Kimley»Horn

MEMORANDUM

11/15/23

STATE OF TEXAS
BRANDON R. FORSYTHE
135242
LICENSED
PROFESSIONAL ENGINEER

Brand Forsythe

To: Chad Bartee, P.E.
City Engineer – City of Keller

From: Brandon Forsythe, P.E.
Kimley-Horn and Associates, Inc.
TBPE Registered Firm Number F-928

Date: November 15, 2023

Subject: Traffic Analysis – Mount Gilead Road Reconstruction
Keller, Texas

INTRODUCTION

The City of Keller has retained Kimley-Horn and Associates, Inc. to prepare design plans for the reconstruction of Mount Gilead Road between US 377 and Bourland Road/Marshall Ridge Parkway.

This technical memorandum evaluates intersection control and lane assignments at the US 377, Oak Drive, and Bourland Road/Marshall Ridge Parkway intersections along Mount Gilead Road as well as thoroughfare capacity along the corridor considering Existing (2023) and Horizon (2033) forecasted volumes. A final intersection control recommendation will be made at the study intersections along with a proposed cross section along Mount Gilead Road based on the results of the analysis. In addition to the intersection and thoroughfare capacity analyses, pedestrian accommodations were also evaluated along the corridor. Please reference the roll plot submittal for the current conceptual layout of the corridor.

EXISTING NETWORK

Mount Gilead Road is currently a two-lane undivided roadway between US 377 and Bourland Road/Marshall Ridge Parkway. The posted speed is 40 mph. West of US 377, Mount Gilead Road turns into Timberland Boulevard which is a four-lane divided roadway. East of Bourland Road/Marshall Ridge Parkway, Mount Gilead Road continues to be a two-lane undivided roadway.

The following provides existing intersection control at the study intersections:

- **Mount Gilead Road & US 377** – Traffic Signal
- **Mount Gilead Road & Oak Drive** – Two-Way Stop Control
- **Mount Gilead Road & Bourland Road/Marshall Ridge Parkway** – All-Way Stop Control

Exhibit 1 (attached) provides the existing lane geometries at the study intersections.

TRAFFIC VOLUMES

EXISTING TRAFFIC VOLUMES

Existing turning movement counts were collected by GRAM Traffic NTX Inc. at the study intersections. The data collection was completed in January 2023. **Exhibit 2** (attached) summarizes the peak hour traffic volumes at the study intersections during the AM and PM peak hours. Raw traffic counts are attached in the **Appendix**.

HORIZON TRAFFIC VOLUMES

Based on the City of Keller's *Citywide Sub-Area Traffic Model and Intersection Analysis Report* (September 2022), the areawide growth rate was determined to be 2.0% annually. Based on recent historic data in the vicinity of Mount Gilead Road, the average growth rate was determined to be 3.5% annually. To provide a conservative analysis, a 3.5% annual growth rate was applied to the existing turning movement volumes for 10 years to the Horizon Year (2033). The data utilized to determine the study area background growth rate is attached in the **Appendix**.

It is worth noting that the eastbound left-turn and southbound right-turn volumes at the intersection of US 377 & Mount Gilead Road were unusually high. It is suspected that this is due to the construction along SH 170. Therefore, no growth was applied to these two movements.

Exhibit 3 (attached) presents the Horizon (2033) forecasted traffic volumes, derived by growing the Existing (2023) volumes at 3.5% per year for ten (10) years.

THOROUGHFARE CAPACITY ANALYSIS

Recommendation Summary: It is recommended that Mount Gilead Road be widened to a four-lane divided roadway between US 377 and Oak Drive and to a three-lane undivided roadway between Oak Drive and Bourland Road/Marshall Ridge Parkway. This recommendation is based on the projected peak hour volume-to-capacity ratio for the Horizon (2033) Year, right-of-way (ROW) constraints, and driveway density along the corridor.

Mount Gilead Road is currently a two-lane undivided roadway between US 377 and Bourland Road/Marshall Ridge Parkway. Based on the City's Master Thoroughfare Plan (Updated September 2022), Mount Gilead Road is classified as a four-lane divided arterial (A4D) between US 377 and Bourland Road/Marshall Ridge Parkway and classified as a three-lane collector (C3U) east of Bourland Road/Marshall Ridge Parkway.

A thoroughfare capacity analysis was performed for Mount Gilead Road between US 377 and Bourland Road/Marshall Ridge Parkway to determine the appropriate cross section based on the volume-to-capacity ratio (v/c) for Existing (2023) and forecasted Horizon (2033) traffic volumes using lane capacities from the Citywide Sub-Area study.

The Horizon (2033) analysis was performed for a three-lane undivided section and a four-lane divided between US 377 and Oak Drive. For the section from Oak Drive to Bourland Road/Marshall Ridge Parkway, a three-lane undivided and a five-lane undivided section were evaluated.

Typically, traffic conditions for the thoroughfare capacity analysis are broken down into three categories: acceptable (v/c is 0.65 or less), tolerable (v/c is between 0.65 and 1.00) and failing (v/c is greater than 1.00).

Table 1 provides a summary of the throughfare capacity analysis for Existing (2023) and Horizon (2033) conditions.

Table 1. Thoroughfare Capacity Analysis

Existing Conditions (2023)								
Location	Cross Section	Direction of Travel (Lanes)	AM Peak Hour			PM Peak Hour		
			Volume	V/C	Traffic Condition	Volume	V/C	Traffic Condition
Between US 377 and Oak Drive	Two-Lane Undivided (2U) C = 395 vphpl	EB (1)	416	1.05	Failing	165	0.42	Acceptable
		WB (1)	181	0.46	Acceptable	370	0.94	Tolerable
		Total (2)	*597*	*0.76*	*Tolerable*	*535*	*0.68*	*Tolerable*
Between Oak Drive and Bourland Rd / Marshall Ridge Pkwy		EB (1)	356	0.90	Tolerable	170	0.43	Acceptable
		WB (1)	174	0.44	Acceptable	377	0.95	Tolerable
		Total (2)	*530*	*0.67*	*Tolerable*	*547*	*0.69*	*Tolerable*

Horizon Conditions (2033)								
Location	Cross Section	Direction of Travel (Lanes)	AM Peak Hour			PM Peak Hour		
			Volume	V/C	Traffic Condition	Volume	V/C	Traffic Condition
Between US 377 and Oak Drive	Three-Lane Undivided (3U) C = 525 vphpl	EB (1)	587	1.12	Failing	232	0.44	Acceptable
		WB (1)	255	0.49	Acceptable	523	1.00	Tolerable
		Total (2)	*842*	*0.80*	*Tolerable*	*755*	*0.72*	*Tolerable*
	Four-Lane Divided (4D) C = 900 vphpl	EB (2)	587	0.33	Acceptable	232	0.13	Acceptable
		WB (2)	255	0.14	Acceptable	523	0.29	Acceptable
		Total (4)	*842*	*0.23*	*Acceptable*	*755*	*0.21*	*Acceptable*
Between Oak Drive and Bourland Rd / Marshall Ridge Pkwy	Three-Lane Undivided (3U) C = 525 vphpl	EB (1)	502	0.96	Tolerable	240	0.46	Acceptable
		WB (1)	246	0.47	Acceptable	531	1.01	Failing
		Total (2)	*748*	*0.71*	*Tolerable*	*771*	*0.73*	*Tolerable*
	Five-Lane Undivided (5U) C = 825 vphpl	EB (2)	502	0.30	Acceptable	240	0.15	Acceptable
		WB (2)	246	0.15	Acceptable	531	0.32	Acceptable
		Total (4)	*748*	*0.23*	*Acceptable*	*771*	*0.23*	*Acceptable*

US 377 TO OAK DRIVE THOROUGHFARE CAPACITY RESULTS

Based on the existing two-lane undivided section and existing traffic volumes west of Oak Drive, the eastbound direction is currently operating with failing conditions during the AM peak hour while the westbound direction is nearing capacity during the PM peak hour.

Considering Horizon (2033) traffic volumes and a three-lane undivided section, the eastbound direction is anticipated to continue operating over capacity in the AM peak hour, while the westbound direction is anticipated to operate at capacity. Assuming the four-lane divided section, traffic conditions are projected to fall within the acceptable-tolerable range.

Based on the results of the thoroughfare capacity analysis, the four-lane divided section is recommended along Mount Gilead Road from US 377 to Oak Street to facilitate traffic adequately.

OAK DRIVE TO BOURLAND ROAD/MARSHALL RIDGE PARKWAY THOROUGHFARE CAPACITY RESULTS

Based on the existing two-lane undivided section and existing traffic volumes east of Oak Drive, traffic conditions currently fall within the acceptable-tolerable range with the eastbound and westbound directions nearing capacity during the AM and PM peak hours, respectively.

Considering Horizon (2033) traffic volumes and a three-lane undivided section, the westbound direction is anticipated to operate over capacity in the PM peak hour, while the eastbound direction is anticipated to near capacity. Assuming the five-lane undivided section, traffic conditions are expected to fall within the acceptable range.

Due to right-of-way constraints along the east end of the Mount Gilead Road corridor and the driveway densities present, the three-lane undivided section is recommended along Mount Gilead Road from Oak Street to Bourland Road/Marshall Ridge Parkway.

INTERSECTION CAPACITY ANALYSIS

The three study area intersections were analyzed based on average total delay analysis for signalized, unsignalized, and roundabout control. For signalized and unsignalized control, *Synchro 11™* software is used which calculates delay and resulting LOS based on HCM procedures. For roundabout control, SIDRA INTERSECTION 9 software is used which also uses HCM procedures to calculate delay. For this analysis, unsignalized delay thresholds were assumed for roundabout level of service.

Capacity analysis results are listed in terms of Level of Service (LOS). LOS is a qualitative term describing operating conditions a driver will experience while traveling on a specific street or highway during a specific time interval. It ranges from A (very little delay) to F (longer delays and congestion). The City's Design Level of Service is defined as LOS C, while TxDOT considers LOS D as the target LOS for design and evaluation purposes. **Table 2** shows LOS breakout based on HCM procedures.

Table 2. Level of Service Thresholds

Level of Service	Signalized Intersection Average Total Delay (sec/veh)	Unsignalized Intersection Average Total Delay (sec/veh)
A	≤10	≤10
B	>10 and ≤20	>10 and ≤15
C	>20 and ≤35	>15 and ≤25
D	>35 and ≤55	>25 and ≤35
E	>55 and ≤80	>35 and ≤50
F	>80	>50

Weekday AM and PM peak hour LOS analyses were completed for Existing (2023), Horizon (2033) No Build, and Horizon (2033) Build conditions. The *Synchro* and *SIDRA* output sheets for analyses completed are provided in the **Appendix**.

EXISTING (2023) AND HORIZON (2033) NO BUILD INTERSECTION CAPACITY ANALYSIS

Table 3 provides a summary of intersection delay and LOS for Existing (2023) and Horizon (2033) No Build conditions, assuming existing intersection control and lane geometries.

Table 3. Intersection Capacity Analysis (Existing and Horizon No Build)

Intersection	Approach	Existing (2023)				Horizon No Build (2033)			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		DELAY (Sec/Veh)	LOS	DELAY (Sec/Veh)	LOS	DELAY (Sec/Veh)	LOS	DELAY (Sec/Veh)	LOS
Mount Gilead Road & Bourland Road	EB	29.4	D	14.5	B	100+	F	24.3	C
	WB	17.0	C	23.9	C	32.5	D	100+	F
	NB	26.4	D	23.2	C	100+	F	100+	F
	SB	27.8	D	16.9	C	100+	F	36.0	E
	Overall	25.5	D	21.2	C	100+	F	85.9	F
Mount Gilead Road & Oak Drive	NB	13.3	B	12.4	B	18.3	C	16.1	C
	SB	14.0	B	13.7	B	16.0	C	16.8	C
Mount Gilead Road & US 377[1]	EB	21.0	C	32.2	C	30.0	C	39.9	D
	WB	27.9	C	42.2	D	33.0	C	67.6	E
	NB	17.1	B	24.7	C	25.9	C	41.1	D
	SB	15.5	B	28.0	C	23.1	C	49.7	D
	Overall	19.0	B	29.3	C	27.2	C	48.3	D

Note 1: Intersection assumes LOS D as acceptable.

Based on the Existing (2023) analysis, all study intersection approaches are operating at LOS D or better. In the Horizon (2033) No Build analysis, only Mount Gilead Road & Oak Drive project acceptable operations. At the Mount Gilead Road & Bourland Road/Marshall Ridge Parkway intersection, several (or all) approaches are projected to operate at failing LOS, which results in the overall intersection operating at LOS F during the peak hours. At the Mount Gilead Road & US 377 intersection, the westbound approach is projected to operate with LOS E during the PM peak hour.

HORIZON (2033) BUILD INTERSECTION CAPACITY ANALYSIS

The following provides a summary of intersection controls evaluated for the Horizon (2033) Build intersection capacity analysis:

- **Mount Gilead Road & US 377** – Signalized control only with the westbound approach built out to four lanes (dedicated left-turn lane, two through lanes, dedicated right-turn lane).
- **Mount Gilead Road & Oak Drive** – Unsignalized (two-way stop control), Signalized, and Roundabout.
    - o Unsignalized and Signalized analyses assumed with:
        - Mount Gilead Road
            - Eastbound: dedicated left, dedicated through, and shared through/right
            - Westbound: dedicated left, two dedicated throughs, and dedicated right
        - Oak Drive approaches assumed as one shared lane
    - o Roundabout assumes two-lane roundabout
- **Mount Gilead Road & Bourland Road/Marshall Ridge Parkway** – Signalized and Roundabout.
    - o Signal assumes two-lane approaches with dedicated left and shared through/right
    - o Roundabout assumes one-lane roundabout due to right-of-way constraints

Table 4 provides a summary of intersection delay and LOS for Horizon (2033) Build conditions. For this analysis, Mount Gilead Road was assumed to be a four-lane divided/three-lane undivided roadway.

Table 4. Intersection Capacity Analysis (Horizon Build)

Intersection	Approach	Horizon Build (2033)											
		Stop-Control				Signalized				Roundabout			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		DELAY (Sec/Veh)	LOS	DELAY (Sec/Veh)	LOS	DELAY (Sec/Veh)	LOS	DELAY (Sec/Veh)	LOS	DELAY (Sec/Veh)	LOS	DELAY (Sec/Veh)	LOS
Mount Gilead Road & Bourland Road	EB	NOT ANALYZED				48.8	D	23.4	C	34.1	D	8.3	A
	WB					25.2	C	33.8	C	9.5	A	28.6	D
	NB					37.9	D	27.0	C	15.8	C	10.7	B
	SB					30.6	C	21.1	C	14.5	B	15.2	C
	Overall					36.1	D	28.0	C	19.0	C	17.7	C
Mount Gilead Road & Oak Drive	EB	Free Flow				7.2	A	5.2	A	4.4	A	3.4	A
	WB					2.3	A	2.5	A	3.4	A	4.3	A
	NB	16.8	C	13.9	B	14.8	B	14.7	B	4.6	A	3.3	A
	SB	16.0	C	16.4	C	14.7	B	14.7	B	3.3	A	4.4	A
	Overall	N/A				6.1	A	3.8	A	4.1	A	4.0	A
Mount Gilead Road & US 377[1]	EB	NOT ANALYZED				30.0	C	38.2	D	NOT ANALYZED			
	WB					31.7	C	40.9	D				
	NB					25.9	C	26.4	C				
	SB					23.1	C	29.4	C				
	Overall					27.1	C	30.9	C				

Note 1: Intersection assumes LOS D as acceptable.

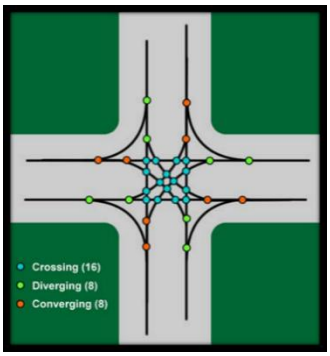
SAFETY CONSIDERATIONS

INTERSECTION CONFLICT POINT CONSIDERATIONS

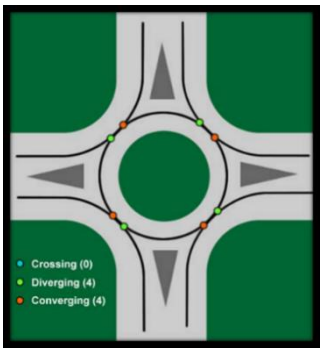
In addition to considering delay and LOS, the safety of both vehicles and pedestrians should also be considered when determining the most appropriate control type. **Figure 1** shows the number of vehicle collision points at a standard intersection compared to a roundabout.

Figure 1: Vehicle Conflict Points Comparison

Standard Intersection



Roundabout

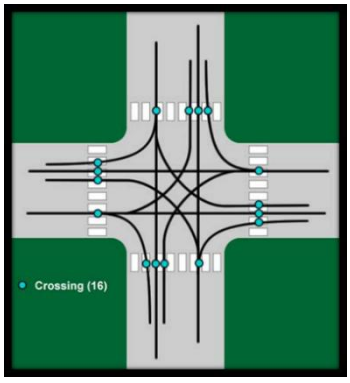


As shown, a standard intersection has a total of 32 conflict points for vehicular traffic, while a roundabout has a total of 8 conflict points and removes all crossing conflicts. The crossing conflicts are the most dangerous conflicts and can lead to the most injuries. Studies have shown that a roundabout can reduce all crashes by 39%, injury crashes by 76%, and fatal crashes by 90%.

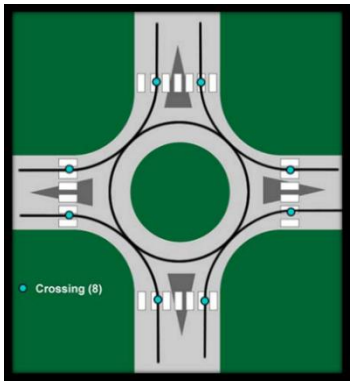
Figure 2 shows the number of potential vehicle collision points with pedestrians at a standard intersection and at a roundabout.

Figure 2: Vehicle and Pedestrian Conflict Points Comparison

Standard Intersection



Roundabout



As shown, a standard intersection has a total of 16 conflict points for pedestrian traffic, while a roundabout only has a total of 8 conflict points. An added benefit to pedestrians at a roundabout is that the crossing distances are usually shorter and there are typically refuge islands provided on each approach, allowing for pedestrians to stop half-way while crossing one leg of the intersection. Studies have shown that a roundabout can reduce vehicular-pedestrian crashes by as much as 40%.

INTERSECTION CONTROL RECOMMENDATIONS

The following recommendations are offered for the study intersections along Mount Gilead Road:

MOUNT GILEAD ROAD & US 377

Recommendation Summary: It is recommended that the intersection remain as a traffic signal with an expanded westbound approach including a dedicated left-turn lane, two through lanes, and a dedicated right-turn lane.

The intersection currently operates at acceptable LOS. These operations are anticipated to continue based on the Horizon (2033) No Build analysis during the AM peak hour while during the PM peak hour, the westbound approach is projected to operate at LOS E. In the Horizon (2033) Build conditions, this failure is mitigated through modifying the westbound approach as a result of the proposed Mount Gilead Road widening.

MOUNT GILEAD ROAD & OAK DRIVE

Recommendation Summary: It is recommended that the intersection remain as a two-way stop-controlled intersection with the addition of eastbound and westbound left-turn lanes within the proposed Mount Gilead Road median and a dedicated westbound right-turn lane.

The intersection approaches are anticipated to operate at LOS C or better during the AM and PM peak hours as a two-way stop-controlled intersection through the Horizon (2033) Build conditions. As a traffic signal or roundabout, the intersection is anticipated to operate at LOS A for Horizon (2033) Build conditions. Based on the relatively low volumes along the minor street (Oak Drive) approaches, the intersection is not projected to meet warranting volumes for consideration of a signal (see **Appendix** for signal warrant analyses). Additionally, both signal and roundabout control would add unnecessary delay to the Mount Gilead Road approaches.

MOUNT GILEAD ROAD & BOURLAND ROAD/MARSHALL RIDGE PARKWAY

Recommendation Summary: It is recommended that a single lane roundabout be installed at Mount Gilead Road & Bourland Road/Marshall Ridge Parkway. The recommendation is based on the roundabout providing the best overall LOS during the peak hours, right-of-way constraints, and the safety considerations previously discussed.

ALL-WAY STOP CONTROL:

The intersection currently operates at acceptable LOS during the PM peak hour, while unacceptable LOS is projected during the AM peak hour. Considering the Horizon (2033) No Build analysis, the intersection is anticipated to operate at LOS F as an all-way stop-controlled intersection.

Due to the observed failures with the Horizon (2033) No Build analysis and the intersection meeting warrants for consideration of signalization, the Horizon (2033) Build analysis did not consider the existing AWSC in the evaluation.

SIGNALIZATION

Based on the volumes, the intersection is projected to meet warranting volumes for consideration of a signal (see **Appendix** for signal warrant analyses).

Based on the Horizon Build (2033) scenario, during the AM peak hour the eastbound and northbound approaches are anticipated to operate with failing LOS D along with the overall intersection, and during the PM peak hour all approaches and the overall intersection are projected to operate at LOS C.

Refer to **Exhibit 4** for the signal concept at the intersection.

ROUNDABOUT

Based on the Horizon Build (2033) scenario, the intersection is anticipated to operate at LOS C during peak hours under roundabout control, with the eastbound approach and westbound approach operating at LOS D during the AM and PM peak hours, respectively. This form of control offers the best overall LOS at the intersection. See below for additional considerations with the roundabout control:

RIGHT-OF-WAY CONSIDERATIONS

Additional right-of-way will be required on the northeast and southwest quadrants of the intersection beyond what is required for a signalized intersection in order to provide pedestrian accommodations.

PEDESTRIAN CONSIDERATIONS

The splitter islands at the roundabout provide a pedestrian refuge on all four legs of the intersection.

SAFETY CONSIDERATIONS

Based on the **Safety Considerations** section, a roundabout reduces the number of conflict points which creates a safer intersection for motorists and pedestrians.

Refer to **Exhibit 5** for the proposed single-lane roundabout layout.

PEDESTRIAN ACCOMMODATIONS

As part of the Mount Gilead Road improvements, pedestrian accommodations will be provided. The proposed roadway cross-sections include a four-lane divided and three-lane undivided sections. Per the City's Master Thoroughfare Plan, both cross-sections require pedestrian improvements with options for a trail and sidewalk.

