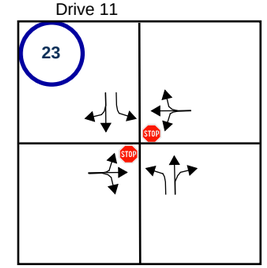
NS Collector &
Drive 9



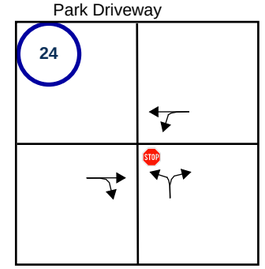
NS Collector &
Drive 10



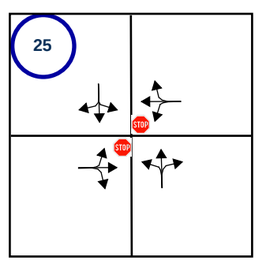
NS Collector &
Drive 11



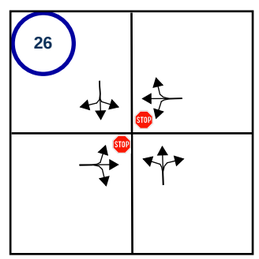
16th Street &
Park Driveway



Drive 12



Drive 13



FUTURE CONDITIONS
GEOMETRY AND INTERSECTION CONTROL

Signalized Intersection
Stop Controlled Intersection

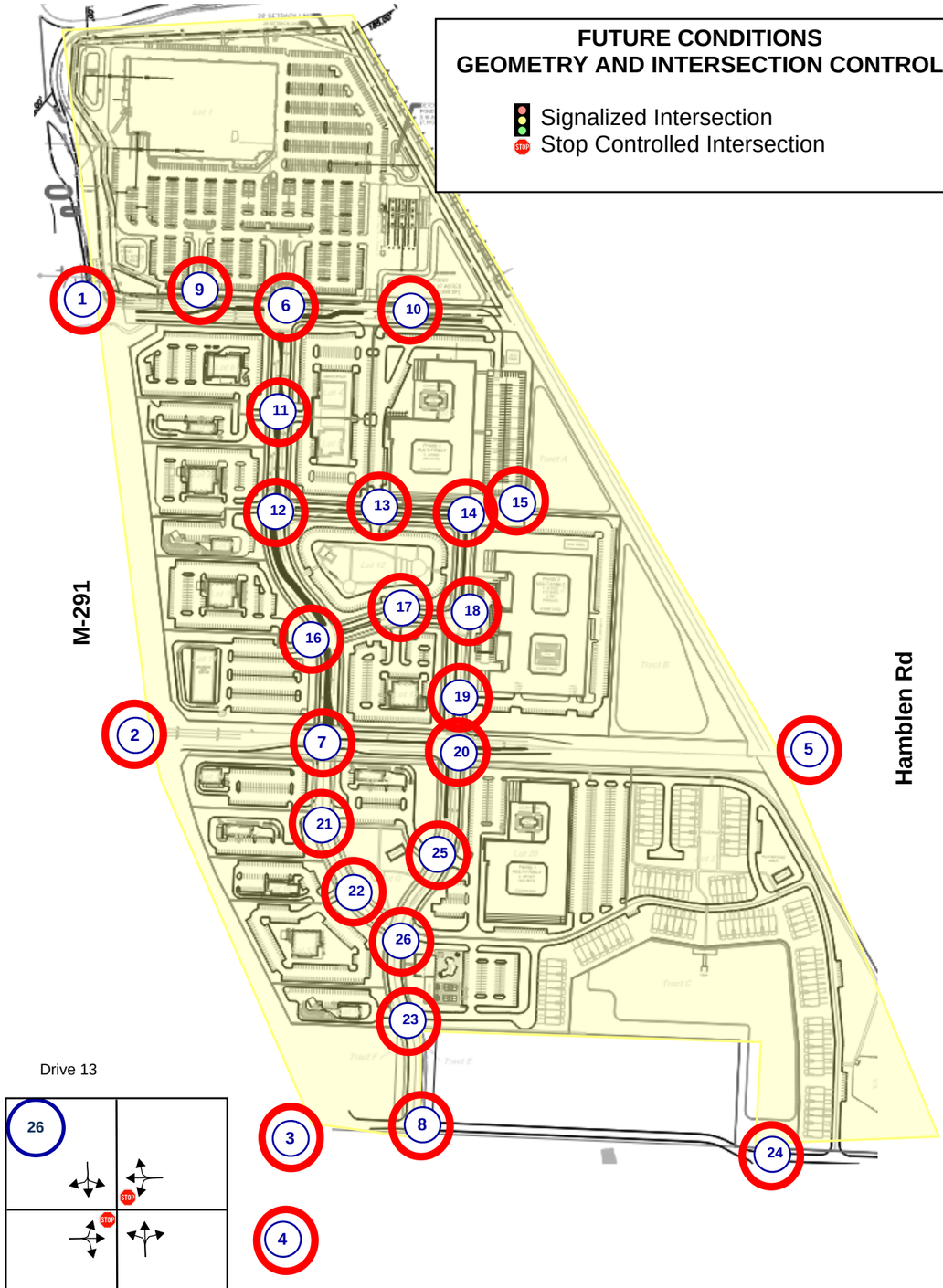
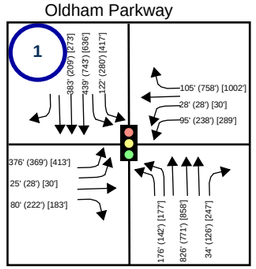
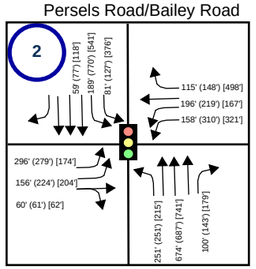


FIGURE 31

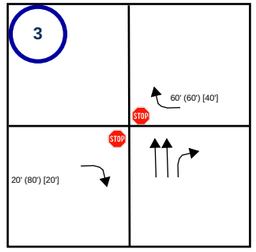
M-291 &
Oldham Parkway



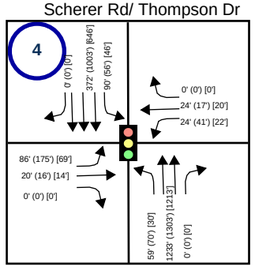
M-291 &
Persels Road/Bailey Road



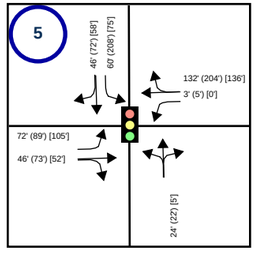
M-291 &
16th Street



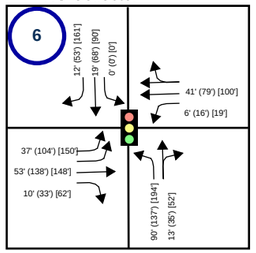
M-291 &
Scherer Rd/ Thompson Dr



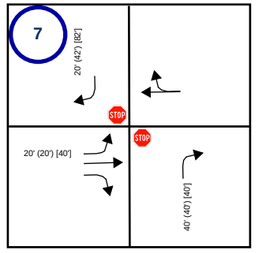
Bailey Road &
Hamblen Road



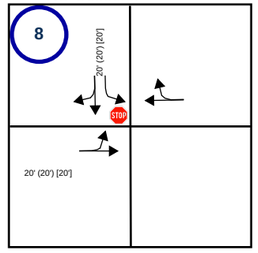
Oldham Parkway &
NS Collector



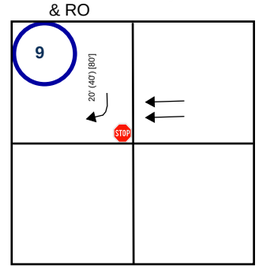
Bailey Road &
NS Collector



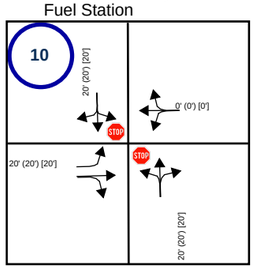
16th Street &
NS Collector



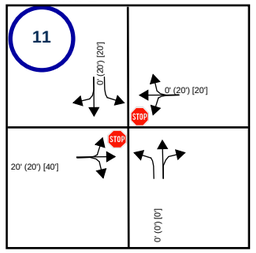
Oldham Parkway
& RO



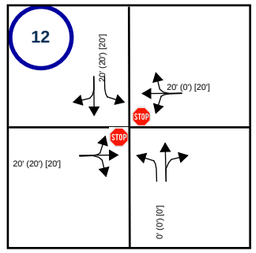
Oldham Parkway &
Fuel Station



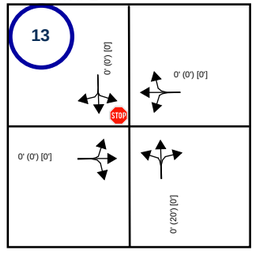
NS Collector &
Drive 1



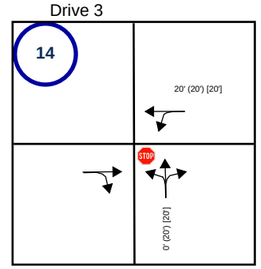
NS Collector &
North EW Drive



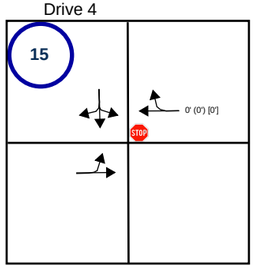
North EW Drive &
Drive 2



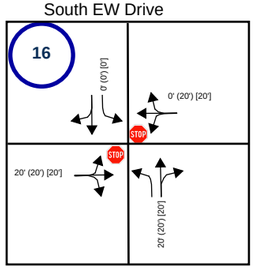
North EW Drive &
Drive 3



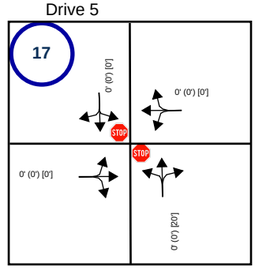
North EW Drive &
Drive 4



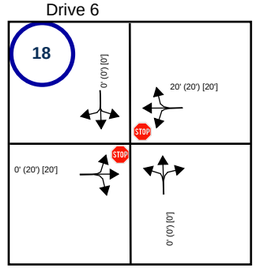
NS Collector &
South EW Drive



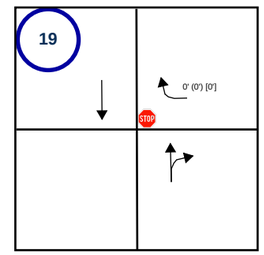
South EW Drive &
Drive 5



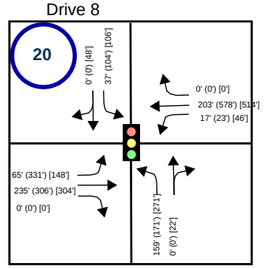
South EW Drive &
Drive 6



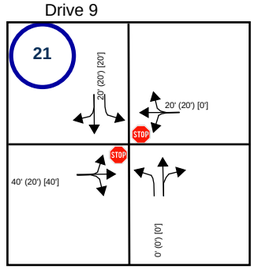
Drive 7



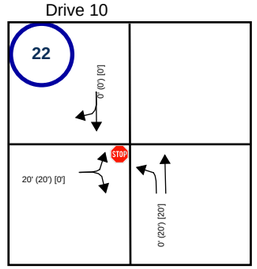
Bailey Road &
Drive 8



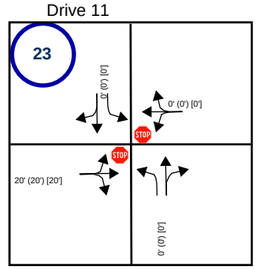
NS Collector &
Drive 9



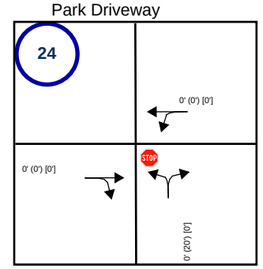
NS Collector &
Drive 10



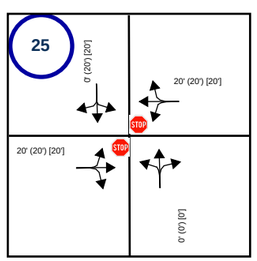
NS Collector &
Drive 11



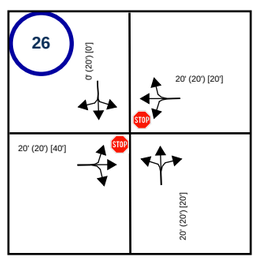
16th Street &
Park Driveway



Drive 12



Drive 13



FUTURE CONDITIONS
95% QUEUE LENGTHS

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

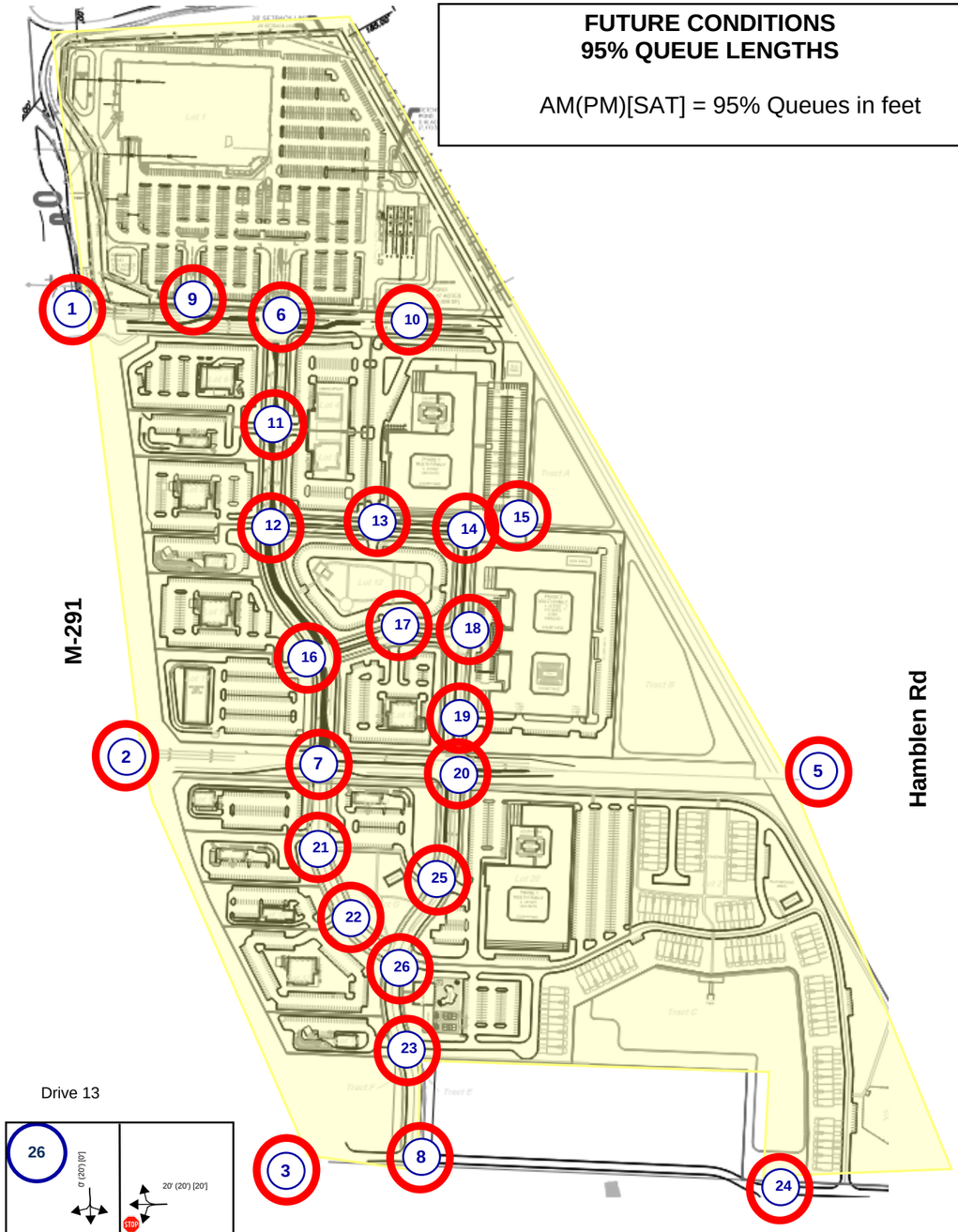


FIGURE 32

RECOMMENDATION SUMMARY BY PHASE

PHASE 1 RECOMMENDATIONS

- Extend existing double SBLT on M-291 to a minimum of 430'
- Construct all of Oldham Parkway with traffic signal at collector street

PHASE 2 RECOMMENDATIONS

- Update Traffic Impact Study
- M-291 Corridor Improvements to construct third SB thru-lane from south of Oldham Parkway to (or through) Scherer Road. Removal of existing shoulder, new paved lane, new paved shoulder
- Median improvements to Bailey Road and collector street

PHASE 3 RECOMMENDATIONS

- Construct second SBLT on M-291 at Bailey to a minimum of 380'. With associated median modifications and eastbound receiving lane.
- Construct WBRT improvements for channelized turn.
- Construct traffic signal at Bailey Road at eastern access point

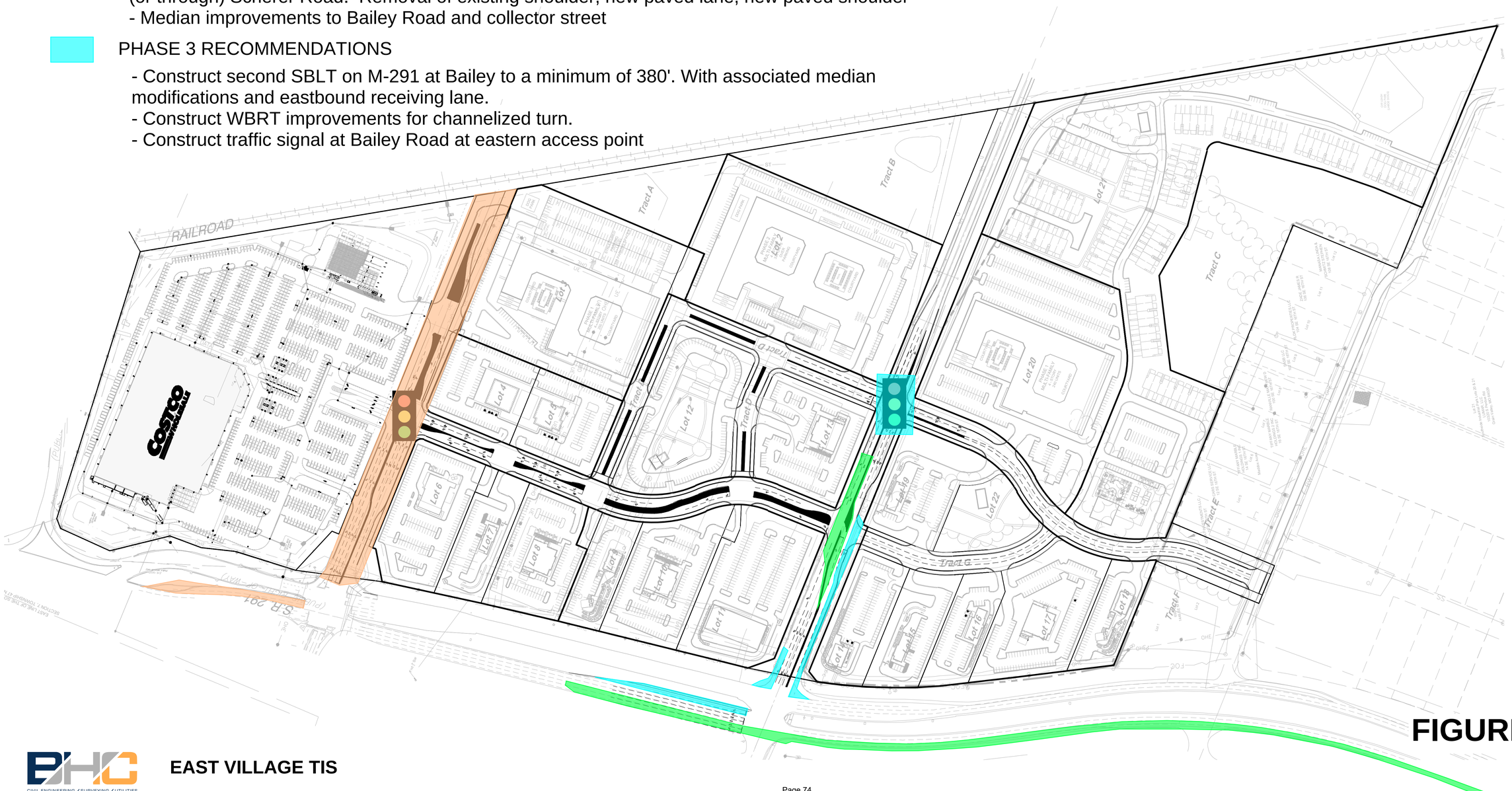


FIGURE 33

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

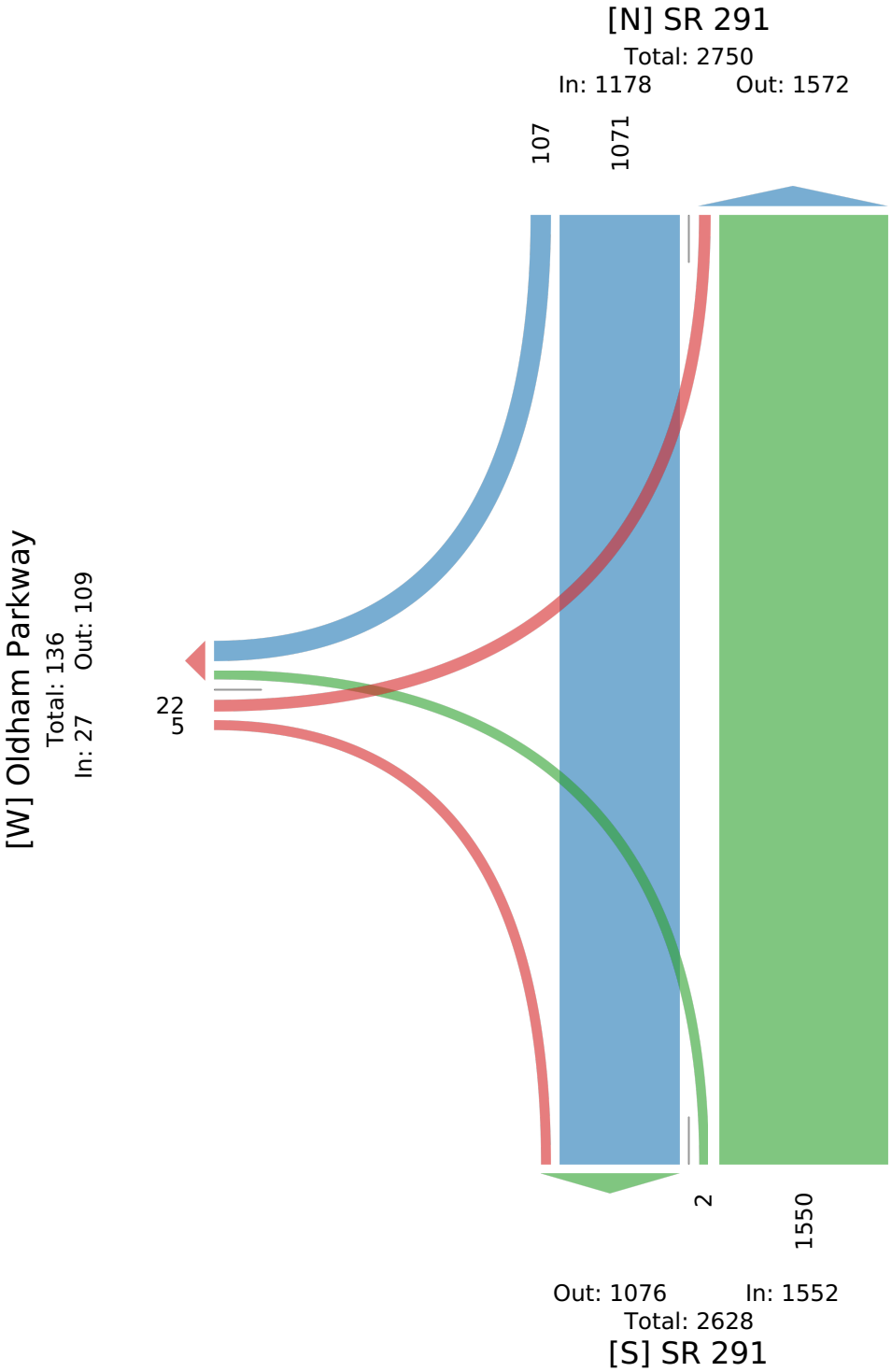
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

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

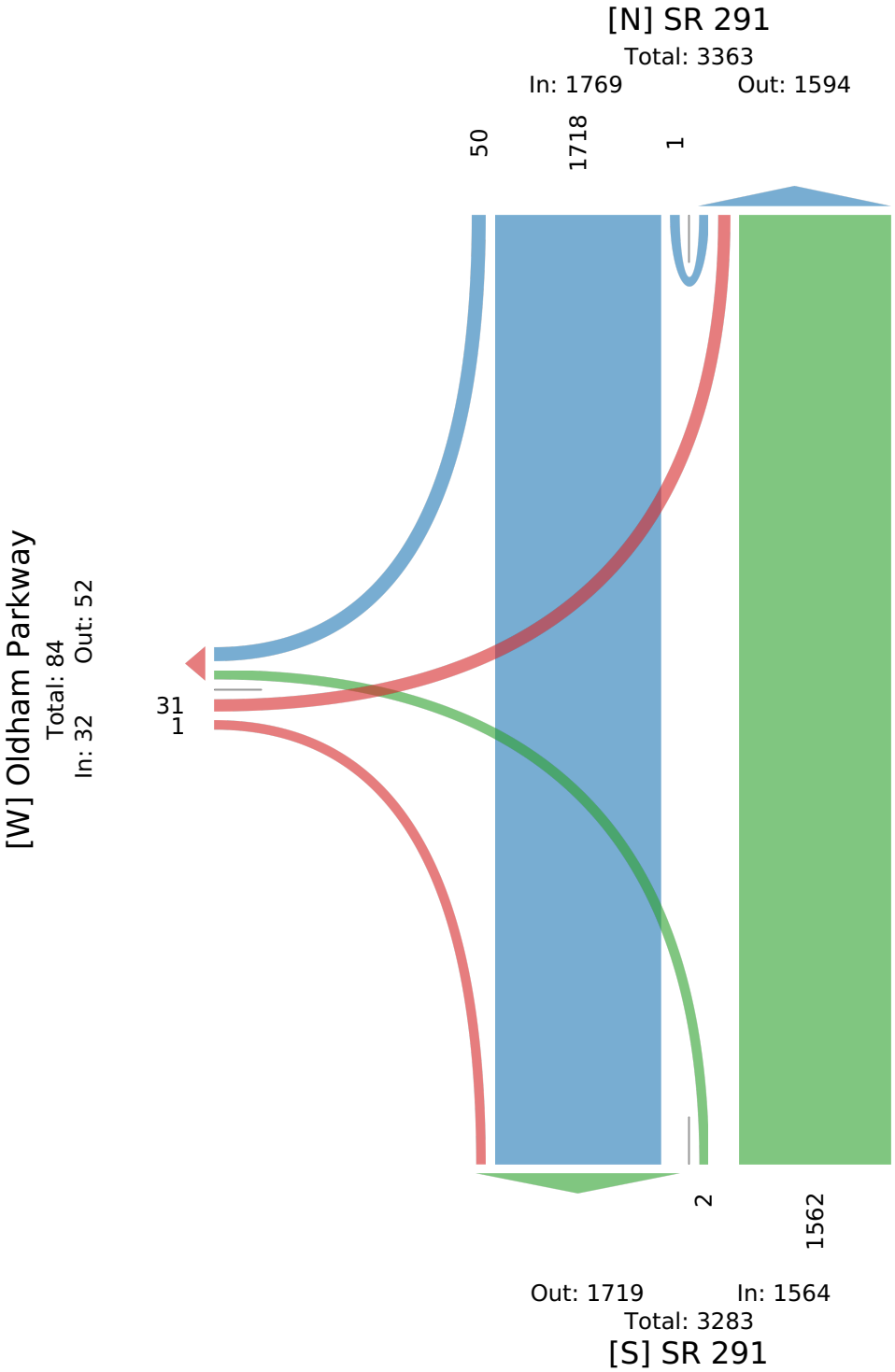
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

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

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

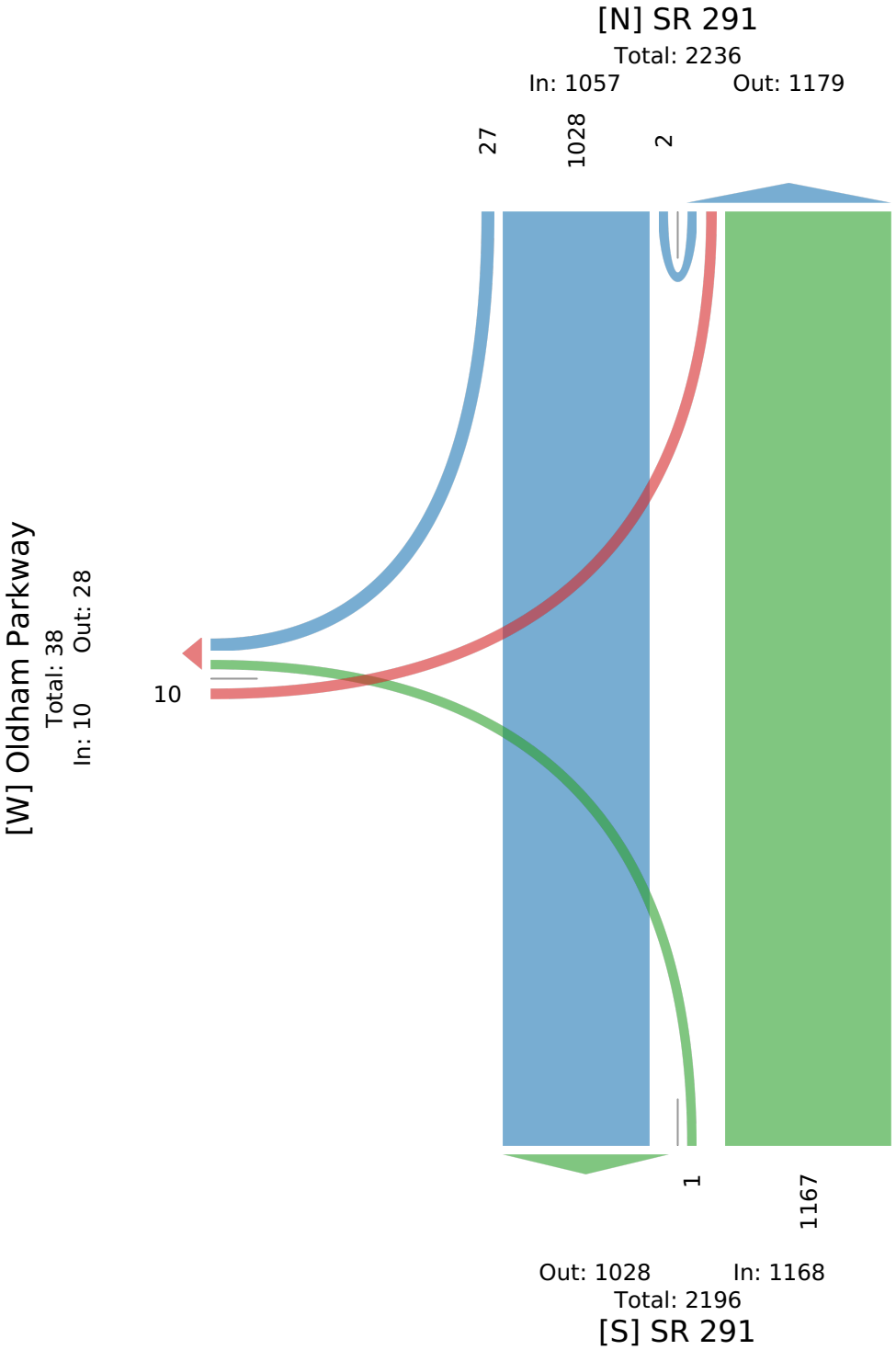
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

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

GEWALT HAMILTON ASSOCIATES, INC.
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

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

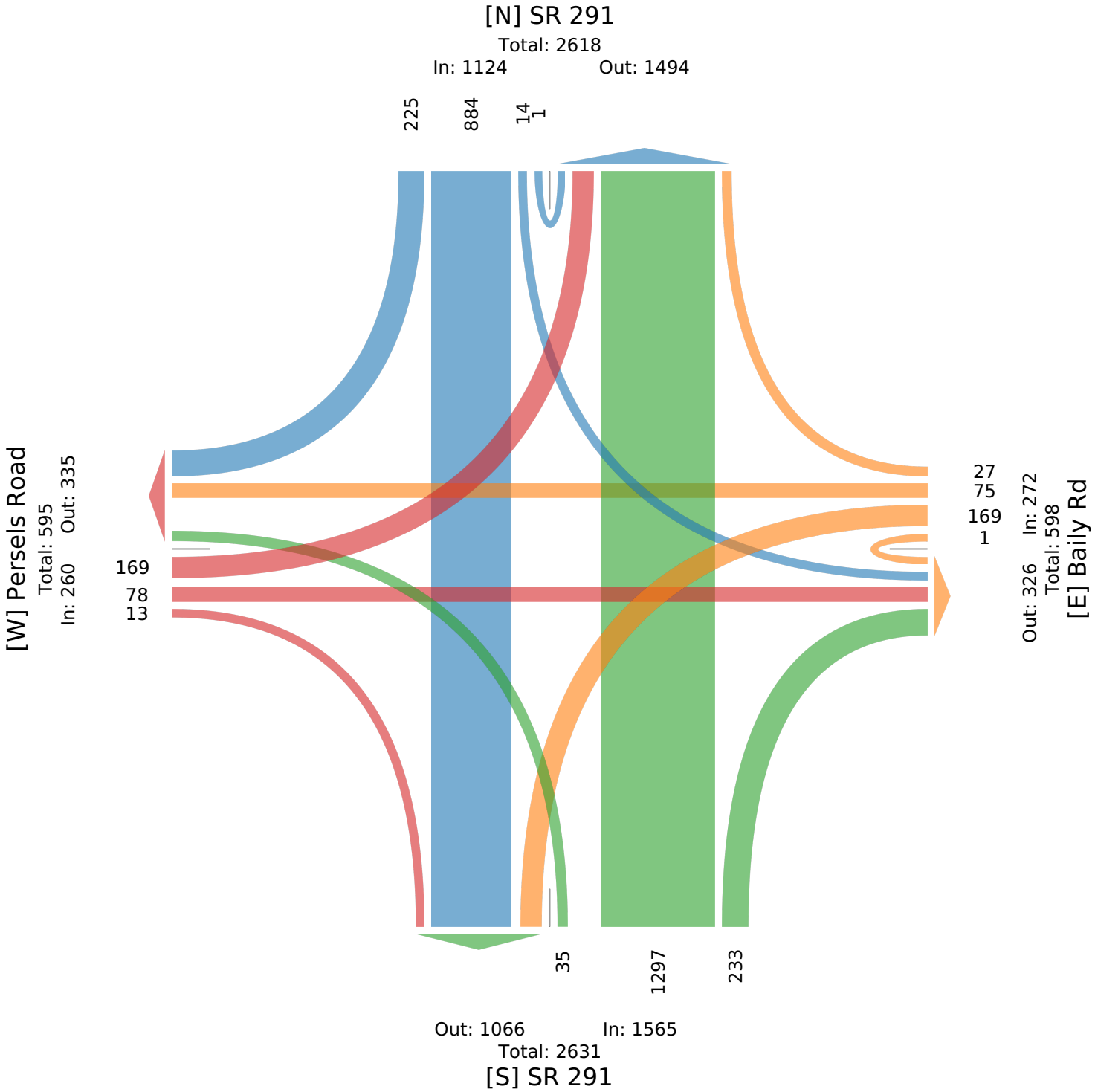
GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

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

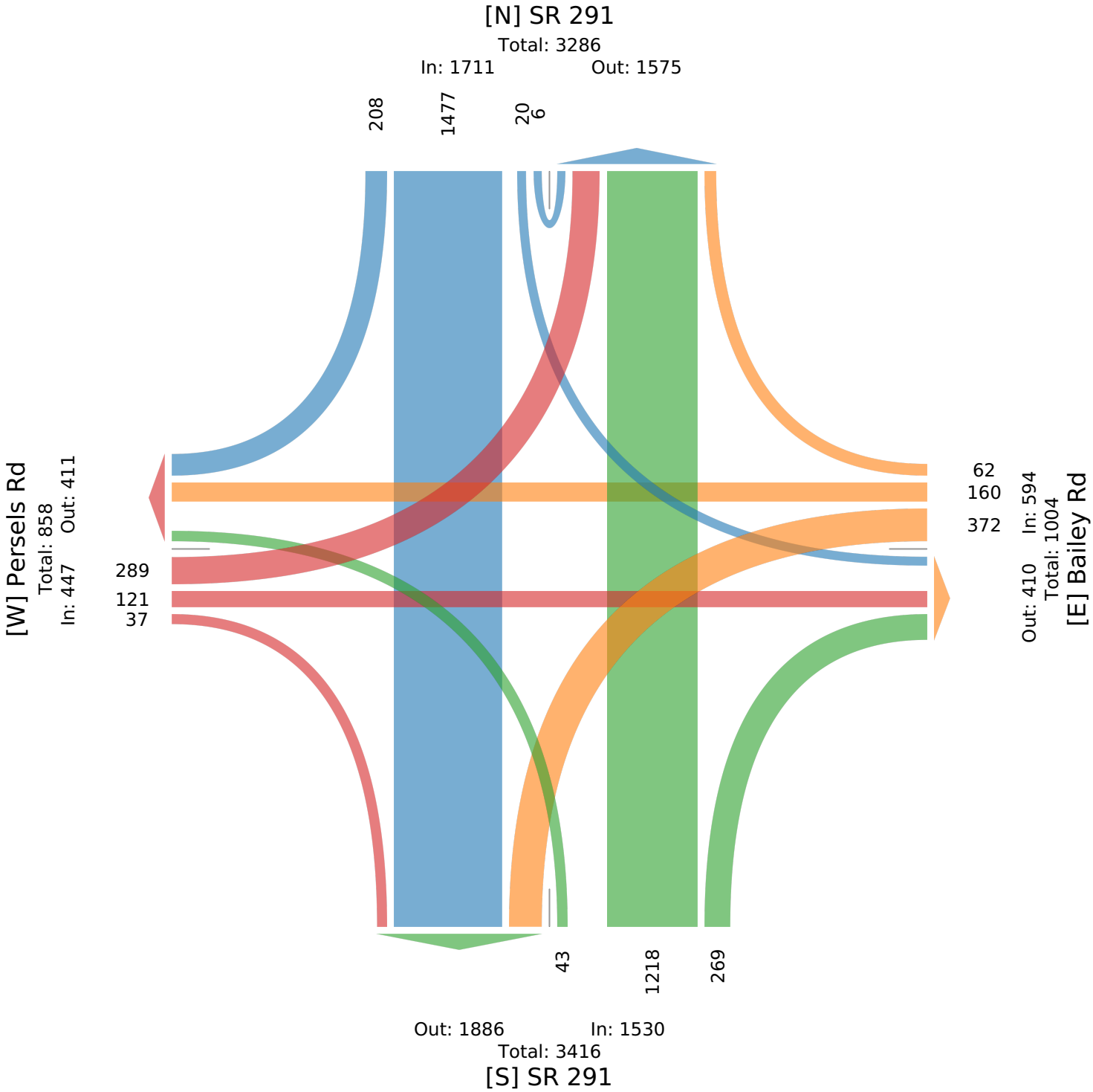
GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

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

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

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

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

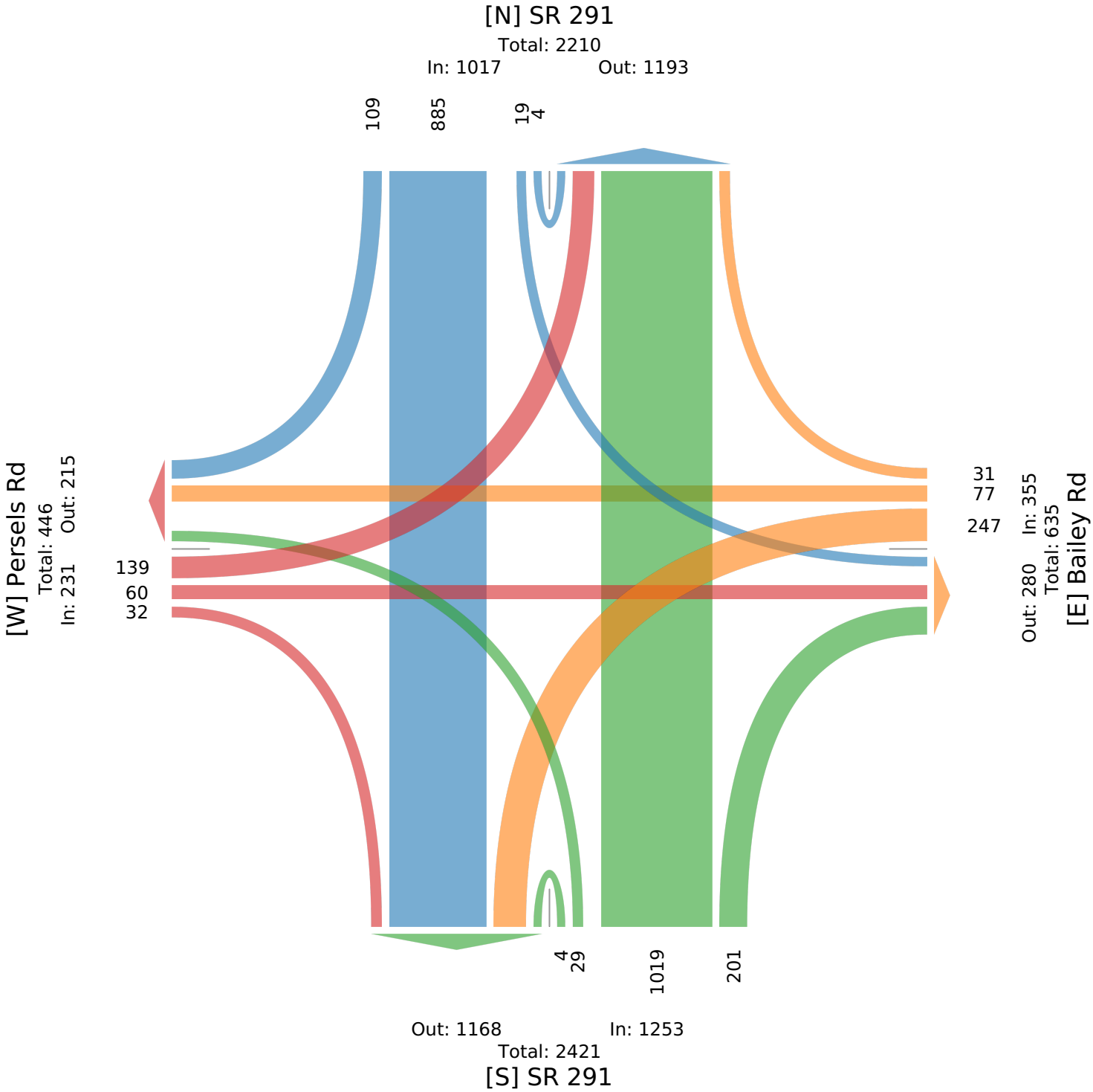
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

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

GEWALT HAMILTON ASSOCIATES, INC.
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

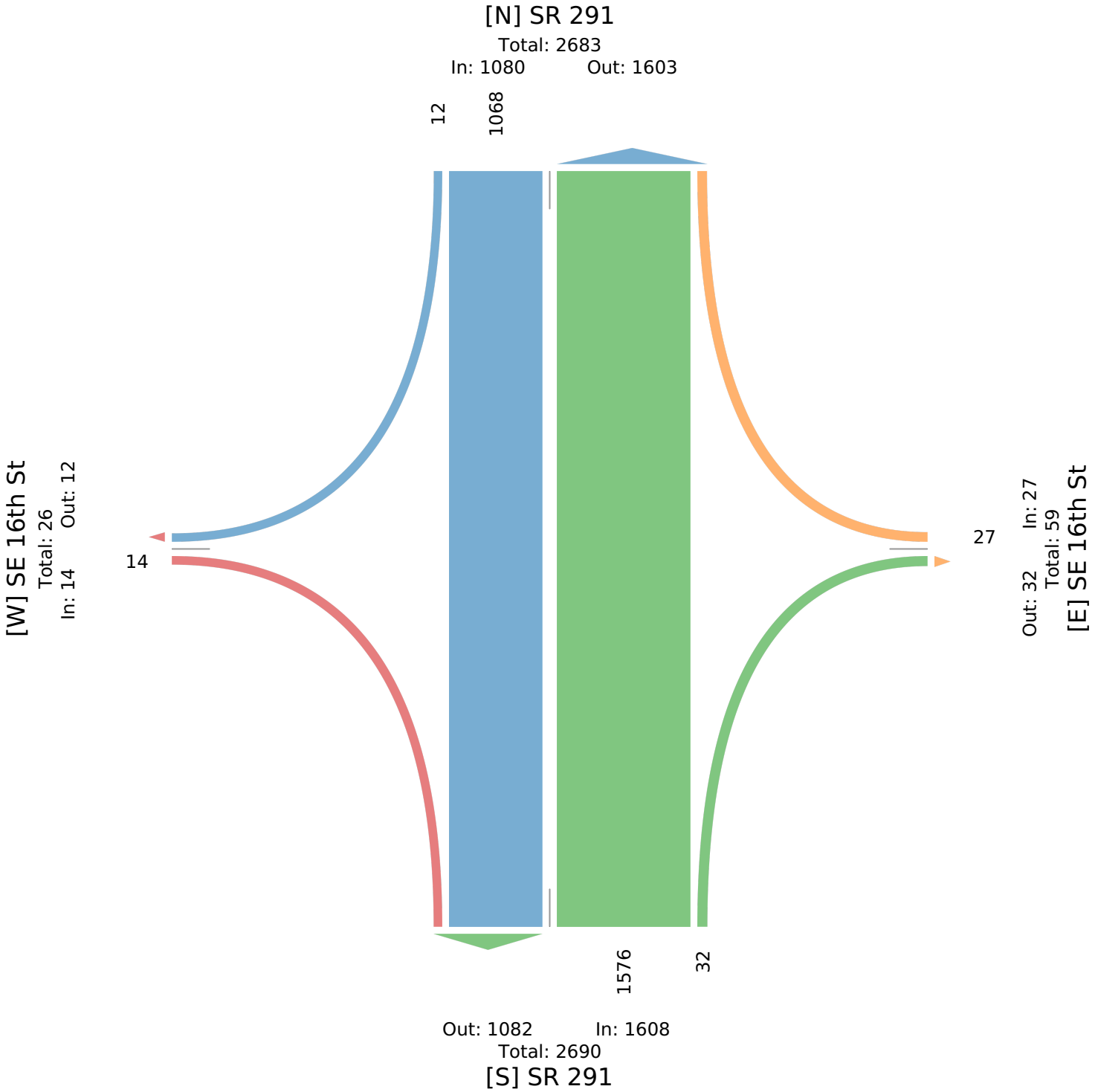
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

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

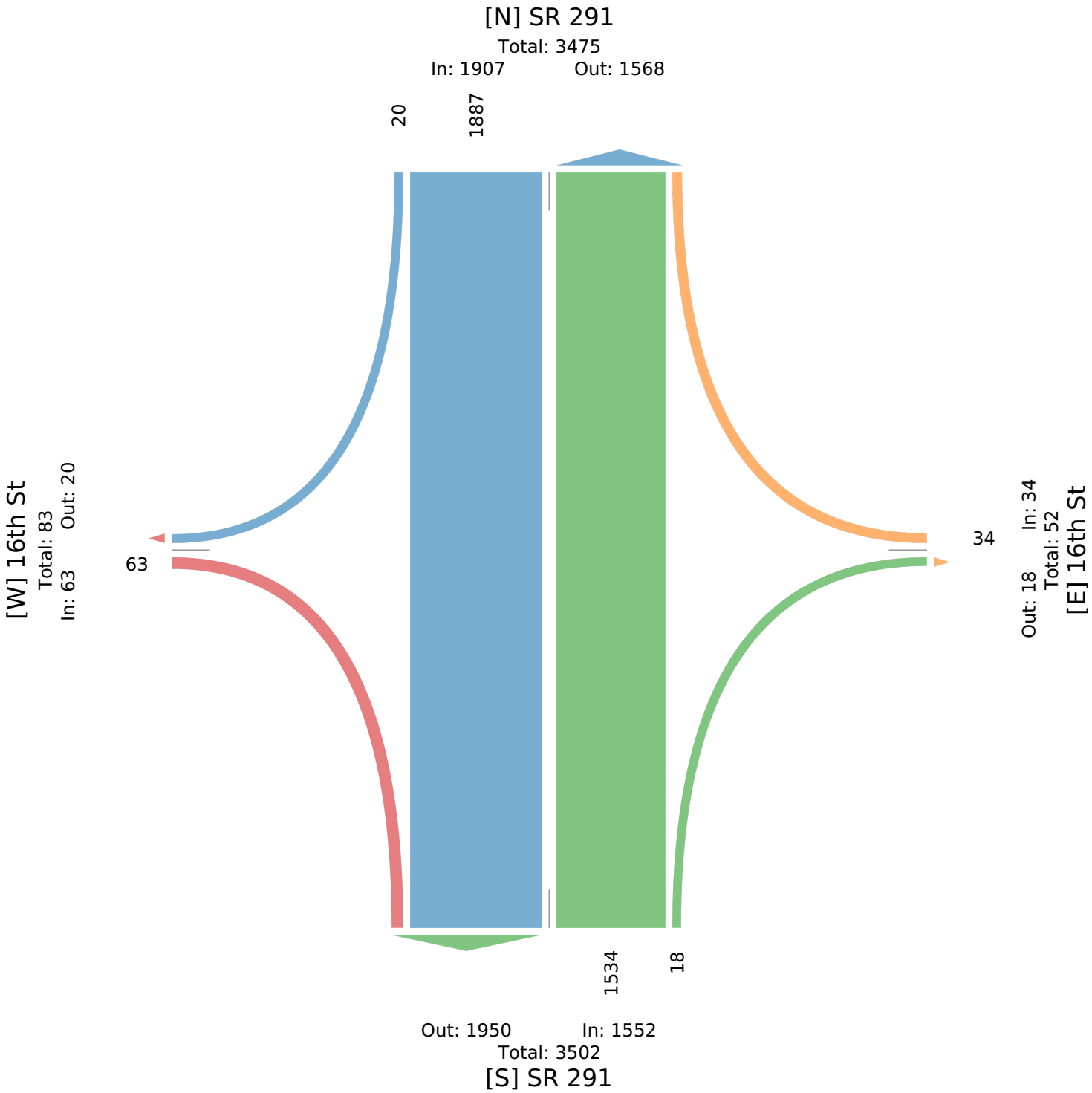
GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

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 4:30PM	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

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
2025-07-19 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

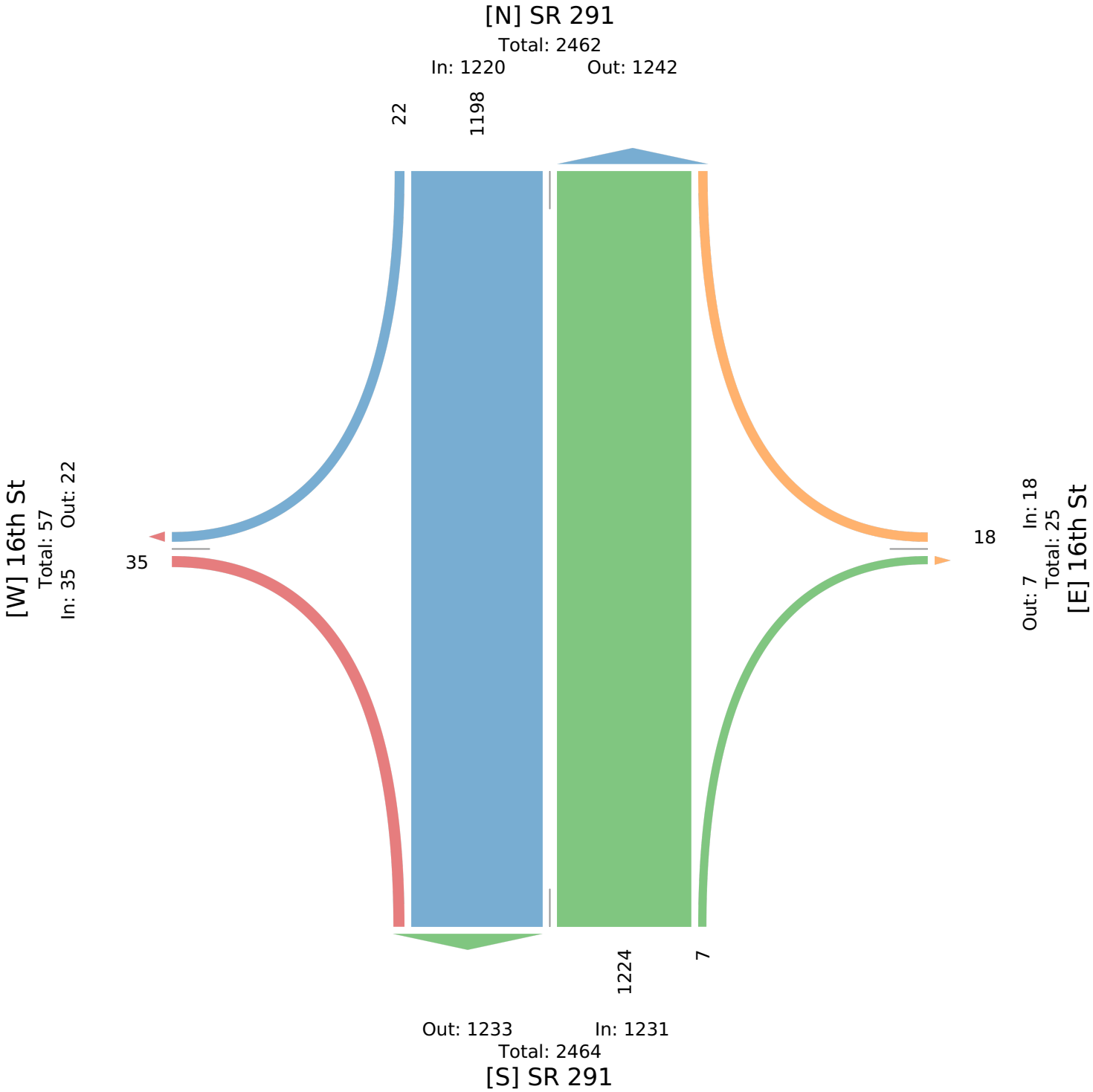
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

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

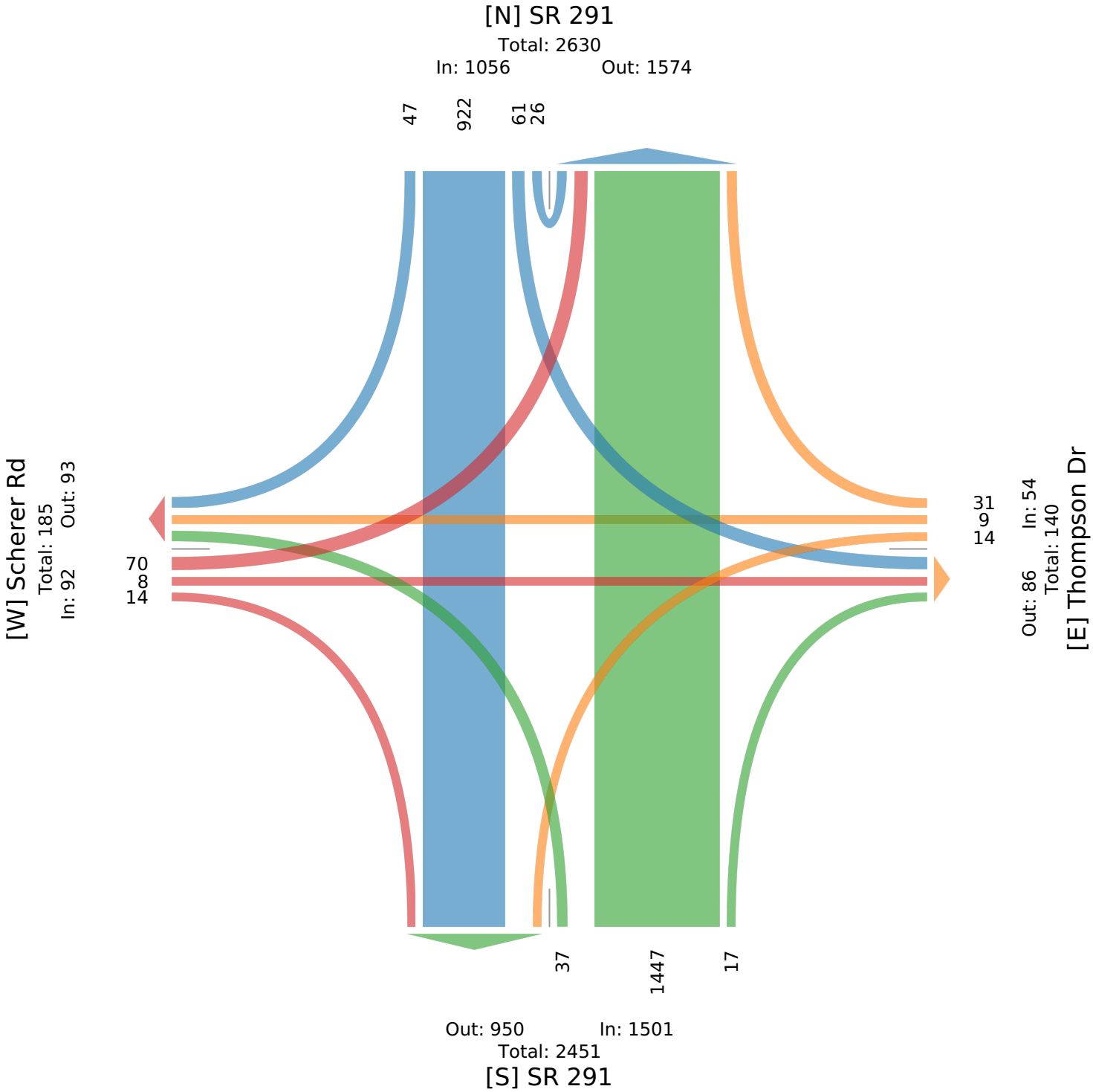
GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

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

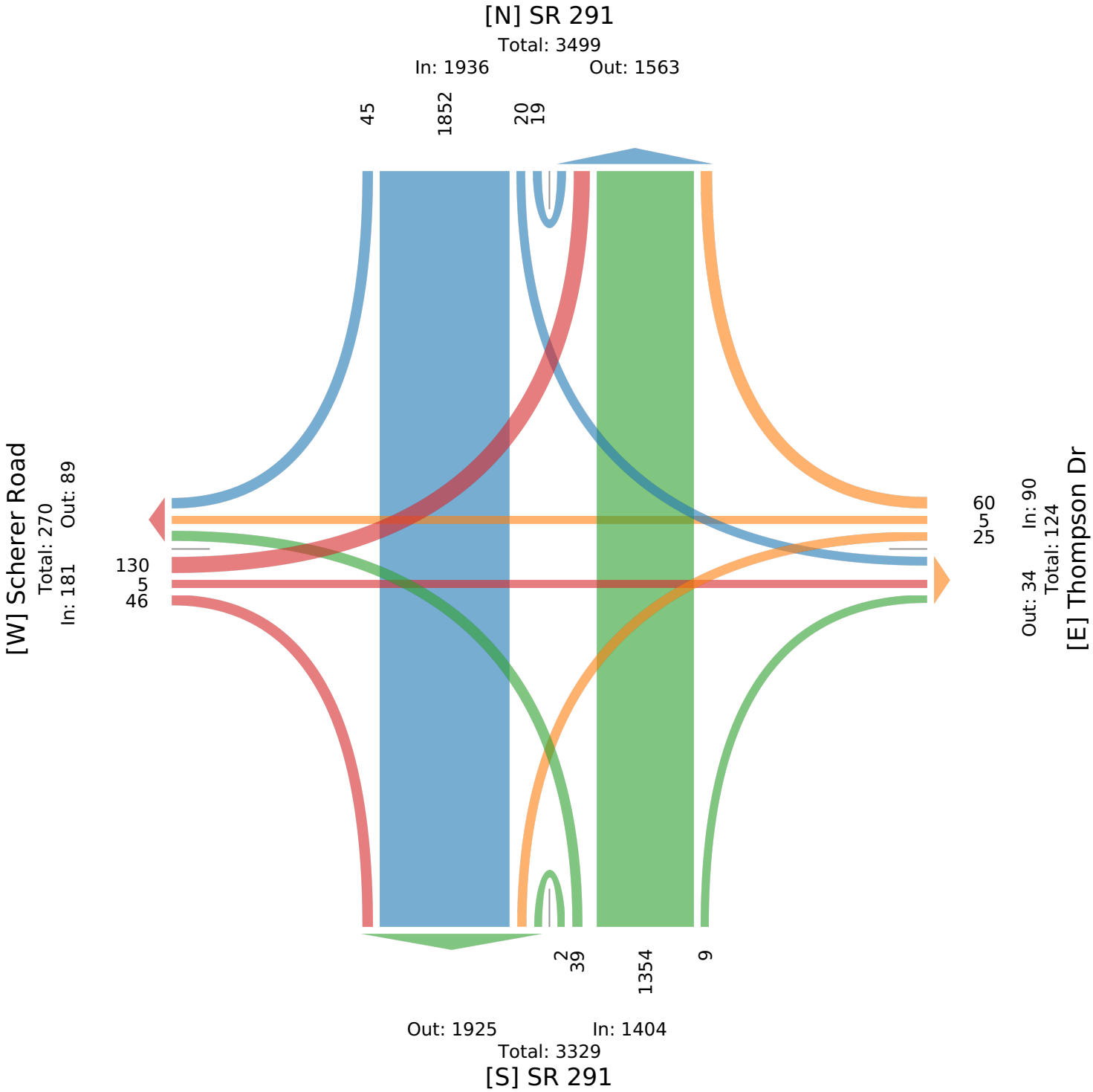
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

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

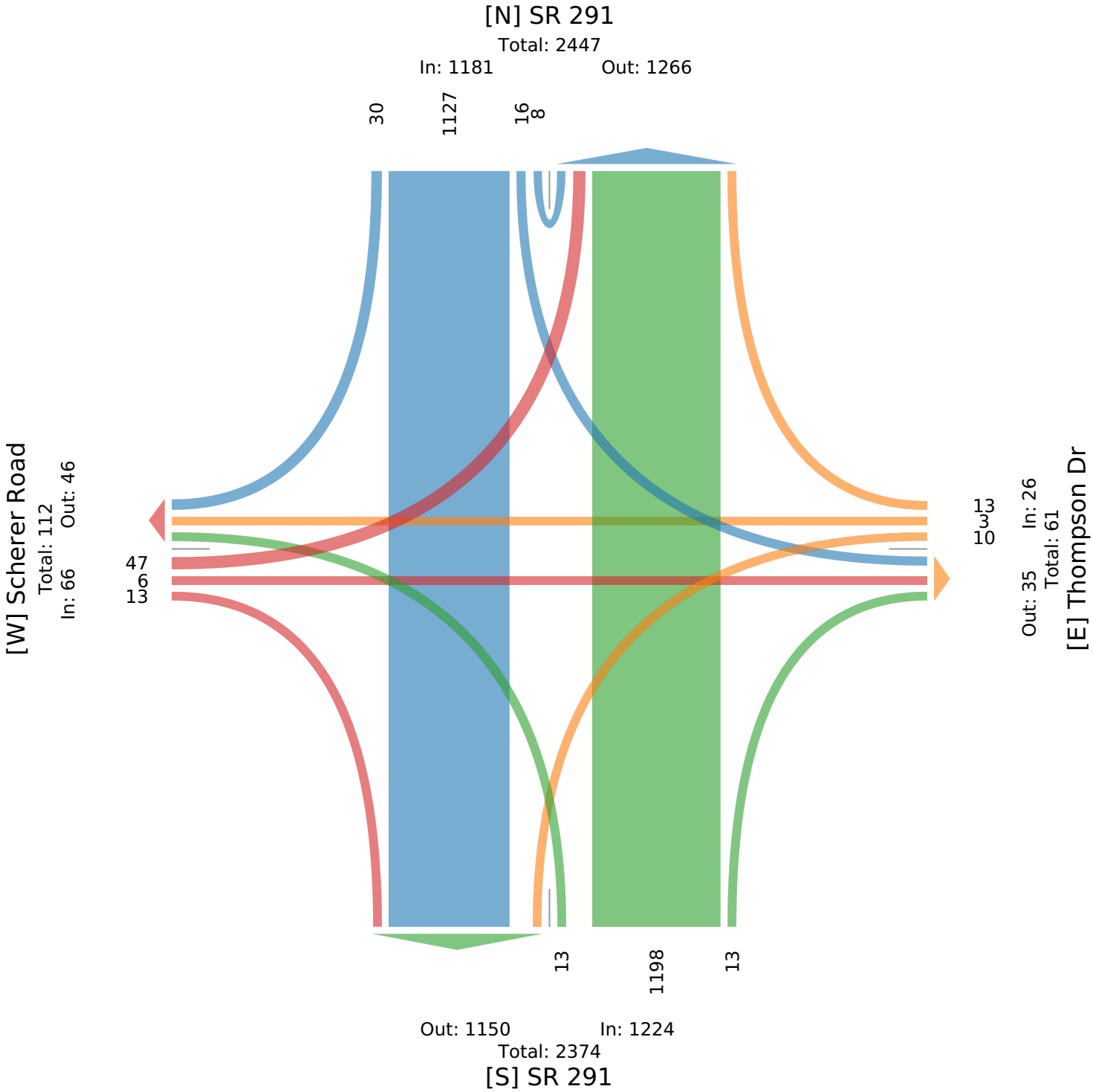
GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

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

GEWALT HAMILTON ASSOCIATES, INC.
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

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
2025-07-10 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

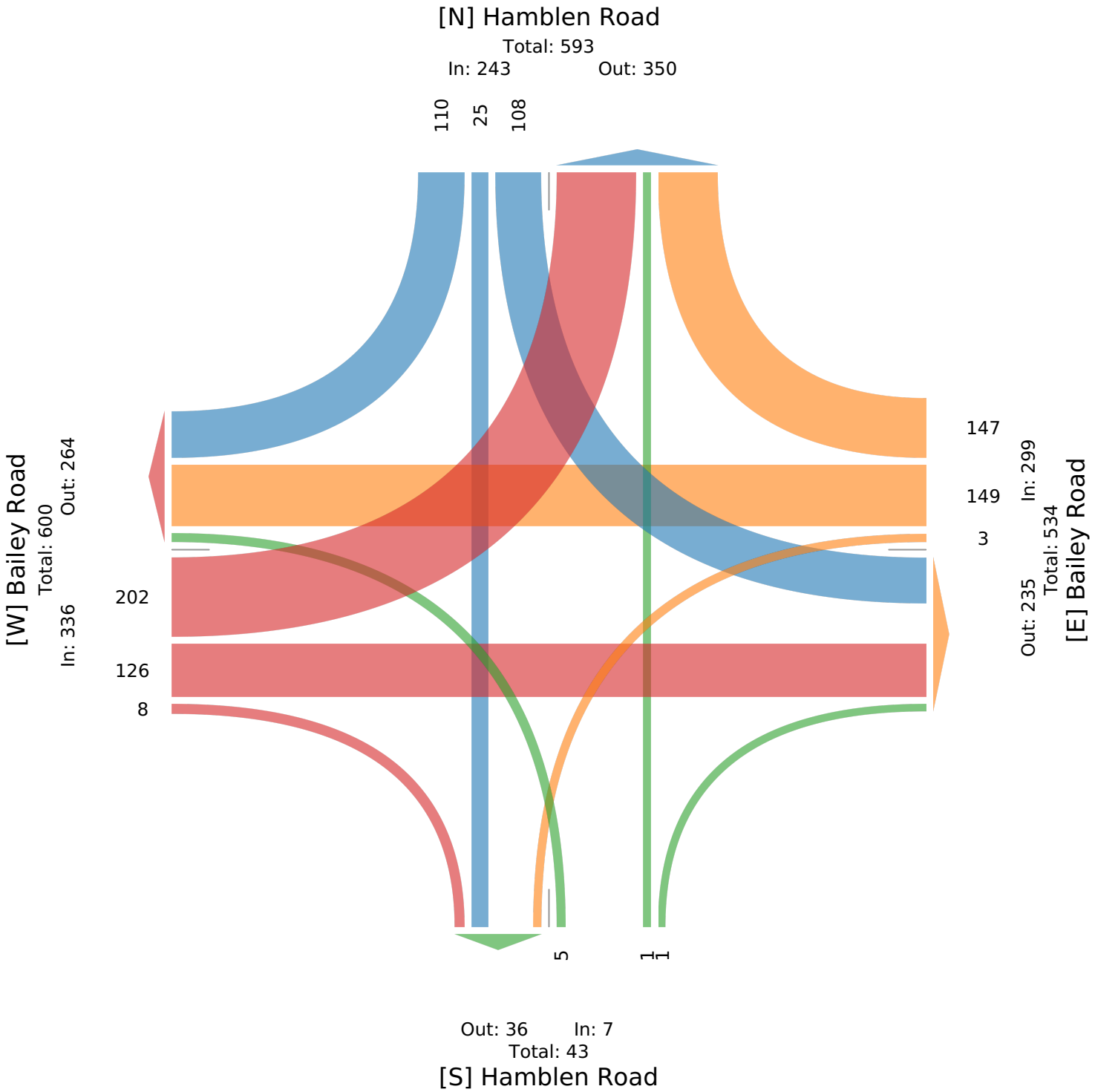
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

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

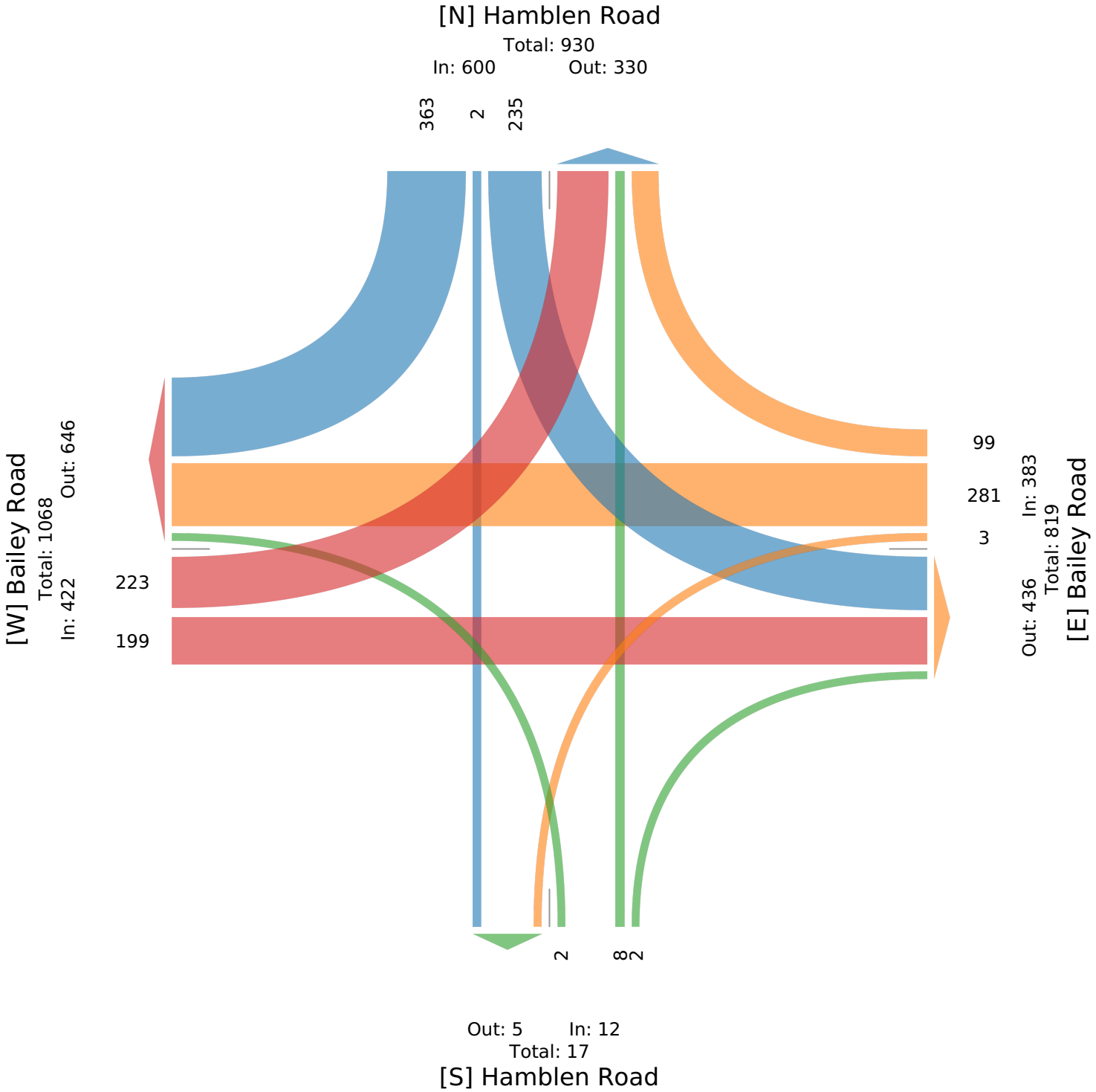
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

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

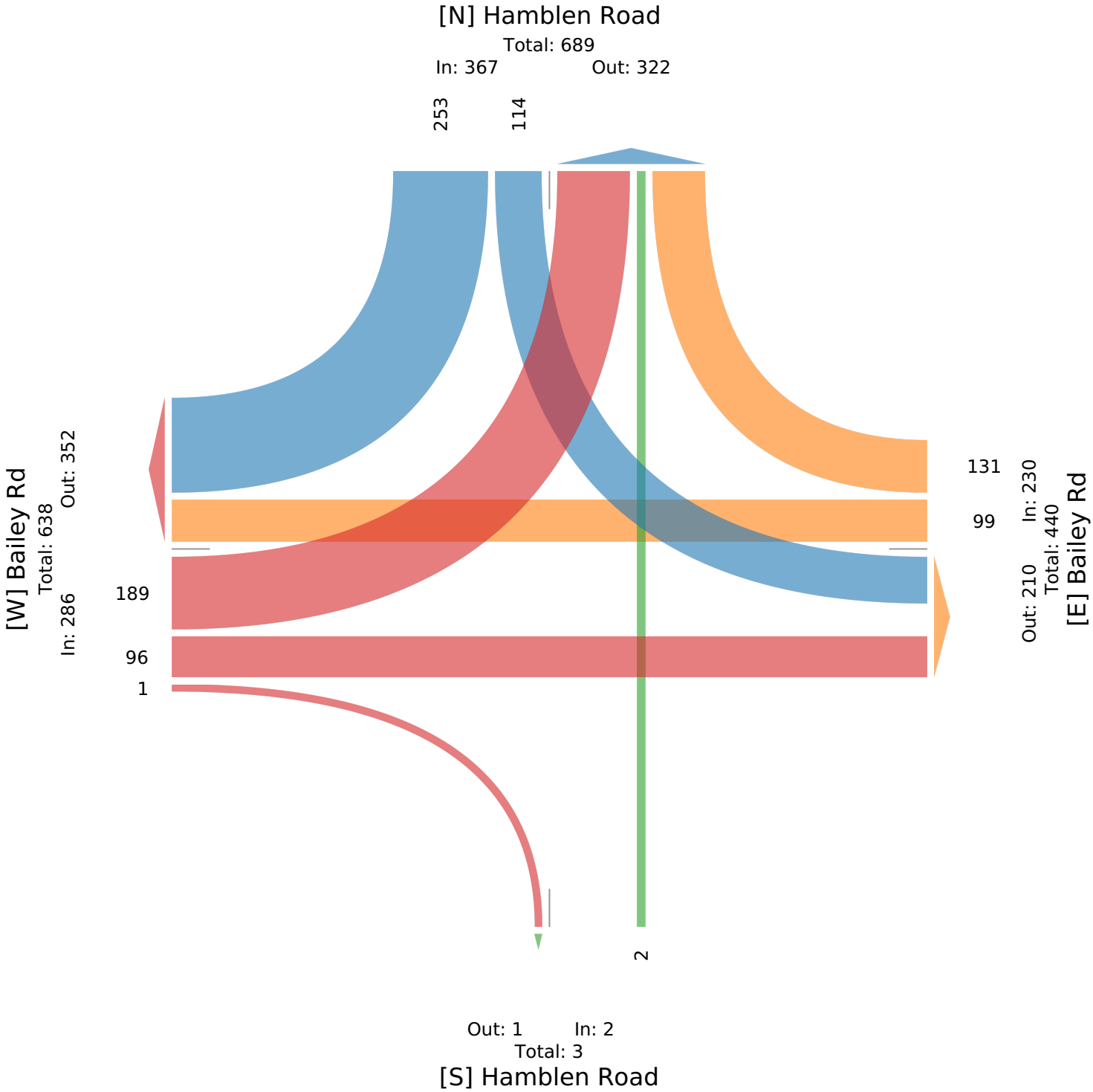
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

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

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



APPENDIX C
ITE TRIP GENERATION PLOTS

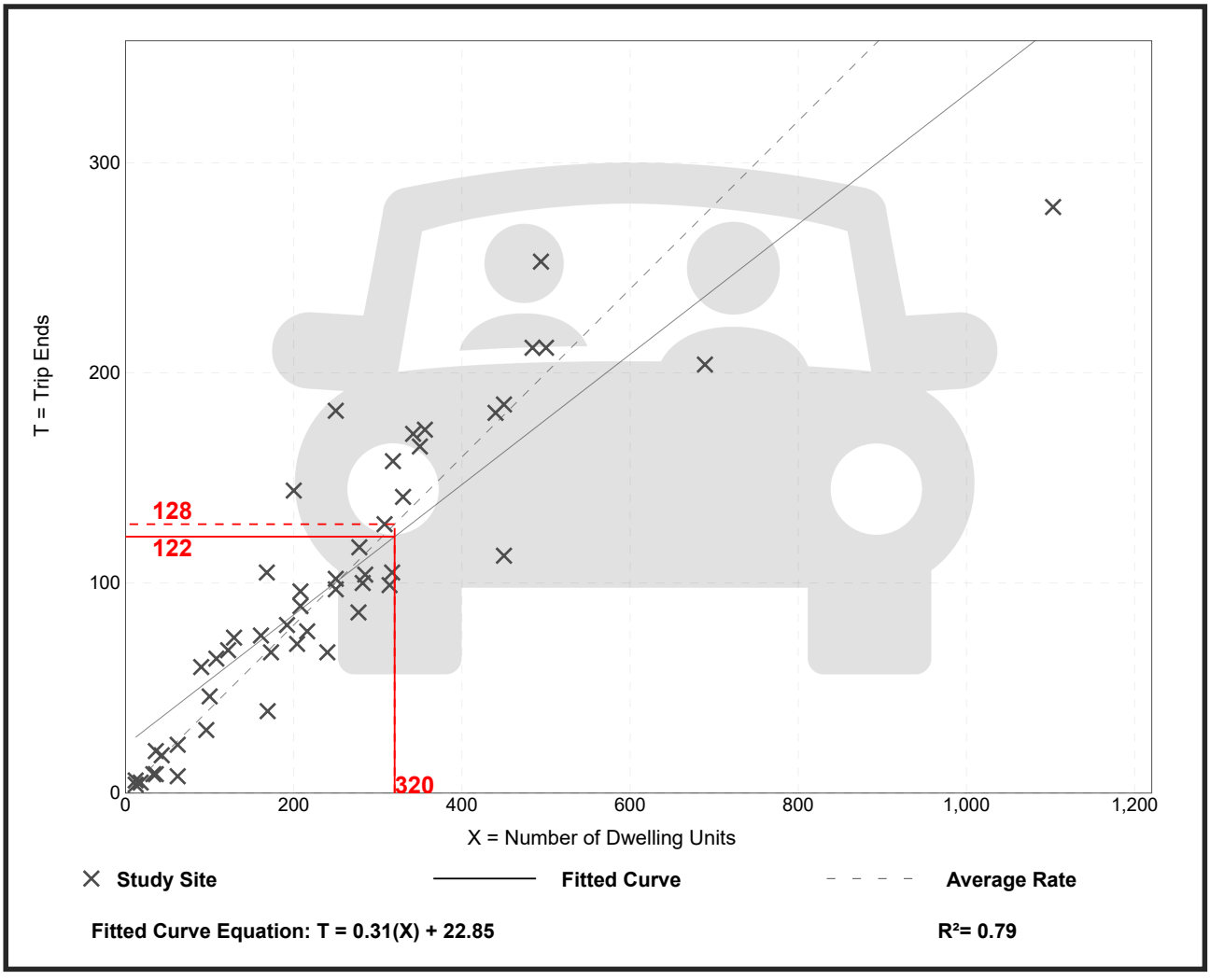
Multifamily Housing (Low-Rise)
Not Close to Rail Transit (220)

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



Trip Gen Manual, 11th Edition ● Institute of Transportation Engineers

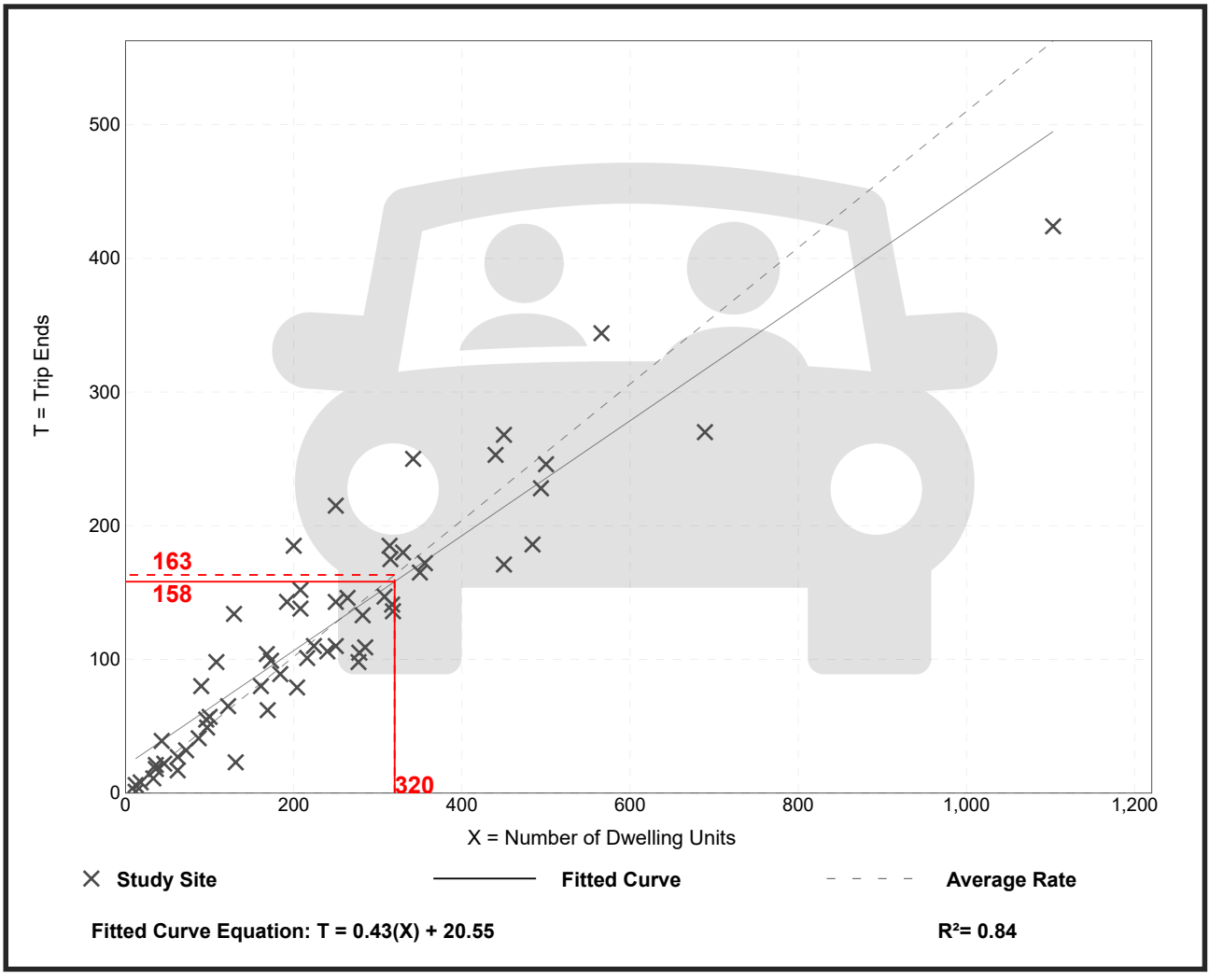
Multifamily Housing (Low-Rise)
Not Close to Rail Transit (220)

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



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

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

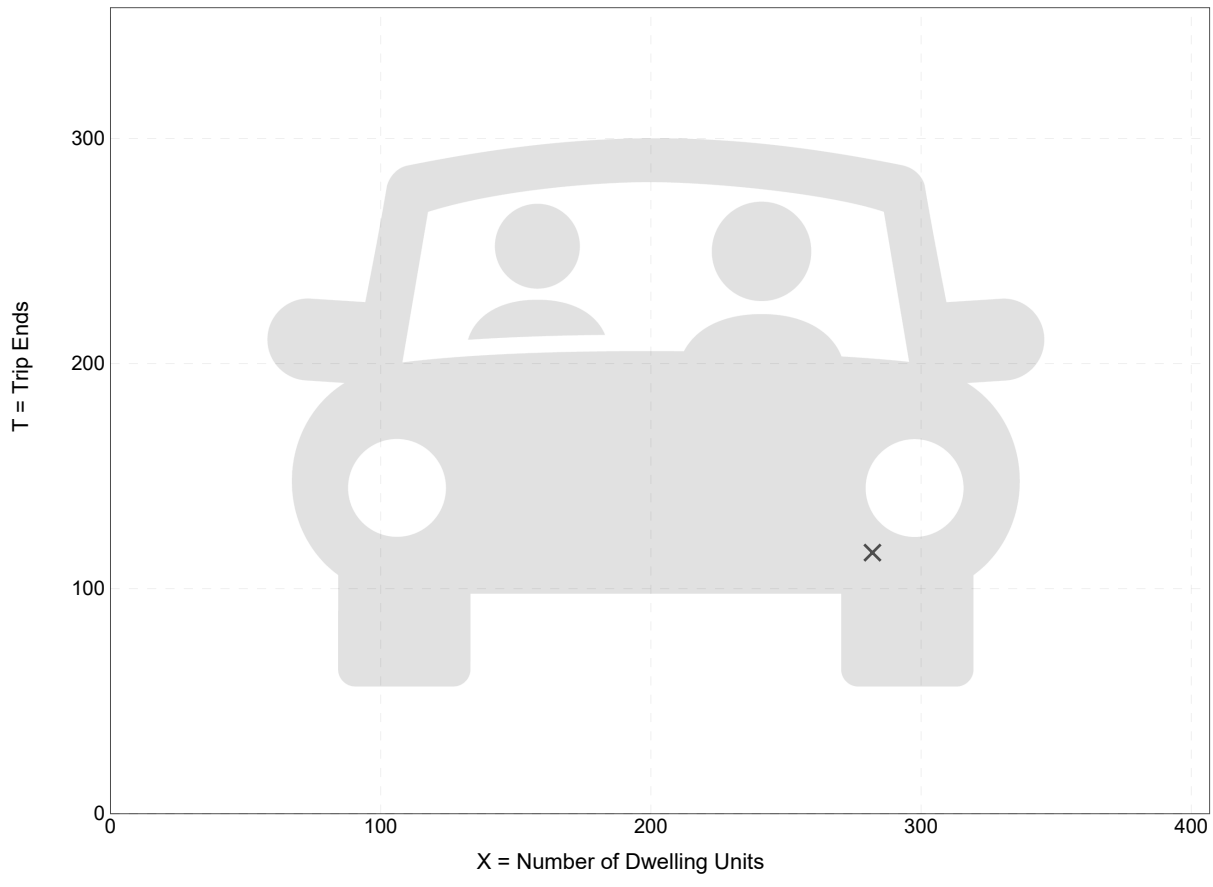
Setting/Location: **General Urban/Suburban**
Number of Studies: 1
Avg. Num. of Dwelling Units: 282
Directional Distribution: Not Available

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)

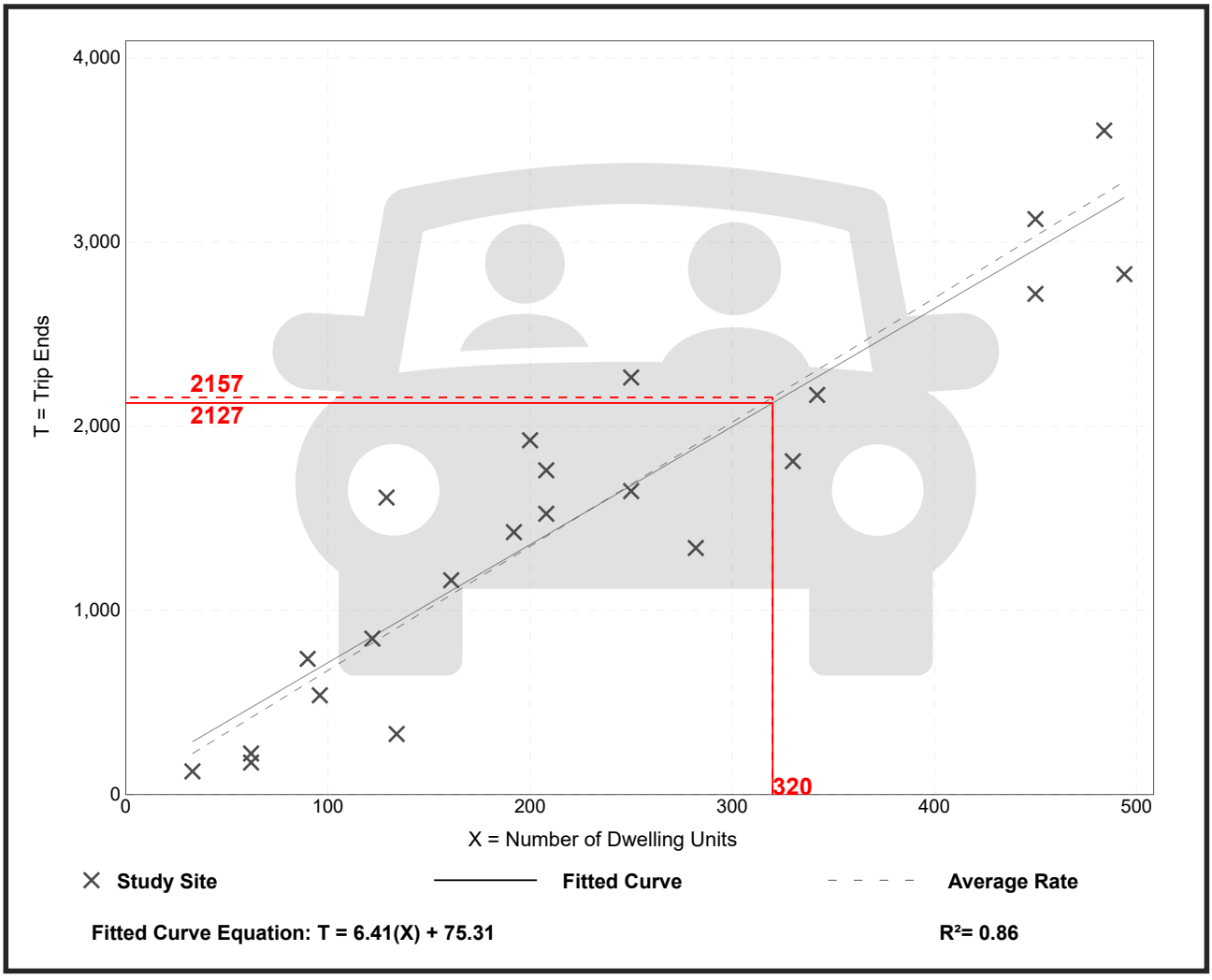
Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday**

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

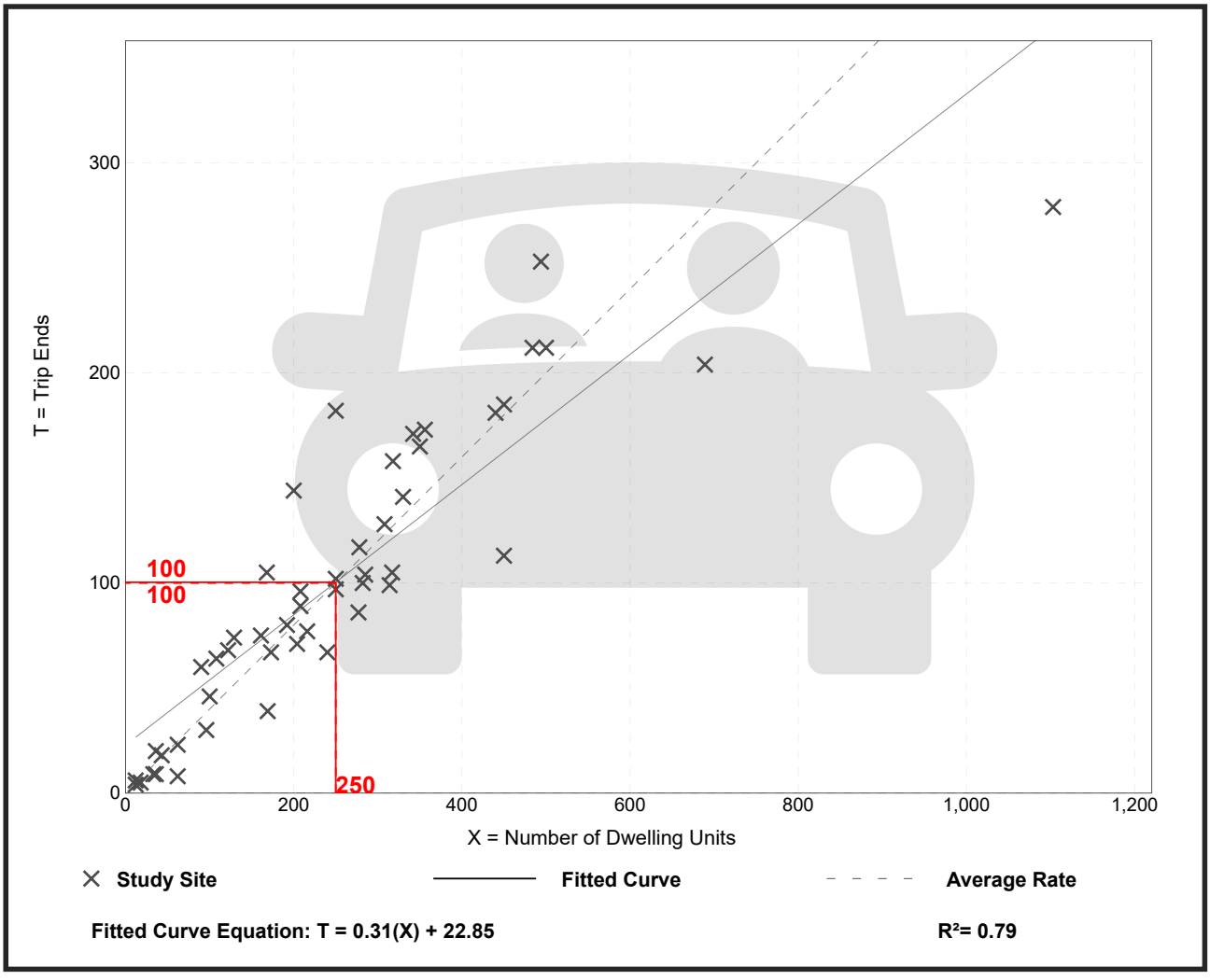
Multifamily Housing (Low-Rise)
Not Close to Rail Transit (220)

Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
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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



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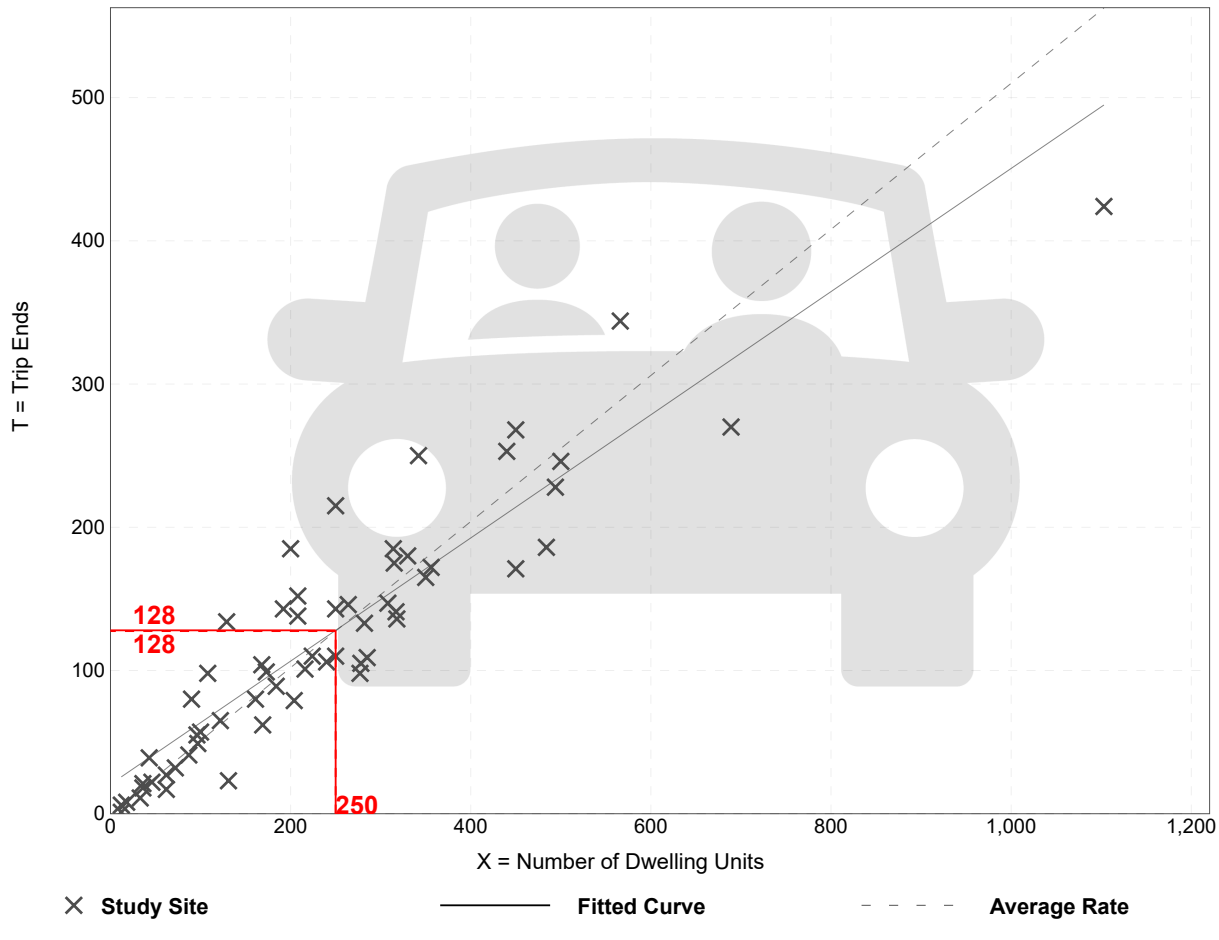
Multifamily Housing (Low-Rise)
Not Close to Rail Transit (220)

Vehicle Trip Ends vs:	**Dwelling Units**
On a:	**Weekday,**
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Data Plot and Equation



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

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

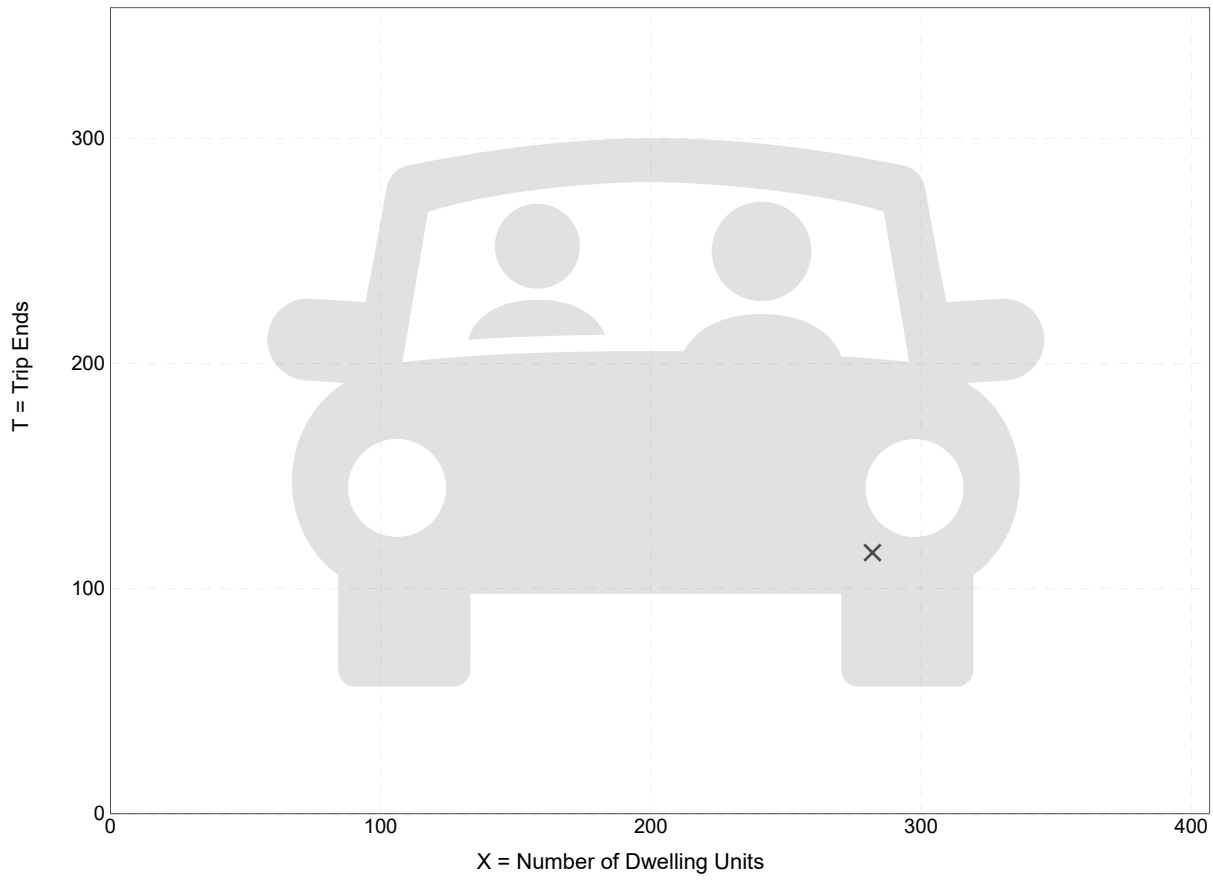
Setting/Location: **General Urban/Suburban**
Number of Studies: 1
Avg. Num. of Dwelling Units: 282
Directional Distribution: Not Available

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)

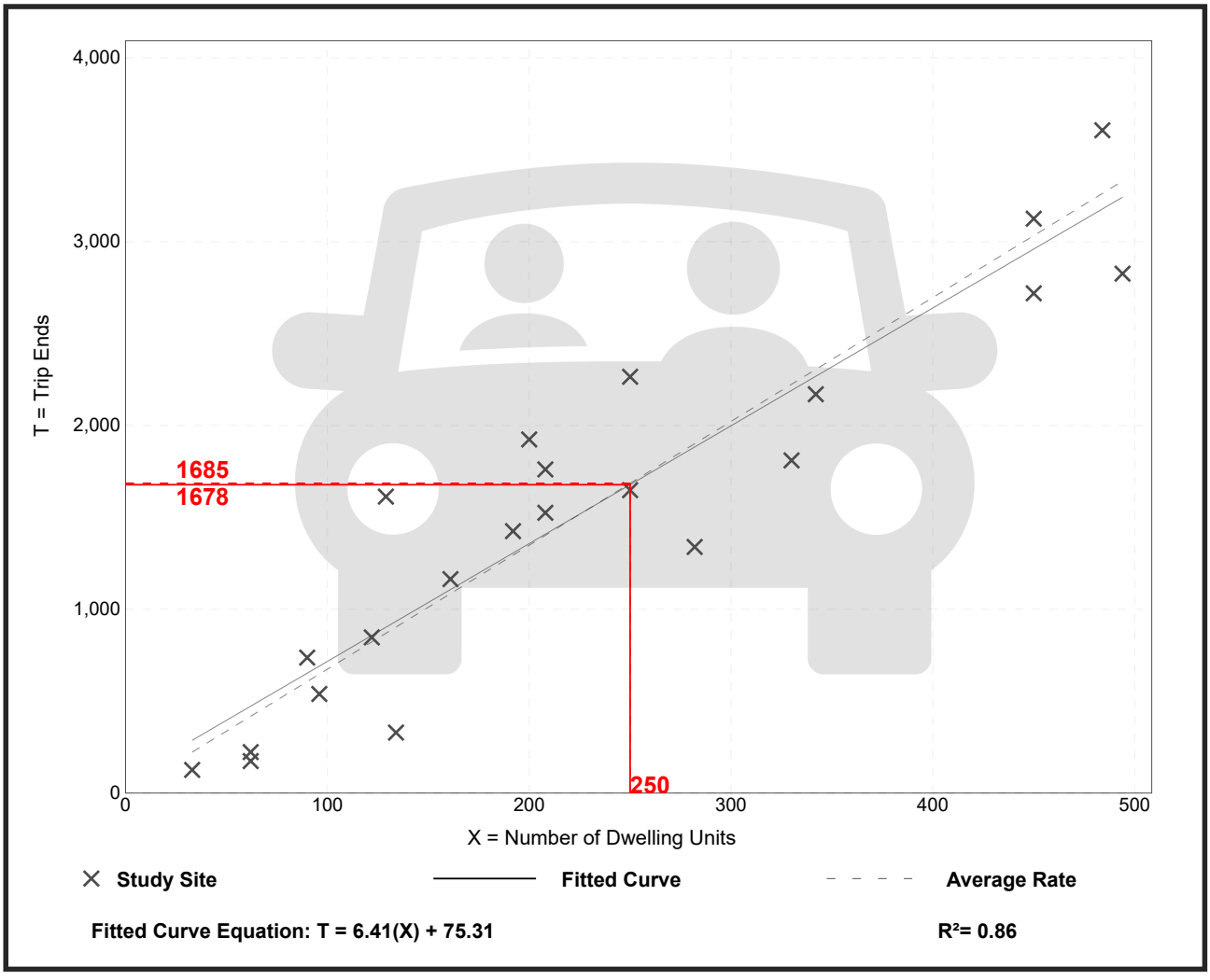
Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday**