This section summarizes the proposed pedestrian improvements for the roadway corridor, pedestrian accommodations at the study intersections, and recommendations for a trail crossing near Oak Drive.

SIDEWALK AND TRAIL CORRIDOR IMPROVEMENTS

EXISTING SIDEWALK AND TRAIL LOCATIONS

Along Mount Gilead Road, between US 377 and Bourland Road/Marshall Ridge Parkway, there are currently no pedestrian accommodations, apart from the recently installed 10-foot trail along the frontage of Milestone Church. East of Bourland Road/Marshall Ridge Parkway, there is a 10-foot trail on the north side of Mount Gilead Road and a 6-foot sidewalk on the south side of Mount Gilead Road. There is also an existing trail that runs north-south from Ridge Point Parkway that terminates on the north side of Mount Gilead Road, east of Oak Drive and Milestone Church.

PROPOSED SIDEWALK AND TRAIL CORRIDOR IMPROVEMENTS

Per the City's Parks & Trails Master Trail Plan, a greenwalk trail is planned along Mount Gilead Road. Based on the location of the trail and sidewalk along the section east of Bourland Road/Marshall Ridge Parkway, it is recommended that a 10-foot trail be located along the north side of the road, and a 6-foot sidewalk be located along the south side of the road.

INTERSECTION PEDESTRIAN IMPROVEMENTS

MOUNT GILEAD ROAD & US 377

There are currently no pedestrian facilities at the Mount Gilead Road and US 377 intersection. A crosswalk will be provided to cross north/south on the east side of the intersection. No additional improvements will be provided. It is anticipated that any future sidewalk or trail connections will be included as part of future adjacent developments.

MOUNT GILEAD ROAD & OAK DRIVE

Apart from the recently installed trail, there are no other pedestrian facilities at the Mount Gilead Road and Oak Drive intersection. East-west crosswalks will be provided along the north and south sides of the intersection for the proposed trail and sidewalk. As part of the project, a north-south trail crossing will be provided across the east leg of the intersection.

Based on current and anticipated future pedestrian volumes, a north-south pedestrian crossing is not recommended on both east and west legs of the Oak Drive intersection. See the **Trail Crossing** section for additional details.

MOUNT GILEAD ROAD & BOURLAND ROAD/MARSHALL RIDGE PARKWAY

There are currently marked crosswalks on all four legs of the intersection. With either a traffic signal or roundabout at this intersection, marked pedestrian crossing will be provided on all four legs of the intersection.

Refer to **Intersection Capacity Analysis** section for additional information about the intersection recommendations.

TRAIL CROSSING

Recommendation Summary: It is recommended to place the trail crossing on the east leg of the Mount Gilead Road & Oak Drive intersection.

The existing trail that runs north-south and terminates near Milestone Church, picks back up west of Hideaway Drive, +/- 1,400 feet south of Mount Gilead Road. To provide for a potential future connection between the two trail segments, a trail crossing will be established as part of this project. The intent is to have the trail continue south of Mount Gilead Road along the east side of Oak Drive.

The intent of this future continuous trail can be accommodated for by providing the crossing location as the east leg of the Mount Gilead Road & Oak Drive intersection. For the time being, it is recommended that the crossing be installed with high visibility crosswalk markings, pedestrian level lighting, and crossing warning signs. It is anticipated that when the continuous trail is ultimately provided that the number of crossings would likely warrant consideration for an RRFB.

Refer to **Exhibit 6** for the proposed conceptual layout of the future trail crossing at the Mount Gilead Road & Oak Drive intersection.

RECOMMENDATIONS

Based upon the traffic analysis and pedestrian accommodation considerations within this document, the following are recommended for the improvements along Mount Gilead Road:

- Mount Gilead Road Roadway Cross-Section
  - Four-lane divided section: US 377 to Oak Drive
  - Three-lane undivided section: Oak Drive to Bourland Road/Marshall Ridge Parkway
- Intersection Control:
  - US 377
    - Remain under signal control with an expanded westbound approach
  - Oak Drive
    - Remain a two-way stop controlled intersection
  - Bourland Road/Marshall Ridge Parkway:
    - Single lane roundabout
      - If the necessary ROW or cost make this unfeasible, signal control will provide for acceptable LOS in the PM peak hour and improved operations in the AM peak hour compared to the existing all-way stop control
- Pedestrian Accommodations
  - Provide for a 10-foot trail on north side and 6-foot sidewalk on south side of Mount Gilead Road
  - Provide pedestrian crossing on the east leg of US 377 & Mount Gilead Road
  - Provide pedestrian crossing on north, south, and east legs of Mount Gilead Road & Oak Drive
  - Maintain crossings at Mount Gilead Road & Bourland Road/Marshall Ridge Parkway
- Trail Crossing:
  - To be provided at east leg of Mount Gilead Road & Oak Drive
  - This will provide potential for a future continuous trail from Ridge Point Parkway to Johnson Road

If you have any questions, please contact me at brandon.forsythe@kimley-horn.com or by phone at 817-339-2289.

APPENDIX

SCHEMATIC

EXHIBITS

TURNING MOVEMENT VOLUME COUNTS

BACKGROUND GROWTH RATE CALCULATION

SYNCHRO INTERSECTION CAPACITY ANALYSIS

SIDRA ROUNDABOUT CAPACITY ANALYSIS

Kimley»Horn

SCHEMATIC

Kimley»Horn

EXHIBITS

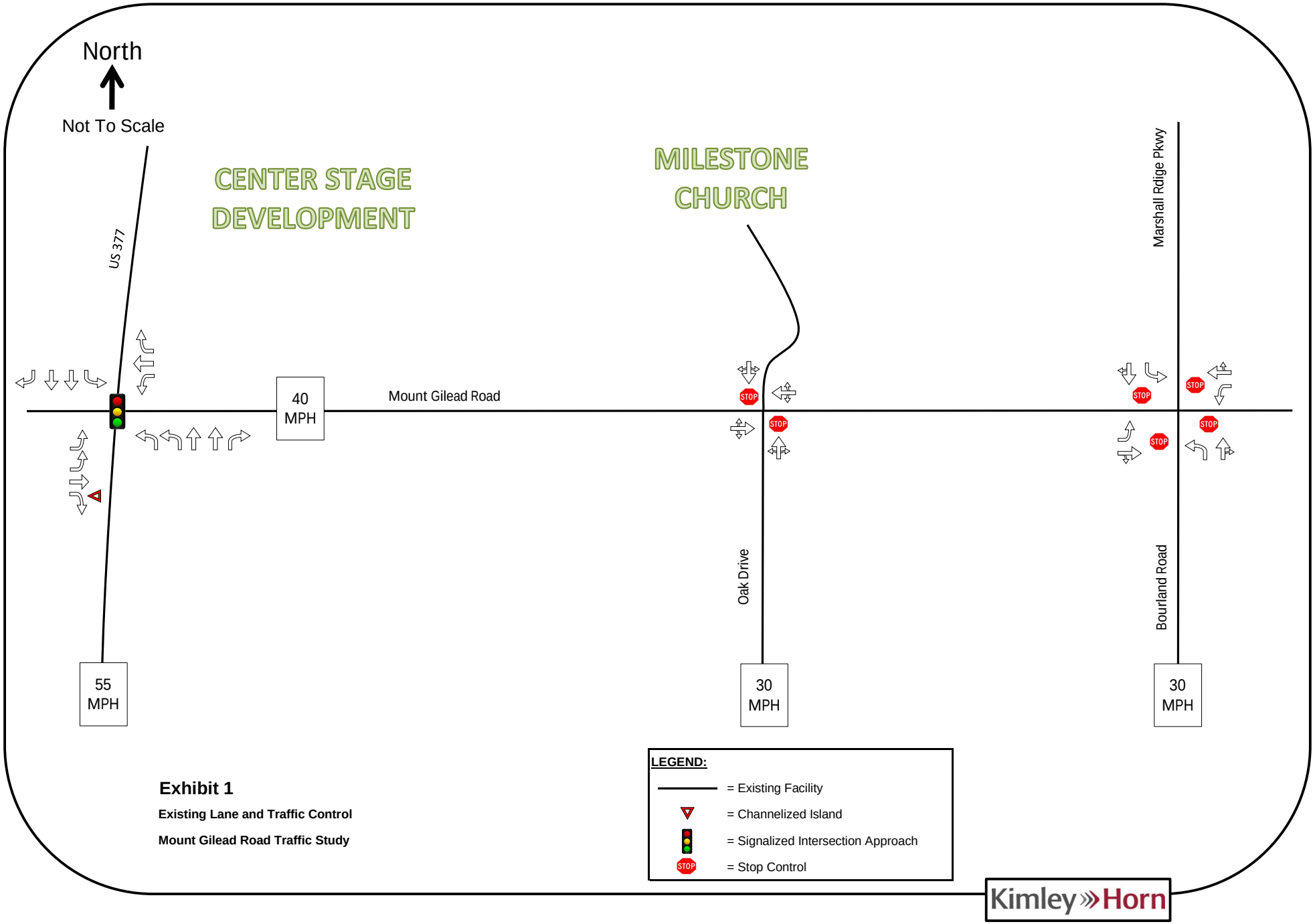


Exhibit 1

Existing Lane and Traffic Control

Mount Gilead Road Traffic Study

Kimley»Horn

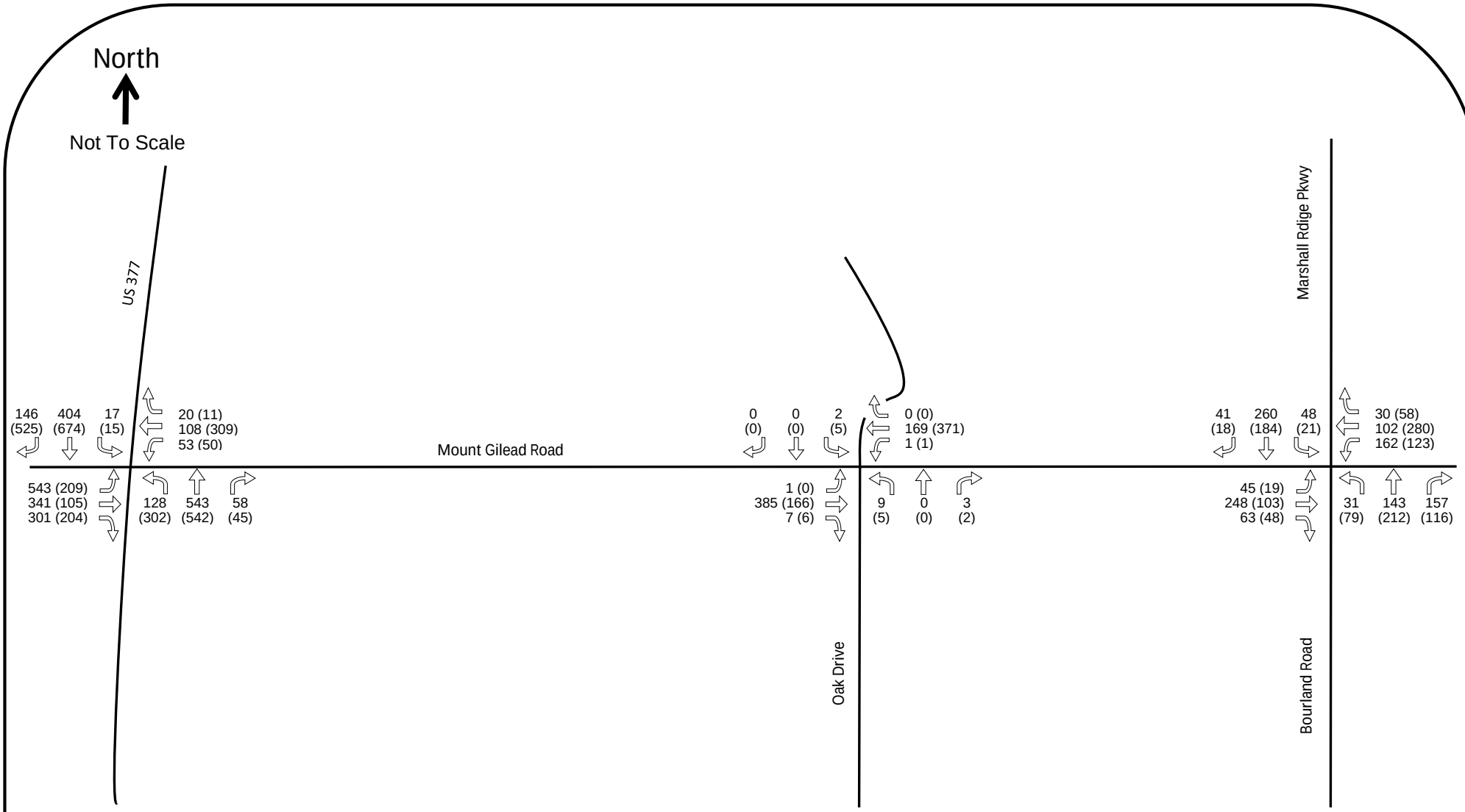


Exhibit 2

Existing Traffic

Mount Gilead Road Traffic Study

LEGEND:

X (Y)

X = AM Peak Hour Turning Movements

Y = PM Peak Hour Turning Movements

Volumes may not sum from point to point due to rounding and presence of smaller driveways not included in analysis.

Kimley»Horn

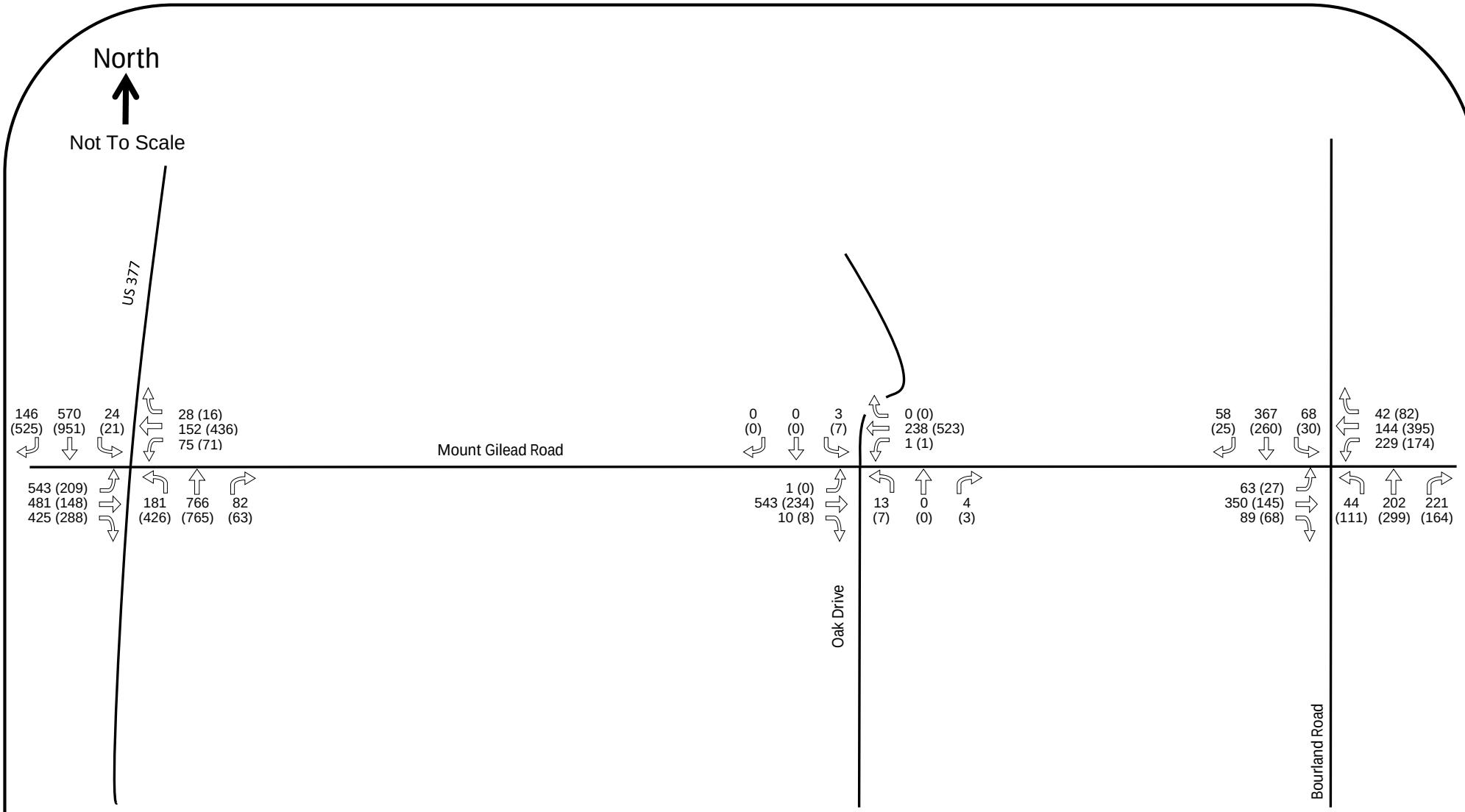


Exhibit 3

Horizon Traffic (2033)

Mount Gilead Road Traffic Study

LEGEND:

X (Y)

X = AM Peak Hour Turning Movements

Y = PM Peak Hour Turning Movements

Volumes may not sum from point to point due to rounding and presence of smaller driveways not included in analysis.

Kimley»Horn

GRAPHIC SCALE IN FEET
0 10 20 40
IF SHEET IS 11X17, SCALE IS: 1"=40'

NORTH

STEPHEN HERZOG
528 UNBRIDLED LN

RODNEY M SMITH
407 MOUNT GILEAD RD

R&L SINGH FAMILY TRUST
532 UNBRIDLED LN

BRANDON WINTERS
536 UNBRIDLED LN

MARSHALL RIDGE PARKWAY

P-1

P-2

P-3

P-4

PROP ROW

EX ROW

EX UTILITY EASEMENT

EX WALL AND UTILITY EASEMENT

EX VISIBILITY EASEMENT

EX SEWER EASEMENT

80'

36'

32'

134+00

135+00

136+00

137+00

138+00

139+00

MOUNT GILEAD ROAD

MOUNT GILEAD ROAD

BOURLAND ROAD

TERRY BORDEN
1224 MORRIS DR

WILLIAM J HOPPER
1276 BOURLAND RD

AMAN PATEL
1289 BOURLAND RD

LEGEND

- SIGNAL POLE TRAFFIC SIGN
- SIGNAL POLE LUMINAIRE
- VEHICLE SIGNAL HEAD
- ROADSIDE POST MOUNTED SIGN
- ELECTRICAL SERVICE CONNECTION
- TRAFFIC SIGNAL CABINET, FOUNDATION, AND BBU
- MAST ARMS
- PED HEAD AND PUSH BUTTON

Plotted, By:
Last Saved: 2023-07-05 11:20:50, Walford, Ben
Filename: 2023-07-05 12:55:57 (Model)
k:\dnt_roadway\061097028-keller mount gilead\c-cadd\exhibit\bourland signal.dwg

MOUNT GILEAD ROAD IMPROVEMENTS

BOURLAND ROAD INTERSECTION - PROPOSED TRAFFIC SIGNAL OPTION

City of KELLER | Kimley»Horn | E-4

GRAPHIC SCALE IN FEET
0 10 20 40
IF SHEET IS 11X17, SCALE IS: 1"=40'

NORTH

STEPHEN HERZOG
528 UNBRIDLED LN

R&L SINGH FAMILY TRUST
532 UNBRIDLED LN

BRANDON WINTERS
536 UNBRIDLED LN

RODNEY M SMITH
407 MOUNT GILEAD RD

TERRY BORDEN
1224 MORRIS DR

WILLIAM J HOPFER
1276 BOURLAND RD

AMAN PATEL
1289 BOURLAND RD

MARSHALL RIDGE PARKWAY

MOUNT GILEAD ROAD

BOURLAND ROAD

PROP DOUBLE-SIDED W11-2 AND W16-7PL SIGNS

PROP W11-2 AND W16-7PL SIGNS

PROP R1-2 SIGN

ADDITIONAL PROP ROW REQUIRED FOR ROUNDABOUT

EX TRAIL ROW

EX WALL AND UTILITY EASEMENT

EX ROW

PROP W2-6 AND W13-1 SIGNS

15 MPH

PROP ROW

PROP R6-1R SIGN

EX VISIBILITY EASEMENT

134+00 135+00 137+00 138+00 139+00

12.0' 14.0' 14.0' 18.0' 19.5' 21.0' 17.6' 18.0' 14.0' 11.0' 14.0' 120.0' 120.0' 120.0'

2023-11-16 09:00:58, Wilson, Kaley
2023-11-16 09:00:10 (E3 Bourland Roundabout)
k:\dnt_roadway\061097028-keller mount gilead\cadd\exhibit\bourland roundabout.dwg

Plotted, By:
Last Saved:
Filename:

MOUNT GILEAD ROAD IMPROVEMENTS

BOURLAND ROAD INTERSECTION - PROPOSED ROUNDABOUT OPTION

City of KELLER | Kimley»Horn

GRAPHIC SCALE IN FEET
0 10 20 40
IF SHEET IS 11X17, SCALE IS 1"=40'

NORTH

MILESTONE CHURCH RIDGE POINT PKWY

MILESTONE CHURCH RIDGE POINT PKWY

CONSERVATION EASEMENT

DOUBLE-SIDED PROP W11-2 AND W16-7P SIGNS WITH RRFB

EX TRAIL EASEMENT

PROP W11-2 AND W16-9P SIGNS

AHEAD

PROP ROW

125.0'

117+00 118+00 119+00 120+00 121+00 122+00

MOUNT GILEAD ROAD

MOUNT GILEAD ROAD

125.0'

PROP W11-2 AND W16-9P SIGNS

AHEAD

DOUBLE-SIDED PROP W11-2 AND W16-7P SIGNS WITH RRFB

EX ROW

PROP ROW

OAK DRIVE

JENNA RUIZ
1225 OAK RD

PAUL HAMILTON
1224 OAK RD

PROPOSED PED CROSSING SIGNS WITH RRFB

Plotted, By:
Last Saved: 2023-11-16 09:01:16, Wilson, Kaley
Filename: 2023-11-16 08:33:21 (RRFB)
k:\dnt_roadway\061097028-keller mount gilead\cadd\exhibit\rrfb.dwg

MOUNT GILEAD ROAD IMPROVEMENTS

OAK DRIVE INTERSECTION - PREFERRED TRAIL CROSSING WITH RECTANGULAR RAPID FLASHING BEACON

City of KELLER | Kimley»Horn | E-6

Kimley»Horn

TURNING MOVEMENT VOLUME COUNTS

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: MT GILEAD RD @ BOURLAND RD
Site Code:
Start Date: 01/19/2023

Turning Movement Data

Start Time	BOURLAND RD Southbound					MT GILEAD RD Westbound					BOURLAND RD Northbound					MT GILEAD RD Eastbound					Int. Total
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	
12:00 AM	0	0	0	0	0	0	1	1	0	2	0	1	1	0	2	0	1	0	0	1	5
12:15 AM	0	0	0	0	0	2	0	0	0	2	1	1	0	0	2	0	2	0	0	2	6
12:30 AM	0	0	0	0	0	1	1	0	0	2	1	0	0	0	1	0	1	0	0	1	4
12:45 AM	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	2
Hourly Total	0	0	0	0	0	4	3	1	0	8	2	2	1	0	5	0	4	0	0	4	17
1:00 AM	0	0	0	0	0	1	2	0	0	3	0	0	1	0	1	0	2	1	0	3	7
1:15 AM	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	0	1	1	0	2	4
1:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 AM	0	0	0	0	0	1	3	0	0	4	0	1	0	0	1	0	0	0	0	0	5
Hourly Total	0	1	0	0	1	2	6	0	0	8	0	1	1	0	2	0	3	2	0	5	16
2:00 AM	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
2:15 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
2:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
2:45 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Hourly Total	0	0	0	0	0	0	2	1	0	3	0	0	0	0	0	0	0	1	0	1	4
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 AM	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	0	1	1	0	2	4
3:45 AM	0	1	0	0	1	0	1	0	0	1	1	1	0	0	2	0	1	0	0	1	5
Hourly Total	0	1	0	0	1	0	2	0	0	2	1	2	0	0	3	0	2	1	0	3	9
4:00 AM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
4:15 AM	0	1	0	0	1	1	1	0	0	2	0	0	0	0	0	0	1	0	0	1	4
4:30 AM	0	4	0	0	4	2	0	0	0	2	0	1	1	0	2	0	1	1	0	2	10
4:45 AM	0	2	1	0	3	0	0	0	0	0	1	1	0	0	2	0	2	0	0	2	7
Hourly Total	0	9	1	0	10	3	1	0	0	4	1	2	1	0	4	0	4	1	0	5	23
5:00 AM	0	1	1	0	2	0	3	1	0	4	0	1	1	0	2	0	2	1	0	3	11
5:15 AM	0	1	0	0	1	1	0	0	0	1	1	6	0	0	7	1	2	0	0	3	12
5:30 AM	0	6	1	0	7	1	1	0	0	2	1	2	0	0	3	0	5	0	0	5	17
5:45 AM	0	10	2	0	12	3	4	0	0	7	0	4	3	0	7	0	2	1	0	3	29
Hourly Total	0	18	4	0	22	5	8	1	0	14	2	13	4	0	19	1	11	2	0	14	69
6:00 AM	0	13	0	0	13	2	1	0	0	3	3	5	3	0	11	1	2	1	0	4	31
6:15 AM	3	8	5	0	16	2	3	0	0	5	0	10	0	0	10	1	7	1	0	9	40
6:30 AM	1	18	3	0	22	6	9	5	0	20	2	5	10	0	17	3	22	7	0	32	91
6:45 AM	3	32	5	0	40	11	13	3	0	27	3	25	14	0	42	1	24	4	0	29	138
Hourly Total	7	71	13	0	91	21	26	8	0	55	8	45	27	0	80	6	55	13	0	74	300
7:00 AM	7	29	11	0	47	23	11	3	0	37	9	20	15	0	44	10	27	11	0	48	176
7:15 AM	8	46	5	0	59	21	11	2	0	34	9	31	26	0	66	22	74	17	0	113	272
7:30 AM	18	67	13	0	98	39	32	11	0	82	6	32	33	0	71	17	70	11	0	98	349
7:45 AM	15	80	14	0	109	38	37	7	0	82	11	43	38	0	92	15	86	15	0	116	399
Hourly Total	48	222	43	0	313	121	91	23	0	235	35	126	112	0	273	64	257	54	0	375	1196
8:00 AM	13	60	6	0	79	53	19	8	0	80	9	31	39	1	80	7	48	14	0	69	308
8:15 AM	2	53	8	0	63	32	14	4	0	50	5	37	47	0	89	6	44	23	0	73	275
8:30 AM	10	23	6	0	39	13	16	3	0	32	7	41	31	0	79	4	49	21	0	74	224
8:45 AM	5	19	6	0	30	17	18	2	0	37	13	20	16	0	49	0	29	16	0	45	161
Hourly Total	30	155	26	0	211	115	67	17	0	199	34	129	133	1	297	17	170	74	0	261	968
9:00 AM	1	36	5	0	42	18	15	2	0	35	9	17	16	0	42	3	24	10	0	37	156
9:15 AM	2	27	3	0	32	15	14	3	0	32	10	24	10	0	44	4	14	5	0	23	131
9:30 AM	2	23	1	0	26	15	11	6	0	32	8	26	17	0	51	4	18	5	0	27	136
9:45 AM	7	28	4	0	39	10	12	2	0	24	8	13	7	0	28	5	19	11	0	35	126
Hourly Total	12	114	13	0	139	58	52	13	0	123	35	80	50	0	165	16	75	31	0	122	549
10:00 AM	2	14	7	0	23	14	12	1	0	27	6	13	13	1	33	3	10	5	0	18	101
10:15 AM	0	14	2	0	16	9	14	0	0	23	10	24	9	0	43	1	11	4	0	16	98
10:30 AM	3	17	3	0	23	8	13	5	0	26	4	11	11	0	26	1	14	7	0	22	97
10:45 AM	1	23	1	0	25	17	13	4	0	34	4	17	7	0	28	6	13	8	0	27	114
Hourly Total	6	68	13	0	87	48	52	10	0	110	24	65	40	1	130	11	48	24	0	83	410
11:00 AM	3	18	4	0	25	7	16	3	0	26	5	22	10	0	37	2	14	5	0	21	109
11:15 AM	4	17	7	0	28	15	16	2	0	33	7	27	15	0	49	7	17	6	0	30	140
11:30 AM	1	20	3	0	24	11	11	3	0	25	9	24	10	0	43	4	17	9	0	30	122
11:45 AM	0	24	7	0	31	24	10	5	0	39	5	23	11	0	39	4	11	12	0	27	136
Hourly Total	8	79	21	0	108	57	53	13	0	123	26	96	46	0	168	17	59	32	0	108	507
12:00 PM	2	19	4	0	25	11	9	4	0	24	9	27	21	0	57	2	15	9	0	26	132
12:15 PM	2	25	5	0	32	11	17	4	0	32	7	32	17	0	56	5	16	3	0	24	144

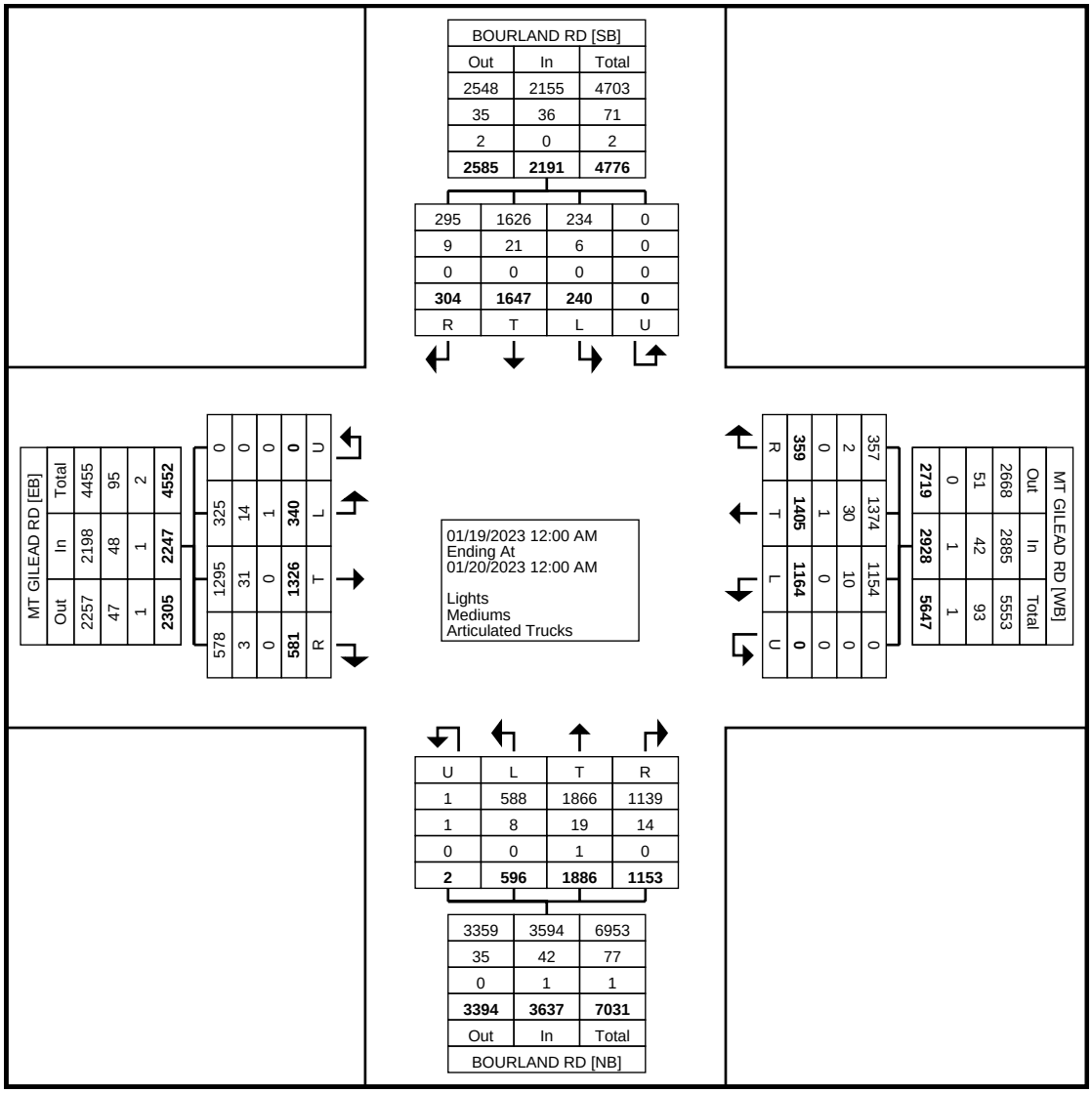
12:30 PM	2	19	5	0	26	12	19	3	0	34	8	29	11	0	48	4	13	8	0	25	133
12:45 PM	4	16	5	0	25	17	17	2	0	36	11	33	25	0	69	4	15	9	0	28	158
Hourly Total	10	79	19	0	108	51	62	13	0	126	35	121	74	0	230	15	59	29	0	103	567
1:00 PM	2	13	2	0	17	10	13	4	0	27	8	28	17	0	53	4	16	7	0	27	124
1:15 PM	0	21	4	0	25	12	17	2	0	31	12	25	14	0	51	3	17	11	0	31	138
1:30 PM	1	14	5	0	20	8	16	2	0	26	5	24	13	0	42	5	13	8	0	26	114
1:45 PM	3	19	1	0	23	19	18	5	0	42	15	20	19	0	54	2	13	15	0	30	149
Hourly Total	6	67	12	0	85	49	64	13	0	126	40	97	63	0	200	14	59	41	0	114	525
2:00 PM	1	17	1	0	19	19	25	5	0	49	12	28	15	0	55	4	5	8	0	17	140
2:15 PM	5	24	1	0	30	10	31	7	0	48	14	18	10	0	42	7	21	15	0	43	163
2:30 PM	2	18	2	0	22	18	25	7	0	50	16	26	10	0	52	4	18	9	0	31	155
2:45 PM	3	22	10	0	35	28	18	6	0	52	11	37	12	0	60	7	20	6	0	33	180
Hourly Total	11	81	14	0	106	75	99	25	0	199	53	109	47	0	209	22	64	38	0	124	638
3:00 PM	0	23	3	0	26	24	14	8	0	46	15	36	27	0	78	12	12	18	0	42	192
3:15 PM	4	28	8	0	40	28	25	4	0	57	8	26	20	0	54	18	24	9	0	51	202
3:30 PM	7	47	12	0	66	24	32	12	0	68	18	34	31	0	83	3	24	13	0	40	257
3:45 PM	9	41	8	0	58	45	49	9	0	103	13	34	34	0	81	4	17	17	0	38	280
Hourly Total	20	139	31	0	190	121	120	33	0	274	54	130	112	0	296	37	77	57	0	171	931
4:00 PM	6	37	8	0	51	34	45	11	0	90	12	51	45	0	108	4	23	12	0	39	288
4:15 PM	10	28	6	0	44	32	51	6	0	89	11	63	32	0	106	8	27	12	0	47	286
4:30 PM	7	43	12	0	62	24	47	12	0	83	9	53	23	0	85	11	20	16	0	47	277
4:45 PM	9	46	7	0	62	41	52	22	0	115	11	56	41	0	108	5	29	9	0	43	328
Hourly Total	32	154	33	0	219	131	195	51	0	377	43	223	141	0	407	28	99	49	0	176	1179
5:00 PM	4	43	6	0	53	25	83	9	0	117	18	48	26	0	92	5	22	15	0	42	304
5:15 PM	2	49	0	0	51	36	78	14	0	128	23	53	27	0	103	4	33	14	0	51	333
5:30 PM	6	46	5	0	57	21	67	13	0	101	27	55	22	0	104	5	19	10	0	34	296
5:45 PM	5	29	7	0	41	29	45	18	0	92	10	40	17	0	67	7	23	12	0	42	242
Hourly Total	17	167	18	0	202	111	273	54	0	438	78	196	92	0	366	21	97	51	0	169	1175
6:00 PM	4	45	3	0	52	21	31	13	0	65	13	47	23	0	83	7	15	11	0	33	233
6:15 PM	2	25	8	0	35	32	35	9	0	76	16	45	18	0	79	7	12	13	0	32	222
6:30 PM	1	20	2	0	23	25	18	8	0	51	11	50	19	0	80	11	10	6	0	27	181
6:45 PM	3	17	2	0	22	8	15	5	0	28	15	33	16	0	64	4	13	8	0	25	139
Hourly Total	10	107	15	0	132	86	99	35	0	220	55	175	76	0	306	29	50	38	0	117	775
7:00 PM	3	20	0	0	23	16	17	5	0	38	5	34	12	0	51	6	11	4	0	21	133
7:15 PM	1	11	2	0	14	11	17	1	0	29	8	21	15	0	44	6	16	4	0	26	113
7:30 PM	2	11	2	0	15	10	14	4	0	28	5	35	15	0	55	5	11	4	0	20	118
7:45 PM	2	9	1	0	12	11	12	9	0	32	3	17	10	0	30	2	8	5	0	15	89
Hourly Total	8	51	5	0	64	48	60	19	0	127	21	107	52	0	180	19	46	17	0	82	453
8:00 PM	4	7	13	0	24	3	10	2	0	15	1	27	12	0	40	2	11	4	0	17	96
8:15 PM	0	11	1	0	12	2	6	6	0	14	6	23	16	0	45	3	11	3	0	17	88
8:30 PM	1	13	3	0	17	10	9	4	0	23	7	17	12	0	36	2	5	5	0	12	88
8:45 PM	5	8	1	0	14	6	10	4	0	20	10	13	6	0	29	0	17	4	0	21	84
Hourly Total	10	39	18	0	67	21	35	16	0	72	24	80	46	0	150	7	44	16	0	67	356
9:00 PM	0	4	2	0	6	9	3	1	0	13	5	16	9	0	30	3	7	1	0	11	60
9:15 PM	0	5	0	0	5	3	4	2	0	9	4	14	8	0	26	1	1	1	0	3	43
9:30 PM	1	3	1	0	5	9	9	3	0	21	2	9	3	0	14	1	5	1	0	7	47
9:45 PM	2	4	1	0	7	6	3	2	0	11	5	9	6	0	20	3	8	1	0	12	50
Hourly Total	3	16	4	0	23	27	19	8	0	54	16	48	26	0	90	8	21	4	0	33	200
10:00 PM	0	1	0	0	1	5	0	1	0	6	1	15	6	0	22	1	2	0	0	3	32
10:15 PM	0	0	0	0	0	3	4	3	0	10	2	6	2	0	10	0	7	1	0	8	28
10:30 PM	0	2	0	0	2	0	2	0	0	2	3	5	0	0	8	3	0	1	0	4	16
10:45 PM	0	0	0	0	0	1	4	0	0	5	2	5	0	0	7	2	1	1	0	4	16
Hourly Total	0	3	0	0	3	9	10	4	0	23	8	31	8	0	47	6	10	3	0	19	92
11:00 PM	0	1	0	0	1	1	1	0	0	2	0	2	0	0	2	1	5	2	0	8	13
11:15 PM	1	1	1	0	3	0	1	0	0	1	0	4	0	0	4	0	5	0	0	5	13
11:30 PM	1	0	0	0	1	0	3	0	0	3	0	1	0	0	1	0	2	1	0	3	8
11:45 PM	0	4	0	0	4	0	1	1	0	2	1	1	1	0	3	1	0	0	0	1	10
Hourly Total	2	6	1	0	9	1	6	1	0	8	1	8	1	0	10	2	12	3	0	17	44
Grand Total	240	1647	304	0	2191	1164	1405	359	0	2928	596	1886	1153	2	3637	340	1326	581	0	2247	11003
Approach %	11.0	75.2	13.9	0.0	-	39.8	48.0	12.3	0.0	-	16.4	51.9	31.7	0.1	-	15.1	59.0	25.9	0.0	-	-
Total %	2.2	15.0	2.8	0.0	19.9	10.6	12.8	3.3	0.0	26.6	5.4	17.1	10.5	0.0	33.1	3.1	12.1	5.3	0.0	20.4	-
Lights	234	1626	295	0	2155	1154	1374	357	0	2885	588	1866	1139	1	3594	325	1295	578	0	2198	10832
% Lights	97.5	98.7	97.0	-	98.4	99.1	97.8	99.4	-	98.5	98.7	98.9	98.8	50.0	98.8	95.6	97.7	99.5	-	97.8	98.4
Mediums	6	21	9	0	36	10	30	2	0	42	8	19	14	1	42	14	31	3	0	48	168
% Mediums	2.5	1.3	3.0	-	1.6	0.9	2.1	0.6	-	1.4	1.3	1.0	1.2	50.0	1.2	4.1	2.3	0.5	-	2.1	1.5
Articulated Trucks	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	1	0	0	0	1	3
% Articulated Trucks	0.0	0.0	0.0	-	0.0	0.0	0.1	0.0	-	0.0	0.0	0.1	0.0	0.0	0.0	0.3	0.0	0.0	-	0.0	0.0

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: MT GILEAD RD @ BOURLAND RD
Site Code:
Start Date: 01/19/2023
Page No: 3



Turning Movement Data Plot

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: MT GILEAD RD @ BOURLAND RD
Site Code:
Start Date: 01/19/2023

Turning Movement Peak Hour Data (7:30 AM)