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

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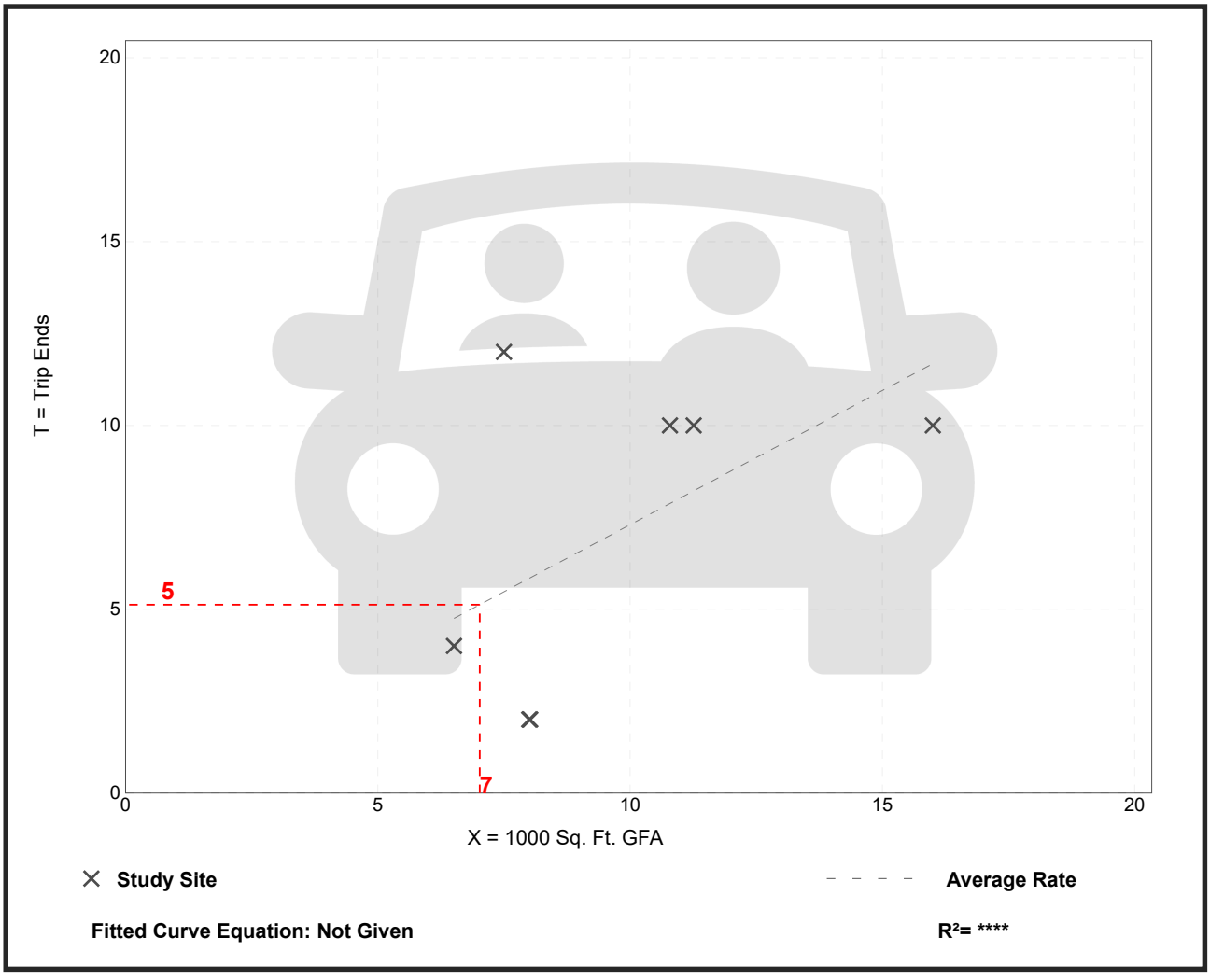
Fine Dining Restaurant
(931)

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



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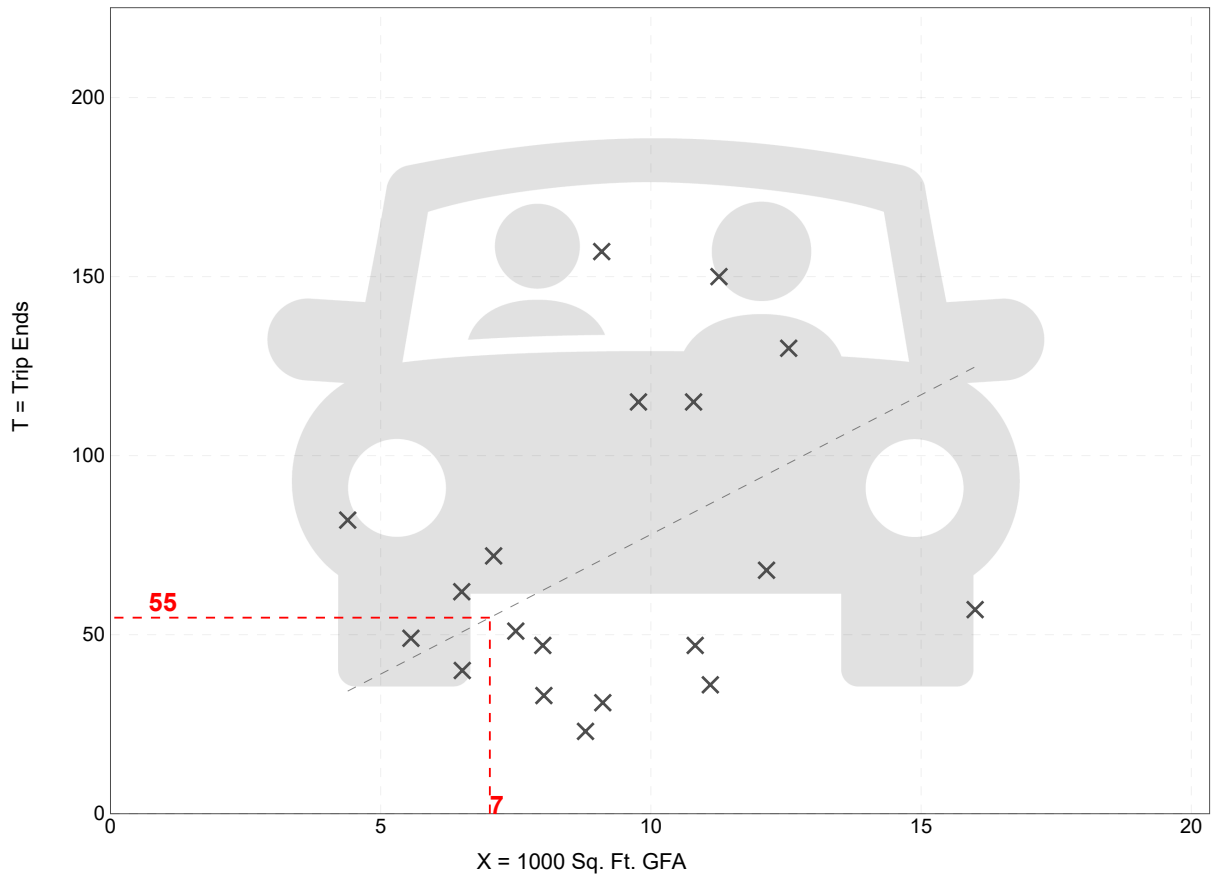
Fine Dining Restaurant
(931)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 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



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Fine Dining Restaurant
(931)

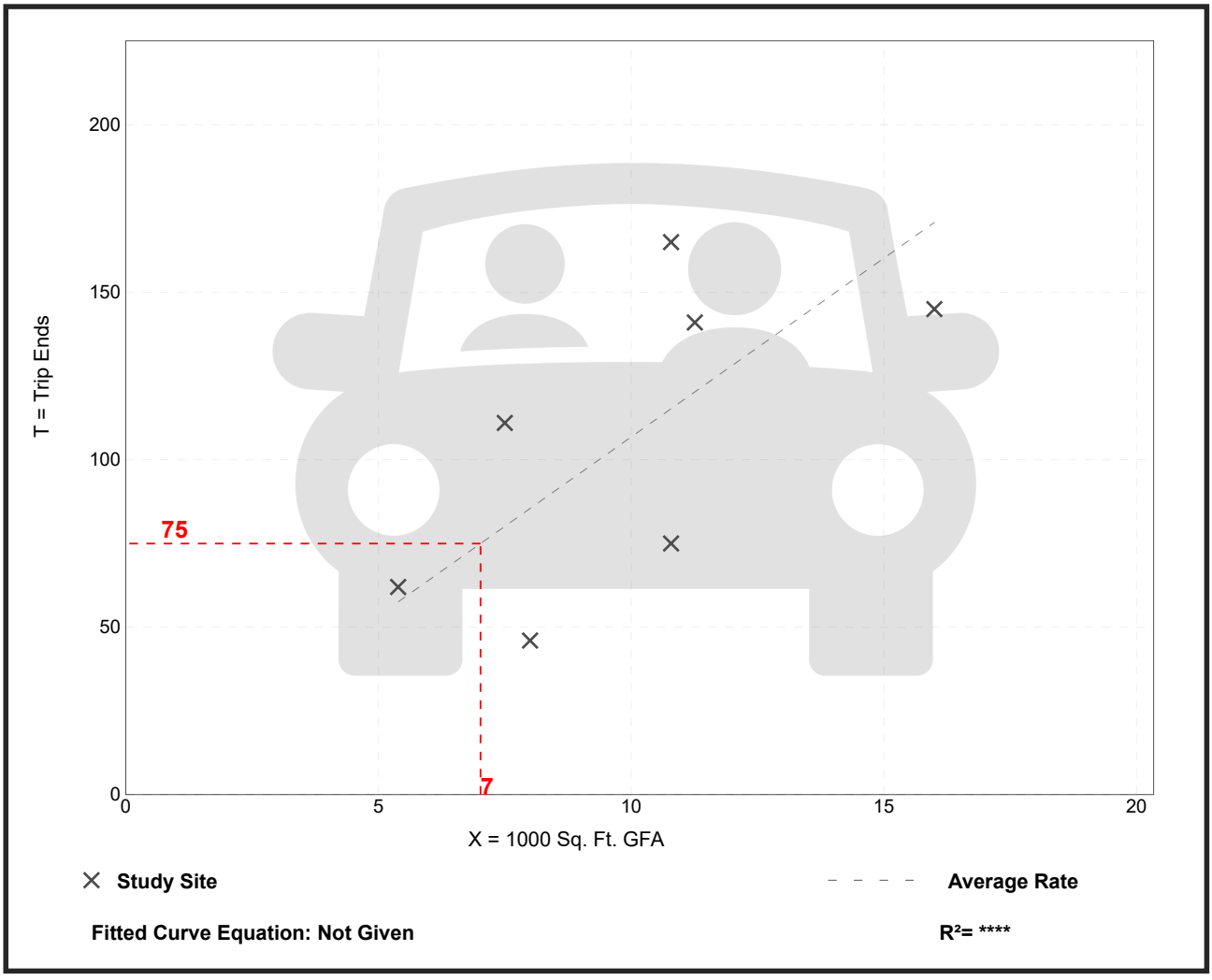
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Saturday, Peak Hour of Generator**

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



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Fine Dining Restaurant
(931)

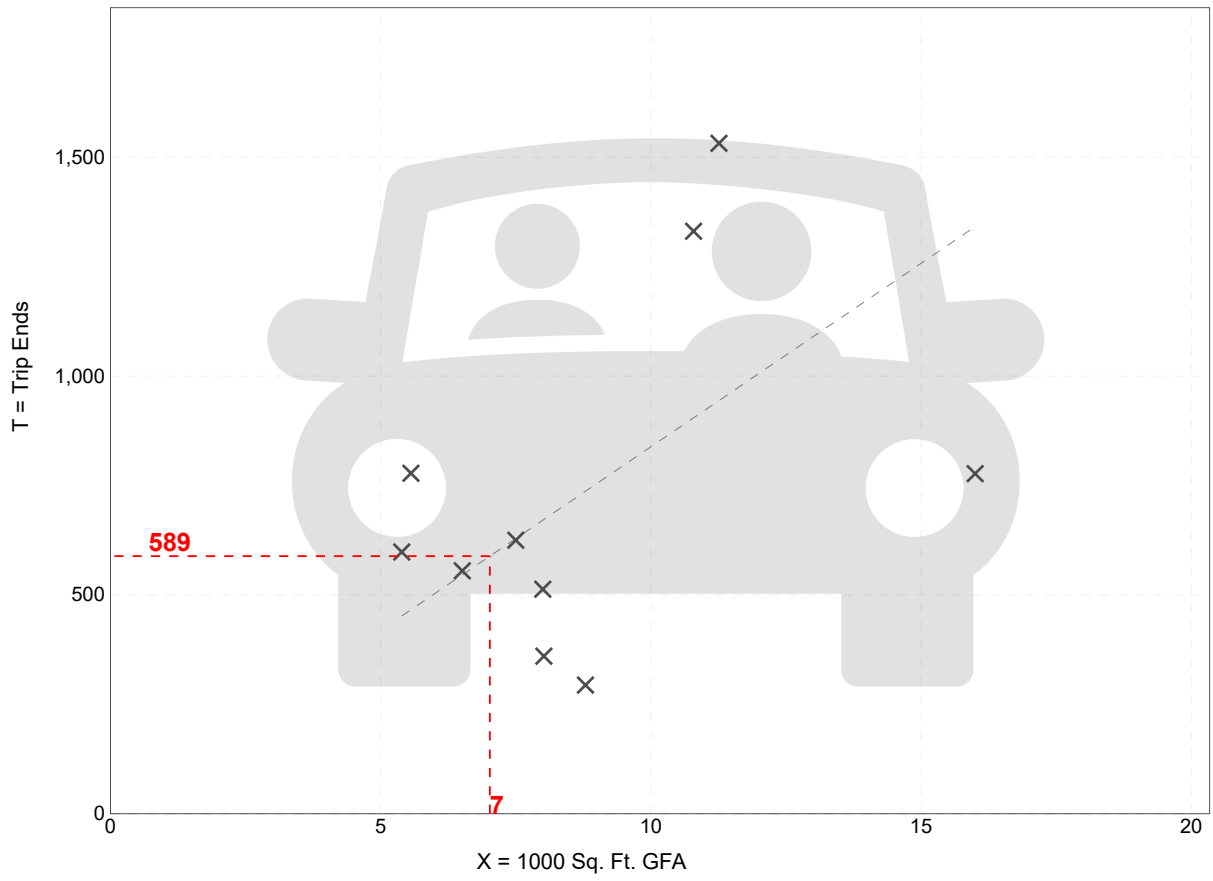
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday**

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



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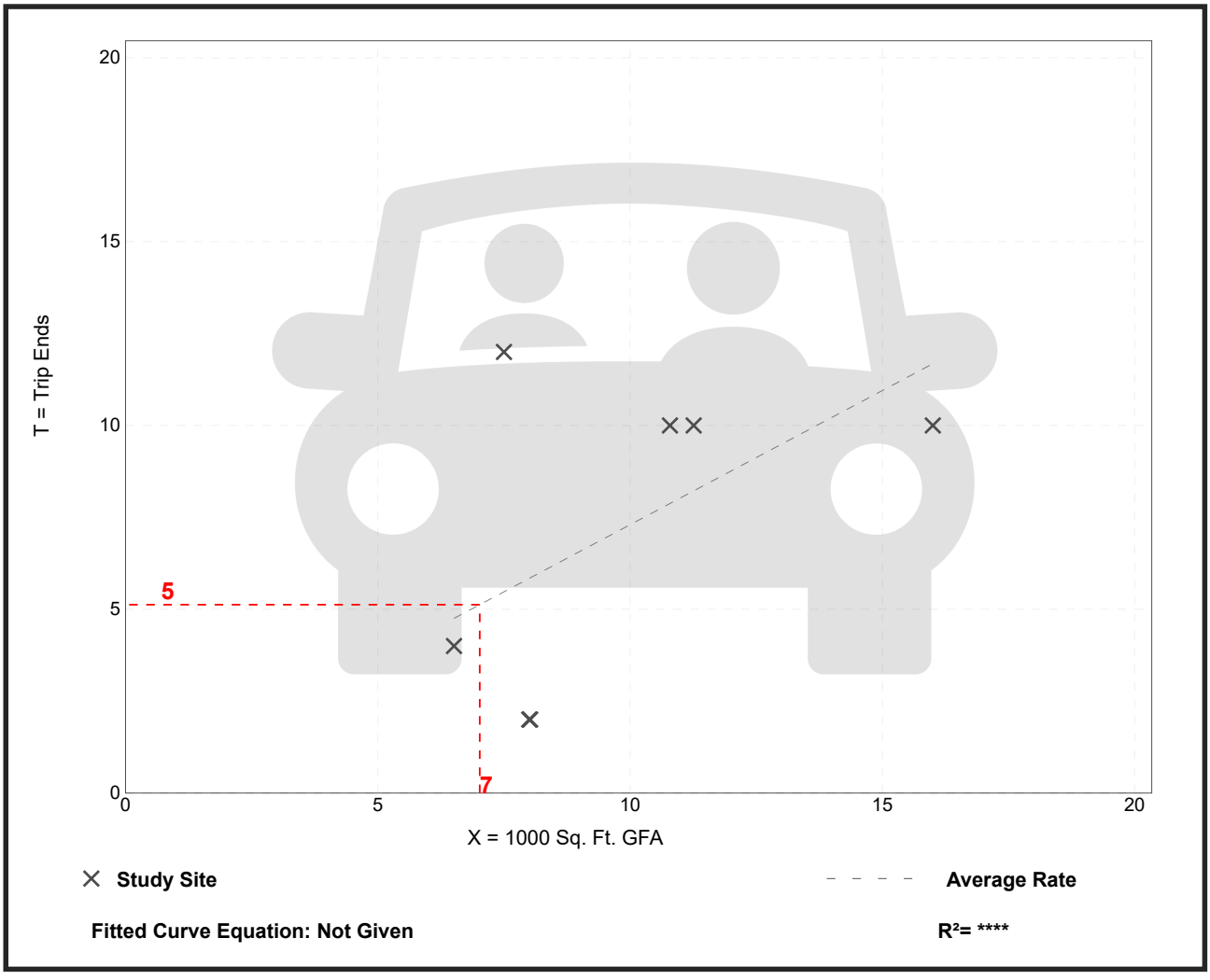
Fine Dining Restaurant
(931)

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



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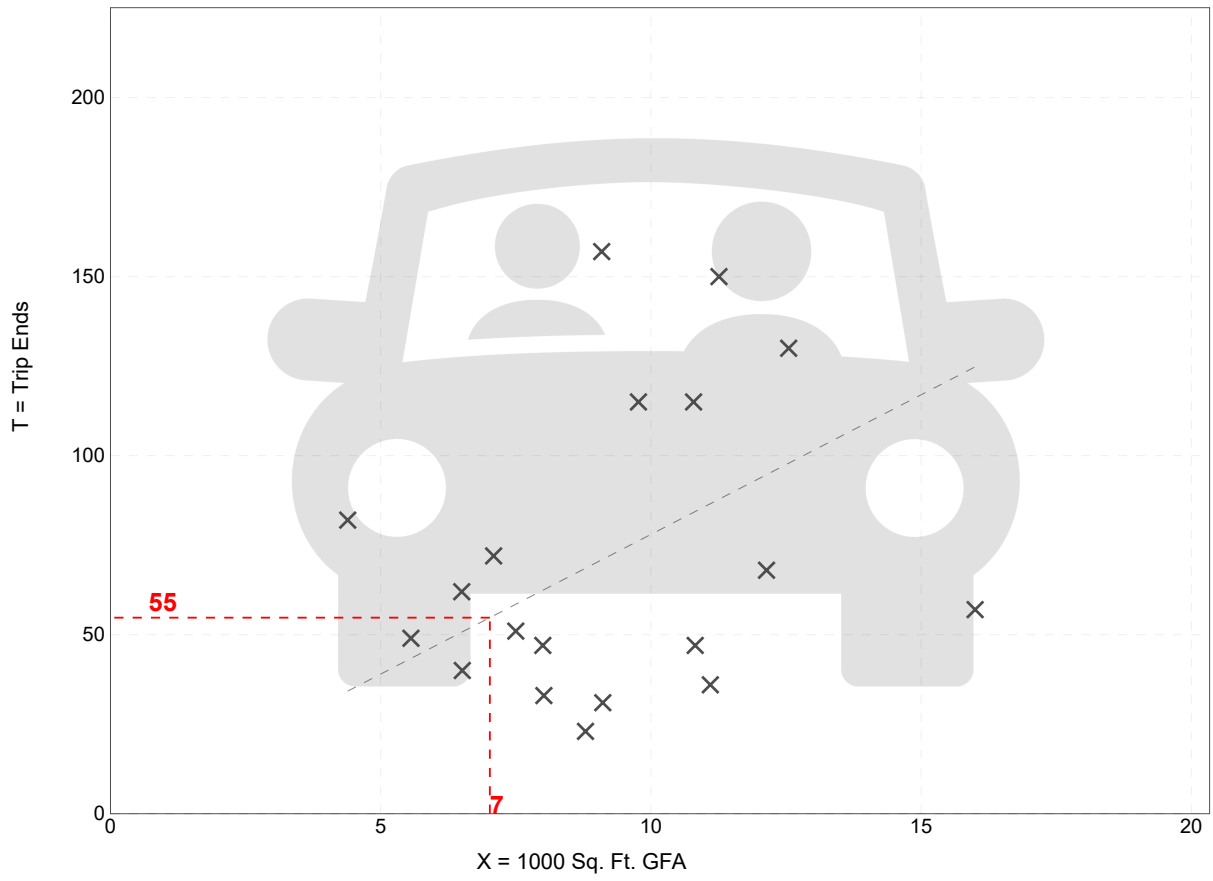
Fine Dining Restaurant
(931)

Vehicle Trip Ends vs:	**1000 Sq. Ft. GFA**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 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= ****

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Fine Dining Restaurant
(931)

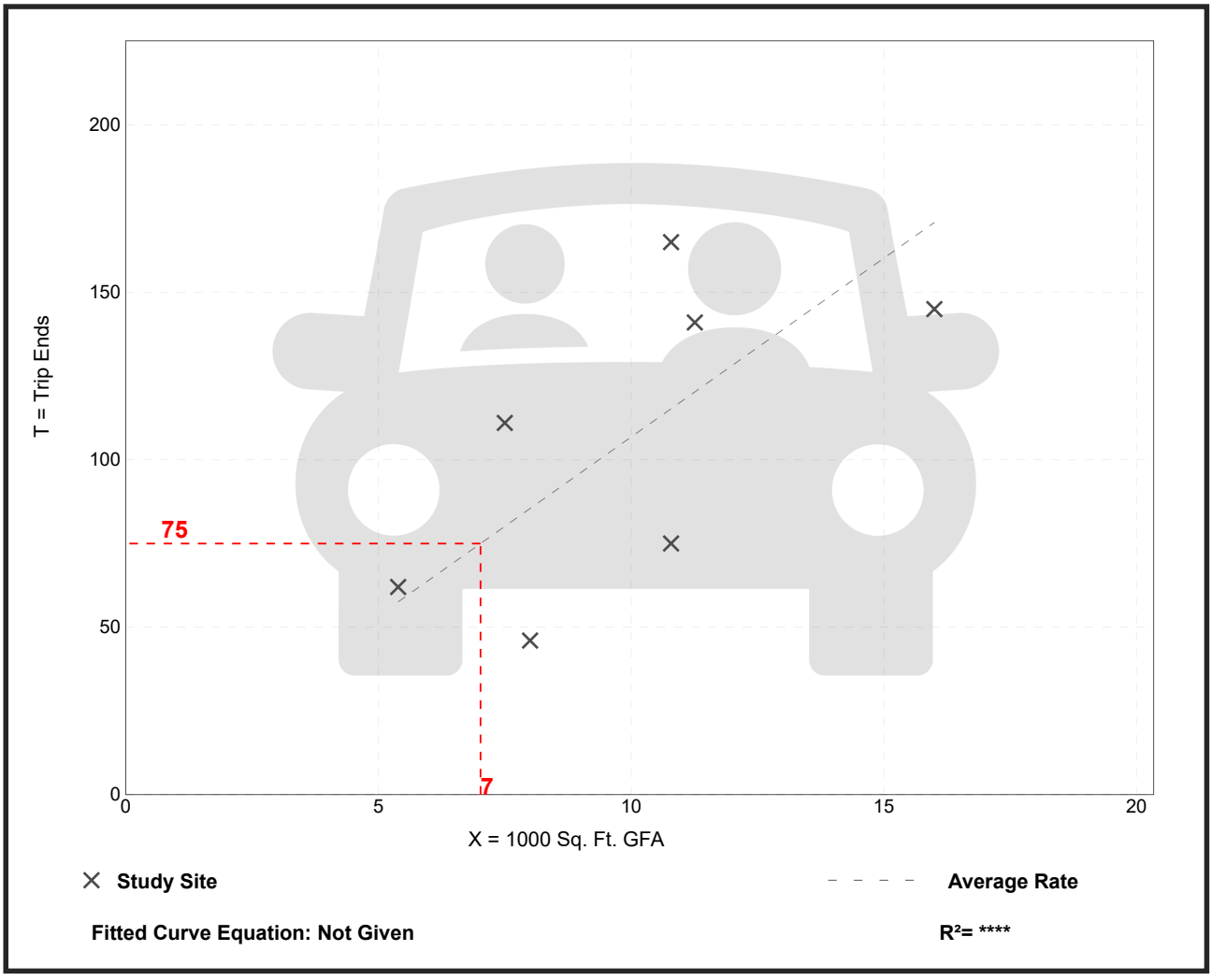
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Saturday, Peak Hour of Generator**

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
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Data Plot and Equation



Trip Gen Manual, 11th Edition ● Institute of Transportation Engineers

Fine Dining Restaurant
(931)

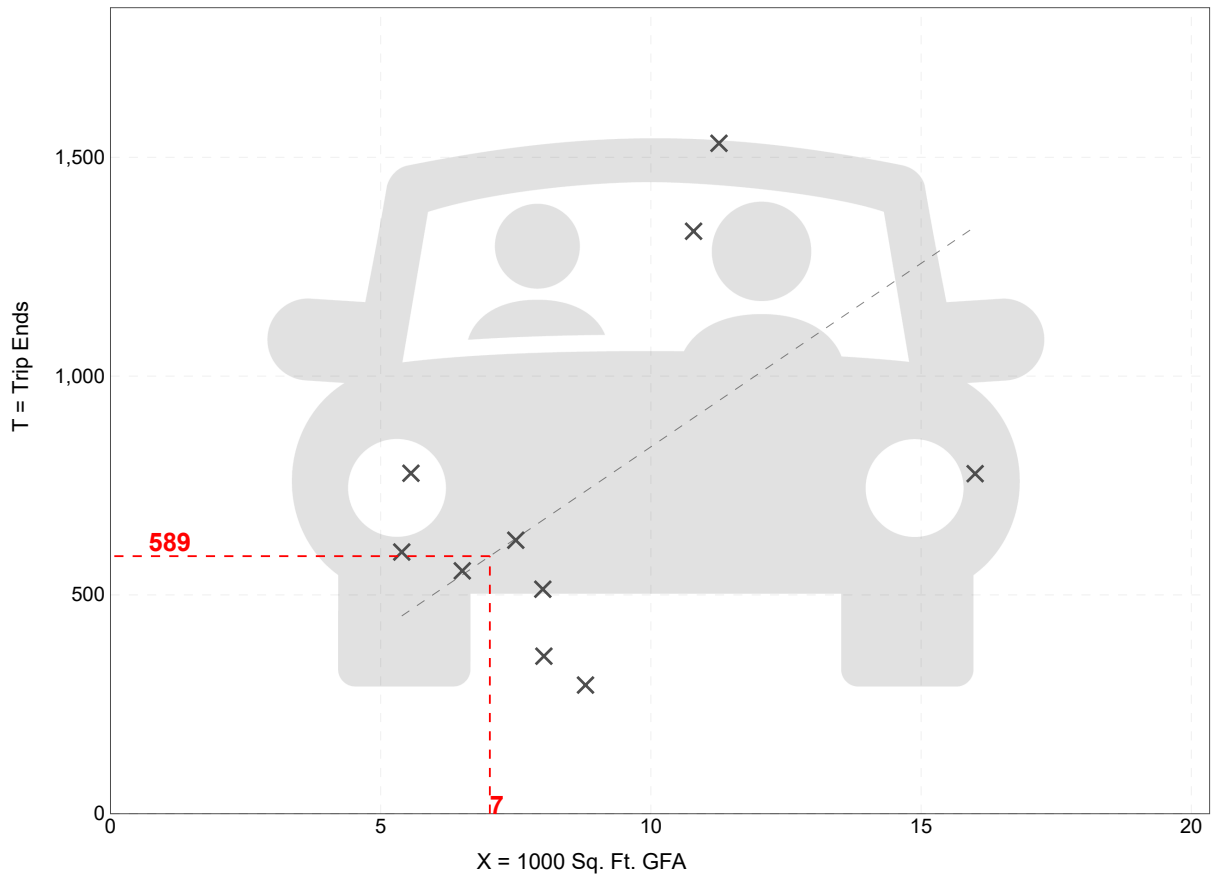
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday**

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= ****

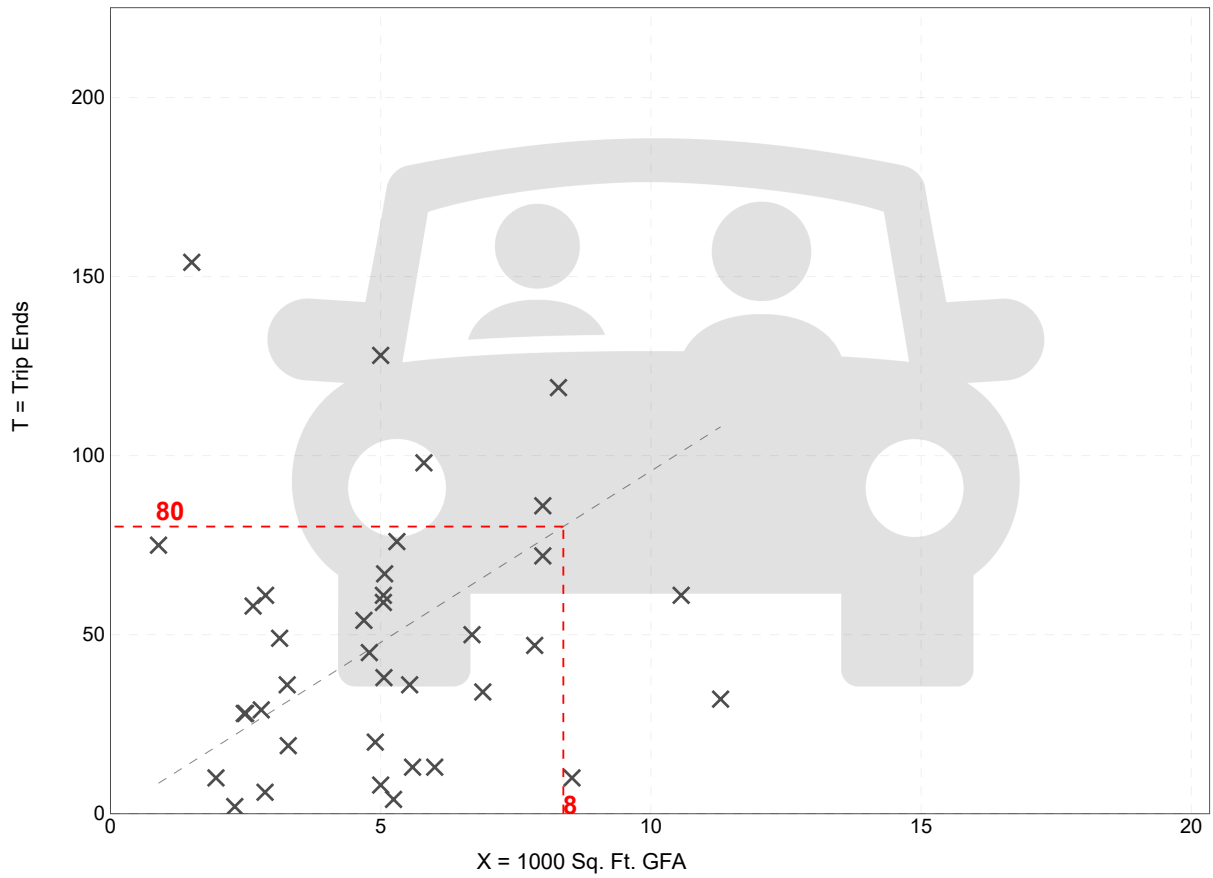
High-Turnover (Sit-Down) Restaurant
(932)

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:	37
Avg. 1000 Sq. Ft. GFA:	5
Directional Distribution:	55% entering, 45% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
9.57	0.76 - 102.39	11.61

Data Plot and Equation



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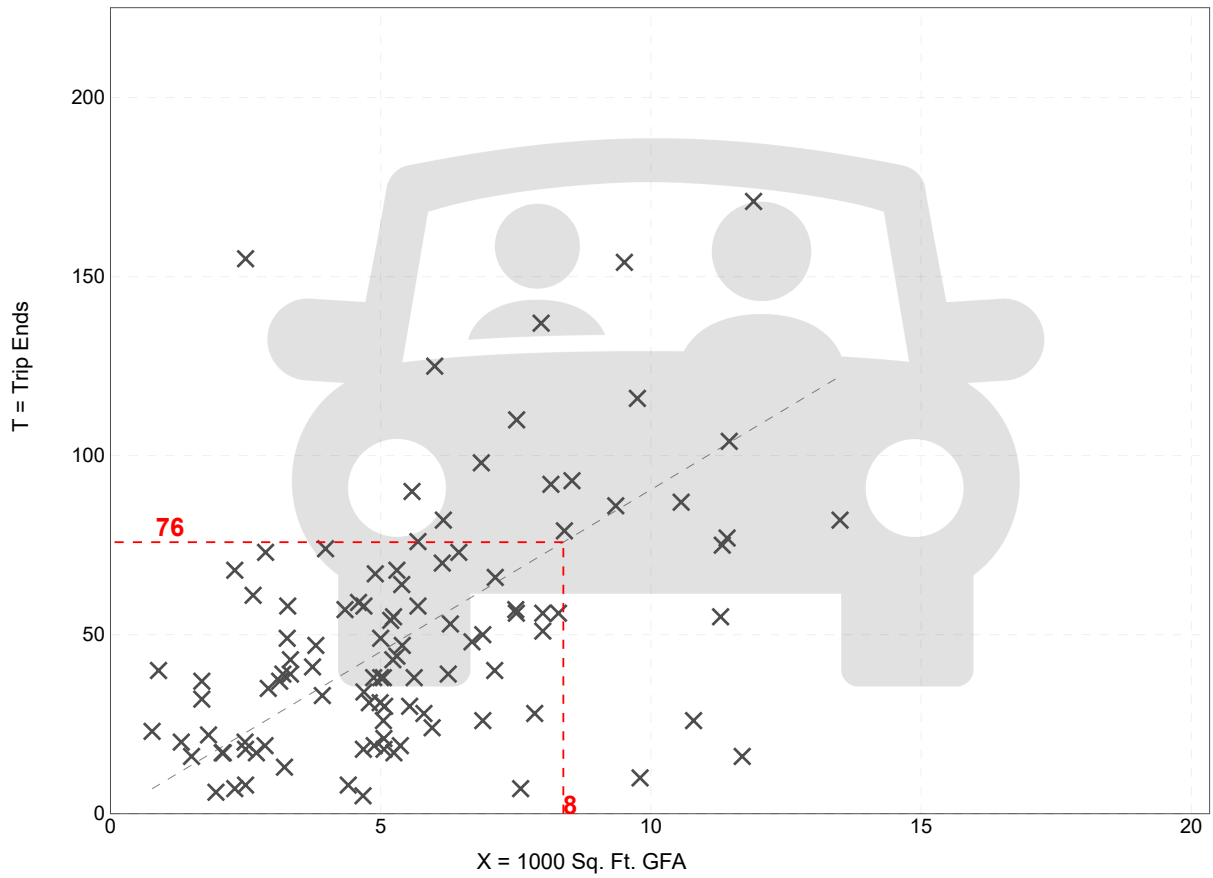
High-Turnover (Sit-Down) Restaurant
(932)

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:	104
Avg. 1000 Sq. Ft. GFA:	6
Directional Distribution:	61% entering, 39% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
9.05	0.92 - 62.00	6.18

Data Plot and Equation



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High-Turnover (Sit-Down) Restaurant
(932)

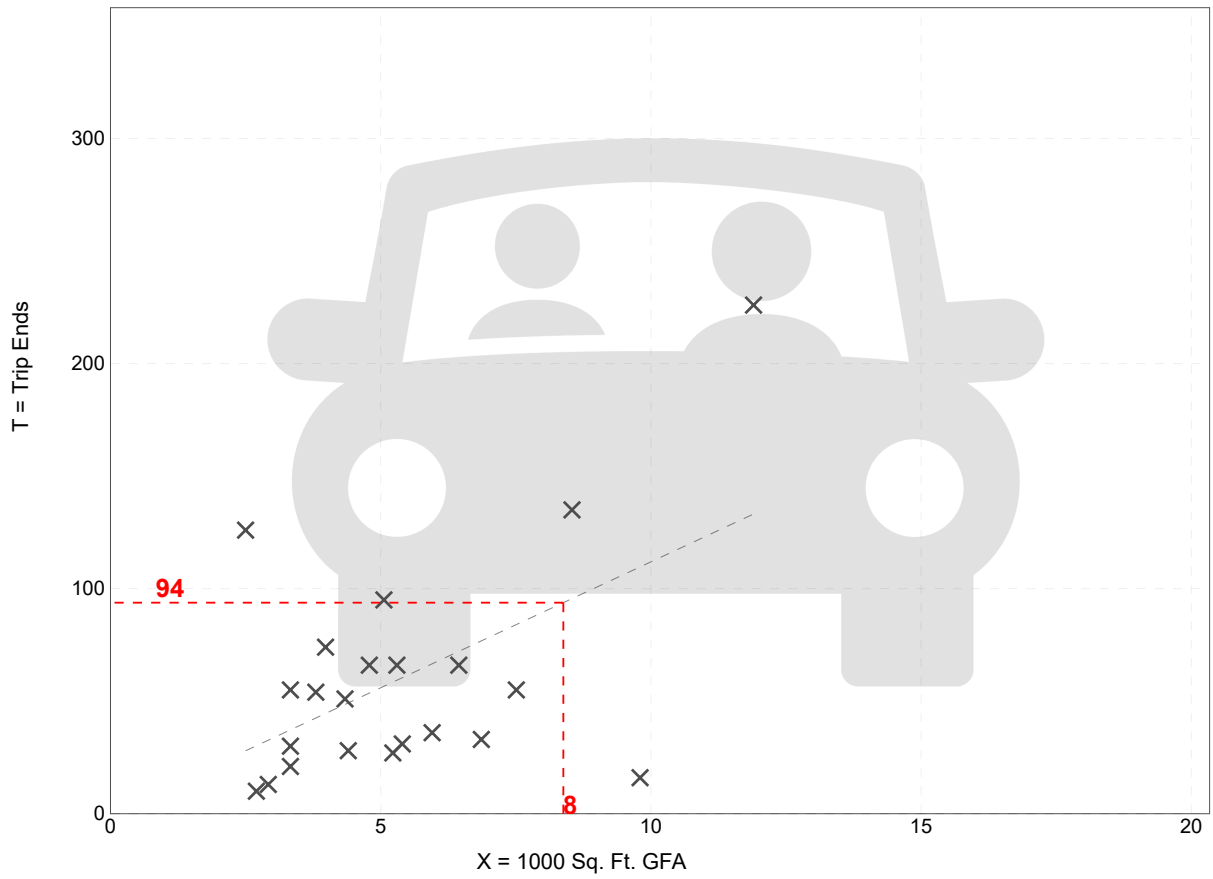
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Saturday, Peak Hour of Generator**

Setting/Location: **General Urban/Suburban**
Number of Studies: 22
Avg. 1000 Sq. Ft. GFA: 5
Directional Distribution: 51% entering, 49% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
11.19	1.63 - 50.40	8.30

Data Plot and Equation



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High-Turnover (Sit-Down) Restaurant
(932)

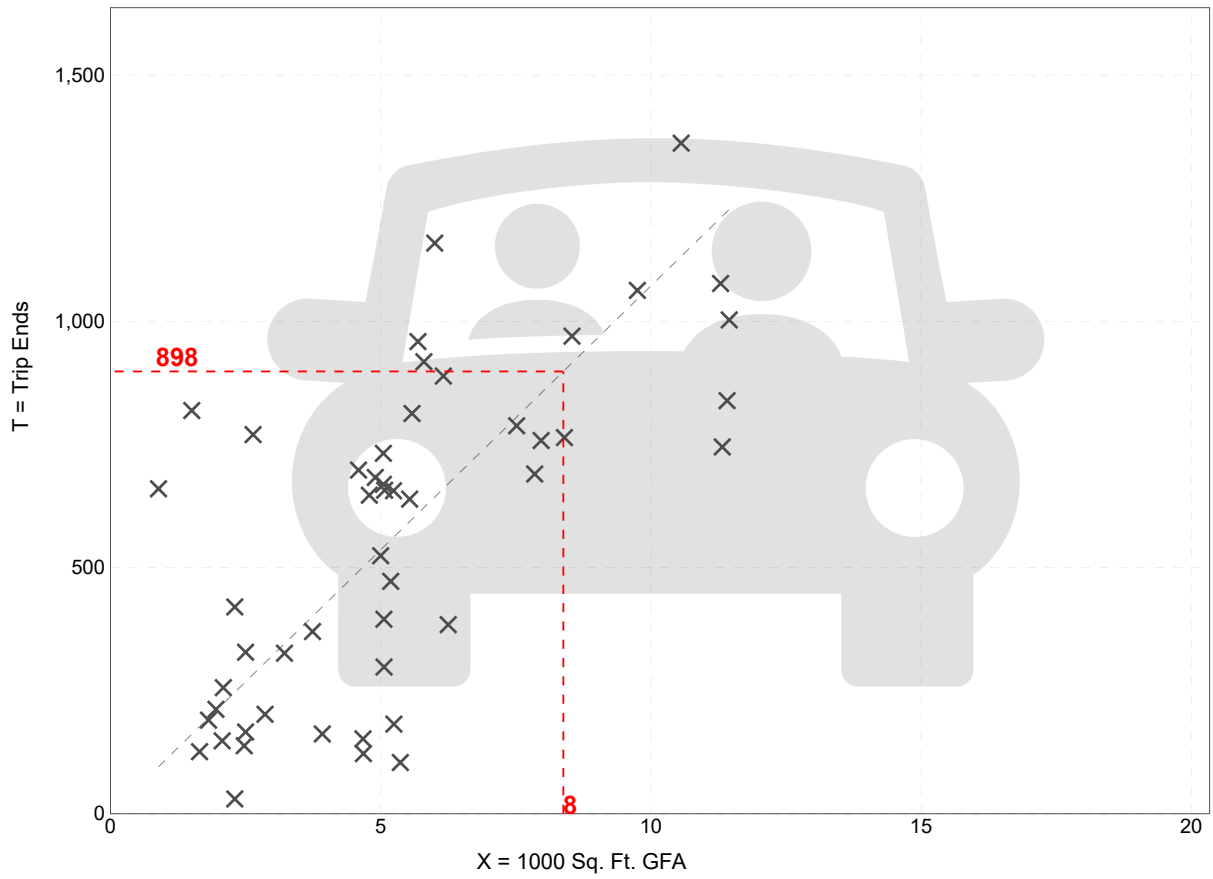
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday**

Setting/Location: **General Urban/Suburban**
Number of Studies: 50
Avg. 1000 Sq. Ft. GFA: 5
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
107.20	13.04 - 742.41	66.72

Data Plot and Equation



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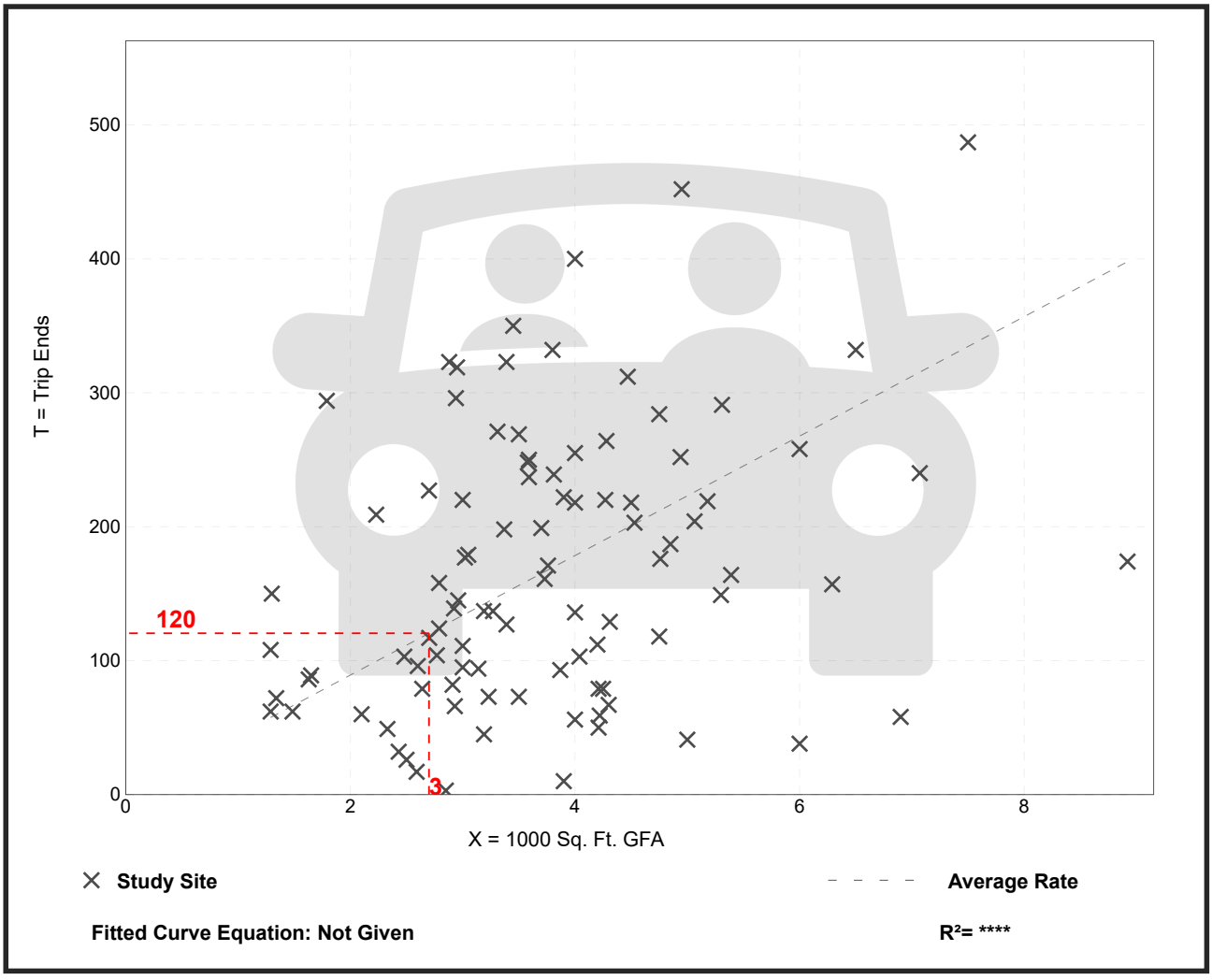
Fast-Food Restaurant with Drive-Through Window
(934)

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



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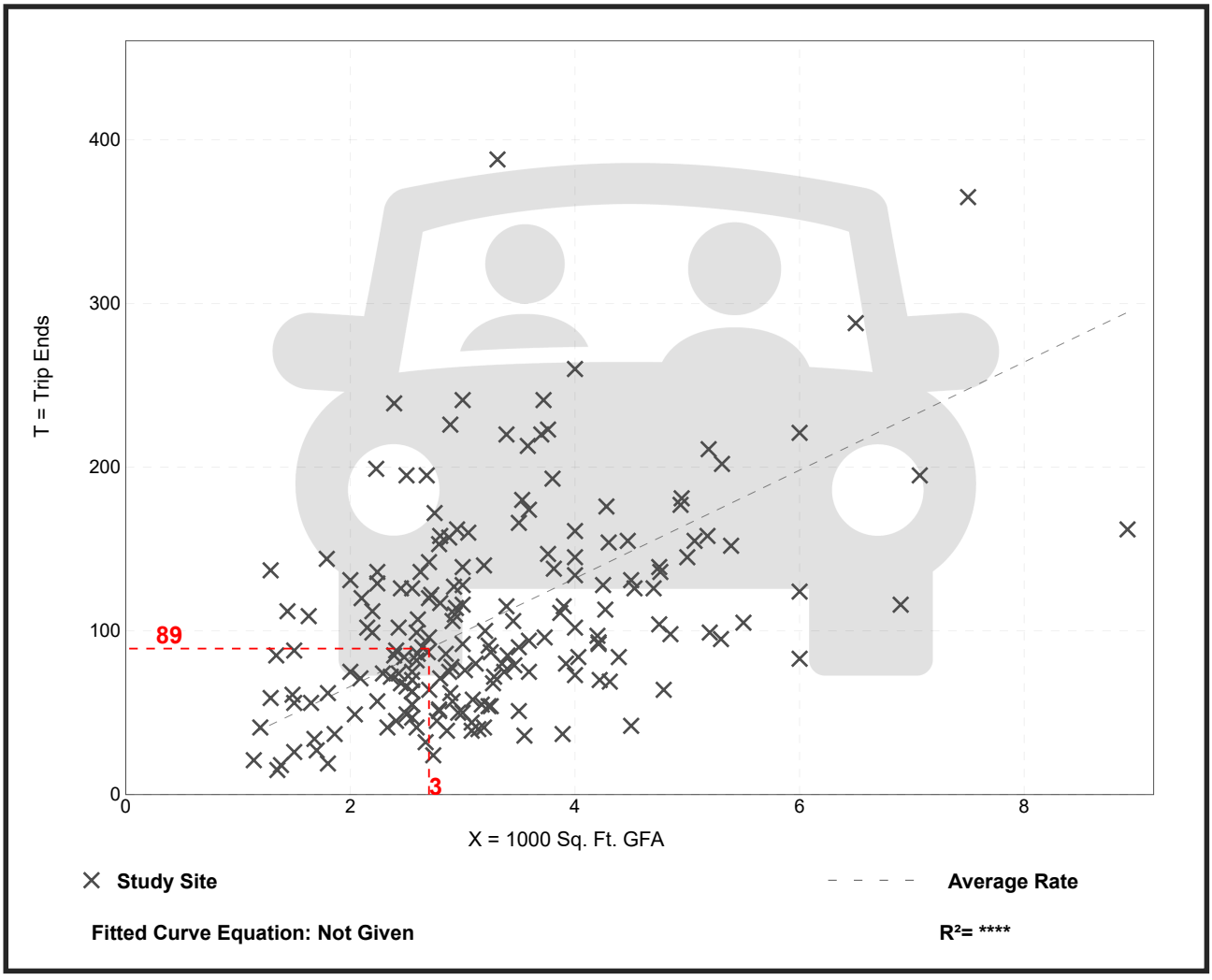
Fast-Food Restaurant with Drive-Through Window
(934)

Vehicle Trip Ends vs:	**1000 Sq. Ft. GFA**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 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



Trip Gen Manual, 11th Edition ● Institute of Transportation Engineers

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

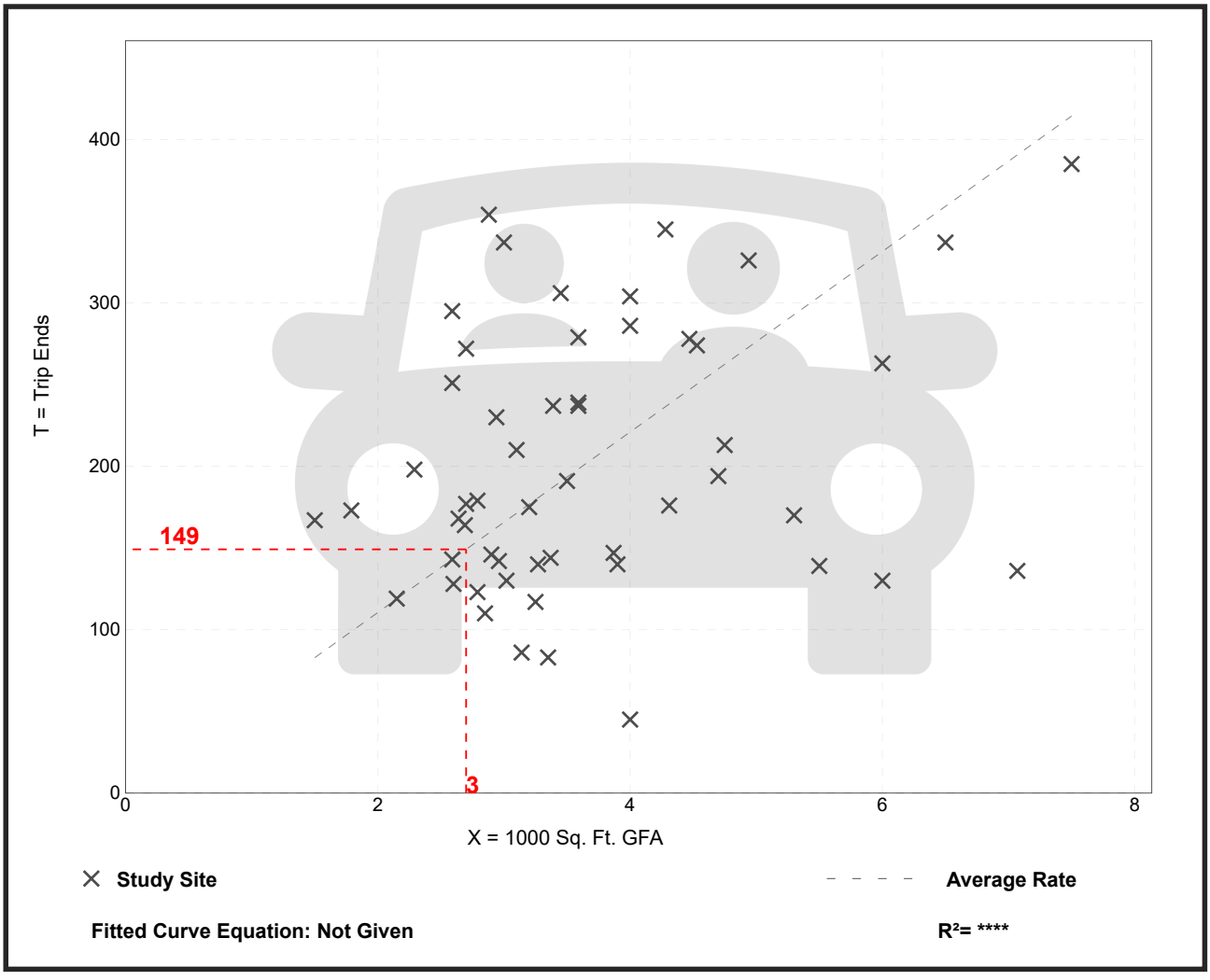
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Saturday, Peak Hour of Generator**

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



Trip Gen Manual, 11th Edition ● Institute of Transportation Engineers

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

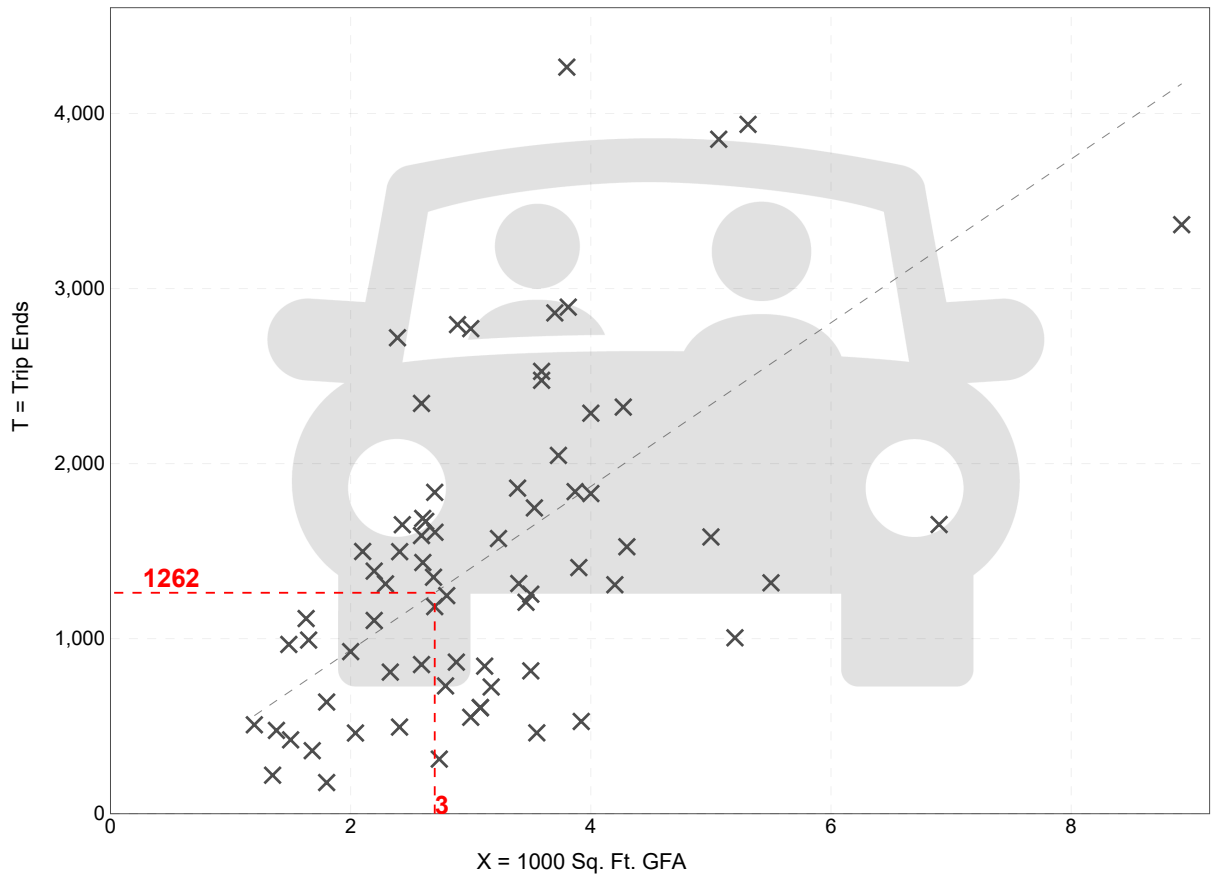
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday**

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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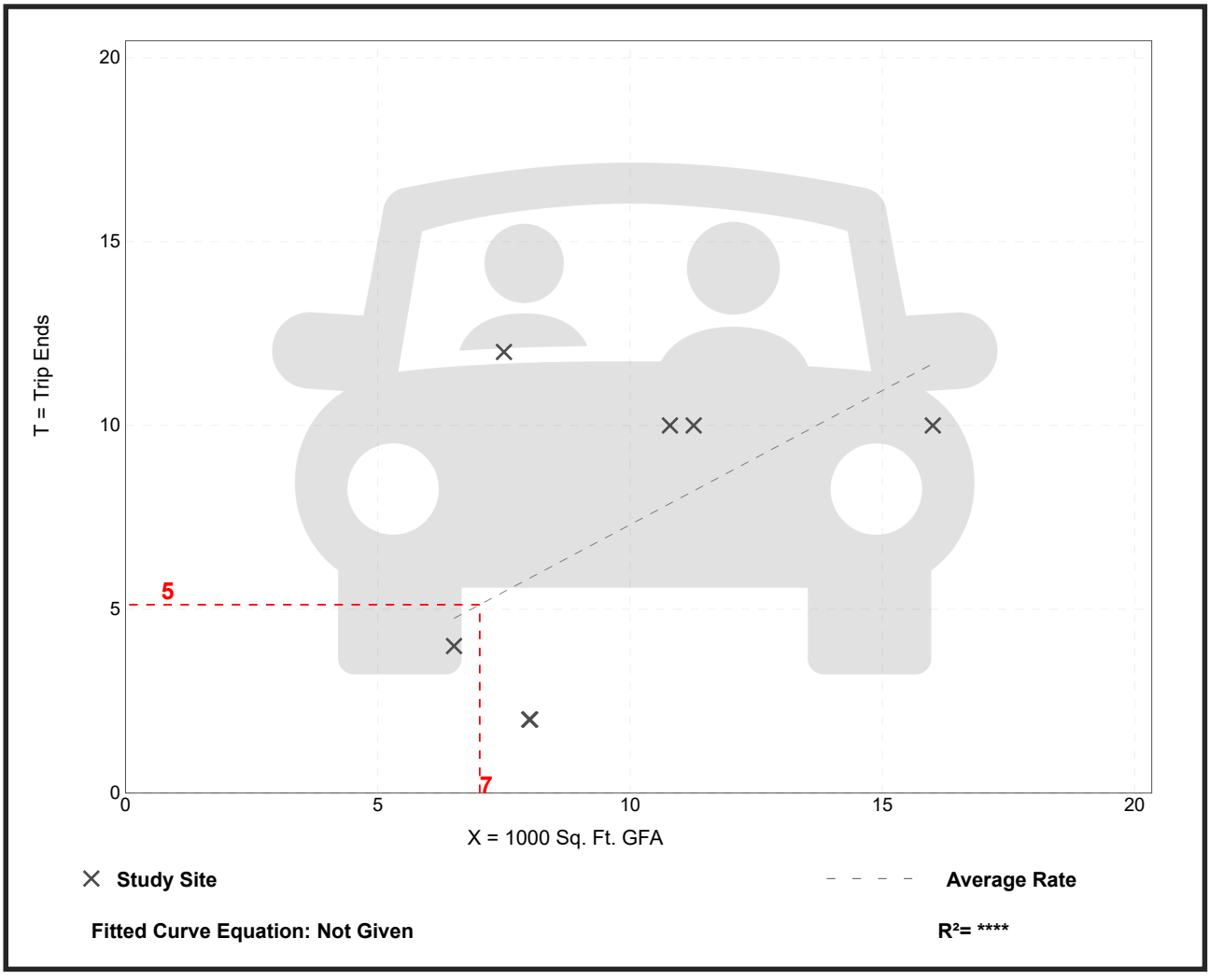
Fine Dining Restaurant
(931)

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



Trip Gen Manual, 11th Edition ● Institute of Transportation Engineers

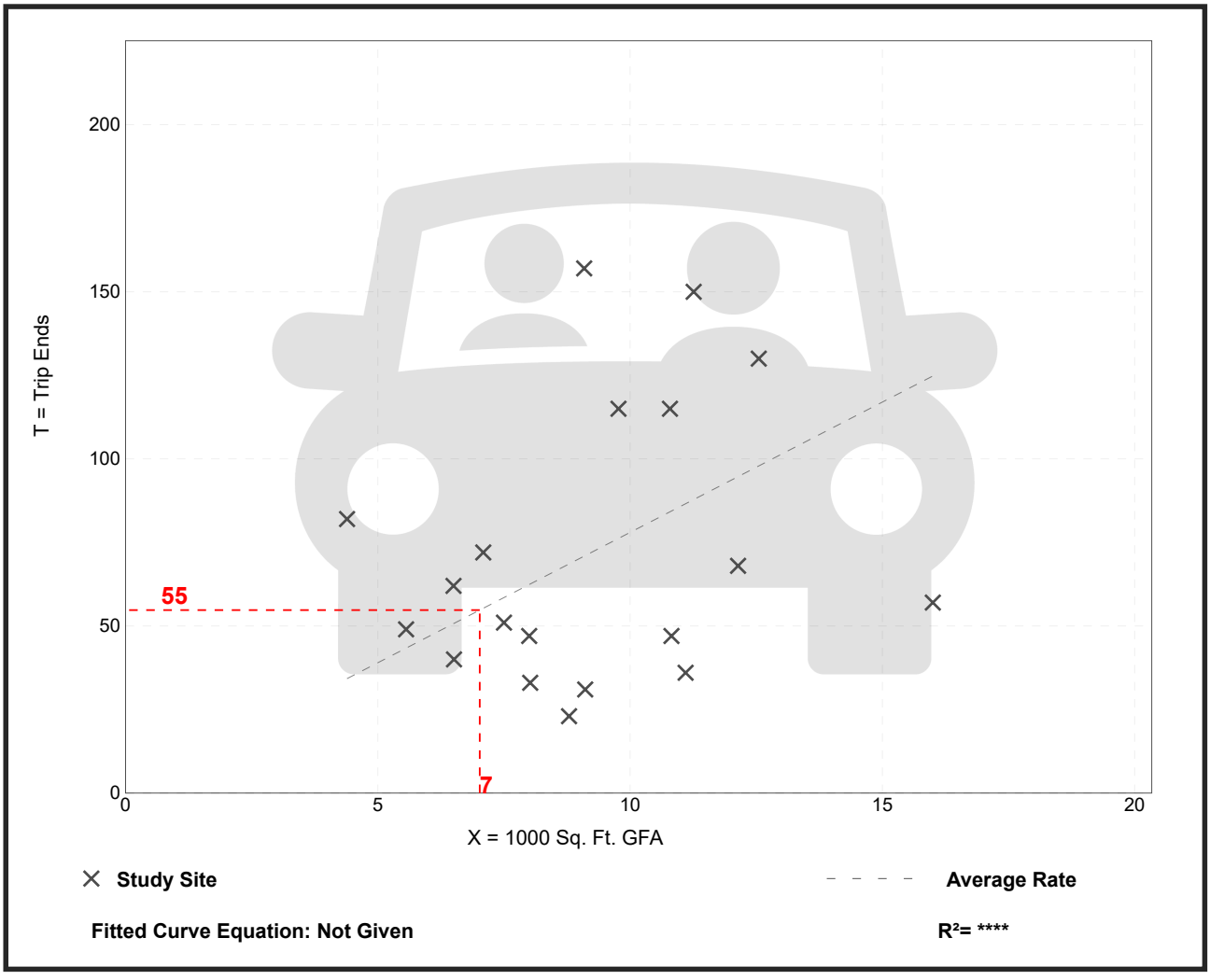
Fine Dining Restaurant
(931)

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



Trip Gen Manual, 11th Edition ● Institute of Transportation Engineers

Fine Dining Restaurant
(931)

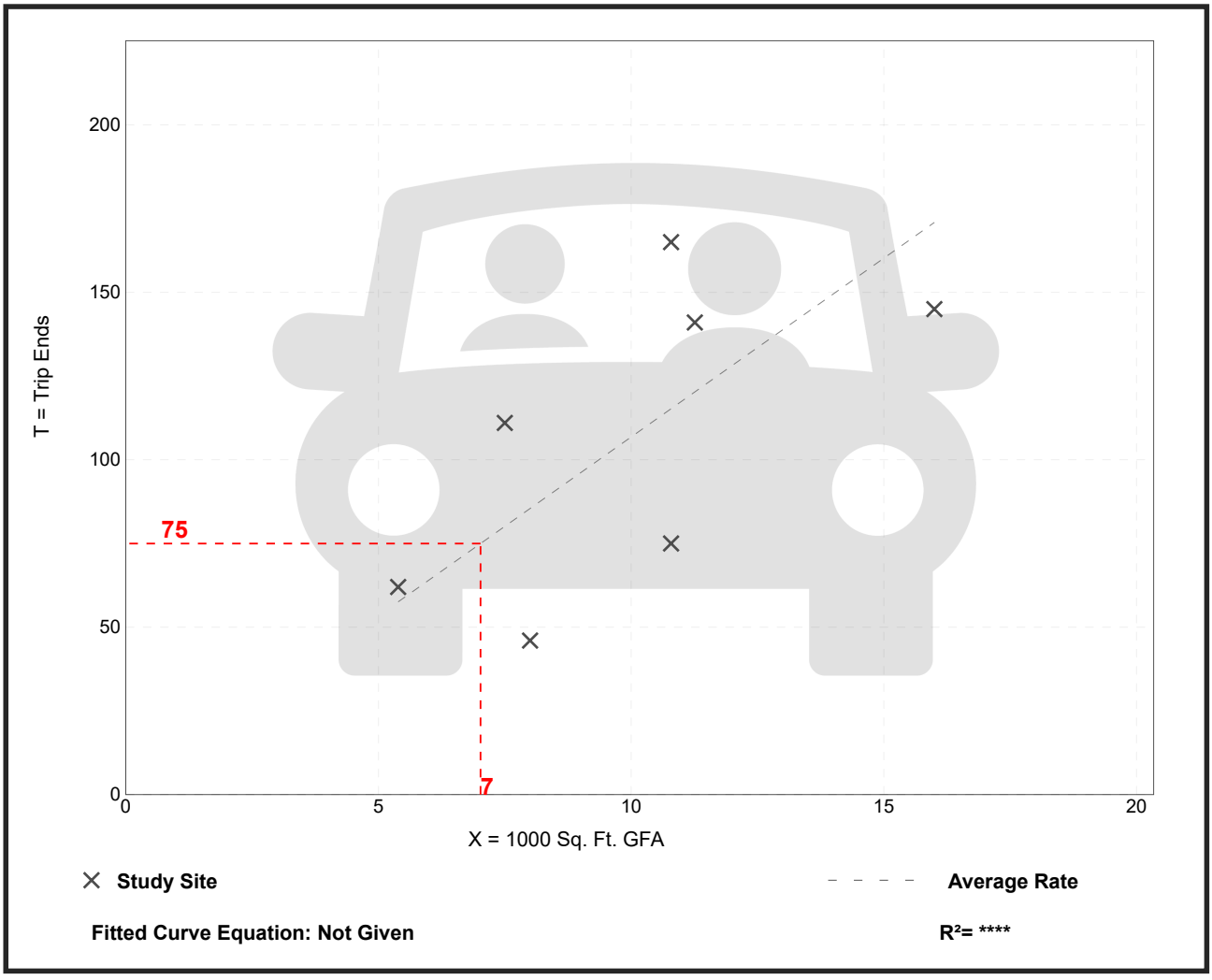
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Saturday, Peak Hour of Generator**

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



Trip Gen Manual, 11th Edition ● Institute of Transportation Engineers

Fine Dining Restaurant
(931)

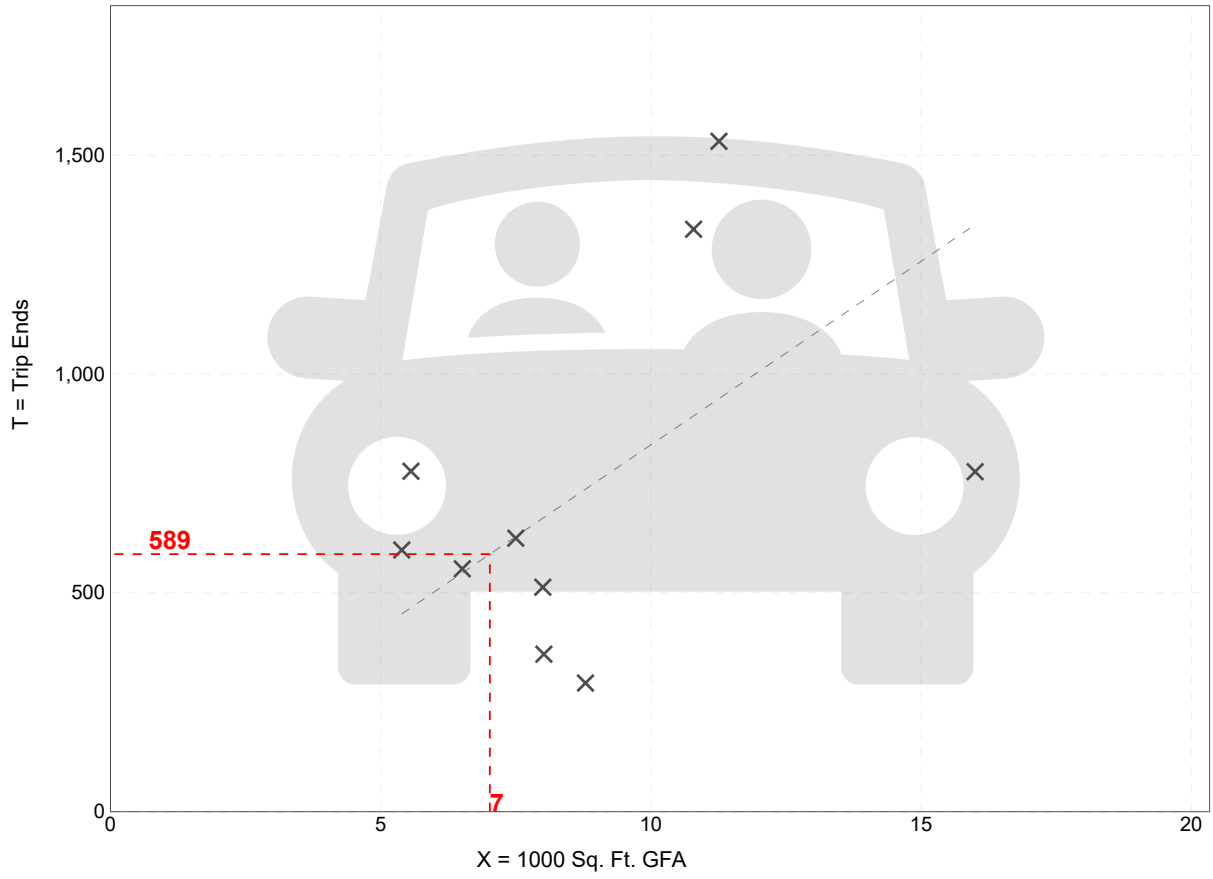
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday**

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= ****

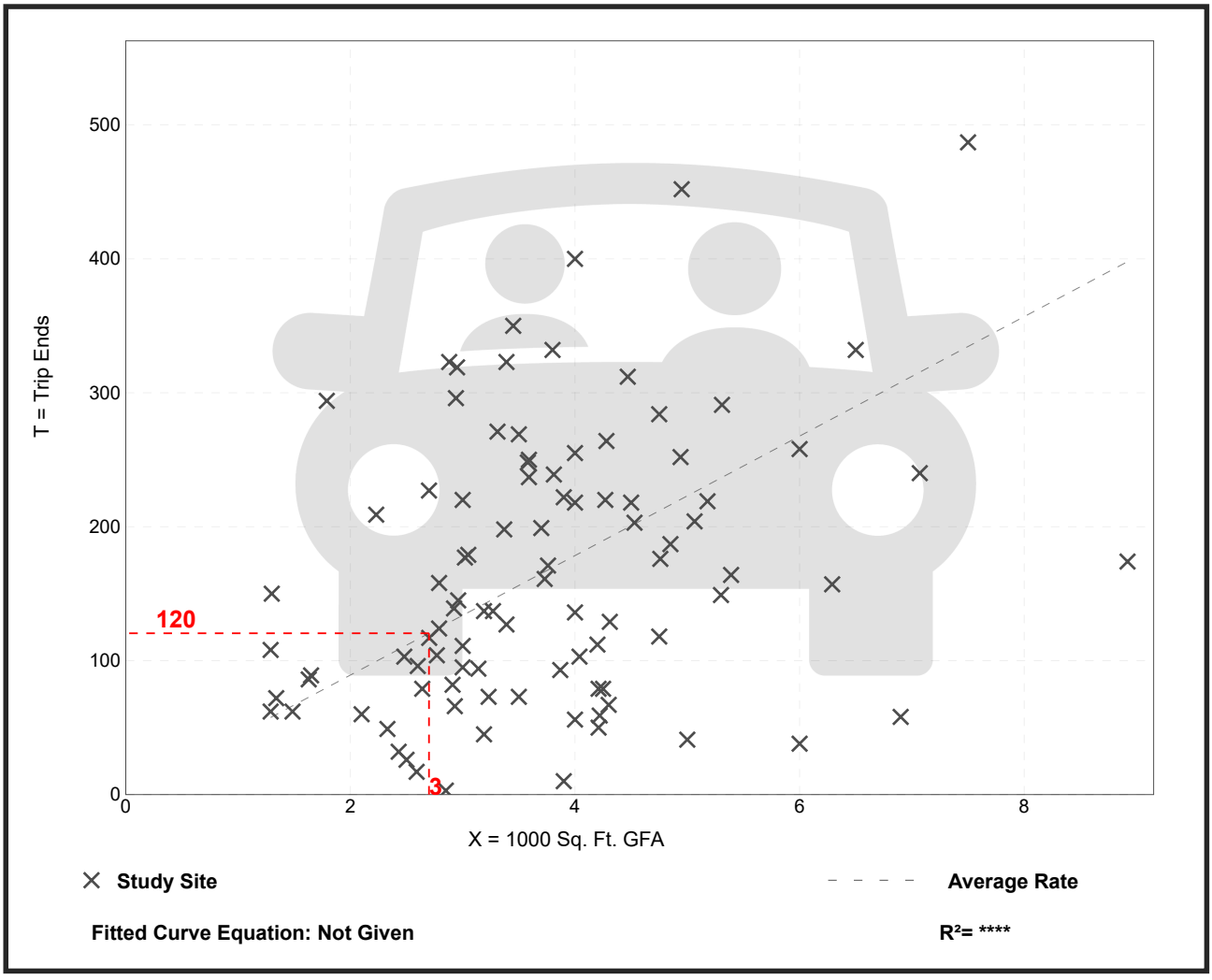
Fast-Food Restaurant with Drive-Through Window
(934)

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



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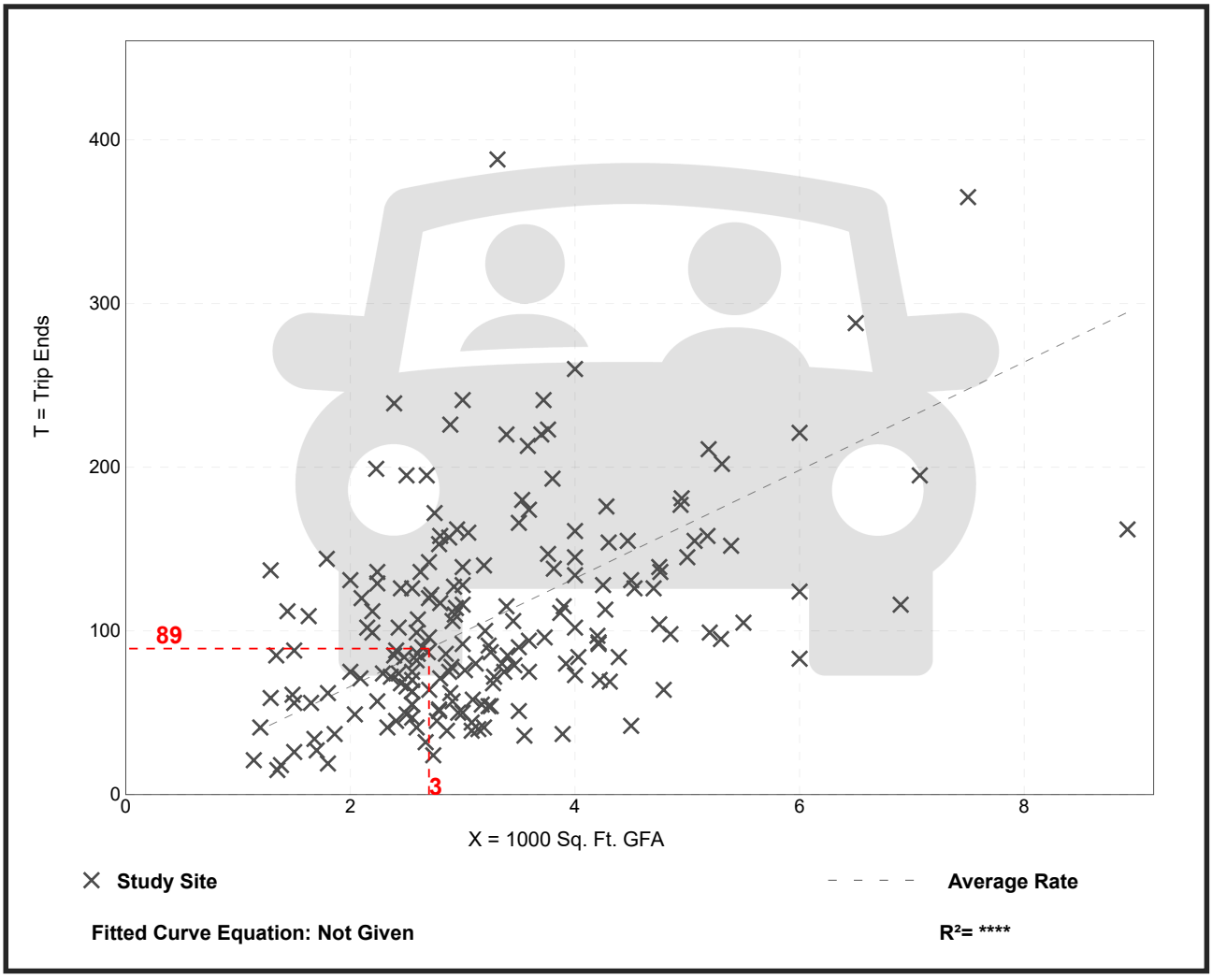
Fast-Food Restaurant with Drive-Through Window
(934)

Vehicle Trip Ends vs:	**1000 Sq. Ft. GFA**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 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



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

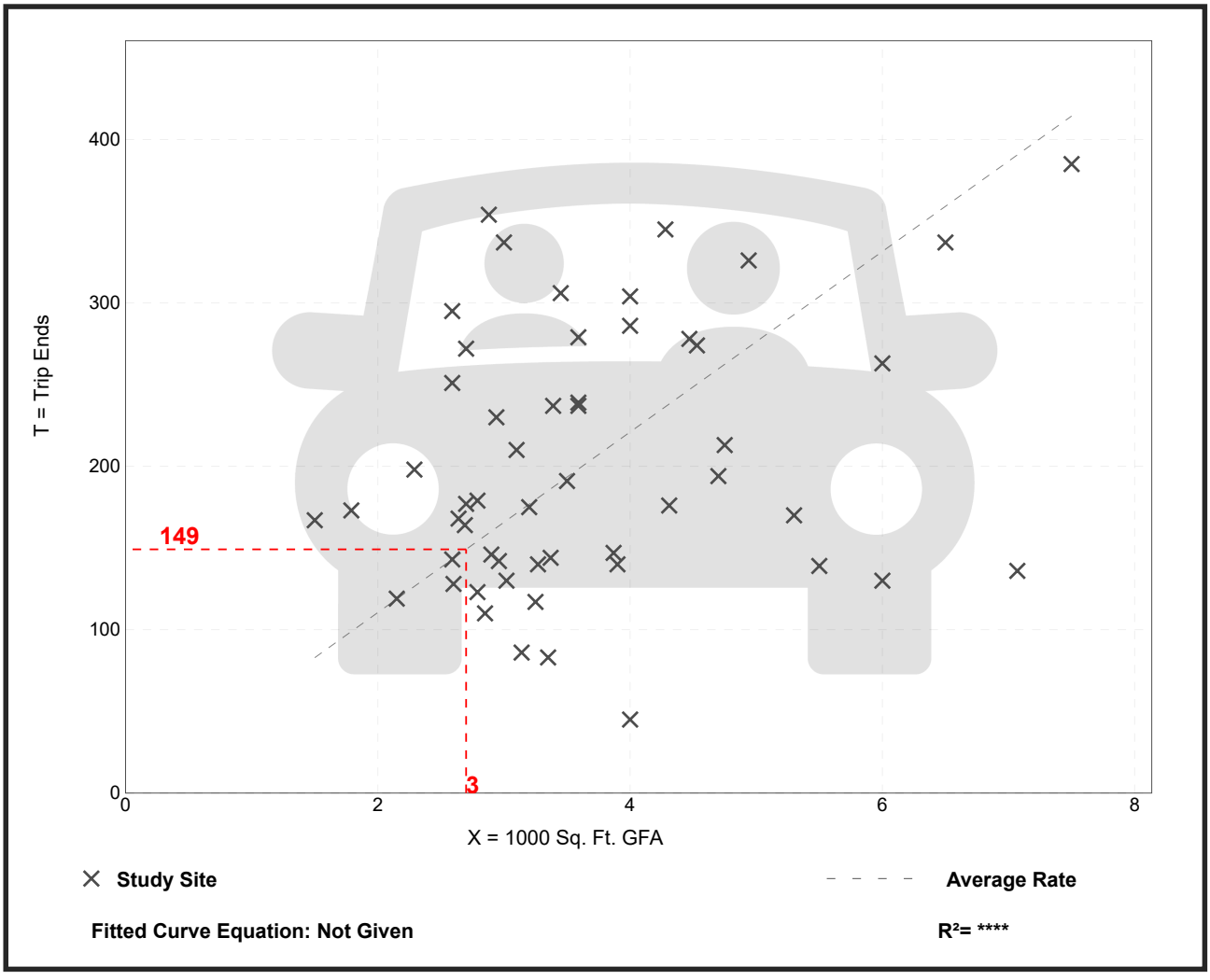
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Saturday, Peak Hour of Generator**

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)

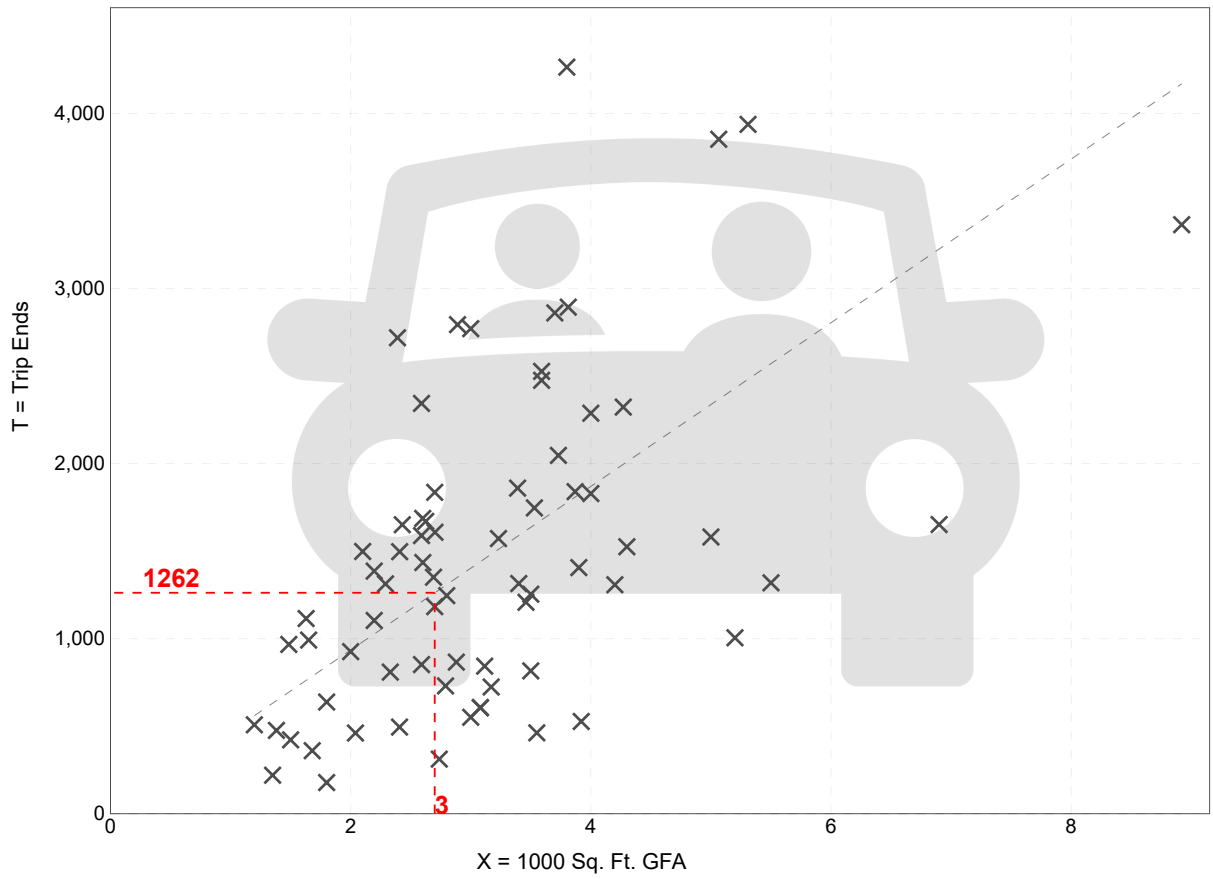
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday**

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 Casual Restaurant
(930)

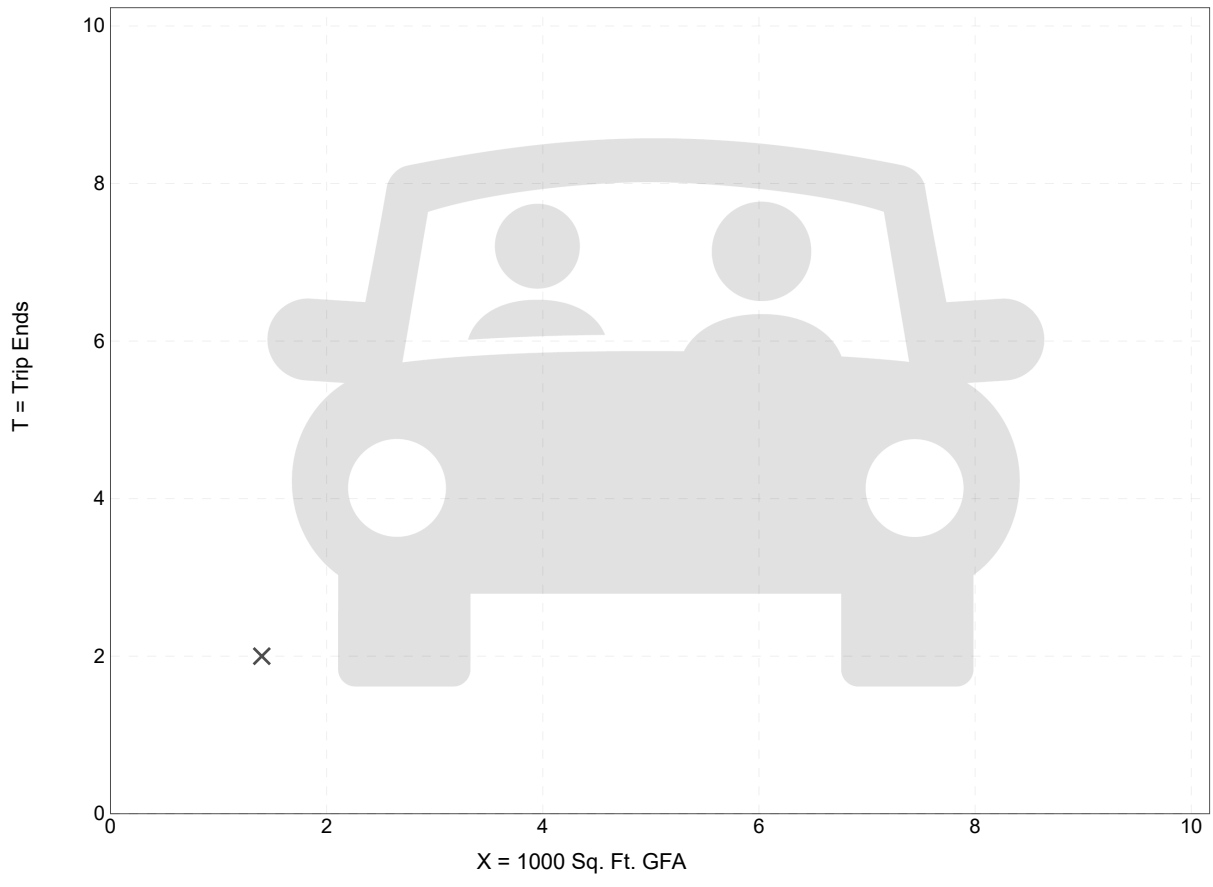
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 1
Avg. 1000 Sq. Ft. GFA: 1
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.43	1.43 - 1.43	*

Data Plot and Equation

Caution – Small Sample Size



Fitted Curve Equation: Not Given

R^2= **

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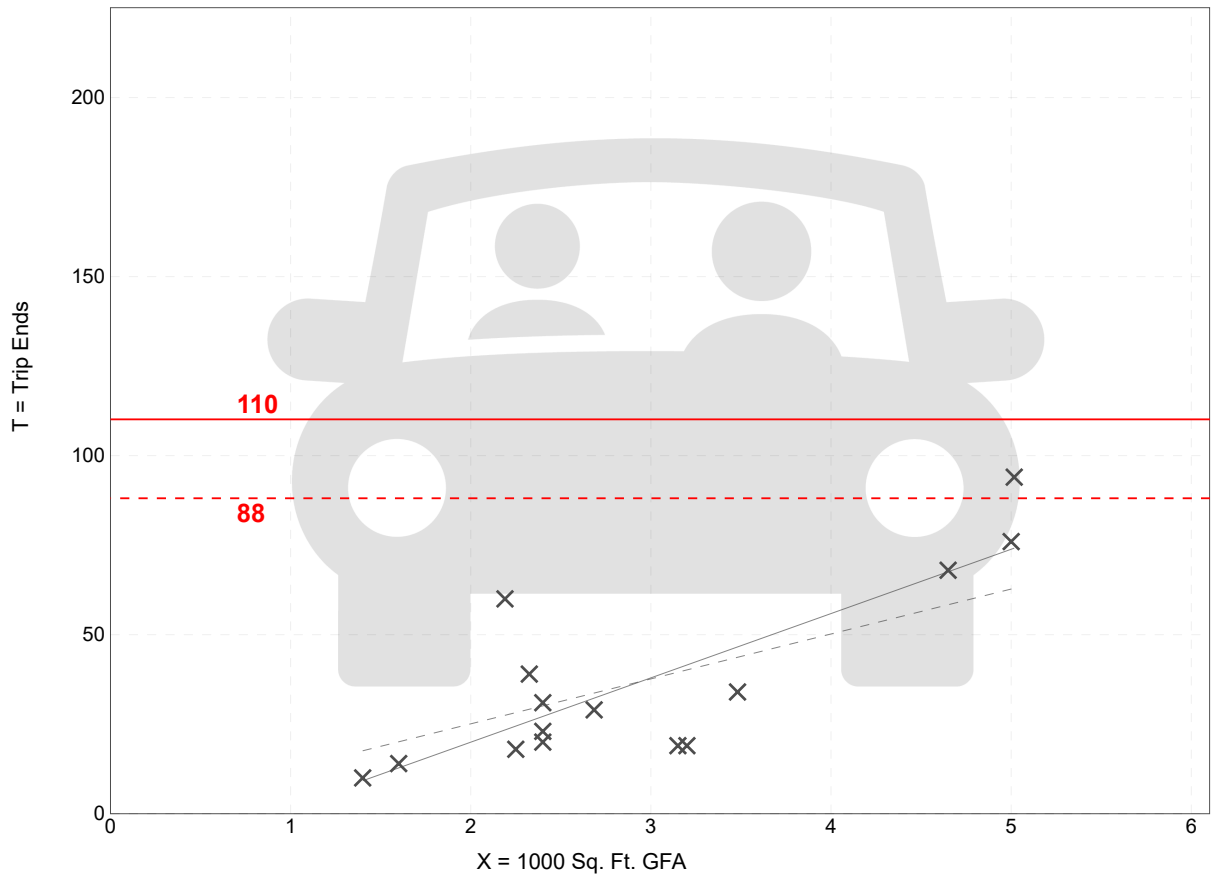
Fast Casual Restaurant
(930)

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:	15
Avg. 1000 Sq. Ft. GFA:	3
Directional Distribution:	55% entering, 45% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
12.55	5.94 - 27.40	5.52

Data Plot and Equation



Fitted Curve Equation: T = 17.96(X) - 15.94

R^2= 0.65

Fast Casual Restaurant
(930)

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

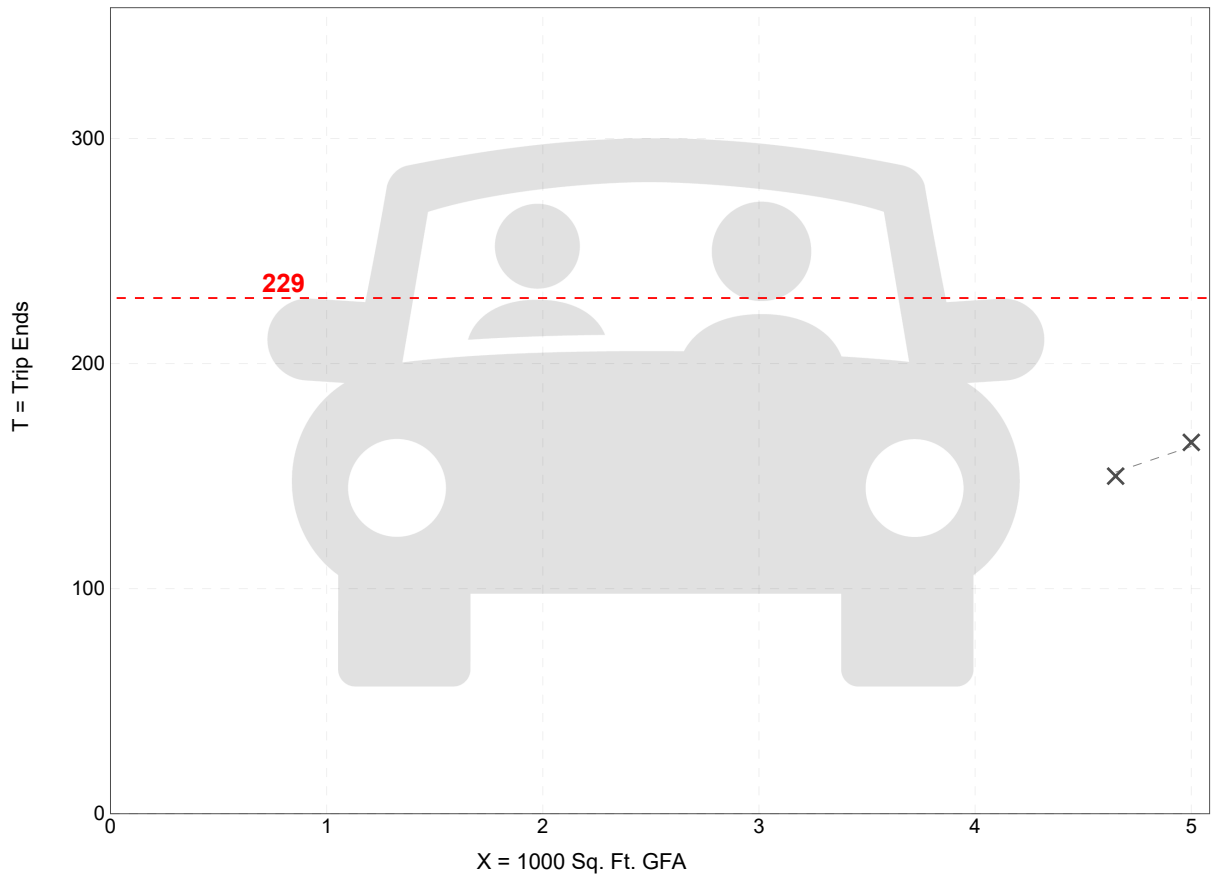
Setting/Location: **General Urban/Suburban**
Number of Studies: 2
Avg. 1000 Sq. Ft. GFA: 5
Directional Distribution: 55% entering, 45% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
32.64	32.26 - 33.00	*

Data Plot and Equation

Caution – Small Sample Size



Fitted Curve Equation: Not Given

R^2= **

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Fast Casual Restaurant
(930)

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

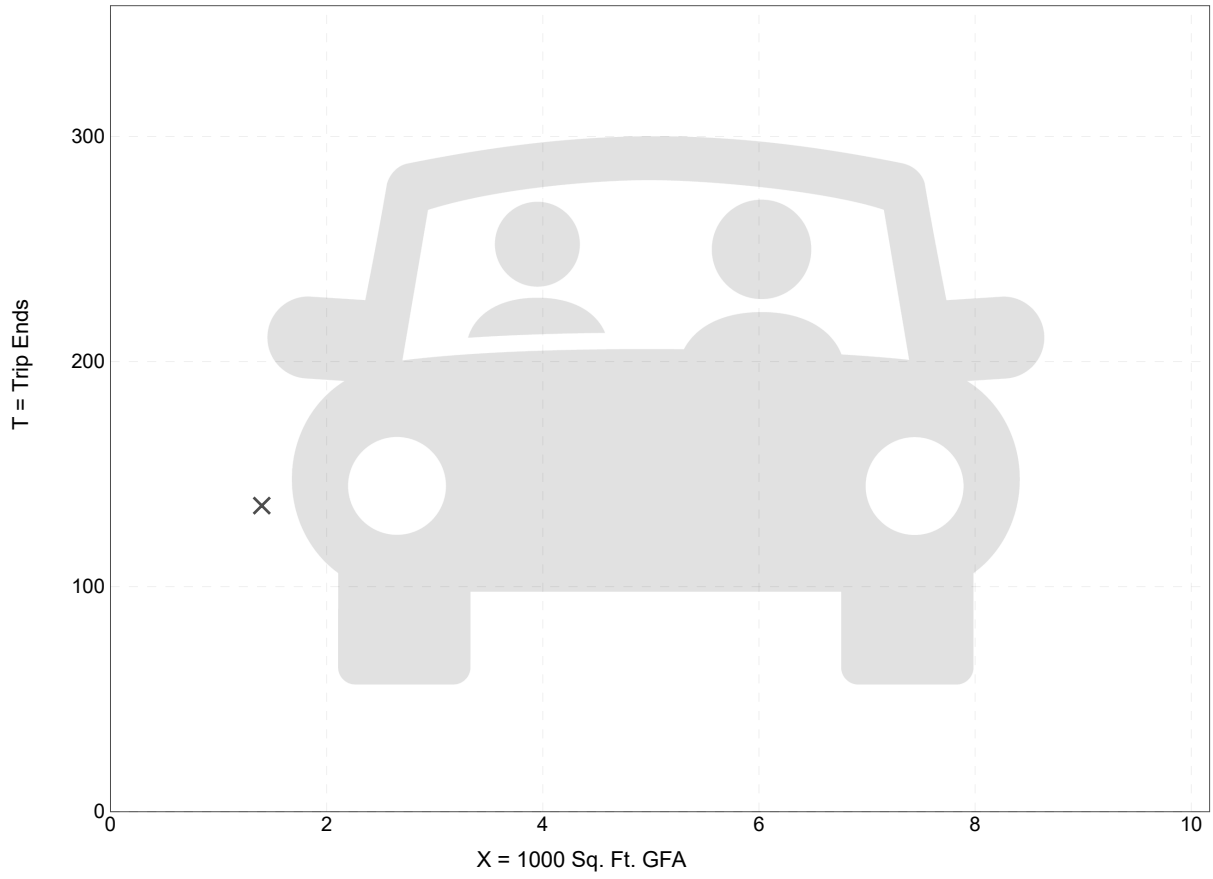
Setting/Location: **General Urban/Suburban**
Number of Studies: 1
Avg. 1000 Sq. Ft. GFA: 1
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
97.14	97.14 - 97.14	*

Data Plot and Equation

Caution – Small Sample Size



Fitted Curve Equation: Not Given

R^2= **

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Strip Retail Plaza (<40k)
(822)

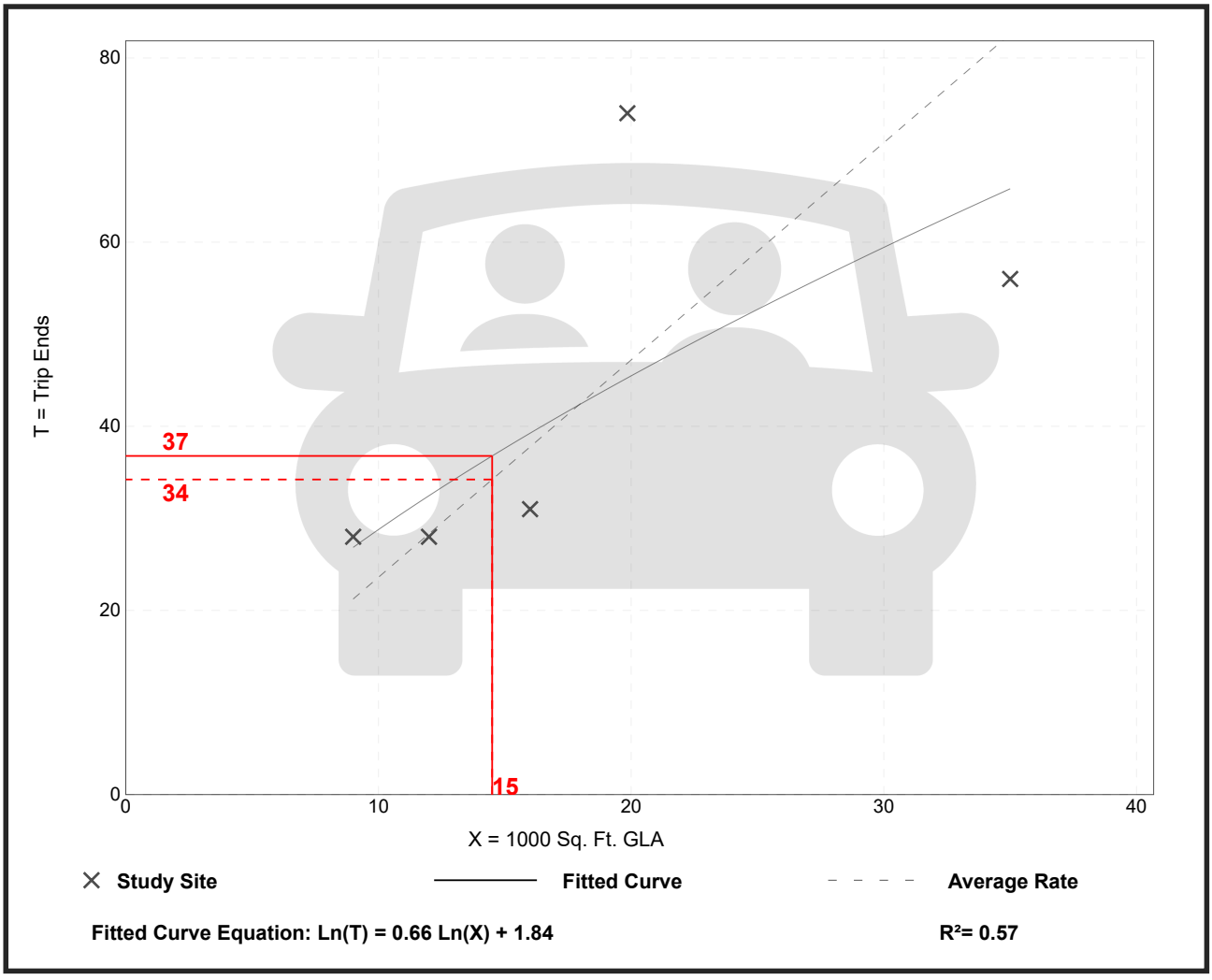
Vehicle Trip Ends vs: **1000 Sq. Ft. GLA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 5
Avg. 1000 Sq. Ft. GLA: 18
Directional Distribution: 60% entering, 40% exiting