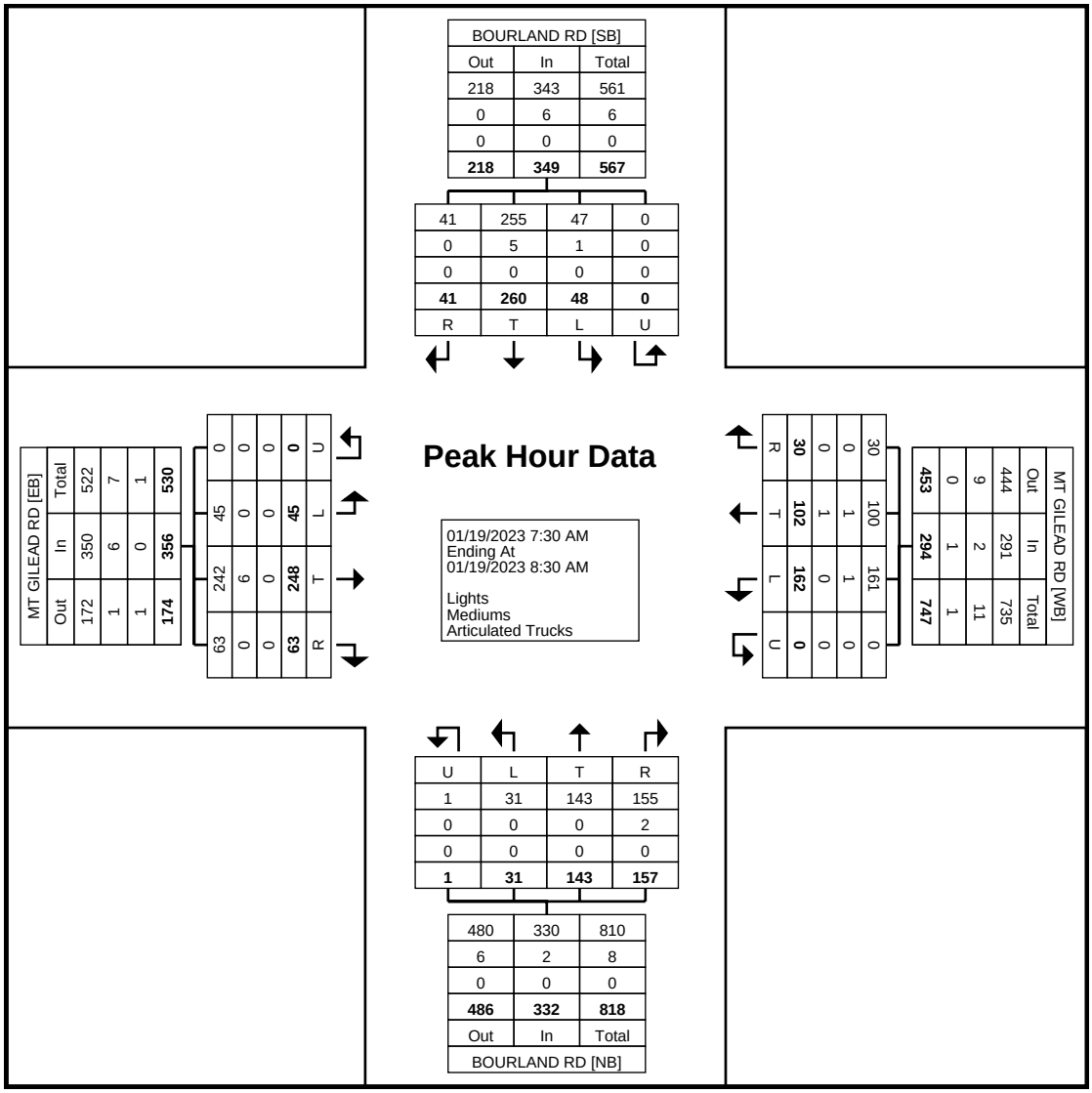
Start Time	BOURLAND RD Southbound					MT GILEAD RD Westbound					BOURLAND RD Northbound					MT GILEAD RD Eastbound					
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Int. Total
7:30 AM	18	67	13	0	98	39	32	11	0	82	6	32	33	0	71	17	70	11	0	98	349
7:45 AM	15	80	14	0	109	38	37	7	0	82	11	43	38	0	92	15	86	15	0	116	399
8:00 AM	13	60	6	0	79	53	19	8	0	80	9	31	39	1	80	7	48	14	0	69	308
8:15 AM	2	53	8	0	63	32	14	4	0	50	5	37	47	0	89	6	44	23	0	73	275
Total	48	260	41	0	349	162	102	30	0	294	31	143	157	1	332	45	248	63	0	356	1331
Approach %	13.8	74.5	11.7	0.0	-	55.1	34.7	10.2	0.0	-	9.3	43.1	47.3	0.3	-	12.6	69.7	17.7	0.0	-	-
Total %	3.6	19.5	3.1	0.0	26.2	12.2	7.7	2.3	0.0	22.1	2.3	10.7	11.8	0.1	24.9	3.4	18.6	4.7	0.0	26.7	-
PHF	0.667	0.813	0.732	0.000	0.800	0.764	0.689	0.682	0.000	0.896	0.705	0.831	0.835	0.250	0.902	0.662	0.721	0.685	0.000	0.767	0.834
Lights	47	255	41	0	343	161	100	30	0	291	31	143	155	1	330	45	242	63	0	350	1314
% Lights	97.9	98.1	100.0	-	98.3	99.4	98.0	100.0	-	99.0	100.0	100.0	98.7	100.0	99.4	100.0	97.6	100.0	-	98.3	98.7
Mediums	1	5	0	0	6	1	1	0	0	2	0	0	2	0	2	0	6	0	0	6	16
% Mediums	2.1	1.9	0.0	-	1.7	0.6	1.0	0.0	-	0.7	0.0	0.0	1.3	0.0	0.6	0.0	2.4	0.0	-	1.7	1.2
Articulated Trucks	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
% Articulated Trucks	0.0	0.0	0.0	-	0.0	0.0	1.0	0.0	-	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-	0.0	0.1

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: MT GILEAD RD @ BOURLAND RD
Site Code:
Start Date: 01/19/2023
Page No: 5



Turning Movement Peak Hour Data Plot (7:30 AM)

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: MT GILEAD RD @ BOURLAND RD
Site Code:
Start Date: 01/19/2023

Turning Movement Peak Hour Data (4:45 PM)

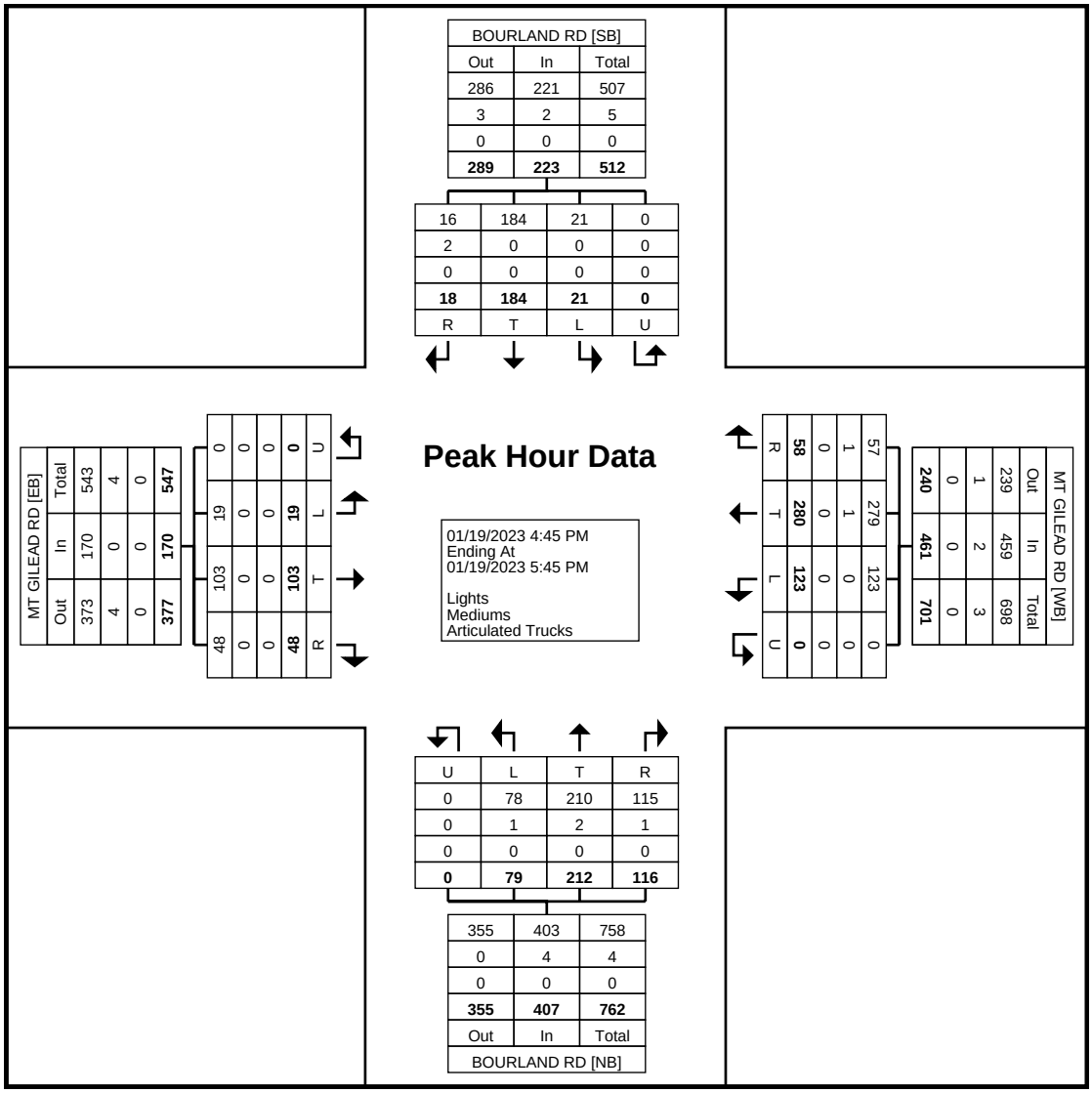
Start Time	BOURLAND RD Southbound					MT GILEAD RD Westbound					BOURLAND RD Northbound					MT GILEAD RD Eastbound					
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Int. Total
4:45 PM	9	46	7	0	62	41	52	22	0	115	11	56	41	0	108	5	29	9	0	43	328
5:00 PM	4	43	6	0	53	25	83	9	0	117	18	48	26	0	92	5	22	15	0	42	304
5:15 PM	2	49	0	0	51	36	78	14	0	128	23	53	27	0	103	4	33	14	0	51	333
5:30 PM	6	46	5	0	57	21	67	13	0	101	27	55	22	0	104	5	19	10	0	34	296
Total	21	184	18	0	223	123	280	58	0	461	79	212	116	0	407	19	103	48	0	170	1261
Approach %	9.4	82.5	8.1	0.0	-	26.7	60.7	12.6	0.0	-	19.4	52.1	28.5	0.0	-	11.2	60.6	28.2	0.0	-	-
Total %	1.7	14.6	1.4	0.0	17.7	9.8	22.2	4.6	0.0	36.6	6.3	16.8	9.2	0.0	32.3	1.5	8.2	3.8	0.0	13.5	-
PHF	0.583	0.939	0.643	0.000	0.899	0.750	0.843	0.659	0.000	0.900	0.731	0.946	0.707	0.000	0.942	0.950	0.780	0.800	0.000	0.833	0.947
Lights	21	184	16	0	221	123	279	57	0	459	78	210	115	0	403	19	103	48	0	170	1253
% Lights	100.0	100.0	88.9	-	99.1	100.0	99.6	98.3	-	99.6	98.7	99.1	99.1	-	99.0	100.0	100.0	100.0	-	100.0	99.4
Mediums	0	0	2	0	2	0	1	1	0	2	1	2	1	0	4	0	0	0	0	0	8
% Mediums	0.0	0.0	11.1	-	0.9	0.0	0.4	1.7	-	0.4	1.3	0.9	0.9	-	1.0	0.0	0.0	0.0	-	0.0	0.6
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	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: MT GILEAD RD @ BOURLAND RD
Site Code:
Start Date: 01/19/2023
Page No: 7



Turning Movement Peak Hour Data Plot (4:45 PM)

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: MT GILEAD RD @ OAK DR
Site Code:
Start Date: 01/19/2023

Turning Movement Data

Start Time	OAK DR Southbound					MT GILEAD RD Westbound					OAK DR Northbound					MT GILEAD RD Eastbound					Int. Total
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	
12:00 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	3
12:15 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	3
12:30 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3
12:45 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
Hourly Total	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	6	0	0	6	11
1:00 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	4
1:15 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	4
1:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2
Hourly Total	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	5	0	0	5	10
2:00 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
2:15 AM	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	0	0	0	0	0	2
2:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
2:45 AM	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	0	0	0	0	0	2
Hourly Total	0	0	0	0	0	0	3	0	0	3	2	0	0	0	2	0	1	0	0	1	6
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 AM	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	0	1	0	0	1	3
3:45 AM	0	0	1	0	1	1	1	0	0	2	0	0	0	0	0	0	1	0	0	1	4
Hourly Total	0	0	1	0	1	1	2	0	0	3	0	0	1	0	1	0	2	0	0	2	7
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
4:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
4:45 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	4
Hourly Total	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	5	0	0	5	8
5:00 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	3	0	0	3	6
5:15 AM	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	0	2	1	0	3	5
5:30 AM	0	0	0	0	0	0	3	0	0	3	1	0	0	0	1	0	4	0	0	4	8
5:45 AM	0	0	0	0	0	0	6	0	0	6	2	0	0	0	2	0	3	0	0	3	11
Hourly Total	0	0	0	0	0	0	13	0	0	13	3	0	1	0	4	0	12	1	0	13	30
6:00 AM	0	0	0	0	0	0	3	1	0	4	0	0	0	0	0	0	4	0	0	4	8
6:15 AM	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	0	10	1	0	11	20
6:30 AM	1	0	0	0	1	0	14	1	0	15	1	0	0	0	1	0	32	0	0	32	49
6:45 AM	0	0	0	0	0	1	23	0	0	24	0	0	0	0	0	0	33	0	0	33	57
Hourly Total	1	0	0	0	1	1	49	2	0	52	1	0	0	0	1	0	79	1	0	80	134
7:00 AM	0	0	0	0	0	0	32	0	0	32	1	0	0	0	1	0	51	0	0	51	84
7:15 AM	0	0	0	0	0	0	25	0	0	25	0	0	1	0	1	0	112	0	0	112	138
7:30 AM	0	0	0	0	0	1	48	0	0	49	1	0	1	0	2	1	104	2	0	107	158
7:45 AM	1	0	0	0	1	0	62	0	0	62	5	0	1	0	6	0	99	5	0	104	173
Hourly Total	1	0	0	0	1	1	167	0	0	168	7	0	3	0	10	1	366	7	0	374	553
8:00 AM	1	0	0	0	1	0	34	0	0	34	3	0	0	0	3	0	70	0	0	70	108
8:15 AM	0	0	0	0	0	0	31	0	0	31	0	0	0	0	0	0	75	1	0	76	107
8:30 AM	0	0	0	0	0	0	27	0	0	27	1	0	0	0	1	0	72	0	0	72	100
8:45 AM	1	0	0	0	1	0	37	1	0	38	2	0	0	0	2	0	47	2	0	49	90
Hourly Total	2	0	0	0	2	0	129	1	0	130	6	0	0	0	6	0	264	3	0	267	405
9:00 AM	0	0	0	0	0	1	30	1	0	32	1	0	0	0	1	0	32	0	0	32	65
9:15 AM	0	0	0	0	0	0	23	0	0	23	0	1	0	0	1	0	28	0	0	28	52
9:30 AM	0	0	0	0	0	0	19	1	0	20	1	0	0	0	1	0	22	1	0	23	44
9:45 AM	2	0	0	0	2	0	24	0	0	24	2	0	0	0	2	1	34	1	0	36	64
Hourly Total	2	0	0	0	2	1	96	2	0	99	4	1	0	0	5	1	116	2	0	119	225
10:00 AM	1	0	1	0	2	1	23	2	0	26	0	0	0	0	0	0	18	2	0	20	48
10:15 AM	0	0	1	0	1	0	26	0	0	26	1	0	0	0	1	0	14	0	0	14	42
10:30 AM	0	0	0	0	0	0	16	1	0	17	0	0	0	0	0	0	22	1	0	23	40
10:45 AM	1	0	1	0	2	0	20	0	0	20	0	0	0	0	0	0	25	1	0	26	48
Hourly Total	2	0	3	0	5	1	85	3	0	89	1	0	0	0	1	0	79	4	0	83	178
11:00 AM	0	0	0	0	0	0	26	0	0	26	1	0	0	0	1	0	21	1	0	22	49
11:15 AM	0	0	0	0	0	0	27	0	0	27	0	0	0	0	0	0	33	1	0	34	61
11:30 AM	0	0	0	0	0	0	25	0	0	25	1	0	1	0	2	0	27	1	0	28	55
11:45 AM	0	0	0	0	0	0	23	0	0	23	1	0	0	0	1	1	26	1	0	28	52
Hourly Total	0	0	0	0	0	0	101	0	0	101	3	0	1	0	4	1	107	4	0	112	217
12:00 PM	1	0	1	0	2	1	21	0	0	22	2	0	0	0	2	0	25	2	0	27	53
12:15 PM	1	0	0	0	1	2	26	1	0	29	2	0	0	0	2	0	21	0	0	21	53

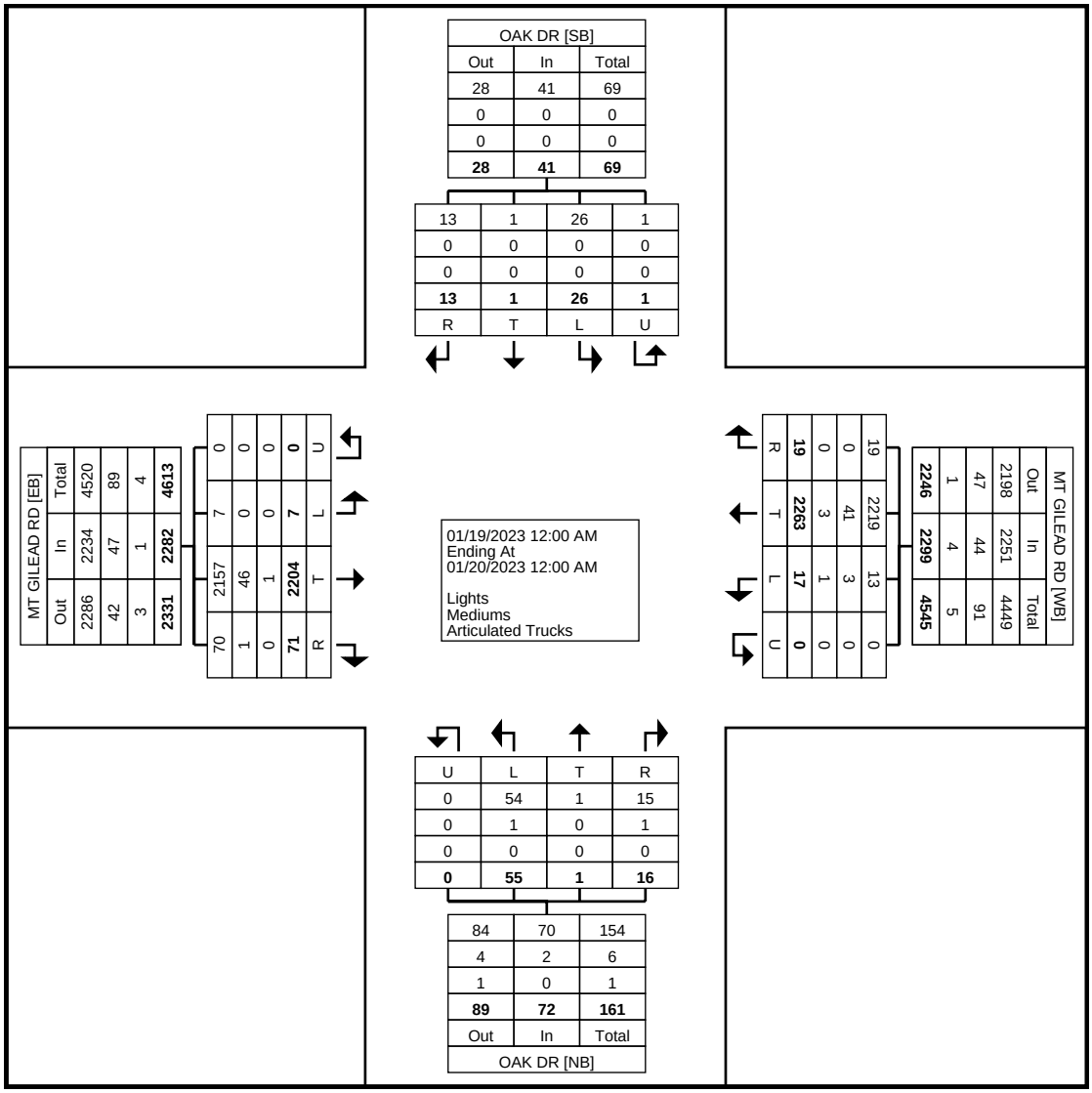
12:30 PM	0	0	1	0	1	0	33	1	0	34	0	0	2	0	2	0	26	0	0	26	63
12:45 PM	0	0	0	0	0	0	34	0	0	34	2	0	0	0	2	1	29	1	0	31	67
Hourly Total	2	0	2	0	4	3	114	2	0	119	6	0	2	0	8	1	101	3	0	105	236
1:00 PM	1	0	0	0	1	1	20	0	0	21	1	0	1	0	2	0	23	1	0	24	48
1:15 PM	1	0	2	0	3	0	30	3	0	33	1	0	1	0	2	1	29	1	0	31	69
1:30 PM	0	0	0	0	0	0	26	0	0	26	0	0	1	0	1	0	26	1	0	27	54
1:45 PM	0	0	0	1	1	0	35	1	0	36	0	0	0	0	0	0	30	1	0	31	68
Hourly Total	2	0	2	1	5	1	111	4	0	116	2	0	3	0	5	1	108	4	0	113	239
2:00 PM	0	0	1	0	1	0	35	0	0	35	0	0	0	0	0	0	17	2	0	19	55
2:15 PM	2	1	0	0	3	0	46	0	0	46	1	0	0	0	1	1	40	1	0	42	92
2:30 PM	0	0	0	0	0	0	43	0	0	43	1	0	0	0	1	0	27	2	0	29	73
2:45 PM	0	0	0	0	0	0	37	0	0	37	0	0	0	0	0	0	33	4	0	37	74
Hourly Total	2	1	1	0	4	0	161	0	0	161	2	0	0	0	2	1	117	9	0	127	294
3:00 PM	1	0	0	0	1	0	31	1	0	32	1	0	0	0	1	0	47	1	0	48	82
3:15 PM	2	0	0	0	2	0	43	0	0	43	1	0	0	0	1	0	43	1	0	44	90
3:30 PM	0	0	0	0	0	1	57	0	0	58	0	0	0	0	0	0	41	1	0	42	100
3:45 PM	1	0	1	0	2	0	65	0	0	65	1	0	1	0	2	0	35	1	0	36	105
Hourly Total	4	0	1	0	5	1	196	1	0	198	3	0	1	0	4	0	166	4	0	170	377
4:00 PM	0	0	0	0	0	1	64	1	0	66	2	0	0	0	2	0	37	1	0	38	106
4:15 PM	0	0	1	0	1	0	65	1	0	66	2	0	1	0	3	0	49	1	0	50	120
4:30 PM	0	0	0	0	0	1	65	0	0	66	0	0	1	0	1	1	45	2	0	48	115
4:45 PM	1	0	0	0	1	0	73	0	0	73	1	0	1	0	2	0	43	1	0	44	120
Hourly Total	1	0	1	0	2	2	267	2	0	271	5	0	3	0	8	1	174	5	0	180	461
5:00 PM	1	0	0	0	1	0	101	0	0	101	2	0	0	0	2	0	42	2	0	44	148
5:15 PM	2	0	0	0	2	1	103	0	0	104	2	0	1	0	3	0	52	1	0	53	162
5:30 PM	1	0	0	0	1	0	94	0	0	94	0	0	0	0	0	0	29	2	0	31	126
5:45 PM	0	0	1	0	1	0	68	0	0	68	0	0	0	0	0	0	43	1	0	44	113
Hourly Total	4	0	1	0	5	1	366	0	0	367	4	0	1	0	5	0	166	6	0	172	549
6:00 PM	0	0	0	0	0	0	44	0	0	44	1	0	0	0	1	0	29	1	0	30	75
6:15 PM	0	0	0	0	0	0	59	0	0	59	1	0	0	0	1	0	33	0	0	33	93
6:30 PM	0	0	1	0	1	2	33	0	0	35	0	0	0	0	0	0	25	1	0	26	62
6:45 PM	1	0	0	0	1	0	29	0	0	29	0	0	0	0	0	0	27	2	0	29	59
Hourly Total	1	0	1	0	2	2	165	0	0	167	2	0	0	0	2	0	114	4	0	118	289
7:00 PM	0	0	0	0	0	0	24	0	0	24	0	0	0	0	0	0	20	0	0	20	44
7:15 PM	0	0	0	0	0	1	25	0	0	26	0	0	0	0	0	0	26	1	0	27	53
7:30 PM	0	0	0	0	0	1	21	0	0	22	1	0	0	0	1	0	20	2	0	22	45
7:45 PM	0	0	0	0	0	0	16	0	0	16	1	0	0	0	1	0	17	2	0	19	36
Hourly Total	0	0	0	0	0	2	86	0	0	88	2	0	0	0	2	0	83	5	0	88	178
8:00 PM	0	0	0	0	0	0	23	0	0	23	1	0	0	0	1	0	17	0	0	17	41
8:15 PM	1	0	0	0	1	0	13	0	0	13	0	0	0	0	0	0	16	3	0	19	33
8:30 PM	0	0	0	0	0	0	18	0	0	18	0	0	0	0	0	0	11	0	0	11	29
8:45 PM	0	0	0	0	0	0	21	0	0	21	0	0	0	0	0	0	21	1	0	22	43
Hourly Total	1	0	0	0	1	0	75	0	0	75	1	0	0	0	1	0	65	4	0	69	146
9:00 PM	0	0	0	0	0	0	11	0	0	11	1	0	0	0	1	0	11	1	0	12	24
9:15 PM	0	0	0	0	0	0	7	1	0	8	0	0	0	0	0	0	3	3	0	6	14
9:30 PM	0	0	0	0	0	0	12	0	0	12	0	0	0	0	0	0	8	1	0	9	21
9:45 PM	1	0	0	0	1	0	8	1	0	9	0	0	0	0	0	0	11	0	0	11	21
Hourly Total	1	0	0	0	1	0	38	2	0	40	1	0	0	0	1	0	33	5	0	38	80
10:00 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	3
10:15 PM	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	8	0	0	8	14
10:30 PM	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	5	0	0	5	10
10:45 PM	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	3	0	0	3	9
Hourly Total	0	0	0	0	0	0	18	0	0	18	0	0	0	0	0	0	18	0	0	18	36
11:00 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	8	0	0	8	9
11:15 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	5	0	0	5	7
11:30 PM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	3	0	0	3	6
11:45 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3
Hourly Total	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	0	17	0	0	17	25
Grand Total	26	1	13	1	41	17	2263	19	0	2299	55	1	16	0	72	7	2204	71	0	2282	4694
Approach %	63.4	2.4	31.7	2.4	-	0.7	98.4	0.8	0.0	-	76.4	1.4	22.2	0.0	-	0.3	96.6	3.1	0.0	-	-
Total %	0.6	0.0	0.3	0.0	0.9	0.4	48.2	0.4	0.0	49.0	1.2	0.0	0.3	0.0	1.5	0.1	47.0	1.5	0.0	48.6	-
Lights	26	1	13	1	41	13	2219	19	0	2251	54	1	15	0	70	7	2157	70	0	2234	4596
% Lights	100.0	100.0	100.0	100.0	100.0	76.5	98.1	100.0	-	97.9	98.2	100.0	93.8	-	97.2	100.0	97.9	98.6	-	97.9	97.9
Mediums	0	0	0	0	0	3	41	0	0	44	1	0	1	0	2	0	46	1	0	47	93
% Mediums	0.0	0.0	0.0	0.0	0.0	17.6	1.8	0.0	-	1.9	1.8	0.0	6.3	-	2.8	0.0	2.1	1.4	-	2.1	2.0
Articulated Trucks	0	0	0	0	0	1	3	0	0	4	0	0	0	0	0	0	1	0	0	1	5
% Articulated Trucks	0.0	0.0	0.0	0.0	0.0	5.9	0.1	0.0	-	0.2	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.1

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: MT GILEAD RD @ OAK DR
Site Code:
Start Date: 01/19/2023
Page No: 3



Turning Movement Data Plot

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: MT GILEAD RD @ OAK DR
Site Code:
Start Date: 01/19/2023

Turning Movement Peak Hour Data (7:15 AM)

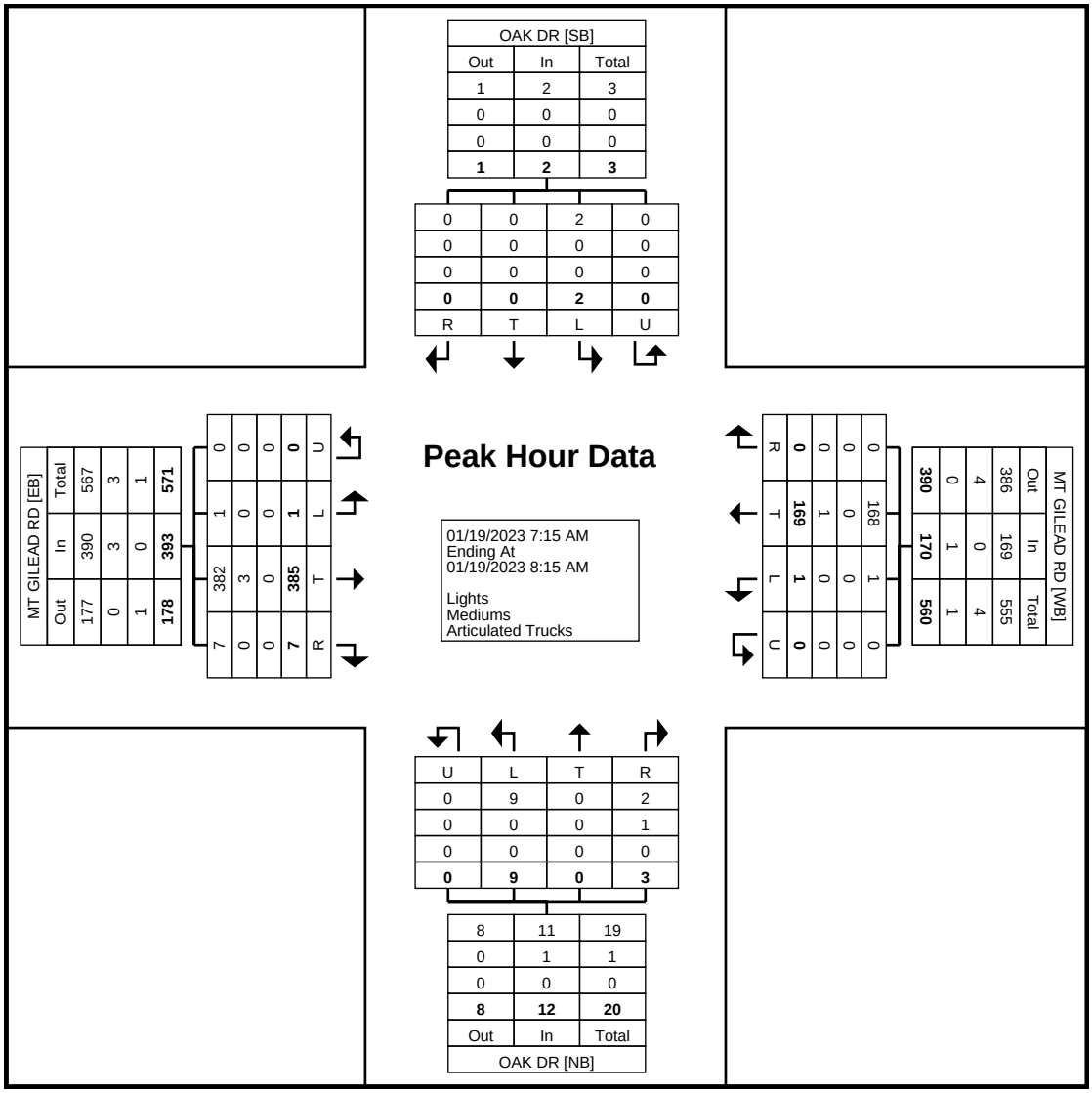
Start Time	OAK DR Southbound					MT GILEAD RD Westbound					OAK DR Northbound					MT GILEAD RD Eastbound					Int. Total
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	
7:15 AM	0	0	0	0	0	0	25	0	0	25	0	0	1	0	1	0	112	0	0	112	138
7:30 AM	0	0	0	0	0	1	48	0	0	49	1	0	1	0	2	1	104	2	0	107	158
7:45 AM	1	0	0	0	1	0	62	0	0	62	5	0	1	0	6	0	99	5	0	104	173
8:00 AM	1	0	0	0	1	0	34	0	0	34	3	0	0	0	3	0	70	0	0	70	108
Total	2	0	0	0	2	1	169	0	0	170	9	0	3	0	12	1	385	7	0	393	577
Approach %	100.0	0.0	0.0	0.0	-	0.6	99.4	0.0	0.0	-	75.0	0.0	25.0	0.0	-	0.3	98.0	1.8	0.0	-	-
Total %	0.3	0.0	0.0	0.0	0.3	0.2	29.3	0.0	0.0	29.5	1.6	0.0	0.5	0.0	2.1	0.2	66.7	1.2	0.0	68.1	-
PHF	0.500	0.000	0.000	0.000	0.500	0.250	0.681	0.000	0.000	0.685	0.450	0.000	0.750	0.000	0.500	0.250	0.859	0.350	0.000	0.877	0.834
Lights	2	0	0	0	2	1	168	0	0	169	9	0	2	0	11	1	382	7	0	390	572
% Lights	100.0	-	-	-	100.0	100.0	99.4	-	-	99.4	100.0	-	66.7	-	91.7	100.0	99.2	100.0	-	99.2	99.1
Mediums	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	3	0	0	3	4
% Mediums	0.0	-	-	-	0.0	0.0	0.0	-	-	0.0	0.0	-	33.3	-	8.3	0.0	0.8	0.0	-	0.8	0.7
Articulated Trucks	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
% Articulated Trucks	0.0	-	-	-	0.0	0.0	0.6	-	-	0.6	0.0	-	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.2

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: MT GILEAD RD @ OAK DR
Site Code:
Start Date: 01/19/2023



Turning Movement Peak Hour Data Plot (7:15 AM)

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: MT GILEAD RD @ OAK DR
Site Code:
Start Date: 01/19/2023

Turning Movement Peak Hour Data (4:45 PM)

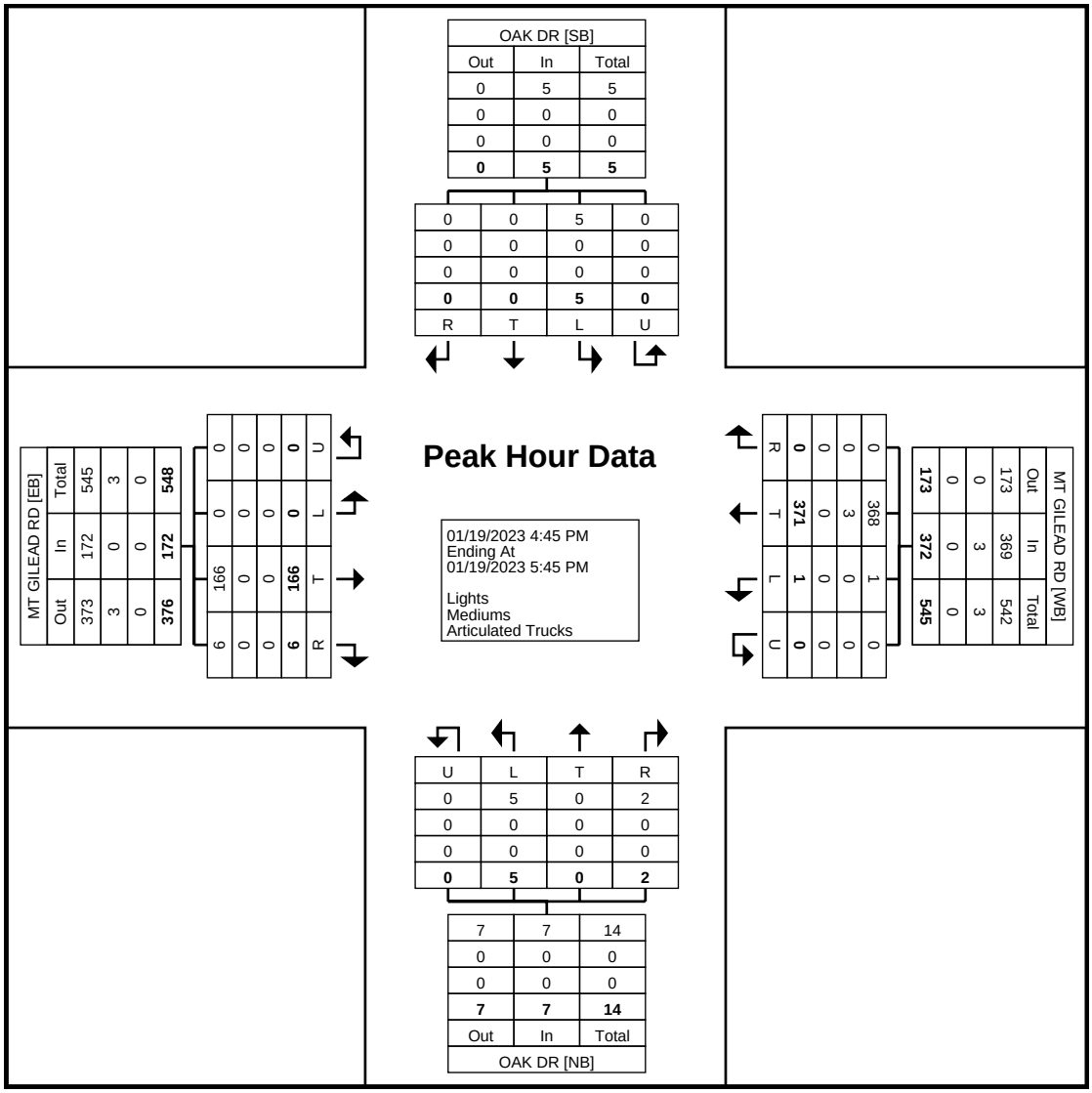
Start Time	OAK DR Southbound					MT GILEAD RD Westbound					OAK DR Northbound					MT GILEAD RD Eastbound					
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Int. Total
4:45 PM	1	0	0	0	1	0	73	0	0	73	1	0	1	0	2	0	43	1	0	44	120
5:00 PM	1	0	0	0	1	0	101	0	0	101	2	0	0	0	2	0	42	2	0	44	148
5:15 PM	2	0	0	0	2	1	103	0	0	104	2	0	1	0	3	0	52	1	0	53	162
5:30 PM	1	0	0	0	1	0	94	0	0	94	0	0	0	0	0	0	29	2	0	31	126
Total	5	0	0	0	5	1	371	0	0	372	5	0	2	0	7	0	166	6	0	172	556
Approach %	100.0	0.0	0.0	0.0	-	0.3	99.7	0.0	0.0	-	71.4	0.0	28.6	0.0	-	0.0	96.5	3.5	0.0	-	-
Total %	0.9	0.0	0.0	0.0	0.9	0.2	66.7	0.0	0.0	66.9	0.9	0.0	0.4	0.0	1.3	0.0	29.9	1.1	0.0	30.9	-
PHF	0.625	0.000	0.000	0.000	0.625	0.250	0.900	0.000	0.000	0.894	0.625	0.000	0.500	0.000	0.583	0.000	0.798	0.750	0.000	0.811	0.858
Lights	5	0	0	0	5	1	368	0	0	369	5	0	2	0	7	0	166	6	0	172	553
% Lights	100.0	-	-	-	100.0	100.0	99.2	-	-	99.2	100.0	-	100.0	-	100.0	-	100.0	100.0	-	100.0	99.5
Mediums	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	3
% Mediums	0.0	-	-	-	0.0	0.0	0.8	-	-	0.8	0.0	-	0.0	-	0.0	-	0.0	0.0	-	0.0	0.5
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	-	0.0	0.0

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: MT GILEAD RD @ OAK DR
Site Code:
Start Date: 01/19/2023



Turning Movement Peak Hour Data Plot (4:45 PM)

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: US 377 @ MT GILEAD RD
Site Code:
Start Date: 01/19/2023

Turning Movement Data

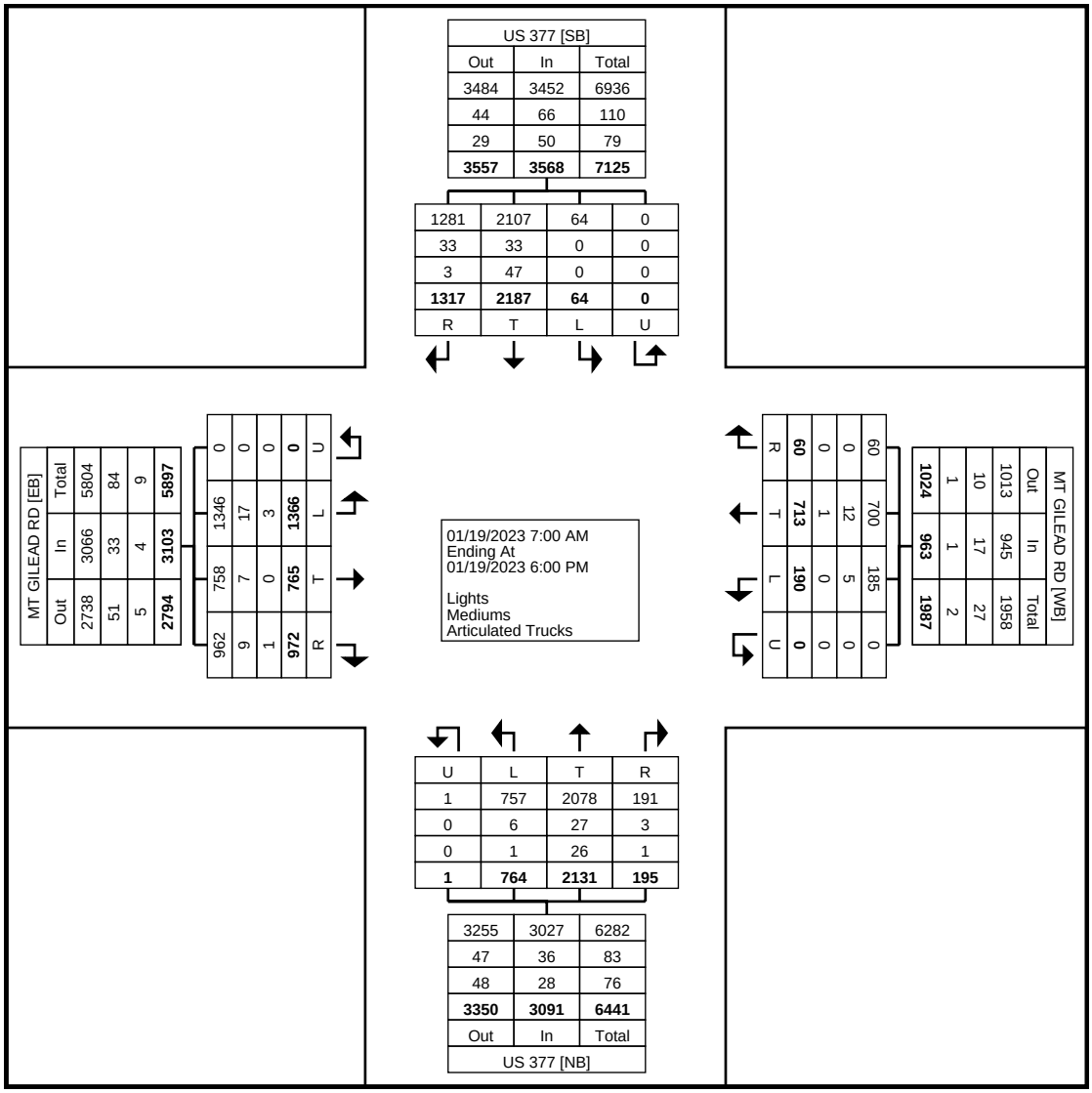
Start Time	US 377 Southbound					MT GILEAD RD Westbound					US 377 Northbound					MT GILEAD RD Eastbound					Int. Total
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	
7:00 AM	1	69	27	0	97	10	22	3	0	35	13	108	11	0	132	141	41	64	0	246	510
7:15 AM	4	74	23	0	101	4	16	4	0	24	17	143	15	0	175	176	107	97	0	380	680
7:30 AM	3	100	31	0	134	18	24	7	0	49	12	153	16	0	181	113	90	56	0	259	623
7:45 AM	6	110	46	0	162	22	41	7	0	70	63	135	14	0	212	148	91	94	0	333	777
Hourly Total	14	353	127	0	494	54	103	21	0	178	105	539	56	0	700	578	329	311	0	1218	2590
8:00 AM	4	120	46	0	170	9	27	2	0	38	36	112	13	0	161	106	53	54	0	213	582
8:15 AM	5	95	39	0	139	8	18	4	0	30	30	105	18	0	153	103	55	63	0	221	543
8:30 AM	2	82	34	0	118	12	19	1	0	32	22	154	7	0	183	100	65	72	0	237	570
8:45 AM	8	123	39	0	170	12	18	5	0	35	17	132	6	1	156	72	40	50	0	162	523
Hourly Total	19	420	158	0	597	41	82	12	0	135	105	503	44	1	653	381	213	239	0	833	2218
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	5	183	142	0	330	11	47	3	0	61	70	155	9	0	234	37	24	41	0	102	727
4:15 PM	4	186	115	0	305	11	61	2	0	74	78	122	17	0	217	61	33	63	0	157	753
4:30 PM	4	201	127	0	332	14	45	5	0	64	51	140	13	0	204	57	31	60	0	148	748
4:45 PM	3	170	123	0	296	9	66	6	0	81	53	130	11	0	194	43	30	54	0	127	698
Hourly Total	16	740	507	0	1263	45	219	16	0	280	252	547	50	0	849	198	118	218	0	534	2926
5:00 PM	4	185	130	0	319	11	72	4	0	87	67	112	12	0	191	61	22	43	0	126	723
5:15 PM	8	170	122	0	300	14	99	2	0	115	83	141	10	0	234	59	35	52	0	146	795
5:30 PM	2	157	111	0	270	13	82	3	0	98	70	137	11	0	218	43	20	53	0	116	702
5:45 PM	1	162	162	0	325	12	56	2	0	70	82	152	12	0	246	46	28	56	0	130	771
Hourly Total	15	674	525	0	1214	50	309	11	0	370	302	542	45	0	889	209	105	204	0	518	2991
Grand Total	64	2187	1317	0	3568	190	713	60	0	963	764	2131	195	1	3091	1366	765	972	0	3103	10725
Approach %	1.8	61.3	36.9	0.0	-	19.7	74.0	6.2	0.0	-	24.7	68.9	6.3	0.0	-	44.0	24.7	31.3	0.0	-	-
Total %	0.6	20.4	12.3	0.0	33.3	1.8	6.6	0.6	0.0	9.0	7.1	19.9	1.8	0.0	28.8	12.7	7.1	9.1	0.0	28.9	-
Lights	64	2107	1281	0	3452	185	700	60	0	945	757	2078	191	1	3027	1346	758	962	0	3066	10490
% Lights	100.0	96.3	97.3	-	96.7	97.4	98.2	100.0	-	98.1	99.1	97.5	97.9	100.0	97.9	98.5	99.1	99.0	-	98.8	97.8
Mediums	0	33	33	0	66	5	12	0	0	17	6	27	3	0	36	17	7	9	0	33	152
% Mediums	0.0	1.5	2.5	-	1.8	2.6	1.7	0.0	-	1.8	0.8	1.3	1.5	0.0	1.2	1.2	0.9	0.9	-	1.1	1.4
Articulated Trucks	0	47	3	0	50	0	1	0	0	1	1	26	1	0	28	3	0	1	0	4	83
% Articulated Trucks	0.0	2.1	0.2	-	1.4	0.0	0.1	0.0	-	0.1	0.1	1.2	0.5	0.0	0.9	0.2	0.0	0.1	-	0.1	0.8