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



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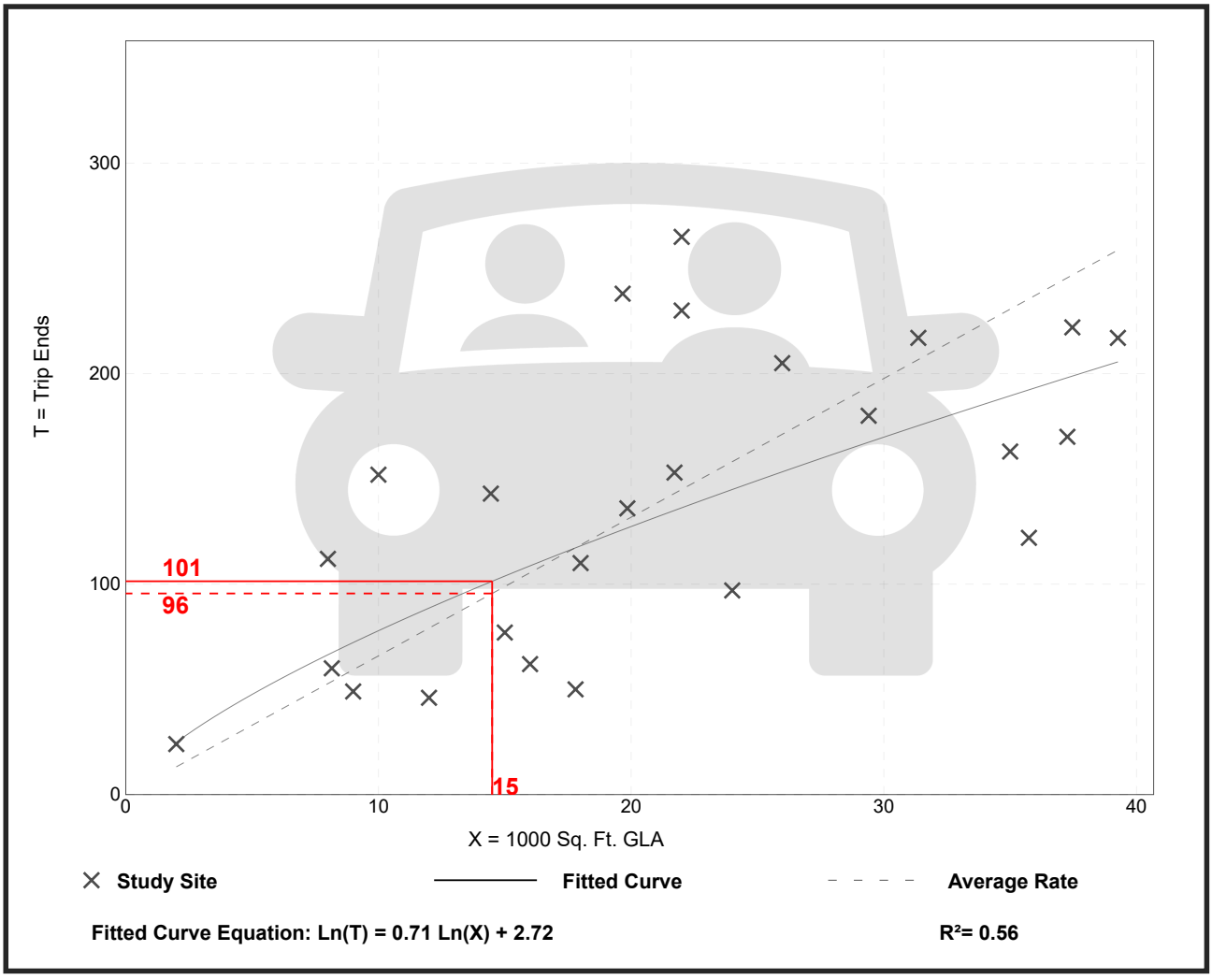
Strip Retail Plaza (<40k)
(822)

Vehicle Trip Ends vs: **1000 Sq. Ft. GLA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 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



Trip Gen Manual, 11th Edition ● Institute of Transportation Engineers

Strip Retail Plaza (<40k)
(822)

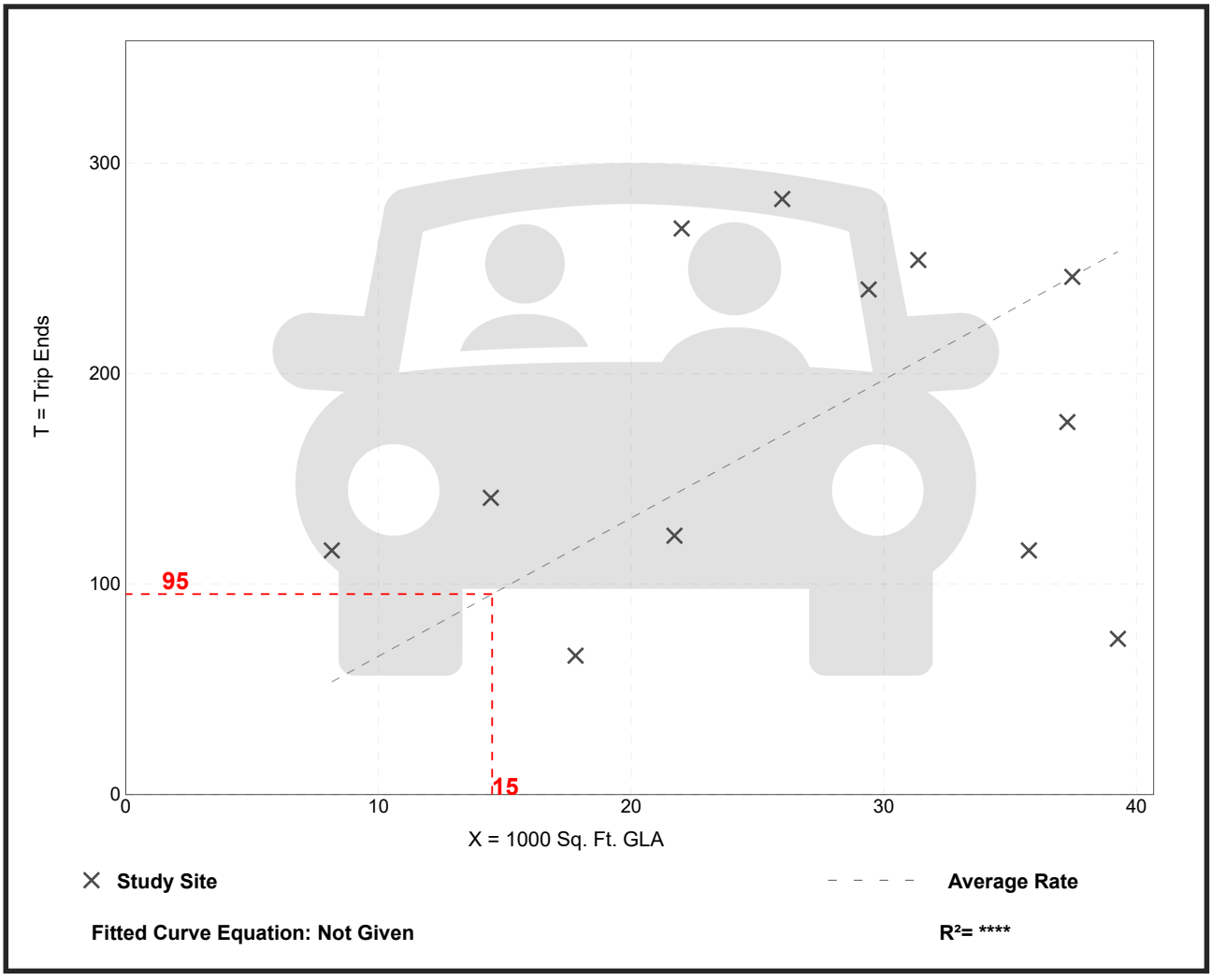
Vehicle Trip Ends vs: **1000 Sq. Ft. GLA**
On a: **Saturday, Peak Hour of Generator**

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



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Strip Retail Plaza (<40k)
(822)

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

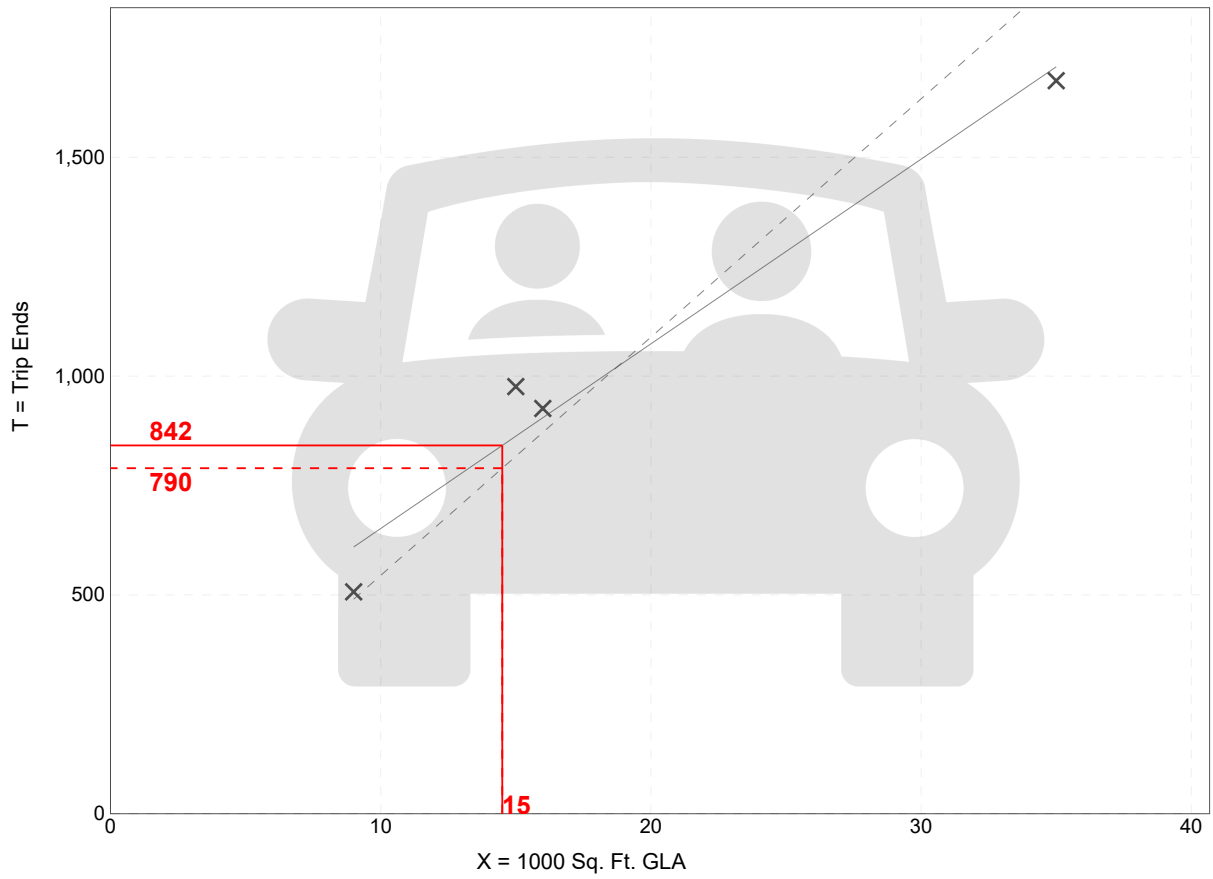
Setting/Location: **General Urban/Suburban**
Number of Studies: 4
Avg. 1000 Sq. Ft. GLA: 19
Directional Distribution: 50% entering, 50% exiting

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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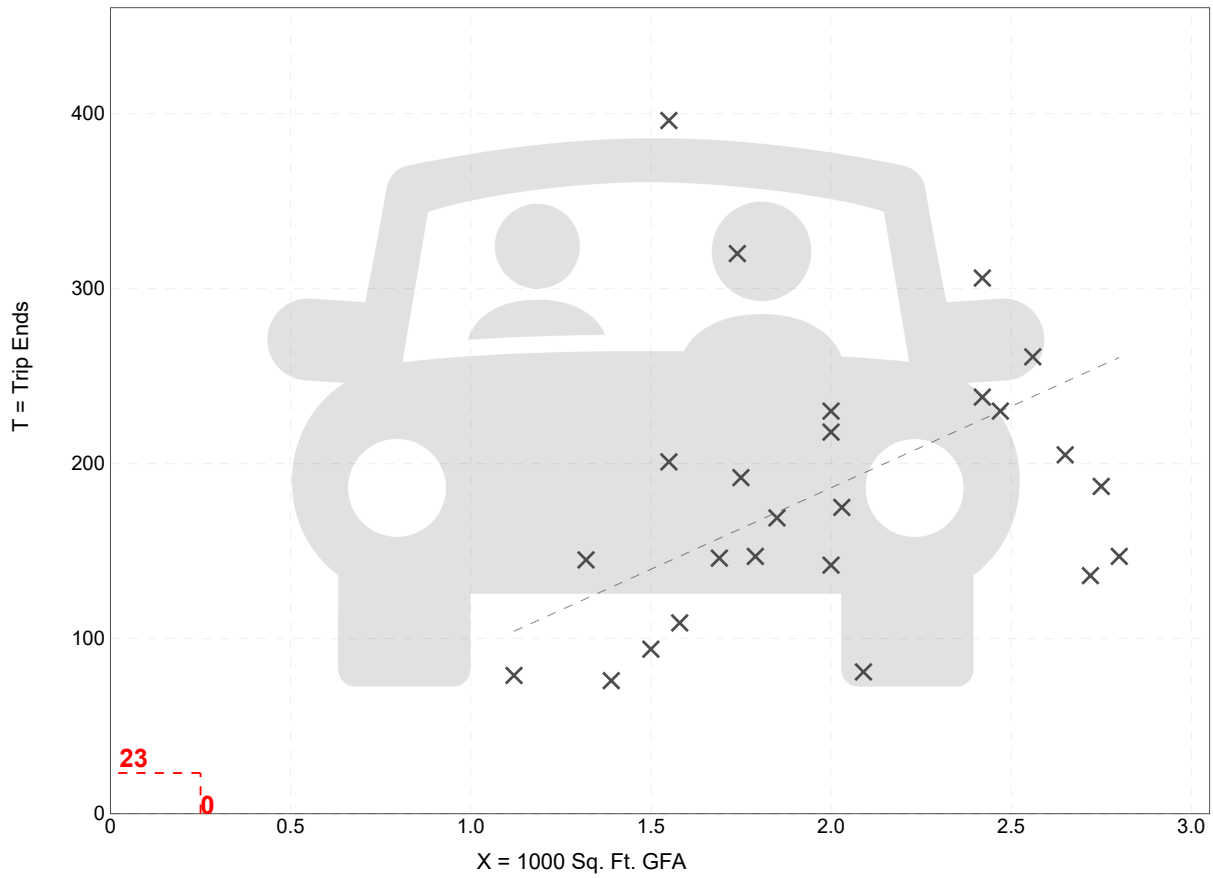
Coffee/Donut Shop without Drive-Through Window
(936)

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:	25
Avg. 1000 Sq. Ft. GFA:	2
Directional Distribution:	51% entering, 49% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
93.08	38.76 - 255.48	42.71

Data Plot and Equation



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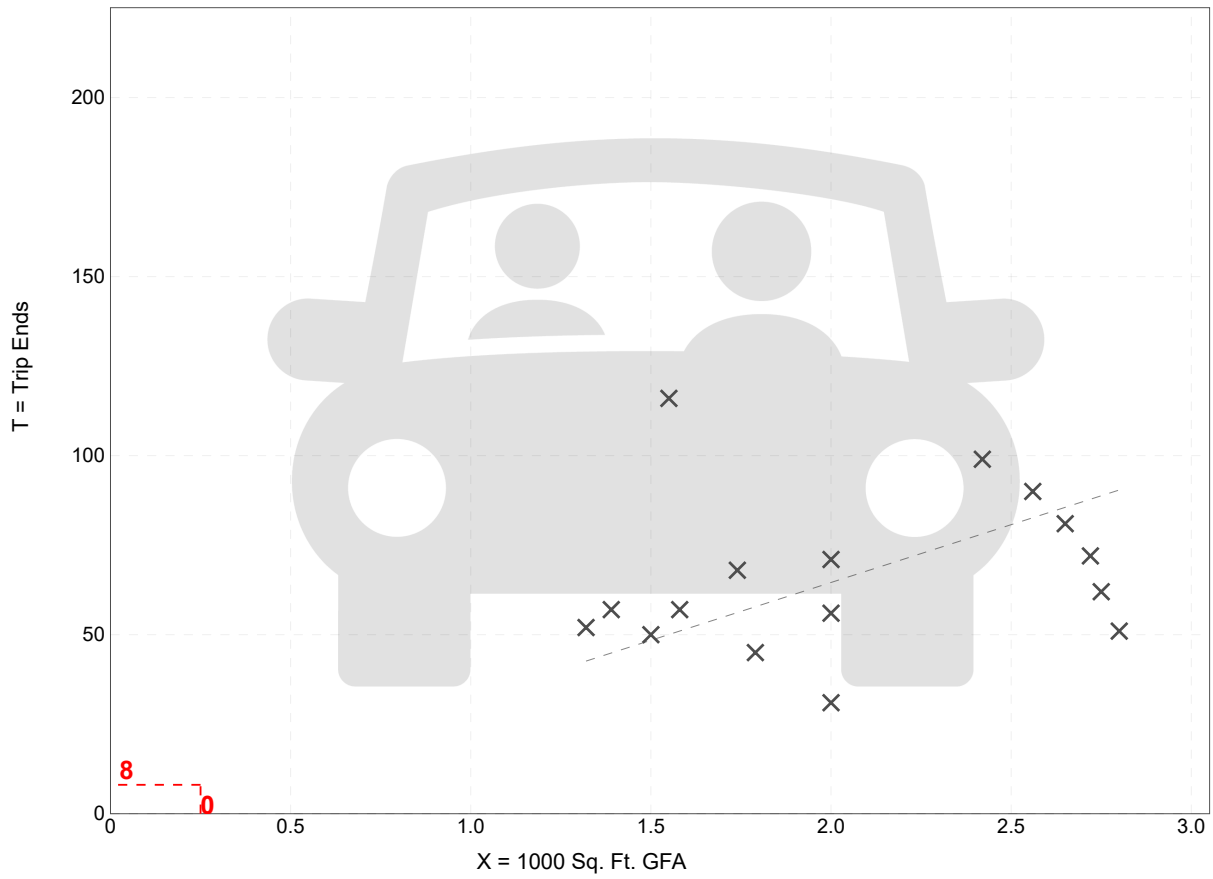
Coffee/Donut Shop without Drive-Through Window
(936)

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:	16
Avg. 1000 Sq. Ft. GFA:	2
Directional Distribution:	50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
32.29	15.50 - 74.84	12.64

Data Plot and Equation



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Coffee/Donut Shop without Drive-Through Window
(936)

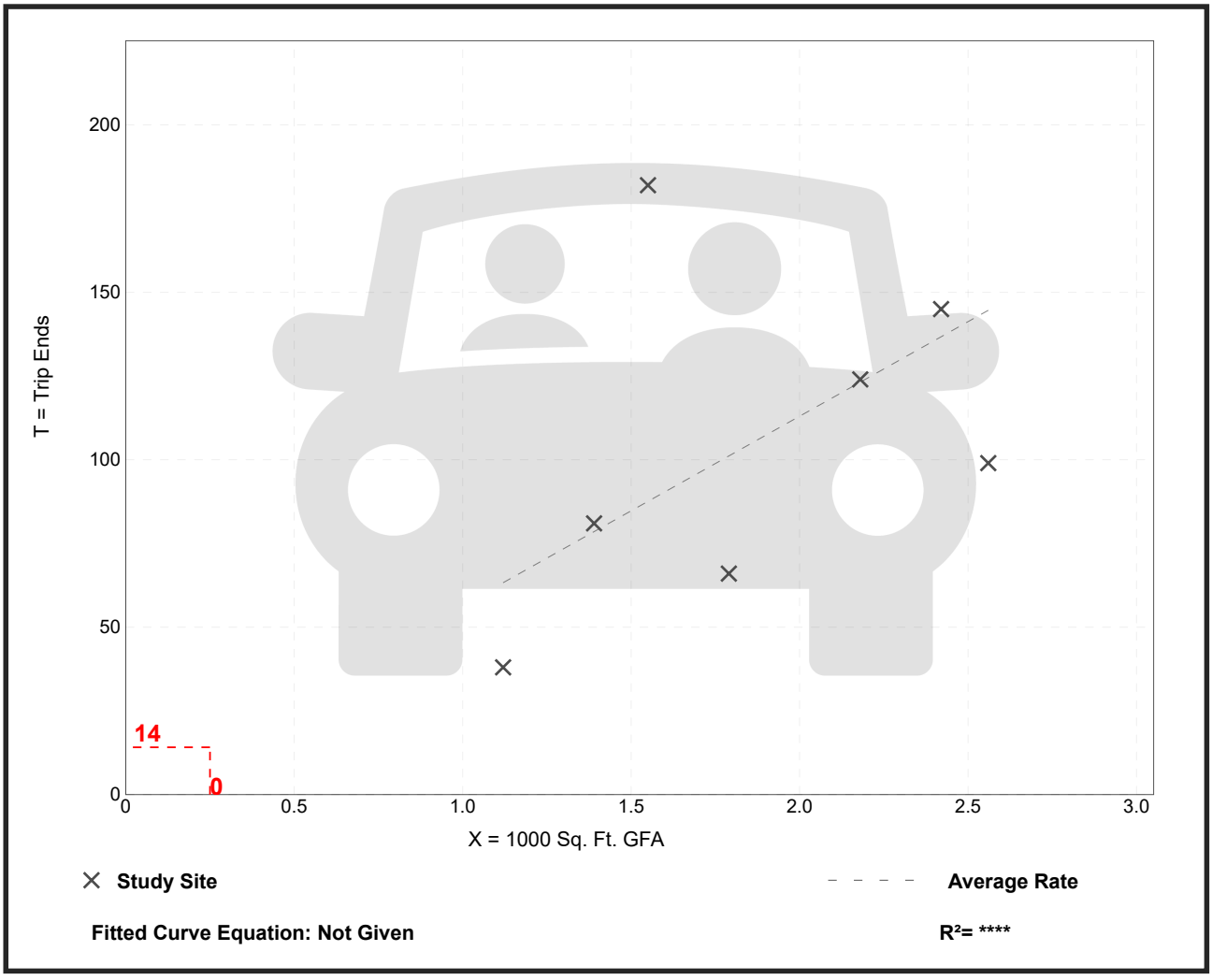
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Saturday, Peak Hour of Generator**

Setting/Location: **General Urban/Suburban**
Number of Studies: 7
Avg. 1000 Sq. Ft. GFA: 2
Directional Distribution: 49% entering, 51% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
56.50	33.93 - 117.42	26.55

Data Plot and Equation



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Public Park
(411)

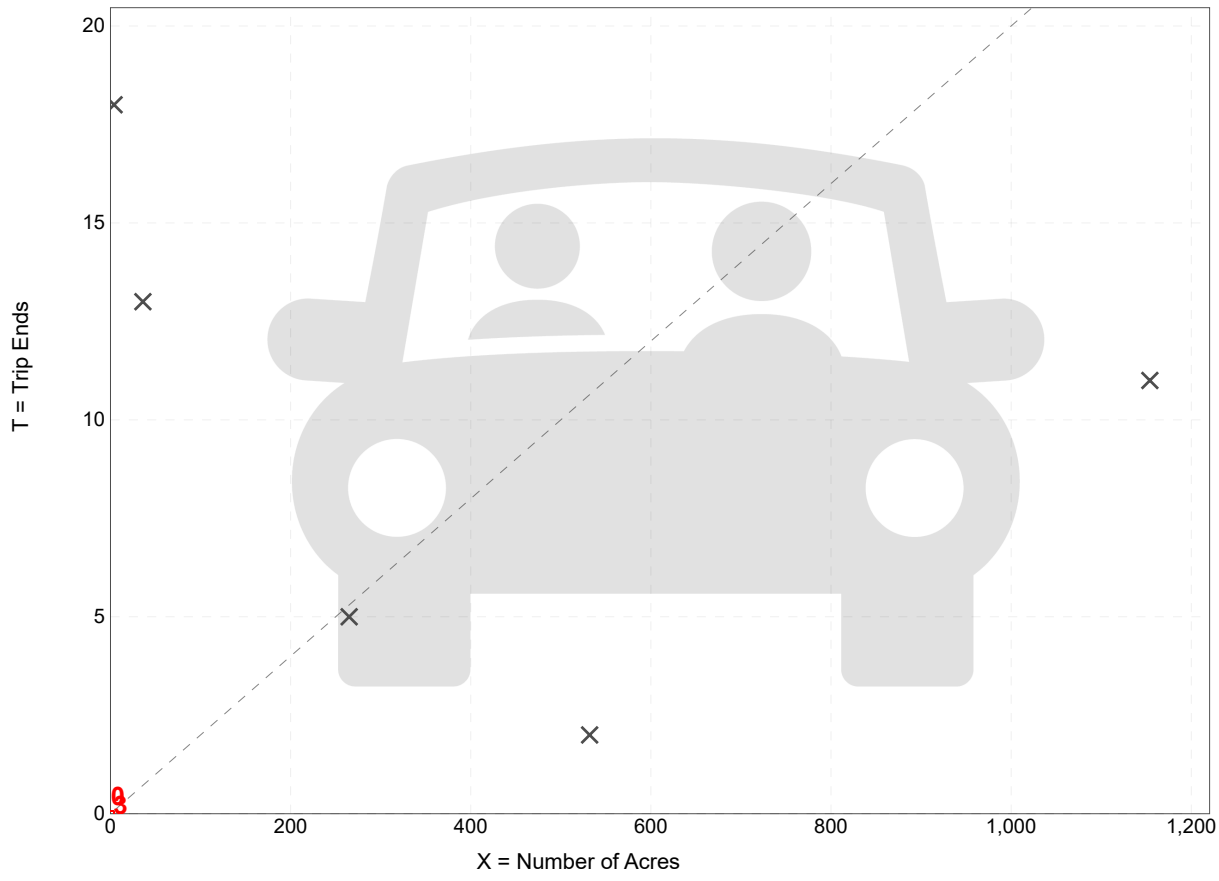
Vehicle Trip Ends vs:	**Acres**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	5
Avg. Num. of Acres:	398
Directional Distribution:	59% entering, 41% exiting

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



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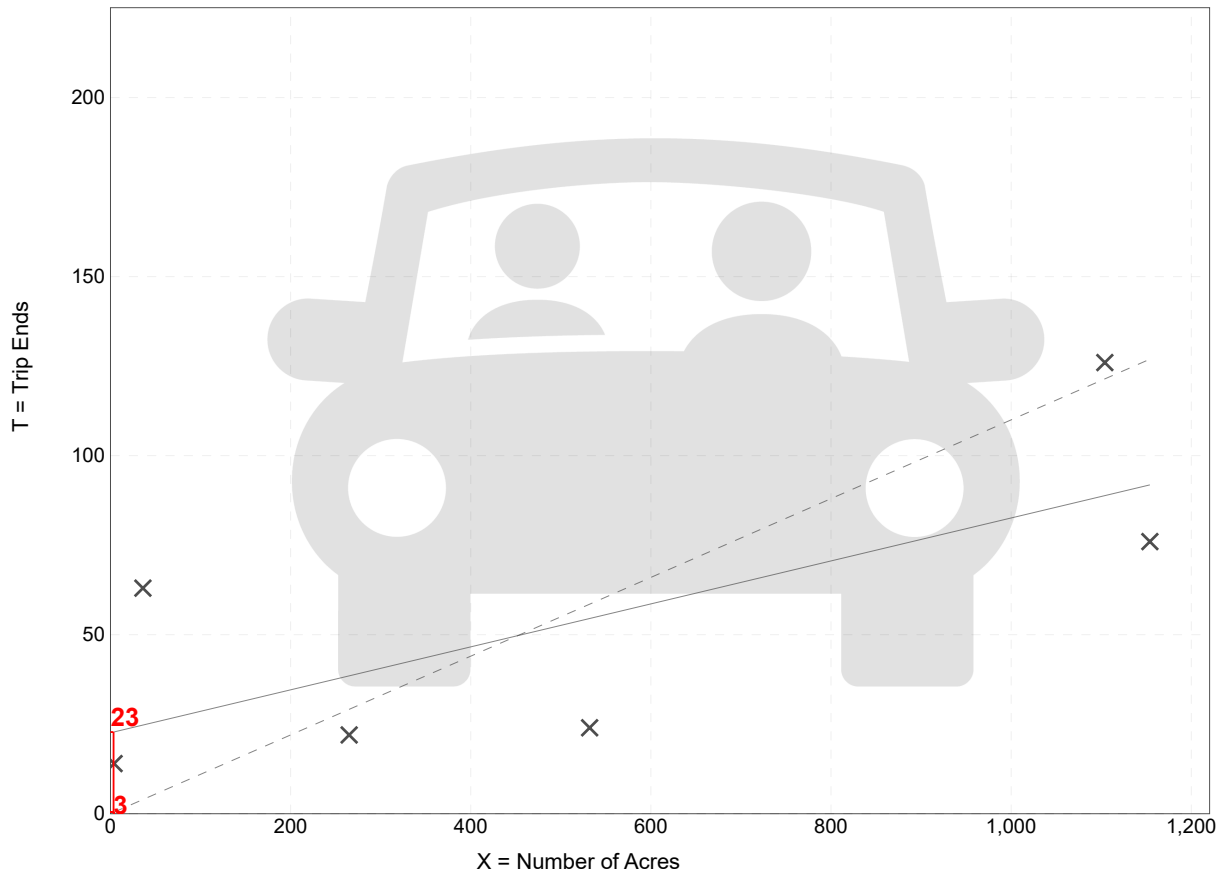
Public Park
(411)

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

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Public Park
(411)

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

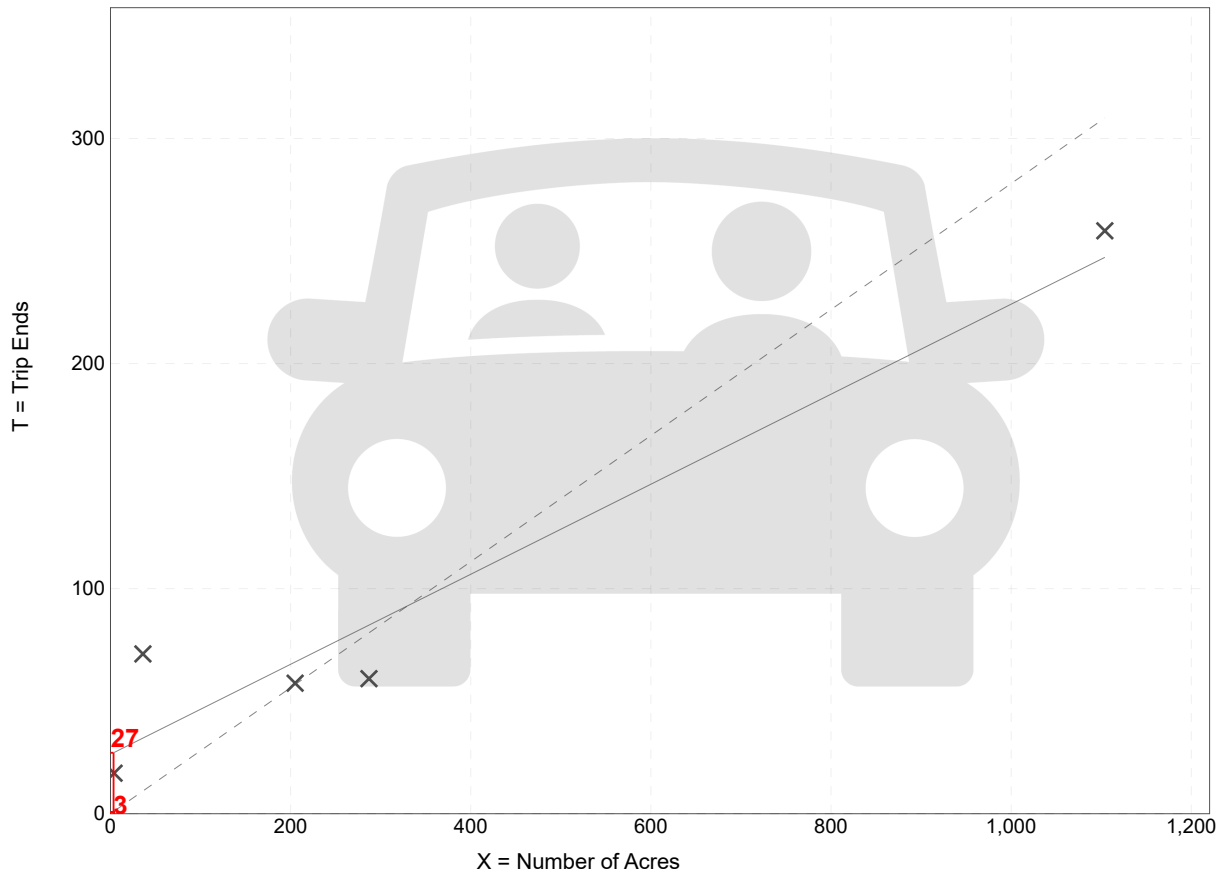
Setting/Location: **General Urban/Suburban**
Number of Studies: 5
Avg. Num. of Acres: 327
Directional Distribution: 55% entering, 45% exiting

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

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Public Park
(411)

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

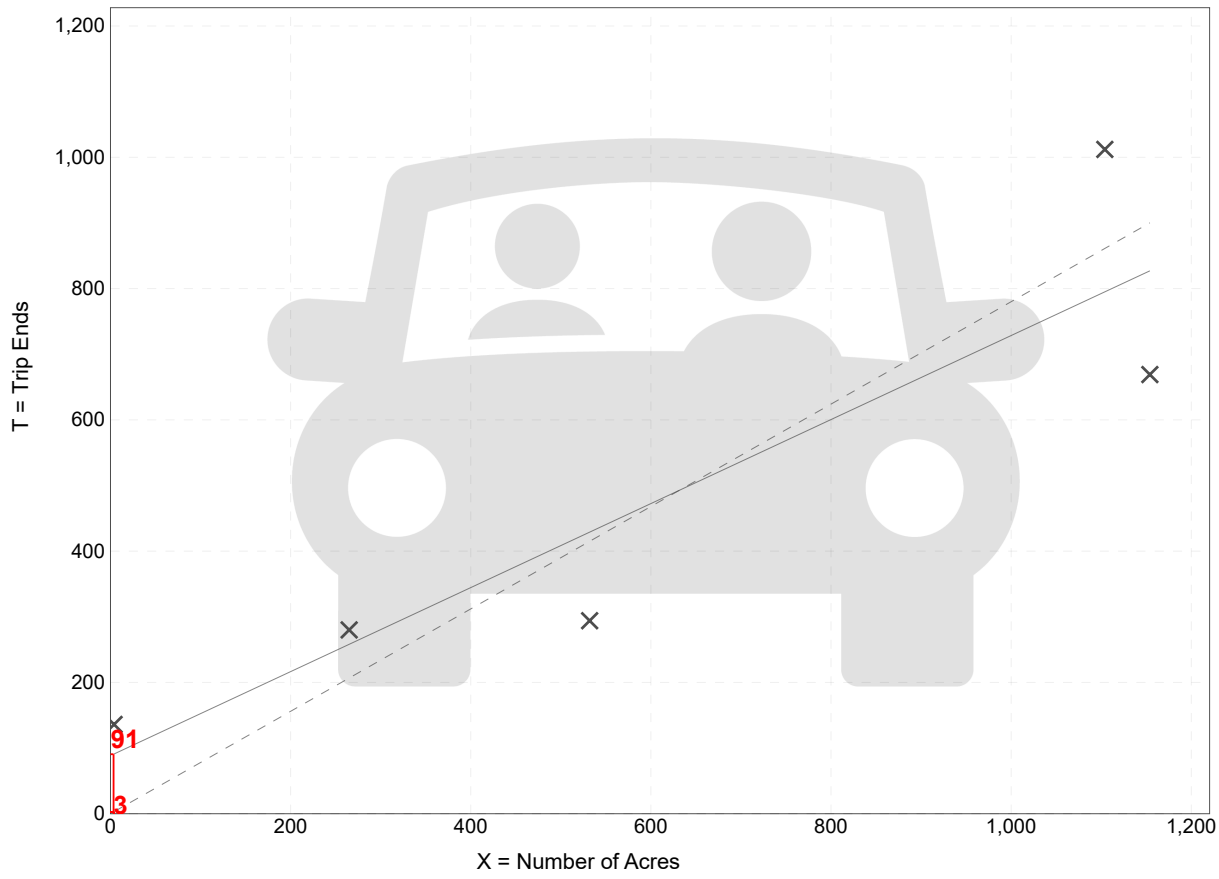
Setting/Location: **General Urban/Suburban**
Number of Studies: 5
Avg. Num. of Acres: 612
Directional Distribution: 50% entering, 50% exiting

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

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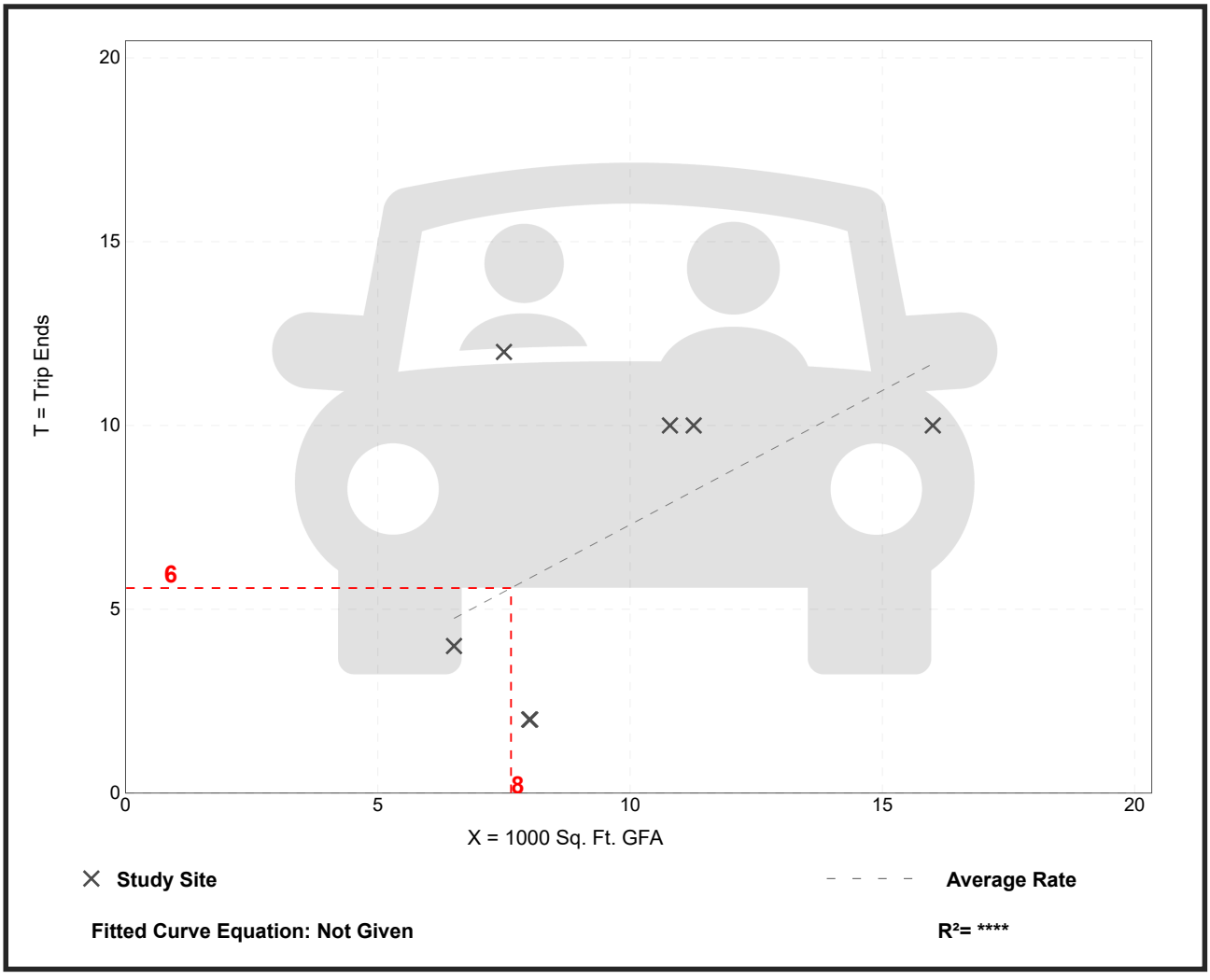
Fine Dining Restaurant
(931)

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



Trip Gen Manual, 11th Edition ● Institute of Transportation Engineers

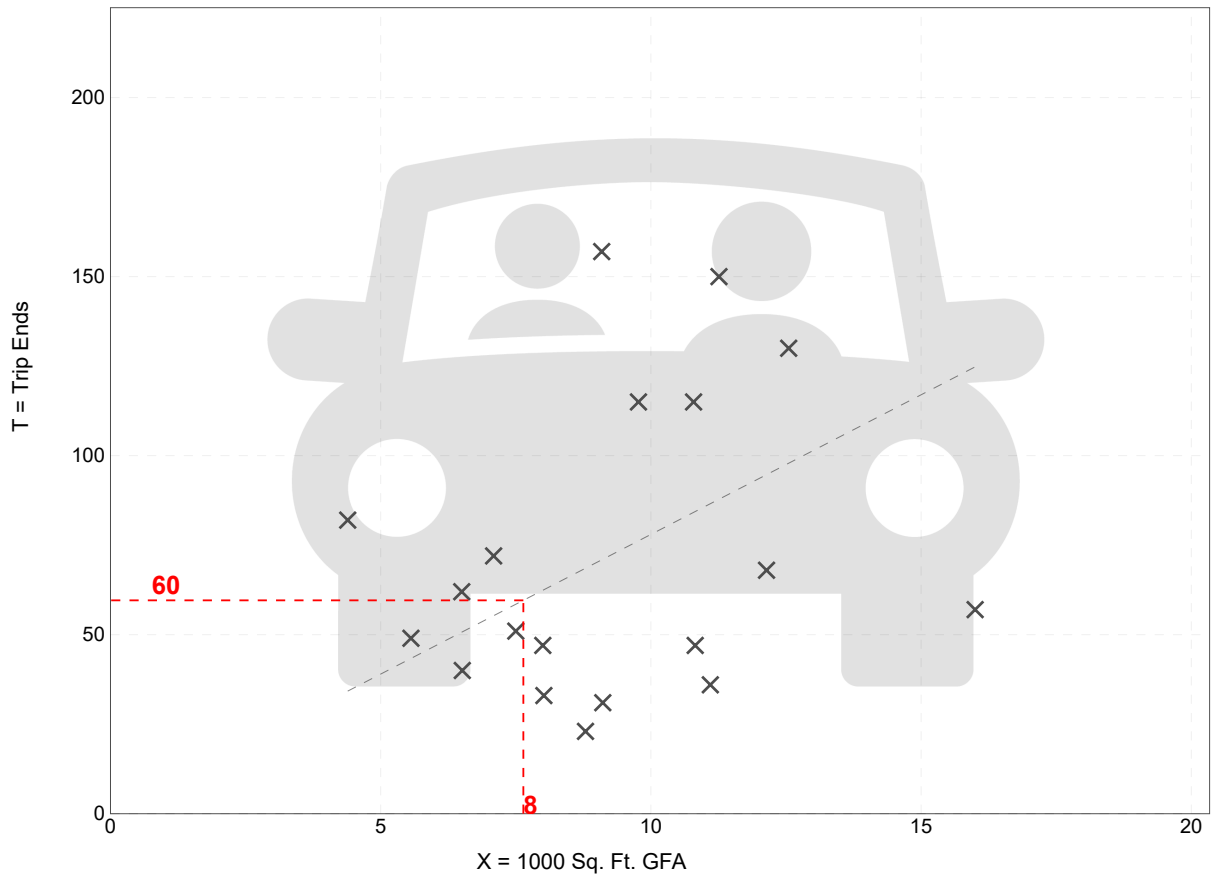
Fine Dining Restaurant
(931)

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



Trip Gen Manual, 11th Edition ● Institute of Transportation Engineers

Fine Dining Restaurant
(931)

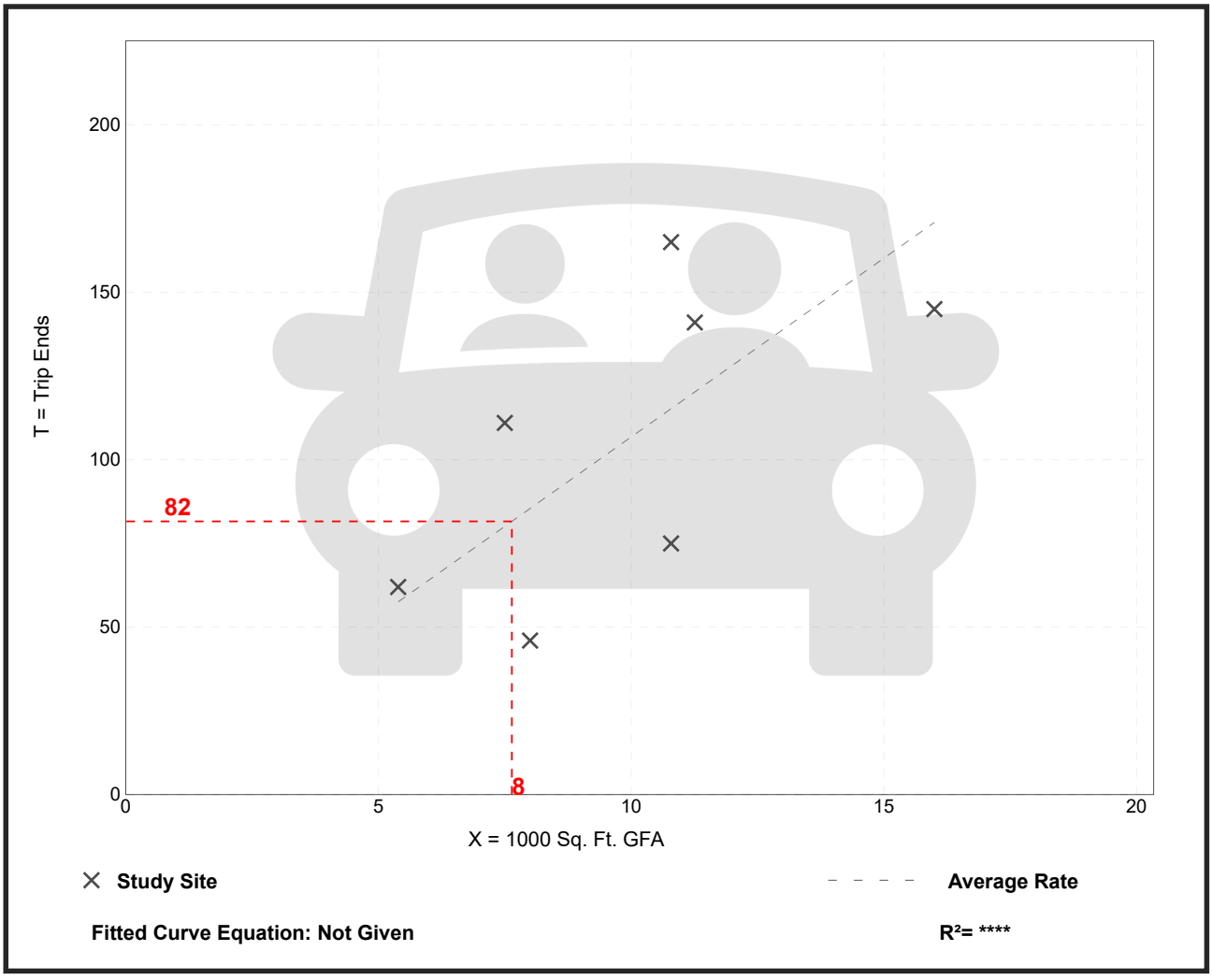
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Saturday, Peak Hour of Generator**

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



Trip Gen Manual, 11th Edition ● Institute of Transportation Engineers

Fine Dining Restaurant
(931)

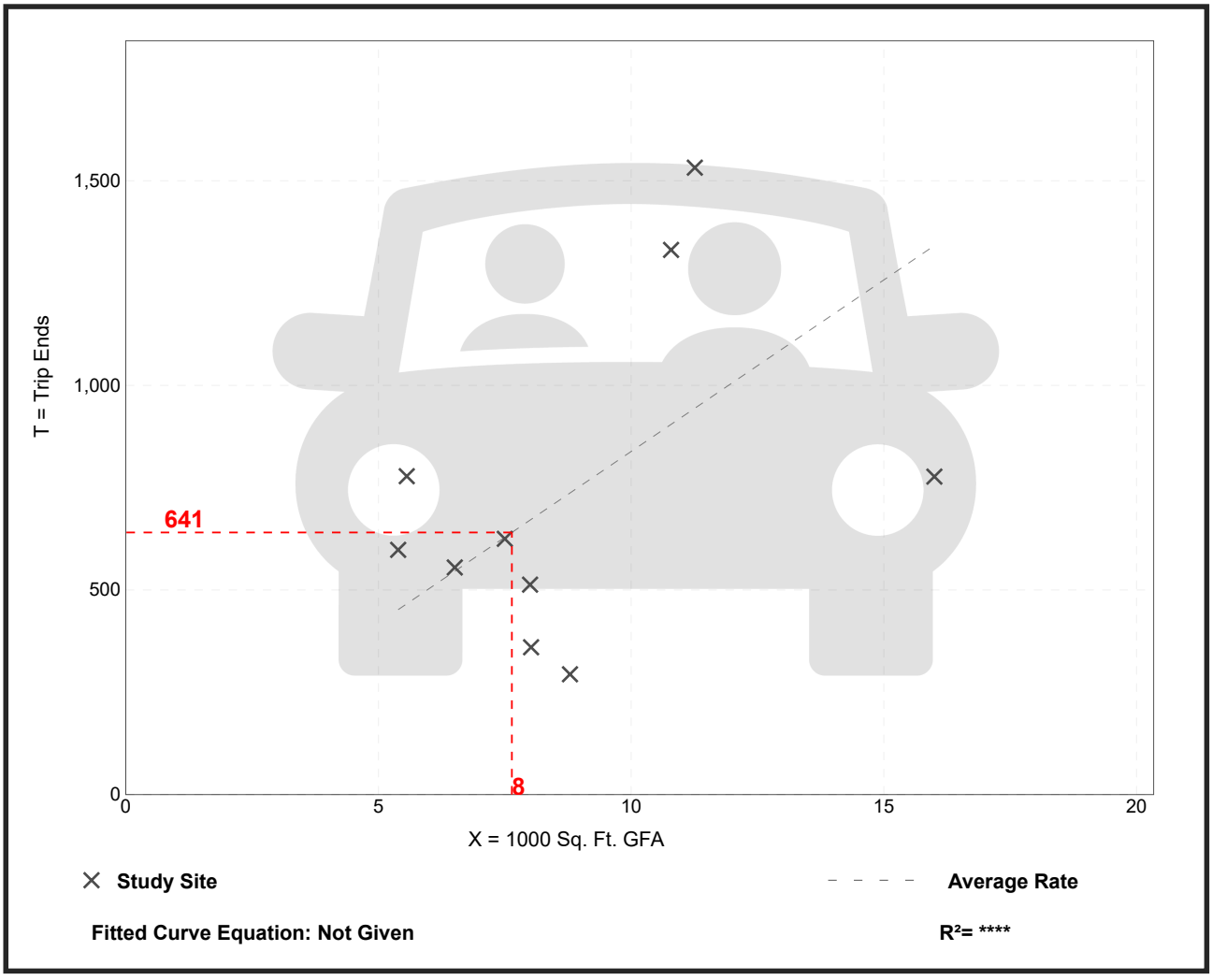
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday**

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



Trip Gen Manual, 11th Edition ● Institute of Transportation Engineers

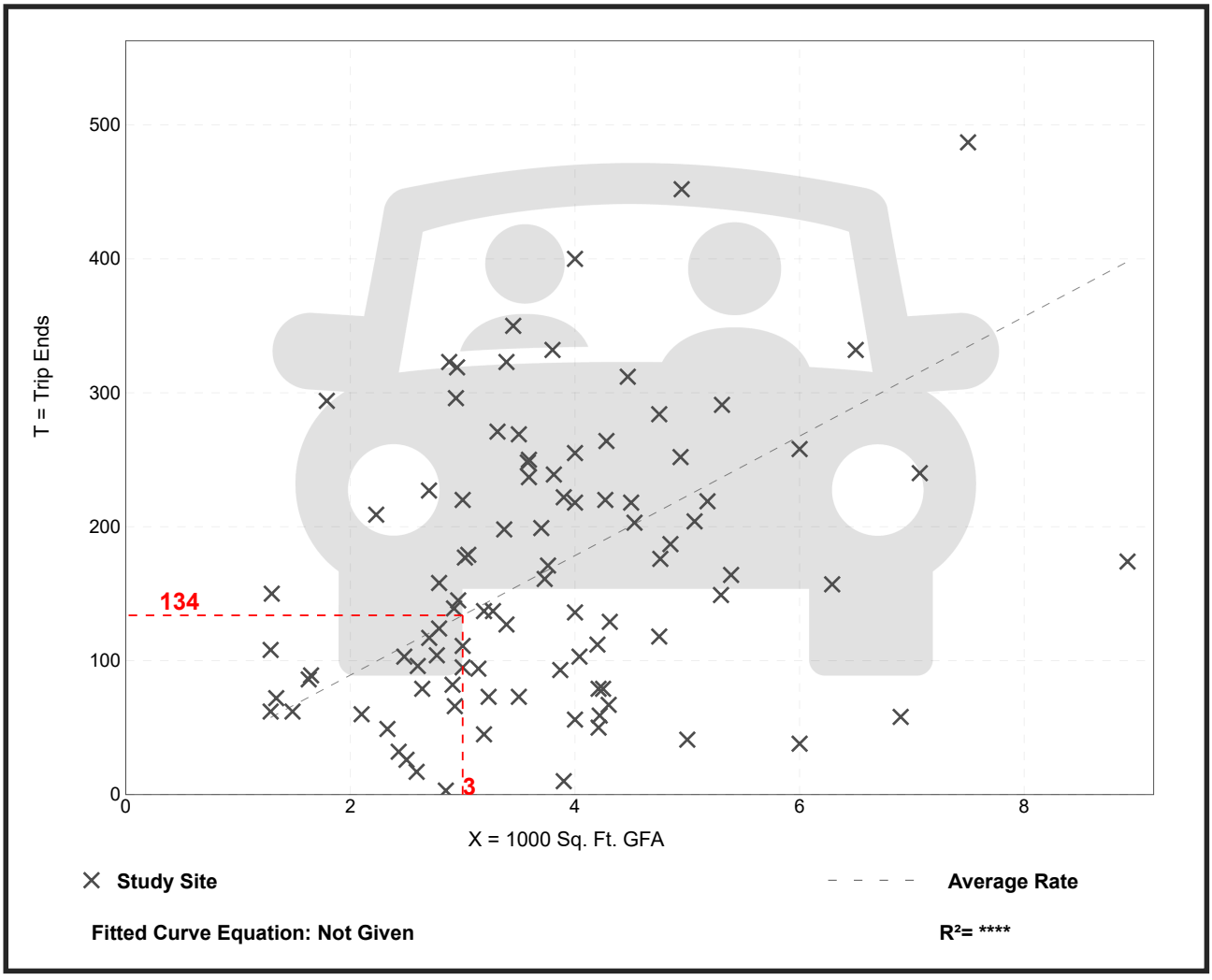
Fast-Food Restaurant with Drive-Through Window
(934)

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



Trip Gen Manual, 11th Edition ● Institute of Transportation Engineers

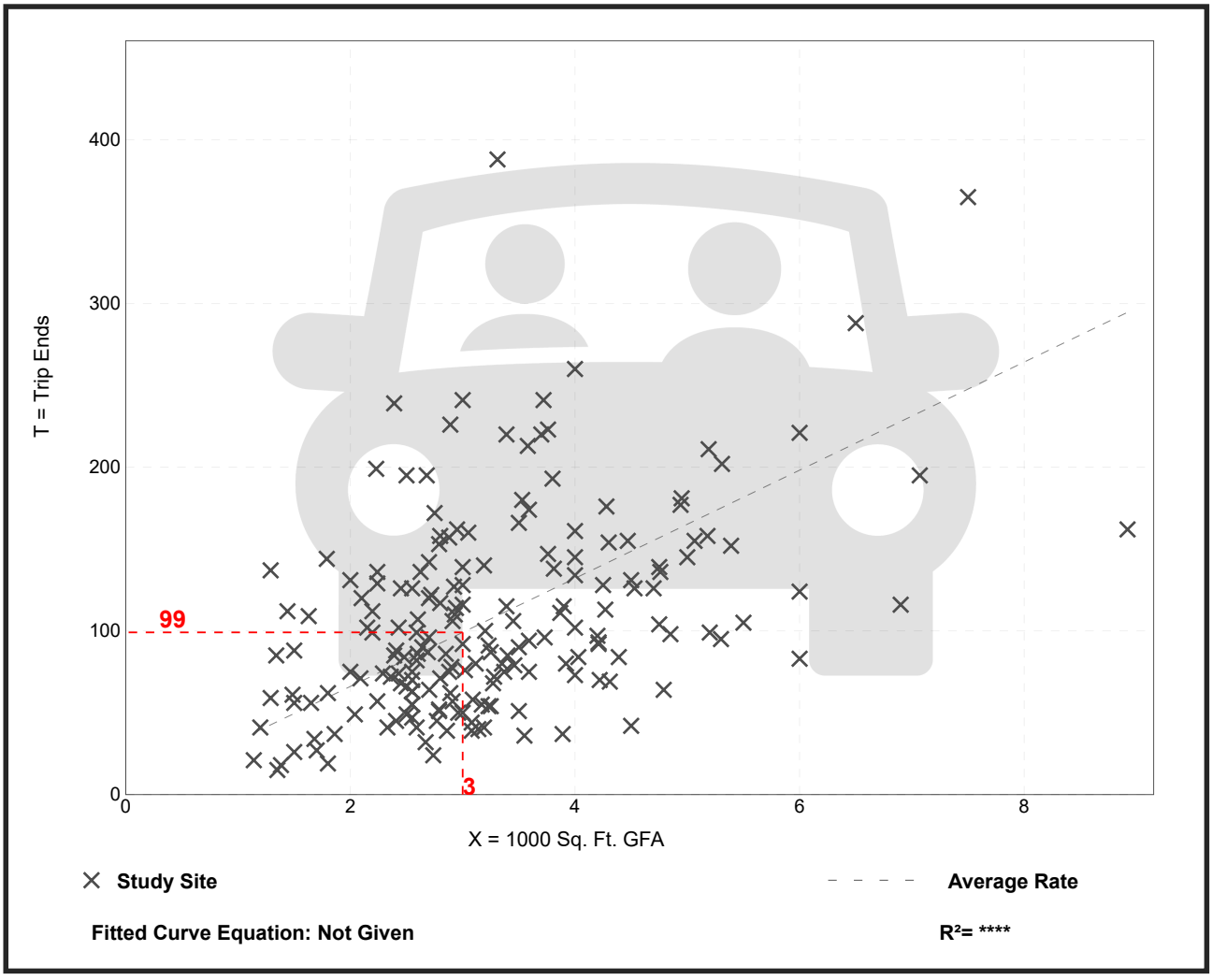
Fast-Food Restaurant with Drive-Through Window
(934)

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



Trip Gen Manual, 11th Edition ● Institute of Transportation Engineers

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

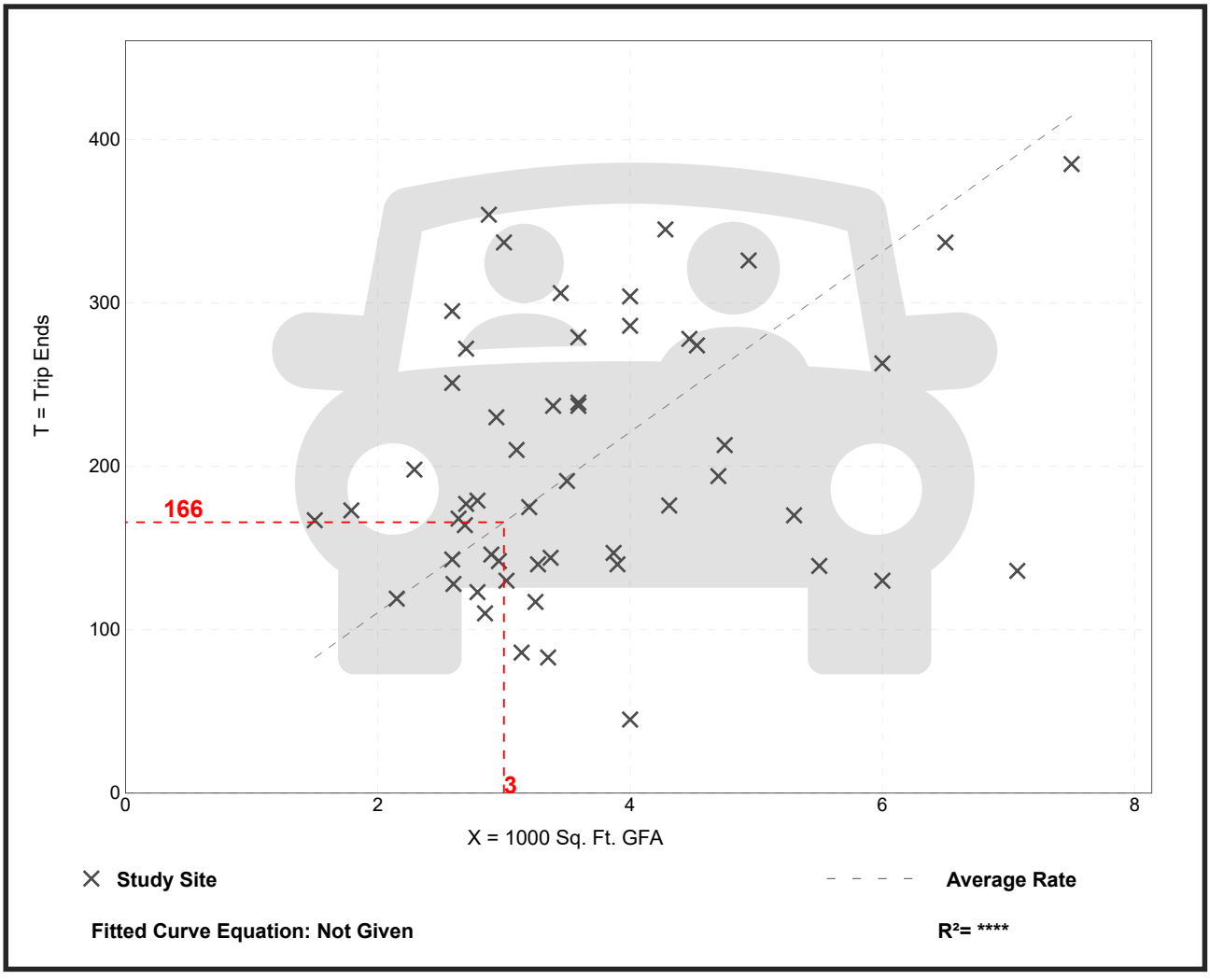
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Saturday, Peak Hour of Generator**

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



Trip Gen Manual, 11th Edition ● Institute of Transportation Engineers

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

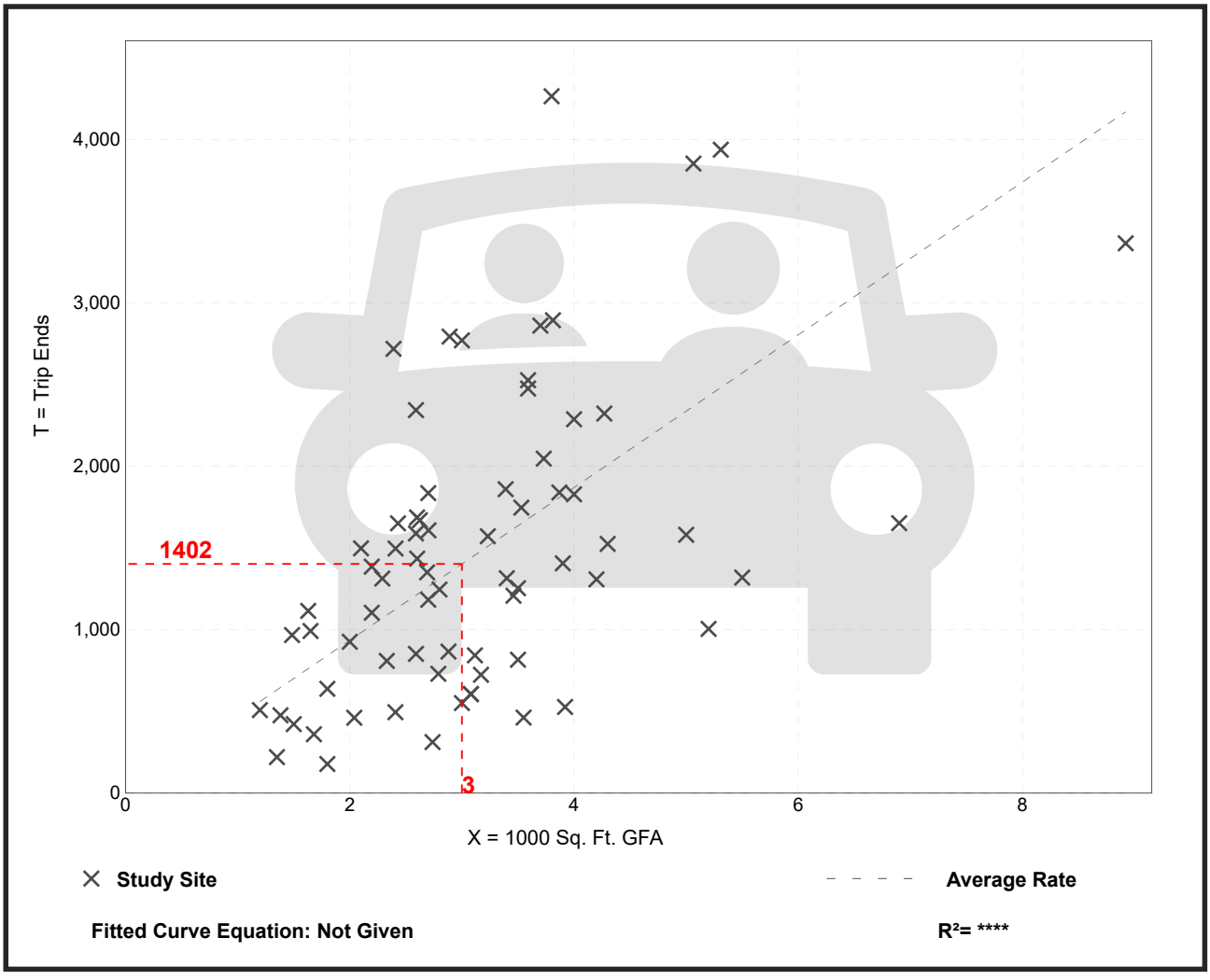
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday**

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



Trip Gen Manual, 11th Edition ● Institute of Transportation Engineers

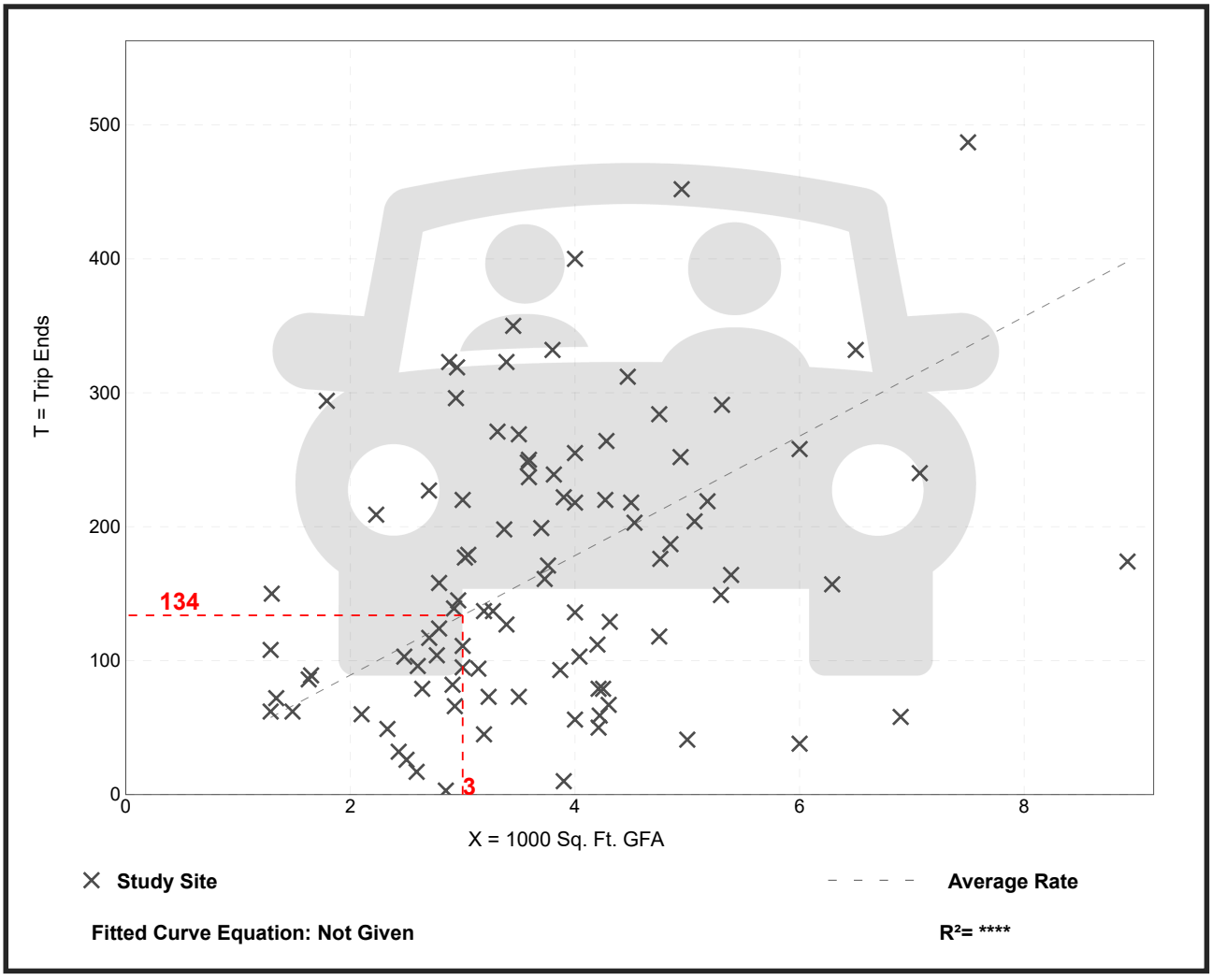
Fast-Food Restaurant with Drive-Through Window
(934)

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



Trip Gen Manual, 11th Edition ● Institute of Transportation Engineers

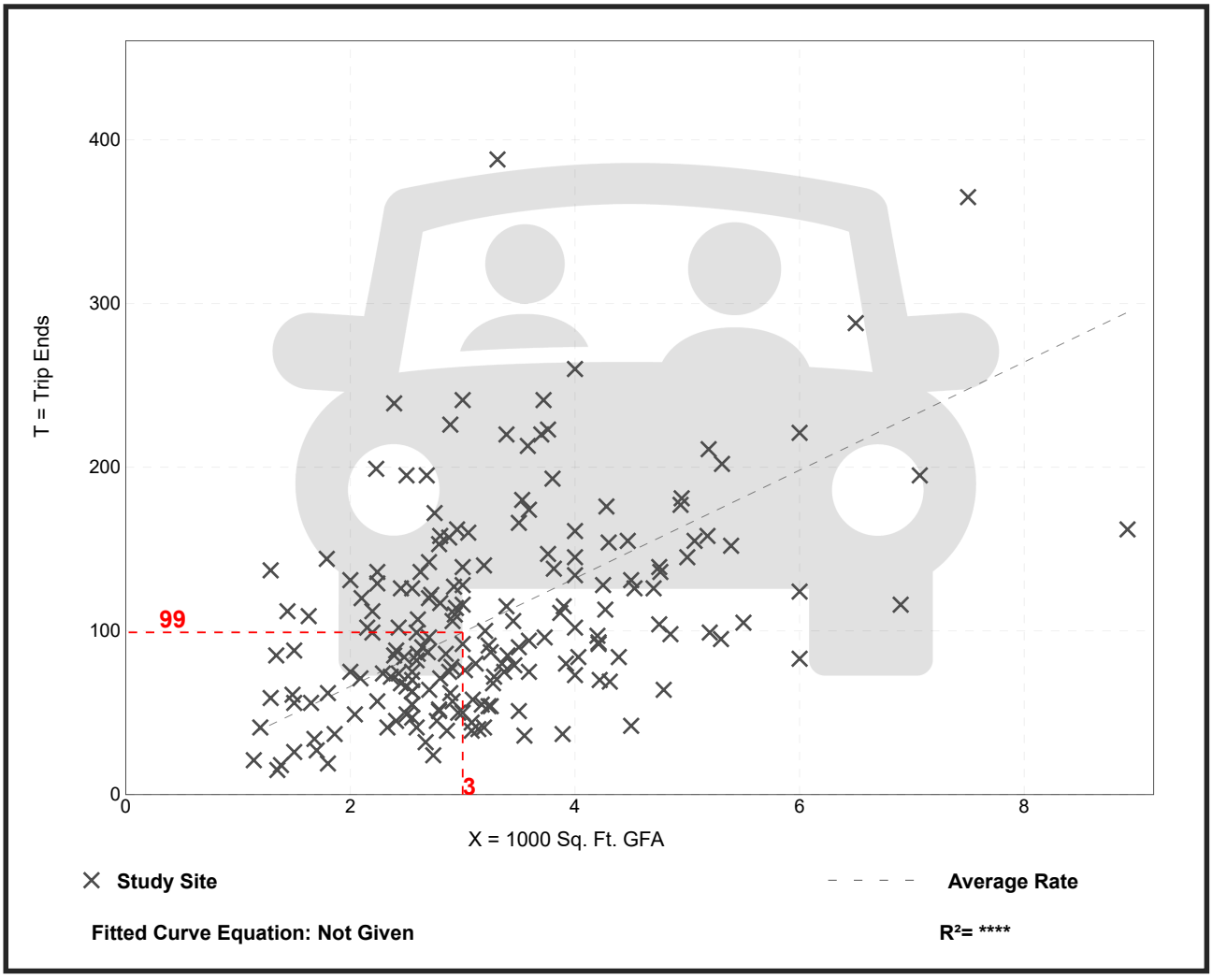
Fast-Food Restaurant with Drive-Through Window
(934)

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



Trip Gen Manual, 11th Edition ● Institute of Transportation Engineers

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

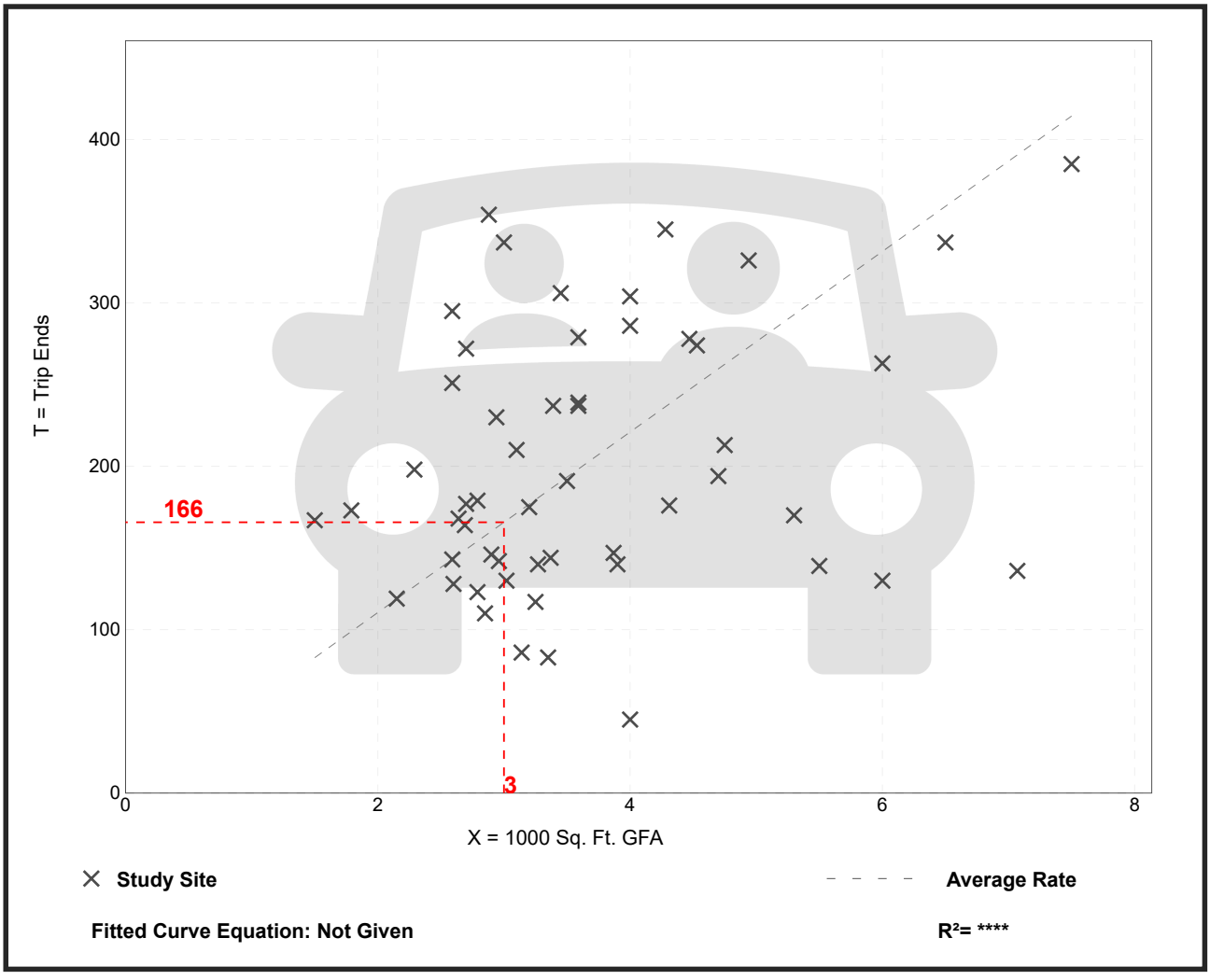
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Saturday, Peak Hour of Generator**

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



Trip Gen Manual, 11th Edition ● Institute of Transportation Engineers

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

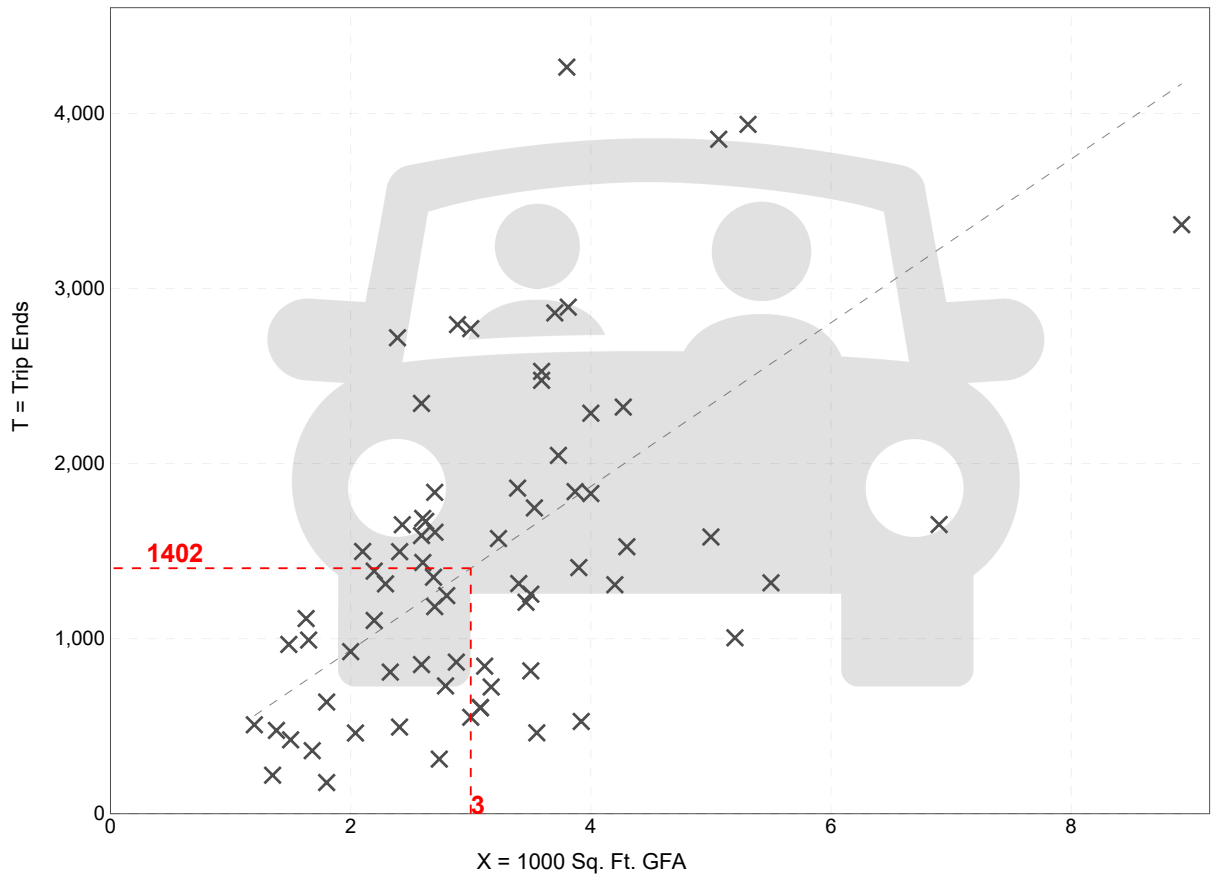
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday**

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
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Data Plot and Equation



Trip Gen Manual, 11th Edition ● Institute of Transportation Engineers

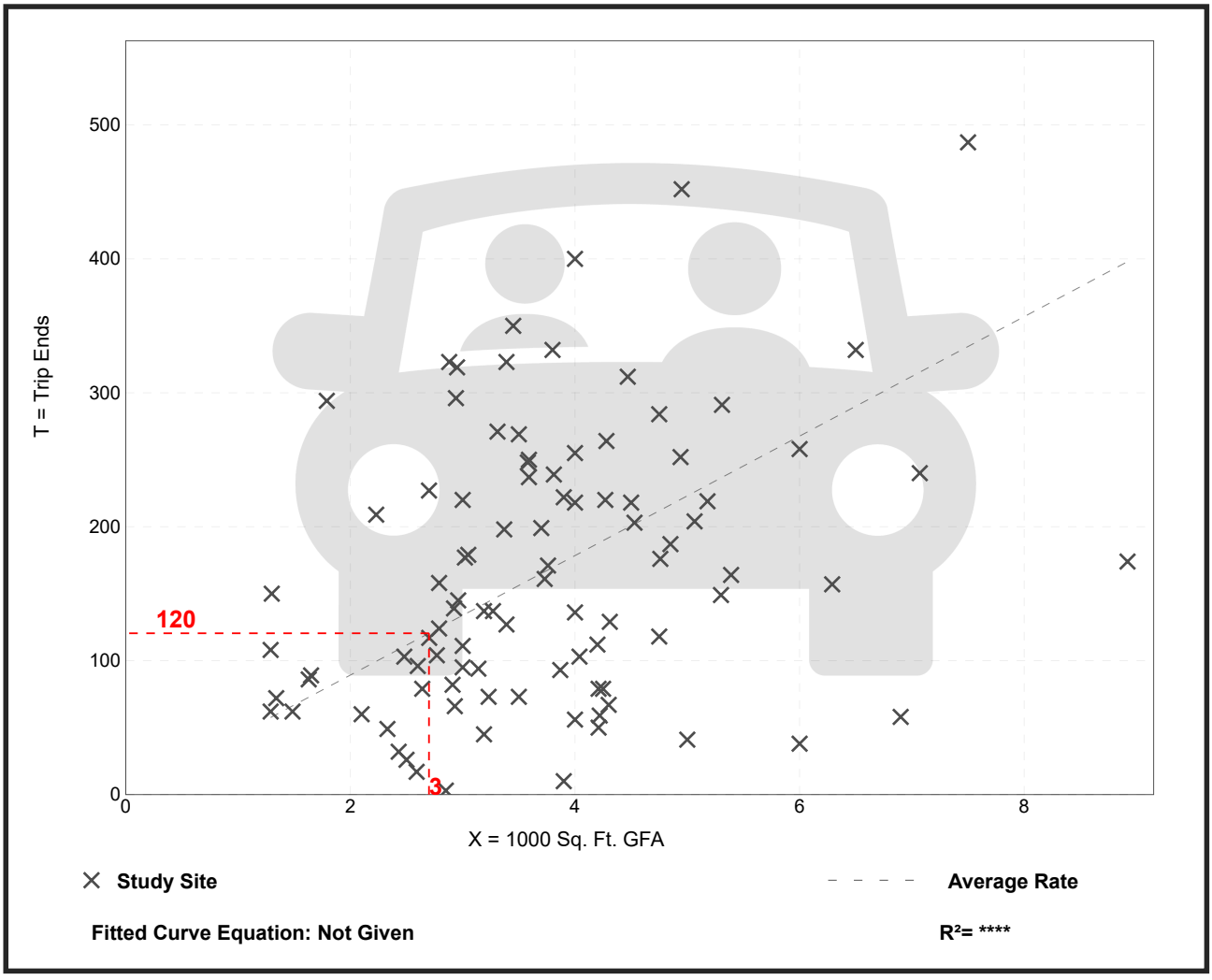
Fast-Food Restaurant with Drive-Through Window
(934)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
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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
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Data Plot and Equation



Trip Gen Manual, 11th Edition ● Institute of Transportation Engineers

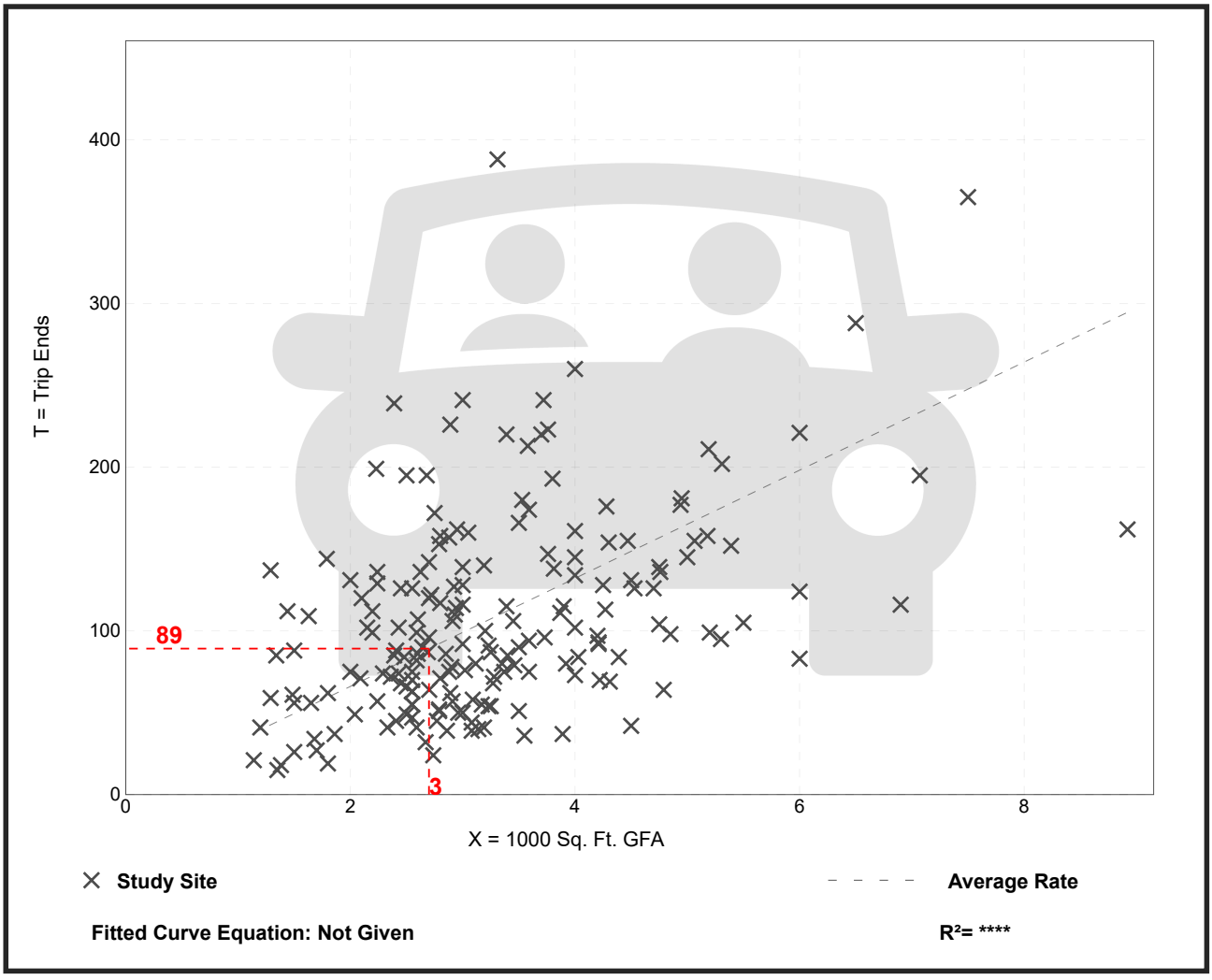
Fast-Food Restaurant with Drive-Through Window
(934)

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



Trip Gen Manual, 11th Edition ● Institute of Transportation Engineers

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

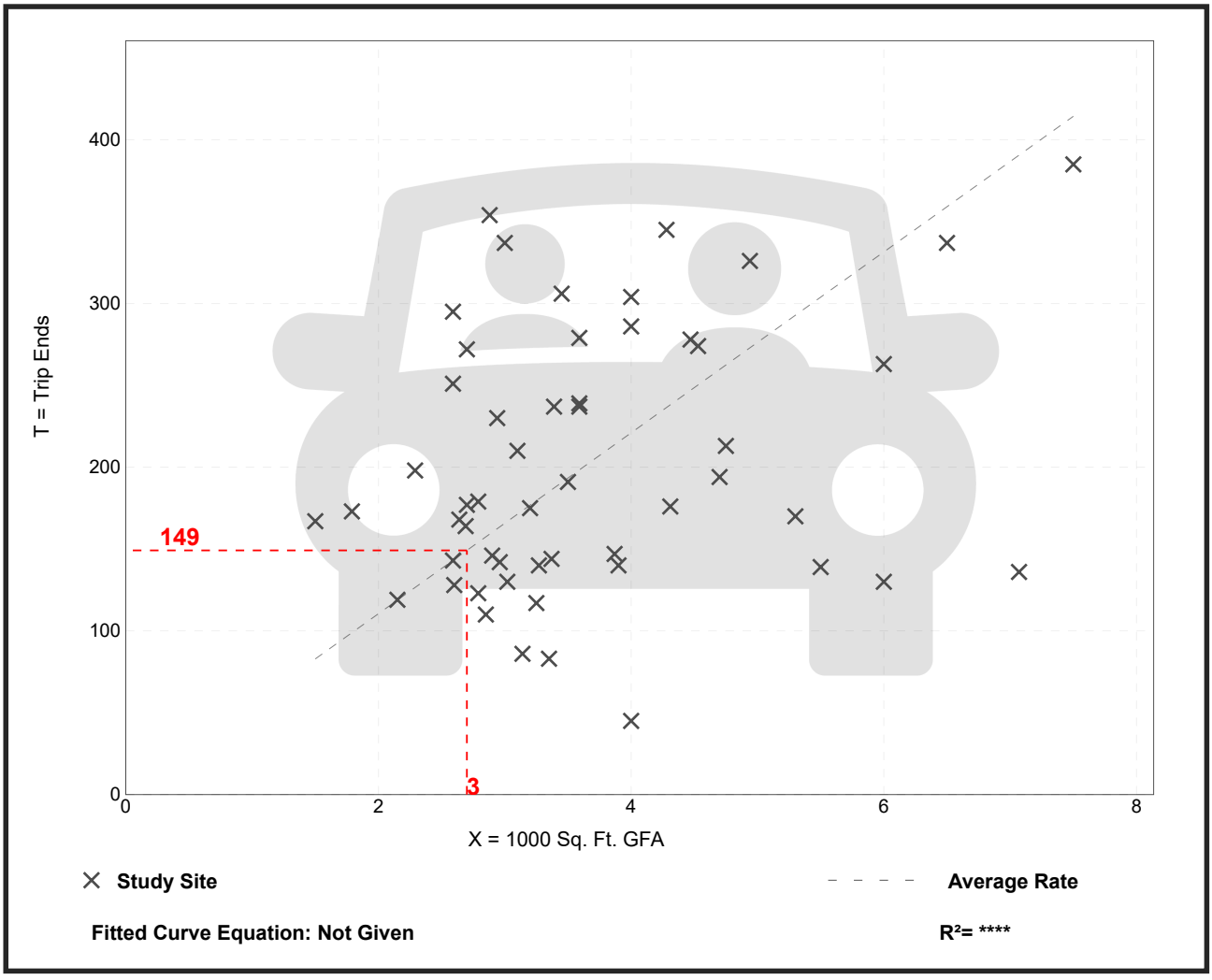
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Saturday, Peak Hour of Generator**

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



Trip Gen Manual, 11th Edition ● Institute of Transportation Engineers

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

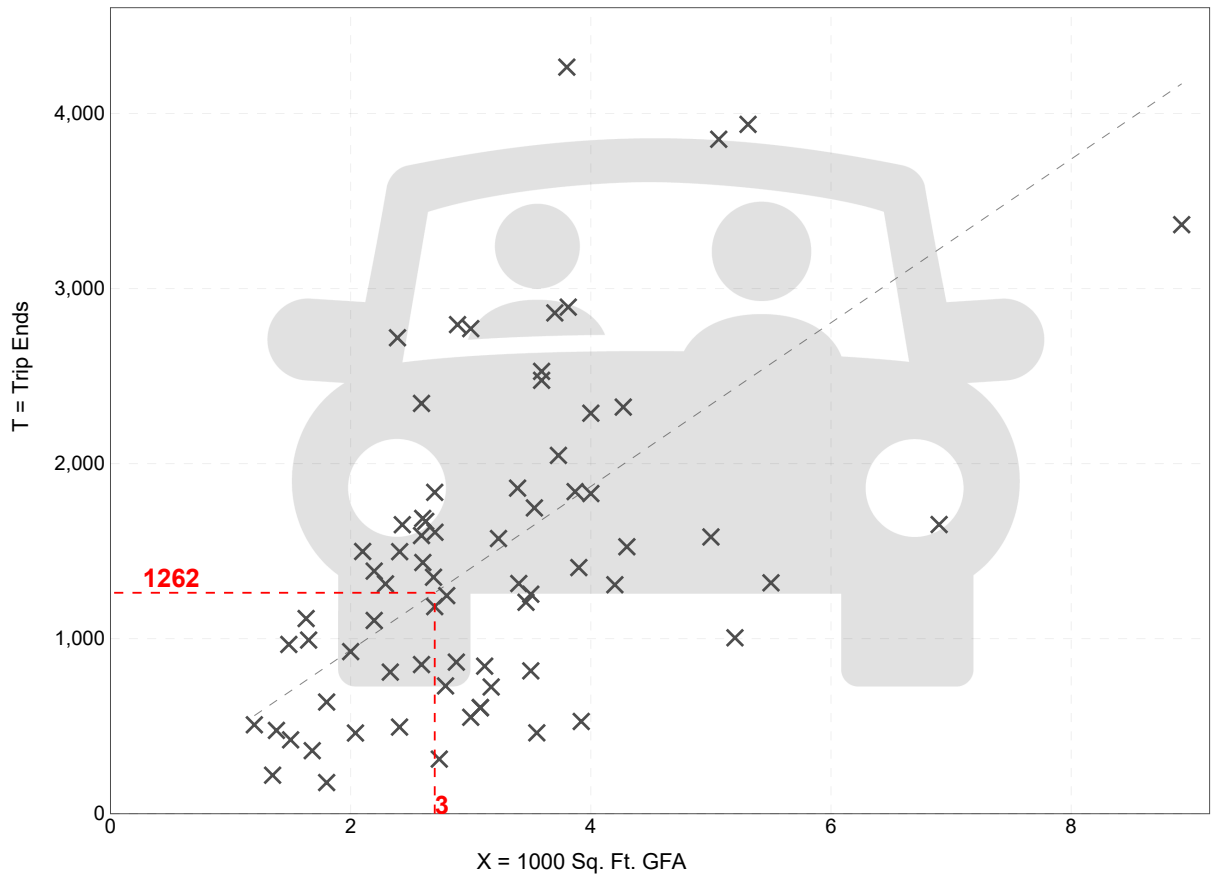
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday**

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 Casual Restaurant
(930)

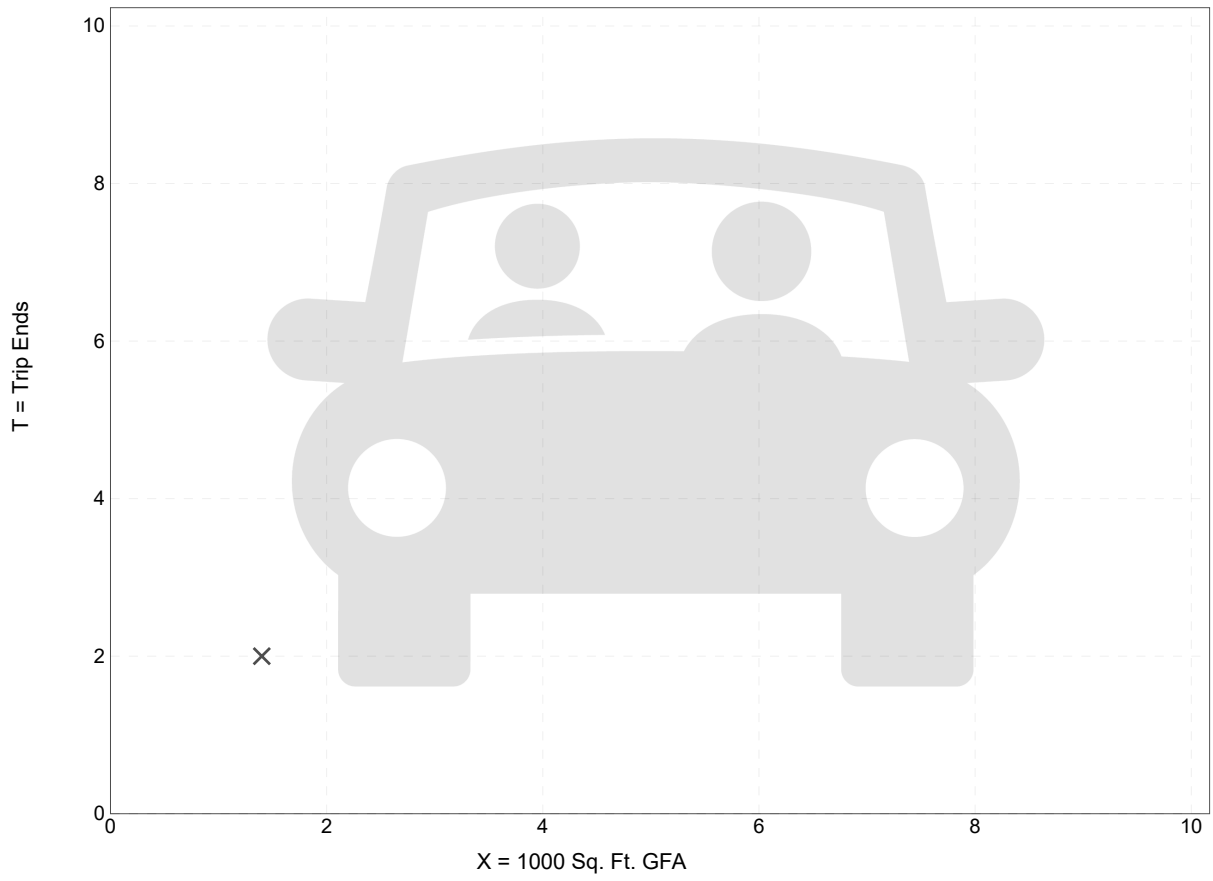
Vehicle Trip Ends vs:	**1000 Sq. Ft. GFA**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	1
Avg. 1000 Sq. Ft. GFA:	1
Directional Distribution:	50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.43	1.43 - 1.43	*

Data Plot and Equation

Caution – Small Sample Size



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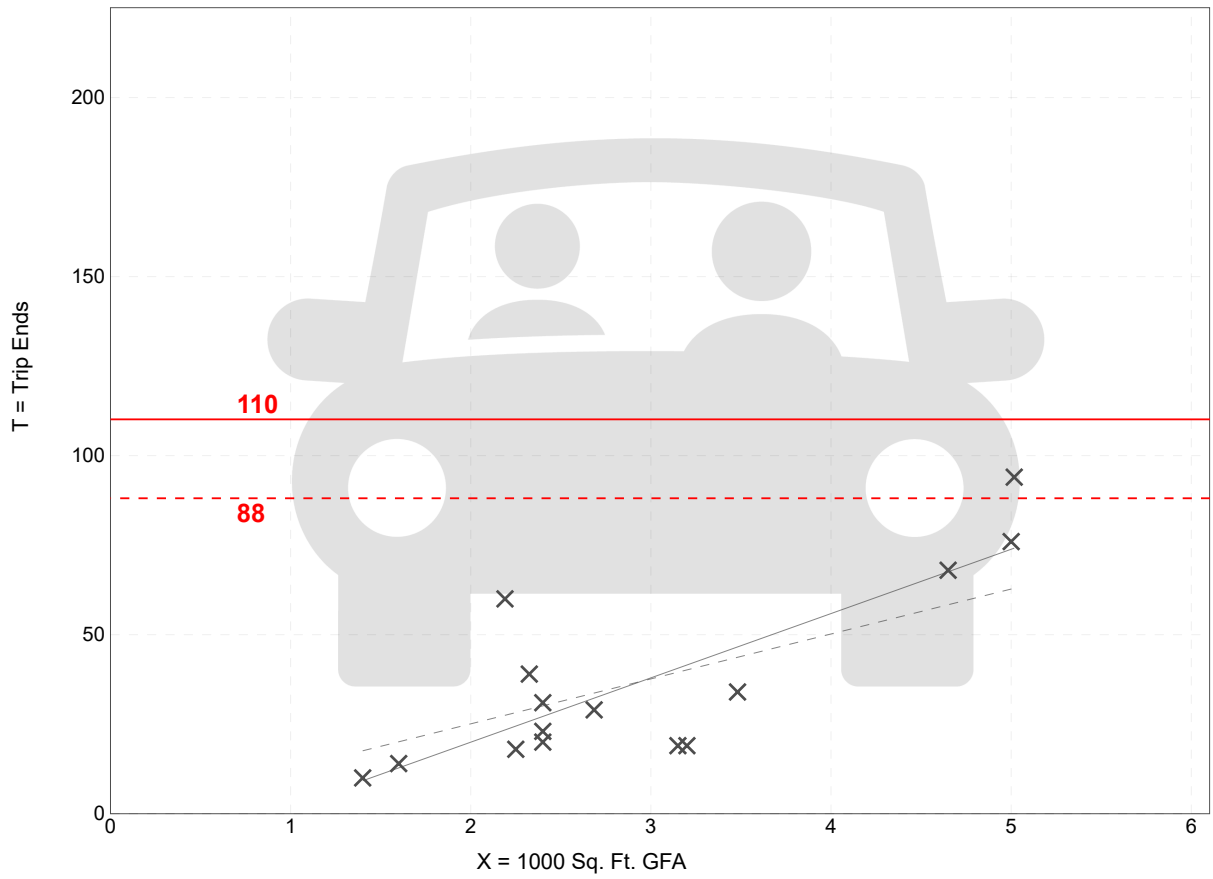
Fast Casual Restaurant
(930)

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:	15
Avg. 1000 Sq. Ft. GFA:	3
Directional Distribution:	55% entering, 45% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
12.55	5.94 - 27.40	5.52

Data Plot and Equation



Fitted Curve Equation: T = 17.96(X) - 15.94

R^2= 0.65

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Fast Casual Restaurant
(930)

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

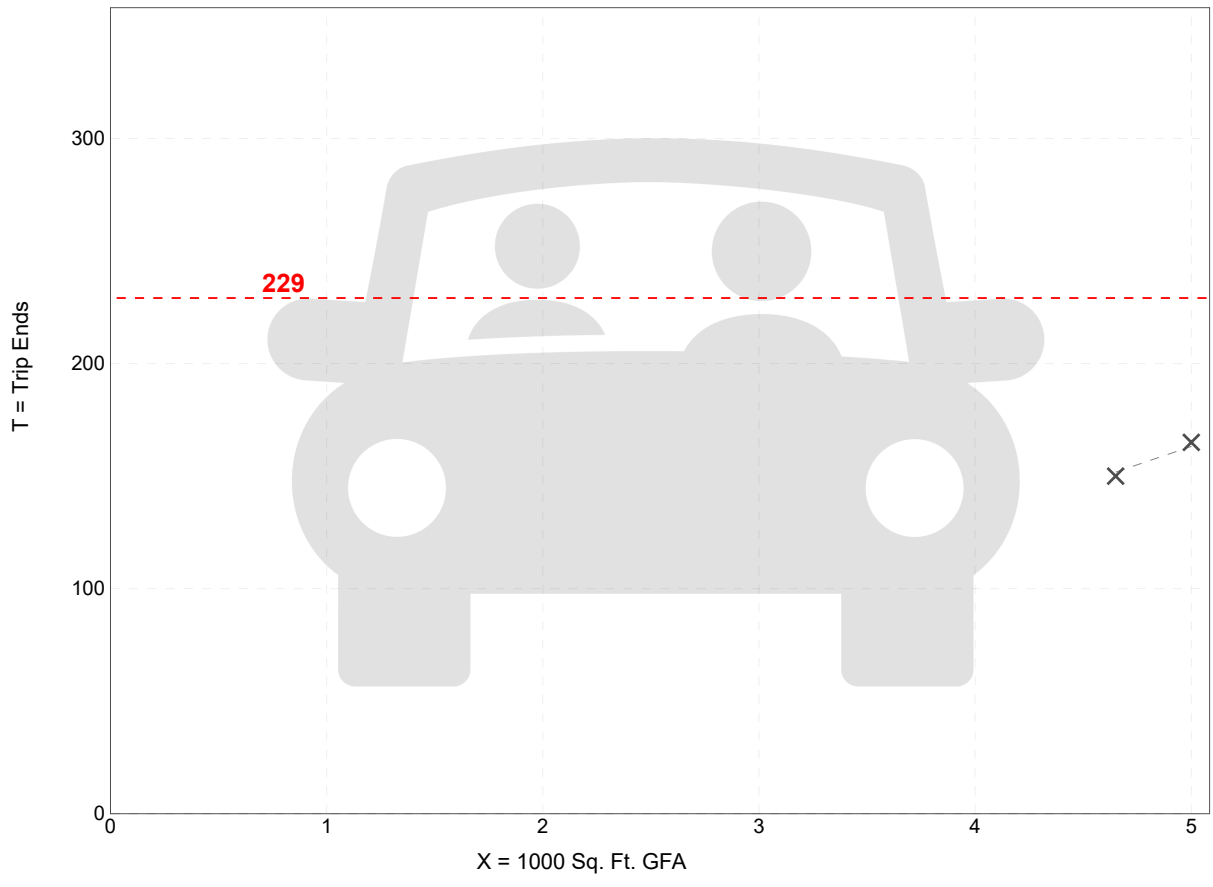
Setting/Location: **General Urban/Suburban**
Number of Studies: 2
Avg. 1000 Sq. Ft. GFA: 5
Directional Distribution: 55% entering, 45% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
32.64	32.26 - 33.00	*

Data Plot and Equation

Caution – Small Sample Size



Fitted Curve Equation: Not Given

R^2= **

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Fast Casual Restaurant
(930)

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

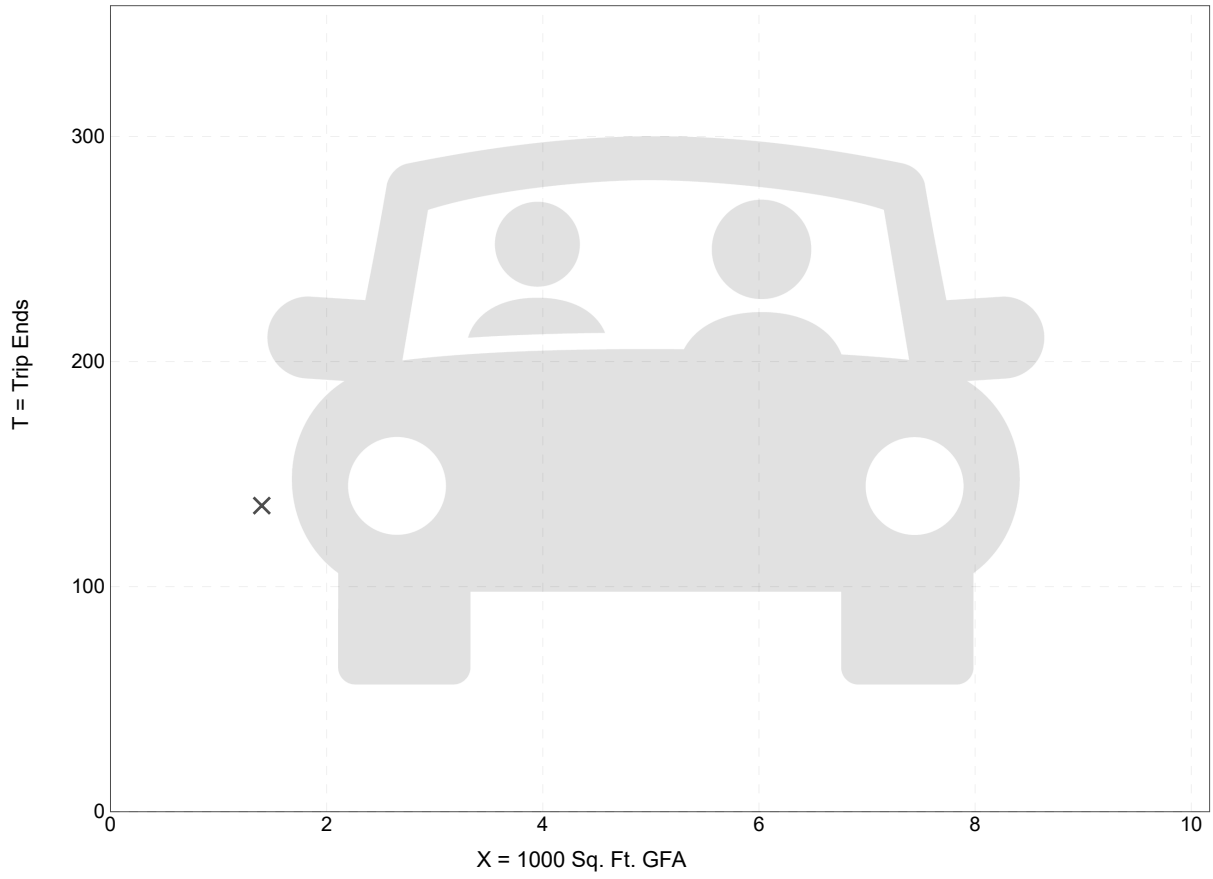
Setting/Location: **General Urban/Suburban**
Number of Studies: 1
Avg. 1000 Sq. Ft. GFA: 1
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
97.14	97.14 - 97.14	*

Data Plot and Equation

Caution – Small Sample Size



Fitted Curve Equation: Not Given

R^2= **

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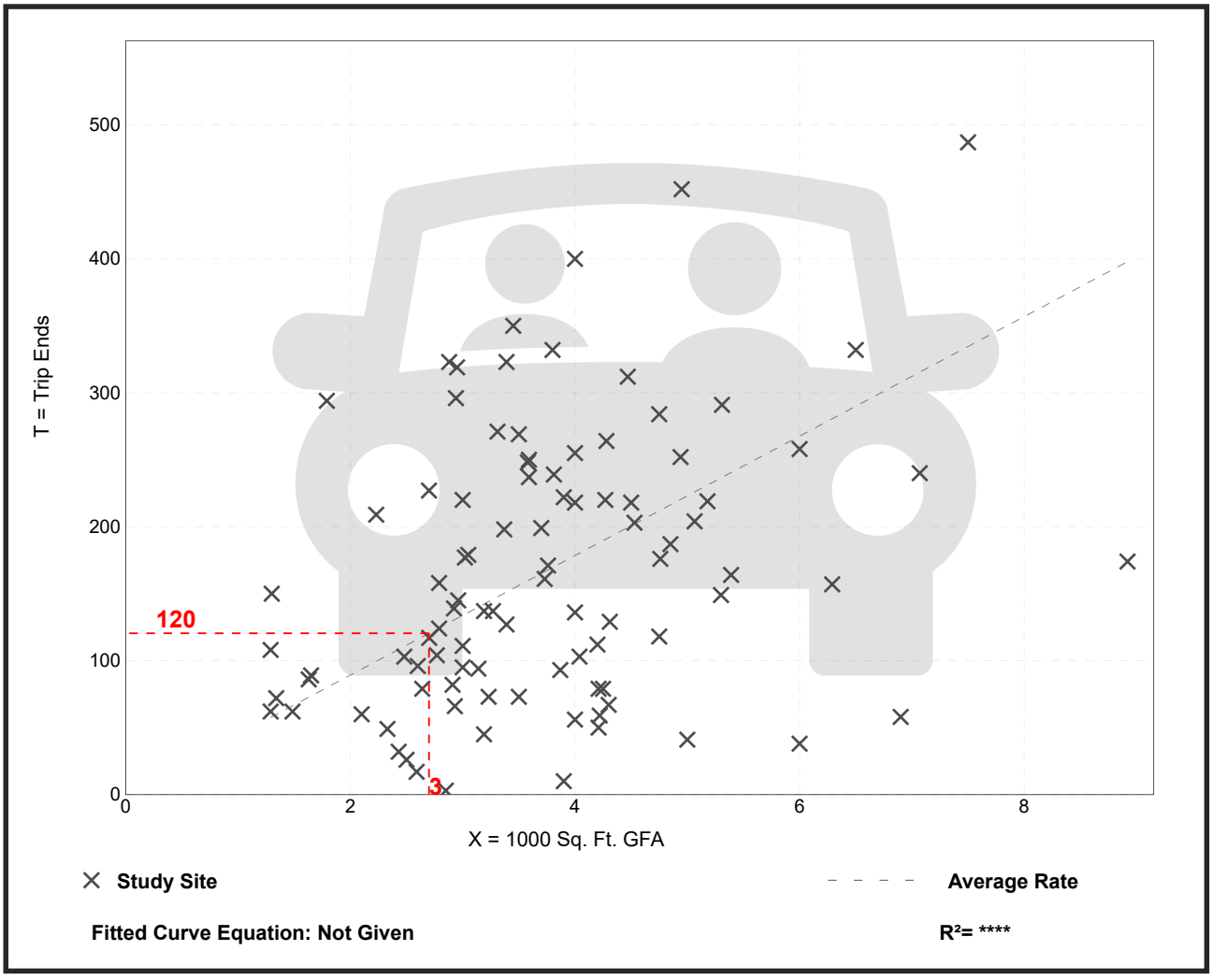
Fast-Food Restaurant with Drive-Through Window
(934)

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



Trip Gen Manual, 11th Edition ● Institute of Transportation Engineers

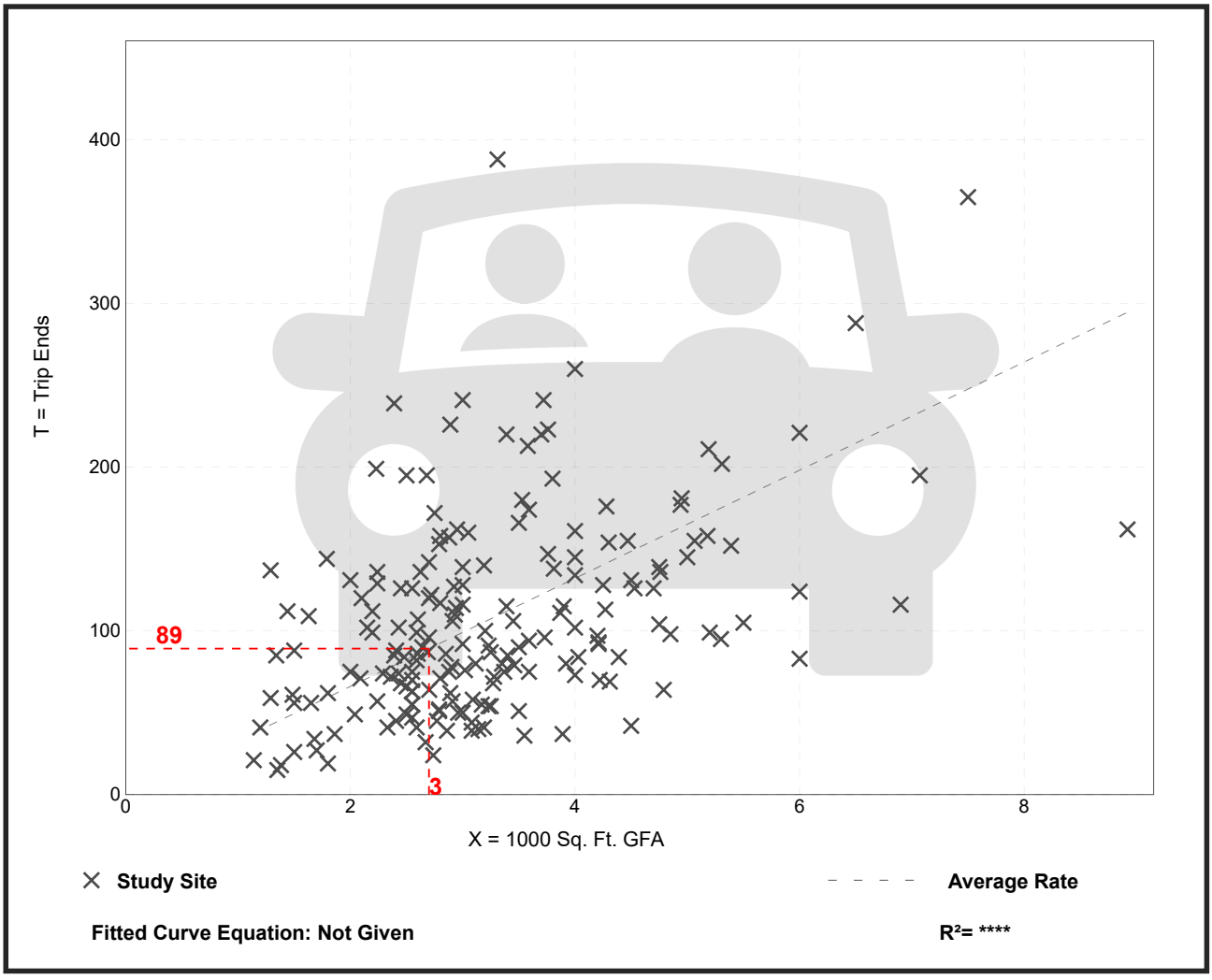
Fast-Food Restaurant with Drive-Through Window
(934)

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



Trip Gen Manual, 11th Edition ● Institute of Transportation Engineers

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

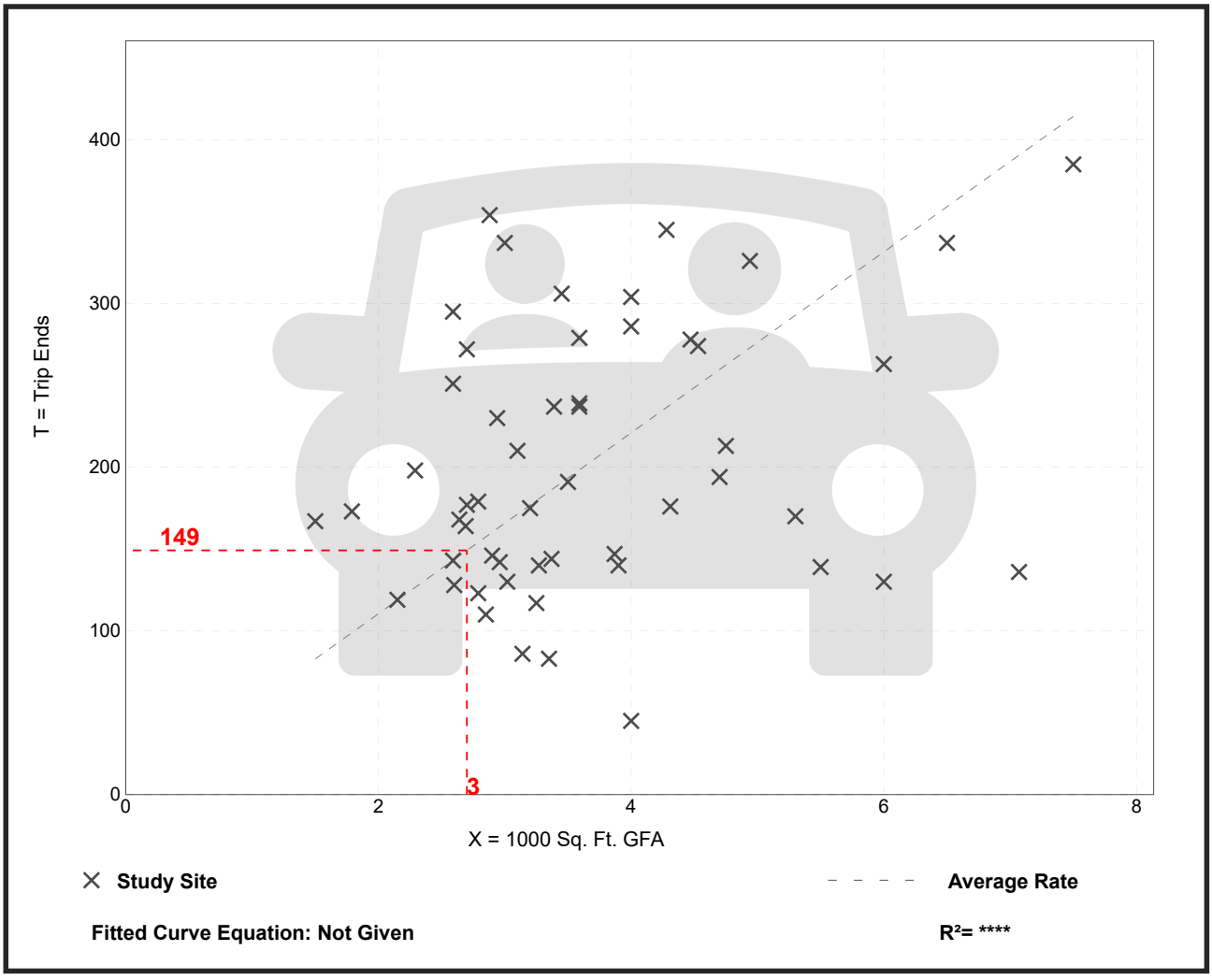
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Saturday, Peak Hour of Generator**

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)

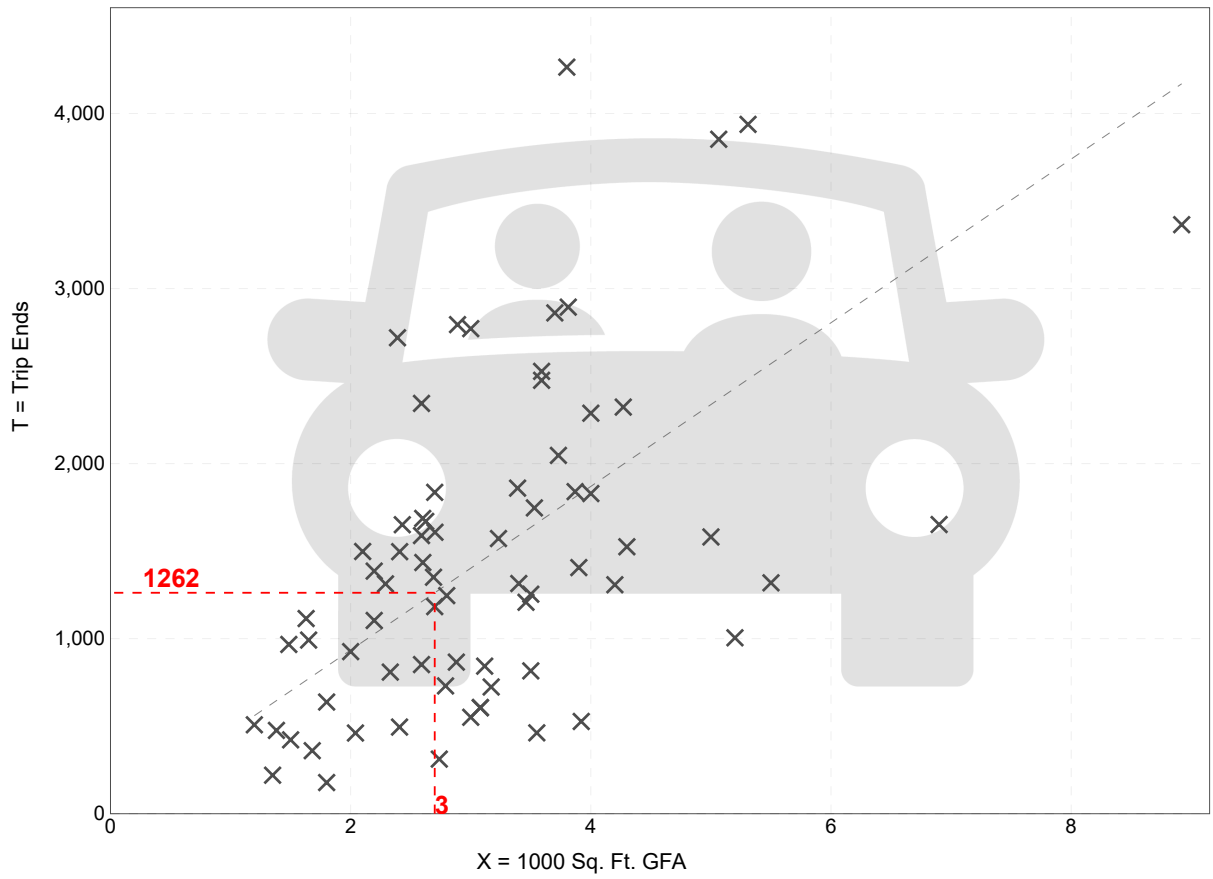
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday**

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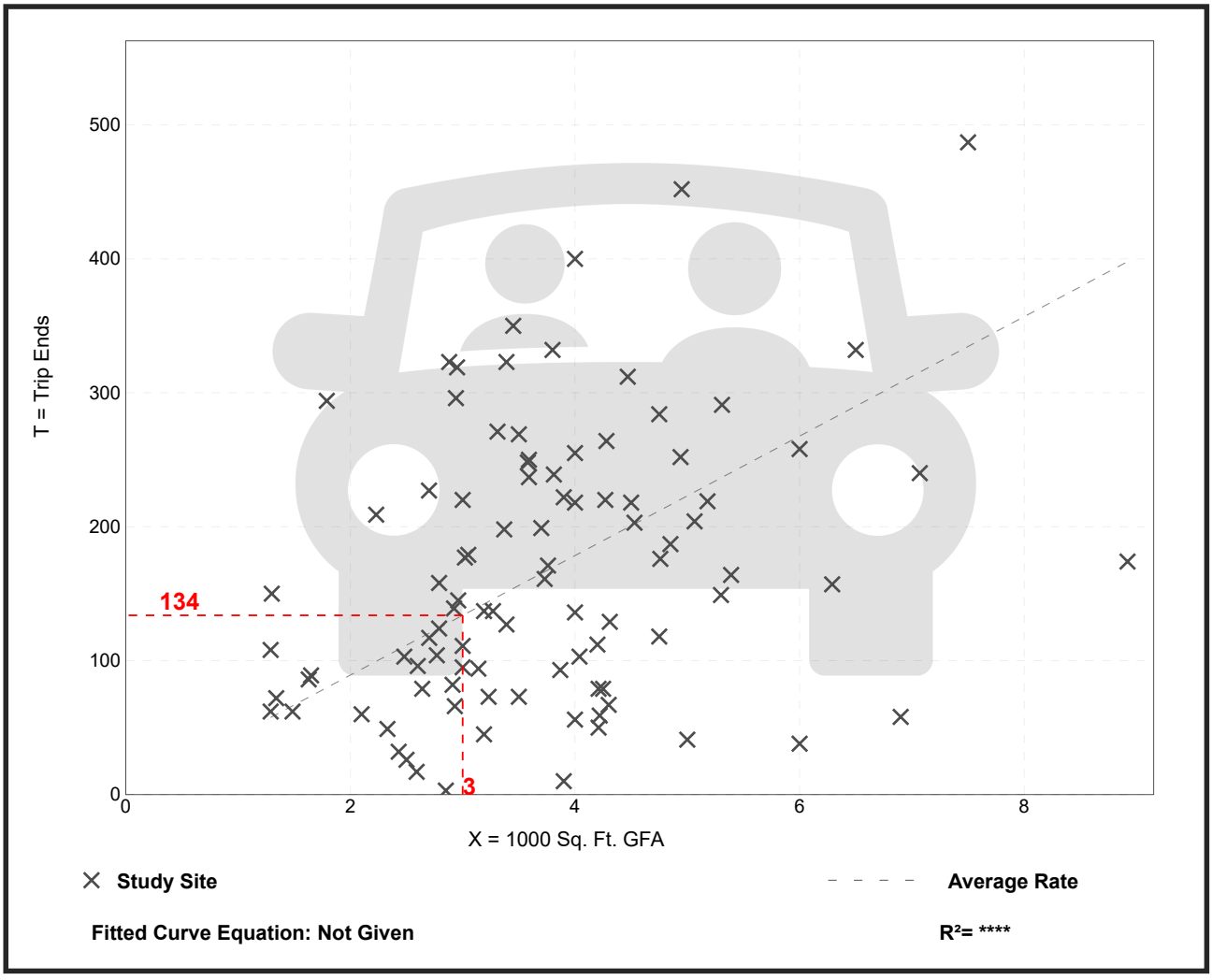
Fast-Food Restaurant with Drive-Through Window
(934)

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
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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



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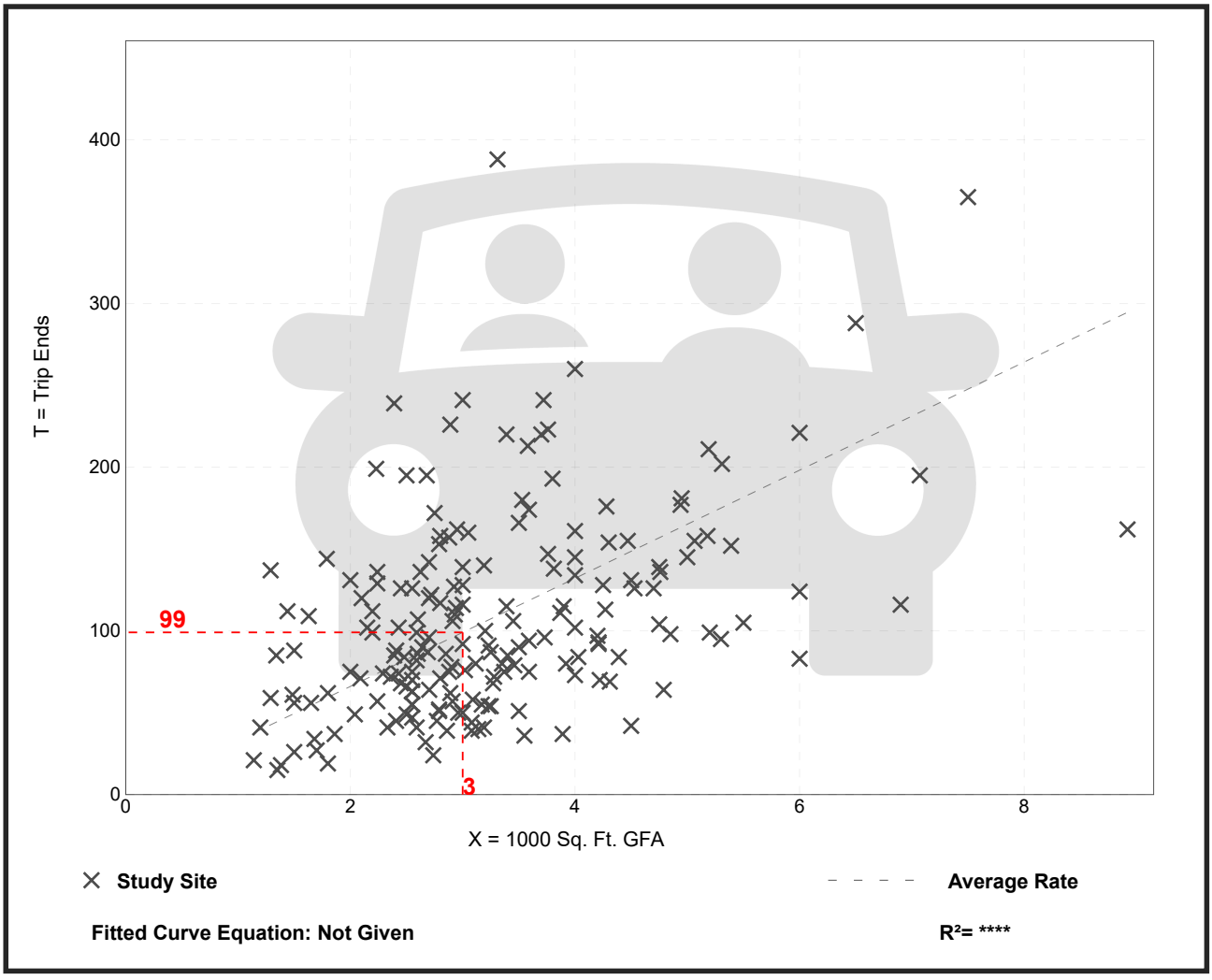
Fast-Food Restaurant with Drive-Through Window
(934)

Vehicle Trip Ends vs:	**1000 Sq. Ft. GFA**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 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



Trip Gen Manual, 11th Edition ● Institute of Transportation Engineers

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

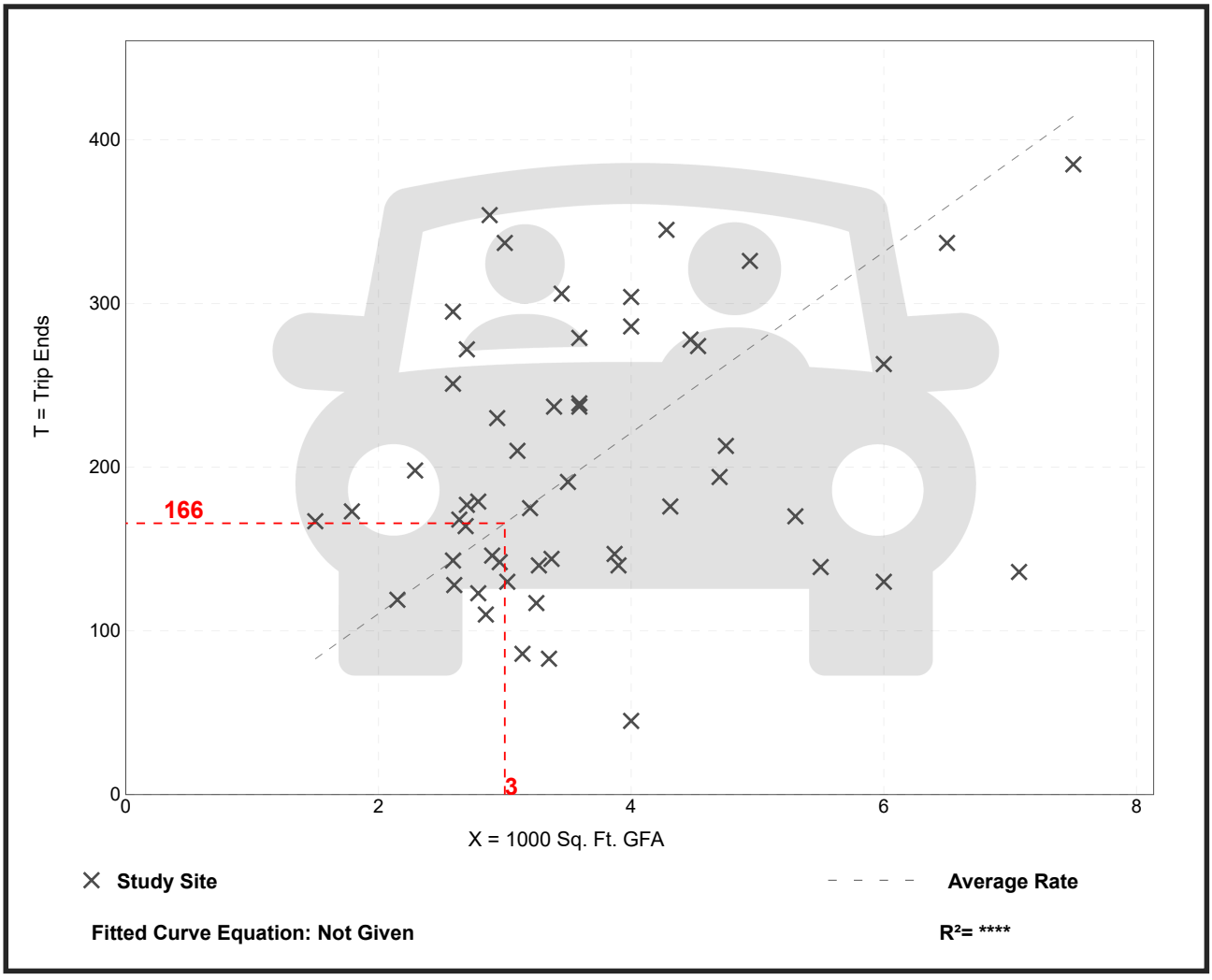
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Saturday, Peak Hour of Generator**

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



Trip Gen Manual, 11th Edition ● Institute of Transportation Engineers

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

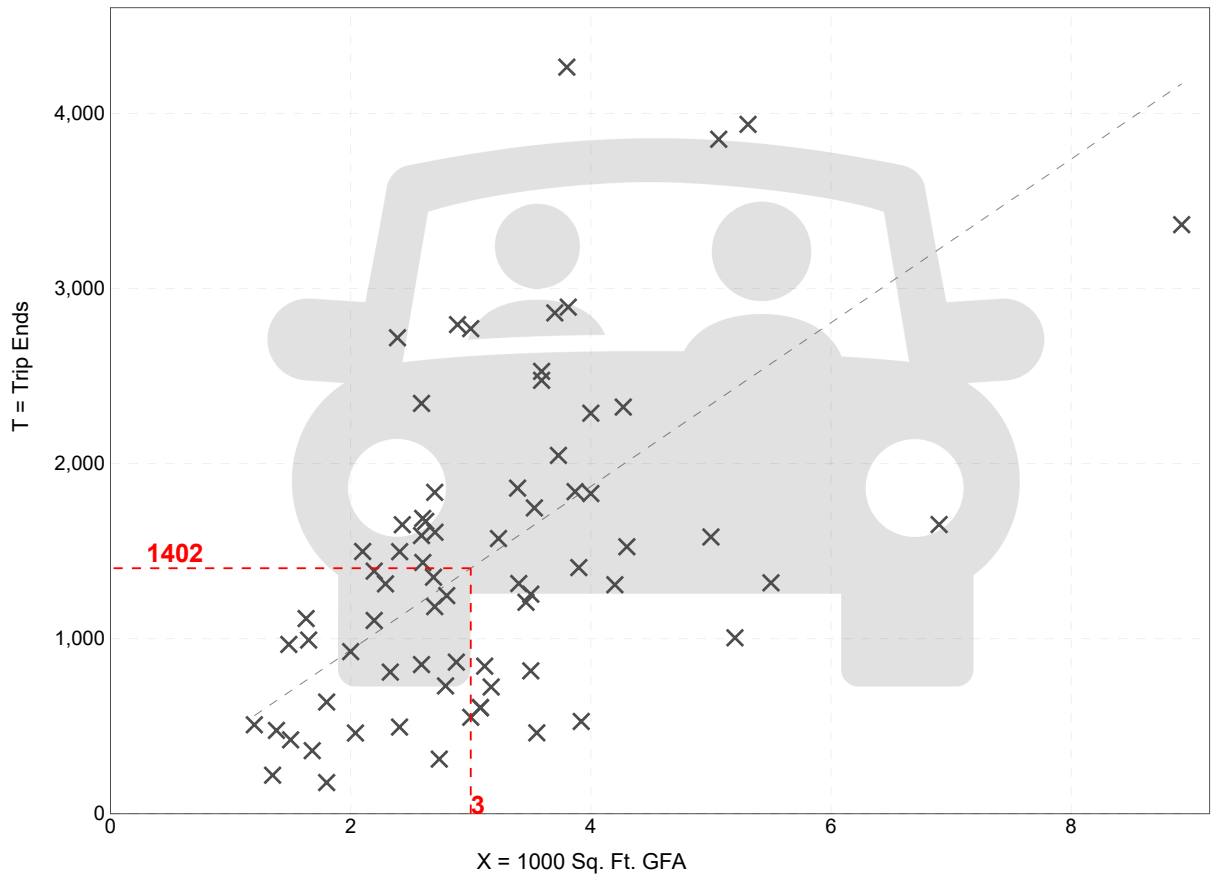
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday**

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
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Data Plot and Equation



Trip Gen Manual, 11th Edition ● Institute of Transportation Engineers

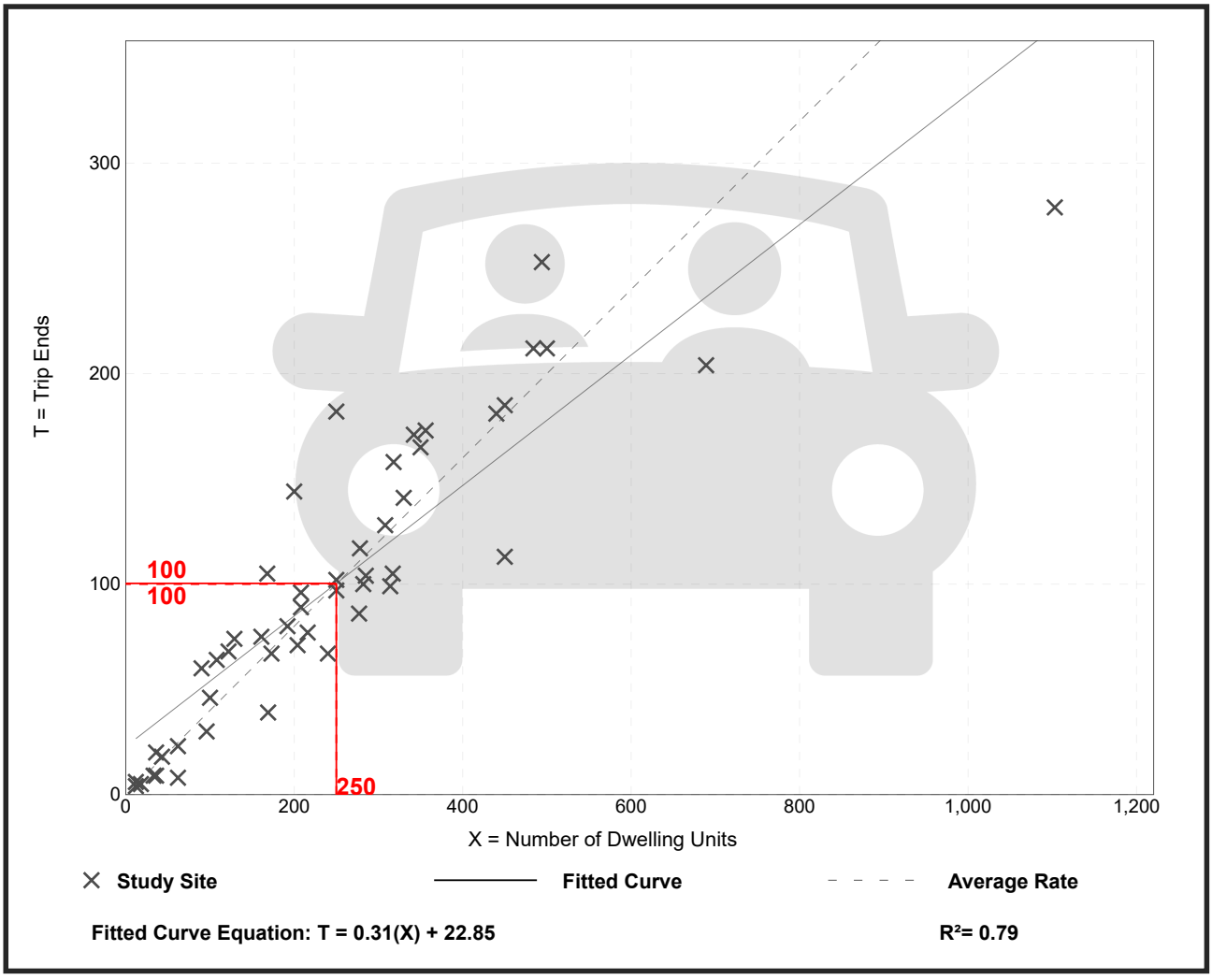
Multifamily Housing (Low-Rise)
Not Close to Rail Transit (220)

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



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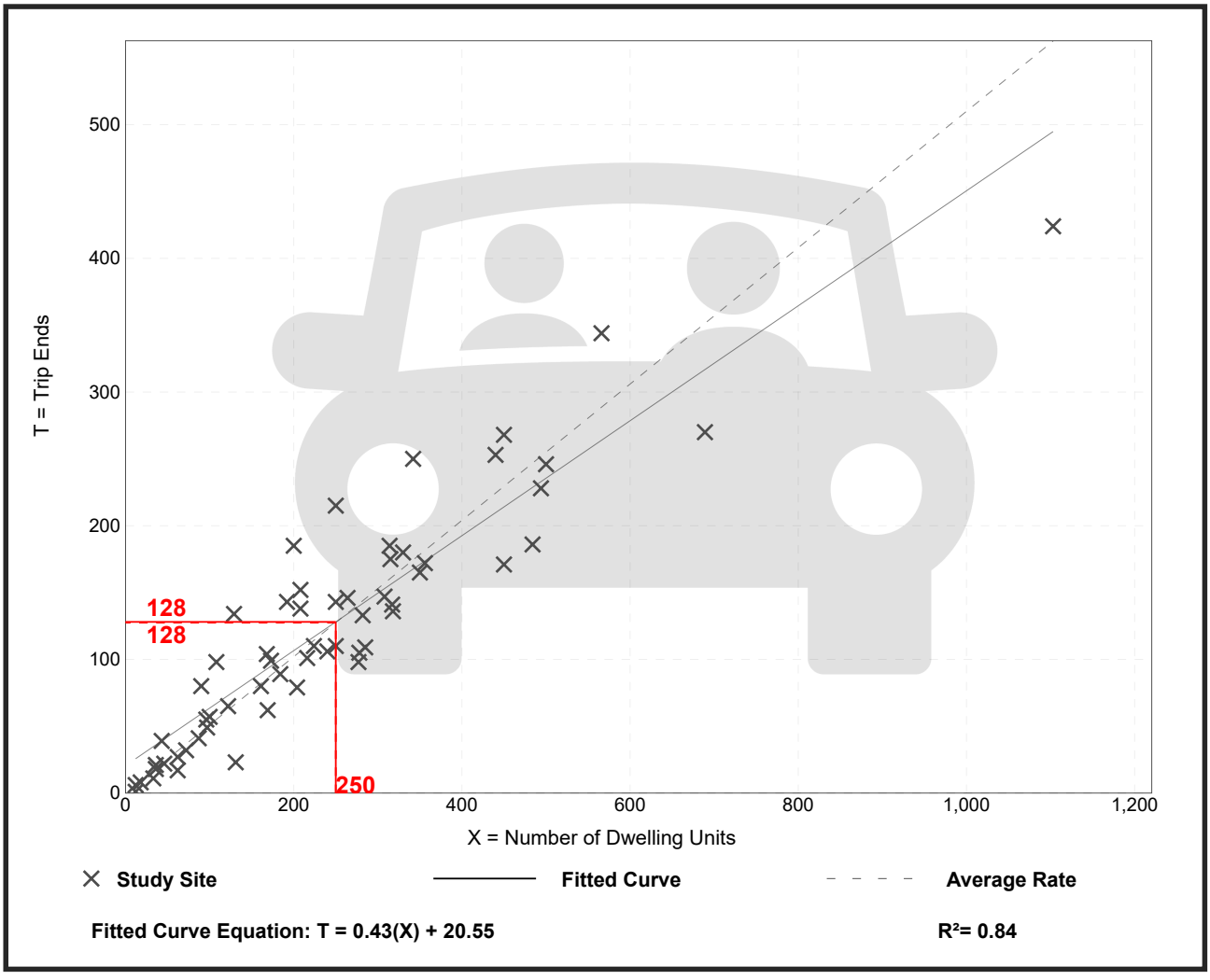
Multifamily Housing (Low-Rise)
Not Close to Rail Transit (220)

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**

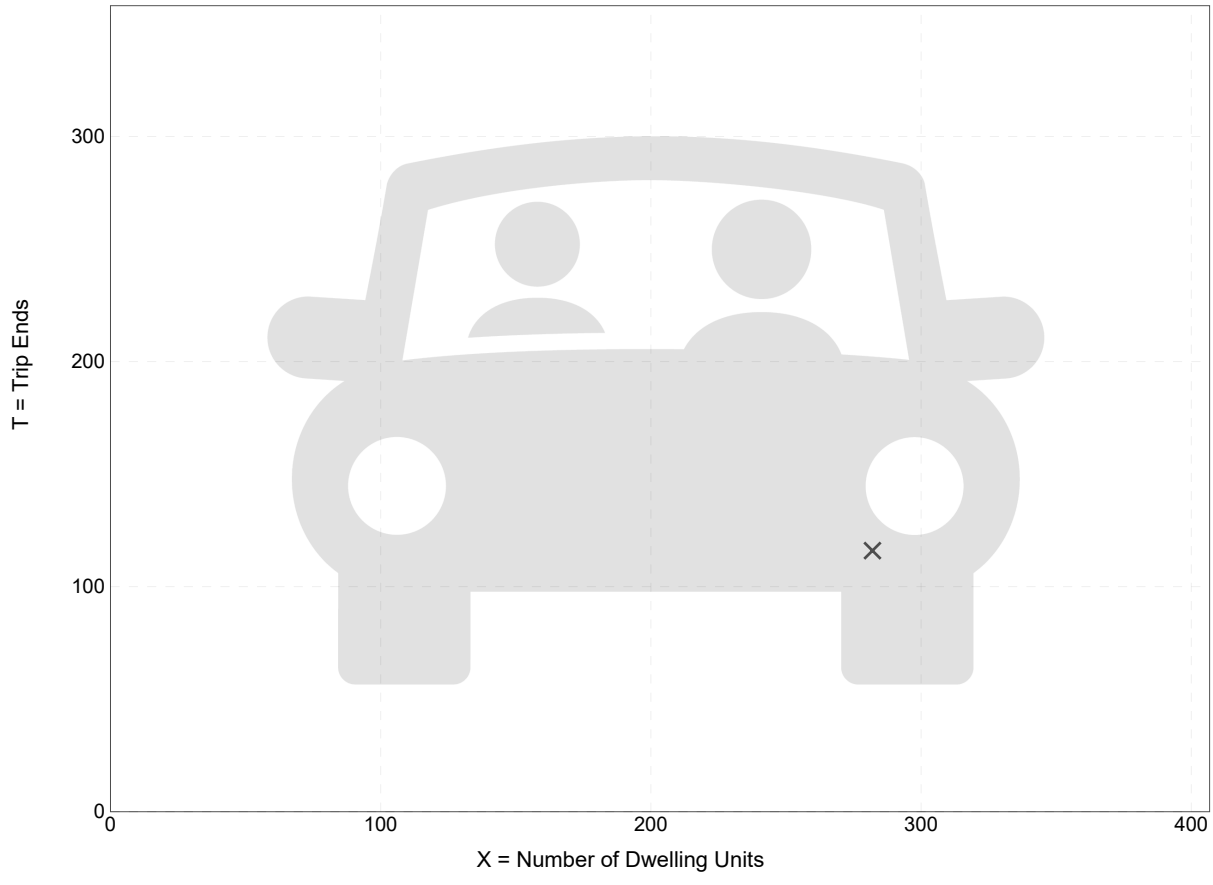
Setting/Location: **General Urban/Suburban**
Number of Studies: 1
Avg. Num. of Dwelling Units: 282
Directional Distribution: Not Available

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)

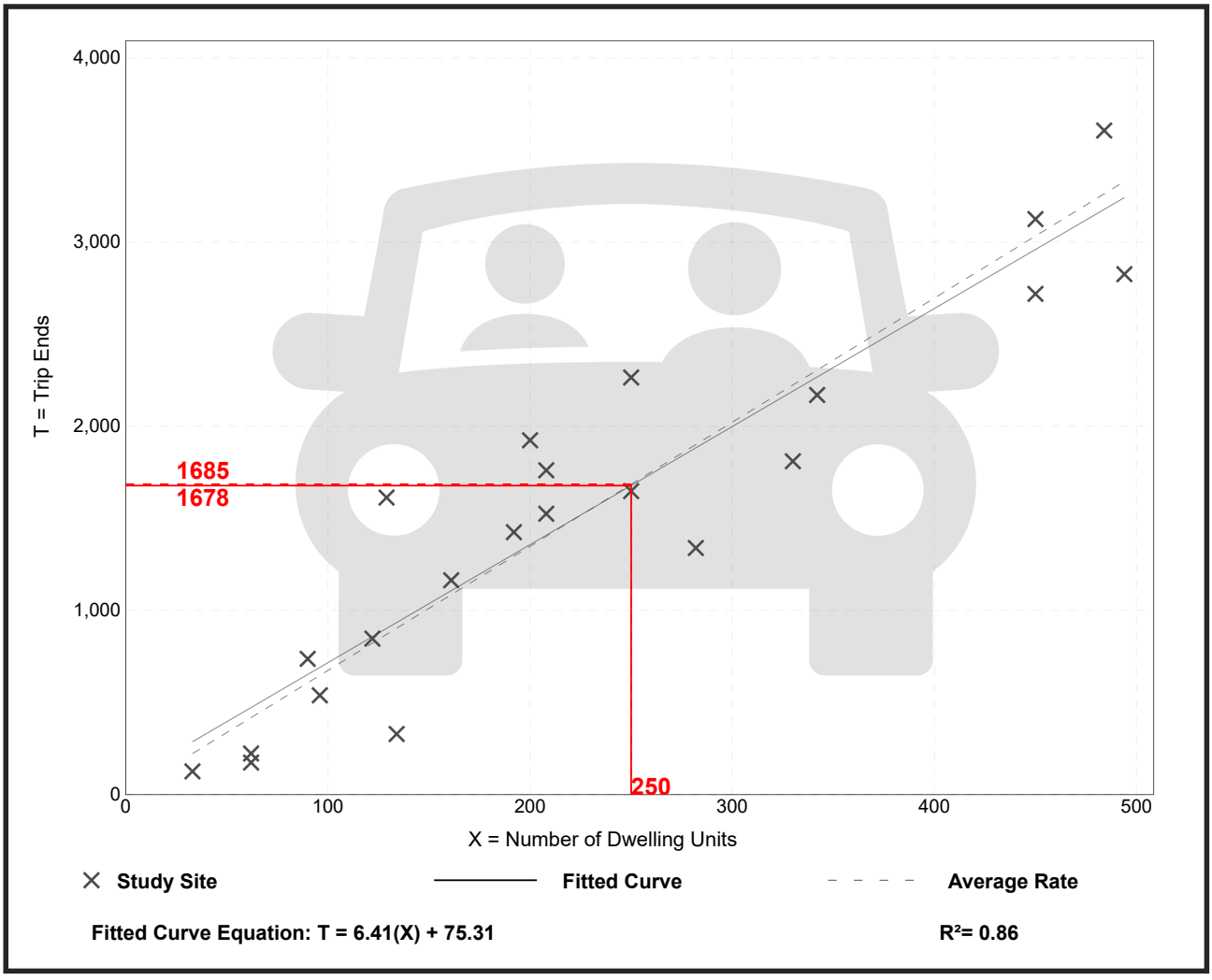
Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday**

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

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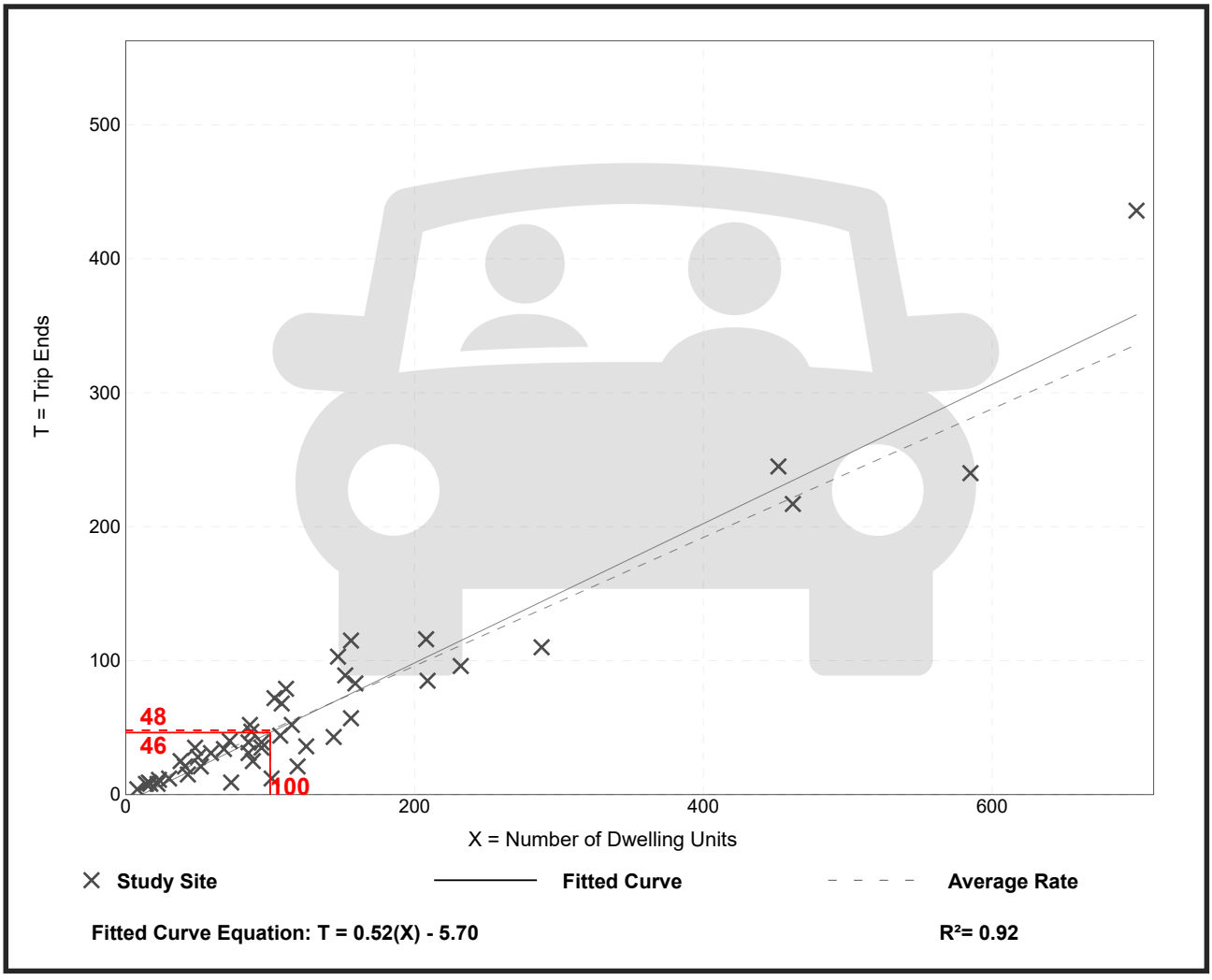
Single-Family Attached Housing
(215)

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



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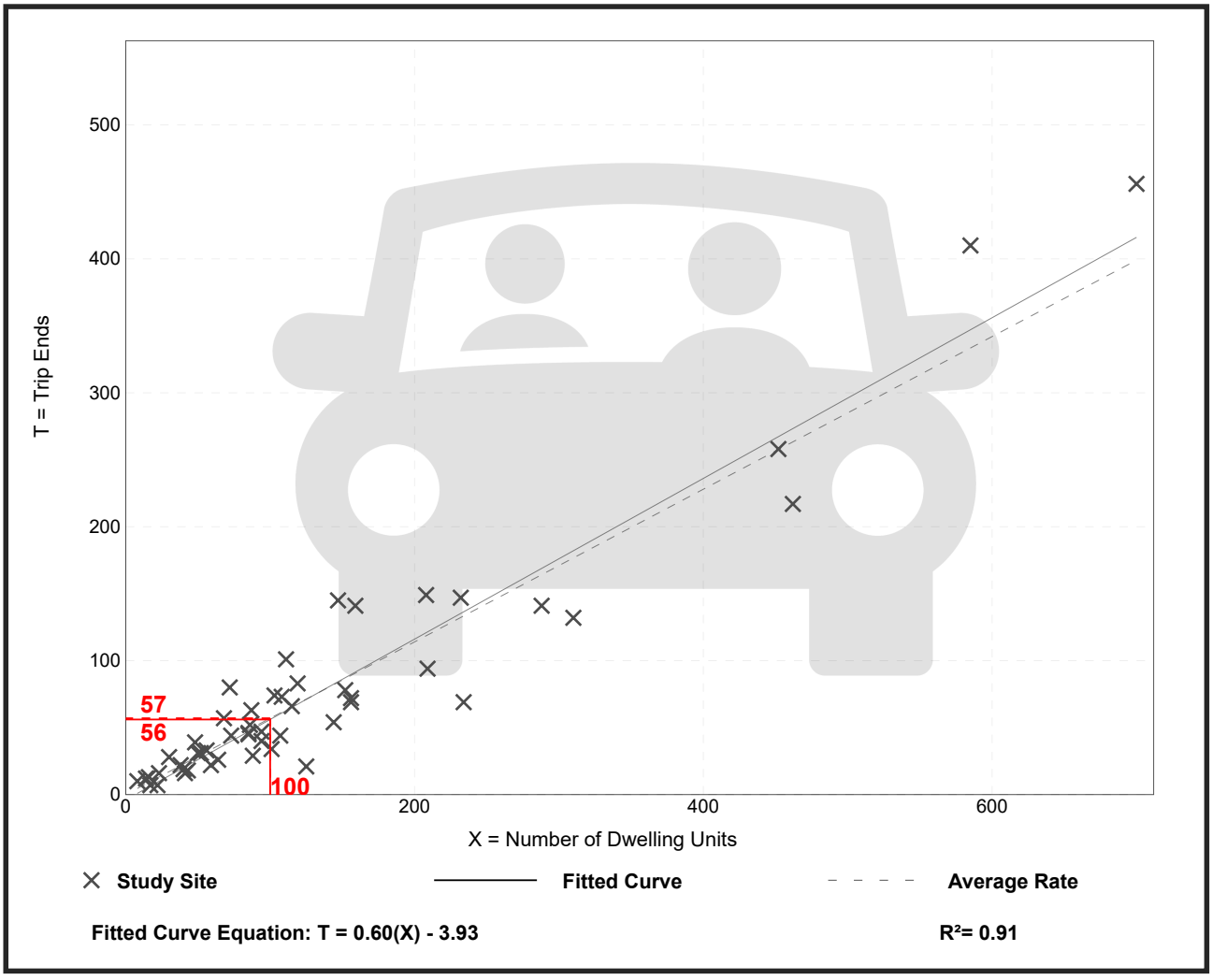
Single-Family Attached Housing
(215)

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



Single-Family Attached Housing
(215)

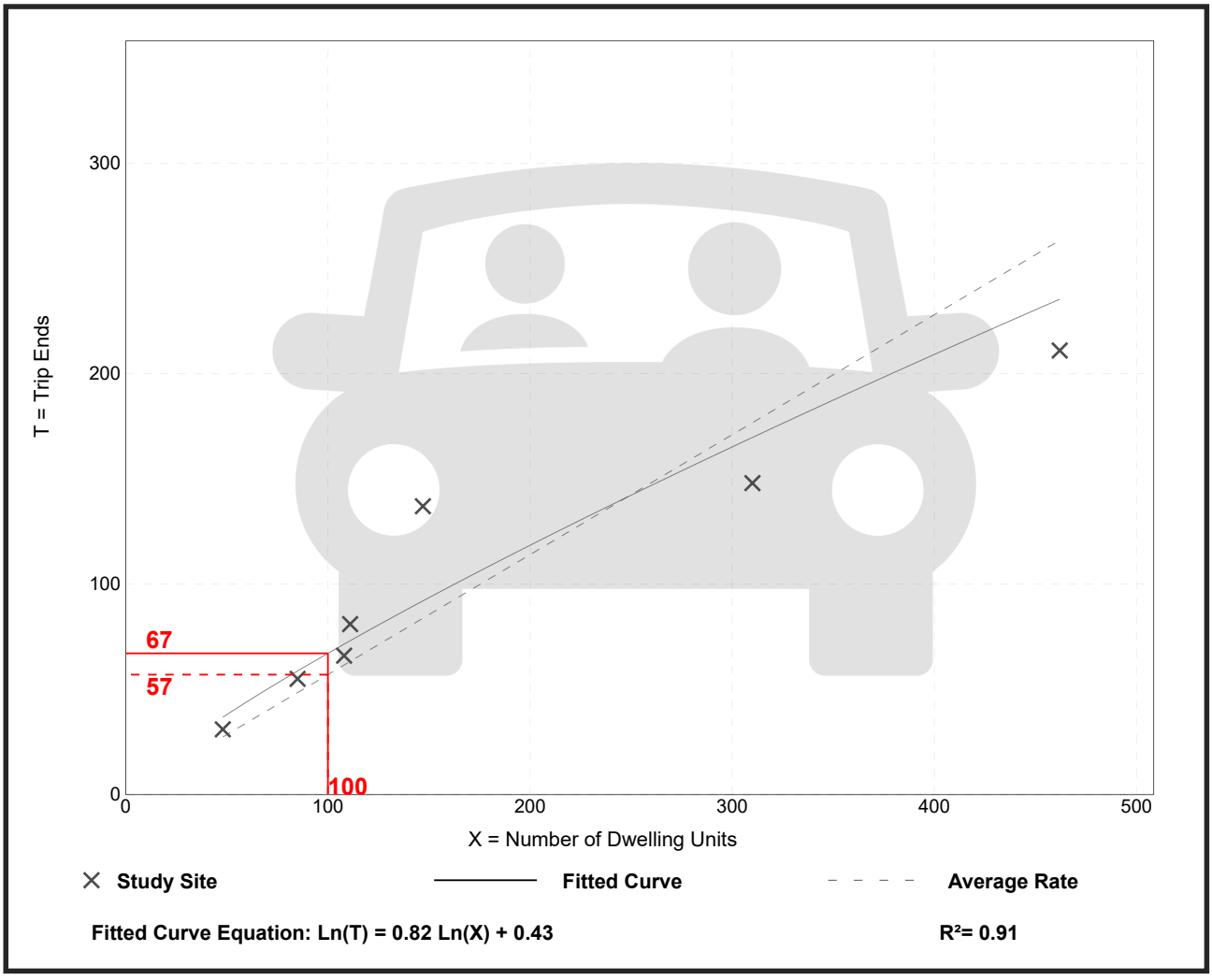
Vehicle Trip Ends vs: **Dwelling Units**
On a: **Saturday, Peak Hour of Generator**

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



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Single-Family Attached Housing
(215)

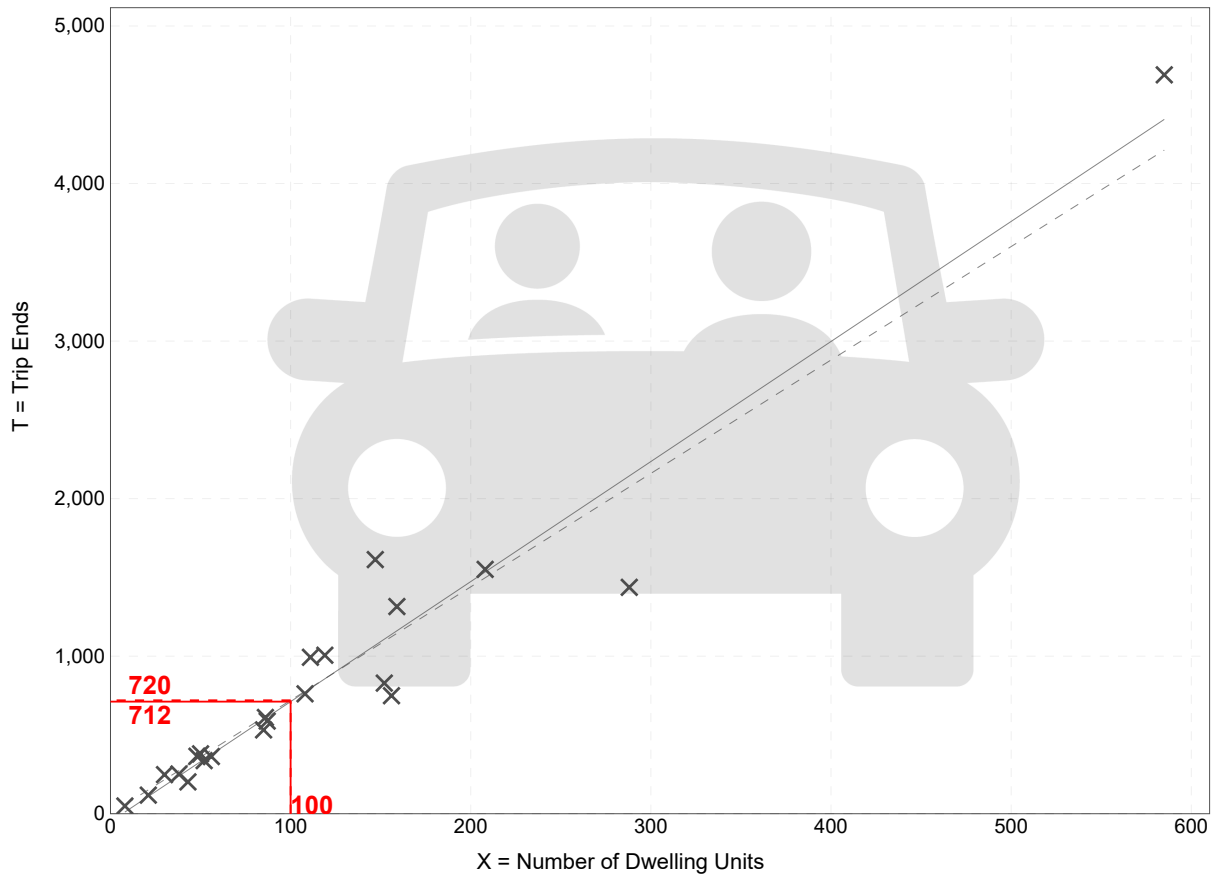
Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday**

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

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Public Park
(411)

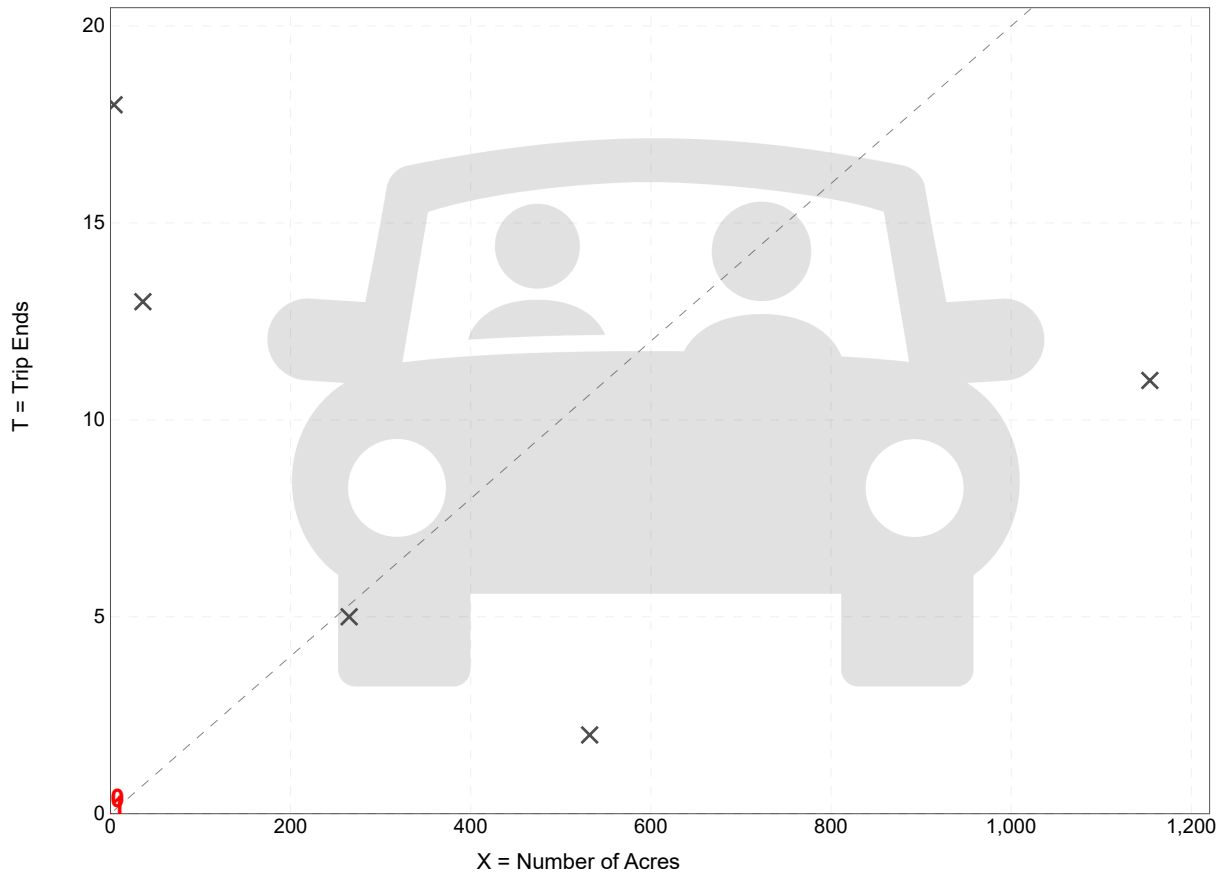
Vehicle Trip Ends vs:	**Acres**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	5
Avg. Num. of Acres:	398
Directional Distribution:	59% entering, 41% exiting

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



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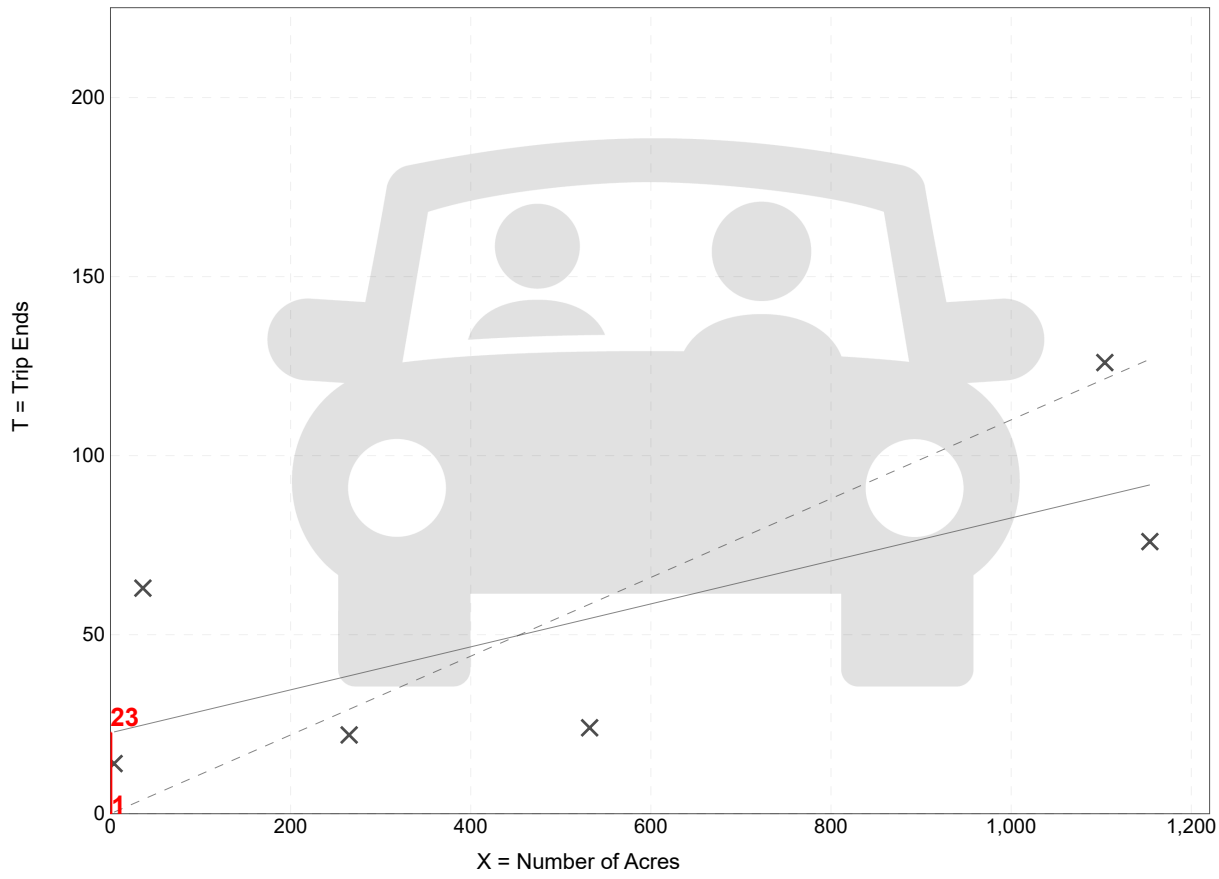
Public Park
(411)

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

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Public Park
(411)

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

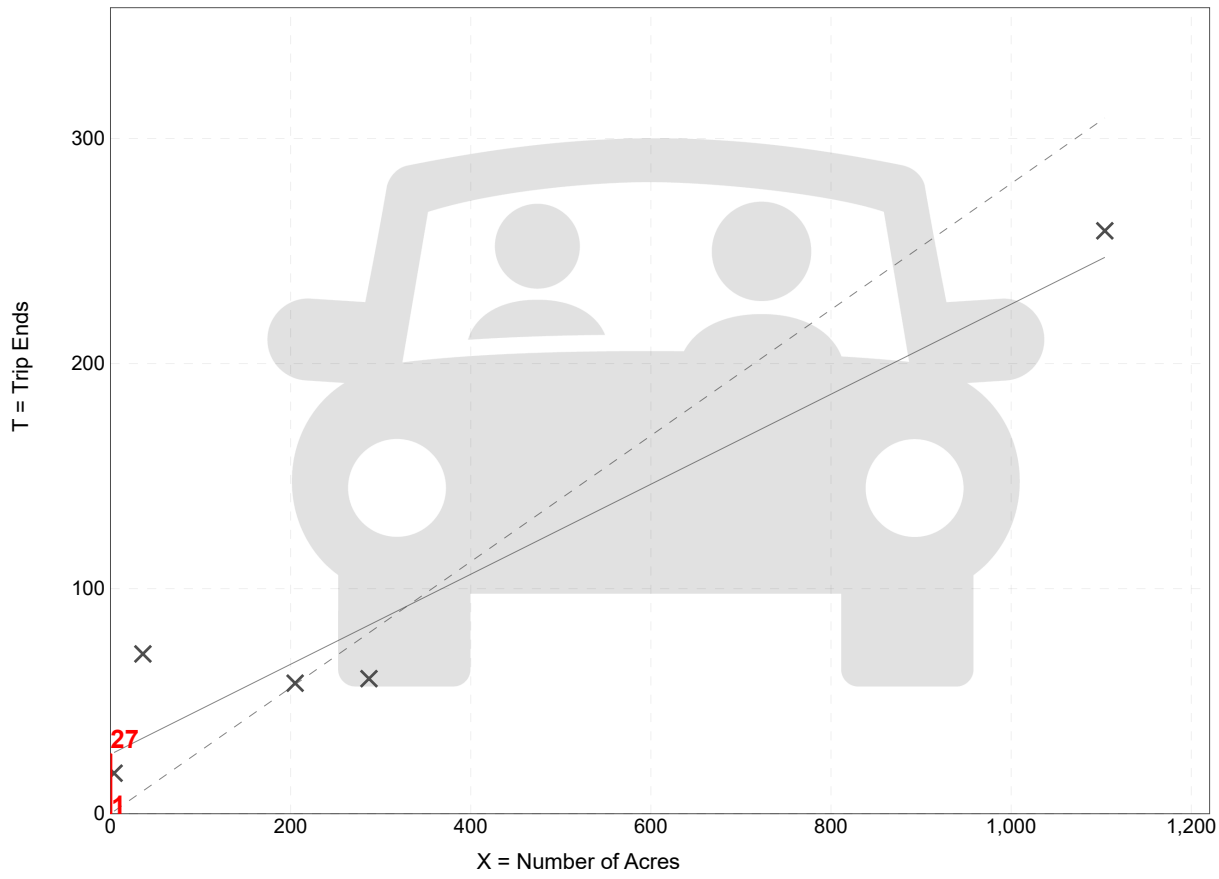
Setting/Location: **General Urban/Suburban**
Number of Studies: 5
Avg. Num. of Acres: 327
Directional Distribution: 55% entering, 45% exiting

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

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Public Park
(411)

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

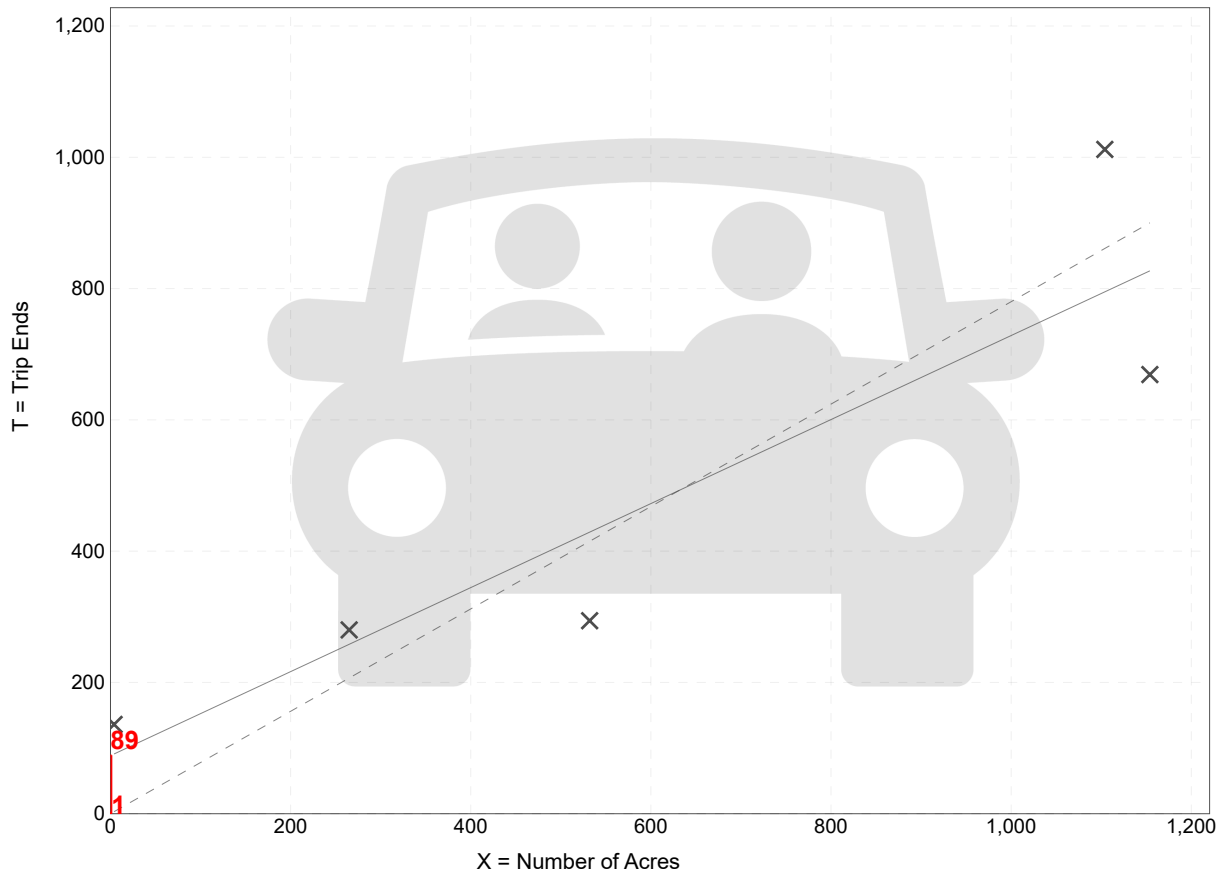
Setting/Location: **General Urban/Suburban**
Number of Studies: 5
Avg. Num. of Acres: 612
Directional Distribution: 50% entering, 50% exiting

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

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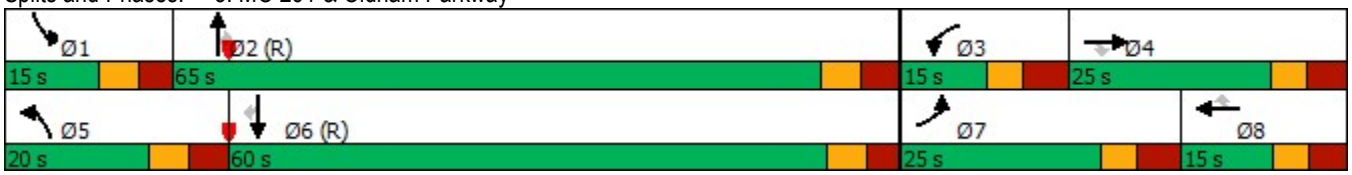
APPENDIX D
CAPACITY AND QUEUING ANALYSES

Intersection 1
M-291 & Oldham Parkway

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø3	Ø8
Lane Configurations									
Traffic Volume (vph)	600	261	314	1550	1034	768			
Future Volume (vph)	600	261	314	1550	1034	768			
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)	30.0	30.2	18.2	75.6	50.8	50.8			
Actuated g/C Ratio	0.25	0.25	0.15	0.63	0.42	0.42			
v/c Ratio	0.76	0.47	0.65	0.53	0.52	0.76			
Control Delay	49.8	7.9	54.9	11.9	26.1	7.7			
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0			
Total Delay	49.8	7.9	54.9	11.9	26.1	7.7			
LOS	D	A	D	B	C	A			
Approach Delay				19.2	18.2				
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: 0.76	
Intersection Signal Delay: 22.2	Intersection LOS: C
Intersection Capacity Utilization 68.6%	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)	652	284	341	1685	1124	835
v/c Ratio	0.76	0.47	0.65	0.53	0.52	0.76
Control Delay	49.8	7.9	54.9	11.9	26.1	7.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.8	7.9	54.9	11.9	26.1	7.7
Queue Length 50th (ft)	240	1	144	214	235	38
Queue Length 95th (ft)	#447	81	194	231	236	147
Internal Link Dist (ft)				1360	440	
Turn Bay Length (ft)	300		250			
Base Capacity (vph)	857	609	521	3205	2327	1134
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	0.47	0.65	0.53	0.48	0.74

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)	600	0	261	0	0	0	314	1550	0	0	1034	768
Future Volume (veh/h)	600	0	261	0	0	0	314	1550	0	0	1034	768
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	652	0	0	0	0	0	341	1685	0	0	1124	0
Adj No. of Lanes	2	1	1	2	1	1	2	3	1	2	3	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	511	279	237	3	2	1	367	3721	1158	3	2873	895
Arrive On Green	0.15	0.00	0.00	0.00	0.00	0.00	0.21	1.00	0.00	0.00	0.56	0.00
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	652	0	0	0	0	0	341	1685	0	0	1124	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	11.7	0.0	0.0	0.0	14.8	0.0
Cycle Q Clear(g_c), s	17.8	0.0	0.0	0.0	0.0	0.0	11.7	0.0	0.0	0.0	14.8	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	511	279	237	3	2	1	367	3721	1158	3	2873	895
V/C Ratio(X)	1.28	0.00	0.00	0.00	0.00	0.00	0.93	0.45	0.00	0.00	0.39	0.00
Avail Cap(c_a), veh/h	511	279	237	221	127	108	367	3721	1158	241	2873	895
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	0.76	0.76	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	46.8	0.0	0.0	0.0	14.6	0.0
Incr Delay (d2), s/veh	139.3	0.0	0.0	0.0	0.0	0.0	24.6	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	18.3	0.0	0.0	0.0	0.0	0.0	6.7	0.1	0.0	0.0	7.0	0.0
LnGrp Delay(d),s/veh	190.4	0.0	0.0	0.0	0.0	0.0	71.3	0.3	0.0	0.0	15.0	0.0
LnGrp LOS	F						E	A			B	
Approach Vol, veh/h		652			0			2026			1124	
Approach Delay, s/veh		190.4			0.0			12.3			15.0	
Approach LOS		F						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	95.0	0.0	25.0	20.0	75.0	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	13.7	16.8	19.8	0.0
Green Ext Time (p_c), s	0.0	18.2	0.0	0.0	0.0	8.9	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	43.6
HCM 2010 LOS	D

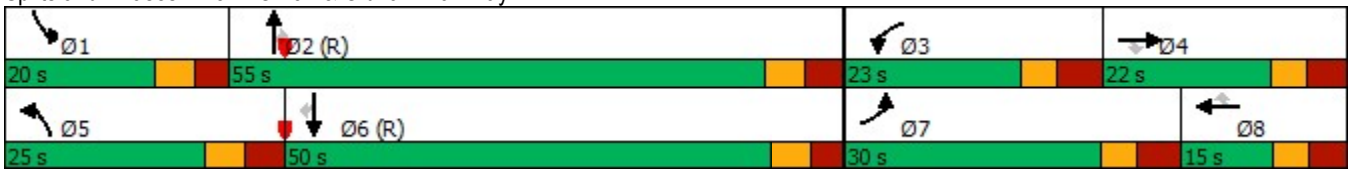
Notes

* 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)	531	251	255	1541	1580	537			
Future Volume (vph)	531	251	255	1541	1580	537			
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)	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)	22.3	22.5	14.9	83.3	61.8	61.8			
Actuated g/C Ratio	0.19	0.19	0.12	0.69	0.52	0.52			
v/c Ratio	0.90	0.42	0.65	0.47	0.66	0.56			
Control Delay	66.6	1.9	46.6	14.3	23.3	6.0			
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0			
Total Delay	66.6	1.9	46.6	14.3	23.3	6.0			
LOS	E	A	D	B	C	A			
Approach Delay				18.9	18.9				
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: 0.90	
Intersection Signal Delay: 23.4	Intersection LOS: C
Intersection Capacity Utilization 70.3%	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)	577	273	277	1675	1717	584
v/c Ratio	0.90	0.42	0.65	0.47	0.66	0.56
Control Delay	66.6	1.9	46.6	14.3	23.3	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.6	1.9	46.6	14.3	23.3	6.0
Queue Length 50th (ft)	226	0	104	263	347	41
Queue Length 95th (ft)	#322	0	m136	403	430	139
Internal Link Dist (ft)				1360	440	
Turn Bay Length (ft)	300		250			
Base Capacity (vph)	652	655	515	3528	2617	1047
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	0.88	0.42	0.54	0.47	0.66	0.56

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)	531	0	251	0	0	0	255	1541	0	0	1580	537
Future Volume (veh/h)	531	0	251	0	0	0	255	1541	0	0	1580	537
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	577	0	0	0	0	0	277	1675	0	0	1717	0
Adj No. of Lanes	2	1	1	2	1	1	2	3	1	2	3	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	632	345	293	3	2	1	337	3542	1103	3	2739	853
Arrive On Green	0.18	0.00	0.00	0.00	0.00	0.00	0.20	1.00	0.00	0.00	0.54	0.00
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	577	0	0	0	0	0	277	1675	0	0	1717	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	19.7	0.0	0.0	0.0	0.0	0.0	9.3	0.0	0.0	0.0	28.2	0.0
Cycle Q Clear(g_c), s	19.7	0.0	0.0	0.0	0.0	0.0	9.3	0.0	0.0	0.0	28.2	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	632	345	293	3	2	1	337	3542	1103	3	2739	853
V/C Ratio(X)	0.91	0.00	0.00	0.00	0.00	0.00	0.82	0.47	0.00	0.00	0.63	0.00
Avail Cap(c_a), veh/h	654	345	293	450	127	108	511	3542	1103	384	2739	853
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	0.73	0.73	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	48.1	0.0	0.0	0.0	0.0	0.0	47.2	0.0	0.0	0.0	19.3	0.0
Incr Delay (d2), s/veh	17.1	0.0	0.0	0.0	0.0	0.0	4.8	0.3	0.0	0.0	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	10.9	0.0	0.0	0.0	0.0	0.0	4.6	0.1	0.0	0.0	13.5	0.0
LnGrp Delay(d),s/veh	65.1	0.0	0.0	0.0	0.0	0.0	52.1	0.3	0.0	0.0	20.4	0.0
LnGrp LOS	E						D	A			C	
Approach Vol, veh/h		577			0			1952			1717	
Approach Delay, s/veh		65.1			0.0			7.7			20.4	
Approach LOS		E						A			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	0.0	90.8	0.0	29.2	18.9	71.8	29.2	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	11.3	30.2	21.7	0.0
Green Ext Time (p_c), s	0.0	17.0	0.0	0.0	0.5	8.8	0.3	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	20.6
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)	600	287	292	1186	1008	589			
Future Volume (vph)	600	287	292	1186	1008	589			
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)	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)	26.5	26.7	16.2	79.1	56.2	56.2			
Actuated g/C Ratio	0.22	0.22	0.14	0.66	0.47	0.47			
v/c Ratio	0.86	0.39	0.68	0.38	0.46	0.59			
Control Delay	57.4	1.4	57.0	9.8	22.9	4.1			
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0			
Total Delay	57.4	1.4	57.0	9.8	22.9	4.1			
LOS	E	A	E	A	C	A			
Approach Delay				19.1	15.9				
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: 0.86	
Intersection Signal Delay: 22.4	Intersection LOS: C
Intersection Capacity Utilization 62.3%	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)	652	312	317	1289	1096	640
v/c Ratio	0.86	0.39	0.68	0.38	0.46	0.59
Control Delay	57.4	1.4	57.0	9.8	22.9	4.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.4	1.4	57.0	9.8	22.9	4.1
Queue Length 50th (ft)	241	0	122	169	219	0
Queue Length 95th (ft)	#364	0	164	171	255	65
Internal Link Dist (ft)				1360	440	
Turn Bay Length (ft)	300		250			
Base Capacity (vph)	767	808	507	3350	2383	1081
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	0.85	0.39	0.63	0.38	0.46	0.59

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)	600	0	287	0	0	0	292	1186	0	0	1008	589
Future Volume (veh/h)	600	0	287	0	0	0	292	1186	0	0	1008	589
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	652	0	0	0	0	0	317	1289	0	0	1096	0
Adj No. of Lanes	2	1	1	2	1	1	2	3	1	2	3	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	702	383	326	3	2	1	380	3438	1070	3	2572	801
Arrive On Green	0.20	0.00	0.00	0.00	0.00	0.00	0.11	0.68	0.00	0.00	0.51	0.00
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	652	0	0	0	0	0	317	1289	0	0	1096	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	22.3	0.0	0.0	0.0	0.0	0.0	10.8	13.2	0.0	0.0	16.3	0.0
Cycle Q Clear(g_c), s	22.3	0.0	0.0	0.0	0.0	0.0	10.8	13.2	0.0	0.0	16.3	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	702	383	326	3	2	1	380	3438	1070	3	2572	801
V/C Ratio(X)	0.93	0.00	0.00	0.00	0.00	0.00	0.83	0.37	0.00	0.00	0.43	0.00
Avail Cap(c_a), veh/h	711	383	326	708	127	108	482	3438	1070	642	2572	801
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	0.81	0.81	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	46.9	0.0	0.0	0.0	0.0	0.0	52.3	8.4	0.0	0.0	18.7	0.0
Incr Delay (d2), s/veh	18.4	0.0	0.0	0.0	0.0	0.0	8.1	0.3	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	12.4	0.0	0.0	0.0	0.0	0.0	5.6	6.2	0.0	0.0	7.7	0.0
LnGrp Delay(d),s/veh	65.3	0.0	0.0	0.0	0.0	0.0	60.5	8.7	0.0	0.0	19.2	0.0
LnGrp LOS	E						E	A			B	
Approach Vol, veh/h		652			0			1606			1096	
Approach Delay, s/veh		65.3			0.0			18.9			19.2	
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	88.3	0.0	31.7	20.4	67.9	31.7	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	15.2	0.0	0.0	12.8	18.3	24.3	0.0
Green Ext Time (p_c), s	0.0	8.9	0.0	0.0	0.4	7.7	0.2	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	28.0
HCM 2010 LOS	C

Notes

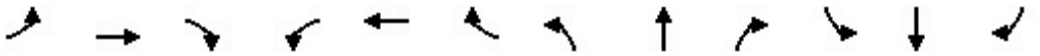
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	600	10	261	43	10	100	314	1550	54	125	1034	768
Future Volume (vph)	600	10	261	43	10	100	314	1550	54	125	1034	768
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)	23.8	26.1	26.1	7.1	7.1	7.1	16.9	51.2	51.2	10.1	44.4	44.4
Actuated g/C Ratio	0.20	0.22	0.22	0.06	0.06	0.06	0.14	0.43	0.43	0.08	0.37	0.37
v/c Ratio	0.96	0.03	0.50	0.23	0.10	0.43	0.71	0.78	0.08	0.47	0.60	0.83
Control Delay	73.7	40.1	8.2	56.2	55.4	6.4	47.3	44.5	1.4	57.4	32.7	15.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	73.7	40.1	8.2	56.2	55.4	6.4	47.3	44.5	1.4	57.4	32.7	15.5
LOS	E	D	A	E	E	A	D	D	A	E	C	B
Approach Delay		53.6			23.6			43.7			27.4	
Approach LOS		D			C			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: 0.96	
Intersection Signal Delay: 38.4	Intersection LOS: D
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)	652	11	284	47	11	109	341	1685	59	136	1124	835
v/c Ratio	0.96	0.03	0.50	0.23	0.10	0.43	0.71	0.78	0.08	0.47	0.60	0.83
Control Delay	73.7	40.1	8.2	56.2	55.4	6.4	47.3	44.5	1.4	57.4	32.7	15.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	73.7	40.1	8.2	56.2	55.4	6.4	47.3	44.5	1.4	57.4	32.7	15.5
Queue Length 50th (ft)	259	7	0	18	8	0	142	381	0	52	255	114
Queue Length 95th (ft)	#376	24	76	38	28	10	m166	m434	m0	84	321	#383
Internal Link Dist (ft)		354			249			1360			440	
Turn Bay Length (ft)	300			250			250			430		
Base Capacity (vph)	680	405	566	678	127	266	569	2168	771	583	1881	1005
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	0.96	0.03	0.50	0.07	0.09	0.41	0.60	0.78	0.08	0.23	0.60	0.83

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)	600	10	261	43	10	100	314	1550	54	125	1034	768
Future Volume (veh/h)	600	10	261	43	10	100	314	1550	54	125	1034	768
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	652	11	0	47	11	0	341	1685	0	136	1124	0
Adj No. of Lanes	2	1	1	2	1	1	2	3	1	2	3	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	683	404	344	113	98	83	411	2332	726	197	1991	620
Arrive On Green	0.20	0.22	0.00	0.03	0.05	0.00	0.08	0.31	0.00	0.06	0.39	0.00
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	652	11	0	47	11	0	341	1685	0	136	1124	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	22.5	0.6	0.0	1.6	0.7	0.0	11.7	35.4	0.0	4.7	20.7	0.0
Cycle Q Clear(g_c), s	22.5	0.6	0.0	1.6	0.7	0.0	11.7	35.4	0.0	4.7	20.7	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	683	404	344	113	98	83	411	2332	726	197	1991	620
V/C Ratio(X)	0.96	0.03	0.00	0.41	0.11	0.00	0.83	0.72	0.00	0.69	0.56	0.00
Avail Cap(c_a), veh/h	683	404	344	680	127	108	568	2332	726	585	1991	620
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	0.45	0.45	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	47.6	37.0	0.0	56.9	54.2	0.0	54.0	34.8	0.0	55.5	28.5	0.0
Incr Delay (d2), s/veh	23.9	0.0	0.0	2.4	0.5	0.0	3.4	0.9	0.0	4.2	1.2	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	13.0	0.3	0.0	0.8	0.4	0.0	5.8	16.8	0.0	2.3	9.9	0.0
LnGrp Delay(d),s/veh	71.5	37.0	0.0	59.3	54.7	0.0	57.4	35.7	0.0	59.7	29.7	0.0
LnGrp LOS	E	D		E	D		E	D		E	C	
Approach Vol, veh/h		663			58			2026			1260	
Approach Delay, s/veh		70.9			58.4			39.3			32.9	
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	13.5	62.2	11.3	33.0	21.5	54.2	31.0	13.3
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	6.7	37.4	3.6	2.6	13.7	22.7	24.5	2.7
Green Ext Time (p_c), s	0.3	2.0	0.1	0.0	0.6	6.9	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	42.8
HCM 2010 LOS	D

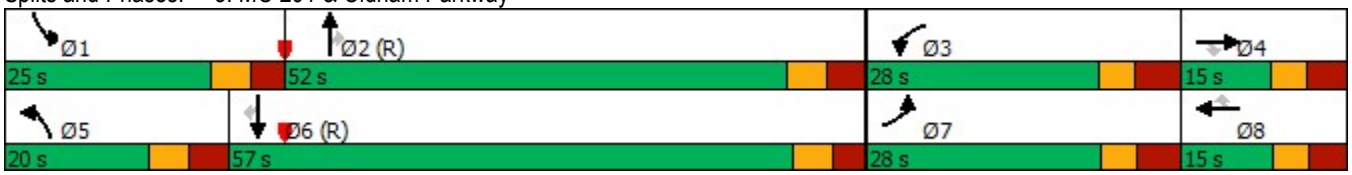
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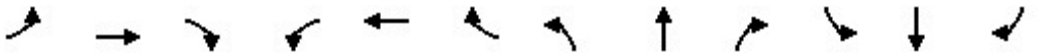
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	531	10	251	277	10	444	255	1495	158	368	1473	537
Future Volume (vph)	531	10	251	277	10	444	255	1495	158	368	1473	537
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)	21.2	13.8	13.8	15.8	8.7	8.7	12.5	44.9	44.9	17.4	49.8	49.8
Actuated g/C Ratio	0.18	0.12	0.12	0.13	0.07	0.07	0.10	0.37	0.37	0.14	0.42	0.42
v/c Ratio	0.95	0.05	0.74	0.67	0.08	1.70	0.78	0.85	0.25	0.80	0.76	0.59
Control Delay	75.9	51.3	27.5	56.9	53.9	351.9	53.1	48.0	14.1	62.8	32.7	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	75.9	51.3	27.5	56.9	53.9	351.9	53.1	48.0	14.1	62.8	32.7	4.9
LOS	E	D	C	E	D	F	D	D	B	E	C	A
Approach Delay		60.2			236.1			45.9			31.1	
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: 1.70	
Intersection Signal Delay: 65.7	Intersection LOS: E
Intersection Capacity Utilization 89.0%	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)	577	11	273	301	11	483	277	1625	172	400	1601	584
v/c Ratio	0.95	0.05	0.74	0.67	0.08	1.70	0.78	0.85	0.25	0.80	0.76	0.59
Control Delay	75.9	51.3	27.5	56.9	53.9	351.9	53.1	48.0	14.1	62.8	32.7	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	75.9	51.3	27.5	56.9	53.9	351.9	53.1	48.0	14.1	62.8	32.7	4.9
Queue Length 50th (ft)	231	8	46	115	8	~418	113	349	23	154	378	8
Queue Length 95th (ft)	#345	28	#202	157	28	#631	m148	411	m58	210	438	83
Internal Link Dist (ft)		354			249			1360			440	
Turn Bay Length (ft)	300			250			250			430		
Base Capacity (vph)	606	214	368	592	135	284	366	1908	699	526	2135	993
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	0.05	0.74	0.51	0.08	1.70	0.76	0.85	0.25	0.76	0.75	0.59

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)	531	10	251	277	10	444	255	1495	158	368	1473	537
Future Volume (veh/h)	531	10	251	277	10	444	255	1495	158	368	1473	537
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	577	11	0	301	11	0	277	1625	0	400	1601	0
Adj No. of Lanes	2	1	1	2	1	1	2	3	1	2	3	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	597	229	195	371	109	92	336	2039	635	461	2199	685
Arrive On Green	0.17	0.12	0.00	0.11	0.06	0.00	0.03	0.13	0.00	0.13	0.43	0.00
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	577	11	0	301	11	0	277	1625	0	400	1601	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	20.0	0.6	0.0	10.3	0.7	0.0	9.6	37.2	0.0	13.7	31.3	0.0
Cycle Q Clear(g_c), s	20.0	0.6	0.0	10.3	0.7	0.0	9.6	37.2	0.0	13.7	31.3	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	597	229	195	371	109	92	336	2039	635	461	2199	685
V/C Ratio(X)	0.97	0.05	0.00	0.81	0.10	0.00	0.82	0.80	0.00	0.87	0.73	0.00
Avail Cap(c_a), veh/h	597	229	195	594	127	108	367	2039	635	528	2199	685
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	0.54	0.54	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	49.3	46.4	0.0	52.3	53.5	0.0	57.0	47.3	0.0	50.9	28.2	0.0
Incr Delay (d2), s/veh	28.7	0.1	0.0	4.5	0.4	0.0	7.6	1.8	0.0	13.0	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	11.8	0.3	0.0	5.1	0.4	0.0	4.9	17.8	0.0	7.3	15.1	0.0
LnGrp Delay(d),s/veh	77.9	46.5	0.0	56.8	53.9	0.0	64.6	49.1	0.0	63.9	30.4	0.0
LnGrp LOS	E	D		E	D		E	D		E	C	
Approach Vol, veh/h		588			312			1902			2001	
Approach Delay, s/veh		77.4			56.7			51.4			37.1	
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	22.7	55.3	20.2	21.8	18.9	59.1	28.0	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	18.4	44.8	* 21	8.0	12.8	* 50	* 21	* 8.2
Max Q Clear Time (g_c+I1), s	15.7	39.2	12.3	2.6	11.6	33.3	22.0	2.7
Green Ext Time (p_c), s	0.4	4.2	0.7	0.0	0.1	9.9	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	49.0
HCM 2010 LOS	D

Notes

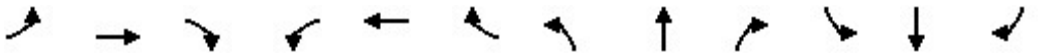
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	600	10	287	342	10	586	292	1138	227	531	897	589
Future Volume (vph)	600	10	287	342	10	586	292	1138	227	531	897	589
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)	24.6	15.7	15.7	18.2	9.6	9.6	15.3	35.9	35.9	22.1	42.7	42.7
Actuated g/C Ratio	0.20	0.13	0.13	0.15	0.08	0.08	0.13	0.30	0.30	0.18	0.36	0.36
v/c Ratio	0.93	0.05	0.70	0.72	0.07	1.83	0.73	0.81	0.38	0.92	0.54	0.66
Control Delay	67.4	50.0	18.4	56.2	53.7	404.7	60.4	43.9	5.6	68.5	32.1	5.8
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	67.4	50.0	18.4	56.2	53.7	404.7	60.4	43.9	5.6	68.5	32.1	5.8
LOS	E	D	B	E	D	F	E	D	A	E	C	A
Approach Delay		51.5			273.8			41.5			34.0	
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: 140	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.83	
Intersection Signal Delay: 80.0	Intersection LOS: E
Intersection Capacity Utilization 92.9%	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)	652	11	312	372	11	637	317	1237	247	577	975	640
v/c Ratio	0.93	0.05	0.70	0.72	0.07	1.83	0.73	0.81	0.38	0.92	0.54	0.66
Control Delay	67.4	50.0	18.4	56.2	53.7	404.7	60.4	43.9	5.6	68.5	32.1	5.8
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	67.4	50.0	18.4	56.2	53.7	404.7	60.4	43.9	5.6	68.5	32.1	5.8
Queue Length 50th (ft)	257	8	25	143	8	~580	122	321	0	227	218	0
Queue Length 95th (ft)	#364	27	#163	187	28	#811	170	379	59	#326	264	87
Internal Link Dist (ft)		354			249			1360			440	
Turn Bay Length (ft)	300			250			250			430		
Base Capacity (vph)	712	243	447	706	149	348	480	1559	656	640	1815	977
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	0.92	0.05	0.70	0.53	0.07	1.83	0.66	0.79	0.38	0.90	0.54	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.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	600	10	287	342	10	586	292	1138	227	531	897	589
Future Volume (veh/h)	600	10	287	342	10	586	292	1138	227	531	897	589
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	652	11	0	372	11	0	317	1237	0	577	975	0
Adj No. of Lanes	2	1	1	2	1	1	2	3	1	2	3	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	702	245	208	448	109	92	380	1635	509	629	1978	616
Arrive On Green	0.20	0.13	0.00	0.13	0.06	0.00	0.11	0.32	0.00	0.18	0.39	0.00
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	652	11	0	372	11	0	317	1237	0	577	975	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	22.3	0.6	0.0	12.6	0.7	0.0	10.8	26.2	0.0	19.8	17.4	0.0
Cycle Q Clear(g_c), s	22.3	0.6	0.0	12.6	0.7	0.0	10.8	26.2	0.0	19.8	17.4	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	702	245	208	448	109	92	380	1635	509	629	1978	616
V/C Ratio(X)	0.93	0.04	0.00	0.83	0.10	0.00	0.83	0.76	0.00	0.92	0.49	0.00
Avail Cap(c_a), veh/h	711	245	208	708	127	108	482	1635	509	642	1978	616
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	0.70	0.70	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	46.9	45.5	0.0	50.9	53.5	0.0	52.3	36.5	0.0	48.1	27.7	0.0
Incr Delay (d2), s/veh	18.4	0.1	0.0	4.7	0.4	0.0	7.1	2.3	0.0	18.0	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	12.4	0.3	0.0	6.3	0.4	0.0	5.5	12.6	0.0	10.9	8.3	0.0
LnGrp Delay(d),s/veh	65.3	45.6	0.0	55.6	53.9	0.0	59.4	38.8	0.0	66.2	28.6	0.0
LnGrp LOS	E	D		E	D		E	D		E	C	
Approach Vol, veh/h		663			383			1554			1552	
Approach Delay, s/veh		65.0			55.6			43.0			42.6	
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	28.5	45.8	22.9	22.8	20.4	53.9	31.7	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	21.8	28.2	14.6	2.6	12.8	19.4	24.3	2.7
Green Ext Time (p_c), s	0.2	4.9	1.0	0.0	0.4	6.6	0.2	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	47.5
HCM 2010 LOS	D

Notes

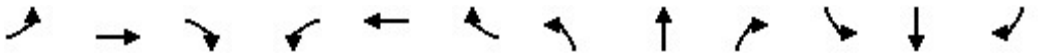
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	600	10	261	147	10	241	314	1573	129	202	1028	768
Future Volume (vph)	600	10	261	147	10	241	314	1573	129	202	1028	768
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)	23.8	20.0	20.0	10.9	7.5	7.5	16.8	47.9	47.9	13.0	44.2	44.2
Actuated g/C Ratio	0.20	0.17	0.17	0.09	0.06	0.06	0.14	0.40	0.40	0.11	0.37	0.37
v/c Ratio	0.96	0.04	0.57	0.51	0.09	0.76	0.71	0.84	0.19	0.59	0.60	0.83
Control Delay	73.7	43.6	10.1	57.4	54.6	21.5	54.1	40.8	11.4	57.4	32.8	15.7
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	73.7	43.6	10.1	57.4	54.6	21.5	54.1	40.8	11.4	57.4	32.8	15.7
LOS	E	D	B	E	D	C	D	D	B	E	C	B
Approach Delay		54.2			35.6			41.0			28.7	
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: 0.96	
Intersection Signal Delay: 38.1	Intersection LOS: D
Intersection Capacity Utilization 79.9%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 3: MO 291 & Oldham Parkway

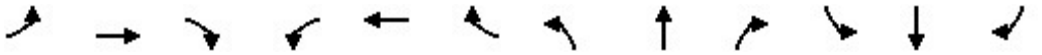




Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	652	11	284	160	11	262	341	1710	140	220	1117	835
v/c Ratio	0.96	0.04	0.57	0.51	0.09	0.76	0.71	0.84	0.19	0.59	0.60	0.83
Control Delay	73.7	43.6	10.1	57.4	54.6	21.5	54.1	40.8	11.4	57.4	32.8	15.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	73.7	43.6	10.1	57.4	54.6	21.5	54.1	40.8	11.4	57.4	32.8	15.7
Queue Length 50th (ft)	259	7	0	61	8	0	145	326	9	85	253	114
Queue Length 95th (ft)	#376	25	80	95	28	#105	m187	#454	m46	122	319	#383
Internal Link Dist (ft)		354			249			1360			440	
Turn Bay Length (ft)	300			250			250			430		
Base Capacity (vph)	680	310	501	678	127	352	566	2031	733	583	1871	1004
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	0.96	0.04	0.57	0.24	0.09	0.74	0.60	0.84	0.19	0.38	0.60	0.83