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: US 377 @ MT GILEAD RD
Site Code:
Start Date: 01/19/2023



Turning Movement Data Plot

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: US 377 @ MT GILEAD RD
Site Code:
Start Date: 01/19/2023

Turning Movement Peak Hour Data (7:15 AM)

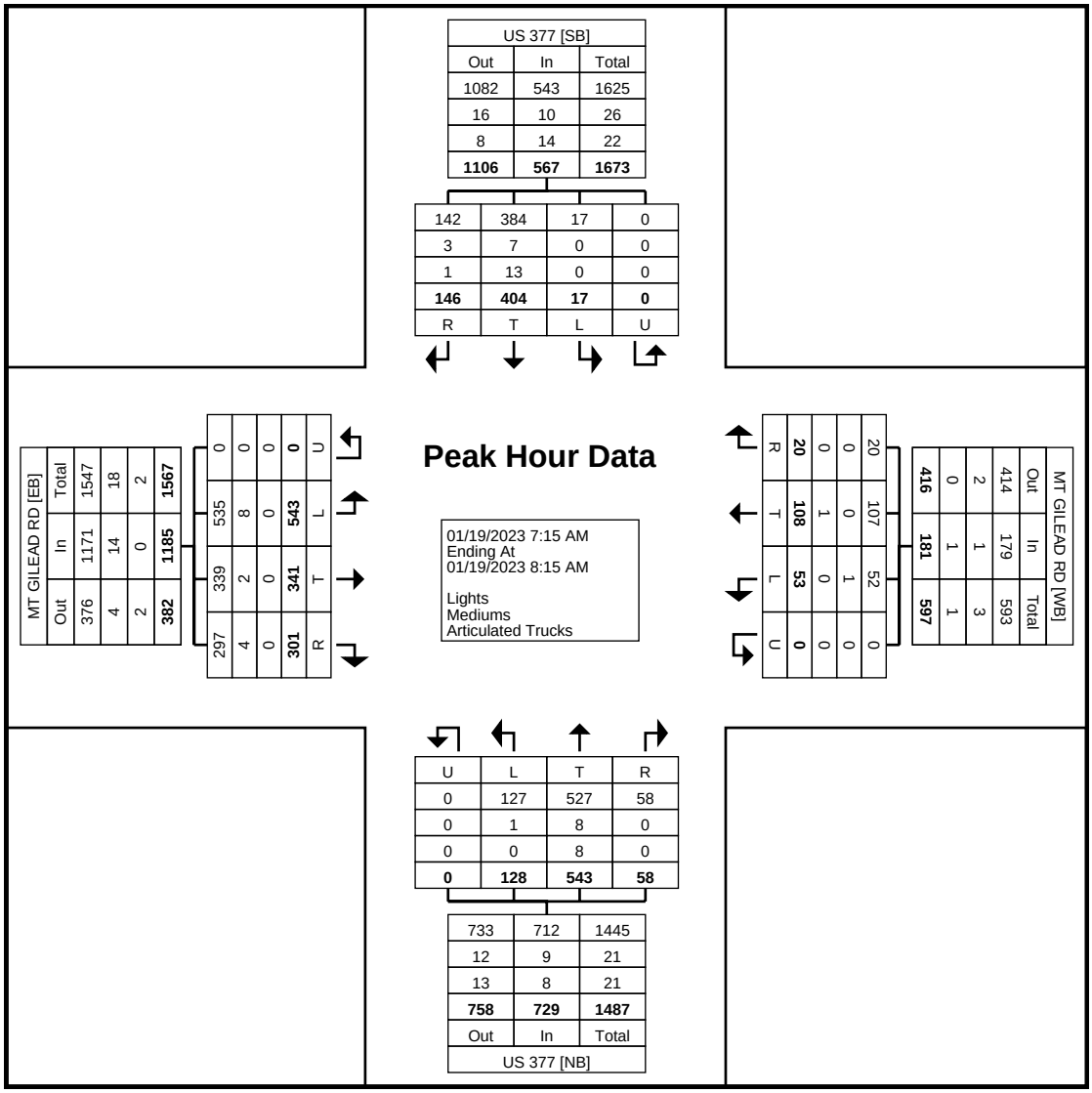
Start Time	US 377 Southbound					MT GILEAD RD Westbound					US 377 Northbound					MT GILEAD RD Eastbound					Int. Total
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	
7:15 AM	4	74	23	0	101	4	16	4	0	24	17	143	15	0	175	176	107	97	0	380	680
7:30 AM	3	100	31	0	134	18	24	7	0	49	12	153	16	0	181	113	90	56	0	259	623
7:45 AM	6	110	46	0	162	22	41	7	0	70	63	135	14	0	212	148	91	94	0	333	777
8:00 AM	4	120	46	0	170	9	27	2	0	38	36	112	13	0	161	106	53	54	0	213	582
Total	17	404	146	0	567	53	108	20	0	181	128	543	58	0	729	543	341	301	0	1185	2662
Approach %	3.0	71.3	25.7	0.0	-	29.3	59.7	11.0	0.0	-	17.6	74.5	8.0	0.0	-	45.8	28.8	25.4	0.0	-	-
Total %	0.6	15.2	5.5	0.0	21.3	2.0	4.1	0.8	0.0	6.8	4.8	20.4	2.2	0.0	27.4	20.4	12.8	11.3	0.0	44.5	-
PHF	0.708	0.842	0.793	0.000	0.834	0.602	0.659	0.714	0.000	0.646	0.508	0.887	0.906	0.000	0.860	0.771	0.797	0.776	0.000	0.780	0.856
Lights	17	384	142	0	543	52	107	20	0	179	127	527	58	0	712	535	339	297	0	1171	2605
% Lights	100.0	95.0	97.3	-	95.8	98.1	99.1	100.0	-	98.9	99.2	97.1	100.0	-	97.7	98.5	99.4	98.7	-	98.8	97.9
Mediums	0	7	3	0	10	1	0	0	0	1	1	8	0	0	9	8	2	4	0	14	34
% Mediums	0.0	1.7	2.1	-	1.8	1.9	0.0	0.0	-	0.6	0.8	1.5	0.0	-	1.2	1.5	0.6	1.3	-	1.2	1.3
Articulated Trucks	0	13	1	0	14	0	1	0	0	1	0	8	0	0	8	0	0	0	0	0	23
% Articulated Trucks	0.0	3.2	0.7	-	2.5	0.0	0.9	0.0	-	0.6	0.0	1.5	0.0	-	1.1	0.0	0.0	0.0	-	0.0	0.9

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: US 377 @ MT GILEAD RD
Site Code:
Start Date: 01/19/2023
Page No: 4



Turning Movement Peak Hour Data Plot (7:15 AM)

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: US 377 @ MT GILEAD RD
Site Code:
Start Date: 01/19/2023

Turning Movement Peak Hour Data (5:00 PM)

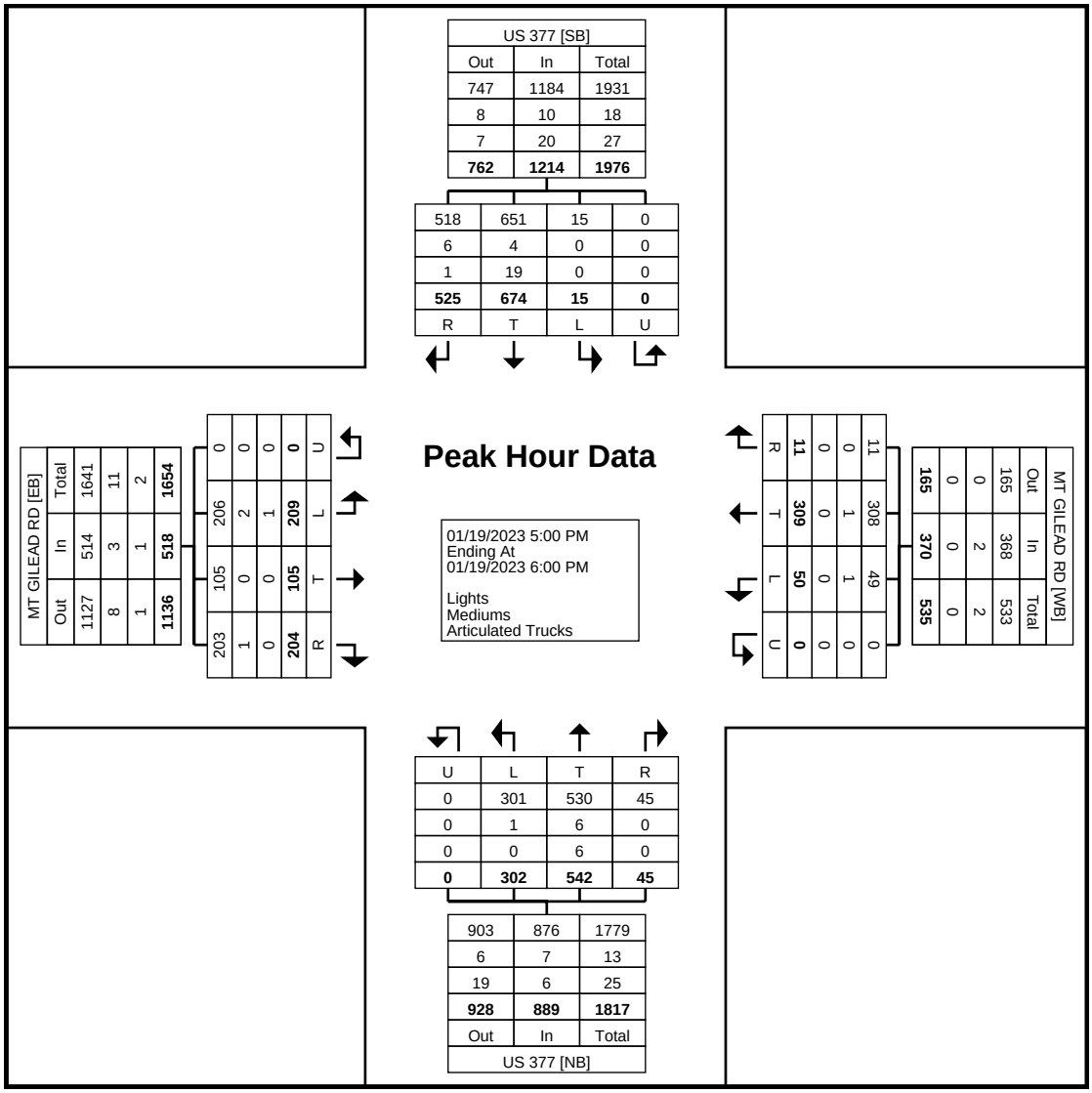
Start Time	US 377 Southbound					MT GILEAD RD Westbound					US 377 Northbound					MT GILEAD RD Eastbound					Int. Total
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	
5:00 PM	4	185	130	0	319	11	72	4	0	87	67	112	12	0	191	61	22	43	0	126	723
5:15 PM	8	170	122	0	300	14	99	2	0	115	83	141	10	0	234	59	35	52	0	146	795
5:30 PM	2	157	111	0	270	13	82	3	0	98	70	137	11	0	218	43	20	53	0	116	702
5:45 PM	1	162	162	0	325	12	56	2	0	70	82	152	12	0	246	46	28	56	0	130	771
Total	15	674	525	0	1214	50	309	11	0	370	302	542	45	0	889	209	105	204	0	518	2991
Approach %	1.2	55.5	43.2	0.0	-	13.5	83.5	3.0	0.0	-	34.0	61.0	5.1	0.0	-	40.3	20.3	39.4	0.0	-	-
Total %	0.5	22.5	17.6	0.0	40.6	1.7	10.3	0.4	0.0	12.4	10.1	18.1	1.5	0.0	29.7	7.0	3.5	6.8	0.0	17.3	-
PHF	0.469	0.911	0.810	0.000	0.934	0.893	0.780	0.688	0.000	0.804	0.910	0.891	0.938	0.000	0.903	0.857	0.750	0.911	0.000	0.887	0.941
Lights	15	651	518	0	1184	49	308	11	0	368	301	530	45	0	876	206	105	203	0	514	2942
% Lights	100.0	96.6	98.7	-	97.5	98.0	99.7	100.0	-	99.5	99.7	97.8	100.0	-	98.5	98.6	100.0	99.5	-	99.2	98.4
Mediums	0	4	6	0	10	1	1	0	0	2	1	6	0	0	7	2	0	1	0	3	22
% Mediums	0.0	0.6	1.1	-	0.8	2.0	0.3	0.0	-	0.5	0.3	1.1	0.0	-	0.8	1.0	0.0	0.5	-	0.6	0.7
Articulated Trucks	0	19	1	0	20	0	0	0	0	0	0	6	0	0	6	1	0	0	0	1	27
% Articulated Trucks	0.0	2.8	0.2	-	1.6	0.0	0.0	0.0	-	0.0	0.0	1.1	0.0	-	0.7	0.5	0.0	0.0	-	0.2	0.9

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: US 377 @ MT GILEAD RD
Site Code:
Start Date: 01/19/2023
Page No: 6



Turning Movement Peak Hour Data Plot (5:00 PM)

Kimley»Horn

BACKGROUND GROWTH RATE CALCULATION

Mt Gilead Roadway Assessment

Historical Link Volumes and Growth Rates

Mt Gilead, East of US 377

Record	Year	Source	24-Hour Volume	Annual Growth Rate
1	2017	City	3,800	-
2	2018	City	4,100	7.9%
3	2019	City	0	-100.0%
4	2020	City	3,400	#DIV/0!
5	2021	City	5,500	61.8%
		5-Yr Avg		#DIV/0!
		2017-2021		9.7%

US 377, North of Mt Gilead Road

Record	Year	Source	24-Hour Volume	Annual Growth Rate
1	2017	City	25,500	-
2	2018	City	24,200	-5.1%
3	2019	City	24,200	0.0%
4	2020	City	23,000	-5.0%
5	2021	City	24,500	6.5%
		5-Yr Avg		-0.9%
		2017-2021		-1.0%

Bourland Road, North of Mt Gilead

Record	Year	Source	24-Hour Volume	Annual Growth Rate
1	2017	City	4,800	-
2	2018	City	4,900	2.1%
3	2019	City	5,600	14.3%
4	2020	City	4,200	-25.0%
5	2021	City	5,200	23.8%
		5-Yr Avg		3.8%
		2017-2021		2.0%

Mt Gilead, West of Bourland Road

Record	Year	Source	24-Hour Volume	Annual Growth Rate
1	2017	City	3,600	-
2	2018	City	3,600	0.0%
3	2019	City	1,000	-72.2%
4	2020	City	3,200	220.0%
5	2021	City	5,100	59.4%
		5-Yr Avg		51.8%
		2017-2021		9.1%

US 377, South of Mt Gilead Road

Record	Year	Source	24-Hour Volume	Annual Growth Rate
1	2017	City	24,400	-
2	2018	City	22,700	-7.0%
3	2019	City	24,300	7.0%
4	2020	City	20,100	-17.3%
5	2021	City	23,300	15.9%
		5-Yr Avg		-0.3%
		2017-2021		-1.1%

Bourland Road, South of Mt Gilead

Record	Year	Source	24-Hour Volume	Annual Growth Rate
1	2017	City	7,300	-
2	2018	City	7,000	-4.1%
3	2019	City	8,100	15.7%
4	2020	City	6,000	-25.9%
5	2021	City	7,500	25.0%
		5-Yr Avg		2.7%
		2017-2021		0.7%

Mt Gilead, East of Bourland Road

Record	Year	Source	24-Hour Volume	Annual Growth Rate
1	2017	City	5,000	-
2	2018	City	5,500	10.0%
3	2019	City	4,600	-16.4%
4	2020	City	4,100	-10.9%
5	2021	City	5,600	36.6%
		5-Yr Avg		4.8%
		2017-2021		2.9%

Overall Study Area Growth Rate 2017-2021	3.2%
Study Area Growth Rate	3.5%

Kimley»Horn

SYNCHRO INTERSECTION CAPACITY ANALYSIS

Intersection	
Intersection Delay, s/veh	25.5
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	45	248	63	162	102	30	31	143	157	48	260	41
Future Vol, veh/h	45	248	63	162	102	30	31	143	157	48	260	41
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	49	270	68	176	111	33	34	155	171	52	283	45
Number of Lanes	1	1	0	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	29.4	17	26.4	27.8
HCM LOS	D	C	D	D

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	100%	0%
Vol Thru, %	0%	48%	0%	80%	0%	77%	0%	86%
Vol Right, %	0%	52%	0%	20%	0%	23%	0%	14%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	31	300	45	311	162	132	48	301
LT Vol	31	0	45	0	162	0	48	0
Through Vol	0	143	0	248	0	102	0	260
RT Vol	0	157	0	63	0	30	0	41
Lane Flow Rate	34	326	49	338	176	143	52	327
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.082	0.712	0.118	0.755	0.438	0.33	0.126	0.735
Departure Headway (Hd)	8.76	7.863	8.703	8.039	8.961	8.277	8.698	8.082
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	409	460	412	450	401	433	412	448
Service Time	6.516	5.619	6.459	5.795	6.725	6.04	6.453	5.836
HCM Lane V/C Ratio	0.083	0.709	0.119	0.751	0.439	0.33	0.126	0.73
HCM Control Delay	12.3	27.9	12.6	31.8	18.6	15.1	12.7	30.2
HCM Lane LOS	B	D	B	D	C	C	B	D
HCM 95th-tile Q	0.3	5.5	0.4	6.3	2.2	1.4	0.4	5.9

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	385	7	1	169	0	9	0	3	2	0	0
Future Vol, veh/h	1	385	7	1	169	0	9	0	3	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	1	418	8	1	184	0	10	0	3	2	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	184	0	0	426	0	0	610	610	422	612	614	184
Stage 1	-	-	-	-	-	-	424	424	-	186	186	-
Stage 2	-	-	-	-	-	-	186	186	-	426	428	-
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	1391	-	-	1133	-	-	407	409	632	405	407	858
Stage 1	-	-	-	-	-	-	608	587	-	816	746	-
Stage 2	-	-	-	-	-	-	816	746	-	606	585	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1391	-	-	1133	-	-	406	408	632	402	406	858
Mov Cap-2 Maneuver	-	-	-	-	-	-	406	408	-	402	406	-
Stage 1	-	-	-	-	-	-	607	586	-	815	745	-
Stage 2	-	-	-	-	-	-	815	745	-	602	584	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	13.3	14
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	446	1391	-	-	1133	-	-	402
HCM Lane V/C Ratio	0.029	0.001	-	-	0.001	-	-	0.005
HCM Control Delay (s)	13.3	7.6	0	-	8.2	0	-	14
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	543	341	301	53	108	20	128	543	58	17	404	146
Future Volume (veh/h)	543	341	301	53	108	20	128	543	58	17	404	146
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	590	371	0	58	117	22	139	590	63	18	439	159
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	777	517		95	196	166	274	1159	601	39	955	782
Arrive On Green	0.22	0.28	0.00	0.05	0.10	0.10	0.08	0.33	0.33	0.02	0.27	0.27
Sat Flow, veh/h	3456	1870	1585	1781	1870	1585	3456	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	590	371	0	58	117	22	139	590	63	18	439	159
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1781	1870	1585	1728	1777	1585	1781	1777	1585
Q Serve(g_s), s	8.9	10.0	0.0	1.8	3.3	0.7	2.2	7.5	1.4	0.6	5.8	3.2
Cycle Q Clear(g_c), s	8.9	10.0	0.0	1.8	3.3	0.7	2.2	7.5	1.4	0.6	5.8	3.2
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	777	517		95	196	166	274	1159	601	39	955	782
V/C Ratio(X)	0.76	0.72		0.61	0.60	0.13	0.51	0.51	0.10	0.46	0.46	0.20
Avail Cap(c_a), veh/h	1269	1022		335	687	582	464	1496	751	239	1496	1024
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.2	18.2	0.0	25.9	23.9	22.7	24.7	15.2	11.2	27.0	17.0	8.0
Incr Delay (d2), s/veh	1.6	1.9	0.0	6.3	2.9	0.4	1.5	0.3	0.1	8.3	0.3	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	3.4	4.1	0.0	0.9	1.5	0.3	0.9	2.7	0.5	0.3	2.2	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.8	20.1	0.0	32.2	26.7	23.0	26.1	15.6	11.3	35.3	17.4	8.1
LnGrp LOS	C	C		C	C	C	C	B	B	D	B	A
Approach Vol, veh/h		961	A		197			792			616	
Approach Delay, s/veh		21.1			27.9			17.1			15.5	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.7	22.7	7.5	19.9	8.9	19.5	17.1	10.4
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	7.5	23.5	10.5	30.5	7.5	23.5	20.5	20.5
Max Q Clear Time (g_c+I1), s	2.6	9.5	3.8	12.0	4.2	7.8	10.9	5.3
Green Ext Time (p_c), s	0.0	3.6	0.0	2.1	0.1	3.1	1.6	0.5