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)	600	10	261	147	10	241	314	1573	129	202	1028	768
Future Volume (veh/h)	600	10	261	147	10	241	314	1573	129	202	1028	768
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	652	11	0	160	11	0	341	1710	0	220	1117	0
Adj No. of Lanes	2	1	1	2	1	1	2	3	1	2	3	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	683	354	301	225	108	92	411	2170	676	287	1961	611
Arrive On Green	0.20	0.19	0.00	0.07	0.06	0.00	0.08	0.29	0.00	0.08	0.39	0.00
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	652	11	0	160	11	0	341	1710	0	220	1117	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	22.5	0.6	0.0	5.5	0.7	0.0	11.7	37.2	0.0	7.5	20.7	0.0
Cycle Q Clear(g_c), s	22.5	0.6	0.0	5.5	0.7	0.0	11.7	37.2	0.0	7.5	20.7	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	683	354	301	225	108	92	411	2170	676	287	1961	611
V/C Ratio(X)	0.96	0.03	0.00	0.71	0.10	0.00	0.83	0.79	0.00	0.77	0.57	0.00
Avail Cap(c_a), veh/h	683	354	301	680	127	108	568	2170	676	585	1961	611
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	0.59	0.59	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	47.6	39.6	0.0	55.0	53.5	0.0	54.0	37.8	0.0	53.9	29.0	0.0
Incr Delay (d2), s/veh	23.9	0.0	0.0	4.1	0.4	0.0	4.4	1.8	0.0	4.3	1.2	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	13.0	0.3	0.0	2.7	0.4	0.0	5.8	17.8	0.0	3.7	9.9	0.0
LnGrp Delay(d),s/veh	71.5	39.6	0.0	59.0	53.9	0.0	58.4	39.6	0.0	58.1	30.2	0.0
LnGrp LOS	E	D		E	D		E	D		E	C	
Approach Vol, veh/h		663			171			2051			1337	
Approach Delay, s/veh		71.0			58.7			42.8			34.8	
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	16.6	58.4	15.2	29.8	21.5	53.5	31.0	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	39.8	* 24	8.0	19.8	* 40	* 24	* 8.2
Max Q Clear Time (g_c+I1), s	9.5	39.2	7.5	2.6	13.7	22.7	24.5	2.7
Green Ext Time (p_c), s	0.5	0.5	0.4	0.0	0.6	6.9	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	45.3
HCM 2010 LOS	D

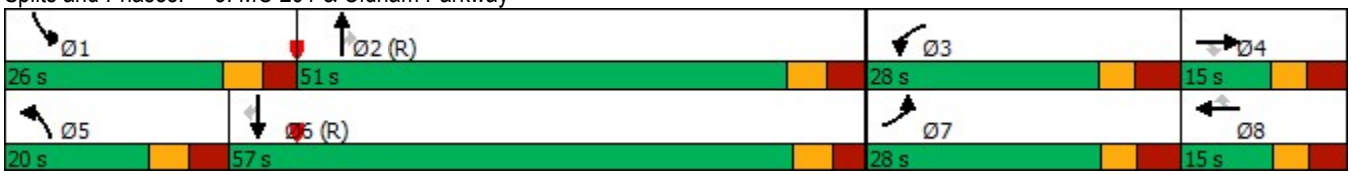
Notes

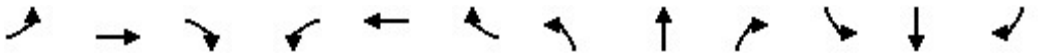
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	531	10	251	395	10	522	255	1513	284	458	1526	537
Future Volume (vph)	531	10	251	395	10	522	255	1513	284	458	1526	537
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	51.0	51.0	26.0	57.0	57.0
Total Split (s)	28.0	15.0	15.0	28.0	15.0	15.0	20.0	51.0	51.0	26.0	57.0	57.0
Total Split (%)	23.3%	12.5%	12.5%	23.3%	12.5%	12.5%	16.7%	42.5%	42.5%	21.7%	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)	21.0	10.0	10.0	19.0	8.2	8.2	12.5	43.8	43.8	19.2	50.5	50.5
Actuated g/C Ratio	0.18	0.08	0.08	0.16	0.07	0.07	0.10	0.36	0.36	0.16	0.42	0.42
v/c Ratio	0.96	0.07	0.89	0.79	0.09	2.02	0.78	0.89	0.41	0.91	0.78	0.59
Control Delay	77.4	53.7	47.3	59.8	54.1	493.2	51.2	49.0	17.5	71.1	33.0	5.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	77.4	53.7	47.3	59.8	54.1	493.2	51.2	49.0	17.5	71.1	33.0	5.5
LOS	E	D	D	E	D	F	D	D	B	E	C	A
Approach Delay		67.6			303.8			44.9			34.1	
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: 81.5	Intersection LOS: F
Intersection Capacity Utilization 94.2%	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)	577	11	273	429	11	567	277	1645	309	498	1659	584
v/c Ratio	0.96	0.07	0.89	0.79	0.09	2.02	0.78	0.89	0.41	0.91	0.78	0.59
Control Delay	77.4	53.7	47.3	59.8	54.1	493.2	51.2	49.0	17.5	71.1	33.0	5.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	77.4	53.7	47.3	59.8	54.1	493.2	51.2	49.0	17.5	71.1	33.0	5.5
Queue Length 50th (ft)	231	8	62	164	8	~552	113	364	75	197	398	17
Queue Length 95th (ft)	#345	28	#235	220	28	#777	m143	m423	m125	#292	459	100
Internal Link Dist (ft)		354			249			1360			440	
Turn Bay Length (ft)	300			250			250			430		
Base Capacity (vph)	601	154	308	592	127	280	366	1856	746	555	2139	983
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	0.96	0.07	0.89	0.72	0.09	2.02	0.76	0.89	0.41	0.90	0.78	0.59

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)	531	10	251	395	10	522	255	1513	284	458	1526	537
Future Volume (veh/h)	531	10	251	395	10	522	255	1513	284	458	1526	537
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	577	11	0	429	11	0	277	1645	0	498	1659	0
Adj No. of Lanes	2	1	1	2	1	1	2	3	1	2	3	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	597	162	138	495	109	92	336	1910	595	549	2199	685
Arrive On Green	0.17	0.09	0.00	0.14	0.06	0.00	0.03	0.12	0.00	0.16	0.43	0.00
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	577	11	0	429	11	0	277	1645	0	498	1659	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	20.0	0.7	0.0	14.6	0.7	0.0	9.6	38.1	0.0	17.1	33.0	0.0
Cycle Q Clear(g_c), s	20.0	0.7	0.0	14.6	0.7	0.0	9.6	38.1	0.0	17.1	33.0	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	597	162	138	495	109	92	336	1910	595	549	2199	685
V/C Ratio(X)	0.97	0.07	0.00	0.87	0.10	0.00	0.82	0.86	0.00	0.91	0.75	0.00
Avail Cap(c_a), veh/h	597	162	138	594	127	108	367	1910	595	556	2199	685
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	0.51	0.51	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	49.3	50.3	0.0	50.2	53.5	0.0	57.0	49.5	0.0	49.6	28.7	0.0
Incr Delay (d2), s/veh	28.7	0.2	0.0	11.2	0.4	0.0	7.2	2.9	0.0	18.5	2.5	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	11.8	0.3	0.0	7.7	0.4	0.0	4.9	18.4	0.0	9.5	15.9	0.0
LnGrp Delay(d),s/veh	77.9	50.5	0.0	61.4	53.9	0.0	64.3	52.4	0.0	68.1	31.2	0.0
LnGrp LOS	E	D		E	D		E	D		E	C	
Approach Vol, veh/h		588			440			1922			2157	
Approach Delay, s/veh		77.4			61.2			54.1			39.7	
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	25.7	52.3	24.6	17.4	18.9	59.1	28.0	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	19.4	43.8	* 21	8.0	12.8	* 50	* 21	* 8.2
Max Q Clear Time (g_c+I1), s	19.1	40.1	16.6	2.7	11.6	35.0	22.0	2.7
Green Ext Time (p_c), s	0.1	3.0	0.6	0.0	0.1	9.6	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	51.3
HCM 2010 LOS	D

Notes

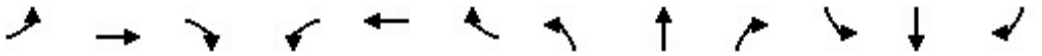
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	600	10	287	487	10	679	292	1255	411	645	1067	589
Future Volume (vph)	600	10	287	487	10	679	292	1255	411	645	1067	589
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	29.0	41.0	41.0	33.0	45.0	45.0
Total Split (s)	31.0	15.0	15.0	31.0	15.0	15.0	29.0	41.0	41.0	33.0	45.0	45.0
Total Split (%)	25.8%	12.5%	12.5%	25.8%	12.5%	12.5%	24.2%	34.2%	34.2%	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)	23.8	9.6	9.6	22.1	8.2	8.2	16.3	34.1	34.1	26.1	43.9	43.9
Actuated g/C Ratio	0.20	0.08	0.08	0.18	0.07	0.07	0.14	0.28	0.28	0.22	0.37	0.37
v/c Ratio	0.96	0.07	0.76	0.84	0.09	1.89	0.68	0.94	0.60	0.94	0.62	0.65
Control Delay	73.7	53.9	18.5	59.6	54.1	427.4	56.7	56.0	8.6	67.5	33.6	5.8
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	73.7	53.9	18.5	59.6	54.1	427.4	56.7	56.0	8.6	67.5	33.6	5.8
LOS	E	D	B	E	D	F	E	E	A	E	C	A
Approach Delay		55.8			271.9			46.1			36.0	
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: 1.89	
Intersection Signal Delay: 85.7	Intersection LOS: F
Intersection Capacity Utilization 100.9%	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)	652	11	312	529	11	738	317	1364	447	701	1160	640
v/c Ratio	0.96	0.07	0.76	0.84	0.09	1.89	0.68	0.94	0.60	0.94	0.62	0.65
Control Delay	73.7	53.9	18.5	59.6	54.1	427.4	56.7	56.0	8.6	67.5	33.6	5.8
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	73.7	53.9	18.5	59.6	54.1	427.4	56.7	56.0	8.6	67.5	33.6	5.8
Queue Length 50th (ft)	259	8	0	202	8	~648	122	380	21	276	268	0
Queue Length 95th (ft)	#376	28	#122	265	28	#889	163	#478	115	#389	337	92
Internal Link Dist (ft)		354			249			1360			440	
Turn Bay Length (ft)	300			250			250			430		
Base Capacity (vph)	680	148	413	678	127	391	623	1445	744	755	1859	984
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	0.96	0.07	0.76	0.78	0.09	1.89	0.51	0.94	0.60	0.93	0.62	0.65

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)	600	10	287	487	10	679	292	1255	411	645	1067	589
Future Volume (veh/h)	600	10	287	487	10	679	292	1255	411	645	1067	589
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	652	11	0	529	11	0	317	1364	0	701	1160	0
Adj No. of Lanes	2	1	1	2	1	1	2	3	1	2	3	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	683	154	131	596	109	92	388	1486	463	750	1995	621
Arrive On Green	0.20	0.08	0.00	0.17	0.06	0.00	0.11	0.29	0.00	0.22	0.39	0.00
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	652	11	0	529	11	0	317	1364	0	701	1160	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	22.5	0.7	0.0	18.0	0.7	0.0	10.8	31.1	0.0	24.0	21.5	0.0
Cycle Q Clear(g_c), s	22.5	0.7	0.0	18.0	0.7	0.0	10.8	31.1	0.0	24.0	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	683	154	131	596	109	92	388	1486	463	750	1995	621
V/C Ratio(X)	0.96	0.07	0.00	0.89	0.10	0.00	0.82	0.92	0.00	0.93	0.58	0.00
Avail Cap(c_a), veh/h	683	154	131	680	127	108	625	1486	463	757	1995	621
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	0.32	0.32	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	47.6	50.8	0.0	48.5	53.5	0.0	52.0	41.1	0.0	46.1	28.7	0.0
Incr Delay (d2), s/veh	23.9	0.2	0.0	12.4	0.4	0.0	1.5	3.9	0.0	18.6	1.2	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	13.0	0.3	0.0	9.6	0.4	0.0	5.2	15.1	0.0	13.3	10.3	0.0
LnGrp Delay(d),s/veh	71.5	51.0	0.0	60.9	53.9	0.0	53.5	45.0	0.0	64.7	29.9	0.0
LnGrp LOS	E	D		E	D		D	D		E	C	
Approach Vol, veh/h		663			540			1681			1861	
Approach Delay, s/veh		71.1			60.8			46.6			43.0	
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	32.7	42.3	28.1	16.9	20.7	54.3	31.0	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	33.8	* 24	8.0	21.8	* 38	* 24	* 8.2
Max Q Clear Time (g_c+I1), s	26.0	33.1	20.0	2.7	12.8	23.5	24.5	2.7
Green Ext Time (p_c), s	0.1	0.5	0.8	0.0	0.7	6.6	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	50.2
HCM 2010 LOS	D

Notes

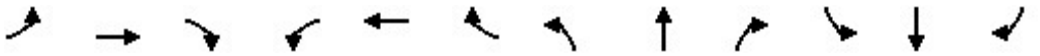
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	600	10	261	147	10	241	314	1676	129	202	1089	768
Future Volume (vph)	600	10	261	147	10	241	314	1676	129	202	1089	768
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)	23.8	20.0	20.0	10.9	7.5	7.5	16.8	47.9	47.9	13.0	44.2	44.2
Actuated g/C Ratio	0.20	0.17	0.17	0.09	0.06	0.06	0.14	0.40	0.40	0.11	0.37	0.37
v/c Ratio	0.96	0.04	0.57	0.51	0.09	0.76	0.71	0.90	0.19	0.59	0.63	0.83
Control Delay	73.7	43.6	10.1	57.4	54.6	21.5	51.2	42.8	10.8	57.4	33.6	15.7
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	73.7	43.6	10.1	57.4	54.6	21.5	51.2	42.8	10.8	57.4	33.6	15.7
LOS	E	D	B	E	D	C	D	D	B	E	C	B
Approach Delay		54.2			35.6			42.1			29.3	
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: 0.96	
Intersection Signal Delay: 38.7	Intersection LOS: D
Intersection Capacity Utilization 81.9%	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)	652	11	284	160	11	262	341	1822	140	220	1184	835
v/c Ratio	0.96	0.04	0.57	0.51	0.09	0.76	0.71	0.90	0.19	0.59	0.63	0.83
Control Delay	73.7	43.6	10.1	57.4	54.6	21.5	51.2	42.8	10.8	57.4	33.6	15.7
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	73.7	43.6	10.1	57.4	54.6	21.5	51.2	42.8	10.8	57.4	33.6	15.7
Queue Length 50th (ft)	259	7	0	61	8	0	142	360	10	85	273	114
Queue Length 95th (ft)	#376	25	80	95	28	#105	m176	m#604	m37	122	342	#383
Internal Link Dist (ft)		354			249			1360			440	
Turn Bay Length (ft)	300			250			250			430		
Base Capacity (vph)	680	310	501	678	127	352	566	2031	733	583	1871	1004
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	0.96	0.04	0.57	0.24	0.09	0.74	0.60	0.90	0.19	0.38	0.63	0.83

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)	600	10	261	147	10	241	314	1676	129	202	1089	768
Future Volume (veh/h)	600	10	261	147	10	241	314	1676	129	202	1089	768
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	652	11	0	160	11	0	341	1822	0	220	1184	0
Adj No. of Lanes	2	1	1	2	1	1	2	3	1	2	3	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	683	354	301	225	108	92	413	2170	676	287	1958	610
Arrive On Green	0.20	0.19	0.00	0.07	0.06	0.00	0.04	0.14	0.00	0.08	0.39	0.00
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	652	11	0	160	11	0	341	1822	0	220	1184	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	22.5	0.6	0.0	5.5	0.7	0.0	11.8	41.9	0.0	7.5	22.4	0.0
Cycle Q Clear(g_c), s	22.5	0.6	0.0	5.5	0.7	0.0	11.8	41.9	0.0	7.5	22.4	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	683	354	301	225	108	92	413	2170	676	287	1958	610
V/C Ratio(X)	0.96	0.03	0.00	0.71	0.10	0.00	0.82	0.84	0.00	0.77	0.60	0.00
Avail Cap(c_a), veh/h	683	354	301	680	127	108	568	2170	676	585	1958	610
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	0.52	0.52	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	47.6	39.6	0.0	55.0	53.5	0.0	56.4	47.5	0.0	53.9	29.6	0.0
Incr Delay (d2), s/veh	23.9	0.0	0.0	4.1	0.4	0.0	3.8	2.2	0.0	4.3	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	13.0	0.3	0.0	2.7	0.4	0.0	5.9	20.1	0.0	3.7	10.7	0.0
LnGrp Delay(d),s/veh	71.5	39.6	0.0	59.0	53.9	0.0	60.2	49.8	0.0	58.1	31.0	0.0
LnGrp LOS	E	D		E	D		E	D		E	C	
Approach Vol, veh/h		663			171			2163			1404	
Approach Delay, s/veh		71.0			58.7			51.4			35.2	
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	16.6	58.4	15.2	29.8	21.6	53.4	31.0	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	39.8	* 24	8.0	19.8	* 40	* 24	* 8.2
Max Q Clear Time (g_c+I1), s	9.5	43.9	7.5	2.6	13.8	24.4	24.5	2.7
Green Ext Time (p_c), s	0.5	0.0	0.4	0.0	0.6	7.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	49.5
HCM 2010 LOS	D

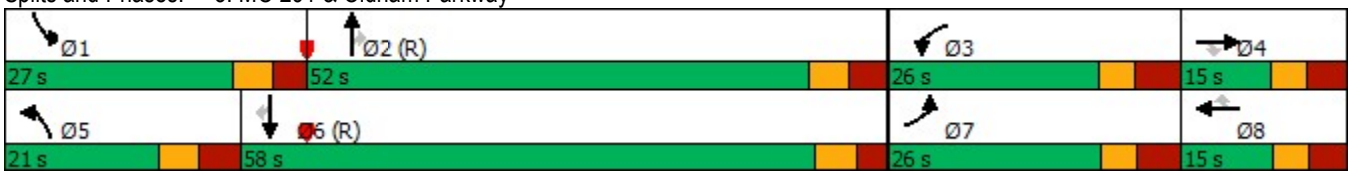
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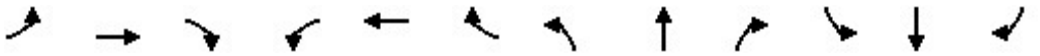
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	531	10	251	395	10	522	255	1606	284	458	1648	537
Future Volume (vph)	531	10	251	395	10	522	255	1606	284	458	1648	537
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	8.7	8.7	18.0	8.2	8.2	13.1	45.3	45.3	19.9	52.1	52.1
Actuated g/C Ratio	0.16	0.07	0.07	0.15	0.07	0.07	0.11	0.38	0.38	0.17	0.43	0.43
v/c Ratio	1.07	0.08	0.90	0.83	0.09	1.95	0.74	0.91	0.41	0.88	0.81	0.60
Control Delay	108.1	54.1	48.2	64.4	54.1	458.9	50.0	47.9	17.2	66.3	33.5	6.4
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	108.1	54.1	48.2	64.4	54.1	458.9	50.0	47.9	17.2	66.3	33.5	6.4
LOS	F	D	D	E	D	F	D	D	B	E	C	A
Approach Delay		88.5			286.4			44.1			33.7	
Approach LOS		F			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: 1.95	
Intersection Signal Delay: 79.8	Intersection LOS: E
Intersection Capacity Utilization 96.0%	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)	577	11	273	429	11	567	277	1746	309	498	1791	584
v/c Ratio	1.07	0.08	0.90	0.83	0.09	1.95	0.74	0.91	0.41	0.88	0.81	0.60
Control Delay	108.1	54.1	48.2	64.4	54.1	458.9	50.0	47.9	17.2	66.3	33.5	6.4
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	108.1	54.1	48.2	64.4	54.1	458.9	50.0	47.9	17.2	66.3	33.5	6.4
Queue Length 50th (ft)	~256	8	54	167	8	~533	117	383	76	195	440	32
Queue Length 95th (ft)	#369	28	#219	#238	28	#758	m138	#445	m109	#280	505	127
Internal Link Dist (ft)		354			249			1360			440	
Turn Bay Length (ft)	300			250			250			430		
Base Capacity (vph)	537	135	303	534	127	291	394	1921	756	583	2207	977
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	1.07	0.08	0.90	0.80	0.09	1.95	0.70	0.91	0.41	0.85	0.81	0.60

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)	531	10	251	395	10	522	255	1606	284	458	1648	537
Future Volume (veh/h)	531	10	251	395	10	522	255	1606	284	458	1648	537
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	577	11	0	429	11	0	277	1746	0	498	1791	0
Adj No. of Lanes	2	1	1	2	1	1	2	3	1	2	3	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	539	135	114	488	109	92	339	1986	618	554	2280	710
Arrive On Green	0.16	0.07	0.00	0.14	0.06	0.00	0.03	0.13	0.00	0.16	0.45	0.00
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	577	11	0	429	11	0	277	1746	0	498	1791	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	18.8	0.7	0.0	14.7	0.7	0.0	9.6	40.5	0.0	17.0	36.0	0.0
Cycle Q Clear(g_c), s	18.8	0.7	0.0	14.7	0.7	0.0	9.6	40.5	0.0	17.0	36.0	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	539	135	114	488	109	92	339	1986	618	554	2280	710
V/C Ratio(X)	1.07	0.08	0.00	0.88	0.10	0.00	0.82	0.88	0.00	0.90	0.79	0.00
Avail Cap(c_a), veh/h	539	135	114	536	127	108	396	1986	618	585	2280	710
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	0.40	0.40	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	50.6	51.9	0.0	50.5	53.5	0.0	57.0	49.5	0.0	49.4	28.2	0.0
Incr Delay (d2), s/veh	58.9	0.3	0.0	14.5	0.4	0.0	4.8	2.5	0.0	16.3	2.8	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	13.3	0.4	0.0	8.0	0.4	0.0	4.8	19.5	0.0	9.3	17.3	0.0
LnGrp Delay(d),s/veh	109.5	52.2	0.0	64.9	53.9	0.0	61.8	52.0	0.0	65.6	31.0	0.0
LnGrp LOS	F	D		E	D		E	D		E	C	
Approach Vol, veh/h		588			440			2023			2289	
Approach Delay, s/veh		108.4			64.7			53.4			38.5	
Approach LOS		F			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	25.9	54.1	24.3	15.7	19.0	61.0	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	19.0	42.5	16.7	2.7	11.6	38.0	20.8	2.7
Green Ext Time (p_c), s	0.3	2.0	0.4	0.0	0.2	9.3	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	54.0
HCM 2010 LOS	D

Notes

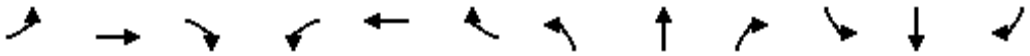
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	600	10	287	487	10	679	292	1572	411	645	1405	589
Future Volume (vph)	600	10	287	487	10	679	292	1572	411	645	1405	589
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	29.0	48.0	48.0	35.0	54.0	54.0
Total Split (s)	32.0	15.0	15.0	32.0	15.0	15.0	29.0	48.0	48.0	35.0	54.0	54.0
Total Split (%)	24.6%	11.5%	11.5%	24.6%	11.5%	11.5%	22.3%	36.9%	36.9%	26.9%	41.5%	41.5%
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)	24.8	9.3	9.3	23.4	8.2	8.2	17.2	41.1	41.1	28.1	52.0	52.0
Actuated g/C Ratio	0.19	0.07	0.07	0.18	0.06	0.06	0.13	0.32	0.32	0.22	0.40	0.40
v/c Ratio	1.00	0.08	0.83	0.86	0.09	2.07	0.70	1.06	0.62	0.95	0.75	0.67
Control Delay	86.9	59.1	29.3	66.1	59.4	508.1	62.2	84.1	14.9	72.4	36.8	8.8
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	86.9	59.1	29.3	66.1	59.4	508.1	62.2	84.1	14.9	72.4	36.8	8.8
LOS	F	E	C	E	E	F	E	F	B	E	D	A
Approach Delay		68.1			321.3			68.8			39.3	
Approach LOS		E			F			E			D	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 110 (85%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 140	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 2.07	
Intersection Signal Delay: 100.0	Intersection LOS: F
Intersection Capacity Utilization 107.0%	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)	652	11	312	529	11	738	317	1709	447	701	1527	640
v/c Ratio	1.00	0.08	0.83	0.86	0.09	2.07	0.70	1.06	0.62	0.95	0.75	0.67
Control Delay	86.9	59.1	29.3	66.1	59.4	508.1	62.2	84.1	14.9	72.4	36.8	8.8
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	86.9	59.1	29.3	66.1	59.4	508.1	62.2	84.1	14.9	72.4	36.8	8.8
Queue Length 50th (ft)	285	9	26	222	9	~757	133	~584	87	301	399	48
Queue Length 95th (ft)	#413	30	#181	#289	30	#1002	177	#680	205	#417	487	188
Internal Link Dist (ft)		354			249			1360			440	
Turn Bay Length (ft)	300			250			250			430		
Base Capacity (vph)	654	133	374	652	117	357	575	1607	717	749	2034	962
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	1.00	0.08	0.83	0.81	0.09	2.07	0.55	1.06	0.62	0.94	0.75	0.67

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)	600	10	287	487	10	679	292	1572	411	645	1405	589
Future Volume (veh/h)	600	10	287	487	10	679	292	1572	411	645	1405	589
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	652	11	0	529	11	0	317	1709	0	701	1527	0
Adj No. of Lanes	2	1	1	2	1	1	2	3	1	2	3	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	657	135	115	589	100	85	381	1644	512	746	2159	672
Arrive On Green	0.19	0.07	0.00	0.17	0.05	0.00	0.11	0.32	0.00	0.22	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	652	11	0	529	11	0	317	1709	0	701	1527	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	24.6	0.7	0.0	19.6	0.7	0.0	11.7	42.0	0.0	26.0	32.1	0.0
Cycle Q Clear(g_c), s	24.6	0.7	0.0	19.6	0.7	0.0	11.7	42.0	0.0	26.0	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	657	135	115	589	100	85	381	1644	512	746	2159	672
V/C Ratio(X)	0.99	0.08	0.00	0.90	0.11	0.00	0.83	1.04	0.00	0.94	0.71	0.00
Avail Cap(c_a), veh/h	657	135	115	654	117	100	577	1644	512	752	2159	672
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	0.09	0.09	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	52.5	56.2	0.0	52.8	58.5	0.0	56.6	44.0	0.0	50.1	30.8	0.0
Incr Delay (d2), s/veh	33.3	0.3	0.0	14.4	0.5	0.0	0.6	20.0	0.0	19.6	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	14.7	0.4	0.0	10.5	0.4	0.0	5.6	22.7	0.0	14.4	15.4	0.0
LnGrp Delay(d),s/veh	85.8	56.5	0.0	67.1	59.0	0.0	57.2	64.0	0.0	69.7	32.7	0.0
LnGrp LOS	F	E		E	E		E	F		E	C	
Approach Vol, veh/h		663			540			2026			2228	
Approach Delay, s/veh		85.3			67.0			63.0			44.4	
Approach LOS		F			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	34.8	49.2	29.5	16.5	21.6	62.4	32.0	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	28.4	40.8	* 25	8.0	21.8	* 47	* 25	* 8.2
Max Q Clear Time (g_c+I1), s	28.0	44.0	21.6	2.7	13.7	34.1	26.6	2.7
Green Ext Time (p_c), s	0.1	0.0	0.7	0.0	0.7	8.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	58.5
HCM 2010 LOS	E

Notes

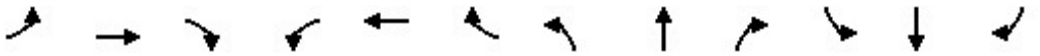
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	600	10	261	147	10	241	314	2016	129	202	1328	768
Future Volume (vph)	600	10	261	147	10	241	314	2016	129	202	1328	768
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)	23.8	20.0	20.0	10.9	7.5	7.5	16.8	47.9	47.9	13.0	44.2	44.2
Actuated g/C Ratio	0.20	0.17	0.17	0.09	0.06	0.06	0.14	0.40	0.40	0.11	0.37	0.37
v/c Ratio	0.96	0.04	0.57	0.51	0.09	0.76	0.71	1.08	0.19	0.59	0.77	0.83
Control Delay	73.7	43.6	10.1	57.4	54.6	21.5	52.6	79.7	9.8	57.4	37.4	15.7
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	73.7	43.6	10.1	57.4	54.6	21.5	52.6	79.7	9.8	57.4	37.4	15.7
LOS	E	D	B	E	D	C	D	E	A	E	D	B
Approach Delay		54.2			35.6			72.5			31.9	
Approach LOS		D			D			E			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: 1.08	
Intersection Signal Delay: 52.0	Intersection LOS: D
Intersection Capacity Utilization 88.5%	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)	652	11	284	160	11	262	341	2191	140	220	1443	835
v/c Ratio	0.96	0.04	0.57	0.51	0.09	0.76	0.71	1.08	0.19	0.59	0.77	0.83
Control Delay	73.7	43.6	10.1	57.4	54.6	21.5	52.6	79.7	9.8	57.4	37.4	15.7
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	73.7	43.6	10.1	57.4	54.6	21.5	52.6	79.7	9.8	57.4	37.4	15.7
Queue Length 50th (ft)	259	7	0	61	8	0	141	~665	8	85	357	114
Queue Length 95th (ft)	#376	25	80	95	28	#105	m176	m#826	m34	122	439	#383
Internal Link Dist (ft)		354			249			1360			440	
Turn Bay Length (ft)	300			250			250			430		
Base Capacity (vph)	680	310	501	678	127	352	566	2031	733	583	1871	1004
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	0.96	0.04	0.57	0.24	0.09	0.74	0.60	1.08	0.19	0.38	0.77	0.83

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)	600	10	261	147	10	241	314	2016	129	202	1328	768
Future Volume (veh/h)	600	10	261	147	10	241	314	2016	129	202	1328	768
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	652	11	0	160	11	0	341	2191	0	220	1443	0
Adj No. of Lanes	2	1	1	2	1	1	2	3	1	2	3	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	683	354	301	225	108	92	413	2170	676	287	1958	610
Arrive On Green	0.20	0.19	0.00	0.07	0.06	0.00	0.04	0.14	0.00	0.08	0.39	0.00
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	652	11	0	160	11	0	341	2191	0	220	1443	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	22.5	0.6	0.0	5.5	0.7	0.0	11.8	51.2	0.0	7.5	29.2	0.0
Cycle Q Clear(g_c), s	22.5	0.6	0.0	5.5	0.7	0.0	11.8	51.2	0.0	7.5	29.2	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	683	354	301	225	108	92	413	2170	676	287	1958	610
V/C Ratio(X)	0.96	0.03	0.00	0.71	0.10	0.00	0.82	1.01	0.00	0.77	0.74	0.00
Avail Cap(c_a), veh/h	683	354	301	680	127	108	568	2170	676	585	1958	610
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	0.52	0.52	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	47.6	39.6	0.0	55.0	53.5	0.0	56.4	51.6	0.0	53.9	31.7	0.0
Incr Delay (d2), s/veh	23.9	0.0	0.0	4.1	0.4	0.0	3.8	16.3	0.0	4.3	2.5	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	13.0	0.3	0.0	2.7	0.4	0.0	5.9	27.3	0.0	3.7	14.1	0.0
LnGrp Delay(d),s/veh	71.5	39.6	0.0	59.0	53.9	0.0	60.2	67.9	0.0	58.1	34.2	0.0
LnGrp LOS	E	D		E	D		E	F		E	C	
Approach Vol, veh/h		663			171			2532			1663	
Approach Delay, s/veh		71.0			58.7			66.8			37.4	
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	16.6	58.4	15.2	29.8	21.6	53.4	31.0	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	39.8	* 24	8.0	19.8	* 40	* 24	* 8.2
Max Q Clear Time (g_c+I1), s	9.5	53.2	7.5	2.6	13.8	31.2	24.5	2.7
Green Ext Time (p_c), s	0.5	0.0	0.4	0.0	0.6	5.8	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	57.4
HCM 2010 LOS	E

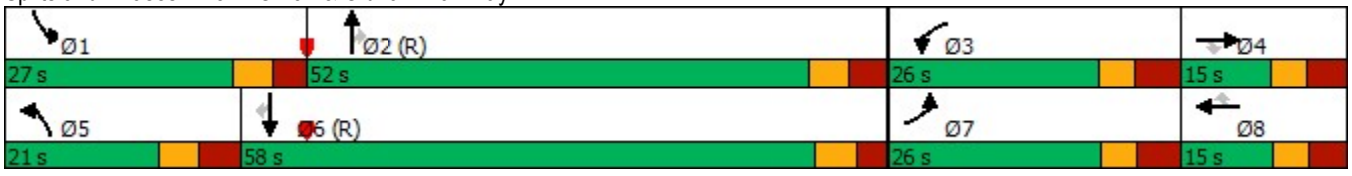
Notes

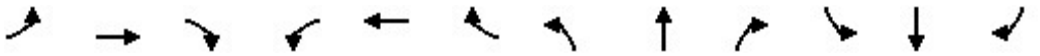
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	531	10	251	395	10	522	255	1949	284	458	2013	537
Future Volume (vph)	531	10	251	395	10	522	255	1949	284	458	2013	537
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	8.7	8.7	18.0	8.2	8.2	13.1	45.3	45.3	19.9	52.1	52.1
Actuated g/C Ratio	0.16	0.07	0.07	0.15	0.07	0.07	0.11	0.38	0.38	0.17	0.43	0.43
v/c Ratio	1.07	0.08	0.91	0.83	0.09	1.95	0.74	1.10	0.42	0.88	0.99	0.63
Control Delay	108.1	54.1	49.7	64.4	54.1	458.9	47.7	92.1	21.3	66.3	51.3	10.3
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	108.1	54.1	49.7	64.4	54.1	458.9	47.7	92.1	21.3	66.3	51.3	10.3
LOS	F	D	D	E	D	F	D	F	C	E	D	B
Approach Delay		88.9			286.4			79.5			46.3	
Approach LOS		F			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: 1.95	
Intersection Signal Delay: 93.3	Intersection LOS: F
Intersection Capacity Utilization 102.6%	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)	577	11	273	429	11	567	277	2118	309	498	2188	584
v/c Ratio	1.07	0.08	0.91	0.83	0.09	1.95	0.74	1.10	0.42	0.88	0.99	0.63
Control Delay	108.1	54.1	49.7	64.4	54.1	458.9	47.7	92.1	21.3	66.3	51.3	10.3
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	108.1	54.1	49.7	64.4	54.1	458.9	47.7	92.1	21.3	66.3	51.3	10.3
Queue Length 50th (ft)	~256	8	56	167	8	~533	117	~670	100	195	~616	84
Queue Length 95th (ft)	#369	28	#222	#238	28	#758	m123	m#693	m105	#280	#743	209
Internal Link Dist (ft)		354			249			1360			440	
Turn Bay Length (ft)	300			250			250			430		
Base Capacity (vph)	537	135	301	534	127	291	394	1921	728	583	2207	925
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	1.07	0.08	0.91	0.80	0.09	1.95	0.70	1.10	0.42	0.85	0.99	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)	531	10	251	395	10	522	255	1949	284	458	2013	537
Future Volume (veh/h)	531	10	251	395	10	522	255	1949	284	458	2013	537
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	577	11	0	429	11	0	277	2118	0	498	2188	0
Adj No. of Lanes	2	1	1	2	1	1	2	3	1	2	3	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	539	135	114	488	109	92	339	1986	618	554	2280	710
Arrive On Green	0.16	0.07	0.00	0.14	0.06	0.00	0.03	0.13	0.00	0.16	0.45	0.00
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	577	11	0	429	11	0	277	2118	0	498	2188	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	18.8	0.7	0.0	14.7	0.7	0.0	9.6	46.9	0.0	17.0	50.0	0.0
Cycle Q Clear(g_c), s	18.8	0.7	0.0	14.7	0.7	0.0	9.6	46.9	0.0	17.0	50.0	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	539	135	114	488	109	92	339	1986	618	554	2280	710
V/C Ratio(X)	1.07	0.08	0.00	0.88	0.10	0.00	0.82	1.07	0.00	0.90	0.96	0.00
Avail Cap(c_a), veh/h	539	135	114	536	127	108	396	1986	618	585	2280	710
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	0.20	0.20	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	50.6	51.9	0.0	50.5	53.5	0.0	57.0	52.3	0.0	49.4	32.1	0.0
Incr Delay (d2), s/veh	58.9	0.3	0.0	14.5	0.4	0.0	2.4	32.4	0.0	16.3	11.5	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	13.3	0.4	0.0	8.0	0.4	0.0	4.7	28.0	0.0	9.3	25.7	0.0
LnGrp Delay(d),s/veh	109.5	52.2	0.0	64.9	53.9	0.0	59.4	84.7	0.0	65.6	43.6	0.0
LnGrp LOS	F	D		E	D		E	F		E	D	
Approach Vol, veh/h		588			440			2395			2686	
Approach Delay, s/veh		108.4			64.7			81.8			47.7	
Approach LOS		F			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	25.9	54.1	24.3	15.7	19.0	61.0	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	19.0	48.9	16.7	2.7	11.6	52.0	20.8	2.7
Green Ext Time (p_c), s	0.3	0.0	0.4	0.0	0.2	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	68.1
HCM 2010 LOS	E

Notes

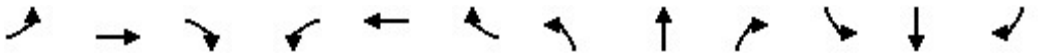
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	600	10	287	487	10	679	292	1829	411	645	1631	589
Future Volume (vph)	600	10	287	487	10	679	292	1829	411	645	1631	589
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	29.0	48.0	48.0	35.0	54.0	54.0
Total Split (s)	32.0	15.0	15.0	32.0	15.0	15.0	29.0	48.0	48.0	35.0	54.0	54.0
Total Split (%)	24.6%	11.5%	11.5%	24.6%	11.5%	11.5%	22.3%	36.9%	36.9%	26.9%	41.5%	41.5%
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)	24.8	9.3	9.3	23.4	8.2	8.2	17.2	41.1	41.1	28.1	52.0	52.0
Actuated g/C Ratio	0.19	0.07	0.07	0.18	0.06	0.06	0.13	0.32	0.32	0.22	0.40	0.40
v/c Ratio	1.00	0.08	0.84	0.86	0.09	2.07	0.70	1.24	0.65	0.95	0.87	0.70
Control Delay	86.9	59.1	29.6	66.1	59.4	508.1	62.2	150.6	19.2	72.4	42.1	12.8
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	86.9	59.1	29.6	66.1	59.4	508.1	62.2	150.6	19.2	72.4	42.1	12.8
LOS	F	E	C	E	E	F	E	F	B	E	D	B
Approach Delay		68.2			321.3			119.1			42.9	
Approach LOS		E			F			F			D	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 110 (85%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 2.07	
Intersection Signal Delay: 115.6	Intersection LOS: F
Intersection Capacity Utilization 112.0%	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)	652	11	312	529	11	738	317	1988	447	701	1773	640
v/c Ratio	1.00	0.08	0.84	0.86	0.09	2.07	0.70	1.24	0.65	0.95	0.87	0.70
Control Delay	86.9	59.1	29.6	66.1	59.4	508.1	62.2	150.6	19.2	72.4	42.1	12.8
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	86.9	59.1	29.6	66.1	59.4	508.1	62.2	150.6	19.2	72.4	42.1	12.8
Queue Length 50th (ft)	285	9	26	222	9	~757	133	~763	124	301	498	108
Queue Length 95th (ft)	#413	30	#183	#289	30	#1002	177	#858	247	#417	#636	273
Internal Link Dist (ft)		354			249			1360			440	
Turn Bay Length (ft)	300			250			250			430		
Base Capacity (vph)	654	133	373	652	117	357	575	1607	687	749	2034	917
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	1.00	0.08	0.84	0.81	0.09	2.07	0.55	1.24	0.65	0.94	0.87	0.70

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)	600	10	287	487	10	679	292	1829	411	645	1631	589
Future Volume (veh/h)	600	10	287	487	10	679	292	1829	411	645	1631	589
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	652	11	0	529	11	0	317	1988	0	701	1773	0
Adj No. of Lanes	2	1	1	2	1	1	2	3	1	2	3	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	657	135	115	589	100	85	381	1644	512	746	2159	672
Arrive On Green	0.19	0.07	0.00	0.17	0.05	0.00	0.11	0.32	0.00	0.22	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	652	11	0	529	11	0	317	1988	0	701	1773	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	24.6	0.7	0.0	19.6	0.7	0.0	11.7	42.0	0.0	26.0	40.0	0.0
Cycle Q Clear(g_c), s	24.6	0.7	0.0	19.6	0.7	0.0	11.7	42.0	0.0	26.0	40.0	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	657	135	115	589	100	85	381	1644	512	746	2159	672
V/C Ratio(X)	0.99	0.08	0.00	0.90	0.11	0.00	0.83	1.21	0.00	0.94	0.82	0.00
Avail Cap(c_a), veh/h	657	135	115	654	117	100	577	1644	512	752	2159	672
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	0.09	0.09	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	52.5	56.2	0.0	52.8	58.5	0.0	56.6	44.0	0.0	50.1	33.0	0.0
Incr Delay (d2), s/veh	33.3	0.3	0.0	14.4	0.5	0.0	0.6	94.7	0.0	19.6	3.7	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	14.7	0.4	0.0	10.5	0.4	0.0	5.6	34.1	0.0	14.4	19.4	0.0
LnGrp Delay(d),s/veh	85.8	56.5	0.0	67.1	59.0	0.0	57.2	138.7	0.0	69.7	36.7	0.0
LnGrp LOS	F	E		E	E		E	F		E	D	
Approach Vol, veh/h		663			540			2305			2474	
Approach Delay, s/veh		85.3			67.0			127.5			46.0	
Approach LOS		F			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	34.8	49.2	29.5	16.5	21.6	62.4	32.0	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	28.4	40.8	* 25	8.0	21.8	* 47	* 25	* 8.2
Max Q Clear Time (g_c+I1), s	28.0	44.0	21.6	2.7	13.7	42.0	26.6	2.7
Green Ext Time (p_c), s	0.1	0.0	0.7	0.0	0.7	4.3	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	83.7
HCM 2010 LOS	F

Notes

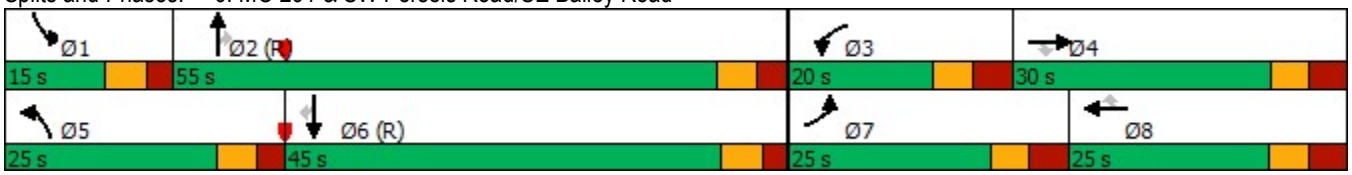
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

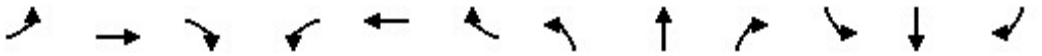
Intersection 2
M-291 & Persels Road/Bailey Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	385	113	141	169	144	53	155	1441	233	35	990	483
Future Volume (vph)	385	113	141	169	144	53	155	1441	233	35	990	483
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)	17.4	20.9	20.9	11.3	14.7	14.7	15.8	58.4	58.4	8.0	45.8	45.8
Actuated g/C Ratio	0.14	0.17	0.17	0.09	0.12	0.12	0.13	0.49	0.49	0.07	0.38	0.38
v/c Ratio	0.84	0.38	0.34	0.57	0.69	0.15	0.72	0.63	0.28	0.32	0.80	0.59
Control Delay	65.6	46.9	3.9	59.0	65.6	0.9	67.1	26.3	4.1	73.8	24.5	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	65.6	46.9	3.9	59.0	65.6	0.9	67.1	26.3	4.1	73.8	24.5	4.3
LOS	E	D	A	E	E	A	E	C	A	E	C	A
Approach Delay		48.7			53.2			26.9			19.2	
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: 0.84	
Intersection Signal Delay: 29.6	Intersection LOS: C
Intersection Capacity Utilization 76.3%	ICU Level of Service D
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)	418	123	153	184	157	58	168	1566	253	38	1076	525
v/c Ratio	0.84	0.38	0.34	0.57	0.69	0.15	0.72	0.63	0.28	0.32	0.80	0.59
Control Delay	65.6	46.9	3.9	59.0	65.6	0.9	67.1	26.3	4.1	73.8	24.5	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	65.6	46.9	3.9	59.0	65.6	0.9	67.1	26.3	4.1	73.8	24.5	4.3
Queue Length 50th (ft)	163	85	0	71	118	0	126	356	4	31	135	24
Queue Length 95th (ft)	#236	142	21	108	187	0	199	437	55	m65	#562	38
Internal Link Dist (ft)		418			3248			1312			1360	
Turn Bay Length (ft)	225			260		280	310			350		
Base Capacity (vph)	514	357	469	369	277	411	278	2473	895	133	1350	884
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	0.34	0.33	0.50	0.57	0.14	0.60	0.63	0.28	0.29	0.80	0.59

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)	385	113	141	169	144	53	155	1441	233	35	990	483
Future Volume (veh/h)	385	113	141	169	144	53	155	1441	233	35	990	483
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	418	123	153	184	157	58	168	1566	0	38	1076	0
Adj No. of Lanes	2	1	1	2	1	1	1	3	1	1	2	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	476	316	269	244	192	163	197	2518	784	74	1505	673
Arrive On Green	0.14	0.17	0.17	0.07	0.10	0.10	0.11	0.50	0.00	0.08	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	418	123	153	184	157	58	168	1566	0	38	1076	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	14.3	7.0	10.7	6.3	9.9	4.1	11.2	27.0	0.0	2.5	13.9	0.0
Cycle Q Clear(g_c), s	14.3	7.0	10.7	6.3	9.9	4.1	11.2	27.0	0.0	2.5	13.9	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	476	316	269	244	192	163	197	2518	784	74	1505	673
V/C Ratio(X)	0.88	0.39	0.57	0.75	0.82	0.36	0.85	0.62	0.00	0.51	0.71	0.00
Avail Cap(c_a), veh/h	516	357	303	370	278	236	279	2518	784	133	1505	673
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	0.79	0.79	0.79	1.00	1.00	0.00	0.85	0.85	0.00
Uniform Delay (d), s/veh	50.7	44.3	45.8	54.7	52.7	50.1	52.4	22.1	0.0	53.8	6.2	0.0
Incr Delay (d2), s/veh	15.0	0.8	2.0	3.8	9.5	1.0	16.1	1.2	0.0	4.6	2.5	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	7.8	3.7	4.8	3.1	5.6	1.8	6.3	12.9	0.0	1.3	6.8	0.0
LnGrp Delay(d),s/veh	65.8	45.1	47.8	58.5	62.3	51.1	68.5	23.3	0.0	58.4	8.7	0.0
LnGrp LOS	E	D	D	E	E	D	E	C		E	A	
Approach Vol, veh/h		694			399			1734			1114	
Approach Delay, s/veh		58.1			58.9			27.6			10.4	
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	11.0	65.9	15.6	27.5	19.4	57.5	23.6	19.5
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	4.5	29.0	8.3	12.7	13.2	15.9	16.3	11.9
Green Ext Time (p_c), s	0.0	10.6	0.2	0.8	0.2	7.6	0.3	0.5

Intersection Summary	
HCM 2010 Ctrl Delay	31.3
HCM 2010 LOS	C

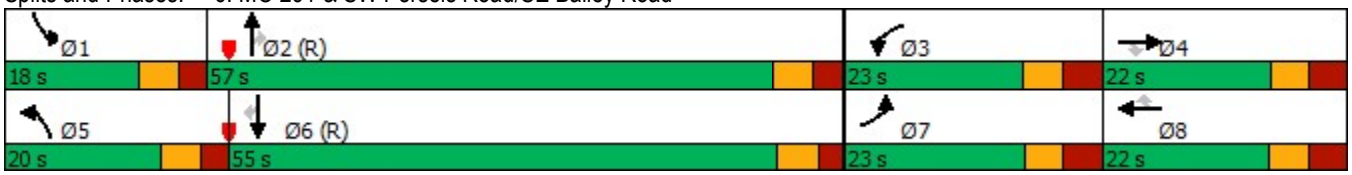
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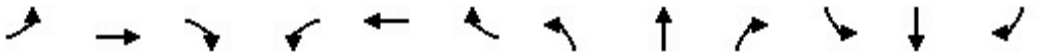
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	416	144	139	381	154	85	155	1331	275	39	1539	404
Future Volume (vph)	416	144	139	381	154	85	155	1331	275	39	1539	404
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)	16.0	14.0	14.0	15.9	13.9	13.9	13.6	57.5	57.5	8.6	50.3	50.3
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	0.99	0.72	0.47	0.91	0.78	0.29	0.84	0.59	0.33	0.33	1.13	0.53
Control Delay	91.6	70.3	12.8	76.8	75.1	3.1	84.4	25.2	3.4	82.8	86.2	2.9
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	91.6	70.3	12.8	76.8	75.1	3.1	84.4	25.2	3.4	82.8	86.2	2.9
LOS	F	E	B	E	E	A	F	C	A	F	F	A
Approach Delay		71.5			66.3			27.0			69.1	
Approach LOS		E			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: 1.13	
Intersection Signal Delay: 54.4	Intersection LOS: D
Intersection Capacity Utilization 92.9%	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)	452	157	151	414	167	92	168	1447	299	42	1673	439
v/c Ratio	0.99	0.72	0.47	0.91	0.78	0.29	0.84	0.59	0.33	0.33	1.13	0.53
Control Delay	91.6	70.3	12.8	76.8	75.1	3.1	84.4	25.2	3.4	82.8	86.2	2.9
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	91.6	70.3	12.8	76.8	75.1	3.1	84.4	25.2	3.4	82.8	86.2	2.9
Queue Length 50th (ft)	182	118	0	165	126	0	129	307	0	34	~809	2
Queue Length 95th (ft)	#291	#204	62	#257	#225	6	#249	376	52	m56	#952	1
Internal Link Dist (ft)		418			3248			1312			1360	
Turn Bay Length (ft)	225			260		280	310			350		
Base Capacity (vph)	457	232	330	454	231	328	207	2436	914	177	1482	824
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	0.99	0.68	0.46	0.91	0.72	0.28	0.81	0.59	0.33	0.24	1.13	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)	416	144	139	381	154	85	155	1331	275	39	1539	404
Future Volume (veh/h)	416	144	139	381	154	85	155	1331	275	39	1539	404
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	452	157	151	414	167	92	168	1447	0	42	1673	0
Adj No. of Lanes	2	1	1	2	1	1	1	3	1	1	2	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	459	209	178	456	209	178	195	2486	774	78	1494	669
Arrive On Green	0.13	0.11	0.11	0.13	0.11	0.11	0.11	0.49	0.00	0.09	0.84	0.00
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	1774	5085	1583	1774	3539	1583
Grp Volume(v), veh/h	452	157	151	414	167	92	168	1447	0	42	1673	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	15.7	9.8	11.2	14.2	10.5	6.6	11.2	24.4	0.0	2.7	50.7	0.0
Cycle Q Clear(g_c), s	15.7	9.8	11.2	14.2	10.5	6.6	11.2	24.4	0.0	2.7	50.7	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	459	209	178	456	209	178	195	2486	774	78	1494	669
V/C Ratio(X)	0.98	0.75	0.85	0.91	0.80	0.52	0.86	0.58	0.00	0.54	1.12	0.00
Avail Cap(c_a), veh/h	459	233	198	456	231	197	205	2486	774	177	1494	669
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	0.64	0.64	0.64	1.00	1.00	0.00	0.74	0.74	0.00
Uniform Delay (d), s/veh	51.9	51.6	52.3	51.3	51.9	50.2	52.5	21.9	0.0	53.6	9.3	0.0
Incr Delay (d2), s/veh	38.0	11.5	26.0	15.5	11.0	1.5	28.6	1.0	0.0	4.2	61.1	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	9.9	5.7	6.2	7.8	6.0	3.0	7.0	11.6	0.0	1.4	35.1	0.0
LnGrp Delay(d),s/veh	89.8	63.1	78.2	66.8	62.9	51.7	81.1	22.9	0.0	57.8	70.5	0.0
LnGrp LOS	F	E	E	E	E	D	F	C		E	F	
Approach Vol, veh/h		760			673			1615			1715	
Approach Delay, s/veh		82.0			63.8			29.0			70.2	
Approach LOS		F			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	11.3	65.2	23.0	20.6	19.3	57.2	23.0	20.6
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	12.0	50.5	15.9	* 15	13.9	* 49	16.0	14.9
Max Q Clear Time (g_c+I1), s	4.7	26.4	16.2	13.2	13.2	52.7	17.7	12.5
Green Ext Time (p_c), s	0.0	10.8	0.0	0.2	0.0	0.0	0.0	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	57.2
HCM 2010 LOS	E

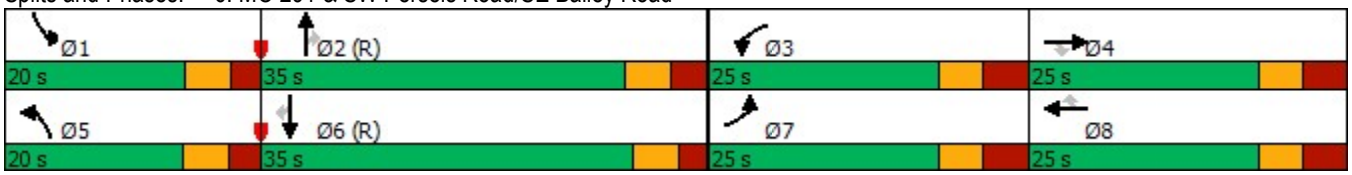
Notes

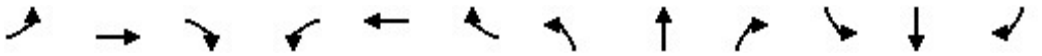
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	259	116	152	247	91	58	139	1151	201	45	1012	317
Future Volume (vph)	259	116	152	247	91	58	139	1151	201	45	1012	317
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)	13.7	12.4	12.4	13.5	12.1	12.1	13.5	46.5	46.5	8.6	39.4	39.4
Actuated g/C Ratio	0.13	0.12	0.12	0.13	0.12	0.12	0.13	0.44	0.44	0.08	0.38	0.38
v/c Ratio	0.63	0.57	0.49	0.61	0.46	0.19	0.67	0.56	0.27	0.34	0.83	0.44
Control Delay	49.3	53.5	10.5	49.0	49.6	1.2	57.7	25.1	4.4	51.3	38.3	6.8
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	49.3	53.5	10.5	49.0	49.6	1.2	57.7	25.1	4.4	51.3	38.3	6.8
LOS	D	D	B	D	D	A	E	C	A	D	D	A
Approach Delay		39.1			42.2			25.3			31.5	
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: 0.83	
Intersection Signal Delay: 31.2	Intersection LOS: C
Intersection Capacity Utilization 65.6%	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)	282	126	165	268	99	63	151	1251	218	49	1100	345
v/c Ratio	0.63	0.57	0.49	0.61	0.46	0.19	0.67	0.56	0.27	0.34	0.83	0.44
Control Delay	49.3	53.5	10.5	49.0	49.6	1.2	57.7	25.1	4.4	51.3	38.3	6.8
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	49.3	53.5	10.5	49.0	49.6	1.2	57.7	25.1	4.4	51.3	38.3	6.8
Queue Length 50th (ft)	93	81	0	89	63	0	97	231	0	32	352	15
Queue Length 95th (ft)	131	135	52	126	111	0	162	335	52	67	#582	94
Internal Link Dist (ft)		418			3248			1312			1360	
Turn Bay Length (ft)	225			260		280	310			350		
Base Capacity (vph)	588	319	415	585	317	414	250	2253	822	236	1329	787
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	0.48	0.39	0.40	0.46	0.31	0.15	0.60	0.56	0.27	0.21	0.83	0.44

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)	259	116	152	247	91	58	139	1151	201	45	1012	317
Future Volume (veh/h)	259	116	152	247	91	58	139	1151	201	45	1012	317
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	282	126	165	268	99	63	151	1251	0	49	1100	0
Adj No. of Lanes	2	1	1	2	1	1	1	3	1	1	2	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	359	235	199	345	229	194	181	2384	742	90	1473	659
Arrive On Green	0.10	0.13	0.13	0.10	0.12	0.12	0.10	0.47	0.00	0.05	0.42	0.00
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	1774	5085	1583	1774	3539	1583
Grp Volume(v), veh/h	282	126	165	268	99	63	151	1251	0	49	1100	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	8.4	6.7	10.7	8.0	5.2	3.8	8.8	18.2	0.0	2.8	27.6	0.0
Cycle Q Clear(g_c), s	8.4	6.7	10.7	8.0	5.2	3.8	8.8	18.2	0.0	2.8	27.6	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	359	235	199	345	229	194	181	2384	742	90	1473	659
V/C Ratio(X)	0.78	0.54	0.83	0.78	0.43	0.32	0.83	0.52	0.00	0.54	0.75	0.00
Avail Cap(c_a), veh/h	590	319	271	587	318	270	235	2384	742	237	1473	659
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	0.64	0.64	0.64	1.00	1.00	0.00	0.74	0.74	0.00
Uniform Delay (d), s/veh	45.9	43.0	44.8	46.1	42.7	42.1	46.2	19.6	0.0	48.7	26.0	0.0
Incr Delay (d2), s/veh	3.8	1.9	14.1	2.4	0.8	0.6	17.6	0.8	0.0	3.8	2.6	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	4.2	3.6	5.5	3.9	2.7	1.7	5.2	8.6	0.0	1.5	14.0	0.0
LnGrp Delay(d),s/veh	49.7	44.9	58.9	48.5	43.5	42.7	63.8	20.5	0.0	52.4	28.6	0.0
LnGrp LOS	D	D	E	D	D	D	E	C		D	C	
Approach Vol, veh/h		573			430			1402			1149	
Approach Delay, s/veh		51.3			46.5			25.1			29.6	
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	11.3	55.7	17.6	20.3	16.8	50.2	18.0	20.0
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	14.0	28.5	17.9	* 18	13.9	* 29	18.0	17.9
Max Q Clear Time (g_c+I1), s	4.8	20.2	10.0	12.7	10.8	29.6	10.4	7.2
Green Ext Time (p_c), s	0.0	4.8	0.6	0.5	0.1	0.0	0.6	0.4

Intersection Summary	
HCM 2010 Ctrl Delay	33.4
HCM 2010 LOS	C

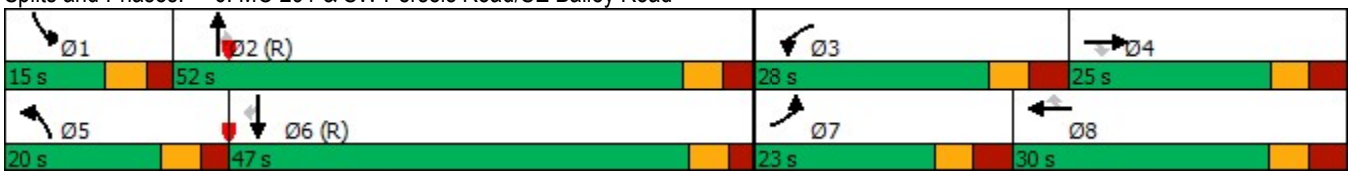
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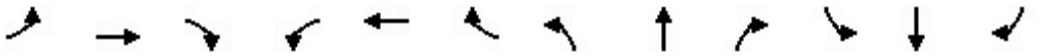
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	394	113	141	169	144	71	155	1468	233	49	1011	490
Future Volume (vph)	394	113	141	169	144	71	155	1468	233	49	1011	490
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	25.0	25.0	28.0	30.0	30.0	20.0	52.0	52.0	15.0	47.0	47.0
Total Split (s)	23.0	25.0	25.0	28.0	30.0	30.0	20.0	52.0	52.0	15.0	47.0	47.0
Total Split (%)	19.2%	20.8%	20.8%	23.3%	25.0%	25.0%	16.7%	43.3%	43.3%	12.5%	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)	16.2	19.8	19.8	11.8	15.4	15.4	16.0	55.4	55.4	9.0	46.2	46.2
Actuated g/C Ratio	0.14	0.16	0.16	0.10	0.13	0.13	0.13	0.46	0.46	0.08	0.38	0.38
v/c Ratio	0.92	0.40	0.39	0.55	0.66	0.23	0.71	0.68	0.30	0.40	0.81	0.60
Control Delay	78.2	48.7	9.8	57.5	62.5	1.6	66.8	28.8	5.2	72.9	21.5	5.3
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	78.2	48.7	9.8	57.5	62.5	1.6	66.8	28.8	5.2	72.9	21.5	5.3
LOS	E	D	A	E	E	A	E	C	A	E	C	A
Approach Delay		58.2			49.1			29.0			18.0	
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: 0.92	
Intersection Signal Delay: 31.2	Intersection LOS: C
Intersection Capacity Utilization 77.2%	ICU Level of Service D
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)	428	123	153	184	157	77	168	1596	253	53	1099	533
v/c Ratio	0.92	0.40	0.39	0.55	0.66	0.23	0.71	0.68	0.30	0.40	0.81	0.60
Control Delay	78.2	48.7	9.8	57.5	62.5	1.6	66.8	28.8	5.2	72.9	21.5	5.3
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	78.2	48.7	9.8	57.5	62.5	1.6	66.8	28.8	5.2	72.9	21.5	5.3
Queue Length 50th (ft)	171	86	0	71	117	0	124	361	10	43	141	24
Queue Length 95th (ft)	#269	144	57	106	181	0	#225	469	65	m77	#203	58
Internal Link Dist (ft)		418			3248			1312			1360	
Turn Bay Length (ft)	225			260		280	310			350		
Base Capacity (vph)	463	307	389	597	355	423	242	2349	855	142	1363	894
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	0.92	0.40	0.39	0.31	0.44	0.18	0.69	0.68	0.30	0.37	0.81	0.60

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)	394	113	141	169	144	71	155	1468	233	49	1011	490
Future Volume (veh/h)	394	113	141	169	144	71	155	1468	233	49	1011	490
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	428	123	153	184	157	77	168	1596	0	53	1099	0
Adj No. of Lanes	2	1	1	2	1	1	1	3	1	1	2	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	459	308	262	250	196	167	195	2499	778	86	1519	680
Arrive On Green	0.13	0.17	0.17	0.07	0.11	0.11	0.11	0.49	0.00	0.10	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	428	123	153	184	157	77	168	1596	0	53	1099	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	14.8	7.1	10.7	6.3	9.9	5.5	11.2	27.9	0.0	3.4	13.9	0.0
Cycle Q Clear(g_c), s	14.8	7.1	10.7	6.3	9.9	5.5	11.2	27.9	0.0	3.4	13.9	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	459	308	262	250	196	167	195	2499	778	86	1519	680
V/C Ratio(X)	0.93	0.40	0.59	0.74	0.80	0.46	0.86	0.64	0.00	0.62	0.72	0.00
Avail Cap(c_a), veh/h	459	308	262	599	355	302	205	2499	778	133	1519	680
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	0.78	0.78	0.78	1.00	1.00	0.00	0.80	0.80	0.00
Uniform Delay (d), s/veh	51.5	44.8	46.3	54.5	52.5	50.5	52.5	22.6	0.0	53.1	5.8	0.0
Incr Delay (d2), s/veh	26.1	0.8	3.3	3.3	5.9	1.6	28.6	1.3	0.0	5.7	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	8.7	3.7	4.9	3.1	5.4	2.5	7.0	13.3	0.0	1.8	6.6	0.0
LnGrp Delay(d),s/veh	77.6	45.6	49.6	57.8	58.3	52.1	81.1	23.9	0.0	58.8	8.3	0.0
LnGrp LOS	E	D	D	E	E	D	F	C		E	A	
Approach Vol, veh/h		704			418			1764			1152	
Approach Delay, s/veh		65.9			57.0			29.3			10.6	
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	11.8	65.5	15.8	26.9	19.3	58.0	23.0	19.7
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	45.5	20.9	* 18	13.9	* 41	16.0	22.9
Max Q Clear Time (g_c+I1), s	5.4	29.9	8.3	12.7	13.2	15.9	16.8	11.9
Green Ext Time (p_c), s	0.0	9.3	0.4	0.5	0.0	8.0	0.0	0.7

Intersection Summary	
HCM 2010 Ctrl Delay	33.2
HCM 2010 LOS	C

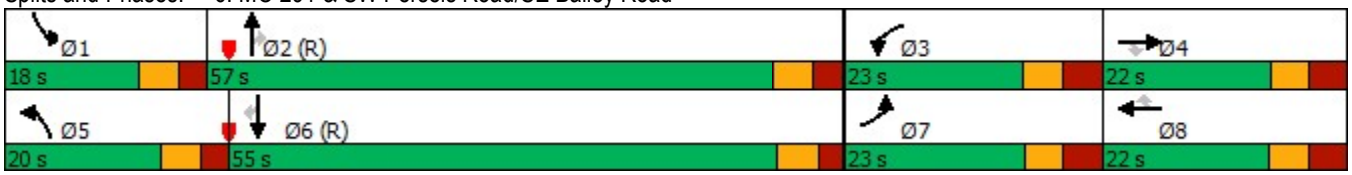
Notes

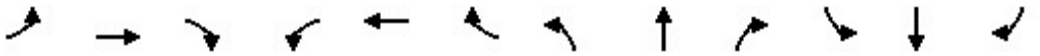
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	434	144	139	381	154	123	155	1387	275	79	1599	424
Future Volume (vph)	434	144	139	381	154	123	155	1387	275	79	1599	424
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)	16.0	14.0	14.0	15.9	13.9	13.9	13.6	55.8	55.8	10.3	50.3	50.3
Actuated g/C Ratio	0.13	0.12	0.12	0.13	0.12	0.12	0.11	0.46	0.46	0.09	0.42	0.42
v/c Ratio	1.03	0.72	0.47	0.91	0.78	0.42	0.84	0.64	0.33	0.57	1.17	0.56
Control Delay	101.5	70.3	12.8	76.8	75.1	9.8	84.4	27.2	3.5	76.3	105.4	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	101.5	70.3	12.8	76.8	75.1	9.8	84.4	27.2	3.5	76.3	105.4	4.3
LOS	F	E	B	E	E	A	F	C	A	E	F	A
Approach Delay		78.1			63.9			28.5			83.9	
Approach LOS		E			E			C			F	

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: 140	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.17	
Intersection Signal Delay: 61.6	Intersection LOS: E
Intersection Capacity Utilization 95.1%	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)	472	157	151	414	167	134	168	1508	299	86	1738	461
v/c Ratio	1.03	0.72	0.47	0.91	0.78	0.42	0.84	0.64	0.33	0.57	1.17	0.56
Control Delay	101.5	70.3	12.8	76.8	75.1	9.8	84.4	27.2	3.5	76.3	105.4	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	101.5	70.3	12.8	76.8	75.1	9.8	84.4	27.2	3.5	76.3	105.4	4.3
Queue Length 50th (ft)	~202	118	0	165	126	0	129	341	0	71	~870	19
Queue Length 95th (ft)	#309	#204	62	#257	#225	45	#249	402	53	m100	#993	35
Internal Link Dist (ft)		418			3248			1312			1360	
Turn Bay Length (ft)	225			260		280	310			350		
Base Capacity (vph)	457	232	330	454	231	328	207	2364	895	177	1482	826
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	1.03	0.68	0.46	0.91	0.72	0.41	0.81	0.64	0.33	0.49	1.17	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)	434	144	139	381	154	123	155	1387	275	79	1599	424
Future Volume (veh/h)	434	144	139	381	154	123	155	1387	275	79	1599	424
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	472	157	151	414	167	134	168	1508	0	86	1738	0
Adj No. of Lanes	2	1	1	2	1	1	1	3	1	1	2	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	459	209	178	456	209	178	195	2401	747	108	1494	669
Arrive On Green	0.13	0.11	0.11	0.13	0.11	0.11	0.11	0.47	0.00	0.12	0.84	0.00
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	1774	5085	1583	1774	3539	1583
Grp Volume(v), veh/h	472	157	151	414	167	134	168	1508	0	86	1738	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	16.0	9.8	11.2	14.2	10.5	9.8	11.2	26.7	0.0	5.7	50.7	0.0
Cycle Q Clear(g_c), s	16.0	9.8	11.2	14.2	10.5	9.8	11.2	26.7	0.0	5.7	50.7	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	459	209	178	456	209	178	195	2401	747	108	1494	669
V/C Ratio(X)	1.03	0.75	0.85	0.91	0.80	0.75	0.86	0.63	0.00	0.80	1.16	0.00
Avail Cap(c_a), veh/h	459	233	198	456	231	197	205	2401	747	177	1494	669
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	0.61	1.00	1.00	0.00	0.59	0.59	0.00
Uniform Delay (d), s/veh	52.0	51.6	52.3	51.3	51.9	51.7	52.5	23.8	0.0	52.0	9.3	0.0
Incr Delay (d2), s/veh	49.5	11.5	26.0	14.9	10.5	8.8	28.6	1.3	0.0	7.8	78.1	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	10.7	5.7	6.2	7.7	6.0	4.7	7.0	12.7	0.0	3.0	38.6	0.0
LnGrp Delay(d),s/veh	101.5	63.1	78.2	66.2	62.5	60.4	81.1	25.0	0.0	59.8	87.4	0.0
LnGrp LOS	F	E	E	E	E	E	F	C		E	F	
Approach Vol, veh/h		780			715			1676			1824	
Approach Delay, s/veh		89.3			64.3			30.6			86.1	
Approach LOS		F			E			C			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	13.3	63.2	23.0	20.6	19.3	57.2	23.0	20.6
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	12.0	50.5	15.9	* 15	13.9	* 49	16.0	14.9
Max Q Clear Time (g_c+I1), s	7.7	28.7	16.2	13.2	13.2	52.7	18.0	12.5
Green Ext Time (p_c), s	0.1	10.8	0.0	0.2	0.0	0.0	0.0	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	64.9
HCM 2010 LOS	E

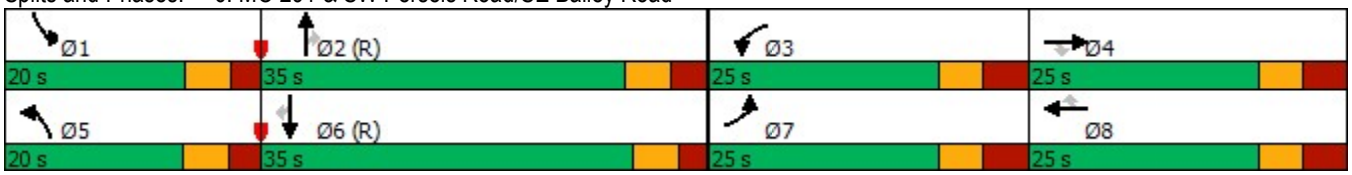
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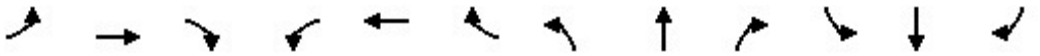
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	289	116	152	247	91	118	139	1241	201	106	1103	347
Future Volume (vph)	289	116	152	247	91	118	139	1241	201	106	1103	347
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)	14.7	12.5	12.5	13.5	11.3	11.3	13.5	40.6	40.6	11.9	39.4	39.4
Actuated g/C Ratio	0.14	0.12	0.12	0.13	0.11	0.11	0.13	0.39	0.39	0.11	0.38	0.38
v/c Ratio	0.66	0.57	0.48	0.61	0.50	0.40	0.67	0.69	0.29	0.57	0.90	0.48
Control Delay	49.3	53.4	10.5	49.0	51.9	5.9	57.7	31.1	5.1	54.9	43.7	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	49.3	53.4	10.5	49.0	51.9	5.9	57.7	31.1	5.1	54.9	43.7	8.4
LOS	D	D	B	D	D	A	E	C	A	D	D	A
Approach Delay		39.6			38.5			30.1			36.6	
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: 0.90	
Intersection Signal Delay: 34.7	Intersection LOS: C
Intersection Capacity Utilization 69.0%	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)	314	126	165	268	99	128	151	1349	218	115	1199	377
v/c Ratio	0.66	0.57	0.48	0.61	0.50	0.40	0.67	0.69	0.29	0.57	0.90	0.48
Control Delay	49.3	53.4	10.5	49.0	51.9	5.9	57.7	31.1	5.1	54.9	43.7	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	49.3	53.4	10.5	49.0	51.9	5.9	57.7	31.1	5.1	54.9	43.7	8.4
Queue Length 50th (ft)	104	81	0	89	64	0	97	273	0	74	400	29
Queue Length 95th (ft)	144	135	52	126	112	23	162	#433	56	127	#658	122
Internal Link Dist (ft)		418			3248			1312			1360	
Turn Bay Length (ft)	225			260		280	310			350		
Base Capacity (vph)	588	319	415	585	317	414	250	1964	745	242	1327	788
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	0.39	0.40	0.46	0.31	0.31	0.60	0.69	0.29	0.48	0.90	0.48

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)	289	116	152	247	91	118	139	1241	201	106	1103	347
Future Volume (veh/h)	289	116	152	247	91	118	139	1241	201	106	1103	347
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	314	126	165	268	99	128	151	1349	0	115	1199	0
Adj No. of Lanes	2	1	1	2	1	1	1	3	1	1	2	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	392	235	199	345	211	180	181	2231	695	143	1473	659
Arrive On Green	0.11	0.13	0.13	0.10	0.11	0.11	0.10	0.44	0.00	0.08	0.42	0.00
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	1774	5085	1583	1774	3539	1583
Grp Volume(v), veh/h	314	126	165	268	99	128	151	1349	0	115	1199	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	9.3	6.7	10.7	8.0	5.2	8.2	8.8	21.3	0.0	6.7	31.4	0.0
Cycle Q Clear(g_c), s	9.3	6.7	10.7	8.0	5.2	8.2	8.8	21.3	0.0	6.7	31.4	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	392	235	199	345	211	180	181	2231	695	143	1473	659
V/C Ratio(X)	0.80	0.54	0.83	0.78	0.47	0.71	0.83	0.60	0.00	0.80	0.81	0.00
Avail Cap(c_a), veh/h	590	319	271	587	318	270	235	2231	695	237	1473	659
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	0.61	0.61	0.61	1.00	1.00	0.00	0.77	0.77	0.00
Uniform Delay (d), s/veh	45.4	43.0	44.8	46.1	43.6	44.9	46.2	22.5	0.0	47.4	27.1	0.0
Incr Delay (d2), s/veh	4.7	1.9	14.1	2.3	1.0	3.2	17.6	1.2	0.0	7.8	3.9	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	4.7	3.6	5.5	3.9	2.8	3.8	5.2	10.1	0.0	3.6	16.1	0.0
LnGrp Delay(d),s/veh	50.1	44.9	58.9	48.4	44.6	48.1	63.8	23.7	0.0	55.2	31.0	0.0
LnGrp LOS	D	D	E	D	D	D	E	C		E	C	
Approach Vol, veh/h		605			495			1500			1314	
Approach Delay, s/veh		51.4			47.6			27.8			33.1	
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	14.5	52.6	17.6	20.3	16.8	50.2	18.9	19.0
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	14.0	28.5	17.9	* 18	13.9	* 29	18.0	17.9
Max Q Clear Time (g_c+I1), s	8.7	23.3	10.0	12.7	10.8	33.4	11.3	10.2
Green Ext Time (p_c), s	0.1	3.5	0.6	0.5	0.1	0.0	0.6	0.5

Intersection Summary	
HCM 2010 Ctrl Delay	35.7
HCM 2010 LOS	D

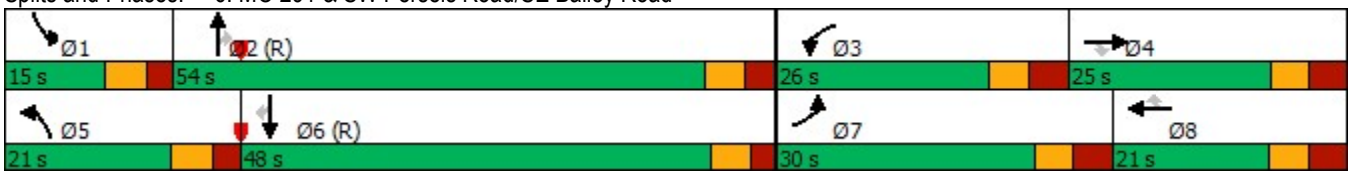
Notes

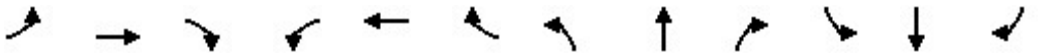
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	397	117	141	220	156	106	155	1526	252	68	1066	492
Future Volume (vph)	397	117	141	220	156	106	155	1526	252	68	1066	492
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)	30.0	25.0	25.0	26.0	21.0	21.0	21.0	54.0	54.0	15.0	48.0	48.0
Total Split (s)	30.0	25.0	25.0	26.0	21.0	21.0	21.0	54.0	54.0	15.0	48.0	48.0
Total Split (%)	25.0%	20.8%	20.8%	21.7%	17.5%	17.5%	17.5%	45.0%	45.0%	12.5%	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)	19.8	20.4	20.4	13.6	14.2	14.2	14.1	53.5	53.5	8.5	45.7	45.7
Actuated g/C Ratio	0.16	0.17	0.17	0.11	0.12	0.12	0.12	0.45	0.45	0.07	0.38	0.38
v/c Ratio	0.76	0.40	0.39	0.61	0.77	0.36	0.81	0.73	0.33	0.59	0.60	0.57
Control Delay	57.1	48.4	9.9	57.4	74.4	6.4	79.5	31.4	5.4	82.6	18.8	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	57.1	48.4	9.9	57.4	74.4	6.4	79.5	31.4	5.4	82.6	18.8	4.0
LOS	E	D	A	E	E	A	E	C	A	F	B	A
Approach Delay		45.4			51.7			31.9			17.0	
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: 0.81	
Intersection Signal Delay: 30.6	Intersection LOS: C
Intersection Capacity Utilization 77.0%	ICU Level of Service D
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)	432	127	153	239	170	115	168	1659	274	74	1159	535
v/c Ratio	0.76	0.40	0.39	0.61	0.77	0.36	0.81	0.73	0.33	0.59	0.60	0.57
Control Delay	57.1	48.4	9.9	57.4	74.4	6.4	79.5	31.4	5.4	82.6	18.8	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	57.1	48.4	9.9	57.4	74.4	6.4	79.5	31.4	5.4	82.6	18.8	4.0
Queue Length 50th (ft)	165	86	0	92	127	0	128	416	13	61	117	12
Queue Length 95th (ft)	216	152	59	130	#243	29	#237	480	69	m104	141	29
Internal Link Dist (ft)		418			522			1312			1360	
Turn Bay Length (ft)	225			260			310			350		
Base Capacity (vph)	657	321	399	540	229	327	219	2265	841	132	1934	933
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	0.66	0.40	0.38	0.44	0.74	0.35	0.77	0.73	0.33	0.56	0.60	0.57

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)	397	117	141	220	156	106	155	1526	252	68	1066	492
Future Volume (veh/h)	397	117	141	220	156	106	155	1526	252	68	1066	492
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	432	127	153	239	170	115	168	1659	0	74	1159	0
Adj No. of Lanes	2	1	1	2	1	1	1	3	1	1	3	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	504	306	260	306	200	170	195	2395	746	95	2103	655
Arrive On Green	0.15	0.16	0.16	0.09	0.11	0.11	0.11	0.47	0.00	0.11	0.83	0.00
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	432	127	153	239	170	115	168	1659	0	74	1159	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	14.7	7.3	10.7	8.2	10.8	8.4	11.2	30.7	0.0	4.9	8.7	0.0
Cycle Q Clear(g_c), s	14.7	7.3	10.7	8.2	10.8	8.4	11.2	30.7	0.0	4.9	8.7	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	504	306	260	306	200	170	195	2395	746	95	2103	655
V/C Ratio(X)	0.86	0.41	0.59	0.78	0.85	0.68	0.86	0.69	0.00	0.78	0.55	0.00
Avail Cap(c_a), veh/h	660	306	260	542	216	183	220	2395	746	133	2103	655
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	0.79	0.79	0.00
Uniform Delay (d), s/veh	50.0	45.0	46.4	53.5	52.6	51.5	52.5	24.9	0.0	52.9	6.8	0.0
Incr Delay (d2), s/veh	8.7	0.9	3.4	4.4	24.7	8.6	25.5	1.7	0.0	14.2	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	7.6	3.9	4.9	4.1	6.9	4.1	6.8	14.7	0.0	2.8	4.0	0.0
LnGrp Delay(d),s/veh	58.6	45.9	49.8	57.9	77.3	60.2	78.0	26.6	0.0	67.1	7.7	0.0
LnGrp LOS	E	D	D	E	E	E	E	C		E	A	
Approach Vol, veh/h		712			524			1827			1233	
Approach Delay, s/veh		54.5			64.7			31.3			11.2	
Approach LOS		D			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	12.4	63.0	17.8	26.8	19.3	56.1	24.6	20.0
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	9.0	47.5	18.9	* 18	14.9	* 42	23.0	13.9
Max Q Clear Time (g_c+I1), s	6.9	32.7	10.2	12.7	13.2	10.7	16.7	12.8
Green Ext Time (p_c), s	0.0	9.3	0.5	0.5	0.1	8.9	0.9	0.2

Intersection Summary	
HCM 2010 Ctrl Delay	33.5
HCM 2010 LOS	C

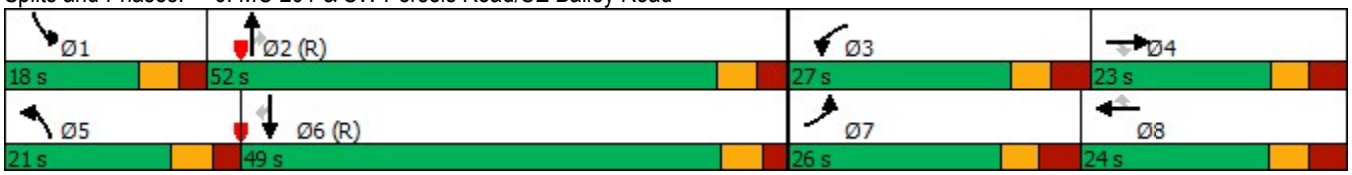
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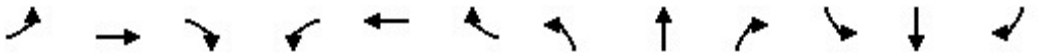
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	441	153	139	446	165	160	155	1486	339	138	1671	426
Future Volume (vph)	441	153	139	446	165	160	155	1486	339	138	1671	426
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	23.0	23.0	27.0	24.0	24.0	21.0	52.0	52.0	18.0	49.0	49.0
Total Split (s)	26.0	23.0	23.0	27.0	24.0	24.0	21.0	52.0	52.0	18.0	49.0	49.0
Total Split (%)	21.7%	19.2%	19.2%	22.5%	20.0%	20.0%	17.5%	43.3%	43.3%	15.0%	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)	18.7	14.6	14.6	19.4	15.3	15.3	14.1	47.1	47.1	12.3	45.7	45.7
Actuated g/C Ratio	0.16	0.12	0.12	0.16	0.13	0.13	0.12	0.39	0.39	0.10	0.38	0.38
v/c Ratio	0.90	0.73	0.47	0.87	0.76	0.49	0.81	0.81	0.45	0.83	0.94	0.56
Control Delay	70.1	70.0	12.3	66.4	70.9	12.1	79.5	36.8	6.0	87.2	31.6	4.7
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	70.1	70.0	12.3	66.4	70.9	12.1	79.5	36.8	6.0	87.2	31.6	4.7
LOS	E	E	B	E	E	B	E	D	A	F	C	A
Approach Delay		59.1			56.1			34.9			29.9	
Approach LOS		E			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: 0.94	
Intersection Signal Delay: 38.9	Intersection LOS: D
Intersection Capacity Utilization 84.0%	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)	479	166	151	485	179	174	168	1615	368	150	1816	463
v/c Ratio	0.90	0.73	0.47	0.87	0.76	0.49	0.81	0.81	0.45	0.83	0.94	0.56
Control Delay	70.1	70.0	12.3	66.4	70.9	12.1	79.5	36.8	6.0	87.2	31.6	4.7
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	70.1	70.0	12.3	66.4	70.9	12.1	79.5	36.8	6.0	87.2	31.6	4.7
Queue Length 50th (ft)	189	124	0	190	134	1	128	412	19	124	373	26
Queue Length 95th (ft)	#279	#209	61	m#275	m#223	m65	#237	476	88	m#176	#615	m66
Internal Link Dist (ft)		418			522			1312			1360	
Turn Bay Length (ft)	225			260			310			350		
Base Capacity (vph)	543	248	341	569	262	372	219	1997	822	184	1935	824
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	0.88	0.67	0.44	0.85	0.68	0.47	0.77	0.81	0.45	0.82	0.94	0.56

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)	441	153	139	446	165	160	155	1486	339	138	1671	426
Future Volume (veh/h)	441	153	139	446	165	160	155	1486	339	138	1671	426
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	479	166	151	485	179	174	168	1615	0	150	1816	0
Adj No. of Lanes	2	1	1	2	1	1	1	3	1	1	3	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	532	230	195	541	237	201	195	2028	632	174	1963	611
Arrive On Green	0.15	0.12	0.12	0.16	0.13	0.13	0.11	0.40	0.00	0.20	0.77	0.00
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	479	166	151	485	179	174	168	1615	0	150	1816	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	16.4	10.3	11.1	16.6	11.1	12.9	11.2	33.6	0.0	9.8	34.2	0.0
Cycle Q Clear(g_c), s	16.4	10.3	11.1	16.6	11.1	12.9	11.2	33.6	0.0	9.8	34.2	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	532	230	195	541	237	201	195	2028	632	174	1963	611
V/C Ratio(X)	0.90	0.72	0.77	0.90	0.76	0.86	0.86	0.80	0.00	0.86	0.93	0.00
Avail Cap(c_a), veh/h	545	248	211	571	262	223	220	2028	632	177	1963	611
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	0.51	0.51	0.00
Uniform Delay (d), s/veh	49.8	50.6	51.0	49.6	50.6	51.4	52.5	31.8	0.0	47.5	12.3	0.0
Incr Delay (d2), s/veh	17.8	9.1	15.1	16.3	10.8	26.2	25.5	3.3	0.0	19.4	5.1	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	9.1	5.9	5.7	9.1	6.4	7.1	6.8	16.3	0.0	5.7	16.0	0.0
LnGrp Delay(d),s/veh	67.7	59.7	66.0	65.9	61.4	77.6	78.0	35.1	0.0	66.9	17.4	0.0
LnGrp LOS	E	E	E	E	E	E	E	D		E	B	
Approach Vol, veh/h		796			838			1783			1966	
Approach Delay, s/veh		65.7			67.3			39.2			21.1	
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	17.7	54.4	26.0	21.9	19.3	52.8	25.5	22.4
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	45.5	19.9	* 16	14.9	* 43	19.0	16.9
Max Q Clear Time (g_c+I1), s	11.8	35.6	18.6	13.1	13.2	36.2	18.4	14.9
Green Ext Time (p_c), s	0.0	6.8	0.3	0.4	0.1	5.4	0.1	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	40.9
HCM 2010 LOS	D

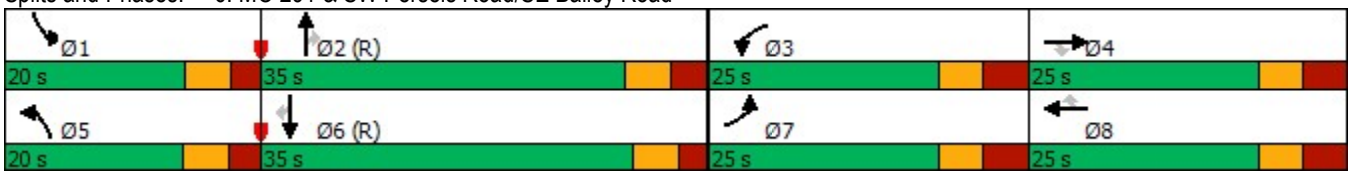
Notes

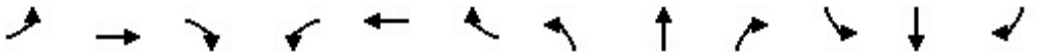
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	308	129	152	324	103	196	139	1445	290	203	1295	366
Future Volume (vph)	308	129	152	324	103	196	139	1445	290	203	1295	366
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)	15.1	13.2	13.2	15.5	13.5	13.5	13.1	32.6	32.6	17.1	37.0	37.0
Actuated g/C Ratio	0.14	0.13	0.13	0.15	0.13	0.13	0.12	0.31	0.31	0.16	0.35	0.35
v/c Ratio	0.68	0.60	0.47	0.70	0.47	0.55	0.68	0.99	0.46	0.77	0.79	0.49
Control Delay	49.6	53.7	10.0	48.9	48.2	11.3	59.8	59.1	7.7	61.0	36.1	5.3
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	49.6	53.7	10.0	48.9	48.2	11.3	59.8	59.1	7.7	61.0	36.1	5.3
LOS	D	D	A	D	D	B	E	E	A	E	D	A
Approach Delay		40.3			37.0			51.2			32.7	
Approach LOS		D			D			D			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: 0.99	
Intersection Signal Delay: 41.1	Intersection LOS: D
Intersection Capacity Utilization 77.4%	ICU Level of Service D
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)	335	140	165	352	112	213	151	1571	315	221	1408	398
v/c Ratio	0.68	0.60	0.47	0.70	0.47	0.55	0.68	0.99	0.46	0.77	0.79	0.49
Control Delay	49.6	53.7	10.0	48.9	48.2	11.3	59.8	59.1	7.7	61.0	36.1	5.3
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	49.6	53.7	10.0	48.9	48.2	11.3	59.8	59.1	7.7	61.0	36.1	5.3
Queue Length 50th (ft)	111	90	0	117	71	3	97	~450	16	138	315	0
Queue Length 95th (ft)	154	147	51	m160	m121	m66	#175	#549	87	#295	#457	73
Internal Link Dist (ft)		418			522			1312			1360	
Turn Bay Length (ft)	225			260			310			350		
Base Capacity (vph)	588	319	415	585	317	446	244	1580	687	288	1793	816
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	0.57	0.44	0.40	0.60	0.35	0.48	0.62	0.99	0.46	0.77	0.79	0.49

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)	308	129	152	324	103	196	139	1445	290	203	1295	366
Future Volume (veh/h)	308	129	152	324	103	196	139	1445	290	203	1295	366
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	335	140	165	352	112	213	151	1571	0	221	1408	0
Adj No. of Lanes	2	1	1	2	1	1	1	3	1	1	3	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	412	275	234	429	286	243	181	1730	539	237	1883	586
Arrive On Green	0.12	0.15	0.15	0.12	0.15	0.15	0.10	0.34	0.00	0.13	0.37	0.00
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	335	140	165	352	112	213	151	1571	0	221	1408	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	10.0	7.3	10.4	10.5	5.7	13.8	8.8	31.0	0.0	12.9	25.3	0.0
Cycle Q Clear(g_c), s	10.0	7.3	10.4	10.5	5.7	13.8	8.8	31.0	0.0	12.9	25.3	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	412	275	234	429	286	243	181	1730	539	237	1883	586
V/C Ratio(X)	0.81	0.51	0.71	0.82	0.39	0.88	0.83	0.91	0.00	0.93	0.75	0.00
Avail Cap(c_a), veh/h	590	319	271	587	318	270	235	1730	539	237	1883	586
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	0.65	0.65	0.00
Uniform Delay (d), s/veh	45.1	41.2	42.6	44.8	40.0	43.5	46.2	33.1	0.0	45.0	28.8	0.0
Incr Delay (d2), s/veh	5.7	1.5	6.8	6.6	0.9	24.6	17.6	8.5	0.0	31.0	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	5.1	3.8	5.0	5.4	3.0	7.7	5.2	15.8	0.0	8.4	12.2	0.0
LnGrp Delay(d),s/veh	50.8	42.7	49.4	51.4	40.9	68.1	63.8	41.6	0.0	76.1	30.6	0.0
LnGrp LOS	D	D	D	D	D	E	E	D		E	C	
Approach Vol, veh/h		640			677			1722			1629	
Approach Delay, s/veh		48.6			54.9			43.5			36.8	
Approach LOS		D			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	20.0	42.2	20.2	22.6	16.8	45.4	19.6	23.2
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	14.9	33.0	12.5	12.4	10.8	27.3	12.0	15.8
Green Ext Time (p_c), s	0.0	0.0	0.6	0.6	0.1	1.3	0.6	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	43.5
HCM 2010 LOS	D

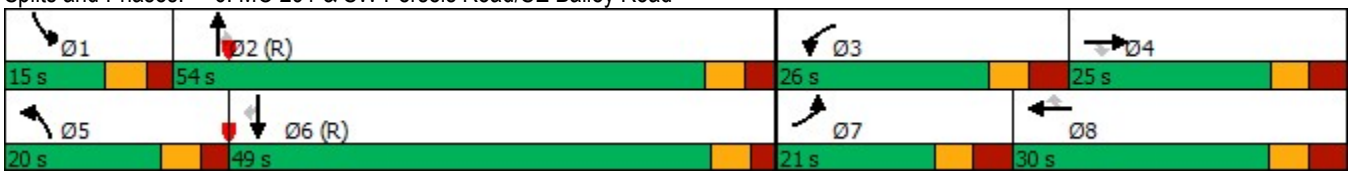
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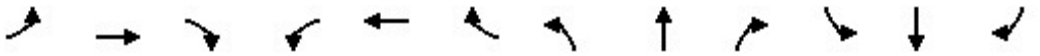
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	397	119	141	276	161	194	156	1541	270	129	1066	492
Future Volume (vph)	397	119	141	276	161	194	156	1541	270	129	1066	492
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)	16.0	17.2	17.2	15.5	16.6	16.6	15.4	51.3	51.3	9.4	45.7	45.7
Actuated g/C Ratio	0.13	0.14	0.14	0.13	0.14	0.14	0.13	0.43	0.43	0.08	0.38	0.38
v/c Ratio	0.94	0.48	0.43	0.68	0.68	0.60	0.75	0.77	0.35	0.52	0.60	0.57
Control Delay	82.2	54.7	11.1	57.6	61.8	21.7	70.8	32.7	5.4	70.3	17.8	3.6
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	82.2	54.7	11.1	57.6	61.8	21.7	70.8	32.7	5.4	70.3	17.8	3.6
LOS	F	D	B	E	E	C	E	C	A	E	B	A
Approach Delay		62.0			47.7			32.0			17.7	
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: 0.94	
Intersection Signal Delay: 33.1	Intersection LOS: C
Intersection Capacity Utilization 77.6%	ICU Level of Service D
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)	432	129	153	300	175	211	170	1675	293	140	1159	535
v/c Ratio	0.94	0.48	0.43	0.68	0.68	0.60	0.75	0.77	0.35	0.52	0.60	0.57
Control Delay	82.2	54.7	11.1	57.6	61.8	21.7	70.8	32.7	5.4	70.3	17.8	3.6
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	82.2	54.7	11.1	57.6	61.8	21.7	70.8	32.7	5.4	70.3	17.8	3.6
Queue Length 50th (ft)	~192	96	0	115	131	41	125	389	14	58	109	6
Queue Length 95th (ft)	#296	156	60	158	196	114	#251	487	73	m93	134	20
Internal Link Dist (ft)		418			522			1312			1360	
Turn Bay Length (ft)	225			260			310			350		
Base Capacity (vph)	458	292	377	540	355	425	233	2173	826	278	1936	933
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	0.94	0.44	0.41	0.56	0.49	0.50	0.73	0.77	0.35	0.50	0.60	0.57

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)	397	119	141	276	161	194	156	1541	270	129	1066	492
Future Volume (veh/h)	397	119	141	276	161	194	156	1541	270	129	1066	492
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	432	129	153	300	175	0	170	1675	0	140	1159	0
Adj No. of Lanes	2	1	1	2	1	1	1	3	1	2	3	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	402	228	194	367	211	179	196	2495	777	199	2221	692
Arrive On Green	0.12	0.12	0.12	0.11	0.11	0.00	0.11	0.49	0.00	0.12	0.87	0.00
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	1774	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	432	129	153	300	175	0	170	1675	0	140	1159	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	14.0	7.8	11.3	10.2	11.0	0.0	11.3	30.0	0.0	4.7	6.4	0.0
Cycle Q Clear(g_c), s	14.0	7.8	11.3	10.2	11.0	0.0	11.3	30.0	0.0	4.7	6.4	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	402	228	194	367	211	179	196	2495	777	199	2221	692
V/C Ratio(X)	1.08	0.57	0.79	0.82	0.83	0.00	0.87	0.67	0.00	0.70	0.52	0.00
Avail Cap(c_a), veh/h	402	279	237	542	355	302	205	2495	777	258	2221	692
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	0.00	1.00	1.00	0.00	0.76	0.76	0.00
Uniform Delay (d), s/veh	53.0	49.6	51.2	52.4	52.1	0.0	52.5	23.2	0.0	52.1	4.7	0.0
Incr Delay (d2), s/veh	66.7	2.2	13.5	6.1	8.1	0.0	29.0	1.5	0.0	4.5	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	10.4	4.2	5.7	5.2	6.2	0.0	7.2	14.3	0.0	2.3	2.9	0.0
LnGrp Delay(d),s/veh	119.7	51.8	64.6	58.5	60.2	0.0	81.5	24.7	0.0	56.5	5.3	0.0
LnGrp LOS	F	D	E	E	E		F	C		E	A	
Approach Vol, veh/h		714			475			1845			1299	
Approach Delay, s/veh		95.6			59.1			29.9			10.9	
Approach LOS		F			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	12.9	65.4	19.9	21.8	19.4	58.9	21.0	20.7
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	47.5	18.9	* 18	13.9	* 43	14.0	22.9
Max Q Clear Time (g_c+I1), s	6.7	32.0	12.2	13.3	13.3	8.4	16.0	13.0
Green Ext Time (p_c), s	0.1	9.7	0.6	0.5	0.0	9.2	0.0	0.6

Intersection Summary	
HCM 2010 Ctrl Delay	38.2
HCM 2010 LOS	D

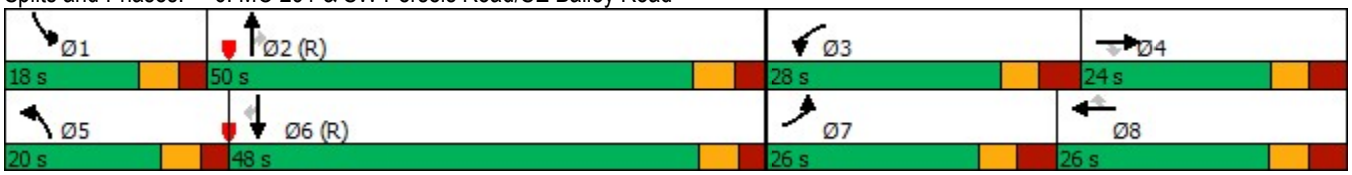
Notes

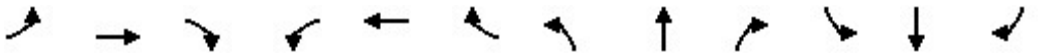
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	441	166	139	496	174	242	156	1497	351	260	1671	426
Future Volume (vph)	441	166	139	496	174	242	156	1497	351	260	1671	426
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)	18.7	15.3	15.3	20.6	17.2	17.2	13.9	45.1	45.1	12.3	44.0	44.0
Actuated g/C Ratio	0.16	0.13	0.13	0.17	0.14	0.14	0.12	0.38	0.38	0.10	0.37	0.37
v/c Ratio	0.90	0.76	0.45	0.91	0.71	0.68	0.83	0.85	0.48	0.80	0.97	0.58
Control Delay	70.1	70.9	11.9	70.1	63.8	24.6	83.5	40.0	7.0	75.0	38.1	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	70.1	70.9	11.9	70.1	63.8	24.6	83.5	40.0	7.0	75.0	38.1	6.1
LOS	E	E	B	E	E	C	F	D	A	E	D	A
Approach Delay		59.4			56.8			37.6			36.4	
Approach LOS		E			E			D			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: 0.97	
Intersection Signal Delay: 42.8	Intersection LOS: D
Intersection Capacity Utilization 85.6%	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)	479	180	151	539	189	263	170	1627	382	283	1816	463
v/c Ratio	0.90	0.76	0.45	0.91	0.71	0.68	0.83	0.85	0.48	0.80	0.97	0.58
Control Delay	70.1	70.9	11.9	70.1	63.8	24.6	83.5	40.0	7.0	75.0	38.1	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	70.1	70.9	11.9	70.1	63.8	24.6	83.5	40.0	7.0	75.0	38.1	6.1
Queue Length 50th (ft)	189	134	0	212	139	54	131	428	25	121	~404	23
Queue Length 95th (ft)	#279	#224	61	#310	219	147	#251	495	102	m#150	#630	m84
Internal Link Dist (ft)		418			522			1312			1360	
Turn Bay Length (ft)	225			260			310			350		
Base Capacity (vph)	543	263	353	597	293	406	210	1912	802	355	1865	804
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	0.88	0.68	0.43	0.90	0.65	0.65	0.81	0.85	0.48	0.80	0.97	0.58

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)	441	166	139	496	174	242	156	1497	351	260	1671	426
Future Volume (veh/h)	441	166	139	496	174	242	156	1497	351	260	1671	426
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	479	180	151	539	189	0	170	1627	0	283	1816	0
Adj No. of Lanes	2	1	1	2	1	1	1	3	1	2	3	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	532	215	183	590	248	211	196	2004	624	332	1927	600
Arrive On Green	0.15	0.12	0.12	0.17	0.13	0.00	0.11	0.39	0.00	0.19	0.76	0.00
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	1774	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	479	180	151	539	189	0	170	1627	0	283	1816	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	16.4	11.4	11.2	18.5	11.7	0.0	11.3	34.2	0.0	9.5	36.3	0.0
Cycle Q Clear(g_c), s	16.4	11.4	11.2	18.5	11.7	0.0	11.3	34.2	0.0	9.5	36.3	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	532	215	183	590	248	211	196	2004	624	332	1927	600
V/C Ratio(X)	0.90	0.84	0.83	0.91	0.76	0.00	0.87	0.81	0.00	0.85	0.94	0.00
Avail Cap(c_a), veh/h	545	264	224	599	293	249	205	2004	624	344	1927	600
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	0.00	1.00	1.00	0.00	0.46	0.46	0.00
Uniform Delay (d), s/veh	49.8	52.0	51.9	48.8	50.2	0.0	52.5	32.4	0.0	47.6	13.4	0.0
Incr Delay (d2), s/veh	17.8	17.4	18.4	18.4	9.4	0.0	29.0	3.7	0.0	9.0	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	9.1	6.9	5.8	10.3	6.7	0.0	7.2	16.7	0.0	4.9	17.1	0.0
LnGrp Delay(d),s/veh	67.7	69.4	70.3	67.2	59.5	0.0	81.5	36.1	0.0	56.6	19.1	0.0
LnGrp LOS	E	E	E	E	E		F	D		E	B	
Approach Vol, veh/h		810			728			1797			2099	
Approach Delay, s/veh		68.5			65.2			40.4			24.2	
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	17.6	53.8	27.7	21.0	19.4	52.0	25.5	23.1
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	11.5	36.2	20.5	13.4	13.3	38.3	18.4	13.7
Green Ext Time (p_c), s	0.0	5.3	0.1	0.5	0.0	3.1	0.1	0.4

Intersection Summary	
HCM 2010 Ctrl Delay	41.7
HCM 2010 LOS	D

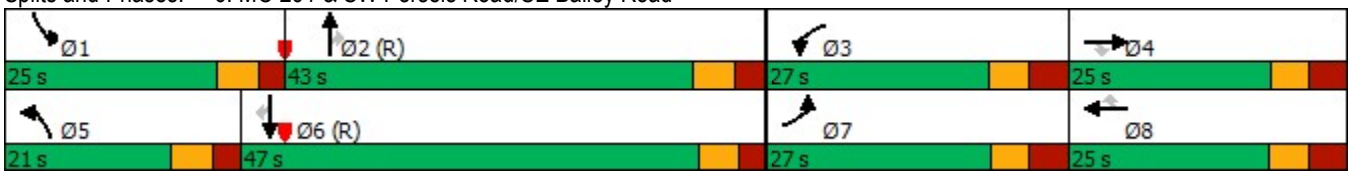
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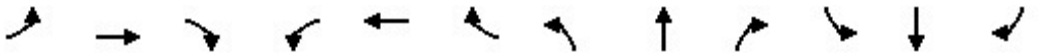
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	308	159	152	495	128	466	144	1492	368	541	1295	366
Future Volume (vph)	308	159	152	495	128	466	144	1492	368	541	1295	366
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)	16.6	18.0	18.0	19.9	21.3	21.3	13.8	36.5	36.5	19.0	42.1	42.1
Actuated g/C Ratio	0.14	0.15	0.15	0.17	0.18	0.18	0.12	0.30	0.30	0.16	0.35	0.35
v/c Ratio	0.71	0.62	0.44	0.95	0.42	1.05	0.77	1.05	0.57	1.08	0.79	0.49
Control Delay	57.5	58.4	10.7	76.2	49.5	78.4	76.1	77.7	11.1	117.1	27.5	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	57.5	58.4	10.7	76.2	49.5	78.4	76.1	77.7	11.1	117.1	27.5	4.3
LOS	E	E	B	E	D	E	E	E	B	F	C	A
Approach Delay		46.3			74.0			65.3			45.7	
Approach LOS		D			E			E			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: 130	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.08	
Intersection Signal Delay: 57.6	Intersection LOS: E
Intersection Capacity Utilization 88.9%	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)	335	173	165	538	139	507	157	1622	400	588	1408	398
v/c Ratio	0.71	0.62	0.44	0.95	0.42	1.05	0.77	1.05	0.57	1.08	0.79	0.49
Control Delay	57.5	58.4	10.7	76.2	49.5	78.4	76.1	77.7	11.1	117.1	27.5	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	57.5	58.4	10.7	76.2	49.5	78.4	76.1	77.7	11.1	117.1	27.5	4.3
Queue Length 50th (ft)	128	127	0	214	97	~258	119	~501	46	~270	161	23
Queue Length 95th (ft)	174	204	62	#321	167	#498	#215	#598	143	m#383	258	m60
Internal Link Dist (ft)		418			522			1312			1360	
Turn Bay Length (ft)	225			260			310			350		
Base Capacity (vph)	572	279	377	569	330	485	219	1546	703	543	1783	806
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	0.62	0.44	0.95	0.42	1.05	0.72	1.05	0.57	1.08	0.79	0.49