Intersection Summary	
HCM 6th Ctrl Delay	19.0
HCM 6th LOS	B

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Intersection Delay, s/veh	21.2
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	19	103	48	123	280	58	79	212	116	21	184	18
Future Vol, veh/h	19	103	48	123	280	58	79	212	116	21	184	18
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	112	52	134	304	63	86	230	126	23	200	20
Number of Lanes	1	1	0	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	14.5	23.9	23.2	16.9
HCM LOS	B	C	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	100%	0%
Vol Thru, %	0%	65%	0%	68%	0%	83%	0%	91%
Vol Right, %	0%	35%	0%	32%	0%	17%	0%	9%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	79	328	19	151	123	338	21	202
LT Vol	79	0	19	0	123	0	21	0
Through Vol	0	212	0	103	0	280	0	184
RT Vol	0	116	0	48	0	58	0	18
Lane Flow Rate	86	357	21	164	134	367	23	220
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.189	0.71	0.049	0.355	0.291	0.736	0.053	0.474
Departure Headway (Hd)	7.937	7.17	8.539	7.792	7.846	7.21	8.343	7.764
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	451	503	418	460	457	500	428	463
Service Time	5.703	4.936	6.32	5.573	5.61	4.974	6.118	5.538
HCM Lane V/C Ratio	0.191	0.71	0.05	0.357	0.293	0.734	0.054	0.475
HCM Control Delay	12.6	25.7	11.8	14.8	13.8	27.6	11.6	17.4
HCM Lane LOS	B	D	B	B	B	D	B	C
HCM 95th-tile Q	0.7	5.6	0.2	1.6	1.2	6.1	0.2	2.5

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	166	6	1	371	0	5	0	2	5	0	0
Future Vol, veh/h	0	166	6	1	371	0	5	0	2	5	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	180	7	1	403	0	5	0	2	5	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	403	0	0	187	0	0	589	589	184	590	592	403
Stage 1	-	-	-	-	-	-	184	184	-	405	405	-
Stage 2	-	-	-	-	-	-	405	405	-	185	187	-
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	1156	-	-	1387	-	-	420	421	858	419	419	647
Stage 1	-	-	-	-	-	-	818	747	-	622	598	-
Stage 2	-	-	-	-	-	-	622	598	-	817	745	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1156	-	-	1387	-	-	420	421	858	418	419	647
Mov Cap-2 Maneuver	-	-	-	-	-	-	420	421	-	418	419	-
Stage 1	-	-	-	-	-	-	818	747	-	622	597	-
Stage 2	-	-	-	-	-	-	621	597	-	815	745	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	12.4	13.7
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	492	1156	-	-	1387	-	-	418
HCM Lane V/C Ratio	0.015	-	-	-	0.001	-	-	0.013
HCM Control Delay (s)	12.4	0	-	-	7.6	0	-	13.7
HCM Lane LOS	B	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	209	105	204	50	309	11	302	542	45	15	674	525
Future Volume (veh/h)	209	105	204	50	309	11	302	542	45	15	674	525
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	227	114	0	54	336	12	328	589	49	16	733	571
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	327	485		79	391	332	412	1496	738	33	1139	658
Arrive On Green	0.09	0.26	0.00	0.04	0.21	0.21	0.12	0.42	0.42	0.02	0.32	0.32
Sat Flow, veh/h	3456	1870	1585	1781	1870	1585	3456	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	227	114	0	54	336	12	328	589	49	16	733	571
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1781	1870	1585	1728	1777	1585	1781	1777	1585
Q Serve(g_s), s	5.0	3.7	0.0	2.3	13.5	0.5	7.2	9.0	1.3	0.7	13.8	25.0
Cycle Q Clear(g_c), s	5.0	3.7	0.0	2.3	13.5	0.5	7.2	9.0	1.3	0.7	13.8	25.0
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	327	485		79	391	332	412	1496	738	33	1139	658
V/C Ratio(X)	0.70	0.23		0.69	0.86	0.04	0.80	0.39	0.07	0.48	0.64	0.87
Avail Cap(c_a), veh/h	665	600		228	480	407	443	1496	738	228	1139	658
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.2	22.8	0.0	36.7	29.7	24.6	33.4	15.7	11.5	37.9	22.7	20.9
Incr Delay (d2), s/veh	2.7	0.2	0.0	10.1	12.4	0.0	9.2	0.2	0.0	10.2	1.2	11.9
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	2.2	1.6	0.0	1.2	7.2	0.2	3.5	3.4	0.4	0.4	5.7	10.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.9	23.0	0.0	46.8	42.2	24.6	42.6	15.8	11.5	48.1	23.9	32.7
LnGrp LOS	D	C		D	D	C	D	B	B	D	C	C
Approach Vol, veh/h		341	A		402			966			1320	
Approach Delay, s/veh		32.2			42.2			24.7			28.0	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.5	37.8	8.4	25.2	14.3	30.0	12.4	21.3
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	10.0	25.0	10.0	25.0	10.0	25.0	15.0	20.0
Max Q Clear Time (g_c+I1), s	2.7	11.0	4.3	5.7	9.2	27.0	7.0	15.5
Green Ext Time (p_c), s	0.0	3.5	0.0	0.5	0.1	0.0	0.5	0.8

Intersection Summary	
HCM 6th Ctrl Delay	29.3
HCM 6th LOS	C

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Intersection Delay, s/veh	106.3
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	63	350	89	229	144	42	44	202	221	68	367	58
Future Vol, veh/h	63	350	89	229	144	42	44	202	221	68	367	58
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	68	380	97	249	157	46	48	220	240	74	399	63
Number of Lanes	1	1	0	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	137.6	32.5	117.8	125.5
HCM LOS	F	D	F	F

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	100%	0%
Vol Thru, %	0%	48%	0%	80%	0%	77%	0%	86%
Vol Right, %	0%	52%	0%	20%	0%	23%	0%	14%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	44	423	63	439	229	186	68	425
LT Vol	44	0	63	0	229	0	68	0
Through Vol	0	202	0	350	0	144	0	367
RT Vol	0	221	0	89	0	42	0	58
Lane Flow Rate	48	460	68	477	249	202	74	462
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.132	1.156	0.188	1.228	0.708	0.538	0.203	1.194
Departure Headway (Hd)	11.025	10.107	10.845	10.165	11.609	10.907	10.967	10.335
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	327	363	333	363	314	334	330	356
Service Time	8.725	7.807	8.545	7.865	9.309	8.607	8.667	8.035
HCM Lane V/C Ratio	0.147	1.267	0.204	1.314	0.793	0.605	0.224	1.298
HCM Control Delay	15.4	128.5	16	155	38.1	25.6	16.4	143
HCM Lane LOS	C	F	C	F	E	D	C	F
HCM 95th-tile Q	0.5	16.4	0.7	18.8	5	3	0.7	17.4

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	5	543	10	5	238	5	13	5	5	5	5	5
Future Vol, veh/h	5	543	10	5	238	5	13	5	5	5	5	5
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	5	590	11	5	259	5	14	5	5	5	5	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	264	0	0	601	0	0	883	880	596	883	883	262
Stage 1	-	-	-	-	-	-	606	606	-	272	272	-
Stage 2	-	-	-	-	-	-	277	274	-	611	611	-
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	1300	-	-	976	-	-	266	286	504	266	285	777
Stage 1	-	-	-	-	-	-	484	487	-	734	685	-
Stage 2	-	-	-	-	-	-	729	683	-	481	484	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1300	-	-	976	-	-	258	283	504	257	282	777
Mov Cap-2 Maneuver	-	-	-	-	-	-	258	283	-	257	282	-
Stage 1	-	-	-	-	-	-	481	484	-	730	681	-
Stage 2	-	-	-	-	-	-	714	679	-	468	481	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.2	18.3	16
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	295	1300	-	-	976	-	-	344
HCM Lane V/C Ratio	0.085	0.004	-	-	0.006	-	-	0.047
HCM Control Delay (s)	18.3	7.8	0	-	8.7	0	-	16
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	543	481	425	75	152	28	181	766	82	24	570	146
Future Volume (veh/h)	543	481	425	75	152	28	181	766	82	24	570	146
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	590	523	0	82	165	30	197	833	89	26	620	159
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	719	611		105	332	282	287	1075	573	50	880	722
Arrive On Green	0.21	0.33	0.00	0.06	0.18	0.18	0.08	0.30	0.30	0.03	0.25	0.25
Sat Flow, veh/h	3456	1870	1585	1781	1870	1585	3456	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	590	523	0	82	165	30	197	833	89	26	620	159
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1781	1870	1585	1728	1777	1585	1781	1777	1585
Q Serve(g_s), s	11.5	18.4	0.0	3.2	5.6	1.1	3.9	15.1	2.7	1.0	11.2	4.3
Cycle Q Clear(g_c), s	11.5	18.4	0.0	3.2	5.6	1.1	3.9	15.1	2.7	1.0	11.2	4.3
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	719	611		105	332	282	287	1075	573	50	880	722
V/C Ratio(X)	0.82	0.86		0.78	0.50	0.11	0.69	0.78	0.16	0.52	0.70	0.22
Avail Cap(c_a), veh/h	930	848		151	504	427	343	1360	700	126	1259	891
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.7	22.2	0.0	32.7	26.2	24.3	31.5	22.4	15.2	33.8	24.2	11.6
Incr Delay (d2), s/veh	4.6	6.3	0.0	14.7	1.1	0.2	4.4	2.2	0.1	7.9	1.0	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	5.0	8.6	0.0	1.8	2.5	0.4	1.8	6.2	0.9	0.5	4.6	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.3	28.5	0.0	47.5	27.3	24.5	35.9	24.6	15.4	41.7	25.2	11.8
LnGrp LOS	C	C		D	C	C	D	C	B	D	C	B
Approach Vol, veh/h		1113	A		277			1119			805	
Approach Delay, s/veh		30.0			33.0			25.9			23.1	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.0	26.3	9.2	28.1	10.9	22.5	19.7	17.5
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	5.0	27.0	6.0	32.0	7.0	25.0	19.0	19.0
Max Q Clear Time (g_c+I1), s	3.0	17.1	5.2	20.4	5.9	13.2	13.5	7.6
Green Ext Time (p_c), s	0.0	4.3	0.0	2.6	0.1	3.7	1.2	0.7

Intersection Summary	
HCM 6th Ctrl Delay	27.2
HCM 6th LOS	C

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Intersection Delay, s/veh	85.9
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	145	68	174	395	82	111	299	164	30	260	25
Future Vol, veh/h	27	145	68	174	395	82	111	299	164	30	260	25
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	29	158	74	189	429	89	121	325	178	33	283	27
Number of Lanes	1	1	0	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	24.3	113.7	107.4	36
HCM LOS	C	F	F	E

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	100%	0%
Vol Thru, %	0%	65%	0%	68%	0%	83%	0%	91%
Vol Right, %	0%	35%	0%	32%	0%	17%	0%	9%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	111	463	27	213	174	477	30	285
LT Vol	111	0	27	0	174	0	30	0
Through Vol	0	299	0	145	0	395	0	260
RT Vol	0	164	0	68	0	82	0	25
Lane Flow Rate	121	503	29	232	189	518	33	310
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.306	1.173	0.08	0.584	0.478	1.222	0.086	0.768
Departure Headway (Hd)	9.64	8.859	10.682	9.918	9.573	8.925	10.332	9.742
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	375	413	337	366	378	410	349	375
Service Time	7.34	6.559	8.382	7.618	7.273	6.625	8.032	7.442
HCM Lane V/C Ratio	0.323	1.218	0.086	0.634	0.5	1.263	0.095	0.827
HCM Control Delay	16.5	129.2	14.3	25.6	20.7	147.6	14	38.3
HCM Lane LOS	C	F	B	D	C	F	B	E
HCM 95th-tile Q	1.3	18.5	0.3	3.5	2.5	20.3	0.3	6.3

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	5	234	8	5	523	5	7	5	5	7	5	5
Future Vol, veh/h	5	234	8	5	523	5	7	5	5	7	5	5
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	5	254	9	5	568	5	8	5	5	8	5	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	573	0	0	263	0	0	855	852	259	855	854	571
Stage 1	-	-	-	-	-	-	269	269	-	581	581	-
Stage 2	-	-	-	-	-	-	586	583	-	274	273	-
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	1000	-	-	1301	-	-	278	297	780	278	296	520
Stage 1	-	-	-	-	-	-	737	687	-	499	500	-
Stage 2	-	-	-	-	-	-	496	499	-	732	684	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1000	-	-	1301	-	-	269	293	780	270	292	520
Mov Cap-2 Maneuver	-	-	-	-	-	-	269	293	-	270	292	-
Stage 1	-	-	-	-	-	-	733	683	-	496	497	-
Stage 2	-	-	-	-	-	-	483	496	-	717	680	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.1	16.1	16.8
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	343	1000	-	-	1301	-	-	323
HCM Lane V/C Ratio	0.054	0.005	-	-	0.004	-	-	0.057
HCM Control Delay (s)	16.1	8.6	0	-	7.8	0	-	16.8
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	209	148	288	71	436	16	426	765	63	21	951	525
Future Volume (veh/h)	209	148	288	71	436	16	426	765	63	21	951	525
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	227	161	0	77	474	17	463	832	68	23	1034	571
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	299	537		99	479	406	462	1458	739	43	1069	614
Arrive On Green	0.09	0.29	0.00	0.06	0.26	0.26	0.13	0.41	0.41	0.02	0.30	0.30
Sat Flow, veh/h	3456	1870	1585	1781	1870	1585	3456	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	227	161	0	77	474	17	463	832	68	23	1034	571
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1781	1870	1585	1728	1777	1585	1781	1777	1585
Q Serve(g_s), s	5.8	6.0	0.0	3.8	22.7	0.7	12.0	16.2	2.1	1.1	25.8	27.0
Cycle Q Clear(g_c), s	5.8	6.0	0.0	3.8	22.7	0.7	12.0	16.2	2.1	1.1	25.8	27.0
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	299	537		99	479	406	462	1458	739	43	1069	614
V/C Ratio(X)	0.76	0.30		0.77	0.99	0.04	1.00	0.57	0.09	0.53	0.97	0.93
Avail Cap(c_a), veh/h	308	537		179	479	406	462	1458	739	99	1069	614
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.1	25.0	0.0	41.8	33.3	25.1	38.9	20.4	13.4	43.3	30.9	26.3
Incr Delay (d2), s/veh	10.2	0.3	0.0	12.0	38.1	0.0	42.4	0.5	0.1	9.7	20.0	20.9
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	2.8	2.7	0.0	2.0	15.0	0.3	7.7	6.5	0.7	0.6	13.6	14.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.3	25.3	0.0	53.9	71.4	25.1	81.3	20.9	13.4	53.0	51.0	47.3
LnGrp LOS	D	C		D	E	C	F	C	B	D	D	D
Approach Vol, veh/h		388	A		568			1363			1628	
Approach Delay, s/veh		39.9			67.6			41.1			49.7	
Approach LOS		D			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.2	41.8	10.0	30.8	17.0	32.0	12.8	28.0
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	5.0	34.0	9.0	22.0	12.0	27.0	8.0	23.0
Max Q Clear Time (g_c+I1), s	3.1	18.2	5.8	8.0	14.0	29.0	7.8	24.7
Green Ext Time (p_c), s	0.0	5.5	0.0	0.7	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	48.3
HCM 6th LOS	D

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

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	5	543	10	5	238	5	13	5	5	5	5	5
Future Vol, veh/h	5	543	10	5	238	5	13	5	5	5	5	5
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	200	-	0	200	-	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	5	590	11	5	259	5	14	5	5	5	5	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	264	0	0	601	0	0	742	874	590	880	880	130
Stage 1	-	-	-	-	-	-	600	600	-	269	269	-
Stage 2	-	-	-	-	-	-	142	274	-	611	611	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.33	6.53	6.23	7.33	6.53	6.93
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	2.219	-	-	2.219	-	-	3.519	4.019	3.319	3.519	4.019	3.319
Pot Cap-1 Maneuver	1299	-	-	974	-	-	318	287	507	254	285	896
Stage 1	-	-	-	-	-	-	487	489	-	714	686	-
Stage 2	-	-	-	-	-	-	847	683	-	480	483	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1299	-	-	974	-	-	309	284	507	246	282	896
Mov Cap-2 Maneuver	-	-	-	-	-	-	309	284	-	246	282	-
Stage 1	-	-	-	-	-	-	485	487	-	711	683	-
Stage 2	-	-	-	-	-	-	831	680	-	468	481	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.2	16.8	16
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	331	1299	-	-	974	-	-	344
HCM Lane V/C Ratio	0.076	0.004	-	-	0.006	-	-	0.047
HCM Control Delay (s)	16.8	7.8	-	-	8.7	-	-	16
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.1

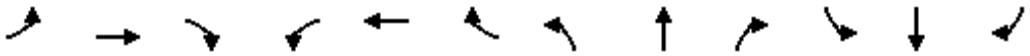
Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	234	8	5	523	5	7	5	5	7	5	5
Future Vol, veh/h	5	234	8	5	523	5	7	5	5	7	5	5
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	200	-	0	200	-	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	5	254	9	5	568	5	8	5	5	8	5	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	573	0	0	263	0	0	561	847	254	852	851	284
Stage 1	-	-	-	-	-	-	264	264	-	578	578	-
Stage 2	-	-	-	-	-	-	297	583	-	274	273	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.33	6.53	6.23	7.33	6.53	6.93
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	2.219	-	-	2.219	-	-	3.519	4.019	3.319	3.519	4.019	3.319
Pot Cap-1 Maneuver	998	-	-	1300	-	-	424	298	784	266	296	714
Stage 1	-	-	-	-	-	-	740	689	-	469	500	-
Stage 2	-	-	-	-	-	-	688	498	-	731	683	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	998	-	-	1300	-	-	412	295	784	259	293	714
Mov Cap-2 Maneuver	-	-	-	-	-	-	412	295	-	259	293	-
Stage 1	-	-	-	-	-	-	736	686	-	467	498	-
Stage 2	-	-	-	-	-	-	673	496	-	717	680	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.1	13.9	16.4
HCM LOS			B	C

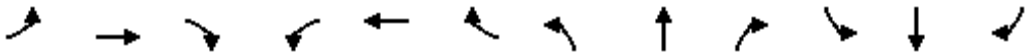
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	422	998	-	-	1300	-	-	333
HCM Lane V/C Ratio	0.044	0.005	-	-	0.004	-	-	0.055
HCM Control Delay (s)	13.9	8.6	-	-	7.8	-	-	16.4
HCM Lane LOS	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.2



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	63	350	89	229	144	42	44	202	221	68	367	58
Future Volume (veh/h)	63	350	89	229	144	42	44	202	221	68	367	58
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	68	380	97	249	157	46	48	220	240	74	399	63
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	493	406	104	322	490	144	235	248	270	221	492	78
Arrive On Green	0.05	0.28	0.28	0.12	0.35	0.35	0.04	0.30	0.30	0.05	0.31	0.31
Sat Flow, veh/h	1781	1437	367	1781	1390	407	1781	818	892	1781	1577	249
Grp Volume(v), veh/h	68	0	477	249	0	203	48	0	460	74	0	462
Grp Sat Flow(s),veh/h/ln	1781	0	1804	1781	0	1797	1781	0	1710	1781	0	1826
Q Serve(g_s), s	2.2	0.0	20.9	7.6	0.0	6.7	1.5	0.0	20.8	2.3	0.0	18.9
Cycle Q Clear(g_c), s	2.2	0.0	20.9	7.6	0.0	6.7	1.5	0.0	20.8	2.3	0.0	18.9
Prop In Lane	1.00		0.20	1.00		0.23	1.00		0.52	1.00		0.14
Lane Grp Cap(c), veh/h	493	0	510	322	0	633	235	0	518	221	0	570
V/C Ratio(X)	0.14	0.00	0.93	0.77	0.00	0.32	0.20	0.00	0.89	0.34	0.00	0.81
Avail Cap(c_a), veh/h	561	0	511	331	0	633	316	0	632	285	0	675
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	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.9	0.0	28.4	19.3	0.0	19.2	20.1	0.0	27.0	20.6	0.0	25.7
Incr Delay (d2), s/veh	0.1	0.0	24.6	10.6	0.0	0.3	0.4	0.0	12.7	0.9	0.0	6.4
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	0.9	0.0	12.1	3.8	0.0	2.7	0.6	0.0	9.9	1.0	0.0	8.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.0	0.0	53.0	29.9	0.0	19.5	20.5	0.0	39.7	21.5	0.0	32.1
LnGrp LOS	B	A	D	C	A	B	C	A	D	C	A	C
Approach Vol, veh/h		545			452			508			536	
Approach Delay, s/veh		48.8			25.2			37.9			30.6	
Approach LOS		D			C			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.1	29.6	14.6	27.9	8.3	30.3	8.9	33.6
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	7.0	30.0	10.0	23.0	7.0	30.0	7.0	26.0
Max Q Clear Time (g_c+I1), s	4.3	22.8	9.6	22.9	3.5	20.9	4.2	8.7
Green Ext Time (p_c), s	0.0	1.7	0.0	0.0	0.0	2.0	0.0	1.0

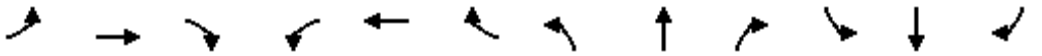
Intersection Summary	
HCM 6th Ctrl Delay	36.1
HCM 6th LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	543	10	5	238	5	13	5	5	5	5	5
Future Volume (veh/h)	5	543	10	5	238	5	13	5	5	5	5	5
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	5	590	11	5	259	5	14	5	5	5	5	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	756	886	751	429	2269	1012	222	15	15	177	26	26
Arrive On Green	0.47	0.47	0.47	0.01	0.64	0.64	0.05	0.05	0.05	0.05	0.05	0.05
Sat Flow, veh/h	1115	1870	1585	1781	3554	1585	916	327	327	557	557	557
Grp Volume(v), veh/h	5	590	11	5	259	5	24	0	0	15	0	0
Grp Sat Flow(s),veh/h/ln	1115	1870	1585	1781	1777	1585	1571	0	0	1670	0	0
Q Serve(g_s), s	0.1	7.7	0.1	0.0	0.9	0.0	0.2	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.1	7.7	0.1	0.0	0.9	0.0	0.4	0.0	0.0	0.2	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.58		0.21	0.33		0.33
Lane Grp Cap(c), veh/h	756	886	751	429	2269	1012	252	0	0	228	0	0
V/C Ratio(X)	0.01	0.67	0.01	0.01	0.11	0.00	0.10	0.00	0.00	0.07	0.00	0.00
Avail Cap(c_a), veh/h	1636	2363	2002	979	6172	2753	1382	0	0	1416	0	0
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	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	4.4	6.4	4.4	4.8	2.2	2.1	14.6	0.0	0.0	14.5	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.9	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.1	0.0	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	0.0	1.7	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	4.4	7.3	4.4	4.8	2.3	2.1	14.8	0.0	0.0	14.7	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	B	A	A	B	A	A
Approach Vol, veh/h		606			269			24			15	
Approach Delay, s/veh		7.2			2.3			14.8			14.7	
Approach LOS		A			A			B			B	

Timer - Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		6.5	5.2	20.0		6.5		25.2				
Change Period (Y+Rc), s		5.0	5.0	5.0		5.0		5.0				
Max Green Setting (Gmax), s		25.0	10.0	40.0		25.0		55.0				
Max Q Clear Time (g_c+I1), s		2.4	2.0	9.7		2.2		2.9				
Green Ext Time (p_c), s		0.1	0.0	4.4		0.0		1.9				

Intersection Summary												
HCM 6th Ctrl Delay			6.1									
HCM 6th LOS			A									



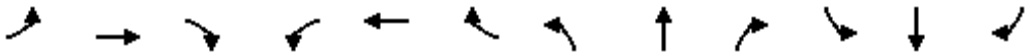
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	543	481	425	75	152	28	181	766	82	24	570	146
Future Volume (veh/h)	543	481	425	75	152	28	181	766	82	24	570	146
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	590	523	0	82	165	30	197	833	89	26	620	159
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	719	611		105	632	282	287	1075	573	50	880	722
Arrive On Green	0.21	0.33	0.00	0.06	0.18	0.18	0.08	0.30	0.30	0.03	0.25	0.25
Sat Flow, veh/h	3456	1870	1585	1781	3554	1585	3456	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	590	523	0	82	165	30	197	833	89	26	620	159
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1781	1777	1585	1728	1777	1585	1781	1777	1585
Q Serve(g_s), s	11.5	18.4	0.0	3.2	2.8	1.1	3.9	15.1	2.7	1.0	11.2	4.3
Cycle Q Clear(g_c), s	11.5	18.4	0.0	3.2	2.8	1.1	3.9	15.1	2.7	1.0	11.2	4.3
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	719	611		105	632	282	287	1075	573	50	880	722
V/C Ratio(X)	0.82	0.86		0.78	0.26	0.11	0.69	0.78	0.16	0.52	0.70	0.22
Avail Cap(c_a), veh/h	930	848		151	957	427	343	1360	700	126	1259	891
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.7	22.2	0.0	32.7	25.0	24.3	31.5	22.4	15.2	33.8	24.2	11.6
Incr Delay (d2), s/veh	4.6	6.3	0.0	14.7	0.2	0.2	4.4	2.2	0.1	7.9	1.0	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	5.0	8.6	0.0	1.8	1.2	0.4	1.8	6.2	0.9	0.5	4.6	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.3	28.5	0.0	47.5	25.2	24.5	35.9	24.6	15.4	41.7	25.2	11.8
LnGrp LOS	C	C		D	C	C	D	C	B	D	C	B
Approach Vol, veh/h		1113			277			1119			805	
Approach Delay, s/veh		30.0			31.7			25.9			23.1	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.0	26.3	9.2	28.1	10.9	22.5	19.7	17.5
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	5.0	27.0	6.0	32.0	7.0	25.0	19.0	19.0
Max Q Clear Time (g_c+I1), s	3.0	17.1	5.2	20.4	5.9	13.2	13.5	4.8
Green Ext Time (p_c), s	0.0	4.3	0.0	2.6	0.1	3.7	1.2	0.9

Intersection Summary	
HCM 6th Ctrl Delay	27.1
HCM 6th LOS	C

Notes

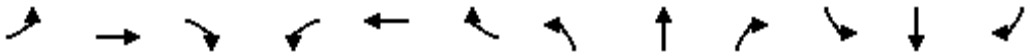
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	145	68	174	395	82	111	299	164	30	260	25
Future Volume (veh/h)	27	145	68	174	395	82	111	299	164	30	260	25
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	29	158	74	189	429	89	121	325	178	33	283	27
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	195	291	137	434	471	98	391	376	206	221	498	48
Arrive On Green	0.03	0.24	0.24	0.10	0.31	0.31	0.07	0.33	0.33	0.03	0.30	0.30
Sat Flow, veh/h	1781	1205	564	1781	1503	312	1781	1136	622	1781	1681	160
Grp Volume(v), veh/h	29	0	232	189	0	518	121	0	503	33	0	310
Grp Sat Flow(s),veh/h/ln	1781	0	1769	1781	0	1814	1781	0	1758	1781	0	1841
Q Serve(g_s), s	0.8	0.0	7.9	5.1	0.0	18.9	3.2	0.0	18.5	0.9	0.0	9.8
Cycle Q Clear(g_c), s	0.8	0.0	7.9	5.1	0.0	18.9	3.2	0.0	18.5	0.9	0.0	9.8
Prop In Lane	1.00		0.32	1.00		0.17	1.00		0.35	1.00		0.09
Lane Grp Cap(c), veh/h	195	0	428	434	0	569	391	0	582	221	0	546
V/C Ratio(X)	0.15	0.00	0.54	0.44	0.00	0.91	0.31	0.00	0.86	0.15	0.00	0.57
Avail Cap(c_a), veh/h	398	0	591	510	0	606	450	0	766	342	0	803
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	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.0	0.0	22.8	16.0	0.0	22.7	15.7	0.0	21.6	17.7	0.0	20.5
Incr Delay (d2), s/veh	0.3	0.0	1.1	0.7	0.0	17.3	0.4	0.0	8.1	0.3	0.0	0.9
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	0.3	0.0	3.2	2.0	0.0	10.2	1.2	0.0	8.3	0.4	0.0	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.3	0.0	23.8	16.7	0.0	40.0	16.1	0.0	29.6	18.0	0.0	21.4
LnGrp LOS	C	A	C	B	A	D	B	A	C	B	A	C
Approach Vol, veh/h		261			707			624			343	
Approach Delay, s/veh		23.4			33.8			27.0			21.1	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.3	27.8	12.1	21.7	9.7	25.4	7.1	26.6
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	7.0	30.0	10.0	23.0	7.0	30.0	10.0	23.0
Max Q Clear Time (g_c+I1), s	2.9	20.5	7.1	9.9	5.2	11.8	2.8	20.9
Green Ext Time (p_c), s	0.0	2.3	0.1	1.1	0.0	1.7	0.0	0.7

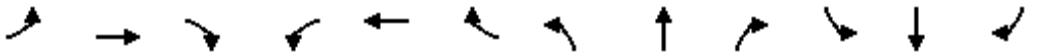
Intersection Summary	
HCM 6th Ctrl Delay	28.0
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	234	8	5	523	5	7	5	5	7	5	5
Future Volume (veh/h)	5	234	8	5	523	5	7	5	5	7	5	5
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	5	254	9	5	568	5	8	5	5	8	5	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	627	889	753	679	2276	1015	196	19	19	196	19	19
Arrive On Green	0.48	0.48	0.48	0.01	0.64	0.64	0.04	0.04	0.04	0.04	0.04	0.04
Sat Flow, veh/h	839	1870	1585	1781	3554	1585	721	450	450	721	450	450
Grp Volume(v), veh/h	5	254	9	5	568	5	18	0	0	18	0	0
Grp Sat Flow(s),veh/h/ln	839	1870	1585	1781	1777	1585	1621	0	0	1621	0	0
Q Serve(g_s), s	0.1	2.6	0.1	0.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.1	2.6	0.1	0.0	2.2	0.0	0.3	0.0	0.0	0.3	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.44		0.28	0.44		0.28
Lane Grp Cap(c), veh/h	627	889	753	679	2276	1015	234	0	0	234	0	0
V/C Ratio(X)	0.01	0.29	0.01	0.01	0.25	0.00	0.08	0.00	0.00	0.08	0.00	0.00
Avail Cap(c_a), veh/h	1292	2370	2008	1231	6191	2762	1404	0	0	1404	0	0
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	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	4.4	5.0	4.4	3.6	2.4	2.0	14.6	0.0	0.0	14.6	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.1	0.0	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	0.0	0.5	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	4.4	5.2	4.4	3.6	2.5	2.1	14.7	0.0	0.0	14.7	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	B	A	A	B	A	A
Approach Vol, veh/h		268			578			18			18	
Approach Delay, s/veh		5.2			2.5			14.7			14.7	
Approach LOS		A			A			B			B	

Timer - Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		6.4	5.2	20.0		6.4		25.2				
Change Period (Y+Rc), s		5.0	5.0	5.0		5.0		5.0				
Max Green Setting (Gmax), s		25.0	10.0	40.0		25.0		55.0				
Max Q Clear Time (g_c+I1), s		2.3	2.0	4.6		2.3		4.2				
Green Ext Time (p_c), s		0.0	0.0	1.6		0.0		4.5				

Intersection Summary												
HCM 6th Ctrl Delay			3.8									
HCM 6th LOS			A									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	209	148	288	71	436	16	426	765	63	21	951	525
Future Volume (veh/h)	209	148	288	71	436	16	426	765	63	21	951	525
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	227	161	0	77	474	17	463	832	68	23	1034	571
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	307	377		99	599	267	532	1710	851	44	1251	698
Arrive On Green	0.09	0.20	0.00	0.06	0.17	0.17	0.15	0.48	0.48	0.02	0.35	0.35
Sat Flow, veh/h	3456	1870	1585	1781	3554	1585	3456	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	227	161	0	77	474	17	463	832	68	23	1034	571
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1781	1777	1585	1728	1777	1585	1781	1777	1585
Q Serve(g_s), s	5.4	6.3	0.0	3.6	10.8	0.8	11.1	13.4	1.8	1.1	22.5	26.6
Cycle Q Clear(g_c), s	5.4	6.3	0.0	3.6	10.8	0.8	11.1	13.4	1.8	1.1	22.5	26.6
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	307	377		99	599	267	532	1710	851	44	1251	698
V/C Ratio(X)	0.74	0.43		0.78	0.79	0.06	0.87	0.49	0.08	0.52	0.83	0.82
Avail Cap(c_a), veh/h	368	465		127	757	338	532	1710	851	105	1262	704
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.5	29.4	0.0	39.4	33.7	29.5	34.9	14.8	9.5	40.7	25.0	20.6
Incr Delay (d2), s/veh	6.3	0.8	0.0	20.5	4.5	0.1	14.5	0.2	0.0	9.3	4.6	7.5
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	2.5	2.9	0.0	2.1	4.9	0.3	5.6	5.1	0.6	0.6	9.8	10.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.8	30.2	0.0	59.9	38.2	29.6	49.4	15.1	9.5	50.0	29.7	28.1
LnGrp LOS	D	C		E	D	C	D	B	A	D	C	C
Approach Vol, veh/h		388			568			1363			1628	
Approach Delay, s/veh		38.2			40.9			26.4			29.4	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.1	45.6	9.7	22.0	18.0	34.7	12.5	19.2
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	5.0	38.0	6.0	21.0	13.0	30.0	9.0	18.0
Max Q Clear Time (g_c+I1), s	3.1	15.4	5.6	8.3	13.1	28.6	7.4	12.8
Green Ext Time (p_c), s	0.0	6.4	0.0	0.6	0.0	1.1	0.1	1.4

Intersection Summary	
HCM 6th Ctrl Delay	30.9
HCM 6th LOS	C

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Kimley»Horn

SIDRA ROUNDABOUT CAPACITY ANALYSIS

MOVEMENT SUMMARY

Site: 101 [Mount Gilead_Bourland_AM (Site Folder: General)]

Horizon Build
AM Peak Hour
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] ft	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed mph
South: Bourland Road														
3	L2	44	2.0	48	2.0	0.646	15.8	LOS C	6.5	164.2	0.81	1.03	1.41	30.0
8	T1	202	2.0	220	2.0	0.646	15.8	LOS C	6.5	164.2	0.81	1.03	1.41	29.9
18	R2	221	2.0	240	2.0	0.646	15.8	LOS C	6.5	164.2	0.81	1.03	1.41	29.2
Approach		467	2.0	508	2.0	0.646	15.8	LOS C	6.5	164.2	0.81	1.03	1.41	29.6
East: Mount Gilead Road														
1	L2	229	2.0	249	2.0	0.473	9.5	LOS A	3.0	76.6	0.63	0.57	0.68	31.6
6	T1	144	2.0	157	2.0	0.473	9.5	LOS A	3.0	76.6	0.63	0.57	0.68	31.6
16	R2	42	2.0	46	2.0	0.473	9.5	LOS A	3.0	76.6	0.63	0.57	0.68	30.7
Approach		415	2.0	451	2.0	0.473	9.5	LOS A	3.0	76.6	0.63	0.57	0.68	31.5
North: Marshall Ridge Parkway														
7	L2	68	2.0	74	2.0	0.635	14.5	LOS B	6.6	168.2	0.79	0.99	1.31	30.5
4	T1	367	2.0	399	2.0	0.635	14.5	LOS B	6.6	168.2	0.79	0.99	1.31	30.4
14	R2	58	2.0	63	2.0	0.635	14.5	LOS B	6.6	168.2	0.79	0.99	1.31	29.6
Approach		493	2.0	536	2.0	0.635	14.5	LOS B	6.6	168.2	0.79	0.99	1.31	30.3
West: Mount Gilead Road														
5	L2	63	2.0	68	2.0	0.855	34.1	LOS D	12.2	310.1	0.96	1.49	2.58	24.1
2	T1	350	2.0	380	2.0	0.855	34.1	LOS D	12.2	310.1	0.96	1.49	2.58	24.1
12	R2	89	2.0	97	2.0	0.855	34.1	LOS D	12.2	310.1	0.96	1.49	2.58	23.6
Approach		502	2.0	546	2.0	0.855	34.1	LOS D	12.2	310.1	0.96	1.49	2.58	24.0
All Vehicles		1877	2.0	2040	2.0	0.855	19.0	LOS C	12.2	310.1	0.81	1.04	1.54	28.4

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 101 [Mount Gilead_Bourland_PM (Site Folder: General)]

Horizon Build
PM Peak Hour
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] ft	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed mph
South: Bourland Road														
3	L2	111	2.0	121	2.0	0.580	10.7	LOS B	4.6	118.0	0.62	0.49	0.66	31.9
8	T1	299	2.0	325	2.0	0.580	10.7	LOS B	4.6	118.0	0.62	0.49	0.66	31.9
18	R2	164	2.0	178	2.0	0.580	10.7	LOS B	4.6	118.0	0.62	0.49	0.66	31.0
Approach		574	2.0	624	2.0	0.580	10.7	LOS B	4.6	118.0	0.62	0.49	0.66	31.6
East: Mount Gilead Road														
1	L2	174	2.0	189	2.0	0.857	28.6	LOS D	17.6	446.1	1.00	1.57	2.51	25.4
6	T1	395	2.0	429	2.0	0.857	28.6	LOS D	17.6	446.1	1.00	1.57	2.51	25.4
16	R2	82	2.0	89	2.0	0.857	28.6	LOS D	17.6	446.1	1.00	1.57	2.51	24.9
Approach		651	2.0	708	2.0	0.857	28.6	LOS D	17.6	446.1	1.00	1.57	2.51	25.3
North: Marshall Ridge Parkway														
7	L2	30	2.0	33	2.0	0.546	15.2	LOS C	3.7	92.9	0.78	0.93	1.24	30.3
4	T1	260	2.0	283	2.0	0.546	15.2	LOS C	3.7	92.9	0.78	0.93	1.24	30.2
14	R2	25	2.0	27	2.0	0.546	15.2	LOS C	3.7	92.9	0.78	0.93	1.24	29.5
Approach		315	2.0	342	2.0	0.546	15.2	LOS C	3.7	92.9	0.78	0.93	1.24	30.2
West: Mount Gilead Road														
5	L2	27	2.0	29	2.0	0.326	8.3	LOS A	1.5	38.8	0.62	0.60	0.62	33.3
2	T1	145	2.0	158	2.0	0.326	8.3	LOS A	1.5	38.8	0.62	0.60	0.62	33.2
12	R2	68	2.0	74	2.0	0.326	8.3	LOS A	1.5	38.8	0.62	0.60	0.62	32.3
Approach		240	2.0	261	2.0	0.326	8.3	LOS A	1.5	38.8	0.62	0.60	0.62	33.0
All Vehicles		1780	2.0	1935	2.0	0.857	17.7	LOS C	17.6	446.1	0.79	0.98	1.43	28.9

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 101 [Mount Gilead_Oak Drive_AM (Site Folder: General)]

Horizon Build
AM Peak Hour
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] ft	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed mph
South: Oak Drive														
3	L2	13	2.0	14	2.0	0.024	4.6	LOS A	0.1	2.0	0.48	0.38	0.48	33.4
8	T1	1	2.0	1	2.0	0.024	4.6	LOS A	0.1	2.0	0.48	0.38	0.48	33.4
18	R2	4	2.0	4	2.0	0.024	4.6	LOS A	0.1	2.0	0.48	0.38	0.48	32.5
Approach		18	2.0	20	2.0	0.024	4.6	LOS A	0.1	2.0	0.48	0.38	0.48	33.2
East: Mount Gilead Road														
1	L2	1	2.0	1	2.0	0.095	3.4	LOS A	0.4	10.0	0.08	0.02	0.08	36.2
6	T1	238	2.0	259	2.0	0.095	3.4	LOS A	0.4	10.0	0.08	0.02	0.08	36.2
16	R2	1	2.0	1	2.0	0.095	3.4	LOS A	0.4	10.0	0.08	0.02	0.08	35.0
Approach		240	2.0	261	2.0	0.095	3.4	LOS A	0.4	10.0	0.08	0.02	0.08	36.2
North: Oak Drive														
7	L2	3	2.0	3	2.0	0.005	3.3	LOS A	0.0	0.4	0.33	0.17	0.33	34.4
4	T1	1	2.0	1	2.0	0.005	3.3	LOS A	0.0	0.4	0.33	0.17	0.33	34.3
14	R2	1	2.0	1	2.0	0.005	3.3	LOS A	0.0	0.4	0.33	0.17	0.33	33.4
Approach		5	2.0	5	2.0	0.005	3.3	LOS A	0.0	0.4	0.33	0.17	0.33	34.2
West: Mount Gilead Road														
5	L2	1	2.0	1	2.0	0.217	4.4	LOS A	1.0	26.5	0.05	0.01	0.05	35.7
2	T1	543	2.0	590	2.0	0.217	4.4	LOS A	1.0	26.5	0.05	0.01	0.05	35.6
12	R2	10	2.0	11	2.0	0.217	4.4	LOS A	1.0	26.5	0.05	0.01	0.05	34.5
Approach		554	2.0	602	2.0	0.217	4.4	LOS A	1.0	26.5	0.05	0.01	0.05	35.6
All Vehicles		817	2.0	888	2.0	0.217	4.1	LOS A	1.0	26.5	0.07	0.02	0.07	35.7

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 101 [Mount Gilead_Oak Drive_PM (Site Folder: General)]

Horizon Build
PM Peak Hour
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] ft	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed mph
South: Oak Drive														
3	L2	7	2.0	8	2.0	0.011	3.3	LOS A	0.0	1.0	0.32	0.18	0.32	34.3
8	T1	1	2.0	1	2.0	0.011	3.3	LOS A	0.0	1.0	0.32	0.18	0.32	34.2
18	R2	3	2.0	3	2.0	0.011	3.3	LOS A	0.0	1.0	0.32	0.18	0.32	33.2
Approach		11	2.0	12	2.0	0.011	3.3	LOS A	0.0	1.0	0.32	0.18	0.32	34.0
East: Mount Gilead Road														
1	L2	1	2.0	1	2.0	0.207	4.3	LOS A	1.0	24.8	0.06	0.01	0.06	35.7
6	T1	523	2.0	568	2.0	0.207	4.3	LOS A	1.0	24.8	0.06	0.01	0.06	35.6
16	R2	1	2.0	1	2.0	0.207	4.3	LOS A	1.0	24.8	0.06	0.01	0.06	34.5
Approach		525	2.0	571	2.0	0.207	4.3	LOS A	1.0	24.8	0.06	0.01	0.06	35.6
North: Oak Drive														
7	L2	7	2.0	8	2.0	0.012	4.4	LOS A	0.0	1.0	0.47	0.34	0.47	33.4
4	T1	1	2.0	1	2.0	0.012	4.4	LOS A	0.0	1.0	0.47	0.34	0.47	33.3
14	R2	1	2.0	1	2.0	0.012	4.4	LOS A	0.0	1.0	0.47	0.34	0.47	32.4
Approach		9	2.0	10	2.0	0.012	4.4	LOS A	0.0	1.0	0.47	0.34	0.47	33.3
West: Mount Gilead Road														
5	L2	1	2.0	1	2.0	0.096	3.4	LOS A	0.4	10.1	0.06	0.01	0.06	36.3
2	T1	234	2.0	254	2.0	0.096	3.4	LOS A	0.4	10.1	0.06	0.01	0.06	36.2
12	R2	8	2.0	9	2.0	0.096	3.4	LOS A	0.4	10.1	0.06	0.01	0.06	35.0
Approach		243	2.0	264	2.0	0.096	3.4	LOS A	0.4	10.1	0.06	0.01	0.06	36.1
All Vehicles		788	2.0	857	2.0	0.207	4.0	LOS A	1.0	24.8	0.07	0.02	0.07	35.7

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.