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)	308	159	152	495	128	466	144	1492	368	541	1295	366
Future Volume (veh/h)	308	159	152	495	128	466	144	1492	368	541	1295	366
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	335	173	165	538	139	0	157	1622	0	588	1408	0
Adj No. of Lanes	2	1	1	2	1	1	1	3	1	2	3	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	404	229	195	571	321	273	184	1680	523	545	1952	608
Arrive On Green	0.12	0.12	0.12	0.17	0.17	0.00	0.10	0.33	0.00	0.32	0.77	0.00
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	1774	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	335	173	165	538	139	0	157	1622	0	588	1408	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	11.4	10.8	12.2	18.5	8.0	0.0	10.4	37.6	0.0	19.0	17.3	0.0
Cycle Q Clear(g_c), s	11.4	10.8	12.2	18.5	8.0	0.0	10.4	37.6	0.0	19.0	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	404	229	195	571	321	273	184	1680	523	545	1952	608
V/C Ratio(X)	0.83	0.75	0.85	0.94	0.43	0.00	0.85	0.97	0.00	1.08	0.72	0.00
Avail Cap(c_a), veh/h	574	279	237	571	321	273	220	1680	523	545	1952	608
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	0.00	1.00	1.00	0.00	0.47	0.47	0.00
Uniform Delay (d), s/veh	51.8	50.9	51.5	49.5	44.4	0.0	52.9	39.5	0.0	41.0	10.6	0.0
Incr Delay (d2), s/veh	6.9	9.0	20.5	24.3	0.9	0.0	23.0	15.2	0.0	50.5	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	5.8	6.1	6.5	10.7	4.2	0.0	6.3	19.9	0.0	12.8	8.0	0.0
LnGrp Delay(d),s/veh	58.7	59.9	72.0	73.8	45.3	0.0	75.9	54.7	0.0	91.5	11.7	0.0
LnGrp LOS	E	E	E	E	D		E	D		F	B	
Approach Vol, veh/h		673			677			1779			1996	
Approach Delay, s/veh		62.3			67.9			56.6			35.2	
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	25.0	46.1	27.0	21.9	18.6	52.6	21.1	27.8
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	19.0	36.5	19.9	* 18	14.9	* 41	20.0	17.9
Max Q Clear Time (g_c+I1), s	21.0	39.6	20.5	14.2	12.4	19.3	13.4	10.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.5	0.1	9.9	0.7	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	50.5
HCM 2010 LOS	D

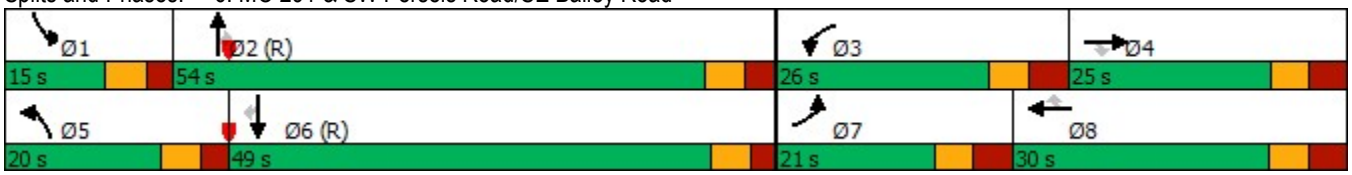
Notes

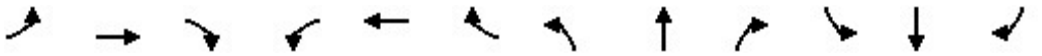
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	397	119	141	276	161	194	156	1827	270	129	1261	492
Future Volume (vph)	397	119	141	276	161	194	156	1827	270	129	1261	492
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)	14.0	15.1	15.1	15.5	16.6	16.6	15.4	53.3	53.3	9.4	47.7	47.7
Actuated g/C Ratio	0.12	0.13	0.13	0.13	0.14	0.14	0.13	0.44	0.44	0.08	0.40	0.40
v/c Ratio	1.08	0.55	0.46	0.68	0.68	0.60	0.75	0.88	0.36	0.52	0.68	0.56
Control Delay	117.7	58.2	11.9	57.6	61.8	22.0	70.8	36.8	7.8	69.2	18.5	3.1
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	117.7	58.2	11.9	57.6	61.8	22.0	70.8	36.8	7.8	69.2	18.5	3.1
LOS	F	E	B	E	E	C	E	D	A	E	B	A
Approach Delay		84.3			47.7			35.7			17.9	
Approach LOS		F			D			D			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: 1.08	
Intersection Signal Delay: 36.8	Intersection LOS: D
Intersection Capacity Utilization 83.1%	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)	432	129	153	300	175	211	170	1986	293	140	1371	535
v/c Ratio	1.08	0.55	0.46	0.68	0.68	0.60	0.75	0.88	0.36	0.52	0.68	0.56
Control Delay	117.7	58.2	11.9	57.6	61.8	22.0	70.8	36.8	7.8	69.2	18.5	3.1
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	117.7	58.2	11.9	57.6	61.8	22.0	70.8	36.8	7.8	69.2	18.5	3.1
Queue Length 50th (ft)	~192	96	0	115	131	41	125	508	33	58	113	0
Queue Length 95th (ft)	#296	156	60	158	196	115	#251	#674	100	m81	189	59
Internal Link Dist (ft)		418			522			1312			1360	
Turn Bay Length (ft)	225			260			310			350		
Base Capacity (vph)	400	279	367	540	355	425	233	2260	825	278	2023	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	1.08	0.46	0.42	0.56	0.49	0.50	0.73	0.88	0.36	0.50	0.68	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)	397	119	141	276	161	194	156	1827	270	129	1261	492
Future Volume (veh/h)	397	119	141	276	161	194	156	1827	270	129	1261	492
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	432	129	153	300	175	0	170	1986	0	140	1371	0
Adj No. of Lanes	2	1	1	2	1	1	1	3	1	2	3	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	402	228	194	367	211	179	196	2495	777	199	2221	692
Arrive On Green	0.12	0.12	0.12	0.11	0.11	0.00	0.11	0.49	0.00	0.12	0.87	0.00
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	1774	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	432	129	153	300	175	0	170	1986	0	140	1371	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	14.0	7.8	11.3	10.2	11.0	0.0	11.3	39.2	0.0	4.7	8.9	0.0
Cycle Q Clear(g_c), s	14.0	7.8	11.3	10.2	11.0	0.0	11.3	39.2	0.0	4.7	8.9	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	402	228	194	367	211	179	196	2495	777	199	2221	692
V/C Ratio(X)	1.08	0.57	0.79	0.82	0.83	0.00	0.87	0.80	0.00	0.70	0.62	0.00
Avail Cap(c_a), veh/h	402	279	237	542	355	302	205	2495	777	258	2221	692
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	0.00	1.00	1.00	0.00	0.62	0.62	0.00
Uniform Delay (d), s/veh	53.0	49.6	51.2	52.4	52.1	0.0	52.5	25.5	0.0	52.1	4.8	0.0
Incr Delay (d2), s/veh	66.7	2.2	13.5	6.1	8.1	0.0	29.0	2.7	0.0	3.7	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	10.4	4.2	5.7	5.2	6.2	0.0	7.2	18.8	0.0	2.3	4.0	0.0
LnGrp Delay(d),s/veh	119.7	51.8	64.6	58.5	60.2	0.0	81.5	28.3	0.0	55.8	5.6	0.0
LnGrp LOS	F	D	E	E	E		F	C		E	A	
Approach Vol, veh/h		714			475			2156			1511	
Approach Delay, s/veh		95.6			59.1			32.5			10.3	
Approach LOS		F			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	12.9	65.4	19.9	21.8	19.4	58.9	21.0	20.7
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	47.5	18.9	* 18	13.9	* 43	14.0	22.9
Max Q Clear Time (g_c+I1), s	6.7	41.2	12.2	13.3	13.3	10.9	16.0	13.0
Green Ext Time (p_c), s	0.1	5.3	0.6	0.5	0.0	11.3	0.0	0.6

Intersection Summary	
HCM 2010 Ctrl Delay	37.5
HCM 2010 LOS	D

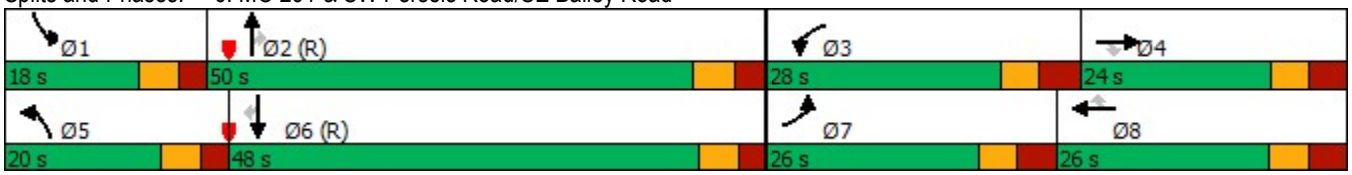
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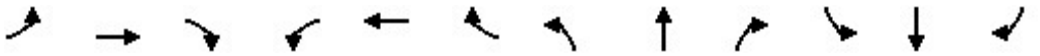
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	441	166	139	496	174	242	156	1770	351	260	1991	426
Future Volume (vph)	441	166	139	496	174	242	156	1770	351	260	1991	426
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)	18.7	15.3	15.3	20.6	17.2	17.2	13.9	45.1	45.1	12.3	44.0	44.0
Actuated g/C Ratio	0.16	0.13	0.13	0.17	0.14	0.14	0.12	0.38	0.38	0.10	0.37	0.37
v/c Ratio	0.90	0.76	0.45	0.91	0.71	0.68	0.83	1.01	0.50	0.80	1.16	0.60
Control Delay	70.1	70.9	11.9	70.1	63.8	24.8	83.5	59.8	10.3	70.5	103.9	10.0
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	70.1	70.9	11.9	70.1	63.8	24.8	83.5	59.8	10.3	70.5	103.9	10.0
LOS	E	E	B	E	E	C	F	E	B	E	F	A
Approach Delay		59.4			56.9			53.8			85.7	
Approach LOS		E			E			D			F	

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: 1.16	
Intersection Signal Delay: 67.8	Intersection LOS: E
Intersection Capacity Utilization 91.8%	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)	479	180	151	539	189	263	170	1924	382	283	2164	463
v/c Ratio	0.90	0.76	0.45	0.91	0.71	0.68	0.83	1.01	0.50	0.80	1.16	0.60
Control Delay	70.1	70.9	11.9	70.1	63.8	24.8	83.5	59.8	10.3	70.5	103.9	10.0
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	70.1	70.9	11.9	70.1	63.8	24.8	83.5	59.8	10.3	70.5	103.9	10.0
Queue Length 50th (ft)	189	134	0	212	139	54	131	~591	53	121	~738	76
Queue Length 95th (ft)	#279	#224	61	#310	219	148	#251	#687	143	m127	m#770	m77
Internal Link Dist (ft)		418			522			1312			1360	
Turn Bay Length (ft)	225			260			310			350		
Base Capacity (vph)	543	263	353	597	293	405	210	1912	770	355	1865	768
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	0.88	0.68	0.43	0.90	0.65	0.65	0.81	1.01	0.50	0.80	1.16	0.60

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)	441	166	139	496	174	242	156	1770	351	260	1991	426
Future Volume (veh/h)	441	166	139	496	174	242	156	1770	351	260	1991	426
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	479	180	151	539	189	0	170	1924	0	283	2164	0
Adj No. of Lanes	2	1	1	2	1	1	1	3	1	2	3	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	532	215	183	590	248	211	196	2004	624	332	1927	600
Arrive On Green	0.15	0.12	0.12	0.17	0.13	0.00	0.11	0.39	0.00	0.19	0.76	0.00
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	1774	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	479	180	151	539	189	0	170	1924	0	283	2164	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	16.4	11.4	11.2	18.5	11.7	0.0	11.3	44.3	0.0	9.5	45.5	0.0
Cycle Q Clear(g_c), s	16.4	11.4	11.2	18.5	11.7	0.0	11.3	44.3	0.0	9.5	45.5	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	532	215	183	590	248	211	196	2004	624	332	1927	600
V/C Ratio(X)	0.90	0.84	0.83	0.91	0.76	0.00	0.87	0.96	0.00	0.85	1.12	0.00
Avail Cap(c_a), veh/h	545	264	224	599	293	249	205	2004	624	344	1927	600
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	0.00	1.00	1.00	0.00	0.18	0.18	0.00
Uniform Delay (d), s/veh	49.8	52.0	51.9	48.8	50.2	0.0	52.5	35.4	0.0	47.6	14.5	0.0
Incr Delay (d2), s/veh	17.8	17.4	18.4	18.4	9.4	0.0	29.0	12.7	0.0	3.9	56.8	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	9.1	6.9	5.8	10.3	6.7	0.0	7.2	23.0	0.0	4.7	30.1	0.0
LnGrp Delay(d),s/veh	67.7	69.4	70.3	67.2	59.5	0.0	81.5	48.1	0.0	51.5	71.3	0.0
LnGrp LOS	E	E	E	E	E		F	D		D	F	
Approach Vol, veh/h		810			728			2094			2447	
Approach Delay, s/veh		68.5			65.2			50.8			69.0	
Approach LOS		E			E			D			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	17.6	53.8	27.7	21.0	19.4	52.0	25.5	23.1
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	11.5	46.3	20.5	13.4	13.3	47.5	18.4	13.7
Green Ext Time (p_c), s	0.0	0.0	0.1	0.5	0.0	0.0	0.1	0.4

Intersection Summary	
HCM 2010 Ctrl Delay	62.2
HCM 2010 LOS	E

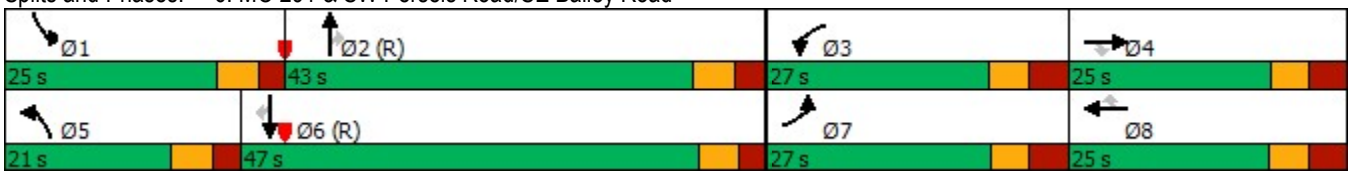
Notes

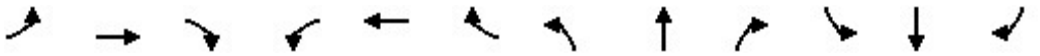
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	308	159	152	495	128	466	144	1716	368	541	1490	366
Future Volume (vph)	308	159	152	495	128	466	144	1716	368	541	1490	366
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)	16.6	18.0	18.0	19.9	21.3	21.3	13.8	36.5	36.5	19.0	42.1	42.1
Actuated g/C Ratio	0.14	0.15	0.15	0.17	0.18	0.18	0.12	0.30	0.30	0.16	0.35	0.35
v/c Ratio	0.71	0.62	0.44	0.95	0.42	1.05	0.77	1.21	0.59	1.08	0.91	0.51
Control Delay	57.5	58.4	10.7	76.2	49.5	78.4	76.1	136.4	14.5	110.3	46.0	8.2
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	57.5	58.4	10.7	76.2	49.5	78.4	76.1	136.4	14.5	110.3	46.0	8.2
LOS	E	E	B	E	D	E	E	F	B	F	D	A
Approach Delay		46.3			74.0			112.4			54.8	
Approach LOS		D			E			F			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: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.21	
Intersection Signal Delay: 77.5	Intersection LOS: E
Intersection Capacity Utilization 93.2%	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)	335	173	165	538	139	507	157	1865	400	588	1620	398
v/c Ratio	0.71	0.62	0.44	0.95	0.42	1.05	0.77	1.21	0.59	1.08	0.91	0.51
Control Delay	57.5	58.4	10.7	76.2	49.5	78.4	76.1	136.4	14.5	110.3	46.0	8.2
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	57.5	58.4	10.7	76.2	49.5	78.4	76.1	136.4	14.5	110.3	46.0	8.2
Queue Length 50th (ft)	128	127	0	214	97	~258	119	~644	73	~262	441	33
Queue Length 95th (ft)	174	204	62	#321	167	#498	#215	#741	179	#376	#541	118
Internal Link Dist (ft)		418			522			1312			1360	
Turn Bay Length (ft)	225			260			310			350		
Base Capacity (vph)	572	279	377	569	330	485	219	1546	674	543	1783	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	0.62	0.44	0.95	0.42	1.05	0.72	1.21	0.59	1.08	0.91	0.51

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)	308	159	152	495	128	466	144	1716	368	541	1490	366
Future Volume (veh/h)	308	159	152	495	128	466	144	1716	368	541	1490	366
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	335	173	165	538	139	0	157	1865	0	588	1620	0
Adj No. of Lanes	2	1	1	2	1	1	1	3	1	2	3	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	404	229	195	571	321	273	184	1680	523	545	1952	608
Arrive On Green	0.12	0.12	0.12	0.17	0.17	0.00	0.10	0.33	0.00	0.16	0.38	0.00
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	1774	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	335	173	165	538	139	0	157	1865	0	588	1620	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	11.4	10.8	12.2	18.5	8.0	0.0	10.4	39.6	0.0	19.0	34.6	0.0
Cycle Q Clear(g_c), s	11.4	10.8	12.2	18.5	8.0	0.0	10.4	39.6	0.0	19.0	34.6	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	404	229	195	571	321	273	184	1680	523	545	1952	608
V/C Ratio(X)	0.83	0.75	0.85	0.94	0.43	0.00	0.85	1.11	0.00	1.08	0.83	0.00
Avail Cap(c_a), veh/h	574	279	237	571	321	273	220	1680	523	545	1952	608
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	1.00	0.00	0.38	0.38	0.00
Uniform Delay (d), s/veh	51.8	50.9	51.5	49.5	44.4	0.0	52.9	40.2	0.0	50.5	33.4	0.0
Incr Delay (d2), s/veh	6.9	9.0	20.5	24.3	0.9	0.0	23.0	58.8	0.0	48.3	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	5.8	6.1	6.5	10.7	4.2	0.0	6.3	27.6	0.0	12.7	16.5	0.0
LnGrp Delay(d),s/veh	58.7	59.9	72.0	73.8	45.3	0.0	75.9	99.0	0.0	98.8	35.1	0.0
LnGrp LOS	E	E	E	E	D		E	F		F	D	
Approach Vol, veh/h		673			677			2022			2208	
Approach Delay, s/veh		62.3			67.9			97.2			52.1	
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	25.0	46.1	27.0	21.9	18.6	52.6	21.1	27.8
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	19.0	36.5	19.9	* 18	14.9	* 41	20.0	17.9
Max Q Clear Time (g_c+I1), s	21.0	41.6	20.5	14.2	12.4	36.6	13.4	10.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.5	0.1	3.4	0.7	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	71.6
HCM 2010 LOS	E

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	0.2

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	1833	32	0	1291	12
Future Vol, veh/h	0	0	14	0	0	27	0	1833	32	0	1291	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	-	-	325	-	-	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	0	0	15	0	0	29	0	1992	35	0	1403	13

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	702	-	-	996	-	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	381	0	0	243	0	-	-	0	-	-
Stage 1	0	0	-	0	0	-	0	-	-	0	-	-
Stage 2	0	0	-	0	0	-	0	-	-	0	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	381	-	-	243	-	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.8	21.8	0	0
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	SBT	SBR
Capacity (veh/h)	-	-	381	243	-	-
HCM Lane V/C Ratio	-	-	0.04	0.121	-	-
HCM Control Delay (s)	-	-	14.8	21.8	-	-
HCM Lane LOS	-	-	B	C	-	-
HCM 95th %tile Q(veh)	-	-	0.1	0.4	-	-

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	0	63	0	0	34	0	1736	18	0	2077	20
Future Vol, veh/h	0	0	63	0	0	34	0	1736	18	0	2077	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	-	-	325	-	-	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	0	0	68	0	0	37	0	1887	20	0	2258	22

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	1129	-	-	944	-	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	198	0	0	263	0	-	-	0	-	-
Stage 1	0	0	-	0	0	-	0	-	-	0	-	-
Stage 2	0	0	-	0	0	-	0	-	-	0	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	198	-	-	263	-	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	32.5	20.9	0	0
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	SBT	SBR
Capacity (veh/h)	-	-	198	263	-	-
HCM Lane V/C Ratio	-	-	0.346	0.141	-	-
HCM Control Delay (s)	-	-	32.5	20.9	-	-
HCM Lane LOS	-	-	D	C	-	-
HCM 95th %tile Q(veh)	-	-	1.5	0.5	-	-

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	1471	7	0	1439	22
Future Vol, veh/h	0	0	35	0	0	18	0	1471	7	0	1439	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	-	-	325	-	-	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	0	0	38	0	0	20	0	1599	8	0	1564	24

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	782	-	-	800	-	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	337	0	0	328	0	-	-	0	-	-
Stage 1	0	0	-	0	0	-	0	-	-	0	-	-
Stage 2	0	0	-	0	0	-	0	-	-	0	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	337	-	-	328	-	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17	16.7	0	0
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	SBT	SBR
Capacity (veh/h)	-	-	337	328	-	-
HCM Lane V/C Ratio	-	-	0.113	0.06	-	-
HCM Control Delay (s)	-	-	17	16.7	-	-
HCM Lane LOS	-	-	C	C	-	-
HCM 95th %tile Q(veh)	-	-	0.4	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	1860	32	0	1312	12
Future Vol, veh/h	0	0	14	0	0	27	0	1860	32	0	1312	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	-	-	325	-	-	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	0	0	15	0	0	29	0	2022	35	0	1426	13

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	713	-	-	1011	-	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	374	0	0	237	0	-	-	0	-	-
Stage 1	0	0	-	0	0	-	0	-	-	0	-	-
Stage 2	0	0	-	0	0	-	0	-	-	0	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	374	-	-	237	-	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15	22.3	0	0
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	SBT	SBR
Capacity (veh/h)	-	-	374	237	-	-
HCM Lane V/C Ratio	-	-	0.041	0.124	-	-
HCM Control Delay (s)	-	-	15	22.3	-	-
HCM Lane LOS	-	-	C	C	-	-
HCM 95th %tile Q(veh)	-	-	0.1	0.4	-	-

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	0	63	0	0	34	0	1892	18	0	2137	20
Future Vol, veh/h	0	0	63	0	0	34	0	1892	18	0	2137	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	-	-	325	-	-	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	0	0	68	0	0	37	0	2057	20	0	2323	22

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	1162	-	-	1029	-	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	188	0	0	231	0	-	-	0	-	-
Stage 1	0	0	-	0	0	-	0	-	-	0	-	-
Stage 2	0	0	-	0	0	-	0	-	-	0	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	188	-	-	231	-	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	34.7	23.5	0	0
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	SBT	SBR
Capacity (veh/h)	-	-	188	231	-	-
HCM Lane V/C Ratio	-	-	0.364	0.16	-	-
HCM Control Delay (s)	-	-	34.7	23.5	-	-
HCM Lane LOS	-	-	D	C	-	-
HCM 95th %tile Q(veh)	-	-	1.6	0.6	-	-

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	1561	7	0	1530	22
Future Vol, veh/h	0	0	35	0	0	18	0	1561	7	0	1530	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	-	-	325	-	-	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	0	0	38	0	0	20	0	1697	8	0	1663	24

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	832	-	-	849	-	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	312	0	0	304	0	-	-	0	-	-
Stage 1	0	0	-	0	0	-	0	-	-	0	-	-
Stage 2	0	0	-	0	0	-	0	-	-	0	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	312	-	-	304	-	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	18.1	17.7	0	0
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	SBT	SBR
Capacity (veh/h)	-	-	312	304	-	-
HCM Lane V/C Ratio	-	-	0.122	0.064	-	-
HCM Control Delay (s)	-	-	18.1	17.7	-	-
HCM Lane LOS	-	-	C	C	-	-
HCM 95th %tile Q(veh)	-	-	0.4	0.2	-	-

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	1940	32	0	1418	12
Future Vol, veh/h	0	0	14	0	0	27	0	1940	32	0	1418	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	-	-	325	-	-	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	0	0	15	0	0	29	0	2109	35	0	1541	13

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	771	-	-	1055	-	0	0	-	-	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	7.14	-	-	6.94	-	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.92	-	-	3.32	-	-	-	-	-	-
Pot Cap-1 Maneuver	0	0	294	0	0	222	0	-	-	0	-	-
Stage 1	0	0	-	0	0	-	0	-	-	0	-	-
Stage 2	0	0	-	0	0	-	0	-	-	0	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	294	-	-	222	-	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17.9	23.7	0	0
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	SBT	SBR
Capacity (veh/h)	-	-	294	222	-	-
HCM Lane V/C Ratio	-	-	0.052	0.132	-	-
HCM Control Delay (s)	-	-	17.9	23.7	-	-
HCM Lane LOS	-	-	C	C	-	-
HCM 95th %tile Q(veh)	-	-	0.2	0.4	-	-

Intersection	
Int Delay, s/veh	0.9

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	1955	18	0	2275	20
Future Vol, veh/h	0	0	63	0	0	34	0	1955	18	0	2275	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	-	-	325	-	-	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	0	0	68	0	0	37	0	2125	20	0	2473	22

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	1237	-	-	1063	-	0	0	-	-	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	7.14	-	-	6.94	-	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.92	-	-	3.32	-	-	-	-	-	-
Pot Cap-1 Maneuver	0	0	144	0	0	219	0	-	-	0	-	-
Stage 1	0	0	-	0	0	-	0	-	-	0	-	-
Stage 2	0	0	-	0	0	-	0	-	-	0	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	144	-	-	219	-	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	50.8	24.7	0	0
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	SBT	SBR
Capacity (veh/h)	-	-	144	219	-	-
HCM Lane V/C Ratio	-	-	0.476	0.169	-	-
HCM Control Delay (s)	-	-	50.8	24.7	-	-
HCM Lane LOS	-	-	F	C	-	-
HCM 95th %tile Q(veh)	-	-	2.2	0.6	-	-

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	1854	7	0	1799	22
Future Vol, veh/h	0	0	35	0	0	18	0	1854	7	0	1799	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	-	-	325	-	-	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	0	0	38	0	0	20	0	2015	8	0	1955	24

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	978	-	-	1008	-	0	0	-	-	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	7.14	-	-	6.94	-	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.92	-	-	3.32	-	-	-	-	-	-
Pot Cap-1 Maneuver	0	0	215	0	0	239	0	-	-	0	-	-
Stage 1	0	0	-	0	0	-	0	-	-	0	-	-
Stage 2	0	0	-	0	0	-	0	-	-	0	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	215	-	-	239	-	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	25.3	21.4	0	0
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	SBT	SBR
Capacity (veh/h)	-	-	215	239	-	-
HCM Lane V/C Ratio	-	-	0.177	0.082	-	-
HCM Control Delay (s)	-	-	25.3	21.4	-	-
HCM Lane LOS	-	-	D	C	-	-
HCM 95th %tile Q(veh)	-	-	0.6	0.3	-	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	14	0	0	80	0	1937	71	0	1474	12
Future Vol, veh/h	0	0	14	0	0	80	0	1937	71	0	1474	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	-	-	325	-	-	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	0	0	15	0	0	87	0	2105	77	0	1602	13

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	801	-	-	1053	-	0	0	-	-	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	7.14	-	-	6.94	-	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.92	-	-	3.32	-	-	-	-	-	-
Pot Cap-1 Maneuver	0	0	281	0	0	223	0	-	-	0	-	-
Stage 1	0	0	-	0	0	-	0	-	-	0	-	-
Stage 2	0	0	-	0	0	-	0	-	-	0	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	281	-	-	223	-	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	18.5	31.1	0	0
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	SBT	SBR
Capacity (veh/h)	-	-	281	223	-	-
HCM Lane V/C Ratio	-	-	0.054	0.39	-	-
HCM Control Delay (s)	-	-	18.5	31.1	-	-
HCM Lane LOS	-	-	C	D	-	-
HCM 95th %tile Q(veh)	-	-	0.2	1.7	-	-

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	0	63	0	0	77	0	1951	88	0	2325	20
Future Vol, veh/h	0	0	63	0	0	77	0	1951	88	0	2325	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	-	-	325	-	-	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	0	0	68	0	0	84	0	2121	96	0	2527	22

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	1264	-	-	1061	-	0	0	-	-	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	7.14	-	-	6.94	-	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.92	-	-	3.32	-	-	-	-	-	-
Pot Cap-1 Maneuver	0	0	138	0	0	220	0	-	-	0	-	-
Stage 1	0	0	-	0	0	-	0	-	-	0	-	-
Stage 2	0	0	-	0	0	-	0	-	-	0	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	138	-	-	220	-	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	54.4	31.1	0	0
HCM LOS	F	D		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	SBT	SBR
Capacity (veh/h)	-	-	138	220	-	-
HCM Lane V/C Ratio	-	-	0.496	0.38	-	-
HCM Control Delay (s)	-	-	54.4	31.1	-	-
HCM Lane LOS	-	-	F	D	-	-
HCM 95th %tile Q(veh)	-	-	2.3	1.7	-	-

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	0	35	0	0	69	0	1932	115	0	1970	22
Future Vol, veh/h	0	0	35	0	0	69	0	1932	115	0	1970	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	-	-	325	-	-	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	0	0	38	0	0	75	0	2100	125	0	2141	24

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	1071	-	-	1050	-	0	0	-	-	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	7.14	-	-	6.94	-	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.92	-	-	3.32	-	-	-	-	-	-
Pot Cap-1 Maneuver	0	0	186	0	0	224	0	-	-	0	-	-
Stage 1	0	0	-	0	0	-	0	-	-	0	-	-
Stage 2	0	0	-	0	0	-	0	-	-	0	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	186	-	-	224	-	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	29.3	29	0	0
HCM LOS	D	D		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	SBT	SBR
Capacity (veh/h)	-	-	186	224	-	-
HCM Lane V/C Ratio	-	-	0.205	0.335	-	-
HCM Control Delay (s)	-	-	29.3	29	-	-
HCM Lane LOS	-	-	D	D	-	-
HCM 95th %tile Q(veh)	-	-	0.7	1.4	-	-

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	14	0	0	80	0	2284	71	0	1709	12
Future Vol, veh/h	0	0	14	0	0	80	0	2284	71	0	1709	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	-	-	325	-	-	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	0	0	15	0	0	87	0	2483	77	0	1858	13

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	929	-	-	1242	-	0	0	-	-	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	7.14	-	-	6.94	-	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.92	-	-	3.32	-	-	-	-	-	-
Pot Cap-1 Maneuver	0	0	231	0	0	166	0	-	-	0	-	-
Stage 1	0	0	-	0	0	-	0	-	-	0	-	-
Stage 2	0	0	-	0	0	-	0	-	-	0	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	231	-	-	166	-	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	21.7	48.4	0	0
HCM LOS	C	E		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	SBT	SBR
Capacity (veh/h)	-	-	231	166	-	-
HCM Lane V/C Ratio	-	-	0.066	0.524	-	-
HCM Control Delay (s)	-	-	21.7	48.4	-	-
HCM Lane LOS	-	-	C	E	-	-
HCM 95th %tile Q(veh)	-	-	0.2	2.6	-	-

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↱			↱		↑↑	↱		↑↑↑	↱
Traffic Vol, veh/h	0	0	63	0	0	77	0	2289	88	0	2740	20
Future Vol, veh/h	0	0	63	0	0	77	0	2289	88	0	2740	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	-	-	325	-	-	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	0	0	68	0	0	84	0	2488	96	0	2978	22

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	1489	-	-	1244	-	0	0	-	-	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	7.14	-	-	6.94	-	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.92	-	-	3.32	-	-	-	-	-	-
Pot Cap-1 Maneuver	0	0	97	0	0	166	0	-	-	0	-	-
Stage 1	0	0	-	0	0	-	0	-	-	0	-	-
Stage 2	0	0	-	0	0	-	0	-	-	0	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	97	-	-	166	-	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	103.1	46.9	0	0
HCM LOS	F	E		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	SBT	SBR
Capacity (veh/h)	-	-	97	166	-	-
HCM Lane V/C Ratio	-	-	0.706	0.504	-	-
HCM Control Delay (s)	-	-	103.1	46.9	-	-
HCM Lane LOS	-	-	F	E	-	-
HCM 95th %tile Q(veh)	-	-	3.6	2.5	-	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	35	0	0	69	0	2202	115	0	2234	22
Future Vol, veh/h	0	0	35	0	0	69	0	2202	115	0	2234	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	-	-	325	-	-	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	0	0	38	0	0	75	0	2393	125	0	2428	24

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	1214	-	-	1197	-	0	0	-	-	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	7.14	-	-	6.94	-	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.92	-	-	3.32	-	-	-	-	-	-
Pot Cap-1 Maneuver	0	0	149	0	0	178	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	-	-	178	-	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	37.3	39.2	0	0
HCM LOS	E	E		

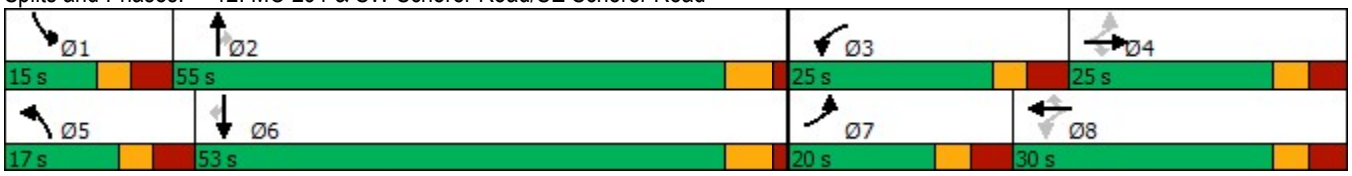
Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	SBT	SBR
Capacity (veh/h)	-	-	149	178	-	-
HCM Lane V/C Ratio	-	-	0.255	0.421	-	-
HCM Control Delay (s)	-	-	37.3	39.2	-	-
HCM Lane LOS	-	-	E	E	-	-
HCM 95th %tile Q(veh)	-	-	1	1.9	-	-

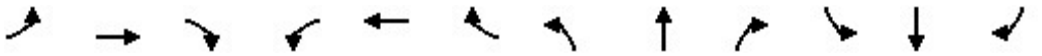
Intersection 4
M-291 & Scherer Road

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	1704	17	61	1145	47
Future Volume (vph)	70	8	14	14	9	31	37	1704	17	61	1145	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)	16.7	14.6	14.6	11.0	7.2	7.2	8.1	55.9	55.9	7.9	58.6	58.6
Actuated g/C Ratio	0.18	0.16	0.16	0.12	0.08	0.08	0.09	0.61	0.61	0.09	0.64	0.64
v/c Ratio	0.32	0.03	0.04	0.08	0.07	0.13	0.26	0.86	0.02	0.43	0.55	0.05
Control Delay	35.1	35.6	0.2	30.9	45.8	1.0	47.2	27.8	0.1	53.4	17.0	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	35.6	0.2	30.9	45.8	1.0	47.2	27.8	0.1	53.4	17.0	0.1
LOS	D	D	A	C	D	A	D	C	A	D	B	A
Approach Delay		29.9			16.2			27.9			18.2	
Approach LOS		C			B			C			B	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 91.9	
Natural Cycle: 140	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 23.9	Intersection LOS: C
Intersection Capacity Utilization 74.9%	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)	76	9	15	15	10	34	40	1852	18	66	1245	51
v/c Ratio	0.32	0.03	0.04	0.08	0.07	0.13	0.26	0.86	0.02	0.43	0.55	0.05
Control Delay	35.1	35.6	0.2	30.9	45.8	1.0	47.2	27.8	0.1	53.4	17.0	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	35.6	0.2	30.9	45.8	1.0	47.2	27.8	0.1	53.4	17.0	0.1
Queue Length 50th (ft)	39	4	0	8	6	0	25	~691	0	41	312	0
Queue Length 95th (ft)	78	20	0	24	24	0	58	#868	0	87	438	0
Internal Link Dist (ft)		298			1736			506			1284	
Turn Bay Length (ft)	120		125	150		90	370		300	350		380
Base Capacity (vph)	304	422	474	411	481	520	200	2152	1024	161	2257	1067
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	0.25	0.02	0.03	0.04	0.02	0.07	0.20	0.86	0.02	0.41	0.55	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)	70	8	14	14	9	31	37	1704	17	61	1145	47
Future Volume (veh/h)	70	8	14	14	9	31	37	1704	17	61	1145	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	76	9	0	15	10	0	40	1852	0	66	1245	0
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	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	250	161	137	184	83	70	87	1911	855	110	1958	876
Arrive On Green	0.07	0.09	0.00	0.02	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	76	9	0	15	10	0	40	1852	0	66	1245	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	3.6	0.4	0.0	0.7	0.5	0.0	2.0	46.1	0.0	3.3	22.1	0.0
Cycle Q Clear(g_c), s	3.6	0.4	0.0	0.7	0.5	0.0	2.0	46.1	0.0	3.3	22.1	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	250	161	137	184	83	70	87	1911	855	110	1958	876
V/C Ratio(X)	0.30	0.06	0.00	0.08	0.12	0.00	0.46	0.97	0.00	0.60	0.64	0.00
Avail Cap(c_a), veh/h	388	371	316	494	473	402	198	1911	855	159	1958	876
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	37.8	38.3	0.0	39.9	41.9	0.0	42.3	20.3	0.0	41.7	14.1	0.0
Incr Delay (d2), s/veh	0.7	0.1	0.0	0.2	0.6	0.0	3.8	14.5	0.0	5.1	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	1.8	0.2	0.0	0.4	0.3	0.0	1.1	26.2	0.0	1.8	10.9	0.0
LnGrp Delay(d),s/veh	38.5	38.4	0.0	40.1	42.6	0.0	46.0	34.8	0.0	46.8	14.7	0.0
LnGrp LOS	D	D		D	D		D	C		D	B	
Approach Vol, veh/h		85			25			1892			1311	
Approach Delay, s/veh		38.5			41.1			35.0			16.4	
Approach LOS		D			D			D			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	12.5	55.1	9.0	14.7	11.3	56.3	12.9	10.8
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	5.3	48.1	2.7	2.4	4.0	24.1	5.6	2.5
Green Ext Time (p_c), s	0.0	1.1	0.0	0.0	0.0	9.1	0.1	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	27.8
HCM 2010 LOS	C

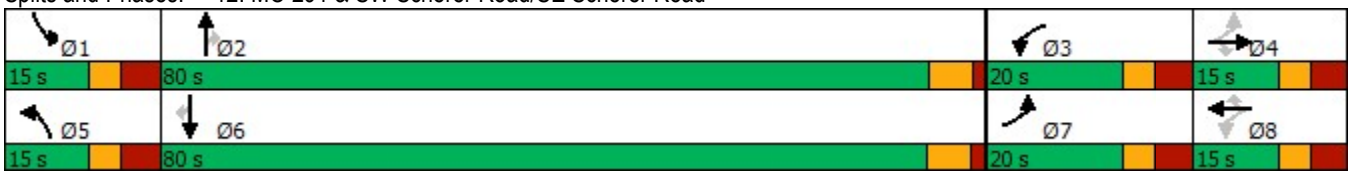
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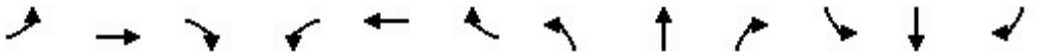
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	130	5	46	25	5	60	39	1556	9	20	2042	45
Future Volume (vph)	130	5	46	25	5	60	39	1556	9	20	2042	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	15.0	15.0	20.0	15.0	15.0	15.0	80.0	80.0	15.0	80.0	80.0
Total Split (s)	20.0	15.0	15.0	20.0	15.0	15.0	15.0	80.0	80.0	15.0	80.0	80.0
Total Split (%)	15.4%	11.5%	11.5%	15.4%	11.5%	11.5%	11.5%	61.5%	61.5%	11.5%	61.5%	61.5%
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)	21.6	14.3	14.3	13.0	7.1	7.1	7.8	78.3	78.3	7.5	75.2	75.2
Actuated g/C Ratio	0.18	0.12	0.12	0.11	0.06	0.06	0.06	0.64	0.64	0.06	0.62	0.62
v/c Ratio	0.62	0.02	0.16	0.16	0.05	0.29	0.37	0.74	0.01	0.20	1.02	0.05
Control Delay	56.2	53.8	1.1	43.7	58.8	3.3	67.8	20.3	0.0	62.2	49.6	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	56.2	53.8	1.1	43.7	58.8	3.3	67.8	20.3	0.0	62.2	49.6	0.1
LOS	E	D	A	D	E	A	E	C	A	E	D	A
Approach Delay		42.1			17.4			21.3			48.6	
Approach LOS		D			B			C			D	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 121.9	
Natural Cycle: 140	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.02	
Intersection Signal Delay: 36.6	Intersection LOS: D
Intersection Capacity Utilization 84.3%	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)	141	5	50	27	5	65	42	1691	10	22	2220	49
v/c Ratio	0.62	0.02	0.16	0.16	0.05	0.29	0.37	0.74	0.01	0.20	1.02	0.05
Control Delay	56.2	53.8	1.1	43.7	58.8	3.3	67.8	20.3	0.0	62.2	49.6	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	56.2	53.8	1.1	43.7	58.8	3.3	67.8	20.3	0.0	62.2	49.6	0.1
Queue Length 50th (ft)	102	4	0	18	4	0	34	560	0	18	~1095	0
Queue Length 95th (ft)	167	17	0	45	18	0	74	683	0	47	#1230	0
Internal Link Dist (ft)		298			1736			506			1284	
Turn Bay Length (ft)	120		125	150		90	370		300	350		380
Base Capacity (vph)	246	218	307	255	126	236	120	2272	1069	120	2184	1033
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	0.57	0.02	0.16	0.11	0.04	0.28	0.35	0.74	0.01	0.18	1.02	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	1556	9	20	2042	45
Future Volume (veh/h)	130	5	46	25	5	60	39	1556	9	20	2042	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	141	5	0	27	5	0	42	1691	0	22	2220	0
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	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	273	181	154	178	76	65	77	2205	986	54	2157	965
Arrive On Green	0.09	0.10	0.00	0.03	0.04	0.00	0.04	0.62	0.00	0.03	0.61	0.00
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	141	5	0	27	5	0	42	1691	0	22	2220	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	9.0	0.3	0.0	1.7	0.3	0.0	2.8	42.0	0.0	1.5	74.2	0.0
Cycle Q Clear(g_c), s	9.0	0.3	0.0	1.7	0.3	0.0	2.8	42.0	0.0	1.5	74.2	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	273	181	154	178	76	65	77	2205	986	54	2157	965
V/C Ratio(X)	0.52	0.03	0.00	0.15	0.07	0.00	0.54	0.77	0.00	0.41	1.03	0.00
Avail Cap(c_a), veh/h	304	181	154	309	125	107	119	2205	986	119	2157	965
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	48.1	49.7	0.0	52.8	56.1	0.0	57.0	16.6	0.0	58.0	23.8	0.0
Incr Delay (d2), s/veh	1.5	0.1	0.0	0.4	0.4	0.0	5.8	2.6	0.0	5.0	27.3	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	4.5	0.2	0.0	0.9	0.2	0.0	1.5	21.2	0.0	0.8	44.1	0.0
LnGrp Delay(d),s/veh	49.7	49.8	0.0	53.2	56.5	0.0	62.8	19.2	0.0	63.0	51.1	0.0
LnGrp LOS	D	D		D	E		E	B		E	F	
Approach Vol, veh/h		146			32			1733			2242	
Approach Delay, s/veh		49.7			53.7			20.3			51.2	
Approach LOS		D			D			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	10.5	81.6	11.0	18.6	12.1	80.0	17.8	11.8
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	* 74	* 13	* 8.2	* 8.2	74.2	13.1	* 8.2
Max Q Clear Time (g_c+I1), s	3.5	44.0	3.7	2.3	4.8	76.2	11.0	2.3
Green Ext Time (p_c), s	0.0	15.6	0.0	0.0	0.0	0.0	0.1	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	38.2
HCM 2010 LOS	D

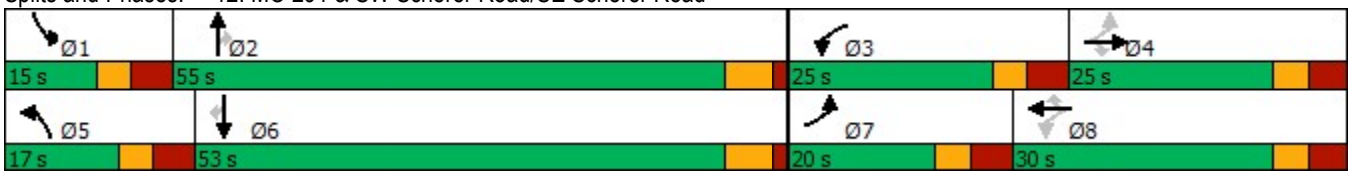
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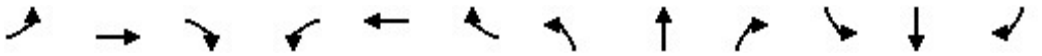
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

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	1375	14	24	1391	34
Future Volume (vph)	41	5	23	12	7	16	14	1375	14	24	1391	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)	12.0	10.5	10.5	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	0.05	0.06	0.09	0.57	0.01	0.15	0.56	0.03
Control Delay	31.5	36.0	0.4	30.6	42.0	0.4	42.1	13.5	0.0	42.0	10.9	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	31.5	36.0	0.4	30.6	42.0	0.4	42.1	13.5	0.0	42.0	10.9	0.0
LOS	C	D	A	C	D	A	D	B	A	D	B	A
Approach Delay		21.4			19.5			13.6			11.2	
Approach LOS		C			B			B			B	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 78.8	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.57	
Intersection Signal Delay: 12.7	Intersection LOS: B
Intersection Capacity Utilization 66.3%	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)	45	5	25	13	8	17	15	1495	15	26	1512	37
v/c Ratio	0.19	0.02	0.07	0.06	0.05	0.06	0.09	0.57	0.01	0.15	0.56	0.03
Control Delay	31.5	36.0	0.4	30.6	42.0	0.4	42.1	13.5	0.0	42.0	10.9	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	31.5	36.0	0.4	30.6	42.0	0.4	42.1	13.5	0.0	42.0	10.9	0.0
Queue Length 50th (ft)	18	2	0	5	3	0	6	133	0	10	136	0
Queue Length 95th (ft)	52	14	0	22	20	0	30	533	0	42	541	0
Internal Link Dist (ft)		298			1736			506			1284	
Turn Bay Length (ft)	120		125	150		90	370		300	350		380
Base Capacity (vph)	352	471	512	469	578	594	241	2618	1212	194	2721	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	0.13	0.01	0.05	0.03	0.01	0.03	0.06	0.57	0.01	0.13	0.56	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	1375	14	24	1391	34
Future Volume (veh/h)	41	5	23	12	7	16	14	1375	14	24	1391	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	45	5	0	13	8	0	15	1495	0	26	1512	0
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	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	225	131	112	174	70	59	43	2011	900	67	2058	921
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	45	5	0	13	8	0	15	1495	0	26	1512	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	0.4	0.0	0.7	27.4	0.0	1.2	27.1	0.0
Cycle Q Clear(g_c), s	2.1	0.2	0.0	0.6	0.4	0.0	0.7	27.4	0.0	1.2	27.1	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	131	112	174	70	59	43	2011	900	67	2058	921
V/C Ratio(X)	0.20	0.04	0.00	0.07	0.11	0.00	0.35	0.74	0.00	0.39	0.73	0.00
Avail Cap(c_a), veh/h	398	391	332	508	498	423	209	2011	900	168	2058	921
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	38.7	40.4	0.0	41.6	14.0	0.0	40.8	13.3	0.0
Incr Delay (d2), s/veh	0.4	0.1	0.0	0.2	0.7	0.0	4.7	2.5	0.0	3.7	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	1.0	0.1	0.0	0.3	0.2	0.0	0.4	14.0	0.0	0.7	13.4	0.0
LnGrp Delay(d),s/veh	37.2	37.7	0.0	38.8	41.1	0.0	46.3	16.5	0.0	44.5	14.7	0.0
LnGrp LOS	D	D		D	D		D	B		D	B	
Approach Vol, veh/h		50			21			1510			1538	
Approach Delay, s/veh		37.3			39.7			16.8			15.2	
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	56.2	11.5	10.1
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	29.4	2.6	2.2	2.7	29.1	4.1	2.4
Green Ext Time (p_c), s	0.0	10.6	0.0	0.0	0.0	10.1	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	16.5
HCM 2010 LOS	B

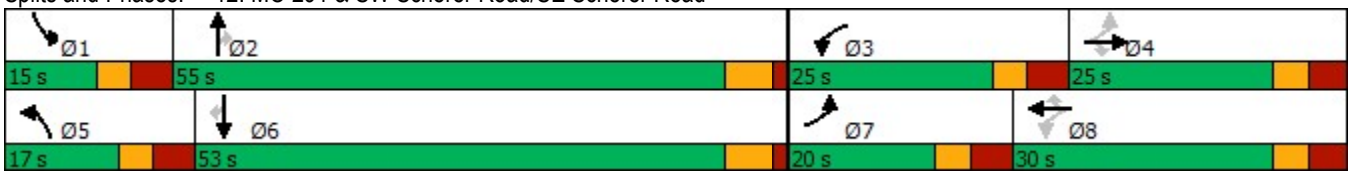
Notes

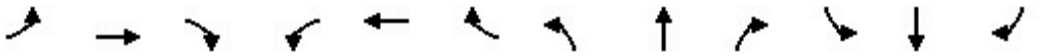
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	71	8	14	14	9	32	37	1729	17	61	1165	48
Future Volume (vph)	71	8	14	14	9	32	37	1729	17	61	1165	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)	16.8	14.6	14.6	11.0	7.2	7.2	8.1	55.9	55.9	7.9	58.6	58.6
Actuated g/C Ratio	0.18	0.16	0.16	0.12	0.08	0.08	0.09	0.61	0.61	0.09	0.64	0.64
v/c Ratio	0.32	0.03	0.04	0.08	0.07	0.13	0.26	0.87	0.02	0.43	0.56	0.05
Control Delay	35.1	35.6	0.2	30.9	45.9	1.1	47.3	28.6	0.1	53.4	17.3	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	35.6	0.2	30.9	45.9	1.1	47.3	28.6	0.1	53.4	17.3	0.1
LOS	D	D	A	C	D	A	D	C	A	D	B	A
Approach Delay		30.0			16.0			28.7			18.3	
Approach LOS		C			B			C			B	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 91.9	
Natural Cycle: 140	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 24.4	Intersection LOS: C
Intersection Capacity Utilization 75.5%	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)	77	9	15	15	10	35	40	1879	18	66	1266	52
v/c Ratio	0.32	0.03	0.04	0.08	0.07	0.13	0.26	0.87	0.02	0.43	0.56	0.05
Control Delay	35.1	35.6	0.2	30.9	45.9	1.1	47.3	28.6	0.1	53.4	17.3	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	35.6	0.2	30.9	45.9	1.1	47.3	28.6	0.1	53.4	17.3	0.1
Queue Length 50th (ft)	40	4	0	8	6	0	25	~712	0	41	321	0
Queue Length 95th (ft)	78	20	0	24	24	0	58	#890	0	88	450	0
Internal Link Dist (ft)		298			1736			506			1284	
Turn Bay Length (ft)	120		125	150		90	370		300	350		380
Base Capacity (vph)	304	422	474	412	480	519	200	2150	1024	161	2256	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	0.25	0.02	0.03	0.04	0.02	0.07	0.20	0.87	0.02	0.41	0.56	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)	71	8	14	14	9	32	37	1729	17	61	1165	48
Future Volume (veh/h)	71	8	14	14	9	32	37	1729	17	61	1165	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	77	9	0	15	10	0	40	1879	0	66	1266	0
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	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	250	162	138	184	83	70	87	1910	855	110	1958	876
Arrive On Green	0.07	0.09	0.00	0.02	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	77	9	0	15	10	0	40	1879	0	66	1266	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	3.7	0.4	0.0	0.7	0.5	0.0	2.0	47.6	0.0	3.3	22.7	0.0
Cycle Q Clear(g_c), s	3.7	0.4	0.0	0.7	0.5	0.0	2.0	47.6	0.0	3.3	22.7	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	250	162	138	184	83	70	87	1910	855	110	1958	876
V/C Ratio(X)	0.31	0.06	0.00	0.08	0.12	0.00	0.46	0.98	0.00	0.60	0.65	0.00
Avail Cap(c_a), veh/h	388	371	315	494	473	402	198	1910	855	159	1958	876
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	37.8	38.3	0.0	40.0	41.9	0.0	42.3	20.6	0.0	41.7	14.2	0.0
Incr Delay (d2), s/veh	0.7	0.1	0.0	0.2	0.6	0.0	3.8	17.1	0.0	5.1	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	1.8	0.2	0.0	0.4	0.3	0.0	1.1	27.5	0.0	1.8	11.3	0.0
LnGrp Delay(d),s/veh	38.5	38.4	0.0	40.1	42.6	0.0	46.1	37.7	0.0	46.8	14.9	0.0
LnGrp LOS	D	D		D	D		D	D		D	B	
Approach Vol, veh/h		86			25			1919			1332	
Approach Delay, s/veh		38.5			41.1			37.9			16.5	
Approach LOS		D			D			D			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	12.5	55.1	9.0	14.7	11.3	56.3	12.9	10.8
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	5.3	49.6	2.7	2.4	4.0	24.7	5.7	2.5
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	9.2	0.1	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	29.5
HCM 2010 LOS	C

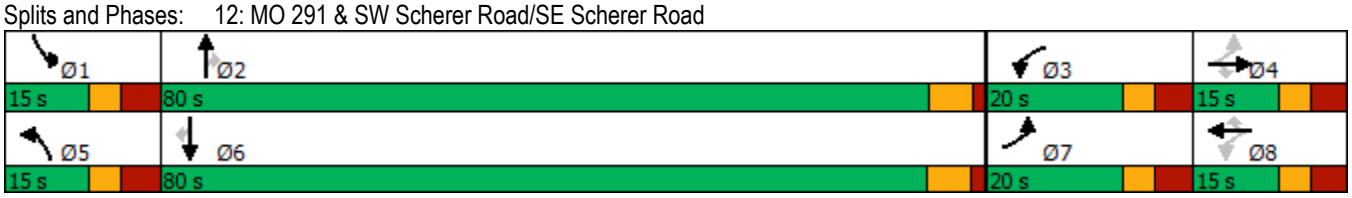
Notes

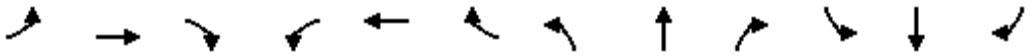
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	135	5	46	25	5	62	39	1605	9	22	2095	50
Future Volume (vph)	135	5	46	25	5	62	39	1605	9	22	2095	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	15.0	15.0	20.0	15.0	15.0	15.0	80.0	80.0	15.0	80.0	80.0
Total Split (s)	20.0	15.0	15.0	20.0	15.0	15.0	15.0	80.0	80.0	15.0	80.0	80.0
Total Split (%)	15.4%	11.5%	11.5%	15.4%	11.5%	11.5%	11.5%	61.5%	61.5%	11.5%	61.5%	61.5%
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)	21.7	14.4	14.4	13.0	7.1	7.1	7.8	78.2	78.2	7.6	75.2	75.2
Actuated g/C Ratio	0.18	0.12	0.12	0.11	0.06	0.06	0.06	0.64	0.64	0.06	0.62	0.62
v/c Ratio	0.64	0.02	0.16	0.16	0.05	0.30	0.37	0.77	0.01	0.22	1.04	0.05
Control Delay	57.5	53.8	1.1	43.7	58.8	3.5	67.8	21.3	0.0	62.6	57.7	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	57.5	53.8	1.1	43.7	58.8	3.5	67.8	21.3	0.0	62.6	57.7	0.1
LOS	E	D	A	D	E	A	E	C	A	E	E	A
Approach Delay		43.5			17.3			22.3			56.5	
Approach LOS		D			B			C			E	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 122	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.04	
Intersection Signal Delay: 41.2	Intersection LOS: D
Intersection Capacity Utilization 85.7%	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)	147	5	50	27	5	67	42	1745	10	24	2277	54
v/c Ratio	0.64	0.02	0.16	0.16	0.05	0.30	0.37	0.77	0.01	0.22	1.04	0.05
Control Delay	57.5	53.8	1.1	43.7	58.8	3.5	67.8	21.3	0.0	62.6	57.7	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	57.5	53.8	1.1	43.7	58.8	3.5	67.8	21.3	0.0	62.6	57.7	0.1
Queue Length 50th (ft)	107	4	0	18	4	0	34	597	0	20	~1147	0
Queue Length 95th (ft)	173	17	0	45	18	0	74	725	0	50	#1281	0
Internal Link Dist (ft)		298			1736			506			1284	
Turn Bay Length (ft)	120		125	150		90	370		300	350		380
Base Capacity (vph)	246	219	308	255	126	236	120	2268	1067	120	2182	1032
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	0.16	0.11	0.04	0.28	0.35	0.77	0.01	0.20	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)	135	5	46	25	5	62	39	1605	9	22	2095	50
Future Volume (veh/h)	135	5	46	25	5	62	39	1605	9	22	2095	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	147	5	0	27	5	0	42	1745	0	24	2277	0
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	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	278	187	159	177	76	65	77	2190	980	57	2149	962
Arrive On Green	0.09	0.10	0.00	0.03	0.04	0.00	0.04	0.62	0.00	0.03	0.61	0.00
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	147	5	0	27	5	0	42	1745	0	24	2277	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	9.4	0.3	0.0	1.7	0.3	0.0	2.8	45.3	0.0	1.6	74.2	0.0
Cycle Q Clear(g_c), s	9.4	0.3	0.0	1.7	0.3	0.0	2.8	45.3	0.0	1.6	74.2	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	278	187	159	177	76	65	77	2190	980	57	2149	962
V/C Ratio(X)	0.53	0.03	0.00	0.15	0.07	0.00	0.54	0.80	0.00	0.42	1.06	0.00
Avail Cap(c_a), veh/h	303	187	159	308	125	106	119	2190	980	119	2149	962
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	48.1	49.6	0.0	53.0	56.3	0.0	57.2	17.5	0.0	58.0	24.0	0.0
Incr Delay (d2), s/veh	1.6	0.1	0.0	0.4	0.4	0.0	5.8	3.1	0.0	5.0	37.4	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	4.7	0.2	0.0	0.9	0.2	0.0	1.5	22.8	0.0	0.9	47.0	0.0
LnGrp Delay(d),s/veh	49.7	49.6	0.0	53.4	56.7	0.0	63.1	20.6	0.0	63.0	61.4	0.0
LnGrp LOS	D	D		D	E		E	C		E	F	
Approach Vol, veh/h		152			32			1787			2301	
Approach Delay, s/veh		49.7			53.9			21.6			61.4	
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	10.7	81.4	11.0	19.1	12.1	80.0	18.3	11.8
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	* 74	* 13	* 8.2	* 8.2	74.2	13.1	* 8.2
Max Q Clear Time (g_c+I1), s	3.6	47.3	3.7	2.3	4.8	76.2	11.4	2.3
Green Ext Time (p_c), s	0.0	15.3	0.0	0.0	0.0	0.0	0.1	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	44.3
HCM 2010 LOS	D

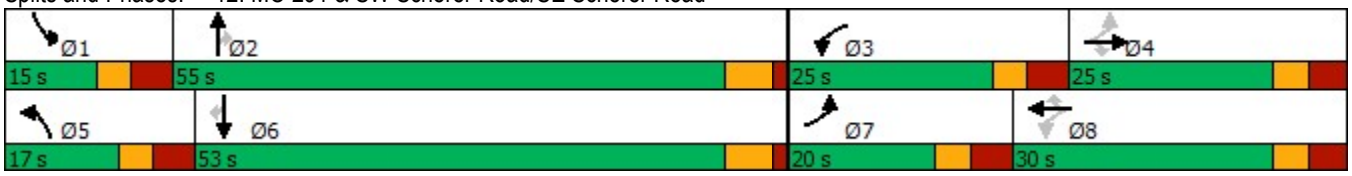
Notes

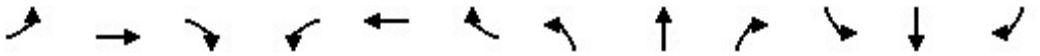
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	5	23	12	7	18	14	1460	14	26	1478	37
Future Volume (vph)	44	5	23	12	7	18	14	1460	14	26	1478	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)	14.9	13.2	13.2	11.0	7.4	7.4	7.6	59.0	59.0	7.8	63.9	63.9
Actuated g/C Ratio	0.18	0.16	0.16	0.13	0.09	0.09	0.09	0.70	0.70	0.09	0.76	0.76
v/c Ratio	0.20	0.02	0.07	0.06	0.05	0.07	0.09	0.64	0.01	0.17	0.60	0.03
Control Delay	31.8	36.2	0.3	30.8	44.3	0.5	44.8	17.9	0.0	45.0	12.9	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	31.8	36.2	0.3	30.8	44.3	0.5	44.8	17.9	0.0	45.0	12.9	0.1
LOS	C	D	A	C	D	A	D	B	A	D	B	A
Approach Delay		22.0			18.7			18.0			13.2	
Approach LOS		C			B			B			B	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 84.5	
Natural Cycle: 130	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.64	
Intersection Signal Delay: 15.7	Intersection LOS: B
Intersection Capacity Utilization 68.7%	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)	48	5	25	13	8	20	15	1587	15	28	1607	40
v/c Ratio	0.20	0.02	0.07	0.06	0.05	0.07	0.09	0.64	0.01	0.17	0.60	0.03
Control Delay	31.8	36.2	0.3	30.8	44.3	0.5	44.8	17.9	0.0	45.0	12.9	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	31.8	36.2	0.3	30.8	44.3	0.5	44.8	17.9	0.0	45.0	12.9	0.1
Queue Length 50th (ft)	24	2	0	6	5	0	9	443	0	17	306	0
Queue Length 95th (ft)	54	14	0	22	20	0	30	#648	0	45	#658	0
Internal Link Dist (ft)		298			1736			506			1284	
Turn Bay Length (ft)	120		125	150		90	370		300	350		380
Base Capacity (vph)	341	457	501	444	541	566	226	2470	1153	181	2675	1235
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	0.14	0.01	0.05	0.03	0.01	0.04	0.07	0.64	0.01	0.15	0.60	0.03

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)	44	5	23	12	7	18	14	1460	14	26	1478	37
Future Volume (veh/h)	44	5	23	12	7	18	14	1460	14	26	1478	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	48	5	0	13	8	0	15	1587	0	28	1607	0
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	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	227	134	114	174	70	59	43	2003	896	70	2056	920
Arrive On Green	0.06	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	48	5	0	13	8	0	15	1587	0	28	1607	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	2.2	0.2	0.0	0.6	0.4	0.0	0.7	30.7	0.0	1.3	30.4	0.0
Cycle Q Clear(g_c), s	2.2	0.2	0.0	0.6	0.4	0.0	0.7	30.7	0.0	1.3	30.4	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	227	134	114	174	70	59	43	2003	896	70	2056	920
V/C Ratio(X)	0.21	0.04	0.00	0.07	0.11	0.00	0.35	0.79	0.00	0.40	0.78	0.00
Avail Cap(c_a), veh/h	396	389	331	506	496	422	208	2003	896	167	2056	920
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	40.5	0.0	41.8	14.9	0.0	40.8	14.0	0.0
Incr Delay (d2), s/veh	0.5	0.1	0.0	0.2	0.7	0.0	4.7	3.3	0.0	3.6	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	1.1	0.1	0.0	0.3	0.2	0.0	0.4	15.7	0.0	0.7	15.3	0.0
LnGrp Delay(d),s/veh	37.3	37.7	0.0	39.0	41.2	0.0	46.5	18.2	0.0	44.5	16.0	0.0
LnGrp LOS	D	D		D	D		D	B		D	B	
Approach Vol, veh/h		53			21			1602			1635	
Approach Delay, s/veh		37.4			39.9			18.5			16.5	
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	10.2	55.1	8.7	13.1	8.9	56.4	11.7	10.1
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	32.7	2.6	2.2	2.7	32.4	4.2	2.4
Green Ext Time (p_c), s	0.0	10.0	0.0	0.0	0.0	9.4	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	17.9
HCM 2010 LOS	B

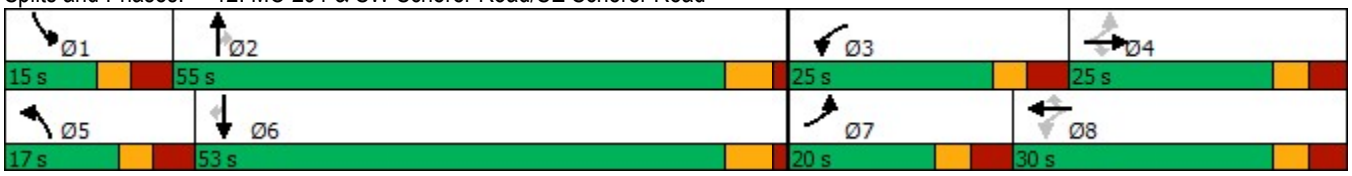
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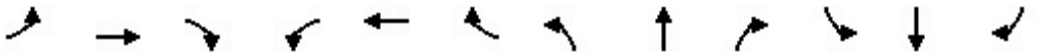
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	8	14	14	9	32	37	1802	17	63	1263	53
Future Volume (vph)	75	8	14	14	9	32	37	1802	17	63	1263	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)	17.1	14.9	14.9	11.0	7.2	7.2	8.1	55.9	55.9	7.9	58.7	58.7
Actuated g/C Ratio	0.19	0.16	0.16	0.12	0.08	0.08	0.09	0.61	0.61	0.09	0.64	0.64
v/c Ratio	0.34	0.03	0.04	0.08	0.07	0.13	0.26	0.91	0.02	0.45	0.42	0.05
Control Delay	35.4	35.5	0.2	30.8	46.0	1.1	47.5	31.7	0.1	54.0	14.5	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	35.5	0.2	30.8	46.0	1.1	47.5	31.7	0.1	54.0	14.5	0.1
LOS	D	D	A	C	D	A	D	C	A	D	B	A
Approach Delay		30.4			16.0			31.7			15.7	
Approach LOS		C			B			C			B	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 92.2	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 24.9	Intersection LOS: C
Intersection Capacity Utilization 77.6%	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)	82	9	15	15	10	35	40	1959	18	68	1373	58
v/c Ratio	0.34	0.03	0.04	0.08	0.07	0.13	0.26	0.91	0.02	0.45	0.42	0.05
Control Delay	35.4	35.5	0.2	30.8	46.0	1.1	47.5	31.7	0.1	54.0	14.5	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	35.5	0.2	30.8	46.0	1.1	47.5	31.7	0.1	54.0	14.5	0.1
Queue Length 50th (ft)	42	4	0	8	6	0	25	~772	0	43	215	0
Queue Length 95th (ft)	82	20	0	24	24	0	58	#953	0	89	289	0
Internal Link Dist (ft)		298			1736			506			1284	
Turn Bay Length (ft)	120		125	150		90	370		300	350		380
Base Capacity (vph)	304	423	476	412	479	519	200	2146	1022	161	3235	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	0.03	0.04	0.02	0.07	0.20	0.91	0.02	0.42	0.42	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)	75	8	14	14	9	32	37	1802	17	63	1263	53
Future Volume (veh/h)	75	8	14	14	9	32	37	1802	17	63	1263	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	82	9	0	15	10	0	40	1959	0	68	1373	0
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	3	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	252	164	139	184	82	70	87	1906	853	112	2810	875
Arrive On Green	0.07	0.09	0.00	0.02	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	5085	1583
Grp Volume(v), veh/h	82	9	0	15	10	0	40	1959	0	68	1373	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1695	1583
Q Serve(g_s), s	3.9	0.4	0.0	0.7	0.5	0.0	2.0	49.3	0.0	3.4	15.1	0.0
Cycle Q Clear(g_c), s	3.9	0.4	0.0	0.7	0.5	0.0	2.0	49.3	0.0	3.4	15.1	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	252	164	139	184	82	70	87	1906	853	112	2810	875
V/C Ratio(X)	0.33	0.05	0.00	0.08	0.12	0.00	0.46	1.03	0.00	0.61	0.49	0.00
Avail Cap(c_a), veh/h	387	370	315	493	472	401	198	1906	853	159	2810	875
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	38.2	0.0	40.1	42.0	0.0	42.4	21.1	0.0	41.8	12.5	0.0
Incr Delay (d2), s/veh	0.7	0.1	0.0	0.2	0.7	0.0	3.8	28.1	0.0	5.3	0.1	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	2.0	0.2	0.0	0.4	0.3	0.0	1.1	31.3	0.0	1.8	7.0	0.0
LnGrp Delay(d),s/veh	38.6	38.4	0.0	40.2	42.7	0.0	46.2	49.2	0.0	47.1	12.7	0.0
LnGrp LOS	D	D		D	D		D	F		D	B	
Approach Vol, veh/h		91			25			1999			1441	
Approach Delay, s/veh		38.6			41.2			49.1			14.3	
Approach LOS		D			D			D			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	9.0	14.9	11.3	56.4	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	5.4	51.3	2.7	2.4	4.0	17.1	5.9	2.5
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	11.1	0.1	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	34.7
HCM 2010 LOS	C

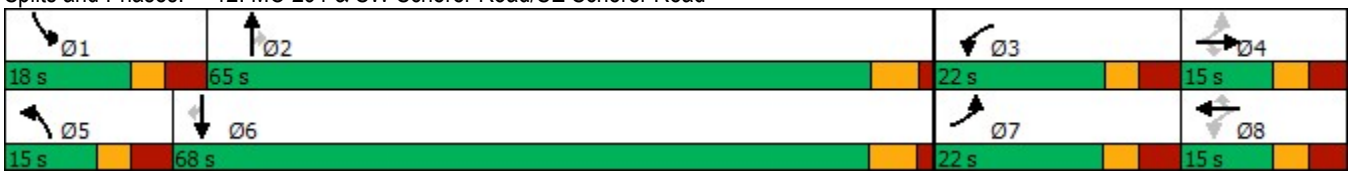
Notes

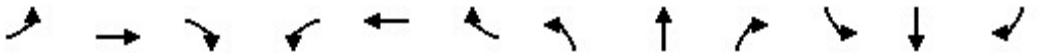
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	150	5	46	25	5	68	39	1751	9	28	2215	61
Future Volume (vph)	150	5	46	25	5	68	39	1751	9	28	2215	61
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)	22.0	15.0	15.0	22.0	15.0	15.0	15.0	65.0	65.0	18.0	68.0	68.0
Total Split (s)	22.0	15.0	15.0	22.0	15.0	15.0	15.0	65.0	65.0	18.0	68.0	68.0
Total Split (%)	18.3%	12.5%	12.5%	18.3%	12.5%	12.5%	12.5%	54.2%	54.2%	15.0%	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)	23.7	15.7	15.7	12.9	7.2	7.2	7.8	65.3	65.3	8.1	62.8	62.8
Actuated g/C Ratio	0.21	0.14	0.14	0.12	0.07	0.07	0.07	0.59	0.59	0.07	0.57	0.57
v/c Ratio	0.59	0.02	0.14	0.14	0.04	0.31	0.34	0.91	0.01	0.23	0.83	0.07
Control Delay	46.7	46.8	0.8	37.3	53.8	3.2	60.5	31.3	0.0	56.5	25.7	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	46.7	46.8	0.8	37.3	53.8	3.2	60.5	31.3	0.0	56.5	25.7	0.1
LOS	D	D	A	D	D	A	E	C	A	E	C	A
Approach Delay		36.2			14.3			31.8			25.4	
Approach LOS		D			B			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 110.6	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 28.3	Intersection LOS: C
Intersection Capacity Utilization 78.6%	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)	163	5	50	27	5	74	42	1903	10	30	2408	66
v/c Ratio	0.59	0.02	0.14	0.14	0.04	0.31	0.34	0.91	0.01	0.23	0.83	0.07
Control Delay	46.7	46.8	0.8	37.3	53.8	3.2	60.5	31.3	0.0	56.5	25.7	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	46.7	46.8	0.8	37.3	53.8	3.2	60.5	31.3	0.0	56.5	25.7	0.1
Queue Length 50th (ft)	105	3	0	16	4	0	31	~768	0	22	589	0
Queue Length 95th (ft)	170	16	0	41	17	0	70	#978	0	54	667	0
Internal Link Dist (ft)		298			1736			506			1284	
Turn Bay Length (ft)	120		125	150		90	370		300	350		380
Base Capacity (vph)	308	264	353	315	141	258	134	2090	1000	183	2926	978
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	0.09	0.04	0.29	0.31	0.91	0.01	0.16	0.82	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)	150	5	46	25	5	68	39	1751	9	28	2215	61
Future Volume (veh/h)	150	5	46	25	5	68	39	1751	9	28	2215	61
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	163	5	0	27	5	0	42	1903	0	30	2408	0
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	3	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	310	209	178	194	82	69	83	2001	895	69	2834	882
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	5085	1583
Grp Volume(v), veh/h	163	5	0	27	5	0	42	1903	0	30	2408	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1695	1583
Q Serve(g_s), s	8.9	0.3	0.0	1.5	0.3	0.0	2.4	53.5	0.0	1.8	42.2	0.0
Cycle Q Clear(g_c), s	8.9	0.3	0.0	1.5	0.3	0.0	2.4	53.5	0.0	1.8	42.2	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	310	209	178	194	82	69	83	2001	895	69	2834	882
V/C Ratio(X)	0.53	0.02	0.00	0.14	0.06	0.00	0.51	0.95	0.00	0.44	0.85	0.00
Avail Cap(c_a), veh/h	379	209	178	384	144	123	137	2001	895	188	2986	930
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	40.5	41.8	0.0	45.5	48.6	0.0	49.3	21.6	0.0	49.8	19.7	0.0
Incr Delay (d2), s/veh	1.4	0.0	0.0	0.3	0.3	0.0	4.7	11.5	0.0	4.3	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	4.5	0.1	0.0	0.8	0.1	0.0	1.3	29.1	0.0	0.9	20.3	0.0
LnGrp Delay(d),s/veh	41.9	41.9	0.0	45.8	48.9	0.0	54.0	33.1	0.0	54.1	22.1	0.0
LnGrp LOS	D	D		D	D		D	C		D	C	
Approach Vol, veh/h		168			32			1945			2438	
Approach Delay, s/veh		41.9			46.3			33.6			22.5	
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	10.9	65.7	10.6	18.7	11.8	64.8	17.9	11.4
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	* 11	* 59	* 15	* 8.2	* 8.2	62.2	15.1	* 8.2
Max Q Clear Time (g_c+I1), s	3.8	55.5	3.5	2.3	4.4	44.2	10.9	2.3
Green Ext Time (p_c), s	0.0	3.3	0.0	0.0	0.0	14.8	0.2	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	28.1
HCM 2010 LOS	C

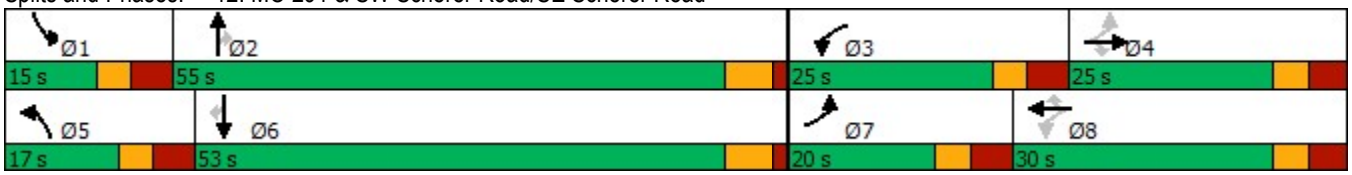
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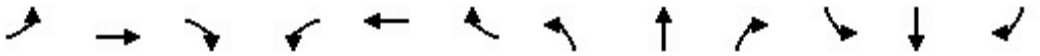
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	5	23	12	7	19	14	1743	14	26	1735	45
Future Volume (vph)	53	5	23	12	7	19	14	1743	14	26	1735	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)	15.3	13.6	13.6	11.0	7.4	7.4	7.6	59.1	59.1	7.8	64.0	64.0
Actuated g/C Ratio	0.18	0.16	0.16	0.13	0.09	0.09	0.09	0.70	0.70	0.09	0.75	0.75
v/c Ratio	0.23	0.02	0.07	0.06	0.05	0.08	0.10	0.77	0.01	0.17	0.49	0.04
Control Delay	32.1	36.0	0.3	30.7	44.6	0.5	45.1	22.4	0.0	45.3	10.4	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	32.1	36.0	0.3	30.7	44.6	0.5	45.1	22.4	0.0	45.3	10.4	0.1
LOS	C	D	A	C	D	A	D	C	A	D	B	A
Approach Delay		23.3			18.2			22.4			10.7	
Approach LOS		C			B			C			B	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 84.9	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay: 16.7	Intersection LOS: B
Intersection Capacity Utilization 75.9%	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)	58	5	25	13	8	21	15	1895	15	28	1886	49
v/c Ratio	0.23	0.02	0.07	0.06	0.05	0.08	0.10	0.77	0.01	0.17	0.49	0.04
Control Delay	32.1	36.0	0.3	30.7	44.6	0.5	45.1	22.4	0.0	45.3	10.4	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	32.1	36.0	0.3	30.7	44.6	0.5	45.1	22.4	0.0	45.3	10.4	0.1
Queue Length 50th (ft)	29	2	0	6	5	0	9	~692	0	17	221	0
Queue Length 95th (ft)	63	14	0	22	20	0	30	#876	0	46	411	0
Internal Link Dist (ft)		298			1736			506			1284	
Turn Bay Length (ft)	120		125	150		90	370		300	350		380
Base Capacity (vph)	340	460	504	448	540	565	225	2463	1150	181	3832	1232
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	0.17	0.01	0.05	0.03	0.01	0.04	0.07	0.77	0.01	0.15	0.49	0.04

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)	53	5	23	12	7	19	14	1743	14	26	1735	45
Future Volume (veh/h)	53	5	23	12	7	19	14	1743	14	26	1735	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	58	5	0	13	8	0	15	1895	0	28	1886	0
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	3	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	236	144	122	173	70	59	43	1991	891	70	2937	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	5085	1583
Grp Volume(v), veh/h	58	5	0	13	8	0	15	1895	0	28	1886	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1695	1583
Q Serve(g_s), s	2.7	0.2	0.0	0.6	0.4	0.0	0.7	44.2	0.0	1.3	21.8	0.0
Cycle Q Clear(g_c), s	2.7	0.2	0.0	0.6	0.4	0.0	0.7	44.2	0.0	1.3	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	236	144	122	173	70	59	43	1991	891	70	2937	915
V/C Ratio(X)	0.25	0.03	0.00	0.08	0.11	0.00	0.35	0.95	0.00	0.40	0.64	0.00
Avail Cap(c_a), veh/h	394	387	329	503	493	419	206	1991	891	166	2937	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	40.8	0.0	42.1	18.0	0.0	41.1	12.4	0.0
Incr Delay (d2), s/veh	0.5	0.1	0.0	0.2	0.7	0.0	4.7	11.6	0.0	3.7	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	1.3	0.1	0.0	0.3	0.2	0.0	0.4	24.5	0.0	0.7	10.3	0.0
LnGrp Delay(d),s/veh	37.4	37.5	0.0	39.3	41.5	0.0	46.7	29.7	0.0	44.7	12.9	0.0
LnGrp LOS	D	D		D	D		D	C		D	B	
Approach Vol, veh/h		63			21			1910			1914	
Approach Delay, s/veh		37.4			40.1			29.8			13.4	
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	13.6	8.9	56.4	12.2	10.1
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	46.2	2.6	2.2	2.7	23.8	4.7	2.4
Green Ext Time (p_c), s	0.0	2.7	0.0	0.0	0.0	14.5	0.1	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	21.9
HCM 2010 LOS	C

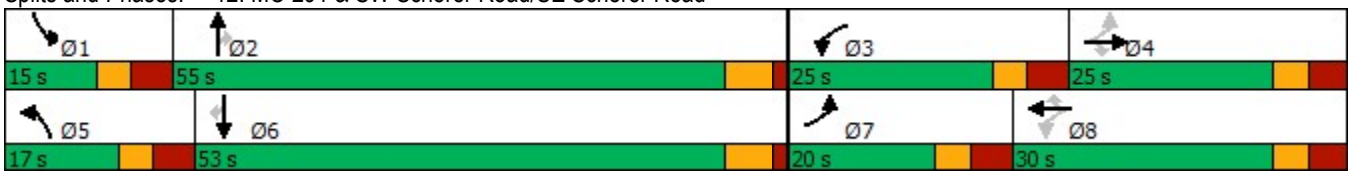
Notes

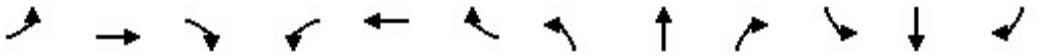
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	8	14	14	9	32	37	1831	17	63	1315	59
Future Volume (vph)	80	8	14	14	9	32	37	1831	17	63	1315	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	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)	17.3	15.1	15.1	11.0	7.2	7.2	8.1	55.9	55.9	7.9	58.7	58.7
Actuated g/C Ratio	0.19	0.16	0.16	0.12	0.08	0.08	0.09	0.60	0.60	0.09	0.64	0.64
v/c Ratio	0.36	0.03	0.04	0.08	0.07	0.13	0.26	0.93	0.02	0.45	0.44	0.06
Control Delay	35.6	35.4	0.2	30.8	46.2	1.1	47.6	33.4	0.1	54.3	14.8	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	35.6	35.4	0.2	30.8	46.2	1.1	47.6	33.4	0.1	54.3	14.8	0.1
LOS	D	D	A	C	D	A	D	C	A	D	B	A
Approach Delay		30.8			16.0			33.4			16.0	
Approach LOS		C			B			C			B	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 92.4	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 25.9	Intersection LOS: C
Intersection Capacity Utilization 78.4%	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)	87	9	15	15	10	35	40	1990	18	68	1429	64
v/c Ratio	0.36	0.03	0.04	0.08	0.07	0.13	0.26	0.93	0.02	0.45	0.44	0.06
Control Delay	35.6	35.4	0.2	30.8	46.2	1.1	47.6	33.4	0.1	54.3	14.8	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	35.6	35.4	0.2	30.8	46.2	1.1	47.6	33.4	0.1	54.3	14.8	0.1
Queue Length 50th (ft)	45	4	0	8	6	0	25	~798	0	43	228	0
Queue Length 95th (ft)	86	20	0	24	24	0	59	#981	0	90	306	0
Internal Link Dist (ft)		298			1736			506			1284	
Turn Bay Length (ft)	120		125	150		90	370		300	350		380
Base Capacity (vph)	304	425	477	412	478	518	199	2141	1021	160	3228	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	0.29	0.02	0.03	0.04	0.02	0.07	0.20	0.93	0.02	0.42	0.44	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	32	37	1831	17	63	1315	59
Future Volume (veh/h)	80	8	14	14	9	32	37	1831	17	63	1315	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	87	9	0	15	10	0	40	1990	0	68	1429	0
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	3	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	254	166	141	184	82	70	87	1904	852	112	2807	874
Arrive On Green	0.07	0.09	0.00	0.02	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	5085	1583
Grp Volume(v), veh/h	87	9	0	15	10	0	40	1990	0	68	1429	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1695	1583
Q Serve(g_s), s	4.2	0.4	0.0	0.7	0.5	0.0	2.0	49.3	0.0	3.4	16.0	0.0
Cycle Q Clear(g_c), s	4.2	0.4	0.0	0.7	0.5	0.0	2.0	49.3	0.0	3.4	16.0	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	254	166	141	184	82	70	87	1904	852	112	2807	874
V/C Ratio(X)	0.34	0.05	0.00	0.08	0.12	0.00	0.46	1.05	0.00	0.61	0.51	0.00
Avail Cap(c_a), veh/h	387	370	314	493	472	401	197	1904	852	159	2807	874
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	38.2	0.0	40.1	42.1	0.0	42.4	21.2	0.0	41.9	12.8	0.0
Incr Delay (d2), s/veh	0.8	0.1	0.0	0.2	0.7	0.0	3.8	33.6	0.0	5.3	0.2	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	2.1	0.2	0.0	0.4	0.3	0.0	1.1	32.7	0.0	1.8	7.4	0.0
LnGrp Delay(d),s/veh	38.8	38.3	0.0	40.3	42.7	0.0	46.2	54.8	0.0	47.1	12.9	0.0
LnGrp LOS	D	D		D	D		D	F		D	B	
Approach Vol, veh/h		96			25			2030			1497	
Approach Delay, s/veh		38.7			41.3			54.6			14.5	
Approach LOS		D			D			D			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	9.0	15.0	11.3	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	5.4	51.3	2.7	2.4	4.0	18.0	6.2	2.5
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	11.5	0.1	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	37.6
HCM 2010 LOS	D

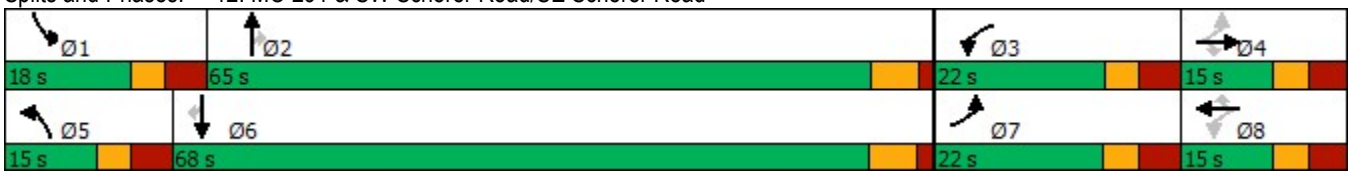
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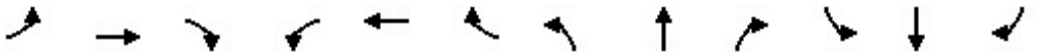
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	154	5	46	25	5	70	39	1809	9	29	2259	64
Future Volume (vph)	154	5	46	25	5	70	39	1809	9	29	2259	64
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)	22.0	15.0	15.0	22.0	15.0	15.0	15.0	65.0	65.0	18.0	68.0	68.0
Total Split (s)	22.0	15.0	15.0	22.0	15.0	15.0	15.0	65.0	65.0	18.0	68.0	68.0
Total Split (%)	18.3%	12.5%	12.5%	18.3%	12.5%	12.5%	12.5%	54.2%	54.2%	15.0%	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)	23.8	15.8	15.8	12.9	7.2	7.2	7.8	65.3	65.3	8.2	62.8	62.8
Actuated g/C Ratio	0.21	0.14	0.14	0.12	0.07	0.07	0.07	0.59	0.59	0.07	0.57	0.57
v/c Ratio	0.60	0.02	0.14	0.14	0.04	0.31	0.34	0.94	0.01	0.25	0.85	0.07
Control Delay	47.2	46.8	0.8	37.2	53.8	3.4	60.5	34.9	0.0	56.7	26.5	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	47.2	46.8	0.8	37.2	53.8	3.4	60.5	34.9	0.0	56.7	26.5	0.1
LOS	D	D	A	D	D	A	E	C	A	E	C	A
Approach Delay		36.7			14.2			35.3			26.2	
Approach LOS		D			B			D			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 110.7	
Natural Cycle: 130	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.94	
Intersection Signal Delay: 30.1	Intersection LOS: C
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)	167	5	50	27	5	76	42	1966	10	32	2455	70
v/c Ratio	0.60	0.02	0.14	0.14	0.04	0.31	0.34	0.94	0.01	0.25	0.85	0.07
Control Delay	47.2	46.8	0.8	37.2	53.8	3.4	60.5	34.9	0.0	56.7	26.5	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	47.2	46.8	0.8	37.2	53.8	3.4	60.5	34.9	0.0	56.7	26.5	0.1
Queue Length 50th (ft)	107	3	0	16	4	0	31	~862	0	24	611	0
Queue Length 95th (ft)	175	16	0	41	17	0	70	#1035	0	56	693	0
Internal Link Dist (ft)		298			1736			506			1284	
Turn Bay Length (ft)	120		125	150		90	370		300	350		380
Base Capacity (vph)	308	265	354	315	141	258	134	2085	998	183	2924	977
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	0.54	0.02	0.14	0.09	0.04	0.29	0.31	0.94	0.01	0.17	0.84	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)	154	5	46	25	5	70	39	1809	9	29	2259	64
Future Volume (veh/h)	154	5	46	25	5	70	39	1809	9	29	2259	64
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	167	5	0	27	5	0	42	1966	0	32	2455	0
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	3	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	313	213	181	193	81	69	83	1999	894	71	2839	884
Arrive On Green	0.11	0.11	0.00	0.04	0.04	0.00	0.05	0.56	0.00	0.04	0.56	0.00
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	5085	1583
Grp Volume(v), veh/h	167	5	0	27	5	0	42	1966	0	32	2455	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1695	1583
Q Serve(g_s), s	9.3	0.3	0.0	1.5	0.3	0.0	2.5	58.2	0.0	1.9	44.1	0.0
Cycle Q Clear(g_c), s	9.3	0.3	0.0	1.5	0.3	0.0	2.5	58.2	0.0	1.9	44.1	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	313	213	181	193	81	69	83	1999	894	71	2839	884
V/C Ratio(X)	0.53	0.02	0.00	0.14	0.06	0.00	0.51	0.98	0.00	0.45	0.86	0.00
Avail Cap(c_a), veh/h	375	213	181	380	143	121	136	1999	894	186	2955	920
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	40.9	42.1	0.0	46.0	49.1	0.0	49.8	22.8	0.0	50.2	20.2	0.0
Incr Delay (d2), s/veh	1.4	0.0	0.0	0.3	0.3	0.0	4.7	16.6	0.0	4.4	2.8	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	4.6	0.1	0.0	0.8	0.1	0.0	1.3	32.7	0.0	1.0	21.2	0.0
LnGrp Delay(d),s/veh	42.3	42.1	0.0	46.4	49.4	0.0	54.6	39.4	0.0	54.6	23.0	0.0
LnGrp LOS	D	D		D	D		D	D		D	C	
Approach Vol, veh/h		172			32			2008			2487	
Approach Delay, s/veh		42.3			46.8			39.7			23.4	
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	11.1	66.3	10.7	19.0	11.8	65.6	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	* 11	* 59	* 15	* 8.2	* 8.2	62.2	15.1	* 8.2
Max Q Clear Time (g_c+I1), s	3.9	60.2	3.5	2.3	4.5	46.1	11.3	2.3
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	13.6	0.1	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	31.3
HCM 2010 LOS	C

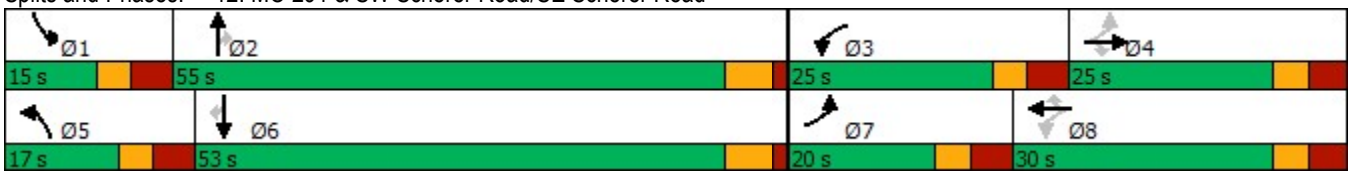
Notes

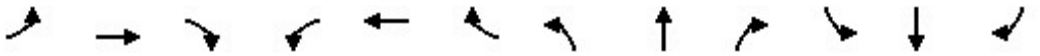
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	5	23	12	7	20	14	1918	14	26	1899	52
Future Volume (vph)	60	5	23	12	7	20	14	1918	14	26	1899	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)	15.8	13.9	13.9	10.9	7.2	7.2	7.4	56.1	56.1	7.6	61.1	61.1
Actuated g/C Ratio	0.18	0.16	0.16	0.12	0.08	0.08	0.08	0.64	0.64	0.09	0.69	0.69
v/c Ratio	0.28	0.02	0.07	0.06	0.05	0.08	0.10	0.92	0.01	0.18	0.58	0.05
Control Delay	33.5	35.8	0.3	30.6	45.0	0.6	45.6	30.8	0.0	46.0	12.3	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	33.5	35.8	0.3	30.6	45.0	0.6	45.6	30.8	0.0	46.0	12.3	0.1
LOS	C	D	A	C	D	A	D	C	A	D	B	A
Approach Delay		24.9			17.9			30.7			12.4	
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: 0.92	
Intersection Signal Delay: 21.5	Intersection LOS: C
Intersection Capacity Utilization 80.8%	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)	65	5	25	13	8	22	15	2085	15	28	2064	57
v/c Ratio	0.28	0.02	0.07	0.06	0.05	0.08	0.10	0.92	0.01	0.18	0.58	0.05
Control Delay	33.5	35.8	0.3	30.6	45.0	0.6	45.6	30.8	0.0	46.0	12.3	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	33.5	35.8	0.3	30.6	45.0	0.6	45.6	30.8	0.0	46.0	12.3	0.1
Queue Length 50th (ft)	33	2	0	6	5	0	9	~828	0	17	261	0
Queue Length 95th (ft)	69	14	0	22	20	0	30	#1021	0	46	479	0
Internal Link Dist (ft)		298			1736			506			1284	
Turn Bay Length (ft)	120		125	150		90	370		300	350		380
Base Capacity (vph)	316	438	486	427	507	540	211	2257	1067	170	3532	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	0.21	0.01	0.05	0.03	0.02	0.04	0.07	0.92	0.01	0.16	0.58	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	20	14	1918	14	26	1899	52
Future Volume (veh/h)	60	5	23	12	7	20	14	1918	14	26	1899	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	65	5	0	13	8	0	15	2085	0	28	2064	0
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	3	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	241	149	127	173	70	59	43	1984	888	70	2928	912
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	5085	1583
Grp Volume(v), veh/h	65	5	0	13	8	0	15	2085	0	28	2064	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1695	1583
Q Serve(g_s), s	3.0	0.2	0.0	0.6	0.4	0.0	0.7	49.3	0.0	1.4	25.5	0.0
Cycle Q Clear(g_c), s	3.0	0.2	0.0	0.6	0.4	0.0	0.7	49.3	0.0	1.4	25.5	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	241	149	127	173	70	59	43	1984	888	70	2928	912
V/C Ratio(X)	0.27	0.03	0.00	0.08	0.11	0.00	0.35	1.05	0.00	0.40	0.71	0.00
Avail Cap(c_a), veh/h	393	386	328	502	491	418	206	1984	888	165	2928	912
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	37.3	0.0	39.2	40.9	0.0	42.2	19.3	0.0	41.2	13.3	0.0
Incr Delay (d2), s/veh	0.6	0.1	0.0	0.2	0.7	0.0	4.7	35.0	0.0	3.7	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	1.5	0.1	0.0	0.3	0.2	0.0	0.4	33.4	0.0	0.7	12.1	0.0
LnGrp Delay(d),s/veh	37.5	37.4	0.0	39.4	41.6	0.0	46.9	54.4	0.0	44.9	14.1	0.0
LnGrp LOS	D	D		D	D		D	F		D	B	
Approach Vol, veh/h		70			21			2100			2092	
Approach Delay, s/veh		37.5			40.2			54.3			14.5	
Approach LOS		D			D			D			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	13.9	8.9	56.4	12.5	10.1
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	51.3	2.6	2.2	2.7	27.5	5.0	2.4
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	14.1	0.1	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	34.5
HCM 2010 LOS	C

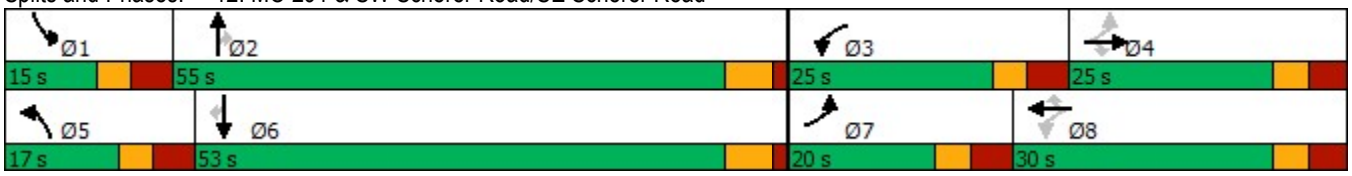
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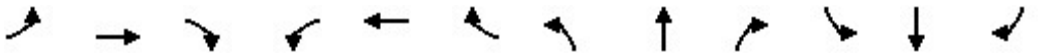
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	8	14	14	9	32	37	2150	17	63	1518	59
Future Volume (vph)	80	8	14	14	9	32	37	2150	17	63	1518	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	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)	17.3	15.1	15.1	11.0	7.2	7.2	8.1	55.9	55.9	7.9	58.7	58.7
Actuated g/C Ratio	0.19	0.16	0.16	0.12	0.08	0.08	0.09	0.60	0.60	0.09	0.64	0.64
v/c Ratio	0.36	0.03	0.04	0.08	0.07	0.13	0.26	1.09	0.02	0.45	0.51	0.06
Control Delay	35.6	35.4	0.2	30.8	46.2	1.1	47.6	75.0	0.1	54.3	15.9	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	35.4	0.2	30.8	46.2	1.1	47.6	75.0	0.1	54.3	15.9	0.1
LOS	D	D	A	C	D	A	D	E	A	D	B	A
Approach Delay		30.8			16.0			74.0			16.8	
Approach LOS		C			B			E			B	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 92.4	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.09	
Intersection Signal Delay: 48.7	Intersection LOS: D
Intersection Capacity Utilization 87.2%	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)	87	9	15	15	10	35	40	2337	18	68	1650	64
v/c Ratio	0.36	0.03	0.04	0.08	0.07	0.13	0.26	1.09	0.02	0.45	0.51	0.06
Control Delay	35.6	35.4	0.2	30.8	46.2	1.1	47.6	75.0	0.1	54.3	15.9	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	35.4	0.2	30.8	46.2	1.1	47.6	75.0	0.1	54.3	15.9	0.1
Queue Length 50th (ft)	45	4	0	8	6	0	25	~1045	0	43	280	0
Queue Length 95th (ft)	86	20	0	24	24	0	59	#1233	0	90	372	0
Internal Link Dist (ft)		298			1736			506			1284	
Turn Bay Length (ft)	120		125	150		90	370		300	350		380
Base Capacity (vph)	304	425	477	412	478	518	199	2141	1021	160	3228	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	0.29	0.02	0.03	0.04	0.02	0.07	0.20	1.09	0.02	0.42	0.51	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	32	37	2150	17	63	1518	59
Future Volume (veh/h)	80	8	14	14	9	32	37	2150	17	63	1518	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	87	9	0	15	10	0	40	2337	0	68	1650	0
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	3	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	254	166	141	184	82	70	87	1904	852	112	2807	874
Arrive On Green	0.07	0.09	0.00	0.02	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	5085	1583
Grp Volume(v), veh/h	87	9	0	15	10	0	40	2337	0	68	1650	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1695	1583
Q Serve(g_s), s	4.2	0.4	0.0	0.7	0.5	0.0	2.0	49.3	0.0	3.4	19.7	0.0
Cycle Q Clear(g_c), s	4.2	0.4	0.0	0.7	0.5	0.0	2.0	49.3	0.0	3.4	19.7	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	254	166	141	184	82	70	87	1904	852	112	2807	874
V/C Ratio(X)	0.34	0.05	0.00	0.08	0.12	0.00	0.46	1.23	0.00	0.61	0.59	0.00
Avail Cap(c_a), veh/h	387	370	314	493	472	401	197	1904	852	159	2807	874
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	38.2	0.0	40.1	42.1	0.0	42.4	21.2	0.0	41.9	13.6	0.0
Incr Delay (d2), s/veh	0.8	0.1	0.0	0.2	0.7	0.0	3.8	107.3	0.0	5.3	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	2.1	0.2	0.0	0.4	0.3	0.0	1.1	52.2	0.0	1.8	9.3	0.0
LnGrp Delay(d),s/veh	38.8	38.3	0.0	40.3	42.7	0.0	46.2	128.4	0.0	47.1	13.9	0.0
LnGrp LOS	D	D		D	D		D	F		D	B	
Approach Vol, veh/h		96			25			2377			1718	
Approach Delay, s/veh		38.7			41.3			127.1			15.3	
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	12.6	55.1	9.0	15.0	11.3	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	5.4	51.3	2.7	2.4	4.0	21.7	6.2	2.5
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	13.0	0.1	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	79.0
HCM 2010 LOS	E

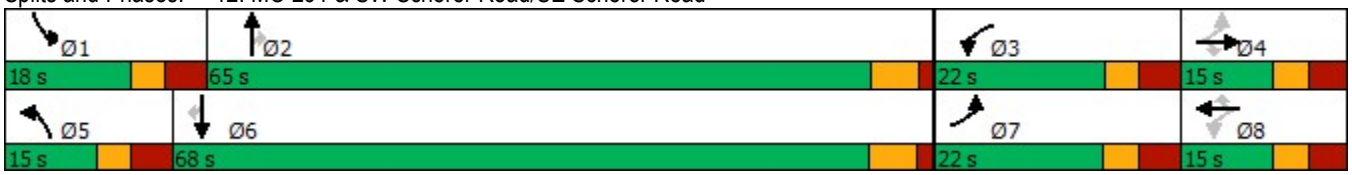
Notes

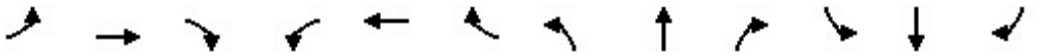
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	154	5	46	25	5	70	39	2107	9	29	2667	64
Future Volume (vph)	154	5	46	25	5	70	39	2107	9	29	2667	64
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)	22.0	15.0	15.0	22.0	15.0	15.0	15.0	65.0	65.0	18.0	68.0	68.0
Total Split (s)	22.0	15.0	15.0	22.0	15.0	15.0	15.0	65.0	65.0	18.0	68.0	68.0
Total Split (%)	18.3%	12.5%	12.5%	18.3%	12.5%	12.5%	12.5%	54.2%	54.2%	15.0%	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)	23.8	15.8	15.8	12.9	7.1	7.1	7.8	65.8	65.8	8.1	63.4	63.4
Actuated g/C Ratio	0.21	0.14	0.14	0.12	0.06	0.06	0.07	0.59	0.59	0.07	0.57	0.57
v/c Ratio	0.60	0.02	0.14	0.14	0.04	0.32	0.34	1.09	0.01	0.25	1.00	0.07
Control Delay	47.4	46.8	0.8	37.3	53.8	3.4	60.7	76.3	0.0	56.8	43.9	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	47.4	46.8	0.8	37.3	53.8	3.4	60.7	76.3	0.0	56.8	43.9	0.1
LOS	D	D	A	D	D	A	E	E	A	E	D	A
Approach Delay		36.9			14.2			75.6			43.0	
Approach LOS		D			B			E			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 111.3	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.09	
Intersection Signal Delay: 55.7	Intersection LOS: E
Intersection Capacity Utilization 88.7%	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)	167	5	50	27	5	76	42	2290	10	32	2899	70
v/c Ratio	0.60	0.02	0.14	0.14	0.04	0.32	0.34	1.09	0.01	0.25	1.00	0.07
Control Delay	47.4	46.8	0.8	37.3	53.8	3.4	60.7	76.3	0.0	56.8	43.9	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	47.4	46.8	0.8	37.3	53.8	3.4	60.7	76.3	0.0	56.8	43.9	0.1
Queue Length 50th (ft)	107	3	0	16	4	0	31	~1134	0	24	~916	0
Queue Length 95th (ft)	175	16	0	41	17	0	70	#1303	0	56	#1003	0
Internal Link Dist (ft)		298			1736			506			1284	
Turn Bay Length (ft)	120		125	150		90	370		300	350		380
Base Capacity (vph)	306	264	353	313	139	257	133	2092	1000	181	2896	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	0.55	0.02	0.14	0.09	0.04	0.30	0.32	1.09	0.01	0.18	1.00	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)	154	5	46	25	5	70	39	2107	9	29	2667	64
Future Volume (veh/h)	154	5	46	25	5	70	39	2107	9	29	2667	64
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	167	5	0	27	5	0	42	2290	0	32	2899	0
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	3	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	310	212	180	190	80	68	82	2026	906	70	2879	896
Arrive On Green	0.11	0.11	0.00	0.04	0.04	0.00	0.05	0.57	0.00	0.04	0.57	0.00
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	5085	1583
Grp Volume(v), veh/h	167	5	0	27	5	0	42	2290	0	32	2899	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1695	1583
Q Serve(g_s), s	9.5	0.3	0.0	1.6	0.3	0.0	2.5	62.9	0.0	1.9	62.2	0.0
Cycle Q Clear(g_c), s	9.5	0.3	0.0	1.6	0.3	0.0	2.5	62.9	0.0	1.9	62.2	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	310	212	180	190	80	68	82	2026	906	70	2879	896
V/C Ratio(X)	0.54	0.02	0.00	0.14	0.06	0.00	0.51	1.13	0.00	0.45	1.01	0.00
Avail Cap(c_a), veh/h	366	212	180	372	139	118	132	2026	906	181	2879	896
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	42.1	43.3	0.0	47.3	50.4	0.0	51.2	23.5	0.0	51.6	23.8	0.0
Incr Delay (d2), s/veh	1.5	0.0	0.0	0.3	0.3	0.0	4.9	65.6	0.0	4.5	18.5	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	4.8	0.1	0.0	0.8	0.2	0.0	1.4	48.8	0.0	1.0	33.7	0.0
LnGrp Delay(d),s/veh	43.6	43.3	0.0	47.7	50.8	0.0	56.1	89.1	0.0	56.1	42.3	0.0
LnGrp LOS	D	D		D	D		E	F		E	F	
Approach Vol, veh/h		172			32			2332			2931	
Approach Delay, s/veh		43.6			48.2			88.5			42.5	
Approach LOS		D			D			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	11.2	68.7	10.7	19.3	11.9	68.0	18.5	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	* 11	* 59	* 15	* 8.2	* 8.2	62.2	15.1	* 8.2
Max Q Clear Time (g_c+I1), s	3.9	64.9	3.6	2.3	4.5	64.2	11.5	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	62.2
HCM 2010 LOS	E

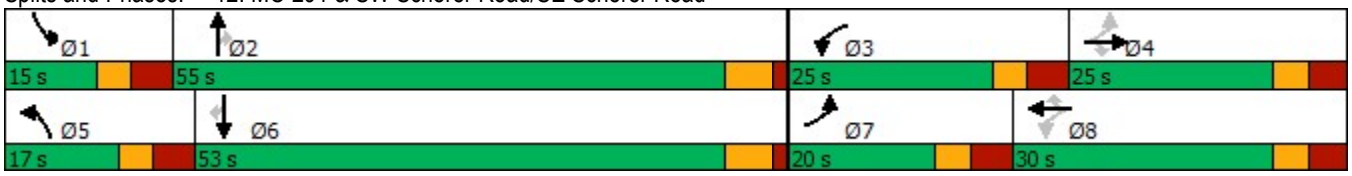
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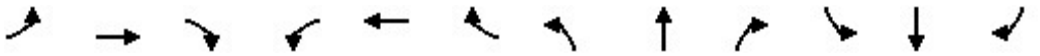
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	5	23	12	7	20	14	2166	14	26	2152	52
Future Volume (vph)	60	5	23	12	7	20	14	2166	14	26	2152	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)	15.8	13.9	13.9	10.9	7.2	7.2	7.4	56.1	56.1	7.6	61.1	61.1
Actuated g/C Ratio	0.18	0.16	0.16	0.12	0.08	0.08	0.08	0.64	0.64	0.09	0.69	0.69
v/c Ratio	0.28	0.02	0.07	0.06	0.05	0.08	0.10	1.04	0.01	0.18	0.66	0.05
Control Delay	33.5	35.8	0.3	30.6	45.0	0.6	45.6	55.2	0.0	46.0	13.9	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	33.5	35.8	0.3	30.6	45.0	0.6	45.6	55.2	0.0	46.0	13.9	0.1
LOS	C	D	A	C	D	A	D	E	A	D	B	A
Approach Delay		24.9			17.9			54.8			14.0	
Approach LOS		C			B			D			B	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 88	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.04	
Intersection Signal Delay: 33.9	Intersection LOS: C
Intersection Capacity Utilization 87.6%	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)	65	5	25	13	8	22	15	2354	15	28	2339	57
v/c Ratio	0.28	0.02	0.07	0.06	0.05	0.08	0.10	1.04	0.01	0.18	0.66	0.05
Control Delay	33.5	35.8	0.3	30.6	45.0	0.6	45.6	55.2	0.0	46.0	13.9	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	33.5	35.8	0.3	30.6	45.0	0.6	45.6	55.2	0.0	46.0	13.9	0.1
Queue Length 50th (ft)	33	2	0	6	5	0	9	~1014	0	17	325	0
Queue Length 95th (ft)	69	14	0	22	20	0	30	#1213	0	46	#646	0
Internal Link Dist (ft)		298			1736			506			1284	
Turn Bay Length (ft)	120		125	150		90	370		300	350		380
Base Capacity (vph)	316	438	486	427	507	540	211	2257	1067	170	3532	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	0.21	0.01	0.05	0.03	0.02	0.04	0.07	1.04	0.01	0.16	0.66	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	20	14	2166	14	26	2152	52
Future Volume (veh/h)	60	5	23	12	7	20	14	2166	14	26	2152	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	65	5	0	13	8	0	15	2354	0	28	2339	0
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	3	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	241	149	127	173	70	59	43	1984	888	70	2928	912
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	5085	1583
Grp Volume(v), veh/h	65	5	0	13	8	0	15	2354	0	28	2339	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1695	1583
Q Serve(g_s), s	3.0	0.2	0.0	0.6	0.4	0.0	0.7	49.3	0.0	1.4	31.8	0.0
Cycle Q Clear(g_c), s	3.0	0.2	0.0	0.6	0.4	0.0	0.7	49.3	0.0	1.4	31.8	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	241	149	127	173	70	59	43	1984	888	70	2928	912
V/C Ratio(X)	0.27	0.03	0.00	0.08	0.11	0.00	0.35	1.19	0.00	0.40	0.80	0.00
Avail Cap(c_a), veh/h	393	386	328	502	491	418	206	1984	888	165	2928	912
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	37.3	0.0	39.2	40.9	0.0	42.2	19.3	0.0	41.2	14.7	0.0
Incr Delay (d2), s/veh	0.6	0.1	0.0	0.2	0.7	0.0	4.7	89.2	0.0	3.7	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	1.5	0.1	0.0	0.3	0.2	0.0	0.4	48.3	0.0	0.7	15.2	0.0
LnGrp Delay(d),s/veh	37.5	37.4	0.0	39.4	41.6	0.0	46.9	108.6	0.0	44.9	16.3	0.0
LnGrp LOS	D	D		D	D		D	F		D	B	
Approach Vol, veh/h		70			21			2369			2367	
Approach Delay, s/veh		37.5			40.2			108.2			16.6	
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	10.3	55.1	8.7	13.9	8.9	56.4	12.5	10.1
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	51.3	2.6	2.2	2.7	33.8	5.0	2.4
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	11.3	0.1	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	62.0
HCM 2010 LOS	E

Notes

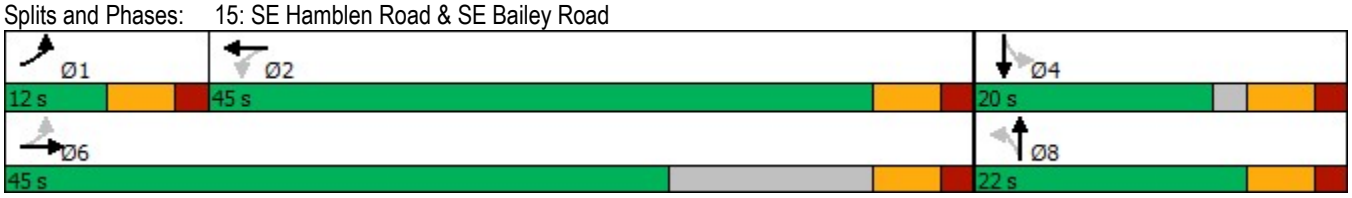
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

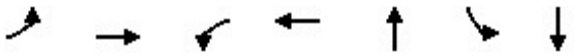
Intersection 5
Bailey Road & Hamblen Road

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)	25.0	27.0	12.2	12.2		9.5	9.5	9.5
Actuated g/C Ratio	0.59	0.63	0.29	0.29		0.22	0.22	0.22
v/c Ratio	0.40	0.11	0.00	0.57		0.09	0.30	0.34
Control Delay	7.9	5.6	12.0	14.7		16.6	19.8	7.2
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	7.9	5.6	12.0	14.7		16.6	19.8	7.2
LOS	A	A	B	B		B	B	A
Approach Delay		7.1		14.6		16.6		11.7
Approach LOS		A		B		B		B

Intersection Summary	
Cycle Length: 79	
Actuated Cycle Length: 42.7	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.57	
Intersection Signal Delay: 11.2	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)	221	127	1	321	27	91	162
v/c Ratio	0.40	0.11	0.00	0.57	0.09	0.30	0.34
Control Delay	7.9	5.6	12.0	14.7	16.6	19.8	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.9	5.6	12.0	14.7	16.6	19.8	7.2
Queue Length 50th (ft)	25	13	0	48	5	20	3
Queue Length 95th (ft)	60	36	3	116	23	59	43
Internal Link Dist (ft)		3248		119	741		656
Turn Bay Length (ft)	240		90			100	
Base Capacity (vph)	556	1828	1099	1514	568	550	730
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	0.40	0.07	0.00	0.21	0.05	0.17	0.22

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	221	124	3	1	159	162	13	13	1	91	15	147
Adj No. of Lanes	1	1	0	1	1	0	0	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	512	983	24	502	226	230	186	144	8	448	27	261
Arrive On Green	0.14	0.54	0.54	0.27	0.27	0.27	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	1774	1811	44	1258	847	863	345	803	44	1394	149	1457
Grp Volume(v), veh/h	221	0	127	1	0	321	27	0	0	91	0	162
Grp Sat Flow(s),veh/h/ln	1774	0	1855	1258	0	1710	1193	0	0	1394	0	1606
Q Serve(g_s), s	3.4	0.0	1.4	0.0	0.0	7.3	0.0	0.0	0.0	0.0	0.0	4.0
Cycle Q Clear(g_c), s	3.4	0.0	1.4	0.0	0.0	7.3	4.0	0.0	0.0	2.0	0.0	4.0
Prop In Lane	1.00		0.02	1.00		0.50	0.48		0.04	1.00		0.91
Lane Grp Cap(c), veh/h	512	0	1006	502	0	455	337	0	0	448	0	288
V/C Ratio(X)	0.43	0.00	0.13	0.00	0.00	0.70	0.08	0.00	0.00	0.20	0.00	0.56
Avail Cap(c_a), veh/h	516	0	1678	1306	0	1548	621	0	0	651	0	522
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	8.7	0.0	4.8	11.6	0.0	14.3	14.8	0.0	0.0	15.3	0.0	16.2
Incr Delay (d2), s/veh	0.6	0.0	0.1	0.0	0.0	2.0	0.1	0.0	0.0	0.2	0.0	1.7
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	1.7	0.0	0.8	0.0	0.0	3.6	0.3	0.0	0.0	1.0	0.0	1.9
LnGrp Delay(d),s/veh	9.3	0.0	4.9	11.6	0.0	16.3	14.9	0.0	0.0	15.6	0.0	17.9
LnGrp LOS	A		A	B		B	B			B		B
Approach Vol, veh/h		348			322			27			253	
Approach Delay, s/veh		7.7			16.3			14.9			17.0	
Approach LOS		A			B			B			B	

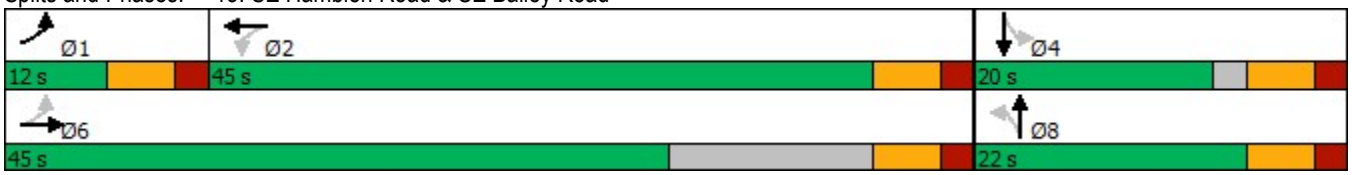
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	11.9	17.5		13.7		29.4		13.7
Change Period (Y+Rc), s	6.0	6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s	6.0	39.0		14.0		39.0		16.0
Max Q Clear Time (g_c+I1), s	5.4	9.3		6.0		3.4		6.0
Green Ext Time (p_c), s	0.0	2.2		0.7		0.7		0.0

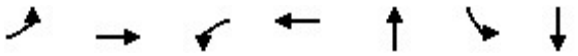
Intersection Summary	
HCM 2010 Ctrl Delay	13.3
HCM 2010 LOS	B

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)	28.8	28.8	16.6	16.6		13.4	13.4	13.4
Actuated g/C Ratio	0.53	0.53	0.31	0.31		0.25	0.25	0.25
v/c Ratio	0.53	0.22	0.01	0.71		0.05	0.71	0.10
Control Delay	11.8	7.3	12.0	22.3		16.9	34.6	8.9
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	11.8	7.3	12.0	22.3		16.9	34.6	8.9
LOS	B	A	B	C		B	C	A
Approach Delay		9.6		22.2		16.9		30.7
Approach LOS		A		C		B		C

Intersection Summary	
Cycle Length: 79	
Actuated Cycle Length: 54.3	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.71	
Intersection Signal Delay: 19.4	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)	218	216	3	404	21	241	43
v/c Ratio	0.53	0.22	0.01	0.71	0.05	0.71	0.10
Control Delay	11.8	7.3	12.0	22.3	16.9	34.6	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.8	7.3	12.0	22.3	16.9	34.6	8.9
Queue Length 50th (ft)	35	34	1	104	4	69	1
Queue Length 95th (ft)	63	62	5	182	21	#193	23
Internal Link Dist (ft)		3248		119	741		656
Turn Bay Length (ft)	240		90			100	
Base Capacity (vph)	410	1722	842	1305	515	413	508
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	0.53	0.13	0.00	0.31	0.04	0.58	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	218	216	0	3	287	117	5	13	3	241	5	38
Adj No. of Lanes	1	1	0	1	1	0	0	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	458	1019	0	498	381	155	135	266	52	440	39	296
Arrive On Green	0.12	0.55	0.00	0.30	0.30	0.30	0.21	0.21	0.21	0.21	0.21	0.21
Sat Flow, veh/h	1774	1863	0	1161	1259	513	211	1281	249	1392	187	1424
Grp Volume(v), veh/h	218	216	0	3	0	404	21	0	0	241	0	43
Grp Sat Flow(s),veh/h/ln	1774	1863	0	1161	0	1772	1741	0	0	1392	0	1611
Q Serve(g_s), s	3.7	2.9	0.0	0.1	0.0	10.1	0.0	0.0	0.0	7.5	0.0	1.1
Cycle Q Clear(g_c), s	3.7	2.9	0.0	0.1	0.0	10.1	0.5	0.0	0.0	8.0	0.0	1.1
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	458	1019	0	498	0	536	453	0	0	440	0	335
V/C Ratio(X)	0.48	0.21	0.00	0.01	0.00	0.75	0.05	0.00	0.00	0.55	0.00	0.13
Avail Cap(c_a), veh/h	459	1483	0	1071	0	1411	651	0	0	548	0	461
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	9.9	5.7	0.0	11.9	0.0	15.4	15.6	0.0	0.0	18.5	0.0	15.8
Incr Delay (d2), s/veh	0.8	0.1	0.0	0.0	0.0	2.2	0.0	0.0	0.0	1.1	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	1.9	1.5	0.0	0.0	0.0	5.3	0.2	0.0	0.0	3.2	0.0	0.5
LnGrp Delay(d),s/veh	10.7	5.8	0.0	11.9	0.0	17.6	15.6	0.0	0.0	19.5	0.0	16.0
LnGrp LOS	B	A		B		B	B			B		B
Approach Vol, veh/h		434			407			21			284	
Approach Delay, s/veh		8.2			17.6			15.6			19.0	
Approach LOS		A			B			B			B	

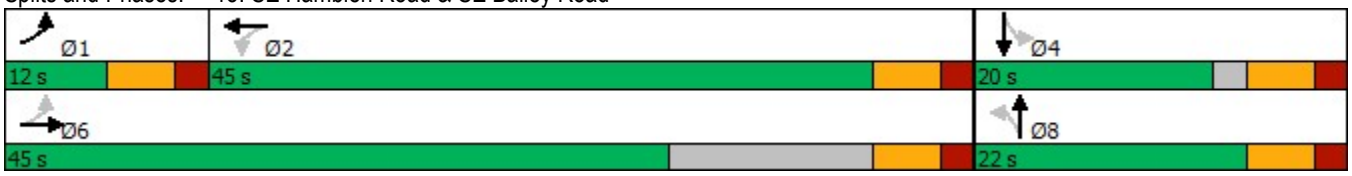
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	12.0	20.8		16.2		32.8		16.2
Change Period (Y+Rc), s	6.0	6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s	6.0	39.0		14.0		39.0		16.0
Max Q Clear Time (g_c+I1), s	5.7	12.1		10.0		4.9		2.5
Green Ext Time (p_c), s	0.0	2.7		0.4		1.3		0.0

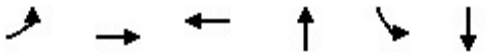
Intersection Summary	
HCM 2010 Ctrl Delay	14.3
HCM 2010 LOS	B

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)	22.6	22.6	10.4	9.9	9.9	9.9
Actuated g/C Ratio	0.51	0.51	0.23	0.22	0.22	0.22
v/c Ratio	0.38	0.12	0.54	0.01	0.38	0.48
Control Delay	8.9	6.6	15.5	12.5	19.3	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.9	6.6	15.5	12.5	19.3	6.0
LOS	A	A	B	B	B	A
Approach Delay		8.1	15.5	12.5		10.1
Approach LOS		A	B	B		B

Intersection Summary	
Cycle Length: 79	
Actuated Cycle Length: 44.6	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.54	
Intersection Signal Delay: 10.9	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)	192	112	251	2	120	267
v/c Ratio	0.38	0.12	0.54	0.01	0.38	0.48
Control Delay	8.9	6.6	15.5	12.5	19.3	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.9	6.6	15.5	12.5	19.3	6.0
Queue Length 50th (ft)	22	12	36	0	25	0
Queue Length 95th (ft)	59	37	96	4	67	45
Internal Link Dist (ft)		3248	119	741		656
Turn Bay Length (ft)	240				100	
Base Capacity (vph)	504	1850	1540	629	511	744
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	0.23	0.36

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	192	112	0	0	135	116	0	1	1	120	1	266
Adj No. of Lanes	1	1	0	1	1	0	0	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	506	922	0	168	202	174	0	192	192	483	1	354
Arrive On Green	0.14	0.50	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	1276	926	796	0	856	856	1409	6	1578
Grp Volume(v), veh/h	192	112	0	0	0	251	0	0	2	120	0	267
Grp Sat Flow(s),veh/h/ln	1774	1863	0	1276	0	1722	0	0	1712	1409	0	1584
Q Serve(g_s), s	3.1	1.4	0.0	0.0	0.0	5.7	0.0	0.0	0.0	3.1	0.0	6.7
Cycle Q Clear(g_c), s	3.1	1.4	0.0	0.0	0.0	5.7	0.0	0.0	0.0	3.1	0.0	6.7
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	506	922	0	168	0	376	0	0	384	483	0	355
V/C Ratio(X)	0.38	0.12	0.00	0.00	0.00	0.67	0.00	0.00	0.01	0.25	0.00	0.75
Avail Cap(c_a), veh/h	513	1699	0	1054	0	1571	0	0	641	629	0	519
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	9.4	5.8	0.0	0.0	0.0	15.3	0.0	0.0	12.9	14.1	0.0	15.5
Incr Delay (d2), s/veh	0.5	0.1	0.0	0.0	0.0	2.1	0.0	0.0	0.0	0.3	0.0	3.6
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	1.5	0.7	0.0	0.0	0.0	2.9	0.0	0.0	0.0	1.2	0.0	3.2
LnGrp Delay(d),s/veh	9.9	5.9	0.0	0.0	0.0	17.3	0.0	0.0	12.9	14.4	0.0	19.0
LnGrp LOS	A	A				B			B	B		B
Approach Vol, veh/h		304			251			2			387	
Approach Delay, s/veh		8.4			17.3			12.9			17.6	
Approach LOS		A			B			B			B	

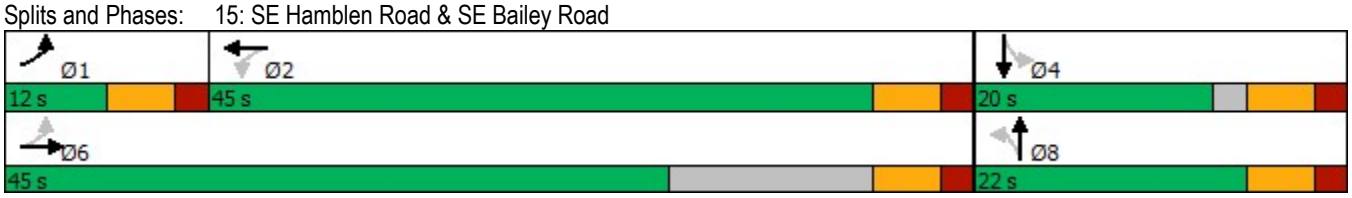
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	11.8	15.3		15.6		27.2		15.6
Change Period (Y+Rc), s	6.0	6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s	6.0	39.0		14.0		39.0		16.0
Max Q Clear Time (g_c+I1), s	5.1	7.7		8.7		3.4		2.0
Green Ext Time (p_c), s	0.0	1.6		1.0		0.6		0.0

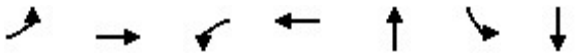
Intersection Summary	
HCM 2010 Ctrl Delay	14.6
HCM 2010 LOS	B

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)	25.4	27.4	12.6	12.6		9.5	9.5	9.5
Actuated g/C Ratio	0.59	0.64	0.29	0.29		0.22	0.22	0.22
v/c Ratio	0.41	0.12	0.00	0.58		0.09	0.30	0.36
Control Delay	8.0	5.6	12.0	15.0		17.0	20.1	7.3
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	8.0	5.6	12.0	15.0		17.0	20.1	7.3
LOS	A	A	B	B		B	C	A
Approach Delay		7.1		15.0		17.0		11.7
Approach LOS		A		B		B		B

Intersection Summary	
Cycle Length: 79	
Actuated Cycle Length: 43.1	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.58	
Intersection Signal Delay: 11.3	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)	228	136	1	330	28	91	170
v/c Ratio	0.41	0.12	0.00	0.58	0.09	0.30	0.36
Control Delay	8.0	5.6	12.0	15.0	17.0	20.1	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.0	5.6	12.0	15.0	17.0	20.1	7.3
Queue Length 50th (ft)	26	14	0	52	6	20	3
Queue Length 95th (ft)	62	38	3	122	24	60	44
Internal Link Dist (ft)		3248		119	741		656
Turn Bay Length (ft)	240		90			100	
Base Capacity (vph)	553	1822	1081	1505	556	546	731
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	0.41	0.07	0.00	0.22	0.05	0.17	0.23

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	228	132	4	1	168	162	14	13	1	91	15	155
Adj No. of Lanes	1	1	0	1	1	0	0	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	509	981	30	504	237	228	183	131	7	440	25	261
Arrive On Green	0.14	0.55	0.55	0.27	0.27	0.27	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	1774	1799	55	1248	873	842	332	737	40	1394	142	1463
Grp Volume(v), veh/h	228	0	136	1	0	330	28	0	0	91	0	170
Grp Sat Flow(s),veh/h/ln	1774	0	1853	1248	0	1714	1108	0	0	1394	0	1605
Q Serve(g_s), s	3.5	0.0	1.6	0.0	0.0	7.6	0.0	0.0	0.0	0.0	0.0	4.2
Cycle Q Clear(g_c), s	3.5	0.0	1.6	0.0	0.0	7.6	4.3	0.0	0.0	2.1	0.0	4.2
Prop In Lane	1.00		0.03	1.00		0.49	0.50		0.04	1.00		0.91
Lane Grp Cap(c), veh/h	509	0	1011	504	0	465	322	0	0	440	0	286
V/C Ratio(X)	0.45	0.00	0.13	0.00	0.00	0.71	0.09	0.00	0.00	0.21	0.00	0.59
Avail Cap(c_a), veh/h	512	0	1663	1285	0	1538	599	0	0	641	0	517
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	8.8	0.0	4.8	11.6	0.0	14.3	15.0	0.0	0.0	15.5	0.0	16.4
Incr Delay (d2), s/veh	0.6	0.0	0.1	0.0	0.0	2.0	0.1	0.0	0.0	0.2	0.0	2.0
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	1.7	0.0	0.8	0.0	0.0	3.8	0.3	0.0	0.0	1.0	0.0	2.0
LnGrp Delay(d),s/veh	9.4	0.0	4.9	11.6	0.0	16.3	15.1	0.0	0.0	15.8	0.0	18.4
LnGrp LOS	A		A	B		B	B			B		B
Approach Vol, veh/h		364			331			28			261	
Approach Delay, s/veh		7.7			16.3			15.1			17.5	
Approach LOS		A			B			B			B	

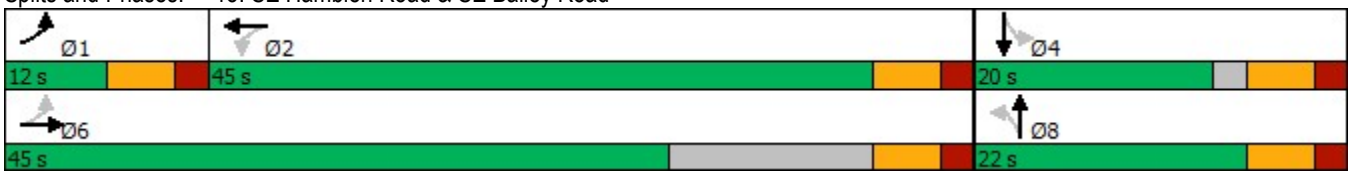
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	11.9	17.8		13.8		29.7		13.8
Change Period (Y+Rc), s	6.0	6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s	6.0	39.0		14.0		39.0		16.0
Max Q Clear Time (g_c+I1), s	5.5	9.6		6.2		3.6		6.3
Green Ext Time (p_c), s	0.0	2.2		0.7		0.8		0.0

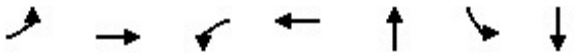
Intersection Summary	
HCM 2010 Ctrl Delay	13.4
HCM 2010 LOS	B

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)	29.4	29.4	17.3	17.3		13.4	13.4	13.4
Actuated g/C Ratio	0.53	0.53	0.31	0.31		0.24	0.24	0.24
v/c Ratio	0.60	0.24	0.01	0.72		0.06	0.71	0.59
Control Delay	13.6	7.4	12.0	22.6		17.4	35.5	6.8
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	13.6	7.4	12.0	22.6		17.4	35.5	6.8
LOS	B	A	B	C		B	D	A
Approach Delay		10.5		22.6		17.4		17.5
Approach LOS		B		C		B		B

Intersection Summary	
Cycle Length: 79	
Actuated Cycle Length: 55	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.72	
Intersection Signal Delay: 16.7	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)	243	235	3	420	21	241	409
v/c Ratio	0.60	0.24	0.01	0.72	0.06	0.71	0.59
Control Delay	13.6	7.4	12.0	22.6	17.4	35.5	6.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.6	7.4	12.0	22.6	17.4	35.5	6.8
Queue Length 50th (ft)	39	37	1	110	4	71	1
Queue Length 95th (ft)	70	67	5	191	21	#197	65
Internal Link Dist (ft)		3248		119	741		656
Turn Bay Length (ft)	240		90			100	
Base Capacity (vph)	405	1704	817	1290	443	407	752
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	0.60	0.14	0.00	0.33	0.05	0.59	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	243	235	0	3	303	117	5	13	3	241	5	404
Adj No. of Lanes	1	1	0	1	1	0	0	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	393	951	0	469	385	149	88	182	32	332	5	438
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	1141	1281	495	38	650	115	1392	19	1567
Grp Volume(v), veh/h	243	235	0	3	0	420	21	0	0	241	0	409
Grp Sat Flow(s),veh/h/ln	1774	1863	0	1141	0	1775	802	0	0	1392	0	1586
Q Serve(g_s), s	5.1	4.0	0.0	0.1	0.0	12.4	0.1	0.0	0.0	1.6	0.0	14.3
Cycle Q Clear(g_c), s	5.1	4.0	0.0	0.1	0.0	12.4	14.4	0.0	0.0	16.0	0.0	14.3
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	393	951	0	469	0	534	302	0	0	332	0	444
V/C Ratio(X)	0.62	0.25	0.00	0.01	0.00	0.79	0.07	0.00	0.00	0.72	0.00	0.92
Avail Cap(c_a), veh/h	393	1270	0	904	0	1210	302	0	0	332	0	444
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	12.8	7.8	0.0	14.0	0.0	18.3	15.7	0.0	0.0	22.3	0.0	20.0
Incr Delay (d2), s/veh	2.9	0.1	0.0	0.0	0.0	2.6	0.1	0.0	0.0	7.6	0.0	24.7
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	2.8	2.1	0.0	0.0	0.0	6.5	0.2	0.0	0.0	4.5	0.0	9.3
LnGrp Delay(d),s/veh	15.7	8.0	0.0	14.0	0.0	20.9	15.8	0.0	0.0	30.0	0.0	44.7
LnGrp LOS	B	A		B		C	B			C		D
Approach Vol, veh/h		478			423			21			650	
Approach Delay, s/veh		11.9			20.9			15.8			39.2	
Approach LOS		B			C			B			D	

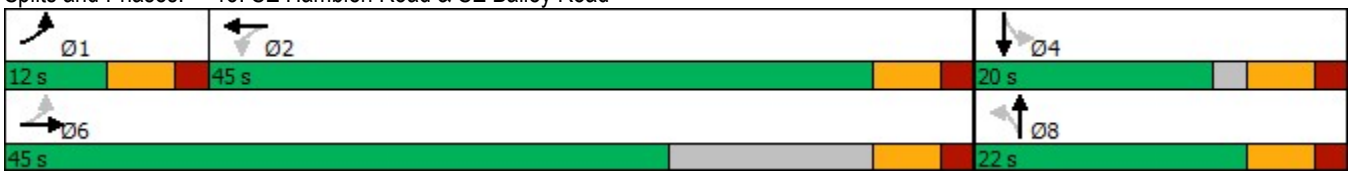
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	12.0	23.2		22.0		35.2		22.0
Change Period (Y+Rc), s	6.0	6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s	6.0	39.0		14.0		39.0		16.0
Max Q Clear Time (g_c+I1), s	7.1	14.4		18.0		6.0		16.4
Green Ext Time (p_c), s	0.0	2.8		0.0		1.4		0.0

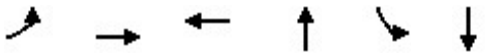
Intersection Summary	
HCM 2010 Ctrl Delay	25.7
HCM 2010 LOS	C

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)	23.4	23.4	11.2	10.0	10.0	10.0
Actuated g/C Ratio	0.51	0.51	0.25	0.22	0.22	0.22
v/c Ratio	0.47	0.14	0.57	0.01	0.39	0.53
Control Delay	9.9	6.7	16.6	13.0	20.0	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.9	6.7	16.6	13.0	20.0	6.3
LOS	A	A	B	B	B	A
Approach Delay		8.7	16.6	13.0		10.1
Approach LOS		A	B	B		B

Intersection Summary	
Cycle Length: 79	
Actuated Cycle Length: 45.5	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.57	
Intersection Signal Delay: 11.3	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)	236	135	273	2	120	310
v/c Ratio	0.47	0.14	0.57	0.01	0.39	0.53
Control Delay	9.9	6.7	16.6	13.0	20.0	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.9	6.7	16.6	13.0	20.0	6.3
Queue Length 50th (ft)	28	15	44	0	26	0
Queue Length 95th (ft)	71	42	110	4	69	49
Internal Link Dist (ft)		3248	119	741		656
Turn Bay Length (ft)	240				100	
Base Capacity (vph)	507	1842	1523	619	502	762
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	0.47	0.07	0.18	0.00	0.24	0.41

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	236	135	0	0	157	116	0	1	1	120	1	309
Adj No. of Lanes	1	1	0	1	1	0	0	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	484	915	0	158	227	168	0	210	210	502	1	387
Arrive On Green	0.13	0.49	0.00	0.00	0.23	0.23	0.00	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	1774	1863	0	1249	997	736	0	856	856	1409	5	1579
Grp Volume(v), veh/h	236	135	0	0	0	273	0	0	2	120	0	310
Grp Sat Flow(s),veh/h/ln	1774	1863	0	1249	0	1733	0	0	1712	1409	0	1584
Q Serve(g_s), s	4.2	1.8	0.0	0.0	0.0	6.6	0.0	0.0	0.0	3.2	0.0	8.4
Cycle Q Clear(g_c), s	4.2	1.8	0.0	0.0	0.0	6.6	0.0	0.0	0.0	3.2	0.0	8.4
Prop In Lane	1.00		0.00	1.00		0.42	0.00		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	484	915	0	158	0	394	0	0	419	502	0	388
V/C Ratio(X)	0.49	0.15	0.00	0.00	0.00	0.69	0.00	0.00	0.00	0.24	0.00	0.80
Avail Cap(c_a), veh/h	484	1597	0	945	0	1486	0	0	602	591	0	488
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	10.4	6.3	0.0	0.0	0.0	16.1	0.0	0.0	13.0	14.2	0.0	16.1
Incr Delay (d2), s/veh	0.8	0.1	0.0	0.0	0.0	2.2	0.0	0.0	0.0	0.2	0.0	7.3
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	2.1	0.9	0.0	0.0	0.0	3.3	0.0	0.0	0.0	1.3	0.0	4.4
LnGrp Delay(d),s/veh	11.1	6.4	0.0	0.0	0.0	18.3	0.0	0.0	13.0	14.5	0.0	23.5
LnGrp LOS	B	A				B			B	B		C
Approach Vol, veh/h		371			273			2			430	
Approach Delay, s/veh		9.4			18.3			13.0			20.9	
Approach LOS		A			B			B			C	

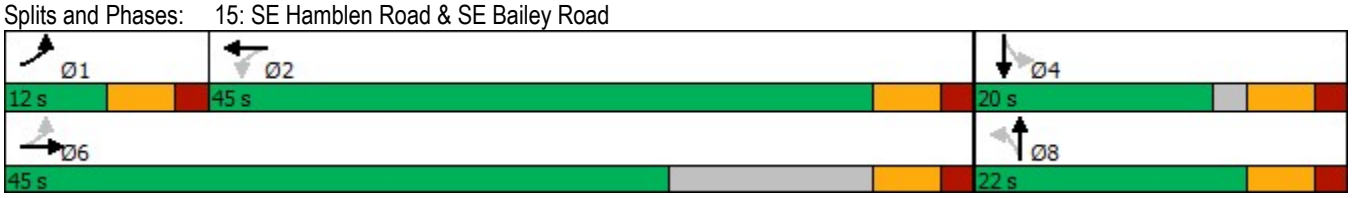
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	12.0	16.3		17.1		28.3		17.1
Change Period (Y+Rc), s	6.0	6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s	6.0	39.0		14.0		39.0		16.0
Max Q Clear Time (g_c+I1), s	6.2	8.6		10.4		3.8		2.0
Green Ext Time (p_c), s	0.0	1.8		0.8		0.8		0.0

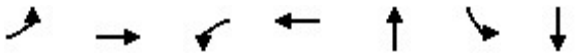
Intersection Summary	
HCM 2010 Ctrl Delay	16.3
HCM 2010 LOS	B

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	224	136	1	162	13	12	84	14
Future Volume (vph)	224	136	1	162	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)	25.8	27.8	12.9	12.9		9.8	9.8	9.8
Actuated g/C Ratio	0.59	0.64	0.30	0.30		0.22	0.22	0.22
v/c Ratio	0.44	0.13	0.00	0.60		0.09	0.30	0.37
Control Delay	8.6	5.8	12.0	15.6		17.0	20.0	7.1
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	8.6	5.8	12.0	15.6		17.0	20.0	7.1
LOS	A	A	B	B		B	C	A
Approach Delay		7.5		15.6		17.0		11.5
Approach LOS		A		B		B		B

Intersection Summary	
Cycle Length: 79	
Actuated Cycle Length: 43.7	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.60	
Intersection Signal Delay: 11.5	Intersection LOS: B
Intersection Capacity Utilization 57.4%	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)	243	152	1	338	28	91	179
v/c Ratio	0.44	0.13	0.00	0.60	0.09	0.30	0.37
Control Delay	8.6	5.8	12.0	15.6	17.0	20.0	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.6	5.8	12.0	15.6	17.0	20.0	7.1
Queue Length 50th (ft)	28	16	0	55	6	20	3
Queue Length 95th (ft)	70	44	3	131	24	60	45
Internal Link Dist (ft)		2219		119	741		656
Turn Bay Length (ft)	240		90			100	
Base Capacity (vph)	547	1814	1054	1494	547	541	731
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	0.44	0.08	0.00	0.23	0.05	0.17	0.24

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	224	136	4	1	162	149	13	12	1	84	14	151
Future Volume (veh/h)	224	136	4	1	162	149	13	12	1	84	14	151
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	243	148	4	1	176	162	14	13	1	91	15	164
Adj No. of Lanes	1	1	0	1	1	0	0	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	507	990	27	503	246	227	177	126	7	433	24	261
Arrive On Green	0.14	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	1805	49	1230	894	823	304	710	38	1394	134	1469
Grp Volume(v), veh/h	243	0	152	1	0	338	28	0	0	91	0	179
Grp Sat Flow(s),veh/h/ln	1774	0	1854	1230	0	1717	1052	0	0	1394	0	1603
Q Serve(g_s), s	3.8	0.0	1.8	0.0	0.0	7.8	0.1	0.0	0.0	0.0	0.0	4.5
Cycle Q Clear(g_c), s	3.8	0.0	1.8	0.0	0.0	7.8	4.6	0.0	0.0	2.2	0.0	4.5
Prop In Lane	1.00		0.03	1.00		0.48	0.50		0.04	1.00		0.92
Lane Grp Cap(c), veh/h	507	0	1017	503	0	473	310	0	0	433	0	285
V/C Ratio(X)	0.48	0.00	0.15	0.00	0.00	0.71	0.09	0.00	0.00	0.21	0.00	0.63
Avail Cap(c_a), veh/h	509	0	1651	1260	0	1529	583	0	0	630	0	512
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	4.9	11.5	0.0	14.3	15.1	0.0	0.0	15.7	0.0	16.7
Incr Delay (d2), s/veh	0.7	0.0	0.1	0.0	0.0	2.0	0.1	0.0	0.0	0.2	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	0.9	0.0	0.0	3.9	0.3	0.0	0.0	1.0	0.0	2.2
LnGrp Delay(d),s/veh	9.6	0.0	4.9	11.5	0.0	16.3	15.2	0.0	0.0	15.9	0.0	18.9
LnGrp LOS	A		A	B		B	B			B		B
Approach Vol, veh/h		395			339			28			270	
Approach Delay, s/veh		7.8			16.3			15.2			17.9	
Approach LOS		A			B			B			B	

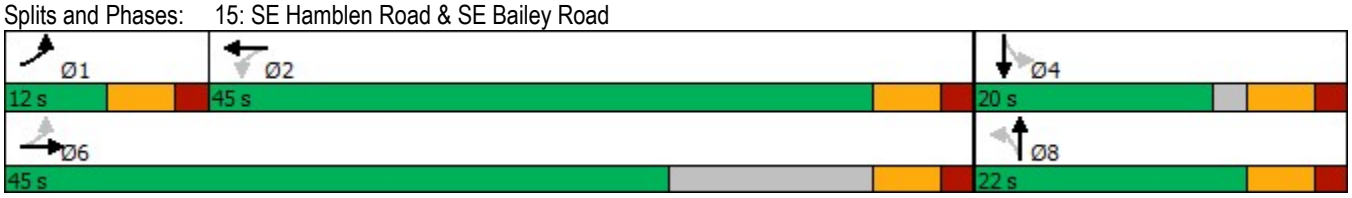
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	12.0	18.1		13.8		30.0		13.8
Change Period (Y+Rc), s	6.0	6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s	6.0	39.0		14.0		39.0		16.0
Max Q Clear Time (g_c+I1), s	5.8	9.8		6.5		3.8		6.6
Green Ext Time (p_c), s	0.0	2.3		0.8		0.9		0.0

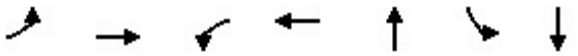
Intersection Summary	
HCM 2010 Ctrl Delay	13.5
HCM 2010 LOS	B

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	240	229	3	292	5	12	222	5
Future Volume (vph)	240	229	3	292	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)	30.0	30.0	17.9	17.9		13.4	13.4	13.4
Actuated g/C Ratio	0.54	0.54	0.32	0.32		0.24	0.24	0.24
v/c Ratio	0.65	0.25	0.01	0.73		0.06	0.72	0.61
Control Delay	15.8	7.4	11.7	22.9		17.9	36.5	7.1
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	15.8	7.4	11.7	22.9		17.9	36.5	7.1
LOS	B	A	B	C		B	D	A
Approach Delay		11.7		22.8		17.9		17.6
Approach LOS		B		C		B		B

Intersection Summary	
Cycle Length: 79	
Actuated Cycle Length: 55.6	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay: 17.2	Intersection LOS: B
Intersection Capacity Utilization 75.0%	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)	261	249	3	434	21	241	435
v/c Ratio	0.65	0.25	0.01	0.73	0.06	0.72	0.61
Control Delay	15.8	7.4	11.7	22.9	17.9	36.5	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.8	7.4	11.7	22.9	17.9	36.5	7.1
Queue Length 50th (ft)	43	40	1	116	5	72	1
Queue Length 95th (ft)	#79	71	5	198	21	#201	68
Internal Link Dist (ft)		2219		119	741		656
Turn Bay Length (ft)	240		90			100	
Base Capacity (vph)	399	1690	800	1279	398	403	767
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	0.65	0.15	0.00	0.34	0.05	0.60	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)	240	229	0	3	292	108	5	12	3	222	5	396
Future Volume (veh/h)	240	229	0	3	292	108	5	12	3	222	5	396
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	261	249	0	3	317	117	5	13	3	241	5	430
Adj No. of Lanes	1	1	0	1	1	0	0	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	389	961	0	472	400	148	78	156	26	300	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	1126	1299	479	4	563	95	1392	18	1568
Grp Volume(v), veh/h	261	249	0	3	0	434	21	0	0	241	0	435
Grp Sat Flow(s),veh/h/ln	1774	1863	0	1126	0	1778	662	0	0	1392	0	1586
Q Serve(g_s), s	5.5	4.3	0.0	0.1	0.0	12.9	0.1	0.0	0.0	0.1	0.0	15.8
Cycle Q Clear(g_c), s	5.5	4.3	0.0	0.1	0.0	12.9	15.9	0.0	0.0	16.0	0.0	15.8
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	389	961	0	472	0	548	260	0	0	300	0	439
V/C Ratio(X)	0.67	0.26	0.00	0.01	0.00	0.79	0.08	0.00	0.00	0.80	0.00	0.99
Avail Cap(c_a), veh/h	389	1256	0	884	0	1199	260	0	0	300	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	13.0	7.8	0.0	13.9	0.0	18.3	16.2	0.0	0.0	23.1	0.0	20.8
Incr Delay (d2), s/veh	4.4	0.1	0.0	0.0	0.0	2.6	0.1	0.0	0.0	14.4	0.0	40.5
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	3.1	2.3	0.0	0.0	0.0	6.7	0.3	0.0	0.0	5.0	0.0	11.7
LnGrp Delay(d),s/veh	17.4	8.0	0.0	13.9	0.0	20.9	16.3	0.0	0.0	37.5	0.0	61.4
LnGrp LOS	B	A		B		C	B			D		E
Approach Vol, veh/h		510			437			21			676	
Approach Delay, s/veh		12.8			20.9			16.3			52.9	
Approach LOS		B			C			B			D	

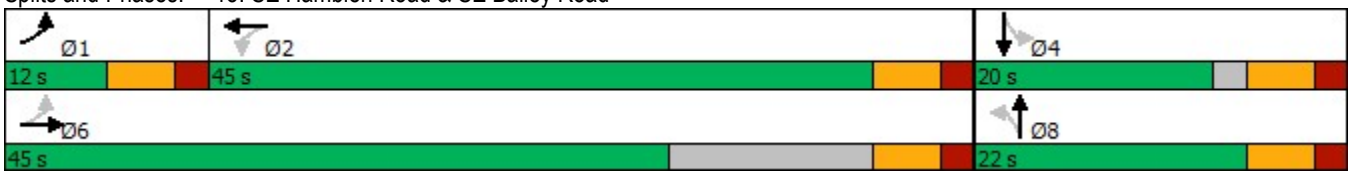
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	12.0	23.8		22.0		35.8		22.0
Change Period (Y+Rc), s	6.0	6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s	6.0	39.0		14.0		39.0		16.0
Max Q Clear Time (g_c+I1), s	7.5	14.9		18.0		6.3		17.9
Green Ext Time (p_c), s	0.0	2.9		0.0		1.5		0.0

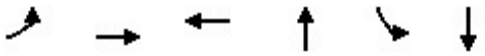
Intersection Summary	
HCM 2010 Ctrl Delay	31.5
HCM 2010 LOS	C

Lane Group	EBL	EBT	WBT	NBT	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	255	143	167	1	110	1
Future Volume (vph)	255	143	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)	24.2	24.2	12.0	10.2	10.2	10.2
Actuated g/C Ratio	0.52	0.52	0.26	0.22	0.22	0.22
v/c Ratio	0.56	0.16	0.60	0.01	0.39	0.57
Control Delay	11.9	6.7	17.9	13.5	20.5	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.9	6.7	17.9	13.5	20.5	6.6
LOS	B	A	B	B	C	A
Approach Delay		10.0	17.9	13.5		10.1
Approach LOS		B	B	B		B

Intersection Summary	
Cycle Length: 79	
Actuated Cycle Length: 46.6	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.60	
Intersection Signal Delay: 12.0	Intersection LOS: B
Intersection Capacity Utilization 64.7%	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)	277	155	298	2	120	356
v/c Ratio	0.56	0.16	0.60	0.01	0.39	0.57
Control Delay	11.9	6.7	17.9	13.5	20.5	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.9	6.7	17.9	13.5	20.5	6.6
Queue Length 50th (ft)	37	19	55	0	27	0
Queue Length 95th (ft)	84	47	124	5	71	53
Internal Link Dist (ft)		2219	119	741		656
Turn Bay Length (ft)	240				100	
Base Capacity (vph)	492	1833	1497	605	491	782
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	0.56	0.08	0.20	0.00	0.24	0.46

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	255	143	0	0	167	107	0	1	1	110	1	327
Future Volume (veh/h)	255	143	0	0	167	107	0	1	1	110	1	327
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	277	155	0	0	182	116	0	1	1	120	1	355
Adj No. of Lanes	1	1	0	1	1	0	0	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	458	908	0	149	254	162	0	226	226	520	1	418
Arrive On Green	0.12	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	1227	1065	678	0	856	856	1409	4	1580
Grp Volume(v), veh/h	277	155	0	0	0	298	0	0	2	120	0	356
Grp Sat Flow(s),veh/h/ln	1774	1863	0	1227	0	1743	0	0	1712	1409	0	1584
Q Serve(g_s), s	5.3	2.2	0.0	0.0	0.0	7.6	0.0	0.0	0.0	3.3	0.0	10.3
Cycle Q Clear(g_c), s	5.3	2.2	0.0	0.0	0.0	7.6	0.0	0.0	0.0	3.4	0.0	10.3
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	458	908	0	149	0	416	0	0	452	520	0	419
V/C Ratio(X)	0.61	0.17	0.00	0.00	0.00	0.72	0.00	0.00	0.00	0.23	0.00	0.85
Avail Cap(c_a), veh/h	458	1504	0	847	0	1407	0	0	567	556	0	459
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	11.4	6.9	0.0	0.0	0.0	16.9	0.0	0.0	13.1	14.3	0.0	16.9
Incr Delay (d2), s/veh	2.3	0.1	0.0	0.0	0.0	2.3	0.0	0.0	0.0	0.2	0.0	13.2
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	2.8	1.1	0.0	0.0	0.0	3.9	0.0	0.0	0.0	1.3	0.0	6.0
LnGrp Delay(d),s/veh	13.7	7.0	0.0	0.0	0.0	19.2	0.0	0.0	13.1	14.5	0.0	30.1
LnGrp LOS	B	A				B			B	B		C
Approach Vol, veh/h		432			298			2			476	
Approach Delay, s/veh		11.3			19.2			13.1			26.2	
Approach LOS		B			B			B			C	

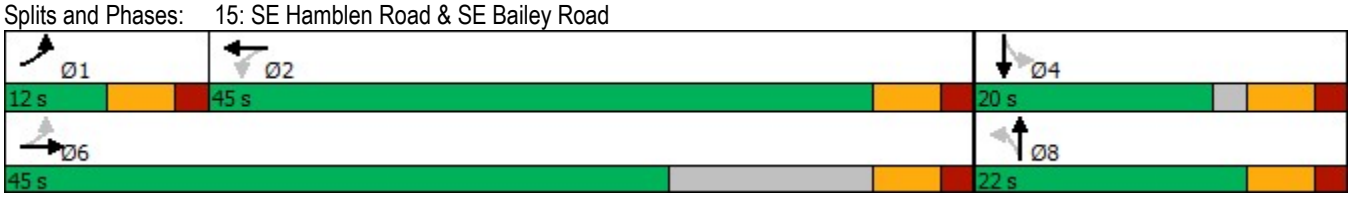
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	12.0	17.5		18.8		29.5		18.8
Change Period (Y+Rc), s	6.0	6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s	6.0	39.0		14.0		39.0		16.0
Max Q Clear Time (g_c+I1), s	7.3	9.6		12.3		4.2		2.0
Green Ext Time (p_c), s	0.0	1.9		0.5		0.9		0.0

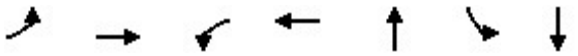
Intersection Summary	
HCM 2010 Ctrl Delay	19.1
HCM 2010 LOS	B

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	232	144	1	164	13	12	84	14
Future Volume (vph)	232	144	1	164	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)	25.0	25.0	12.8	12.8		9.4	9.4	9.4
Actuated g/C Ratio	0.54	0.54	0.27	0.27		0.20	0.20	0.20
v/c Ratio	0.53	0.16	0.00	0.64		0.10	0.33	0.40
Control Delay	10.4	6.0	12.0	17.0		17.1	20.8	7.5
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	10.4	6.0	12.0	17.0		17.1	20.8	7.5
LOS	B	A	B	B		B	C	A
Approach Delay		8.7		17.0		17.1		11.9
Approach LOS		A		B		B		B

Intersection Summary	
Cycle Length: 79	
Actuated Cycle Length: 46.6	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.64	
Intersection Signal Delay: 12.4	Intersection LOS: B
Intersection Capacity Utilization 57.9%	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)	252	161	1	340	28	91	183
v/c Ratio	0.53	0.16	0.00	0.64	0.10	0.33	0.40
Control Delay	10.4	6.0	12.0	17.0	17.1	20.8	7.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.4	6.0	12.0	17.0	17.1	20.8	7.5
Queue Length 50th (ft)	29	17	0	55	6	21	3
Queue Length 95th (ft)	72	46	3	132	24	60	46
Internal Link Dist (ft)		2219		119	741		656
Turn Bay Length (ft)	240		90			100	
Base Capacity (vph)	478	1813	1038	1484	502	480	670
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	0.53	0.09	0.00	0.23	0.06	0.19	0.27

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	232	144	4	1	164	149	13	12	1	84	14	155
Future Volume (veh/h)	232	144	4	1	164	149	13	12	1	84	14	155
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	252	157	4	1	178	162	14	13	1	91	15	168
Adj No. of Lanes	1	1	0	1	1	0	0	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	507	993	25	501	249	226	175	124	7	430	23	261
Arrive On Green	0.14	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	1809	46	1220	900	819	292	699	37	1394	131	1472
Grp Volume(v), veh/h	252	0	161	1	0	340	28	0	0	91	0	183
Grp Sat Flow(s),veh/h/ln	1774	0	1855	1220	0	1718	1028	0	0	1394	0	1603
Q Serve(g_s), s	3.9	0.0	1.9	0.0	0.0	7.8	0.1	0.0	0.0	0.0	0.0	4.7
Cycle Q Clear(g_c), s	3.9	0.0	1.9	0.0	0.0	7.8	4.7	0.0	0.0	2.2	0.0	4.7
Prop In Lane	1.00		0.02	1.00		0.48	0.50		0.04	1.00		0.92
Lane Grp Cap(c), veh/h	507	0	1018	501	0	475	306	0	0	430	0	285
V/C Ratio(X)	0.50	0.00	0.16	0.00	0.00	0.72	0.09	0.00	0.00	0.21	0.00	0.64
Avail Cap(c_a), veh/h	508	0	1648	1248	0	1526	576	0	0	627	0	511
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	4.9	11.5	0.0	14.3	15.2	0.0	0.0	15.8	0.0	16.8
Incr Delay (d2), s/veh	0.8	0.0	0.1	0.0	0.0	2.0	0.1	0.0	0.0	0.2	0.0	2.4
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	1.9	0.0	1.0	0.0	0.0	4.0	0.3	0.0	0.0	1.0	0.0	2.2
LnGrp Delay(d),s/veh	9.7	0.0	5.0	11.5	0.0	16.3	15.3	0.0	0.0	16.0	0.0	19.2
LnGrp LOS	A		A	B		B	B			B		B
Approach Vol, veh/h		413			341			28			274	
Approach Delay, s/veh		7.9			16.3			15.3			18.1	
Approach LOS		A			B			B			B	

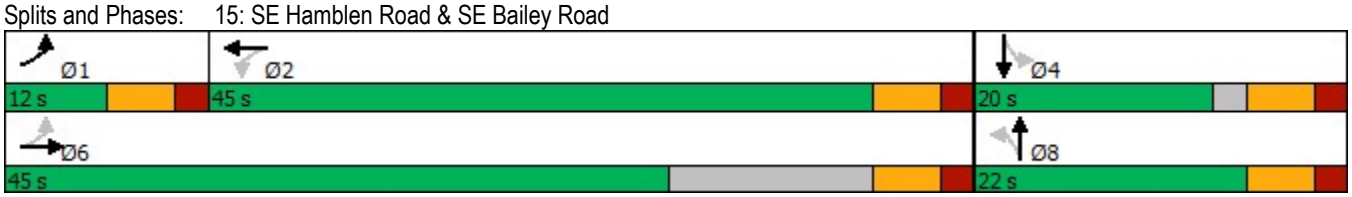
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	12.0	18.1		13.8		30.1		13.8
Change Period (Y+Rc), s	6.0	6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s	6.0	39.0		14.0		39.0		16.0
Max Q Clear Time (g_c+I1), s	5.9	9.8		6.7		3.9		6.7
Green Ext Time (p_c), s	0.0	2.3		0.8		0.9		0.0

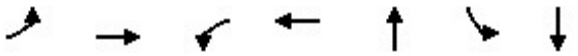
Intersection Summary	
HCM 2010 Ctrl Delay	13.5
HCM 2010 LOS	B

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	251	237	3	303	5	12	222	5
Future Volume (vph)	251	237	3	303	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)	30.8	30.8	18.6	18.6		13.5	13.5	13.5
Actuated g/C Ratio	0.55	0.55	0.33	0.33		0.24	0.24	0.24
v/c Ratio	0.69	0.25	0.01	0.73		0.07	0.73	0.63
Control Delay	17.8	7.3	11.7	22.9		18.5	37.7	7.3
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	17.8	7.3	11.7	22.9		18.5	37.7	7.3
LOS	B	A	B	C		B	D	A
Approach Delay		12.7		22.8		18.5		17.9
Approach LOS		B		C		B		B

Intersection Summary	
Cycle Length: 79	
Actuated Cycle Length: 56.4	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay: 17.6	Intersection LOS: B
Intersection Capacity Utilization 76.9%	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)	273	258	3	446	21	241	448
v/c Ratio	0.69	0.25	0.01	0.73	0.07	0.73	0.63
Control Delay	17.8	7.3	11.7	22.9	18.5	37.7	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.8	7.3	11.7	22.9	18.5	37.7	7.3
Queue Length 50th (ft)	45	42	1	121	5	73	1
Queue Length 95th (ft)	#89	73	5	204	22	#208	72
Internal Link Dist (ft)		2219		119	741		656
Turn Bay Length (ft)	240		90			100	
Base Capacity (vph)	395	1673	784	1266	369	398	772
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	0.69	0.15	0.00	0.35	0.06	0.61	0.58

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)	251	237	0	3	303	108	5	12	3	222	5	408
Future Volume (veh/h)	251	237	0	3	303	108	5	12	3	222	5	408
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	273	258	0	3	329	117	5	13	3	241	5	443
Adj No. of Lanes	1	1	0	1	1	0	0	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	386	969	0	475	413	147	76	151	25	297	5	430
Arrive On Green	0.10	0.52	0.00	0.31	0.31	0.31	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	1774	1863	0	1117	1313	467	0	552	92	1392	18	1568
Grp Volume(v), veh/h	273	258	0	3	0	446	21	0	0	241	0	448
Grp Sat Flow(s),veh/h/ln	1774	1863	0	1117	0	1780	644	0	0	1392	0	1586
Q Serve(g_s), s	5.8	4.5	0.0	0.1	0.0	13.4	0.0	0.0	0.0	0.0	0.0	16.0
Cycle Q Clear(g_c), s	5.8	4.5	0.0	0.1	0.0	13.4	16.0	0.0	0.0	16.0	0.0	16.0
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	386	969	0	475	0	560	253	0	0	297	0	435
V/C Ratio(X)	0.71	0.27	0.00	0.01	0.00	0.80	0.08	0.00	0.00	0.81	0.00	1.03
Avail Cap(c_a), veh/h	386	1245	0	870	0	1190	253	0	0	297	0	435
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	13.2	7.8	0.0	13.7	0.0	18.3	16.5	0.0	0.0	23.4	0.0	21.2
Incr Delay (d2), s/veh	5.8	0.1	0.0	0.0	0.0	2.6	0.1	0.0	0.0	15.6	0.0	51.2
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	3.4	2.3	0.0	0.0	0.0	7.0	0.3	0.0	0.0	5.1	0.0	13.1
LnGrp Delay(d),s/veh	19.0	7.9	0.0	13.8	0.0	20.9	16.6	0.0	0.0	39.0	0.0	72.3
LnGrp LOS	B	A		B		C	B			D		F
Approach Vol, veh/h		531			449			21			689	
Approach Delay, s/veh		13.6			20.9			16.6			60.7	
Approach LOS		B			C			B			E	

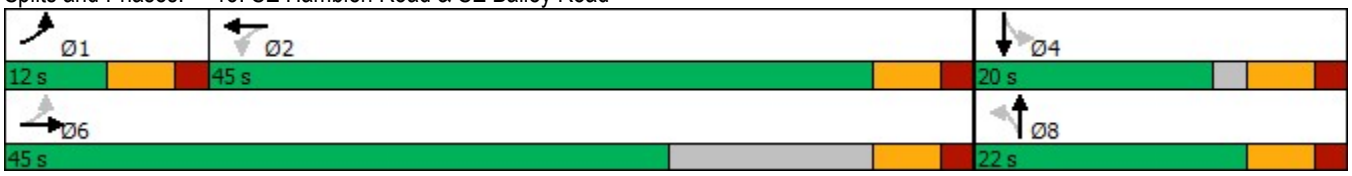
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	12.0	24.4		22.0		36.4		22.0
Change Period (Y+Rc), s	6.0	6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s	6.0	39.0		14.0		39.0		16.0
Max Q Clear Time (g_c+I1), s	7.8	15.4		18.0		6.5		18.0
Green Ext Time (p_c), s	0.0	3.0		0.0		1.6		0.0

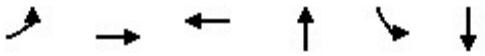
Intersection Summary	
HCM 2010 Ctrl Delay	34.8
HCM 2010 LOS	C

Lane Group	EBL	EBT	WBT	NBT	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	292	162	189	1	110	1
Future Volume (vph)	292	162	189	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)	25.1	25.1	12.9	10.3	10.3	10.3
Actuated g/C Ratio	0.53	0.53	0.27	0.22	0.22	0.22
v/c Ratio	0.66	0.18	0.62	0.01	0.39	0.61
Control Delay	15.2	6.7	18.6	14.5	21.4	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.2	6.7	18.6	14.5	21.4	7.1
LOS	B	A	B	B	C	A
Approach Delay		12.2	18.6	14.5		10.4
Approach LOS		B	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: 13.0	Intersection LOS: B
Intersection Capacity Utilization 70.5%	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)	317	176	321	2	120	401
v/c Ratio	0.66	0.18	0.62	0.01	0.39	0.61
Control Delay	15.2	6.7	18.6	14.5	21.4	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.2	6.7	18.6	14.5	21.4	7.1
Queue Length 50th (ft)	44	22	63	0	28	0
Queue Length 95th (ft)	#105	52	136	5	75	58
Internal Link Dist (ft)		2219	119	741		656
Turn Bay Length (ft)	240				100	
Base Capacity (vph)	482	1819	1475	593	482	804
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	0.66	0.10	0.22	0.00	0.25	0.50

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)	292	162	0	0	189	107	0	1	1	110	1	368
Future Volume (veh/h)	292	162	0	0	189	107	0	1	1	110	1	368
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	317	176	0	0	205	116	0	1	1	120	1	400
Adj No. of Lanes	1	1	0	1	1	0	0	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	438	906	0	142	279	158	0	237	237	531	1	437
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	1204	1118	633	0	856	856	1409	4	1580
Grp Volume(v), veh/h	317	176	0	0	0	321	0	0	2	120	0	401
Grp Sat Flow(s),veh/h/ln	1774	1863	0	1204	0	1751	0	0	1712	1409	0	1584
Q Serve(g_s), s	6.0	2.7	0.0	0.0	0.0	8.5	0.0	0.0	0.0	3.4	0.0	12.4
Cycle Q Clear(g_c), s	6.0	2.7	0.0	0.0	0.0	8.5	0.0	0.0	0.0	3.5	0.0	12.4
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	438	906	0	142	0	437	0	0	473	531	0	438
V/C Ratio(X)	0.72	0.19	0.00	0.00	0.00	0.73	0.00	0.00	0.00	0.23	0.00	0.92
Avail Cap(c_a), veh/h	438	1435	0	769	0	1349	0	0	541	531	0	438
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	13.1	7.4	0.0	0.0	0.0	17.5	0.0	0.0	13.3	14.5	0.0	17.7
Incr Delay (d2), s/veh	5.8	0.1	0.0	0.0	0.0	2.4	0.0	0.0	0.0	0.2	0.0	23.8
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	1.4	0.0	0.0	0.0	4.4	0.0	0.0	0.0	1.4	0.0	8.2
LnGrp Delay(d),s/veh	18.9	7.5	0.0	0.0	0.0	19.9	0.0	0.0	13.3	14.7	0.0	41.6
LnGrp LOS	B	A				B			B	B		D
Approach Vol, veh/h		493			321			2			521	
Approach Delay, s/veh		14.8			19.9			13.3			35.4	
Approach LOS		B			B			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	18.6		20.0		30.6		20.0
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	8.0	10.5		14.4		4.7		2.0
Green Ext Time (p_c), s	0.0	2.1		0.0		1.0		0.0

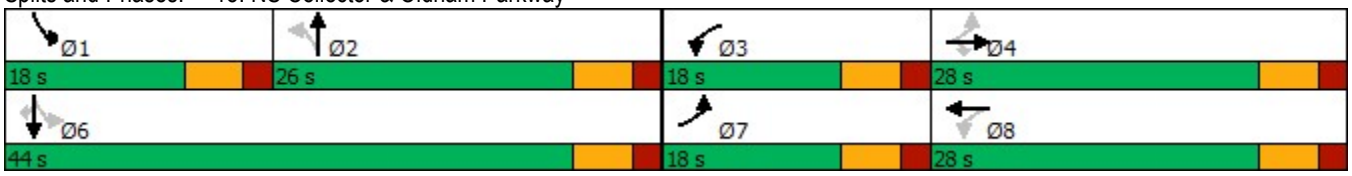
Intersection Summary	
HCM 2010 Ctrl Delay	24.0
HCM 2010 LOS	C

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)		207	212	
Turn Bay Length (ft)	150			
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	1863	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	1	1	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	180	465	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	1316	1863	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	1316	1863	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	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	1267	839	713	370	483	0	180	465	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	508	931	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	

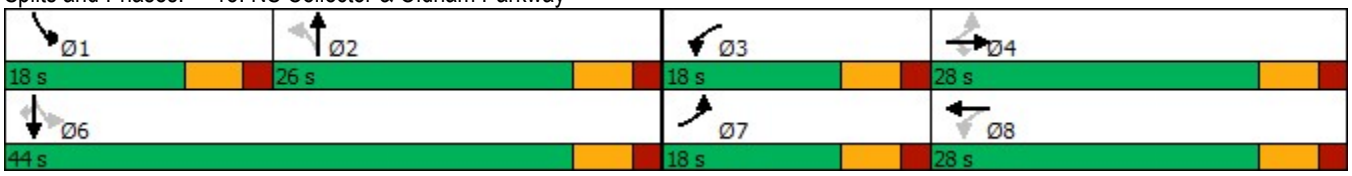
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4		6	7	8
Phs Duration (G+Y+Rc), s	0.0	16.0	0.0	24.0		16.0	12.6	11.5
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0		6.0	6.0	6.0
Max Green Setting (Gmax), s	12.0	20.0	12.0	22.0		38.0	12.0	22.0
Max Q Clear Time (g_c+I1), s	0.0	0.0	0.0	2.5		3.6	3.2	2.3
Green Ext Time (p_c), 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)		207	212	
Turn Bay Length (ft)	150			
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	1863	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	1	1	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	141	555	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	988	1863	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	988	1863	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	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	1189	869	739	389	680	0	141	555	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	235	731	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	

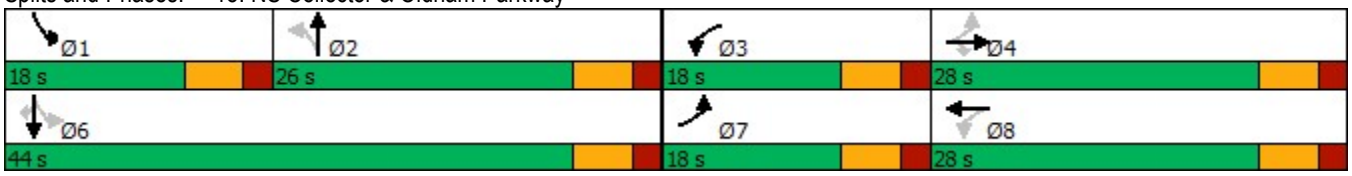
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4		6	7	8
Phs Duration (G+Y+Rc), s	0.0	21.2	0.0	29.8		21.2	14.0	15.8
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0		6.0	6.0	6.0
Max Green Setting (Gmax), s	12.0	20.0	12.0	22.0		38.0	12.0	22.0
Max Q Clear Time (g_c+I1), s	0.0	0.0	0.0	3.8		13.8	6.8	3.9
Green Ext Time (p_c), 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)		207	212	
Turn Bay Length (ft)	150			
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	1863	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	1	1	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	117	672	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	890	1863	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	890	1863	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	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	1123	827	703	317	574	0	117	672	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	117	672	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	

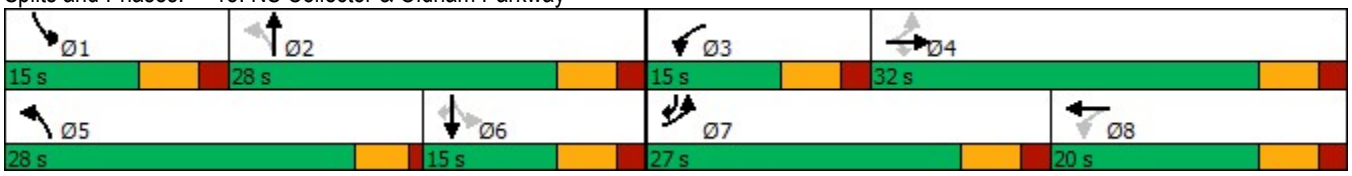
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4		6	7	8
Phs Duration (G+Y+Rc), s	0.0	28.2	0.0	33.3		28.2	17.4	16.0
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0		6.0	6.0	6.0
Max Green Setting (Gmax), s	12.0	20.0	12.0	22.0		38.0	12.0	22.0
Max Q Clear Time (g_c+I1), s	0.0	0.0	0.0	5.3		20.4	11.0	5.1
Green Ext Time (p_c), s	0.0	0.0	0.0	0.7		1.8	0.3	1.1

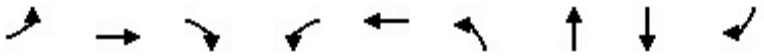
Intersection Summary	
HCM 2010 Ctrl Delay	18.8
HCM 2010 LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT	SBR	Ø1
Lane Configurations										
Traffic Volume (vph)	129	54	150	3	94	190	14	11	60	
Future Volume (vph)	129	54	150	3	94	190	14	11	60	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	NA	pm+ov	
Protected Phases	7	4		3	8	5	2	6	7	1
Permitted Phases	4		4	8		2			6	
Detector Phase	7	4	4	3	8	5	2	6	7	
Switch Phase										
Minimum Initial (s)	8.0	10.0	10.0	8.0	10.0	8.0	10.0	9.0	8.0	8.0
Minimum Split (s)	27.0	32.0	32.0	15.0	20.0	28.0	28.0	15.0	27.0	15.0
Total Split (s)	27.0	32.0	32.0	15.0	20.0	28.0	28.0	15.0	27.0	15.0
Total Split (%)	30.0%	35.6%	35.6%	16.7%	22.2%	31.1%	31.1%	16.7%	30.0%	17%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	3.5	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	1.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	4.5	6.0	6.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	None
Act Effct Green (s)	19.6	19.0	19.0	16.0	11.2	29.5	30.2	10.1	25.9	
Actuated g/C Ratio	0.35	0.34	0.34	0.29	0.20	0.53	0.54	0.18	0.46	
v/c Ratio	0.16	0.09	0.24	0.01	0.14	0.30	0.02	0.04	0.08	
Control Delay	13.6	18.2	2.3	13.3	24.4	11.9	9.2	25.0	0.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	13.6	18.2	2.3	13.3	24.4	11.9	9.2	25.0	0.2	
LOS	B	B	A	B	C	B	A	C	A	
Approach Delay		9.3			24.0		11.7	4.1		
Approach LOS		A			C		B	A		

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 56	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.30	
Intersection Signal Delay: 11.5	Intersection LOS: B
Intersection Capacity Utilization 39.3%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 18: NS Collector & Oldham Parkway





Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	140	59	163	3	102	207	19	12	65
v/c Ratio	0.16	0.09	0.24	0.01	0.14	0.30	0.02	0.04	0.08
Control Delay	13.6	18.2	2.3	13.3	24.4	11.9	9.2	25.0	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.6	18.2	2.3	13.3	24.4	11.9	9.2	25.0	0.2
Queue Length 50th (ft)	16	13	0	1	17	46	3	4	0
Queue Length 95th (ft)	36	52	18	6	40	86	13	18	0
Internal Link Dist (ft)		207			212		278	167	
Turn Bay Length (ft)	150			100		160			
Base Capacity (vph)	1509	966	935	487	988	890	903	334	1096
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	0.09	0.06	0.17	0.01	0.10	0.23	0.02	0.04	0.06

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	129	54	150	3	94	0	190	14	4	0	11	60
Future Volume (veh/h)	129	54	150	3	94	0	190	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	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	140	59	163	3	102	0	207	15	4	0	12	65
Adj No. of Lanes	2	1	1	1	2	0	1	1	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	1071	552	470	344	626	0	574	534	142	353	298	453
Arrive On Green	0.13	0.30	0.30	0.01	0.18	0.00	0.14	0.38	0.38	0.00	0.16	0.16
Sat Flow, veh/h	3442	1863	1583	1774	3632	0	1774	1418	378	1774	1863	1583
Grp Volume(v), veh/h	140	59	163	3	102	0	207	0	19	0	12	65
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1774	1770	0	1774	0	1796	1774	1863	1583
Q Serve(g_s), s	1.6	1.3	4.5	0.1	1.4	0.0	5.0	0.0	0.4	0.0	0.3	1.7
Cycle Q Clear(g_c), s	1.6	1.3	4.5	0.1	1.4	0.0	5.0	0.0	0.4	0.0	0.3	1.7
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	1071	552	470	344	626	0	574	0	677	353	298	453
V/C Ratio(X)	0.13	0.11	0.35	0.01	0.16	0.00	0.36	0.00	0.03	0.00	0.04	0.14
Avail Cap(c_a), veh/h	1922	861	732	616	881	0	1073	0	703	634	298	453
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	12.9	14.4	15.5	18.8	19.6	0.0	14.2	0.0	11.0	0.0	20.0	14.9
Incr Delay (d2), s/veh	0.1	0.1	0.4	0.0	0.1	0.0	0.4	0.0	0.0	0.0	0.1	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	0.7	0.7	2.0	0.0	0.7	0.0	2.4	0.0	0.2	0.0	0.2	0.8
LnGrp Delay(d),s/veh	13.0	14.4	15.9	18.8	19.7	0.0	14.6	0.0	11.1	0.0	20.0	15.1
LnGrp LOS	B	B	B	B	B		B		B		C	B
Approach Vol, veh/h		362			105			226			77	
Approach Delay, s/veh		14.6			19.7			14.3			15.8	
Approach LOS		B			B			B			B	

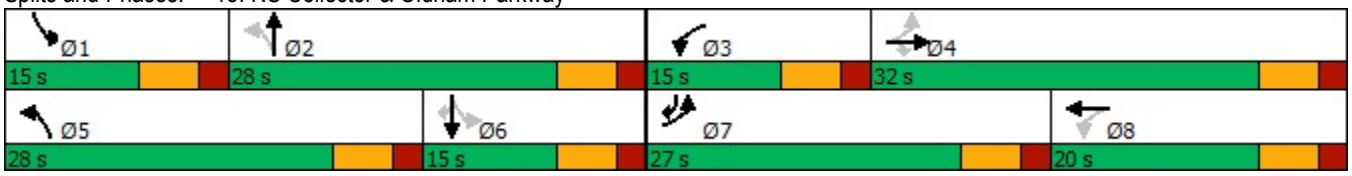
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	27.2	6.4	22.7	12.2	15.0	13.1	15.9
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	4.5	6.0	6.0	6.0
Max Green Setting (Gmax), s	9.0	22.0	9.0	26.0	23.5	9.0	21.0	14.0
Max Q Clear Time (g_c+I1), s	0.0	2.4	2.1	6.5	7.0	3.7	3.6	3.4
Green Ext Time (p_c), s	0.0	0.0	0.0	0.8	0.5	0.1	0.4	0.3

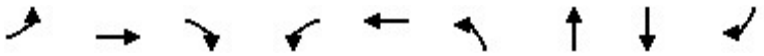
Intersection Summary	
HCM 2010 Ctrl Delay	15.3
HCM 2010 LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT	SBR	Ø1
Lane Configurations										
Traffic Volume (vph)	379	167	197	14	171	226	42	57	303	
Future Volume (vph)	379	167	197	14	171	226	42	57	303	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	NA	pm+ov	
Protected Phases	7	4		3	8	5	2	6	7	1
Permitted Phases	4		4	8		2			6	
Detector Phase	7	4	4	3	8	5	2	6	7	
Switch Phase										
Minimum Initial (s)	8.0	10.0	10.0	8.0	10.0	8.0	10.0	9.0	8.0	8.0
Minimum Split (s)	27.0	32.0	32.0	15.0	20.0	28.0	28.0	15.0	27.0	15.0
Total Split (s)	27.0	32.0	32.0	15.0	20.0	28.0	28.0	15.0	27.0	15.0
Total Split (%)	30.0%	35.6%	35.6%	16.7%	22.2%	31.1%	31.1%	16.7%	30.0%	17%
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	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	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	None
Act Effct Green (s)	30.3	27.9	27.9	18.6	10.5	30.0	30.0	9.1	28.9	
Actuated g/C Ratio	0.42	0.39	0.39	0.26	0.15	0.41	0.41	0.13	0.40	
v/c Ratio	0.40	0.25	0.28	0.04	0.36	0.46	0.08	0.26	0.40	
Control Delay	15.7	19.1	3.0	15.3	32.1	18.0	11.5	35.0	3.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	15.7	19.1	3.0	15.3	32.1	18.0	11.5	35.0	3.9	
LOS	B	B	A	B	C	B	B	C	A	
Approach Delay		13.1			30.8		16.8	8.8		
Approach LOS		B			C		B	A		

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 72.4	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.46	
Intersection Signal Delay: 14.9	Intersection LOS: B
Intersection Capacity Utilization 54.6%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 18: NS Collector & Oldham Parkway





Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	412	182	214	15	186	246	58	62	329
v/c Ratio	0.40	0.25	0.28	0.04	0.36	0.46	0.08	0.26	0.40
Control Delay	15.7	19.1	3.0	15.3	32.1	18.0	11.5	35.0	3.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.7	19.1	3.0	15.3	32.1	18.0	11.5	35.0	3.9
Queue Length 50th (ft)	59	50	0	4	40	72	12	25	2
Queue Length 95th (ft)	104	138	33	16	79	137	35	68	53
Internal Link Dist (ft)		207			212		278	167	
Turn Bay Length (ft)	150			100		160			
Base Capacity (vph)	1213	739	782	395	692	630	755	234	957
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	0.34	0.25	0.27	0.04	0.27	0.39	0.08	0.26	0.34

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	379	167	197	14	171	0	226	42	11	0	57	303
Future Volume (veh/h)	379	167	197	14	171	0	226	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	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	412	182	214	15	186	0	246	46	12	0	62	329
Adj No. of Lanes	2	1	1	1	2	0	1	1	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	1004	519	441	333	583	0	499	563	147	320	276	462
Arrive On Green	0.14	0.28	0.28	0.03	0.16	0.00	0.15	0.40	0.40	0.00	0.15	0.15
Sat Flow, veh/h	3442	1863	1583	1774	3632	0	1774	1425	372	1774	1863	1583
Grp Volume(v), veh/h	412	182	214	15	186	0	246	0	58	0	62	329
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1774	1770	0	1774	0	1797	1774	1863	1583
Q Serve(g_s), s	5.4	4.7	6.8	0.4	2.8	0.0	6.6	0.0	1.2	0.0	1.8	9.0
Cycle Q Clear(g_c), s	5.4	4.7	6.8	0.4	2.8	0.0	6.6	0.0	1.2	0.0	1.8	9.0
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	1004	519	441	333	583	0	499	0	710	320	276	462
V/C Ratio(X)	0.41	0.35	0.49	0.05	0.32	0.00	0.49	0.00	0.08	0.00	0.22	0.71
Avail Cap(c_a), veh/h	1703	798	678	544	817	0	880	0	710	580	276	462
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	15.2	17.5	18.3	19.9	22.3	0.0	16.0	0.0	11.5	0.0	22.8	19.2
Incr Delay (d2), s/veh	0.3	0.4	0.8	0.1	0.3	0.0	0.8	0.0	0.0	0.0	0.4	5.1
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	2.6	2.5	3.1	0.2	1.4	0.0	3.2	0.0	0.6	0.0	0.9	5.6
LnGrp Delay(d),s/veh	15.5	17.9	19.1	19.9	22.6	0.0	16.8	0.0	11.5	0.0	23.2	24.3
LnGrp LOS	B	B	B	B	C		B		B		C	C
Approach Vol, veh/h		808			201			304			391	
Approach Delay, s/veh		17.0			22.4			15.8			24.1	
Approach LOS		B			C			B			C	

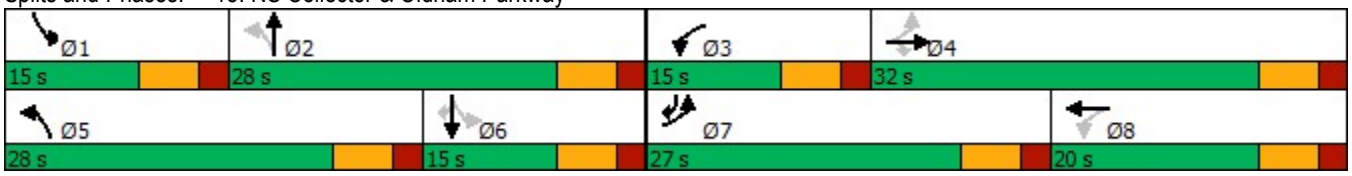
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	30.0	7.8	22.9	15.0	15.0	14.7	16.0
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	9.0	22.0	9.0	26.0	22.0	9.0	21.0	14.0
Max Q Clear Time (g_c+I1), s	0.0	3.2	2.4	8.8	8.6	11.0	7.4	4.8
Green Ext Time (p_c), s	0.0	0.2	0.0	1.6	0.6	0.0	1.3	0.7

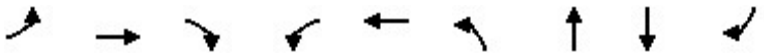
Intersection Summary	
HCM 2010 Ctrl Delay	19.0
HCM 2010 LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT	SBR	Ø1
Lane Configurations										
Traffic Volume (vph)	546	183	329	18	213	285	61	75	390	
Future Volume (vph)	546	183	329	18	213	285	61	75	390	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	NA	pm+ov	
Protected Phases	7	4		3	8	5	2	6	7	1
Permitted Phases	4		4	8		2			6	
Detector Phase	7	4	4	3	8	5	2	6	7	
Switch Phase										
Minimum Initial (s)	8.0	10.0	10.0	8.0	10.0	8.0	10.0	9.0	8.0	8.0
Minimum Split (s)	27.0	32.0	32.0	15.0	20.0	28.0	28.0	15.0	27.0	15.0
Total Split (s)	27.0	32.0	32.0	15.0	20.0	28.0	28.0	15.0	27.0	15.0
Total Split (%)	30.0%	35.6%	35.6%	16.7%	22.2%	31.1%	31.1%	16.7%	30.0%	17%
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	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	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	None
Act Effct Green (s)	35.4	30.3	30.3	19.3	11.2	32.7	32.7	9.1	33.3	
Actuated g/C Ratio	0.44	0.38	0.38	0.24	0.14	0.41	0.41	0.11	0.41	
v/c Ratio	0.53	0.28	0.44	0.06	0.47	0.58	0.11	0.39	0.53	
Control Delay	17.5	21.8	4.7	16.0	36.6	22.5	14.0	42.1	10.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	17.5	21.8	4.7	16.0	36.6	22.5	14.0	42.1	10.8	
LOS	B	C	A	B	D	C	B	D	B	
Approach Delay		14.3			35.0		20.7	15.9		
Approach LOS		B			C		C	B		

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 80.3	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.58	
Intersection Signal Delay: 18.0	Intersection LOS: B
Intersection Capacity Utilization 63.3%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 18: NS Collector & Oldham Parkway





Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	593	199	358	20	232	310	82	82	424
v/c Ratio	0.53	0.28	0.44	0.06	0.47	0.58	0.11	0.39	0.53
Control Delay	17.5	21.8	4.7	16.0	36.6	22.5	14.0	42.1	10.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.5	21.8	4.7	16.0	36.6	22.5	14.0	42.1	10.8
Queue Length 50th (ft)	102	62	0	6	60	112	21	40	61
Queue Length 95th (ft)	150	148	62	19	100	194	52	90	161
Internal Link Dist (ft)		207			212		278	167	
Turn Bay Length (ft)	150			100		160			
Base Capacity (vph)	1185	711	825	365	624	594	745	211	846
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	0.50	0.28	0.43	0.05	0.37	0.52	0.11	0.39	0.50

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	546	183	329	18	213	0	285	61	15	0	75	390
Future Volume (veh/h)	546	183	329	18	213	0	285	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	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	593	199	358	20	232	0	310	66	16	0	82	424
Adj No. of Lanes	2	1	1	1	2	0	1	1	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	1050	554	471	297	522	0	506	580	141	283	247	506
Arrive On Green	0.19	0.30	0.30	0.04	0.15	0.00	0.18	0.40	0.40	0.00	0.13	0.13
Sat Flow, veh/h	3442	1863	1583	1774	3632	0	1774	1449	351	1774	1863	1583
Grp Volume(v), veh/h	593	199	358	20	232	0	310	0	82	0	82	424
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1774	1770	0	1774	0	1801	1774	1863	1583
Q Serve(g_s), s	9.0	5.7	13.9	0.6	4.1	0.0	9.5	0.0	1.9	0.0	2.7	9.0
Cycle Q Clear(g_c), s	9.0	5.7	13.9	0.6	4.1	0.0	9.5	0.0	1.9	0.0	2.7	9.0
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	1050	554	471	297	522	0	506	0	720	283	247	506
V/C Ratio(X)	0.56	0.36	0.76	0.07	0.44	0.00	0.61	0.00	0.11	0.00	0.33	0.84
Avail Cap(c_a), veh/h	1473	714	607	467	731	0	764	0	720	516	247	506
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	16.9	18.7	21.6	22.8	26.4	0.0	18.1	0.0	12.8	0.0	26.7	21.4
Incr Delay (d2), s/veh	0.5	0.4	4.2	0.1	0.6	0.0	1.2	0.0	0.1	0.0	0.8	11.8
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	3.0	6.6	0.3	2.0	0.0	4.6	0.0	1.0	0.0	1.4	9.0
LnGrp Delay(d),s/veh	17.4	19.1	25.8	22.9	27.0	0.0	19.3	0.0	12.9	0.0	27.4	33.2
LnGrp LOS	B	B	C	C	C		B		B		C	C
Approach Vol, veh/h		1150			252			392			506	
Approach Delay, s/veh		20.3			26.6			17.9			32.3	
Approach LOS		C			C			B			C	

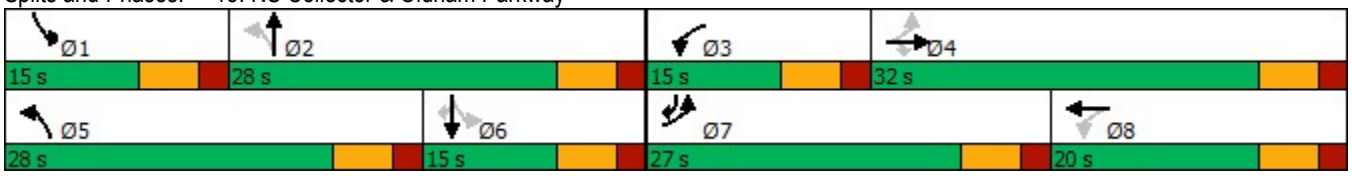
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	33.1	8.5	26.2	18.1	15.0	18.7	16.0
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	9.0	22.0	9.0	26.0	22.0	9.0	21.0	14.0
Max Q Clear Time (g_c+I1), s	0.0	3.9	2.6	15.9	11.5	11.0	11.0	6.1
Green Ext Time (p_c), s	0.0	0.3	0.0	1.8	0.7	0.0	1.7	0.8

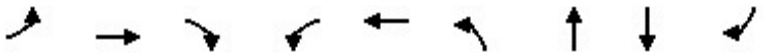
Intersection Summary	
HCM 2010 Ctrl Delay	23.2
HCM 2010 LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT	SBR	Ø1
Lane Configurations										
Traffic Volume (vph)	129	54	150	3	94	190	14	11	60	
Future Volume (vph)	129	54	150	3	94	190	14	11	60	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	NA	pm+ov	
Protected Phases	7	4		3	8	5	2	6	7	1
Permitted Phases	4		4	8		2			6	
Detector Phase	7	4	4	3	8	5	2	6	7	
Switch Phase										
Minimum Initial (s)	8.0	10.0	10.0	8.0	10.0	8.0	10.0	9.0	8.0	8.0
Minimum Split (s)	27.0	32.0	32.0	15.0	20.0	28.0	28.0	15.0	27.0	15.0
Total Split (s)	27.0	32.0	32.0	15.0	20.0	28.0	28.0	15.0	27.0	15.0
Total Split (%)	30.0%	35.6%	35.6%	16.7%	22.2%	31.1%	31.1%	16.7%	30.0%	17%
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	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	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	None
Act Effct Green (s)	19.7	19.0	19.0	16.0	11.1	29.6	32.0	10.0	28.2	
Actuated g/C Ratio	0.34	0.33	0.33	0.28	0.19	0.51	0.55	0.17	0.49	
v/c Ratio	0.16	0.10	0.24	0.01	0.15	0.32	0.02	0.04	0.08	
Control Delay	14.4	19.1	1.6	14.3	25.4	12.7	8.9	26.0	0.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	14.4	19.1	1.6	14.3	25.4	12.7	8.9	26.0	0.2	
LOS	B	B	A	B	C	B	A	C	A	
Approach Delay		9.4			25.1		12.4	4.2		
Approach LOS		A			C		B	A		

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 57.9	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.32	
Intersection Signal Delay: 11.9	Intersection LOS: B
Intersection Capacity Utilization 40.5%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 18: NS Collector & Oldham Parkway





Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	140	59	163	3	102	207	19	12	65
v/c Ratio	0.16	0.10	0.24	0.01	0.15	0.32	0.02	0.04	0.08
Control Delay	14.4	19.1	1.6	14.3	25.4	12.7	8.9	26.0	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.4	19.1	1.6	14.3	25.4	12.7	8.9	26.0	0.2
Queue Length 50th (ft)	17	14	0	1	18	49	3	4	0
Queue Length 95th (ft)	37	53	10	6	41	90	13	19	0
Internal Link Dist (ft)		207			212		278	167	
Turn Bay Length (ft)	150			100		160			
Base Capacity (vph)	1454	930	918	470	951	827	999	322	1083
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	0.10	0.06	0.18	0.01	0.11	0.25	0.02	0.04	0.06

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	129	54	150	3	94	0	190	14	4	0	11	60
Future Volume (veh/h)	129	54	150	3	94	0	190	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	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	140	59	163	3	102	0	207	15	4	0	12	65
Adj No. of Lanes	2	1	1	1	2	0	1	1	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	1043	539	458	335	609	0	559	557	149	344	290	442
Arrive On Green	0.12	0.29	0.29	0.01	0.17	0.00	0.13	0.39	0.39	0.00	0.16	0.16
Sat Flow, veh/h	3442	1863	1583	1774	3632	0	1774	1418	378	1774	1863	1583
Grp Volume(v), veh/h	140	59	163	3	102	0	207	0	19	0	12	65
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1774	1770	0	1774	0	1796	1774	1863	1583
Q Serve(g_s), s	1.6	1.3	4.7	0.1	1.4	0.0	5.2	0.0	0.4	0.0	0.3	1.8
Cycle Q Clear(g_c), s	1.6	1.3	4.7	0.1	1.4	0.0	5.2	0.0	0.4	0.0	0.3	1.8
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	1043	539	458	335	609	0	559	0	706	344	290	442
V/C Ratio(X)	0.13	0.11	0.36	0.01	0.17	0.00	0.37	0.00	0.03	0.00	0.04	0.15
Avail Cap(c_a), veh/h	1868	838	712	599	857	0	997	0	706	617	290	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	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	15.1	16.3	19.5	20.4	0.0	15.0	0.0	10.8	0.0	20.7	15.7
Incr Delay (d2), s/veh	0.1	0.1	0.5	0.0	0.1	0.0	0.4	0.0	0.0	0.0	0.1	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	0.8	0.7	2.1	0.0	0.7	0.0	2.5	0.0	0.2	0.0	0.2	0.8
LnGrp Delay(d),s/veh	13.7	15.2	16.7	19.5	20.5	0.0	15.4	0.0	10.8	0.0	20.8	15.8
LnGrp LOS	B	B	B	B	C		B		B		C	B
Approach Vol, veh/h		362			105			226			77	
Approach Delay, s/veh		15.3			20.5			15.0			16.6	
Approach LOS		B			C			B			B	

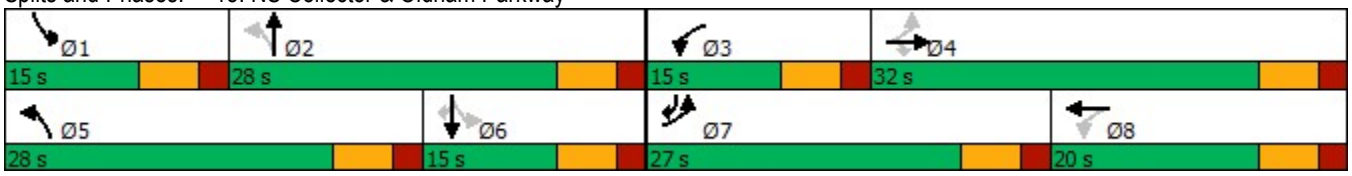
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	28.7	6.4	22.7	13.7	15.0	13.2	15.9
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	9.0	22.0	9.0	26.0	22.0	9.0	21.0	14.0
Max Q Clear Time (g_c+I1), s	0.0	2.4	2.1	6.7	7.2	3.8	3.6	3.4
Green Ext Time (p_c), s	0.0	0.0	0.0	0.8	0.5	0.1	0.4	0.3

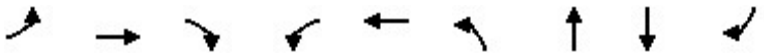
Intersection Summary	
HCM 2010 Ctrl Delay	16.1
HCM 2010 LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT	SBR	Ø1
Lane Configurations										
Traffic Volume (vph)	379	167	197	14	171	226	42	57	303	
Future Volume (vph)	379	167	197	14	171	226	42	57	303	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	NA	pm+ov	
Protected Phases	7	4		3	8	5	2	6	7	1
Permitted Phases	4		4	8		2			6	
Detector Phase	7	4	4	3	8	5	2	6	7	
Switch Phase										
Minimum Initial (s)	8.0	10.0	10.0	8.0	10.0	8.0	10.0	9.0	8.0	8.0
Minimum Split (s)	27.0	32.0	32.0	15.0	20.0	28.0	28.0	15.0	27.0	15.0
Total Split (s)	27.0	32.0	32.0	15.0	20.0	28.0	28.0	15.0	27.0	15.0
Total Split (%)	30.0%	35.6%	35.6%	16.7%	22.2%	31.1%	31.1%	16.7%	30.0%	17%
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	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	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	None
Act Effct Green (s)	30.3	27.9	27.9	18.6	10.5	30.0	30.0	9.1	28.9	
Actuated g/C Ratio	0.42	0.39	0.39	0.26	0.15	0.41	0.41	0.13	0.40	
v/c Ratio	0.40	0.25	0.28	0.04	0.36	0.46	0.08	0.26	0.40	
Control Delay	15.7	19.1	3.0	15.3	32.1	18.0	11.5	35.0	3.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	15.7	19.1	3.0	15.3	32.1	18.0	11.5	35.0	3.9	
LOS	B	B	A	B	C	B	B	C	A	
Approach Delay		13.1			30.8		16.8	8.8		
Approach LOS		B			C		B	A		

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 72.4	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.46	
Intersection Signal Delay: 14.9	Intersection LOS: B
Intersection Capacity Utilization 54.6%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 18: NS Collector & Oldham Parkway





Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	412	182	214	15	186	246	58	62	329
v/c Ratio	0.40	0.25	0.28	0.04	0.36	0.46	0.08	0.26	0.40
Control Delay	15.7	19.1	3.0	15.3	32.1	18.0	11.5	35.0	3.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.7	19.1	3.0	15.3	32.1	18.0	11.5	35.0	3.9
Queue Length 50th (ft)	59	50	0	4	40	72	12	25	2
Queue Length 95th (ft)	104	138	33	16	79	137	35	68	53
Internal Link Dist (ft)		207			212		278	167	
Turn Bay Length (ft)	150			100		160			
Base Capacity (vph)	1213	739	782	395	692	630	755	234	957
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	0.34	0.25	0.27	0.04	0.27	0.39	0.08	0.26	0.34

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	379	167	197	14	171	0	226	42	11	0	57	303
Future Volume (veh/h)	379	167	197	14	171	0	226	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	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	412	182	214	15	186	0	246	46	12	0	62	329
Adj No. of Lanes	2	1	1	1	2	0	1	1	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	1004	519	441	333	583	0	499	563	147	320	276	462
Arrive On Green	0.14	0.28	0.28	0.03	0.16	0.00	0.15	0.40	0.40	0.00	0.15	0.15
Sat Flow, veh/h	3442	1863	1583	1774	3632	0	1774	1425	372	1774	1863	1583
Grp Volume(v), veh/h	412	182	214	15	186	0	246	0	58	0	62	329
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1774	1770	0	1774	0	1797	1774	1863	1583
Q Serve(g_s), s	5.4	4.7	6.8	0.4	2.8	0.0	6.6	0.0	1.2	0.0	1.8	9.0
Cycle Q Clear(g_c), s	5.4	4.7	6.8	0.4	2.8	0.0	6.6	0.0	1.2	0.0	1.8	9.0
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	1004	519	441	333	583	0	499	0	710	320	276	462
V/C Ratio(X)	0.41	0.35	0.49	0.05	0.32	0.00	0.49	0.00	0.08	0.00	0.22	0.71
Avail Cap(c_a), veh/h	1703	798	678	544	817	0	880	0	710	580	276	462
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	15.2	17.5	18.3	19.9	22.3	0.0	16.0	0.0	11.5	0.0	22.8	19.2
Incr Delay (d2), s/veh	0.3	0.4	0.8	0.1	0.3	0.0	0.8	0.0	0.0	0.0	0.4	5.1
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	2.6	2.5	3.1	0.2	1.4	0.0	3.2	0.0	0.6	0.0	0.9	5.6
LnGrp Delay(d),s/veh	15.5	17.9	19.1	19.9	22.6	0.0	16.8	0.0	11.5	0.0	23.2	24.3
LnGrp LOS	B	B	B	B	C		B		B		C	C
Approach Vol, veh/h		808			201			304			391	
Approach Delay, s/veh		17.0			22.4			15.8			24.1	
Approach LOS		B			C			B			C	

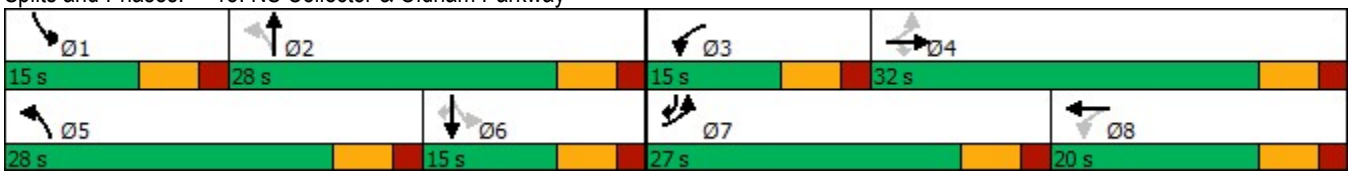
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	30.0	7.8	22.9	15.0	15.0	14.7	16.0
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	9.0	22.0	9.0	26.0	22.0	9.0	21.0	14.0
Max Q Clear Time (g_c+I1), s	0.0	3.2	2.4	8.8	8.6	11.0	7.4	4.8
Green Ext Time (p_c), s	0.0	0.2	0.0	1.6	0.6	0.0	1.3	0.7

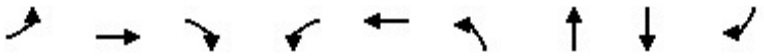
Intersection Summary	
HCM 2010 Ctrl Delay	19.0
HCM 2010 LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT	SBR	Ø1
Lane Configurations										
Traffic Volume (vph)	546	183	329	18	213	285	61	75	390	
Future Volume (vph)	546	183	329	18	213	285	61	75	390	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	NA	pm+ov	
Protected Phases	7	4		3	8	5	2	6	7	1
Permitted Phases	4		4	8		2			6	
Detector Phase	7	4	4	3	8	5	2	6	7	
Switch Phase										
Minimum Initial (s)	8.0	10.0	10.0	8.0	10.0	8.0	10.0	9.0	8.0	8.0
Minimum Split (s)	27.0	32.0	32.0	15.0	20.0	28.0	28.0	15.0	27.0	15.0
Total Split (s)	27.0	32.0	32.0	15.0	20.0	28.0	28.0	15.0	27.0	15.0
Total Split (%)	30.0%	35.6%	35.6%	16.7%	22.2%	31.1%	31.1%	16.7%	30.0%	17%
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	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	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	None
Act Effct Green (s)	35.4	30.3	30.3	19.3	11.2	32.7	32.7	9.1	33.3	
Actuated g/C Ratio	0.44	0.38	0.38	0.24	0.14	0.41	0.41	0.11	0.41	
v/c Ratio	0.53	0.28	0.44	0.06	0.47	0.58	0.11	0.39	0.53	
Control Delay	17.5	21.8	4.7	16.0	36.6	22.5	14.0	42.1	10.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	17.5	21.8	4.7	16.0	36.6	22.5	14.0	42.1	10.8	
LOS	B	C	A	B	D	C	B	D	B	
Approach Delay		14.3			35.0		20.7	15.9		
Approach LOS		B			C		C	B		

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 80.3	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.58	
Intersection Signal Delay: 18.0	Intersection LOS: B
Intersection Capacity Utilization 63.3%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 18: NS Collector & Oldham Parkway





Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	593	199	358	20	232	310	82	82	424
v/c Ratio	0.53	0.28	0.44	0.06	0.47	0.58	0.11	0.39	0.53
Control Delay	17.5	21.8	4.7	16.0	36.6	22.5	14.0	42.1	10.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.5	21.8	4.7	16.0	36.6	22.5	14.0	42.1	10.8
Queue Length 50th (ft)	102	62	0	6	60	112	21	40	61
Queue Length 95th (ft)	150	148	62	19	100	194	52	90	161
Internal Link Dist (ft)		207			212		278	167	
Turn Bay Length (ft)	150			100		160			
Base Capacity (vph)	1185	711	825	365	624	594	745	211	846
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	0.50	0.28	0.43	0.05	0.37	0.52	0.11	0.39	0.50

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	546	183	329	18	213	0	285	61	15	0	75	390
Future Volume (veh/h)	546	183	329	18	213	0	285	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	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	593	199	358	20	232	0	310	66	16	0	82	424
Adj No. of Lanes	2	1	1	1	2	0	1	1	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	1050	554	471	297	522	0	506	580	141	283	247	506
Arrive On Green	0.19	0.30	0.30	0.04	0.15	0.00	0.18	0.40	0.40	0.00	0.13	0.13
Sat Flow, veh/h	3442	1863	1583	1774	3632	0	1774	1449	351	1774	1863	1583
Grp Volume(v), veh/h	593	199	358	20	232	0	310	0	82	0	82	424
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1774	1770	0	1774	0	1801	1774	1863	1583
Q Serve(g_s), s	9.0	5.7	13.9	0.6	4.1	0.0	9.5	0.0	1.9	0.0	2.7	9.0
Cycle Q Clear(g_c), s	9.0	5.7	13.9	0.6	4.1	0.0	9.5	0.0	1.9	0.0	2.7	9.0
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	1050	554	471	297	522	0	506	0	720	283	247	506
V/C Ratio(X)	0.56	0.36	0.76	0.07	0.44	0.00	0.61	0.00	0.11	0.00	0.33	0.84
Avail Cap(c_a), veh/h	1473	714	607	467	731	0	764	0	720	516	247	506
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	16.9	18.7	21.6	22.8	26.4	0.0	18.1	0.0	12.8	0.0	26.7	21.4
Incr Delay (d2), s/veh	0.5	0.4	4.2	0.1	0.6	0.0	1.2	0.0	0.1	0.0	0.8	11.8
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	3.0	6.6	0.3	2.0	0.0	4.6	0.0	1.0	0.0	1.4	9.0
LnGrp Delay(d),s/veh	17.4	19.1	25.8	22.9	27.0	0.0	19.3	0.0	12.9	0.0	27.4	33.2
LnGrp LOS	B	B	C	C	C		B		B		C	C
Approach Vol, veh/h		1150			252			392			506	
Approach Delay, s/veh		20.3			26.6			17.9			32.3	
Approach LOS		C			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	0.0	33.1	8.5	26.2	18.1	15.0	18.7	16.0
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	22.0	9.0	26.0	22.0	9.0	21.0	14.0
Max Q Clear Time (g_c+I1), s	0.0	3.9	2.6	15.9	11.5	11.0	11.0	6.1
Green Ext Time (p_c), s	0.0	0.3	0.0	1.8	0.7	0.0	1.7	0.8

Intersection Summary	
HCM 2010 Ctrl Delay	23.2
HCM 2010 LOS	C

Intersection 7
Bailey Road & N/S Collector

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	31	365	365	25	0	44
Future Vol, veh/h	31	365	365	25	0	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	100	-	-	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	34	397	397	27	0	48

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	424	0	-	0	-	397
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	4.13	-	-	-	-	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	2.219	-	-	-	-	3.319
Pot Cap-1 Maneuver	1133	-	-	-	0	652
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1133	-	-	-	-	652
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	11
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1133	-	-	-	652
HCM Lane V/C Ratio	0.03	-	-	-	0.073
HCM Control Delay (s)	8.3	-	-	-	11
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	113	488	639	76	0	141
Future Vol, veh/h	113	488	639	76	0	141
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	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	123	530	695	83	0	153

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	778	0	-	0	-	695
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	4.13	-	-	-	-	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	2.219	-	-	-	-	3.319
Pot Cap-1 Maneuver	837	-	-	-	0	441
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	837	-	-	-	-	441
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	1.9	0	17.4
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	837	-	-	-	441
HCM Lane V/C Ratio	0.147	-	-	-	0.348
HCM Control Delay (s)	10	-	-	-	17.4
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0.5	-	-	-	1.5

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	202	371	413	114	0	183
Future Vol, veh/h	202	371	413	114	0	183
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	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	220	403	449	124	0	199

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	573	0	-	0	-	449
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	4.13	-	-	-	-	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	2.219	-	-	-	-	3.319
Pot Cap-1 Maneuver	998	-	-	-	0	609
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	998	-	-	-	-	609
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	3.4	0	13.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	998	-	-	-	609
HCM Lane V/C Ratio	0.22	-	-	-	0.327
HCM Control Delay (s)	9.6	-	-	-	13.8
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.8	-	-	-	1.4

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	31	255	187	0	517	25	0	0	238	0	0	44
Future Vol, veh/h	31	255	187	0	517	25	0	0	238	0	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	100	-	-	-	-	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	34	277	203	0	562	27	0	0	259	0	0	48

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	589	0	0	-	-	0	-	-	240	-	-	562
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.13	-	-	-	-	-	-	-	6.93	-	-	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.219	-	-	-	-	-	-	-	3.319	-	-	3.319
Pot Cap-1 Maneuver	984	-	-	0	-	-	0	0	762	0	0	526
Stage 1	-	-	-	0	-	-	0	0	-	0	0	-
Stage 2	-	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	984	-	-	-	-	-	-	-	762	-	-	526
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0	12.1	12.5
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	762	984	-	-	-	-	526
HCM Lane V/C Ratio	0.339	0.034	-	-	-	-	0.091
HCM Control Delay (s)	12.1	8.8	-	-	-	-	12.5
HCM Lane LOS	B	A	-	-	-	-	B
HCM 95th %tile Q(veh)	1.5	0.1	-	-	-	-	0.3

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	113	448	187	0	778	76	0	0	198	0	0	141
Future Vol, veh/h	113	448	187	0	778	76	0	0	198	0	0	141
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	100	-	-	-	-	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	123	487	203	0	846	83	0	0	215	0	0	153

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	929	0	0	-	-	0	-	-	345	-	-	846
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.13	-	-	-	-	-	-	-	6.93	-	-	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.219	-	-	-	-	-	-	-	3.319	-	-	3.319
Pot Cap-1 Maneuver	734	-	-	0	-	-	0	0	652	0	0	361
Stage 1	-	-	-	0	-	-	0	0	-	0	0	-
Stage 2	-	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	734	-	-	-	-	-	-	-	652	-	-	361
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.6	0	13.2	22.1
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	652	734	-	-	-	-	361
HCM Lane V/C Ratio	0.33	0.167	-	-	-	-	0.425
HCM Control Delay (s)	13.2	10.9	-	-	-	-	22.1
HCM Lane LOS	B	B	-	-	-	-	C
HCM 95th %tile Q(veh)	1.4	0.6	-	-	-	-	2.1

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	202	418	399	0	879	114	0	0	179	0	0	183
Future Vol, veh/h	202	418	399	0	879	114	0	0	179	0	0	183
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	100	-	-	-	-	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	220	454	434	0	955	124	0	0	195	0	0	199

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1079	0	0	-	-	0	-	-	444	-	-	955
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.13	-	-	-	-	-	-	-	6.93	-	-	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.219	-	-	-	-	-	-	-	3.319	-	-	3.319
Pot Cap-1 Maneuver	644	-	-	0	-	-	0	0	562	0	0	312
Stage 1	-	-	-	0	-	-	0	0	-	0	0	-
Stage 2	-	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	644	-	-	-	-	-	-	-	562	-	-	312
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.7	0	14.8	34.8
HCM LOS			B	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	562	644	-	-	-	-	312
HCM Lane V/C Ratio	0.346	0.341	-	-	-	-	0.638
HCM Control Delay (s)	14.8	13.5	-	-	-	-	34.8
HCM Lane LOS	B	B	-	-	-	-	D
HCM 95th %tile Q(veh)	1.5	1.5	-	-	-	-	4.1

Intersection 8
16th Street &
N/S Collector

Intersection	
Int Delay, s/veh	4.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	38	33	33	0	0	46
Future Vol, veh/h	38	33	33	0	0	46
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	41	36	36	0	0	50

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	36	0	-	0	154	36
Stage 1	-	-	-	-	36	-
Stage 2	-	-	-	-	118	-
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	1575	-	-	-	838	1037
Stage 1	-	-	-	-	986	-
Stage 2	-	-	-	-	907	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1575	-	-	-	815	1037
Mov Cap-2 Maneuver	-	-	-	-	815	-
Stage 1	-	-	-	-	959	-
Stage 2	-	-	-	-	907	-

Approach	EB	WB	SB
HCM Control Delay, s	3.9	0	8.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1575	-	-	-	1037
HCM Lane V/C Ratio	0.026	-	-	-	0.048
HCM Control Delay (s)	7.3	0	-	-	8.6
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2

Intersection	
Int Delay, s/veh	5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	67	21	38	0	0	38
Future Vol, veh/h	67	21	38	0	0	38
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	73	23	41	0	0	41

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	41	0	-	0	210	41
Stage 1	-	-	-	-	41	-
Stage 2	-	-	-	-	169	-
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	1568	-	-	-	778	1030
Stage 1	-	-	-	-	981	-
Stage 2	-	-	-	-	861	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1568	-	-	-	741	1030
Mov Cap-2 Maneuver	-	-	-	-	741	-
Stage 1	-	-	-	-	935	-
Stage 2	-	-	-	-	861	-

Approach	EB	WB	SB
HCM Control Delay, s	5.6	0	8.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1568	-	-	-	1030
HCM Lane V/C Ratio	0.046	-	-	-	0.04
HCM Control Delay (s)	7.4	0	-	-	8.6
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

Intersection	
Int Delay, s/veh	6.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	106	9	23	0	0	43
Future Vol, veh/h	106	9	23	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	115	10	25	0	0	47

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	25	0	-	0	265	25
Stage 1	-	-	-	-	25	-
Stage 2	-	-	-	-	240	-
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	1589	-	-	-	724	1051
Stage 1	-	-	-	-	998	-
Stage 2	-	-	-	-	800	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1589	-	-	-	671	1051
Mov Cap-2 Maneuver	-	-	-	-	671	-
Stage 1	-	-	-	-	925	-
Stage 2	-	-	-	-	800	-

Approach	EB	WB	SB
HCM Control Delay, s	6.9	0	8.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1589	-	-	-	1051
HCM Lane V/C Ratio	0.073	-	-	-	0.044
HCM Control Delay (s)	7.4	0	-	-	8.6
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.2	-	-	-	0.1

Intersection 9
Oldham Parkway & RO

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	0	1000
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	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	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	0	722
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	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	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	0	643
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	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	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	333	344	0	0	43
Future Vol, veh/h	0	333	344	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	362	374	0	0	47

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	187
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	0	823
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	-	823
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	SBLn1
Capacity (veh/h)	-	-	823
HCM Lane V/C Ratio	-	-	0.057
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	742	700	0	0	216
Future Vol, veh/h	0	742	700	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	807	761	0	0	235

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	381
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	0	617
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	-	617
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	14.4
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	617
HCM Lane V/C Ratio	-	-	0.381
HCM Control Delay (s)	-	-	14.4
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	1.8

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↱
Traffic Vol, veh/h	0	1058	887	0	0	279
Future Vol, veh/h	0	1058	887	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	1150	964	0	0	303

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	482
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	0	530
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	-	530
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	20.5
HCM LOS			C

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	530
HCM Lane V/C Ratio	-	-	0.572
HCM Control Delay (s)	-	-	20.5
HCM Lane LOS	-	-	C
HCM 95th %tile Q(veh)	-	-	3.6

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↱
Traffic Vol, veh/h	0	333	344	0	0	43
Future Vol, veh/h	0	333	344	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	362	374	0	0	47

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	187
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	0	823
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	-	823
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	SBLn1
Capacity (veh/h)	-	-	823
HCM Lane V/C Ratio	-	-	0.057
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	742	700	0	0	216
Future Vol, veh/h	0	742	700	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	807	761	0	0	235

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	381
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	0	617
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	-	617
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	14.4
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	617
HCM Lane V/C Ratio	-	-	0.381
HCM Control Delay (s)	-	-	14.4
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	1.8

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↱
Traffic Vol, veh/h	0	1058	887	0	0	279
Future Vol, veh/h	0	1058	887	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	1150	964	0	0	303

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	482
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	0	530
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	-	530
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	20.5
HCM LOS			C

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	530
HCM Lane V/C Ratio	-	-	0.572
HCM Control Delay (s)	-	-	20.5
HCM Lane LOS	-	-	C
HCM 95th %tile Q(veh)	-	-	3.6

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	100	-	-	-	-	-	-	-	-	-	-	-
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	100	-	-	-	-	-	-	-	-	-	-	-
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	100	-	-	-	-	-	-	-	-	-	-	-
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	11	11	0	34	0	34	0	0	0	0	29
Future Vol, veh/h	36	11	11	0	34	0	34	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	100	-	-	-	-	-	-	-	-	-	-	-
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	12	12	0	37	0	37	0	0	0	0	32

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	37	0	0	24	0	0	149	133	18	133	139	37
Stage 1	-	-	-	-	-	-	96	96	-	37	37	-
Stage 2	-	-	-	-	-	-	53	37	-	96	102	-
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	1574	-	-	1591	-	-	819	758	1061	839	752	1035
Stage 1	-	-	-	-	-	-	911	815	-	978	864	-
Stage 2	-	-	-	-	-	-	960	864	-	911	811	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1574	-	-	1591	-	-	779	739	1061	823	733	1035
Mov Cap-2 Maneuver	-	-	-	-	-	-	779	739	-	823	733	-
Stage 1	-	-	-	-	-	-	888	795	-	954	864	-
Stage 2	-	-	-	-	-	-	931	864	-	888	791	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	4.6	0	9.9	8.6
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	779	1574	-	-	1591	-	-	1035
HCM Lane V/C Ratio	0.047	0.025	-	-	-	-	-	0.03
HCM Control Delay (s)	9.9	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	36	36	0	20	0	20	0	0	0	0	145
Future Vol, veh/h	105	36	36	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	100	-	-	-	-	-	-	-	-	-	-	-
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	39	39	0	22	0	22	0	0	0	0	158

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	22	0	0	78	0	0	388	309	59	309	328	22
Stage 1	-	-	-	-	-	-	287	287	-	22	22	-
Stage 2	-	-	-	-	-	-	101	22	-	287	306	-
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	-	-	1520	-	-	571	605	1007	643	591	1055
Stage 1	-	-	-	-	-	-	720	674	-	996	877	-
Stage 2	-	-	-	-	-	-	905	877	-	720	662	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1593	-	-	1520	-	-	459	561	1007	608	548	1055
Mov Cap-2 Maneuver	-	-	-	-	-	-	459	561	-	608	548	-
Stage 1	-	-	-	-	-	-	668	625	-	924	877	-
Stage 2	-	-	-	-	-	-	770	877	-	668	614	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	4.4	0	13.2	9
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	459	1593	-	-	1520	-	-	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	23	23	0	23	0	23	0	0	0	0	186
Future Vol, veh/h	152	23	23	0	23	0	23	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	100	-	-	-	-	-	-	-	-	-	-	-
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	25	25	0	25	0	25	0	0	0	0	202

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	25	0	0	50	0	0	494	393	38	393	405	25
Stage 1	-	-	-	-	-	-	368	368	-	25	25	-
Stage 2	-	-	-	-	-	-	126	25	-	368	380	-
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	1589	-	-	1557	-	-	486	543	1034	566	535	1051
Stage 1	-	-	-	-	-	-	652	621	-	993	874	-
Stage 2	-	-	-	-	-	-	878	874	-	652	614	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1589	-	-	1557	-	-	361	487	1034	521	479	1051
Mov Cap-2 Maneuver	-	-	-	-	-	-	361	487	-	521	479	-
Stage 1	-	-	-	-	-	-	584	556	-	890	874	-
Stage 2	-	-	-	-	-	-	709	874	-	584	550	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	5.8	0	15.7	9.2
HCM LOS			C	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	361	1589	-	-	1557	-	-	1051
HCM Lane V/C Ratio	0.069	0.104	-	-	-	-	-	0.192
HCM Control Delay (s)	15.7	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	11	11	0	34	0	34	0	0	0	0	29
Future Vol, veh/h	36	11	11	0	34	0	34	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	100	-	-	-	-	-	-	-	-	-	-	-
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	12	12	0	37	0	37	0	0	0	0	32

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	37	0	0	24	0	0	149	133	18	133	139	37
Stage 1	-	-	-	-	-	-	96	96	-	37	37	-
Stage 2	-	-	-	-	-	-	53	37	-	96	102	-
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	1574	-	-	1591	-	-	819	758	1061	839	752	1035
Stage 1	-	-	-	-	-	-	911	815	-	978	864	-
Stage 2	-	-	-	-	-	-	960	864	-	911	811	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1574	-	-	1591	-	-	779	739	1061	823	733	1035
Mov Cap-2 Maneuver	-	-	-	-	-	-	779	739	-	823	733	-
Stage 1	-	-	-	-	-	-	888	795	-	954	864	-
Stage 2	-	-	-	-	-	-	931	864	-	888	791	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	4.6	0	9.9	8.6
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	779	1574	-	-	1591	-	-	1035
HCM Lane V/C Ratio	0.047	0.025	-	-	-	-	-	0.03
HCM Control Delay (s)	9.9	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	36	36	0	20	0	20	0	0	0	0	145
Future Vol, veh/h	105	36	36	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	100	-	-	-	-	-	-	-	-	-	-	-
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	39	39	0	22	0	22	0	0	0	0	158

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	22	0	0	78	0	0	388	309	59	309	328	22
Stage 1	-	-	-	-	-	-	287	287	-	22	22	-
Stage 2	-	-	-	-	-	-	101	22	-	287	306	-
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	-	-	1520	-	-	571	605	1007	643	591	1055
Stage 1	-	-	-	-	-	-	720	674	-	996	877	-
Stage 2	-	-	-	-	-	-	905	877	-	720	662	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1593	-	-	1520	-	-	459	561	1007	608	548	1055
Mov Cap-2 Maneuver	-	-	-	-	-	-	459	561	-	608	548	-
Stage 1	-	-	-	-	-	-	668	625	-	924	877	-
Stage 2	-	-	-	-	-	-	770	877	-	668	614	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	4.4	0	13.2	9
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	459	1593	-	-	1520	-	-	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	23	23	0	23	0	23	0	0	0	0	186
Future Vol, veh/h	152	23	23	0	23	0	23	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	100	-	-	-	-	-	-	-	-	-	-	-
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	25	25	0	25	0	25	0	0	0	0	202

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	25	0	0	50	0	0	494	393	38	393	405	25
Stage 1	-	-	-	-	-	-	368	368	-	25	25	-
Stage 2	-	-	-	-	-	-	126	25	-	368	380	-
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	1589	-	-	1557	-	-	486	543	1034	566	535	1051
Stage 1	-	-	-	-	-	-	652	621	-	993	874	-
Stage 2	-	-	-	-	-	-	878	874	-	652	614	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1589	-	-	1557	-	-	361	487	1034	521	479	1051
Mov Cap-2 Maneuver	-	-	-	-	-	-	361	487	-	521	479	-
Stage 1	-	-	-	-	-	-	584	556	-	890	874	-
Stage 2	-	-	-	-	-	-	709	874	-	584	550	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	5.8	0	15.7	9.2
HCM LOS			C	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	361	1589	-	-	1557	-	-	1051
HCM Lane V/C Ratio	0.069	0.104	-	-	-	-	-	0.192
HCM Control Delay (s)	15.7	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	3.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	110	0	0	0	0	4	0	94	0	6	70	88
Future Vol, veh/h	110	0	0	0	0	4	0	94	0	6	70	88
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	-	-	-	-	-	-	150	-	-	150	-	-
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	120	0	0	0	0	4	0	102	0	7	76	96

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	242	240	124	240	288	102	172	0	0	102	0	0
Stage 1	138	138	-	102	102	-	-	-	-	-	-	-
Stage 2	104	102	-	138	186	-	-	-	-	-	-	-
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	712	661	927	714	622	953	1405	-	-	1490	-	-
Stage 1	865	782	-	904	811	-	-	-	-	-	-	-
Stage 2	902	811	-	865	746	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	706	658	927	711	619	953	1405	-	-	1490	-	-
Mov Cap-2 Maneuver	706	658	-	711	619	-	-	-	-	-	-	-
Stage 1	865	778	-	904	811	-	-	-	-	-	-	-
Stage 2	898	811	-	861	742	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.1	8.8	0	0.3
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1405	-	-	706	953	1490	-	-
HCM Lane V/C Ratio	-	-	-	0.169	0.005	0.004	-	-
HCM Control Delay (s)	0	-	-	11.1	8.8	7.4	-	-
HCM Lane LOS	A	-	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.6	0	0	-	-

Intersection	
Int Delay, s/veh	4.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	102	0	0	6	0	52	0	125	6	48	150	71
Future Vol, veh/h	102	0	0	6	0	52	0	125	6	48	150	71
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	-	-	-	-	-	-	150	-	-	150	-	-
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	111	0	0	7	0	57	0	136	7	52	163	77

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	474	449	202	446	484	140	240	0	0	143	0	0
Stage 1	306	306	-	140	140	-	-	-	-	-	-	-
Stage 2	168	143	-	306	344	-	-	-	-	-	-	-
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	501	505	839	523	483	908	1327	-	-	1440	-	-
Stage 1	704	662	-	863	781	-	-	-	-	-	-	-
Stage 2	834	779	-	704	637	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	457	487	839	508	466	908	1327	-	-	1440	-	-
Mov Cap-2 Maneuver	457	487	-	508	466	-	-	-	-	-	-	-
Stage 1	704	638	-	863	781	-	-	-	-	-	-	-
Stage 2	782	779	-	679	614	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.4	9.6	0	1.4
HCM LOS	C	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1327	-	-	457	840	1440	-	-
HCM Lane V/C Ratio	-	-	-	0.243	0.075	0.036	-	-
HCM Control Delay (s)	0	-	-	15.4	9.6	7.6	-	-
HCM Lane LOS	A	-	-	C	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.9	0.2	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	119	0	0	6	0	56	0	186	8	80	218	124
Future Vol, veh/h	119	0	0	6	0	56	0	186	8	80	218	124
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	-	-	-	-	-	-	150	-	-	150	-	-
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	129	0	0	7	0	61	0	202	9	87	237	135

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	716	690	305	686	753	207	372	0	0	211	0	0
Stage 1	479	479	-	207	207	-	-	-	-	-	-	-
Stage 2	237	211	-	479	546	-	-	-	-	-	-	-
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	368	735	362	339	833	1186	-	-	1360	-	-
Stage 1	568	555	-	795	731	-	-	-	-	-	-	-
Stage 2	766	728	-	568	518	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	304	344	735	344	317	833	1186	-	-	1360	-	-
Mov Cap-2 Maneuver	304	344	-	344	317	-	-	-	-	-	-	-
Stage 1	568	519	-	795	731	-	-	-	-	-	-	-
Stage 2	710	728	-	532	485	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	25.3	10.4	0	1.5
HCM LOS	D	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1186	-	-	304	732	1360	-	-
HCM Lane V/C Ratio	-	-	-	0.425	0.092	0.064	-	-
HCM Control Delay (s)	0	-	-	25.3	10.4	7.8	-	-
HCM Lane LOS	A	-	-	D	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	2	0.3	0.2	-	-

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	110	0	0	0	0	4	0	94	0	6	70	88
Future Vol, veh/h	110	0	0	0	0	4	0	94	0	6	70	88
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	-	-	-	-	-	-	150	-	-	150	-	-
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	120	0	0	0	0	4	0	102	0	7	76	96

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	242	240	124	240	288	102	172	0	0	102	0	0
Stage 1	138	138	-	102	102	-	-	-	-	-	-	-
Stage 2	104	102	-	138	186	-	-	-	-	-	-	-
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	712	661	927	714	622	953	1405	-	-	1490	-	-
Stage 1	865	782	-	904	811	-	-	-	-	-	-	-
Stage 2	902	811	-	865	746	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	706	658	927	711	619	953	1405	-	-	1490	-	-
Mov Cap-2 Maneuver	706	658	-	711	619	-	-	-	-	-	-	-
Stage 1	865	778	-	904	811	-	-	-	-	-	-	-
Stage 2	898	811	-	861	742	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.1	8.8	0	0.3
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1405	-	-	706	953	1490	-	-
HCM Lane V/C Ratio	-	-	-	0.169	0.005	0.004	-	-
HCM Control Delay (s)	0	-	-	11.1	8.8	7.4	-	-
HCM Lane LOS	A	-	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.6	0	0	-	-

Intersection	
Int Delay, s/veh	4.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	102	0	0	6	0	52	0	125	6	48	150	71
Future Vol, veh/h	102	0	0	6	0	52	0	125	6	48	150	71
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	-	-	-	-	-	-	150	-	-	150	-	-
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	111	0	0	7	0	57	0	136	7	52	163	77

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	474	449	202	446	484	140	240	0	0	143	0	0
Stage 1	306	306	-	140	140	-	-	-	-	-	-	-
Stage 2	168	143	-	306	344	-	-	-	-	-	-	-
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	501	505	839	523	483	908	1327	-	-	1440	-	-
Stage 1	704	662	-	863	781	-	-	-	-	-	-	-
Stage 2	834	779	-	704	637	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	457	487	839	508	466	908	1327	-	-	1440	-	-
Mov Cap-2 Maneuver	457	487	-	508	466	-	-	-	-	-	-	-
Stage 1	704	638	-	863	781	-	-	-	-	-	-	-
Stage 2	782	779	-	679	614	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.4	9.6	0	1.4
HCM LOS	C	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1327	-	-	457	840	1440	-	-
HCM Lane V/C Ratio	-	-	-	0.243	0.075	0.036	-	-
HCM Control Delay (s)	0	-	-	15.4	9.6	7.6	-	-
HCM Lane LOS	A	-	-	C	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.9	0.2	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	119	0	0	6	0	56	0	186	8	80	218	124
Future Vol, veh/h	119	0	0	6	0	56	0	186	8	80	218	124
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	-	-	-	-	-	-	150	-	-	150	-	-
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	129	0	0	7	0	61	0	202	9	87	237	135

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	716	690	305	686	753	207	372	0	0	211	0	0
Stage 1	479	479	-	207	207	-	-	-	-	-	-	-
Stage 2	237	211	-	479	546	-	-	-	-	-	-	-
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	368	735	362	339	833	1186	-	-	1360	-	-
Stage 1	568	555	-	795	731	-	-	-	-	-	-	-
Stage 2	766	728	-	568	518	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	304	344	735	344	317	833	1186	-	-	1360	-	-
Mov Cap-2 Maneuver	304	344	-	344	317	-	-	-	-	-	-	-
Stage 1	568	519	-	795	731	-	-	-	-	-	-	-
Stage 2	710	728	-	532	485	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	25.3	10.4	0	1.5
HCM LOS	D	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1186	-	-	304	732	1360	-	-
HCM Lane V/C Ratio	-	-	-	0.425	0.092	0.064	-	-
HCM Control Delay (s)	0	-	-	25.3	10.4	7.8	-	-
HCM Lane LOS	A	-	-	D	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	2	0.3	0.2	-	-

Intersection 12
N/S Collector &
North E/W Drive

Intersection	
Int Delay, s/veh	6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	52	4	20	0	0	24	4	18	0	27	0	43
Future Vol, veh/h	52	4	20	0	0	24	4	18	0	27	0	43
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	-	-	-	-	-	-	150	-	-	150	-	-
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	57	4	22	0	0	26	4	20	0	29	0	47

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	123	110	24	123	133	20	47	0	0	20	0	0
Stage 1	82	82	-	28	28	-	-	-	-	-	-	-
Stage 2	41	28	-	95	105	-	-	-	-	-	-	-
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	852	780	1052	852	758	1058	1560	-	-	1596	-	-
Stage 1	926	827	-	989	872	-	-	-	-	-	-	-
Stage 2	974	872	-	912	808	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	818	764	1052	818	742	1058	1560	-	-	1596	-	-
Mov Cap-2 Maneuver	818	764	-	818	742	-	-	-	-	-	-	-
Stage 1	923	812	-	986	869	-	-	-	-	-	-	-
Stage 2	948	869	-	872	793	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.6	8.5	1.3	2.8
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1560	-	-	865	1058	1596	-	-
HCM Lane V/C Ratio	0.003	-	-	0.096	0.025	0.018	-	-
HCM Control Delay (s)	7.3	-	-	9.6	8.5	7.3	-	-
HCM Lane LOS	A	-	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.1	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	59	5	26	0	0	13	7	59	0	80	19	57
Future Vol, veh/h	59	5	26	0	0	13	7	59	0	80	19	57
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	-	-	-	-	-	-	150	-	-	150	-	-
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	64	5	28	0	0	14	8	64	0	87	21	62

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	313	306	52	323	337	64	83	0	0	64	0	0
Stage 1	226	226	-	80	80	-	-	-	-	-	-	-
Stage 2	87	80	-	243	257	-	-	-	-	-	-	-
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	640	608	1016	630	584	1000	1514	-	-	1538	-	-
Stage 1	777	717	-	929	828	-	-	-	-	-	-	-
Stage 2	921	828	-	761	695	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	601	570	1016	580	548	1000	1514	-	-	1538	-	-
Mov Cap-2 Maneuver	601	570	-	580	548	-	-	-	-	-	-	-
Stage 1	773	676	-	924	824	-	-	-	-	-	-	-
Stage 2	903	824	-	692	655	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.2	8.7	0.8	3.8
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1514	-	-	679	1000	1538	-	-
HCM Lane V/C Ratio	0.005	-	-	0.144	0.014	0.057	-	-
HCM Control Delay (s)	7.4	-	-	11.2	8.7	7.5	-	-
HCM Lane LOS	A	-	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.5	0	0.2	-	-

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	94	10	0	0	0	16	12	84	0	100	16	108
Future Vol, veh/h	94	10	0	0	0	16	12	84	0	100	16	108
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	-	-	-	-	-	-	150	-	-	150	-	-
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	11	0	0	0	17	13	91	0	109	17	117

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	420	411	76	416	469	91	134	0	0	91	0	0
Stage 1	294	294	-	117	117	-	-	-	-	-	-	-
Stage 2	126	117	-	299	352	-	-	-	-	-	-	-
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	531	985	547	492	967	1451	-	-	1504	-	-
Stage 1	714	670	-	888	799	-	-	-	-	-	-	-
Stage 2	878	799	-	710	632	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	501	489	985	505	453	967	1451	-	-	1504	-	-
Mov Cap-2 Maneuver	501	489	-	505	453	-	-	-	-	-	-	-
Stage 1	708	622	-	880	792	-	-	-	-	-	-	-
Stage 2	854	792	-	647	586	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.3	8.8	0.9	3.4
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1451	-	-	500	967	1504	-	-
HCM Lane V/C Ratio	0.009	-	-	0.226	0.018	0.072	-	-
HCM Control Delay (s)	7.5	-	-	14.3	8.8	7.6	-	-
HCM Lane LOS	A	-	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.9	0.1	0.2	-	-

Intersection	
Int Delay, s/veh	6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↰	↱		↰	↱	
Traffic Vol, veh/h	52	4	20	0	0	24	4	18	0	27	0	43
Future Vol, veh/h	52	4	20	0	0	24	4	18	0	27	0	43
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	-	-	-	-	-	-	150	-	-	150	-	-
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	57	4	22	0	0	26	4	20	0	29	0	47

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	123	110	24	123	133	20	47	0	0	20	0	0
Stage 1	82	82	-	28	28	-	-	-	-	-	-	-
Stage 2	41	28	-	95	105	-	-	-	-	-	-	-
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	852	780	1052	852	758	1058	1560	-	-	1596	-	-
Stage 1	926	827	-	989	872	-	-	-	-	-	-	-
Stage 2	974	872	-	912	808	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	818	764	1052	818	742	1058	1560	-	-	1596	-	-
Mov Cap-2 Maneuver	818	764	-	818	742	-	-	-	-	-	-	-
Stage 1	923	812	-	986	869	-	-	-	-	-	-	-
Stage 2	948	869	-	872	793	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.6	8.5	1.3	2.8
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1560	-	-	865	1058	1596	-	-
HCM Lane V/C Ratio	0.003	-	-	0.096	0.025	0.018	-	-
HCM Control Delay (s)	7.3	-	-	9.6	8.5	7.3	-	-
HCM Lane LOS	A	-	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.1	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	59	5	26	0	0	13	7	59	0	80	19	57
Future Vol, veh/h	59	5	26	0	0	13	7	59	0	80	19	57
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	-	-	-	-	-	-	150	-	-	150	-	-
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	64	5	28	0	0	14	8	64	0	87	21	62

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	313	306	52	323	337	64	83	0	0	64	0	0
Stage 1	226	226	-	80	80	-	-	-	-	-	-	-
Stage 2	87	80	-	243	257	-	-	-	-	-	-	-
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	640	608	1016	630	584	1000	1514	-	-	1538	-	-
Stage 1	777	717	-	929	828	-	-	-	-	-	-	-
Stage 2	921	828	-	761	695	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	601	570	1016	580	548	1000	1514	-	-	1538	-	-
Mov Cap-2 Maneuver	601	570	-	580	548	-	-	-	-	-	-	-
Stage 1	773	676	-	924	824	-	-	-	-	-	-	-
Stage 2	903	824	-	692	655	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.2	8.7	0.8	3.8
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1514	-	-	679	1000	1538	-	-
HCM Lane V/C Ratio	0.005	-	-	0.144	0.014	0.057	-	-
HCM Control Delay (s)	7.4	-	-	11.2	8.7	7.5	-	-
HCM Lane LOS	A	-	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.5	0	0.2	-	-

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	94	10	0	0	0	16	12	84	0	100	16	108
Future Vol, veh/h	94	10	0	0	0	16	12	84	0	100	16	108
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	-	-	-	-	-	-	150	-	-	150	-	-
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	11	0	0	0	17	13	91	0	109	17	117

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	420	411	76	416	469	91	134	0	0	91	0	0
Stage 1	294	294	-	117	117	-	-	-	-	-	-	-
Stage 2	126	117	-	299	352	-	-	-	-	-	-	-
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	531	985	547	492	967	1451	-	-	1504	-	-
Stage 1	714	670	-	888	799	-	-	-	-	-	-	-
Stage 2	878	799	-	710	632	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	501	489	985	505	453	967	1451	-	-	1504	-	-
Mov Cap-2 Maneuver	501	489	-	505	453	-	-	-	-	-	-	-
Stage 1	708	622	-	880	792	-	-	-	-	-	-	-
Stage 2	854	792	-	647	586	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.3	8.8	0.9	3.4
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1451	-	-	500	967	1504	-	-
HCM Lane V/C Ratio	0.009	-	-	0.226	0.018	0.072	-	-
HCM Control Delay (s)	7.5	-	-	14.3	8.8	7.6	-	-
HCM Lane LOS	A	-	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.9	0.1	0.2	-	-

Intersection 13
North E/W Drive & Drive 2

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	24	7	0	18	1	6	0	0	4	0	0
Future Vol, veh/h	0	24	7	0	18	1	6	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	26	8	0	20	1	7	0	0	4	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	21	0	0	34	0	0	51	51	30	51	55	21
Stage 1	-	-	-	-	-	-	30	30	-	21	21	-
Stage 2	-	-	-	-	-	-	21	21	-	30	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	1595	-	-	1578	-	-	948	840	1044	948	836	1056
Stage 1	-	-	-	-	-	-	987	870	-	998	878	-
Stage 2	-	-	-	-	-	-	998	878	-	987	867	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1595	-	-	1578	-	-	948	840	1044	948	836	1056
Mov Cap-2 Maneuver	-	-	-	-	-	-	948	840	-	948	836	-
Stage 1	-	-	-	-	-	-	987	870	-	998	878	-
Stage 2	-	-	-	-	-	-	998	878	-	987	867	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	8.8	8.8
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	948	1595	-	-	1578	-	-	948
HCM Lane V/C Ratio	0.007	-	-	-	-	-	-	0.005
HCM Control Delay (s)	8.8	0	-	-	0	-	-	8.8
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0	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	83	2	0	11	4	2	0	0	2	0	0
Future Vol, veh/h	0	83	2	0	11	4	2	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	90	2	0	12	4	2	0	0	2	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	16	0	0	92	0	0	105	107	91	105	106	14
Stage 1	-	-	-	-	-	-	91	91	-	14	14	-
Stage 2	-	-	-	-	-	-	14	16	-	91	92	-
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	1602	-	-	1503	-	-	875	783	967	875	784	1066
Stage 1	-	-	-	-	-	-	916	820	-	1006	884	-
Stage 2	-	-	-	-	-	-	1006	882	-	916	819	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1602	-	-	1503	-	-	875	783	967	875	784	1066
Mov Cap-2 Maneuver	-	-	-	-	-	-	875	783	-	875	784	-
Stage 1	-	-	-	-	-	-	916	820	-	1006	884	-
Stage 2	-	-	-	-	-	-	1006	882	-	916	819	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	9.1	9.1
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	875	1602	-	-	1503	-	-	875
HCM Lane V/C Ratio	0.002	-	-	-	-	-	-	0.002
HCM Control Delay (s)	9.1	0	-	-	0	-	-	9.1
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0	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	105	5	0	12	3	4	0	0	3	0	0
Future Vol, veh/h	0	105	5	0	12	3	4	0	0	3	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	114	5	0	13	3	4	0	0	3	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	16	0	0	119	0	0	132	133	117	132	134	15
Stage 1	-	-	-	-	-	-	117	117	-	15	15	-
Stage 2	-	-	-	-	-	-	15	16	-	117	119	-
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	1602	-	-	1469	-	-	840	758	935	840	757	1065
Stage 1	-	-	-	-	-	-	888	799	-	1005	883	-
Stage 2	-	-	-	-	-	-	1005	882	-	888	797	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1602	-	-	1469	-	-	840	758	935	840	757	1065
Mov Cap-2 Maneuver	-	-	-	-	-	-	840	758	-	840	757	-
Stage 1	-	-	-	-	-	-	888	799	-	1005	883	-
Stage 2	-	-	-	-	-	-	1005	882	-	888	797	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	9.3	9.3
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	840	1602	-	-	1469	-	-	840
HCM Lane V/C Ratio	0.005	-	-	-	-	-	-	0.004
HCM Control Delay (s)	9.3	0	-	-	0	-	-	9.3
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

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	24	7	0	18	1	6	0	0	4	0	0
Future Vol, veh/h	0	24	7	0	18	1	6	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	26	8	0	20	1	7	0	0	4	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	21	0	0	34	0	0	51	51	30	51	55	21
Stage 1	-	-	-	-	-	-	30	30	-	21	21	-
Stage 2	-	-	-	-	-	-	21	21	-	30	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	1595	-	-	1578	-	-	948	840	1044	948	836	1056
Stage 1	-	-	-	-	-	-	987	870	-	998	878	-
Stage 2	-	-	-	-	-	-	998	878	-	987	867	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1595	-	-	1578	-	-	948	840	1044	948	836	1056
Mov Cap-2 Maneuver	-	-	-	-	-	-	948	840	-	948	836	-
Stage 1	-	-	-	-	-	-	987	870	-	998	878	-
Stage 2	-	-	-	-	-	-	998	878	-	987	867	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	8.8	8.8
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	948	1595	-	-	1578	-	-	948
HCM Lane V/C Ratio	0.007	-	-	-	-	-	-	0.005
HCM Control Delay (s)	8.8	0	-	-	0	-	-	8.8
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0	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	83	2	0	11	4	2	0	0	2	0	0
Future Vol, veh/h	0	83	2	0	11	4	2	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	90	2	0	12	4	2	0	0	2	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	16	0	0	92	0	0	105	107	91	105	106	14
Stage 1	-	-	-	-	-	-	91	91	-	14	14	-
Stage 2	-	-	-	-	-	-	14	16	-	91	92	-
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	1602	-	-	1503	-	-	875	783	967	875	784	1066
Stage 1	-	-	-	-	-	-	916	820	-	1006	884	-
Stage 2	-	-	-	-	-	-	1006	882	-	916	819	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1602	-	-	1503	-	-	875	783	967	875	784	1066
Mov Cap-2 Maneuver	-	-	-	-	-	-	875	783	-	875	784	-
Stage 1	-	-	-	-	-	-	916	820	-	1006	884	-
Stage 2	-	-	-	-	-	-	1006	882	-	916	819	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	9.1	9.1
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	875	1602	-	-	1503	-	-	875
HCM Lane V/C Ratio	0.002	-	-	-	-	-	-	0.002
HCM Control Delay (s)	9.1	0	-	-	0	-	-	9.1
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0	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	105	5	0	12	3	4	0	0	3	0	0
Future Vol, veh/h	0	105	5	0	12	3	4	0	0	3	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	114	5	0	13	3	4	0	0	3	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	16	0	0	119	0	0	132	133	117	132	134	15
Stage 1	-	-	-	-	-	-	117	117	-	15	15	-
Stage 2	-	-	-	-	-	-	15	16	-	117	119	-
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	1602	-	-	1469	-	-	840	758	935	840	757	1065
Stage 1	-	-	-	-	-	-	888	799	-	1005	883	-
Stage 2	-	-	-	-	-	-	1005	882	-	888	797	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1602	-	-	1469	-	-	840	758	935	840	757	1065
Mov Cap-2 Maneuver	-	-	-	-	-	-	840	758	-	840	757	-
Stage 1	-	-	-	-	-	-	888	799	-	1005	883	-
Stage 2	-	-	-	-	-	-	1005	882	-	888	797	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	9.3	9.3
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	840	1602	-	-	1469	-	-	840
HCM Lane V/C Ratio	0.005	-	-	-	-	-	-	0.004
HCM Control Delay (s)	9.3	0	-	-	0	-	-	9.3
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Intersection 14
North E/W Drive & Drive 3

Intersection	
Int Delay, s/veh	4.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	6	22	51	18	1	6
Future Vol, veh/h	6	22	51	18	1	6
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	7	24	55	20	1	7

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	31	0	149	19
Stage 1	-	-	-	-	19	-
Stage 2	-	-	-	-	130	-
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	-	-	1582	-	843	1059
Stage 1	-	-	-	-	1004	-
Stage 2	-	-	-	-	896	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1582	-	813	1059
Mov Cap-2 Maneuver	-	-	-	-	813	-
Stage 1	-	-	-	-	1004	-
Stage 2	-	-	-	-	865	-

Approach	EB	WB	NB
HCM Control Delay, s	0	5.4	8.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1015	-	-	1582	-
HCM Lane V/C Ratio	0.007	-	-	0.035	-
HCM Control Delay (s)	8.6	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0.1	-

Intersection	
Int Delay, s/veh	2.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	19	66	31	11	4	19
Future Vol, veh/h	19	66	31	11	4	19
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	21	72	34	12	4	21

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	93	0	137	57
Stage 1	-	-	-	-	57	-
Stage 2	-	-	-	-	80	-
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	-	-	1501	-	856	1009
Stage 1	-	-	-	-	966	-
Stage 2	-	-	-	-	943	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1501	-	836	1009
Mov Cap-2 Maneuver	-	-	-	-	836	-
Stage 1	-	-	-	-	966	-
Stage 2	-	-	-	-	921	-

Approach	EB	WB	NB
HCM Control Delay, s	0	5.5	8.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	974	-	-	1501	-
HCM Lane V/C Ratio	0.026	-	-	0.022	-
HCM Control Delay (s)	8.8	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

Intersection	
Int Delay, s/veh	2.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	12	96	34	12	4	13
Future Vol, veh/h	12	96	34	12	4	13
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	13	104	37	13	4	14

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	117	0	152	65
Stage 1	-	-	-	-	65	-
Stage 2	-	-	-	-	87	-
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	-	-	1471	-	840	999
Stage 1	-	-	-	-	958	-
Stage 2	-	-	-	-	936	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1471	-	819	999
Mov Cap-2 Maneuver	-	-	-	-	819	-
Stage 1	-	-	-	-	958	-
Stage 2	-	-	-	-	913	-

Approach	EB	WB	NB
HCM Control Delay, s	0	5.6	8.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	950	-	-	1471	-
HCM Lane V/C Ratio	0.019	-	-	0.025	-
HCM Control Delay (s)	8.9	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

Intersection	
Int Delay, s/veh	4.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	6	22	51	18	1	6
Future Vol, veh/h	6	22	51	18	1	6
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	7	24	55	20	1	7

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	31	0	149	19
Stage 1	-	-	-	-	19	-
Stage 2	-	-	-	-	130	-
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	-	-	1582	-	843	1059
Stage 1	-	-	-	-	1004	-
Stage 2	-	-	-	-	896	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1582	-	813	1059
Mov Cap-2 Maneuver	-	-	-	-	813	-
Stage 1	-	-	-	-	1004	-
Stage 2	-	-	-	-	865	-

Approach	EB	WB	NB
HCM Control Delay, s	0	5.4	8.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1015	-	-	1582	-
HCM Lane V/C Ratio	0.007	-	-	0.035	-
HCM Control Delay (s)	8.6	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0.1	-

Intersection	
Int Delay, s/veh	2.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	19	66	31	11	4	19
Future Vol, veh/h	19	66	31	11	4	19
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	21	72	34	12	4	21

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	93	0	137	57
Stage 1	-	-	-	-	57	-
Stage 2	-	-	-	-	80	-
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	-	-	1501	-	856	1009
Stage 1	-	-	-	-	966	-
Stage 2	-	-	-	-	943	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1501	-	836	1009
Mov Cap-2 Maneuver	-	-	-	-	836	-
Stage 1	-	-	-	-	966	-
Stage 2	-	-	-	-	921	-

Approach	EB	WB	NB
HCM Control Delay, s	0	5.5	8.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	974	-	-	1501	-
HCM Lane V/C Ratio	0.026	-	-	0.022	-
HCM Control Delay (s)	8.8	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

Intersection	
Int Delay, s/veh	2.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	12	96	34	12	3	13
Future Vol, veh/h	12	96	34	12	3	13
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	13	104	37	13	3	14

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	117	0	152	65
Stage 1	-	-	-	-	65	-
Stage 2	-	-	-	-	87	-
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	-	-	1471	-	840	999
Stage 1	-	-	-	-	958	-
Stage 2	-	-	-	-	936	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1471	-	819	999
Mov Cap-2 Maneuver	-	-	-	-	819	-
Stage 1	-	-	-	-	958	-
Stage 2	-	-	-	-	913	-

Approach	EB	WB	NB
HCM Control Delay, s	0	5.6	8.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	959	-	-	1471	-
HCM Lane V/C Ratio	0.018	-	-	0.025	-
HCM Control Delay (s)	8.8	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

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	65	0	0	4
Future Vol, veh/h	1	10	65	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	71	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	34	40	0	0	2
Future Vol, veh/h	4	34	40	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	37	43	0	0	2

Major/Minor	Major1		Minor2	
Conflicting Flow All	0	0	45	0
Stage 1	-	-	0	-
Stage 2	-	-	45	-
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	-	-	847	-
Stage 1	-	-	-	-
Stage 2	-	-	857	-
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	3	22	43	0	0	3
Future Vol, veh/h	3	22	43	0	0	3
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	3	24	47	0	0	3

Major/Minor	Major1		Minor2	
Conflicting Flow All	0	0	30	0
Stage 1	-	-	0	-
Stage 2	-	-	30	-
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	-	-	863	-
Stage 1	-	-	-	-
Stage 2	-	-	870	-
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	65	0	0	4
Future Vol, veh/h	1	10	65	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	71	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	34	40	0	0	2
Future Vol, veh/h	4	34	40	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	37	43	0	0	2

Major/Minor	Major1		Minor2	
Conflicting Flow All	0	0	45	0
Stage 1	-	-	0	-
Stage 2	-	-	45	-
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	-	-	847	-
Stage 1	-	-	-	-
Stage 2	-	-	857	-
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	3	22	43	0	0	3
Future Vol, veh/h	3	22	43	0	0	3
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	3	24	47	0	0	3

Major/Minor	Major1		Minor2	
Conflicting Flow All	0	0	30	0
Stage 1	-	-	0	-
Stage 2	-	-	30	-
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	-	-	863	-
Stage 1	-	-	-	-
Stage 2	-	-	870	-
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	4.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	2	17	7	0	0	26	22	7	0	20	0
Future Vol, veh/h	0	2	17	7	0	0	26	22	7	0	20	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	-	-	-	-	-	-	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	0	2	18	8	0	0	28	24	8	0	22	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	106	110	22	116	106	28	22	0	0	32	0	0
Stage 1	22	22	-	84	84	-	-	-	-	-	-	-
Stage 2	84	88	-	32	22	-	-	-	-	-	-	-
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	873	780	1055	861	784	1047	1593	-	-	1580	-	-
Stage 1	996	877	-	924	825	-	-	-	-	-	-	-
Stage 2	924	822	-	984	877	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	862	766	1055	833	770	1047	1593	-	-	1580	-	-
Mov Cap-2 Maneuver	862	766	-	833	770	-	-	-	-	-	-	-
Stage 1	978	877	-	907	810	-	-	-	-	-	-	-
Stage 2	908	807	-	964	877	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.6	9.4	3.5	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1593	-	-	1015	833	1580	-	-
HCM Lane V/C Ratio	0.018	-	-	0.02	0.009	-	-	-
HCM Control Delay (s)	7.3	-	-	8.6	9.4	0	-	-
HCM Lane LOS	A	-	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0	0	-	-

Intersection	
Int Delay, s/veh	5.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↰	↱		↰	↱	
Traffic Vol, veh/h	0	9	79	17	0	0	96	66	27	0	45	0
Future Vol, veh/h	0	9	79	17	0	0	96	66	27	0	45	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	-	-	-	-	-	-	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	0	10	86	18	0	0	104	72	29	0	49	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	344	358	49	392	344	87	49	0	0	101	0	0
Stage 1	49	49	-	295	295	-	-	-	-	-	-	-
Stage 2	295	309	-	97	49	-	-	-	-	-	-	-
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	610	568	1020	567	579	971	1558	-	-	1491	-	-
Stage 1	964	854	-	713	669	-	-	-	-	-	-	-
Stage 2	713	660	-	910	854	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	579	530	1020	486	540	971	1558	-	-	1491	-	-
Mov Cap-2 Maneuver	579	530	-	486	540	-	-	-	-	-	-	-
Stage 1	899	854	-	665	624	-	-	-	-	-	-	-
Stage 2	665	616	-	824	854	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.3	12.7	3.8	0
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1558	-	-	932	486	1491	-	-
HCM Lane V/C Ratio	0.067	-	-	0.103	0.038	-	-	-
HCM Control Delay (s)	7.5	-	-	9.3	12.7	0	-	-
HCM Lane LOS	A	-	-	A	B	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.3	0.1	0	-	-

Intersection	
Int Delay, s/veh	6.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↰	↱		↰	↱	
Traffic Vol, veh/h	0	15	134	33	0	0	175	96	45	0	16	0
Future Vol, veh/h	0	15	134	33	0	0	175	96	45	0	16	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	-	-	-	-	-	-	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	0	16	146	36	0	0	190	104	49	0	17	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	526	550	17	607	526	129	17	0	0	153	0	0
Stage 1	17	17	-	509	509	-	-	-	-	-	-	-
Stage 2	509	533	-	98	17	-	-	-	-	-	-	-
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	462	443	1062	408	457	921	1600	-	-	1428	-	-
Stage 1	1002	881	-	547	538	-	-	-	-	-	-	-
Stage 2	547	525	-	908	881	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	420	390	1062	310	403	921	1600	-	-	1428	-	-
Mov Cap-2 Maneuver	420	390	-	310	403	-	-	-	-	-	-	-
Stage 1	883	881	-	482	474	-	-	-	-	-	-	-
Stage 2	482	463	-	769	881	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.8	18.1	4.2	0
HCM LOS	A	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1600	-	-	905	310	1428	-	-
HCM Lane V/C Ratio	0.119	-	-	0.179	0.116	-	-	-
HCM Control Delay (s)	7.6	-	-	9.8	18.1	0	-	-
HCM Lane LOS	A	-	-	A	C	A	-	-
HCM 95th %tile Q(veh)	0.4	-	-	0.6	0.4	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	0	2	17	7	0	0	26	22	7	0	20	0
Future Vol, veh/h	0	2	17	7	0	0	26	22	7	0	20	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	-	-	-	-	-	-	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	0	2	18	8	0	0	28	24	8	0	22	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	106	110	22	116	106	28	22	0	0	32	0	0
Stage 1	22	22	-	84	84	-	-	-	-	-	-	-
Stage 2	84	88	-	32	22	-	-	-	-	-	-	-
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	873	780	1055	861	784	1047	1593	-	-	1580	-	-
Stage 1	996	877	-	924	825	-	-	-	-	-	-	-
Stage 2	924	822	-	984	877	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	862	766	1055	833	770	1047	1593	-	-	1580	-	-
Mov Cap-2 Maneuver	862	766	-	833	770	-	-	-	-	-	-	-
Stage 1	978	877	-	907	810	-	-	-	-	-	-	-
Stage 2	908	807	-	964	877	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.6	9.4	3.5	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1593	-	-	1015	833	1580	-	-
HCM Lane V/C Ratio	0.018	-	-	0.02	0.009	-	-	-
HCM Control Delay (s)	7.3	-	-	8.6	9.4	0	-	-
HCM Lane LOS	A	-	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0	0	-	-

Intersection	
Int Delay, s/veh	5.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↰	↱		↰	↱	
Traffic Vol, veh/h	0	9	79	17	0	0	96	66	27	0	45	0
Future Vol, veh/h	0	9	79	17	0	0	96	66	27	0	45	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	-	-	-	-	-	-	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	0	10	86	18	0	0	104	72	29	0	49	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	344	358	49	392	344	87	49	0	0	101	0	0
Stage 1	49	49	-	295	295	-	-	-	-	-	-	-
Stage 2	295	309	-	97	49	-	-	-	-	-	-	-
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	610	568	1020	567	579	971	1558	-	-	1491	-	-
Stage 1	964	854	-	713	669	-	-	-	-	-	-	-
Stage 2	713	660	-	910	854	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	579	530	1020	486	540	971	1558	-	-	1491	-	-
Mov Cap-2 Maneuver	579	530	-	486	540	-	-	-	-	-	-	-
Stage 1	899	854	-	665	624	-	-	-	-	-	-	-
Stage 2	665	616	-	824	854	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.3	12.7	3.8	0
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1558	-	-	932	486	1491	-	-
HCM Lane V/C Ratio	0.067	-	-	0.103	0.038	-	-	-
HCM Control Delay (s)	7.5	-	-	9.3	12.7	0	-	-
HCM Lane LOS	A	-	-	A	B	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.3	0.1	0	-	-

Intersection	
Int Delay, s/veh	6.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↰	↱		↰	↱	
Traffic Vol, veh/h	0	15	134	33	0	0	175	96	45	0	16	0
Future Vol, veh/h	0	15	134	33	0	0	175	96	45	0	16	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	-	-	-	-	-	-	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	0	16	146	36	0	0	190	104	49	0	17	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	526	550	17	607	526	129	17	0	0	153	0	0
Stage 1	17	17	-	509	509	-	-	-	-	-	-	-
Stage 2	509	533	-	98	17	-	-	-	-	-	-	-
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	462	443	1062	408	457	921	1600	-	-	1428	-	-
Stage 1	1002	881	-	547	538	-	-	-	-	-	-	-
Stage 2	547	525	-	908	881	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	420	390	1062	310	403	921	1600	-	-	1428	-	-
Mov Cap-2 Maneuver	420	390	-	310	403	-	-	-	-	-	-	-
Stage 1	883	881	-	482	474	-	-	-	-	-	-	-
Stage 2	482	463	-	769	881	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.8	18.1	4.2	0
HCM LOS	A	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1600	-	-	905	310	1428	-	-
HCM Lane V/C Ratio	0.119	-	-	0.179	0.116	-	-	-
HCM Control Delay (s)	7.6	-	-	9.8	18.1	0	-	-
HCM Lane LOS	A	-	-	A	C	A	-	-
HCM 95th %tile Q(veh)	0.4	-	-	0.6	0.4	0	-	-

Intersection 17
South E/W Drive & Drive 5

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	4	2	3	0	0	1	3	0	0	1	0	4
Future Vol, veh/h	4	2	3	0	0	1	3	0	0	1	0	4
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	4	2	3	0	0	1	3	0	0	1	0	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1	0	0	5	0	0	15	13	4	13	14	1
Stage 1	-	-	-	-	-	-	12	12	-	1	1	-
Stage 2	-	-	-	-	-	-	3	1	-	12	13	-
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	-	-	1616	-	-	1001	881	1080	1004	880	1084
Stage 1	-	-	-	-	-	-	1009	886	-	1022	895	-
Stage 2	-	-	-	-	-	-	1020	895	-	1009	885	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1622	-	-	1616	-	-	995	879	1080	1002	878	1084
Mov Cap-2 Maneuver	-	-	-	-	-	-	995	879	-	1002	878	-
Stage 1	-	-	-	-	-	-	1007	884	-	1020	895	-
Stage 2	-	-	-	-	-	-	1016	895	-	1007	883	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3.2	0	8.6	8.4
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	995	1622	-	-	1616	-	-	1067
HCM Lane V/C Ratio	0.003	0.003	-	-	-	-	-	0.005
HCM Control Delay (s)	8.6	7.2	0	-	0	-	-	8.4
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0	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	1	9	26	3	0	0	16	0	18	0	0	1
Future Vol, veh/h	1	9	26	3	0	0	16	0	18	0	0	1
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	28	3	0	0	17	0	20	0	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	0	0	0	38	0	0	33	32	24	42	46	0
Stage 1	-	-	-	-	-	-	26	26	-	6	6	-
Stage 2	-	-	-	-	-	-	7	6	-	36	40	-
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	-	-	-	1572	-	-	974	861	1052	961	846	-
Stage 1	-	-	-	-	-	-	992	874	-	1016	891	-
Stage 2	-	-	-	-	-	-	1015	891	-	980	862	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	1572	-	-	-	859	1052	942	844	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	859	-	942	844	-
Stage 1	-	-	-	-	-	-	992	874	-	1016	889	-
Stage 2	-	-	-	-	-	-	1013	889	-	962	862	-

Approach	EB	WB	NB	SB
HCM Control Delay, s		7.3		
HCM LOS			-	-

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	-	1572	-	-	-
HCM Lane V/C Ratio	-	-	-	-	0.002	-	-	-
HCM Control Delay (s)	-	-	-	-	7.3	0	-	-
HCM Lane LOS	-	-	-	-	A	A	-	-
HCM 95th %tile Q(veh)	-	-	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	3.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	2	15	43	5	0	1	31	0	3	1	0	2
Future Vol, veh/h	2	15	43	5	0	1	31	0	3	1	0	2
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	2	16	47	5	0	1	34	0	3	1	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1	0	0	63	0	0	56	55	40	56	78	1
Stage 1	-	-	-	-	-	-	44	44	-	11	11	-
Stage 2	-	-	-	-	-	-	12	11	-	45	67	-
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	-	-	1540	-	-	941	836	1031	941	812	1084
Stage 1	-	-	-	-	-	-	970	858	-	1010	886	-
Stage 2	-	-	-	-	-	-	1009	886	-	969	839	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1622	-	-	1540	-	-	936	833	1031	935	809	1084
Mov Cap-2 Maneuver	-	-	-	-	-	-	936	833	-	935	809	-
Stage 1	-	-	-	-	-	-	969	857	-	1009	883	-
Stage 2	-	-	-	-	-	-	1004	883	-	965	838	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	6.1	9	8.5
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	944	1622	-	-	1540	-	-	1029
HCM Lane V/C Ratio	0.039	0.001	-	-	0.004	-	-	0.003
HCM Control Delay (s)	9	7.2	0	-	7.3	0	-	8.5
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	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	4	2	3	0	0	1	3	0	0	1	0	4
Future Vol, veh/h	4	2	3	0	0	1	3	0	0	1	0	4
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	4	2	3	0	0	1	3	0	0	1	0	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1	0	0	5	0	0	15	13	4	13	14	1
Stage 1	-	-	-	-	-	-	12	12	-	1	1	-
Stage 2	-	-	-	-	-	-	3	1	-	12	13	-
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	-	-	1616	-	-	1001	881	1080	1004	880	1084
Stage 1	-	-	-	-	-	-	1009	886	-	1022	895	-
Stage 2	-	-	-	-	-	-	1020	895	-	1009	885	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1622	-	-	1616	-	-	995	879	1080	1002	878	1084
Mov Cap-2 Maneuver	-	-	-	-	-	-	995	879	-	1002	878	-
Stage 1	-	-	-	-	-	-	1007	884	-	1020	895	-
Stage 2	-	-	-	-	-	-	1016	895	-	1007	883	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3.2	0	8.6	8.4
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	995	1622	-	-	1616	-	-	1067
HCM Lane V/C Ratio	0.003	0.003	-	-	-	-	-	0.005
HCM Control Delay (s)	8.6	7.2	0	-	0	-	-	8.4
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0	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	1	9	26	3	0	0	16	0	18	0	0	1
Future Vol, veh/h	1	9	26	3	0	0	16	0	18	0	0	1
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	28	3	0	0	17	0	20	0	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	0	0	0	38	0	0	33	32	24	42	46	0
Stage 1	-	-	-	-	-	-	26	26	-	6	6	-
Stage 2	-	-	-	-	-	-	7	6	-	36	40	-
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	-	-	-	1572	-	-	974	861	1052	961	846	-
Stage 1	-	-	-	-	-	-	992	874	-	1016	891	-
Stage 2	-	-	-	-	-	-	1015	891	-	980	862	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	1572	-	-	-	859	1052	942	844	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	859	-	942	844	-
Stage 1	-	-	-	-	-	-	992	874	-	1016	889	-
Stage 2	-	-	-	-	-	-	1013	889	-	962	862	-

Approach	EB	WB	NB	SB
HCM Control Delay, s		7.3		
HCM LOS			-	-

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	-	1572	-	-	-
HCM Lane V/C Ratio	-	-	-	-	0.002	-	-	-
HCM Control Delay (s)	-	-	-	-	7.3	0	-	-
HCM Lane LOS	-	-	-	-	A	A	-	-
HCM 95th %tile Q(veh)	-	-	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	3.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	2	15	43	5	0	1	31	0	3	1	0	2
Future Vol, veh/h	2	15	43	5	0	1	31	0	3	1	0	2
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	2	16	47	5	0	1	34	0	3	1	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1	0	0	63	0	0	56	55	40	56	78	1
Stage 1	-	-	-	-	-	-	44	44	-	11	11	-
Stage 2	-	-	-	-	-	-	12	11	-	45	67	-
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	-	-	1540	-	-	941	836	1031	941	812	1084
Stage 1	-	-	-	-	-	-	970	858	-	1010	886	-
Stage 2	-	-	-	-	-	-	1009	886	-	969	839	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1622	-	-	1540	-	-	936	833	1031	935	809	1084
Mov Cap-2 Maneuver	-	-	-	-	-	-	936	833	-	935	809	-
Stage 1	-	-	-	-	-	-	969	857	-	1009	883	-
Stage 2	-	-	-	-	-	-	1004	883	-	965	838	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	6.1	9	8.5
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	944	1622	-	-	1540	-	-	1029
HCM Lane V/C Ratio	0.039	0.001	-	-	0.004	-	-	0.003
HCM Control Delay (s)	9	7.2	0	-	7.3	0	-	8.5
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

Intersection 18
South E/W Drive & Drive 6

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	0	3	32	0	0	1	7	10	0	73	0
Future Vol, veh/h	0	0	3	32	0	0	1	7	10	0	73	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	35	0	0	1	8	11	0	79	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	95	100	79	97	95	14	79	0	0	19	0	0
Stage 1	79	79	-	16	16	-	-	-	-	-	-	-
Stage 2	16	21	-	81	79	-	-	-	-	-	-	-
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	888	790	981	885	795	1066	1519	-	-	1597	-	-
Stage 1	930	829	-	1004	882	-	-	-	-	-	-	-
Stage 2	1004	878	-	927	829	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	887	789	981	881	794	1066	1519	-	-	1597	-	-
Mov Cap-2 Maneuver	887	789	-	881	794	-	-	-	-	-	-	-
Stage 1	929	829	-	1003	881	-	-	-	-	-	-	-
Stage 2	1003	877	-	924	829	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.7	9.3	0.4	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1519	-	-	981	881	1597	-	-
HCM Lane V/C Ratio	0.001	-	-	0.003	0.039	-	-	-
HCM Control Delay (s)	7.4	0	-	8.7	9.3	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	0	27	20	0	0	3	23	34	0	98	0
Future Vol, veh/h	0	0	27	20	0	0	3	23	34	0	98	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	29	22	0	0	3	25	37	0	107	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	157	175	107	172	157	44	107	0	0	62	0	0
Stage 1	107	107	-	50	50	-	-	-	-	-	-	-
Stage 2	50	68	-	122	107	-	-	-	-	-	-	-
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	809	718	947	791	735	1026	1484	-	-	1541	-	-
Stage 1	898	807	-	963	853	-	-	-	-	-	-	-
Stage 2	963	838	-	882	807	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	807	717	947	766	734	1026	1484	-	-	1541	-	-
Mov Cap-2 Maneuver	807	717	-	766	734	-	-	-	-	-	-	-
Stage 1	896	807	-	961	851	-	-	-	-	-	-	-
Stage 2	961	836	-	855	807	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.9	9.8	0.4	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1484	-	-	947	766	1541	-	-
HCM Lane V/C Ratio	0.002	-	-	0.031	0.028	-	-	-
HCM Control Delay (s)	7.4	0	-	8.9	9.8	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	0	19	22	0	0	6	15	22	0	129	0
Future Vol, veh/h	0	0	19	22	0	0	6	15	22	0	129	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	21	24	0	0	7	16	24	0	140	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	182	194	140	193	182	28	140	0	0	40	0	0
Stage 1	140	140	-	42	42	-	-	-	-	-	-	-
Stage 2	42	54	-	151	140	-	-	-	-	-	-	-
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	779	701	908	767	712	1047	1443	-	-	1570	-	-
Stage 1	863	781	-	972	860	-	-	-	-	-	-	-
Stage 2	972	850	-	851	781	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	776	697	908	747	708	1047	1443	-	-	1570	-	-
Mov Cap-2 Maneuver	776	697	-	747	708	-	-	-	-	-	-	-
Stage 1	859	781	-	967	856	-	-	-	-	-	-	-
Stage 2	967	846	-	832	781	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.1	10	1	0
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1443	-	-	908	747	1570	-	-
HCM Lane V/C Ratio	0.005	-	-	0.023	0.032	-	-	-
HCM Control Delay (s)	7.5	0	-	9.1	10	0	-	-
HCM Lane LOS	A	A	-	A	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	0	3	32	0	0	1	7	10	0	73	0
Future Vol, veh/h	0	0	3	32	0	0	1	7	10	0	73	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	35	0	0	1	8	11	0	79	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	95	100	79	97	95	14	79	0	0	19	0	0
Stage 1	79	79	-	16	16	-	-	-	-	-	-	-
Stage 2	16	21	-	81	79	-	-	-	-	-	-	-
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	888	790	981	885	795	1066	1519	-	-	1597	-	-
Stage 1	930	829	-	1004	882	-	-	-	-	-	-	-
Stage 2	1004	878	-	927	829	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	887	789	981	881	794	1066	1519	-	-	1597	-	-
Mov Cap-2 Maneuver	887	789	-	881	794	-	-	-	-	-	-	-
Stage 1	929	829	-	1003	881	-	-	-	-	-	-	-
Stage 2	1003	877	-	924	829	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.7	9.3	0.4	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1519	-	-	981	881	1597	-	-
HCM Lane V/C Ratio	0.001	-	-	0.003	0.039	-	-	-
HCM Control Delay (s)	7.4	0	-	8.7	9.3	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	27	20	0	0	3	23	34	0	98	0
Future Vol, veh/h	0	0	27	20	0	0	3	23	34	0	98	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	29	22	0	0	3	25	37	0	107	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	157	175	107	172	157	44	107	0	0	62	0	0
Stage 1	107	107	-	50	50	-	-	-	-	-	-	-
Stage 2	50	68	-	122	107	-	-	-	-	-	-	-
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	809	718	947	791	735	1026	1484	-	-	1541	-	-
Stage 1	898	807	-	963	853	-	-	-	-	-	-	-
Stage 2	963	838	-	882	807	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	807	717	947	766	734	1026	1484	-	-	1541	-	-
Mov Cap-2 Maneuver	807	717	-	766	734	-	-	-	-	-	-	-
Stage 1	896	807	-	961	851	-	-	-	-	-	-	-
Stage 2	961	836	-	855	807	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.9	9.8	0.4	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1484	-	-	947	766	1541	-	-
HCM Lane V/C Ratio	0.002	-	-	0.031	0.028	-	-	-
HCM Control Delay (s)	7.4	0	-	8.9	9.8	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	0	19	22	0	0	6	15	22	0	129	0
Future Vol, veh/h	0	0	19	22	0	0	6	15	22	0	129	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	21	24	0	0	7	16	24	0	140	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	182	194	140	193	182	28	140	0	0	40	0	0
Stage 1	140	140	-	42	42	-	-	-	-	-	-	-
Stage 2	42	54	-	151	140	-	-	-	-	-	-	-
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	779	701	908	767	712	1047	1443	-	-	1570	-	-
Stage 1	863	781	-	972	860	-	-	-	-	-	-	-
Stage 2	972	850	-	851	781	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	776	697	908	747	708	1047	1443	-	-	1570	-	-
Mov Cap-2 Maneuver	776	697	-	747	708	-	-	-	-	-	-	-
Stage 1	859	781	-	967	856	-	-	-	-	-	-	-
Stage 2	967	846	-	832	781	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.1	10	1	0
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1443	-	-	908	747	1570	-	-
HCM Lane V/C Ratio	0.005	-	-	0.023	0.032	-	-	-
HCM Control Delay (s)	7.5	0	-	9.1	10	0	-	-
HCM Lane LOS	A	A	-	A	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-

Intersection 19
Drive 7

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	18	10	0	108
Future Vol, veh/h	0	0	18	10	0	108
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	0	0	20	11	0	117

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	26	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.23	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.319	-	-	-	-
Pot Cap-1 Maneuver	0	1049	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	1049	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	-
HCM Lane LOS	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	-

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	61	34	0	145
Future Vol, veh/h	0	0	61	34	0	145
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	0	0	66	37	0	158

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	85	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.23	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.319	-	-	-	-
Pot Cap-1 Maneuver	0	973	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	973	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	-
HCM Lane LOS	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	-

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	43	22	0	170
Future Vol, veh/h	0	0	43	22	0	170
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	0	0	47	24	0	185

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	59	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.23	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.319	-	-	-	-
Pot Cap-1 Maneuver	0	1006	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	1006	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	-
HCM Lane LOS	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	-

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	18	10	0	108
Future Vol, veh/h	0	0	18	10	0	108
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	0	0	20	11	0	117

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	26	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.23	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.319	-	-	-	-
Pot Cap-1 Maneuver	0	1049	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	1049	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	-
HCM Lane LOS	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	-

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	61	34	0	145
Future Vol, veh/h	0	0	61	34	0	145
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	0	0	66	37	0	158

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	85	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.23	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.319	-	-	-	-
Pot Cap-1 Maneuver	0	973	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	973	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	-
HCM Lane LOS	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	-

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	43	22	0	170
Future Vol, veh/h	0	0	43	22	0	170
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	0	0	47	24	0	185

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	59	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.23	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.319	-	-	-	-
Pot Cap-1 Maneuver	0	1006	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	1006	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	-
HCM Lane LOS	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	-

Intersection 20
Bailey Road & Drive 8

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	22	343	320	6	39	70
Future Vol, veh/h	22	343	320	6	39	70
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	-	-	190	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	24	373	348	7	42	76

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	355	0	-	0	769	348
Stage 1	-	-	-	-	348	-
Stage 2	-	-	-	-	421	-
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	1204	-	-	-	369	695
Stage 1	-	-	-	-	715	-
Stage 2	-	-	-	-	662	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1204	-	-	-	362	695
Mov Cap-2 Maneuver	-	-	-	-	362	-
Stage 1	-	-	-	-	701	-
Stage 2	-	-	-	-	662	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	12.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1204	-	-	-	362	695
HCM Lane V/C Ratio	0.02	-	-	-	0.117	0.109
HCM Control Delay (s)	8.1	-	-	-	16.3	10.8
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4	0.4

Intersection	
Int Delay, s/veh	6.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	74	414	672	21	102	43
Future Vol, veh/h	74	414	672	21	102	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	-	-	190	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	80	450	730	23	111	47

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	753	0	-	0	1340	730
Stage 1	-	-	-	-	730	-
Stage 2	-	-	-	-	610	-
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	857	-	-	-	168	422
Stage 1	-	-	-	-	477	-
Stage 2	-	-	-	-	542	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	857	-	-	-	152	422
Mov Cap-2 Maneuver	-	-	-	-	152	-
Stage 1	-	-	-	-	433	-
Stage 2	-	-	-	-	542	-

Approach	EB	WB	SB
HCM Control Delay, s	1.5	0	57
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	857	-	-	-	152	422
HCM Lane V/C Ratio	0.094	-	-	-	0.729	0.111
HCM Control Delay (s)	9.6	-	-	-	74.9	14.6
HCM Lane LOS	A	-	-	-	F	B
HCM 95th %tile Q(veh)	0.3	-	-	-	4.4	0.4

Intersection	
Int Delay, s/veh	4.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	47	324	480	18	124	47
Future Vol, veh/h	47	324	480	18	124	47
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	-	-	190	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	51	352	522	20	135	51

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	542	0	-	0	976	522
Stage 1	-	-	-	-	522	-
Stage 2	-	-	-	-	454	-
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	1027	-	-	-	279	555
Stage 1	-	-	-	-	595	-
Stage 2	-	-	-	-	640	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1027	-	-	-	265	555
Mov Cap-2 Maneuver	-	-	-	-	265	-
Stage 1	-	-	-	-	565	-
Stage 2	-	-	-	-	640	-

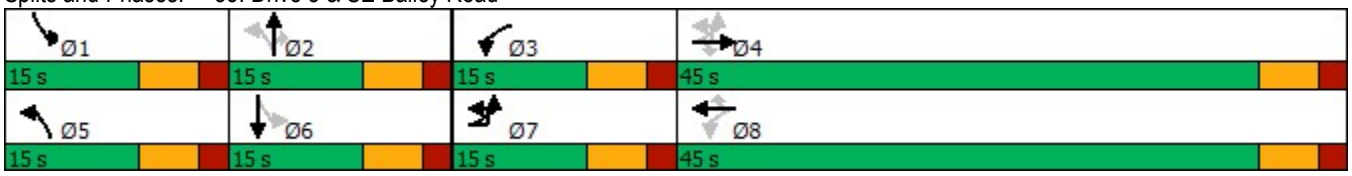
Approach	EB	WB	SB
HCM Control Delay, s	1.1	0	26.5
HCM LOS			D

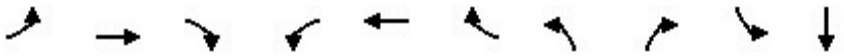
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1027	-	-	-	265	555
HCM Lane V/C Ratio	0.05	-	-	-	0.509	0.092
HCM Control Delay (s)	8.7	-	-	-	31.9	12.1
HCM Lane LOS	A	-	-	-	D	B
HCM 95th %tile Q(veh)	0.2	-	-	-	2.7	0.3

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	143	355	21	27	305	6	201	21	39	0
Future Volume (vph)	143	355	21	27	305	6	201	21	39	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	Perm	pm+pt	NA
Protected Phases	7	4		3	8		5		1	6
Permitted Phases	4		4	8		8	2	2	6	
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	8.0	10.0	10.0	8.0	10.0	10.0	8.0	9.0	8.0	9.0
Minimum Split (s)	15.0	45.0	45.0	15.0	45.0	45.0	15.0	15.0	15.0	15.0
Total Split (s)	15.0	45.0	45.0	15.0	45.0	45.0	15.0	15.0	15.0	15.0
Total Split (%)	16.7%	50.0%	50.0%	16.7%	50.0%	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	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	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	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	None	Min
Act Effct Green (s)	31.1	27.8	27.8	26.1	18.1	18.1	21.2	16.1	17.2	9.1
Actuated g/C Ratio	0.45	0.40	0.40	0.38	0.26	0.26	0.31	0.23	0.25	0.13
v/c Ratio	0.37	0.52	0.03	0.06	0.68	0.01	0.55	0.03	0.11	0.13
Control Delay	12.8	20.2	0.1	9.7	30.4	0.0	25.6	0.0	18.4	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.8	20.2	0.1	9.7	30.4	0.0	25.6	0.0	18.4	0.4
LOS	B	C	A	A	C	A	C	A	B	A
Approach Delay		17.3			28.1					6.6
Approach LOS		B			C					A

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 69.2	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.68	
Intersection Signal Delay: 20.5	Intersection LOS: C
Intersection Capacity Utilization 58.2%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 35: Drive 8 & SE Bailey Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBT
Lane Group Flow (vph)	155	386	23	29	332	7	218	23	42	80
v/c Ratio	0.37	0.52	0.03	0.06	0.68	0.01	0.55	0.03	0.11	0.13
Control Delay	12.8	20.2	0.1	9.7	30.4	0.0	25.6	0.0	18.4	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.8	20.2	0.1	9.7	30.4	0.0	25.6	0.0	18.4	0.4
Queue Length 50th (ft)	35	101	0	6	126	0	66	0	11	0
Queue Length 95th (ft)	65	235	0	17	203	0	#159	0	37	0
Internal Link Dist (ft)		347			2219					59
Turn Bay Length (ft)			210	130		190	200			
Base Capacity (vph)	420	1058	977	478	1058	977	399	779	416	621
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.36	0.02	0.06	0.31	0.01	0.55	0.03	0.10	0.13

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)	143	355	21	27	305	6	201	0	21	39	0	74
Future Volume (veh/h)	143	355	21	27	305	6	201	0	21	39	0	74
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	1900
Adj Flow Rate, veh/h	155	386	23	29	332	7	218	0	23	42	0	80
Adj No. of Lanes	1	1	1	1	1	1	1	1	1	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	389	556	473	315	430	366	472	385	327	427	0	225
Arrive On Green	0.12	0.30	0.30	0.05	0.23	0.23	0.13	0.00	0.21	0.07	0.00	0.14
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	1863	1583	1774	0	1583
Grp Volume(v), veh/h	155	386	23	29	332	7	218	0	23	42	0	80
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1863	1583	1774	0	1583
Q Serve(g_s), s	3.9	11.6	0.7	0.8	10.6	0.2	6.4	0.0	0.7	1.2	0.0	2.9
Cycle Q Clear(g_c), s	3.9	11.6	0.7	0.8	10.6	0.2	6.4	0.0	0.7	1.2	0.0	2.9
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	389	556	473	315	430	366	472	385	327	427	0	225
V/C Ratio(X)	0.40	0.69	0.05	0.09	0.77	0.02	0.46	0.00	0.07	0.10	0.00	0.36
Avail Cap(c_a), veh/h	432	1145	973	477	1145	973	491	385	327	561	0	225
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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.6	19.7	15.8	17.1	22.8	18.8	19.1	0.0	20.3	20.4	0.0	24.6
Incr Delay (d2), s/veh	0.7	1.6	0.0	0.1	3.0	0.0	0.7	0.0	0.1	0.1	0.0	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	1.9	6.1	0.3	0.4	5.8	0.1	3.2	0.0	0.3	0.6	0.0	1.3
LnGrp Delay(d),s/veh	16.3	21.3	15.9	17.2	25.8	18.9	19.8	0.0	20.3	20.5	0.0	25.6
LnGrp LOS	B	C	B	B	C	B	B		C	C		C
Approach Vol, veh/h		564			368			241			122	
Approach Delay, s/veh		19.7			25.0			19.9			23.8	
Approach LOS		B			C			B			C	

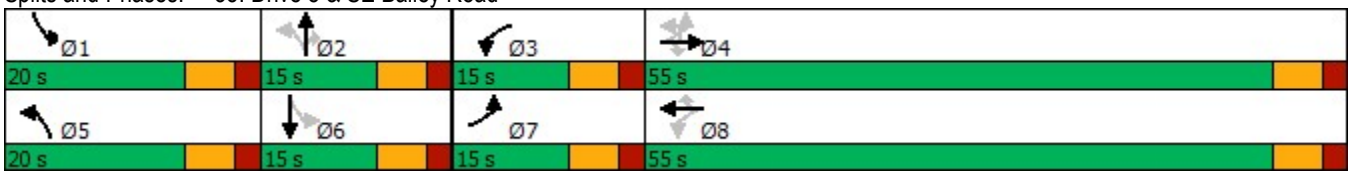
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.2	19.1	9.2	24.9	14.3	15.0	13.5	20.7
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	9.0	9.0	9.0	39.0	9.0	9.0	9.0	39.0
Max Q Clear Time (g_c+I1), s	3.2	2.7	2.8	13.6	8.4	4.9	5.9	12.6
Green Ext Time (p_c), s	0.0	0.0	0.0	2.5	0.0	0.1	0.1	2.1

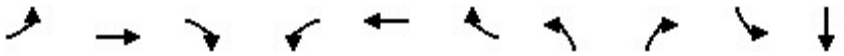
Intersection Summary	
HCM 2010 Ctrl Delay	21.6
HCM 2010 LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	263	428	68	36	657	21	178	15	102	0
Future Volume (vph)	263	428	68	36	657	21	178	15	102	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	Perm	pm+pt	NA
Protected Phases	7	4		3	8		5		1	6
Permitted Phases	4		4	8		8	2	2	6	
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	8.0	10.0	10.0	8.0	10.0	10.0	8.0	9.0	8.0	9.0
Minimum Split (s)	15.0	55.0	55.0	15.0	55.0	55.0	20.0	15.0	20.0	15.0
Total Split (s)	15.0	55.0	55.0	15.0	55.0	55.0	20.0	15.0	20.0	15.0
Total Split (%)	14.3%	52.4%	52.4%	14.3%	52.4%	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	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	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	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	None	Min
Act Effct Green (s)	53.6	48.6	48.6	49.3	41.3	41.3	24.9	14.6	19.6	9.1
Actuated g/C Ratio	0.56	0.50	0.50	0.51	0.43	0.43	0.26	0.15	0.20	0.09
v/c Ratio	1.11	0.49	0.08	0.08	0.89	0.03	0.54	0.03	0.34	0.12
Control Delay	112.9	19.5	0.2	9.0	40.6	0.1	35.7	0.1	31.6	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	112.9	19.5	0.2	9.0	40.6	0.1	35.7	0.1	31.6	0.6
LOS	F	B	A	A	D	A	D	A	C	A
Approach Delay		50.1			37.8					22.0
Approach LOS		D			D					C

Intersection Summary	
Cycle Length: 105	
Actuated Cycle Length: 96.3	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.11	
Intersection Signal Delay: 41.2	Intersection LOS: D
Intersection Capacity Utilization 80.7%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 35: Drive 8 & SE Bailey Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBT
Lane Group Flow (vph)	286	465	74	39	714	23	193	16	111	50
v/c Ratio	1.11	0.49	0.08	0.08	0.89	0.03	0.54	0.03	0.34	0.12
Control Delay	112.9	19.5	0.2	9.0	40.6	0.1	35.7	0.1	31.6	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	112.9	19.5	0.2	9.0	40.6	0.1	35.7	0.1	31.6	0.6
Queue Length 50th (ft)	~157	211	0	10	402	0	99	0	54	0
Queue Length 95th (ft)	#331	306	0	23	#578	0	171	0	104	0
Internal Link Dist (ft)		347			2219					59
Turn Bay Length (ft)			210	130		190	200			
Base Capacity (vph)	258	980	906	496	958	889	372	616	393	410
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.11	0.47	0.08	0.08	0.75	0.03	0.52	0.03	0.28	0.12

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)	263	428	68	36	657	21	178	0	15	102	0	46
Future Volume (veh/h)	263	428	68	36	657	21	178	0	15	102	0	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	1900
Adj Flow Rate, veh/h	286	465	74	39	714	23	193	0	16	111	0	50
Adj No. of Lanes	1	1	1	1	1	1	1	1	1	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	301	874	743	428	794	675	380	250	212	359	0	155
Arrive On Green	0.10	0.47	0.47	0.05	0.43	0.43	0.12	0.00	0.13	0.08	0.00	0.10
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	1863	1583	1774	0	1583
Grp Volume(v), veh/h	286	465	74	39	714	23	193	0	16	111	0	50
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1863	1583	1774	0	1583
Q Serve(g_s), s	8.4	16.3	2.4	1.1	32.9	0.8	8.8	0.0	0.8	5.0	0.0	2.7
Cycle Q Clear(g_c), s	8.4	16.3	2.4	1.1	32.9	0.8	8.8	0.0	0.8	5.0	0.0	2.7
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	874	743	428	794	675	380	250	212	359	0	155
V/C Ratio(X)	0.95	0.53	0.10	0.09	0.90	0.03	0.51	0.00	0.08	0.31	0.00	0.32
Avail Cap(c_a), veh/h	301	990	842	503	990	842	440	250	212	483	0	155
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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.3	17.3	13.6	13.6	24.6	15.4	31.8	0.0	34.9	33.1	0.0	38.8
Incr Delay (d2), s/veh	38.5	0.5	0.1	0.1	9.4	0.0	1.1	0.0	0.1	0.5	0.0	1.2
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	7.3	8.4	1.1	0.5	18.9	0.3	4.3	0.0	0.4	2.5	0.0	1.2
LnGrp Delay(d),s/veh	58.7	17.8	13.7	13.7	34.1	15.4	32.9	0.0	35.1	33.6	0.0	40.0
LnGrp LOS	E	B	B	B	C	B	C		D	C		D
Approach Vol, veh/h		825			776			209			161	
Approach Delay, s/veh		31.6			32.5			33.1			35.6	
Approach LOS		C			C			C			D	

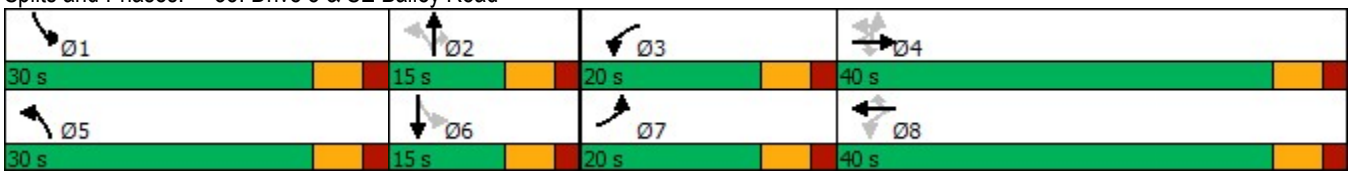
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.5	18.4	11.1	49.2	16.9	15.0	15.0	45.3
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	14.0	9.0	9.0	49.0	14.0	9.0	9.0	49.0
Max Q Clear Time (g_c+I1), s	7.0	2.8	3.1	18.3	10.8	4.7	10.4	34.9
Green Ext Time (p_c), s	0.1	0.0	0.0	3.5	0.2	0.1	0.0	4.4

Intersection Summary	
HCM 2010 Ctrl Delay	32.4
HCM 2010 LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	193	357	47	64	480	18	320	10	23	124	10
Future Volume (vph)	193	357	47	64	480	18	320	10	23	124	10
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA
Protected Phases	7	4		3	8		5	2		1	6
Permitted Phases	4		4	8		8	2		2	6	
Detector Phase	7	4	4	3	8	8	5	2	2	1	6
Switch Phase											
Minimum Initial (s)	8.0	10.0	10.0	8.0	10.0	10.0	8.0	9.0	9.0	8.0	9.0
Minimum Split (s)	20.0	40.0	40.0	20.0	40.0	40.0	30.0	15.0	15.0	30.0	15.0
Total Split (s)	20.0	40.0	40.0	20.0	40.0	40.0	30.0	15.0	15.0	30.0	15.0
Total Split (%)	19.0%	38.1%	38.1%	19.0%	38.1%	38.1%	28.6%	14.3%	14.3%	28.6%	14.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	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	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	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)	47.7	37.5	37.5	38.4	29.9	29.9	35.5	18.7	18.7	20.1	9.1
Actuated g/C Ratio	0.49	0.39	0.39	0.40	0.31	0.31	0.37	0.19	0.19	0.21	0.09
v/c Ratio	0.66	0.54	0.07	0.17	0.91	0.03	0.69	0.03	0.06	0.41	0.31
Control Delay	27.5	27.9	0.2	14.5	53.6	0.1	33.0	35.5	0.3	27.3	21.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.5	27.9	0.2	14.5	53.6	0.1	33.0	35.5	0.3	27.3	21.2
LOS	C	C	A	B	D	A	C	D	A	C	C
Approach Delay		25.6			47.4			30.9			25.4
Approach LOS		C			D			C			C

Intersection Summary	
Cycle Length: 105	
Actuated Cycle Length: 96.5	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 33.9	Intersection LOS: C
Intersection Capacity Utilization 75.4%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 35: Drive 8 & SE Bailey Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	210	388	51	70	522	20	348	11	25	135	62
v/c Ratio	0.66	0.54	0.07	0.17	0.91	0.03	0.69	0.03	0.06	0.41	0.31
Control Delay	27.5	27.9	0.2	14.5	53.6	0.1	33.0	35.5	0.3	27.3	21.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.5	27.9	0.2	14.5	53.6	0.1	33.0	35.5	0.3	27.3	21.2
Queue Length 50th (ft)	74	200	0	23	326	0	181	6	0	61	7
Queue Length 95th (ft)	148	304	0	46	#514	0	271	22	0	106	48
Internal Link Dist (ft)		347			2219			315			59
Turn Bay Length (ft)			210	130		190	200				
Base Capacity (vph)	346	734	718	524	667	667	542	361	432	561	200
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.53	0.07	0.13	0.78	0.03	0.64	0.03	0.06	0.24	0.31

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)	193	357	47	64	480	18	320	10	23	124	10	47
Future Volume (veh/h)	193	357	47	64	480	18	320	10	23	124	10	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	1900
Adj Flow Rate, veh/h	210	388	51	70	522	20	348	11	25	135	11	51
Adj No. of Lanes	1	1	1	1	1	1	1	1	1	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	311	642	545	380	589	501	524	394	335	385	30	140
Arrive On Green	0.10	0.34	0.34	0.08	0.32	0.32	0.20	0.21	0.21	0.09	0.10	0.10
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	1863	1583	1774	289	1338
Grp Volume(v), veh/h	210	388	51	70	522	20	348	11	25	135	0	62
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1863	1583	1774	0	1627
Q Serve(g_s), s	6.7	14.8	1.9	2.1	22.9	0.8	14.2	0.4	1.1	5.7	0.0	3.0
Cycle Q Clear(g_c), s	6.7	14.8	1.9	2.1	22.9	0.8	14.2	0.4	1.1	5.7	0.0	3.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.82
Lane Grp Cap(c), veh/h	311	642	545	380	589	501	524	394	335	385	0	170
V/C Ratio(X)	0.68	0.60	0.09	0.18	0.89	0.04	0.66	0.03	0.07	0.35	0.00	0.36
Avail Cap(c_a), veh/h	416	737	626	535	737	626	671	394	335	722	0	170
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	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.3	23.3	19.1	17.5	27.9	20.3	24.6	26.9	27.2	30.2	0.0	35.8
Incr Delay (d2), s/veh	2.7	1.1	0.1	0.2	10.6	0.0	1.6	0.0	0.1	0.5	0.0	1.3
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	3.4	7.7	0.8	1.1	13.5	0.3	7.1	0.2	0.5	2.8	0.0	1.4
LnGrp Delay(d),s/veh	22.9	24.4	19.2	17.7	38.5	20.4	26.3	26.9	27.2	30.8	0.0	37.1
LnGrp LOS	C	C	B	B	D	C	C	C	C	C		D
Approach Vol, veh/h		649			612			384			197	
Approach Delay, s/veh		23.5			35.6			26.4			32.8	
Approach LOS		C			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	13.7	24.2	12.5	35.6	22.9	15.0	14.9	33.2
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	24.0	9.0	14.0	34.0	24.0	9.0	14.0	34.0
Max Q Clear Time (g_c+I1), s	7.7	3.1	4.1	16.8	16.2	5.0	8.7	24.9
Green Ext Time (p_c), s	0.3	0.0	0.1	2.3	0.7	0.1	0.3	2.3

Intersection Summary	
HCM 2010 Ctrl Delay	29.1
HCM 2010 LOS	C

Intersection 21
N/S Collector
& Drive 9

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	164	0	0	0	0	31	10	43	0	44	55	88
Future Vol, veh/h	164	0	0	0	0	31	10	43	0	44	55	88
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	178	0	0	0	0	34	11	47	0	48	60	96

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	290	273	108	273	321	47	156	0	0	47	0	0
Stage 1	204	204	-	69	69	-	-	-	-	-	-	-
Stage 2	86	69	-	204	252	-	-	-	-	-	-	-
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	662	634	946	679	596	1022	1424	-	-	1560	-	-
Stage 1	798	733	-	941	837	-	-	-	-	-	-	-
Stage 2	922	837	-	798	698	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	620	607	946	657	571	1022	1424	-	-	1560	-	-
Mov Cap-2 Maneuver	620	607	-	657	571	-	-	-	-	-	-	-
Stage 1	792	708	-	933	830	-	-	-	-	-	-	-
Stage 2	884	830	-	771	674	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.1	8.6	1.4	1.7
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1424	-	-	620	1022	1560	-	-
HCM Lane V/C Ratio	0.008	-	-	0.288	0.033	0.031	-	-
HCM Control Delay (s)	7.5	0	-	13.1	8.6	7.4	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	1.2	0.1	0.1	-	-

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	134	0	0	0	0	26	8	38	0	38	73	76
Future Vol, veh/h	134	0	0	0	0	26	8	38	0	38	73	76
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	146	0	0	0	0	28	9	41	0	41	79	83

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	276	262	121	262	303	41	162	0	0	41	0	0
Stage 1	203	203	-	59	59	-	-	-	-	-	-	-
Stage 2	73	59	-	203	244	-	-	-	-	-	-	-
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	676	643	930	691	610	1030	1417	-	-	1568	-	-
Stage 1	799	733	-	953	846	-	-	-	-	-	-	-
Stage 2	937	846	-	799	704	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	639	620	930	672	588	1030	1417	-	-	1568	-	-
Mov Cap-2 Maneuver	639	620	-	672	588	-	-	-	-	-	-	-
Stage 1	793	712	-	946	840	-	-	-	-	-	-	-
Stage 2	905	840	-	776	684	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.3	8.6	1.3	1.5
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1417	-	-	639	1030	1568	-	-
HCM Lane V/C Ratio	0.006	-	-	0.228	0.027	0.026	-	-
HCM Control Delay (s)	7.6	0	-	12.3	8.6	7.4	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.9	0.1	0.1	-	-

Intersection	
Int Delay, s/veh	6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	162	0	0	0	0	0	18	17	0	77	168	154
Future Vol, veh/h	162	0	0	0	0	0	18	17	0	77	168	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	-	-	-	-	-	-	-	-	-	-	-	-
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	0	20	18	0	84	183	167

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	493	493	267	493	576	18	350	0	0	18	0	0
Stage 1	435	435	-	58	58	-	-	-	-	-	-	-
Stage 2	58	58	-	435	518	-	-	-	-	-	-	-
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	486	477	772	486	428	1061	1209	-	-	1599	-	-
Stage 1	600	580	-	954	847	-	-	-	-	-	-	-
Stage 2	954	847	-	600	533	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	455	437	772	455	392	1061	1209	-	-	1599	-	-
Mov Cap-2 Maneuver	455	437	-	455	392	-	-	-	-	-	-	-
Stage 1	590	541	-	938	833	-	-	-	-	-	-	-
Stage 2	938	833	-	560	497	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17.8	0	4.1	1.4
HCM LOS	C	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1209	-	-	455	-	1599	-	-
HCM Lane V/C Ratio	0.016	-	-	0.387	-	0.052	-	-
HCM Control Delay (s)	8	0	-	17.8	0	7.4	0	-
HCM Lane LOS	A	A	-	C	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	1.8	-	0.2	-	-

Intersection 22
N/S Collector
& Drive 10

Intersection	
Int Delay, s/veh	4.8

Movement	EBL	EBR	SET	SER	NWL	NWT
Lane Configurations						
Traffic Vol, veh/h	24	56	26	29	20	29
Future Vol, veh/h	24	56	26	29	20	29
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	26	61	28	32	22	32

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	120	44	0	0	60	0
Stage 1	44	-	-	-	-	-
Stage 2	76	-	-	-	-	-
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	1026	-	-	1544	-
Stage 1	978	-	-	-	-	-
Stage 2	947	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	863	1026	-	-	1544	-
Mov Cap-2 Maneuver	863	-	-	-	-	-
Stage 1	978	-	-	-	-	-
Stage 2	933	-	-	-	-	-

Approach	EB	SE	NW
HCM Control Delay, s	9.1	0	3
HCM LOS	A		

Minor Lane/Major Mvmt	NWL	NWT	EBLn1	SET	SER
Capacity (veh/h)	1544	-	971	-	-
HCM Lane V/C Ratio	0.014	-	0.09	-	-
HCM Control Delay (s)	7.4	0	9.1	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBR	SET	SER	NWL	NWT
Lane Configurations						
Traffic Vol, veh/h	23	78	22	51	34	23
Future Vol, veh/h	23	78	22	51	34	23
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	25	85	24	55	37	25

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	151	52	0	0	79	0
Stage 1	52	-	-	-	-	-
Stage 2	99	-	-	-	-	-
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	841	1016	-	-	1519	-
Stage 1	970	-	-	-	-	-
Stage 2	925	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	820	1016	-	-	1519	-
Mov Cap-2 Maneuver	820	-	-	-	-	-
Stage 1	970	-	-	-	-	-
Stage 2	902	-	-	-	-	-

Approach	EB	SE	NW
HCM Control Delay, s	9.2	0	4.4
HCM LOS	A		

Minor Lane/Major Mvmt	NWL	NWT	EBLn1	SET	SER
Capacity (veh/h)	1519	-	964	-	-
HCM Lane V/C Ratio	0.024	-	0.114	-	-
HCM Control Delay (s)	7.4	0	9.2	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.4	-	-

Intersection	
Int Delay, s/veh	5.4

Movement	EBL	EBR	SET	SER	NWL	NWT
Lane Configurations						
Traffic Vol, veh/h	17	159	46	122	80	18
Future Vol, veh/h	17	159	46	122	80	18
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	18	173	50	133	87	20

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	311	117	0	0	183	0
Stage 1	117	-	-	-	-	-
Stage 2	194	-	-	-	-	-
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	681	935	-	-	1392	-
Stage 1	908	-	-	-	-	-
Stage 2	839	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	638	935	-	-	1392	-
Mov Cap-2 Maneuver	638	-	-	-	-	-
Stage 1	908	-	-	-	-	-
Stage 2	786	-	-	-	-	-

Approach	EB	SE	NW
HCM Control Delay, s	10.1	0	6.3
HCM LOS	B		

Minor Lane/Major Mvmt	NWL	NWT	EBLn1	SET	SER
Capacity (veh/h)	1392	-	895	-	-
HCM Lane V/C Ratio	0.062	-	0.214	-	-
HCM Control Delay (s)	7.8	0	10.1	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.8	-	-

Intersection 23
N/S Collector
& Drive 11

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	39	0	35	2	0	0	13	22	3	0	9	31
Future Vol, veh/h	39	0	35	2	0	0	13	22	3	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	-	-	-	-	-	-	-	-	-	-	-	-
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	2	0	0	14	24	3	0	10	34

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	81	82	27	100	98	26	44	0	0	27	0	0
Stage 1	27	27	-	54	54	-	-	-	-	-	-	-
Stage 2	54	55	-	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	907	808	1048	881	792	1050	1564	-	-	1587	-	-
Stage 1	990	873	-	958	850	-	-	-	-	-	-	-
Stage 2	958	849	-	968	858	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	901	801	1048	843	785	1050	1564	-	-	1587	-	-
Mov Cap-2 Maneuver	901	801	-	843	785	-	-	-	-	-	-	-
Stage 1	981	873	-	949	842	-	-	-	-	-	-	-
Stage 2	949	841	-	933	858	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.1	9.3	2.5	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1564	-	-	965	843	1587	-	-
HCM Lane V/C Ratio	0.009	-	-	0.083	0.003	-	-	-
HCM Control Delay (s)	7.3	0	-	9.1	9.3	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3	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	32	0	29	1	0	0	11	49	7	0	8	26
Future Vol, veh/h	32	0	29	1	0	0	11	49	7	0	8	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	-	-	-	-	-	-	-	-	-	-	-	-
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	1	0	0	12	53	8	0	9	28

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	104	108	23	120	118	57	37	0	0	61	0	0
Stage 1	23	23	-	81	81	-	-	-	-	-	-	-
Stage 2	81	85	-	39	37	-	-	-	-	-	-	-
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	876	782	1054	855	772	1009	1574	-	-	1542	-	-
Stage 1	995	876	-	927	828	-	-	-	-	-	-	-
Stage 2	927	824	-	976	864	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	871	776	1054	824	766	1009	1574	-	-	1542	-	-
Mov Cap-2 Maneuver	871	776	-	824	766	-	-	-	-	-	-	-
Stage 1	987	876	-	920	821	-	-	-	-	-	-	-
Stage 2	920	817	-	947	864	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.1	9.4	1.2	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1574	-	-	949	824	1542	-	-
HCM Lane V/C Ratio	0.008	-	-	0.07	0.001	-	-	-
HCM Control Delay (s)	7.3	0	-	9.1	9.4	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0	0	-	-

Intersection	
Int Delay, s/veh	3.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	29	0	44	2	0	0	23	77	6	0	0	53
Future Vol, veh/h	29	0	44	2	0	0	23	77	6	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	-	-	-	-	-	-	-	-	-	-	-	-
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	2	0	0	25	84	7	0	0	58

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	167	170	29	191	196	88	58	0	0	91	0	0
Stage 1	29	29	-	138	138	-	-	-	-	-	-	-
Stage 2	138	141	-	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	797	723	1046	769	699	970	1546	-	-	1504	-	-
Stage 1	988	871	-	865	782	-	-	-	-	-	-	-
Stage 2	865	780	-	960	847	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	787	711	1046	724	687	970	1546	-	-	1504	-	-
Mov Cap-2 Maneuver	787	711	-	724	687	-	-	-	-	-	-	-
Stage 1	971	871	-	850	769	-	-	-	-	-	-	-
Stage 2	850	767	-	916	847	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.3	10	1.6	0
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1546	-	-	925	724	1504	-	-
HCM Lane V/C Ratio	0.016	-	-	0.086	0.003	-	-	-
HCM Control Delay (s)	7.4	0	-	9.3	10	0	-	-
HCM Lane LOS	A	A	-	A	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0	0	-	-

Intersection 24
16th Street & Park Driveway

Intersection	
Int Delay, s/veh	1.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	17	16	0	20	14	0
Future Vol, veh/h	17	16	0	20	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	18	17	0	22	15	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	35	0	49	27
Stage 1	-	-	-	-	27	-
Stage 2	-	-	-	-	22	-
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	-	-	1576	-	960	1048
Stage 1	-	-	-	-	996	-
Stage 2	-	-	-	-	1001	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1576	-	960	1048
Mov Cap-2 Maneuver	-	-	-	-	960	-
Stage 1	-	-	-	-	996	-
Stage 2	-	-	-	-	1001	-

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)	960	-	-	1576	-
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	2.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	12	9	0	21	17	0
Future Vol, veh/h	12	9	0	21	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	13	10	0	23	18	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	23	0	41	18
Stage 1	-	-	-	-	18	-
Stage 2	-	-	-	-	23	-
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	-	-	1592	-	970	1061
Stage 1	-	-	-	-	1005	-
Stage 2	-	-	-	-	1000	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1592	-	970	1061
Mov Cap-2 Maneuver	-	-	-	-	970	-
Stage 1	-	-	-	-	1005	-
Stage 2	-	-	-	-	1000	-

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	-	-	1592	-
HCM Lane V/C Ratio	0.019	-	-	-	-
HCM Control Delay (s)	8.8	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	2.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	6	4	0	14	9	0
Future Vol, veh/h	6	4	0	14	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	7	4	0	15	10	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	11	0	24	9
Stage 1	-	-	-	-	9	-
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	-	-	1608	-	992	1073
Stage 1	-	-	-	-	1014	-
Stage 2	-	-	-	-	1008	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1608	-	992	1073
Mov Cap-2 Maneuver	-	-	-	-	992	-
Stage 1	-	-	-	-	1014	-
Stage 2	-	-	-	-	1008	-

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)	992	-	-	1608	-
HCM Lane V/C Ratio	0.01	-	-	-	-
HCM Control Delay (s)	8.7	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection 25
Drive 12

Intersection	
Int Delay, s/veh	4.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	51	0	0	0	0	76	0	94	0	17	27	5
Future Vol, veh/h	51	0	0	0	0	76	0	94	0	17	27	5
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	55	0	0	0	0	83	0	102	0	18	29	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	119	170	32	170	172	51	34	0	0	102	0	0
Stage 1	68	68	-	102	102	-	-	-	-	-	-	-
Stage 2	51	102	-	68	70	-	-	-	-	-	-	-
Critical Hdwy	7.33	6.53	6.23	7.33	6.53	6.93	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.53	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.53	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.519	4.019	3.319	3.519	4.019	3.319	2.219	-	-	2.219	-	-
Pot Cap-1 Maneuver	850	722	1041	785	721	1007	1577	-	-	1489	-	-
Stage 1	942	838	-	893	810	-	-	-	-	-	-	-
Stage 2	956	810	-	942	836	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	774	713	1041	778	712	1007	1577	-	-	1489	-	-
Mov Cap-2 Maneuver	774	713	-	778	712	-	-	-	-	-	-	-
Stage 1	942	828	-	893	810	-	-	-	-	-	-	-
Stage 2	878	810	-	931	826	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10	8.9	0	2.6
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1577	-	-	774	1007	1489	-	-
HCM Lane V/C Ratio	-	-	-	0.072	0.082	0.012	-	-
HCM Control Delay (s)	0	-	-	10	8.9	7.4	0	-
HCM Lane LOS	A	-	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.3	0	-	-

Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	41	0	0	0	0	45	0	105	0	56	45	4
Future Vol, veh/h	41	0	0	0	0	45	0	105	0	56	45	4
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	45	0	0	0	0	49	0	114	0	61	49	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	230	287	51	287	289	57	53	0	0	114	0	0
Stage 1	173	173	-	114	114	-	-	-	-	-	-	-
Stage 2	57	114	-	173	175	-	-	-	-	-	-	-
Critical Hdwy	7.33	6.53	6.23	7.33	6.53	6.93	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.53	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.53	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.519	4.019	3.319	3.519	4.019	3.319	2.219	-	-	2.219	-	-
Pot Cap-1 Maneuver	715	622	1017	654	620	998	1552	-	-	1474	-	-
Stage 1	828	755	-	879	801	-	-	-	-	-	-	-
Stage 2	948	801	-	828	754	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	658	595	1017	632	593	998	1552	-	-	1474	-	-
Mov Cap-2 Maneuver	658	595	-	632	593	-	-	-	-	-	-	-
Stage 1	828	723	-	879	801	-	-	-	-	-	-	-
Stage 2	902	801	-	792	722	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.9	8.8	0	4
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1552	-	-	658	998	1474	-	-
HCM Lane V/C Ratio	-	-	-	0.068	0.049	0.041	-	-
HCM Control Delay (s)	0	-	-	10.9	8.8	7.5	0	-
HCM Lane LOS	A	-	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.2	0.1	-	-

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	81	0	0	0	0	51	0	211	0	36	66	9
Future Vol, veh/h	81	0	0	0	0	51	0	211	0	36	66	9
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	88	0	0	0	0	55	0	229	0	39	72	10

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	270	384	77	384	389	115	82	0	0	229	0	0
Stage 1	155	155	-	229	229	-	-	-	-	-	-	-
Stage 2	115	229	-	155	160	-	-	-	-	-	-	-
Critical Hdwy	7.33	6.53	6.23	7.33	6.53	6.93	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.53	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.53	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.519	4.019	3.319	3.519	4.019	3.319	2.219	-	-	2.219	-	-
Pot Cap-1 Maneuver	672	549	983	561	545	916	1514	-	-	1338	-	-
Stage 1	847	769	-	754	714	-	-	-	-	-	-	-
Stage 2	878	714	-	847	765	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	616	532	983	548	528	916	1514	-	-	1338	-	-
Mov Cap-2 Maneuver	616	532	-	548	528	-	-	-	-	-	-	-
Stage 1	847	745	-	754	714	-	-	-	-	-	-	-
Stage 2	825	714	-	821	741	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.8	9.2	0	2.5
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1514	-	-	616	916	1338	-	-
HCM Lane V/C Ratio	-	-	-	0.143	0.061	0.029	-	-
HCM Control Delay (s)	0	-	-	11.8	9.2	7.8	0	-
HCM Lane LOS	A	-	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.5	0.2	0.1	-	-

Intersection 26
Drive 13

Intersection	
Int Delay, s/veh	6.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	57	0	35	0	0	27	34	20	7	8	4	15
Future Vol, veh/h	57	0	35	0	0	27	34	20	7	8	4	15
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	62	0	38	0	0	29	37	22	8	9	4	16

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	145	134	12	149	138	26	20	0	0	30	0	0
Stage 1	30	30	-	100	100	-	-	-	-	-	-	-
Stage 2	115	104	-	49	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	824	757	1069	819	753	1050	1596	-	-	1583	-	-
Stage 1	987	870	-	906	812	-	-	-	-	-	-	-
Stage 2	890	809	-	964	863	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	783	734	1069	771	730	1050	1596	-	-	1583	-	-
Mov Cap-2 Maneuver	783	734	-	771	730	-	-	-	-	-	-	-
Stage 1	963	865	-	884	793	-	-	-	-	-	-	-
Stage 2	844	790	-	924	858	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.7	8.5	4.1	2.2
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1596	-	-	872	1050	1583	-	-
HCM Lane V/C Ratio	0.023	-	-	0.115	0.028	0.005	-	-
HCM Control Delay (s)	7.3	0	-	9.7	8.5	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4	0.1	0	-	-

Intersection	
Int Delay, s/veh	6.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	79	0	30	0	0	17	40	17	24	24	4	17
Future Vol, veh/h	79	0	30	0	0	17	40	17	24	24	4	17
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	86	0	33	0	0	18	43	18	26	26	4	18

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	191	195	13	199	191	31	22	0	0	44	0	0
Stage 1	65	65	-	117	117	-	-	-	-	-	-	-
Stage 2	126	130	-	82	74	-	-	-	-	-	-	-
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	769	700	1067	760	704	1043	1593	-	-	1564	-	-
Stage 1	946	841	-	888	799	-	-	-	-	-	-	-
Stage 2	878	789	-	926	833	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	730	669	1067	711	672	1043	1593	-	-	1564	-	-
Mov Cap-2 Maneuver	730	669	-	711	672	-	-	-	-	-	-	-
Stage 1	920	827	-	863	777	-	-	-	-	-	-	-
Stage 2	838	767	-	882	819	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.3	8.5	3.6	3.9
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1593	-	-	799	1043	1564	-	-
HCM Lane V/C Ratio	0.027	-	-	0.148	0.018	0.017	-	-
HCM Control Delay (s)	7.3	0	-	10.3	8.5	7.3	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.5	0.1	0.1	-	-

Intersection	
Int Delay, s/veh	8.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	175	0	46	0	0	23	61	29	16	19	8	39
Future Vol, veh/h	175	0	46	0	0	23	61	29	16	19	8	39
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	190	0	50	0	0	25	66	32	17	21	9	42

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	257	253	30	270	266	41	51	0	0	49	0	0
Stage 1	72	72	-	173	173	-	-	-	-	-	-	-
Stage 2	185	181	-	97	93	-	-	-	-	-	-	-
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	696	650	1044	683	640	1030	1555	-	-	1558	-	-
Stage 1	938	835	-	829	756	-	-	-	-	-	-	-
Stage 2	817	750	-	910	818	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	649	613	1044	622	604	1030	1555	-	-	1558	-	-
Mov Cap-2 Maneuver	649	613	-	622	604	-	-	-	-	-	-	-
Stage 1	897	823	-	793	723	-	-	-	-	-	-	-
Stage 2	762	717	-	854	807	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.7	8.6	4.3	2.1
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1555	-	-	704	1030	1558	-	-
HCM Lane V/C Ratio	0.043	-	-	0.341	0.024	0.013	-	-
HCM Control Delay (s)	7.4	0	-	12.7	8.6	7.3	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	1.5	0.1	0	-	-

APPENDIX E
KITTELSON AND ASSOCIATES TRAFFIC MEMO

KITTELSON & ASSOCIATES
143 N Woodland Blvd, Second Floor
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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
50 SE 30th Street,
Lee's Summit, Missouri 64082

Prepared by:
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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

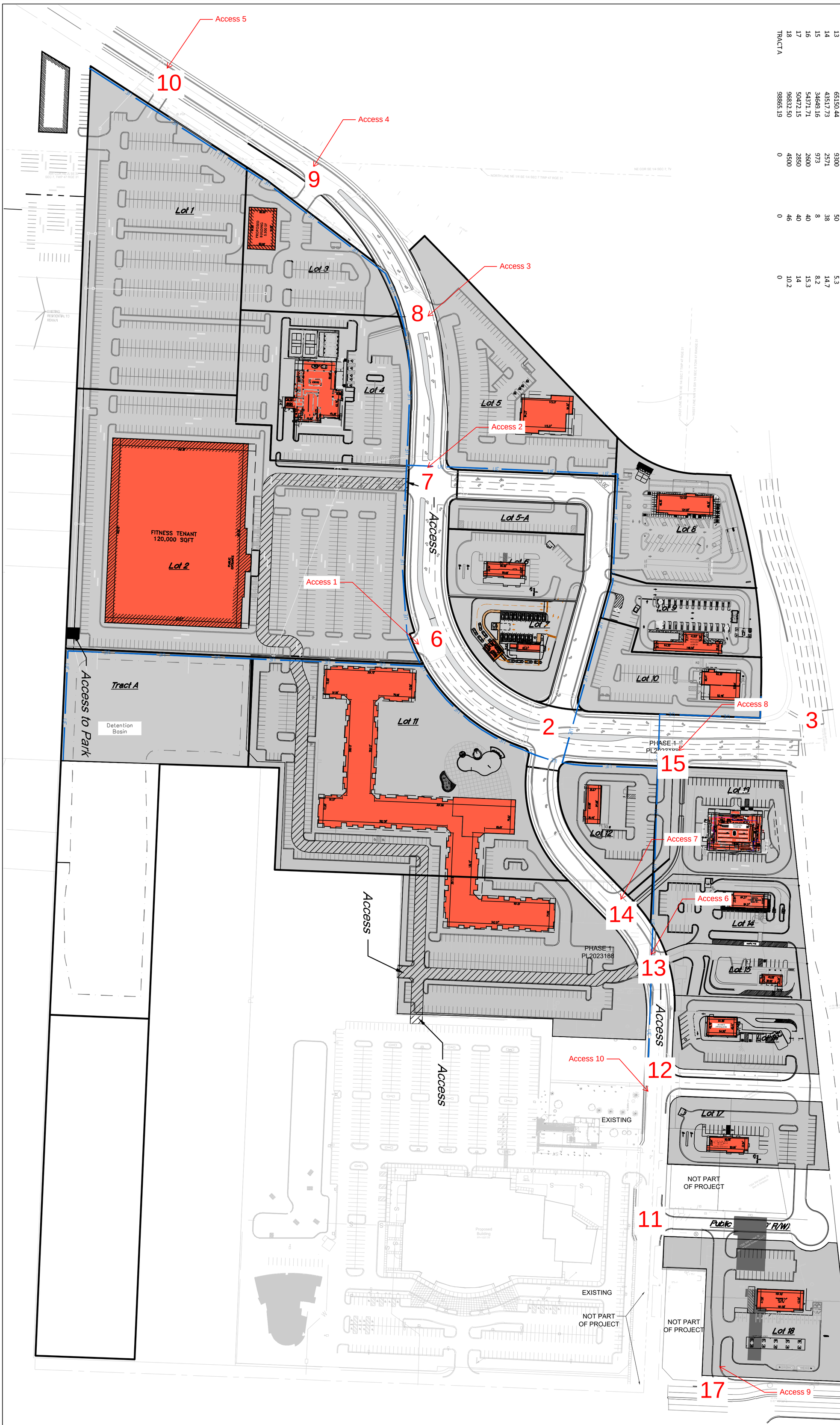
- Construct a raised median on Persels Road to restrict Market Street access to right-in/right-out.

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



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

C: 100

REVISIONS
1 REV. 6/25/2024
2 REV. 7/9/2024
REV. 8/7/2024

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