

Kum & Go 1391 Traffic Impact Study Jonesboro, AR

Prepared For:

Kum & Go
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November 2020



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1.0 INTRODUCTION AND PURPOSE

This report documents the results of impact analyses conducted for a proposed Kum & Go redevelopment in the northwest corner of Dara Drive & AR 18/Highlands Drive intersection in Jonesboro, Arkansas. A map showing the general location of the study area and study intersections is illustrated in **Figure 1**.

This traffic impact study (TIS) was conducted to identify the anticipated trips that would be generated by the proposed development to determine the effects of site traffic on the surrounding street network. This study is considered a Level 1 Traffic Impact Analysis (TIA) according to the City of Jonesboro Transportation Impact Study Guidelines (TISG).

According to the TISG, site traffic from the development will be analyzed with existing traffic conditions. Specific recommendations are included at the end of the report to help mitigate the traffic impacts.

2.0 DATA COLLECTION

The data collection effort included obtaining peak hour turning movement counts and documentation of current street geometrics and traffic control.

Olsson coordinated intersection turning movement counts on Thursday, November 19, 2020 at the intersection of Dara Drive & AR 18 and Hytrol Driveway (approximately 200' west of Dara Drive) & AR 18. Each count was taken at 15-minute intervals from 7:00am – 9:00am, 11:00am – 1:00pm, and 3:00pm – 6:00pm. Existing heavy vehicle traffic on AR 18 is under 4 percent of total traffic.

Existing traffic volumes are illustrated in **Figure 2**. Count data is provided in **Appendix A**.

LEGEND

-  Study Intersection
-  Site Area

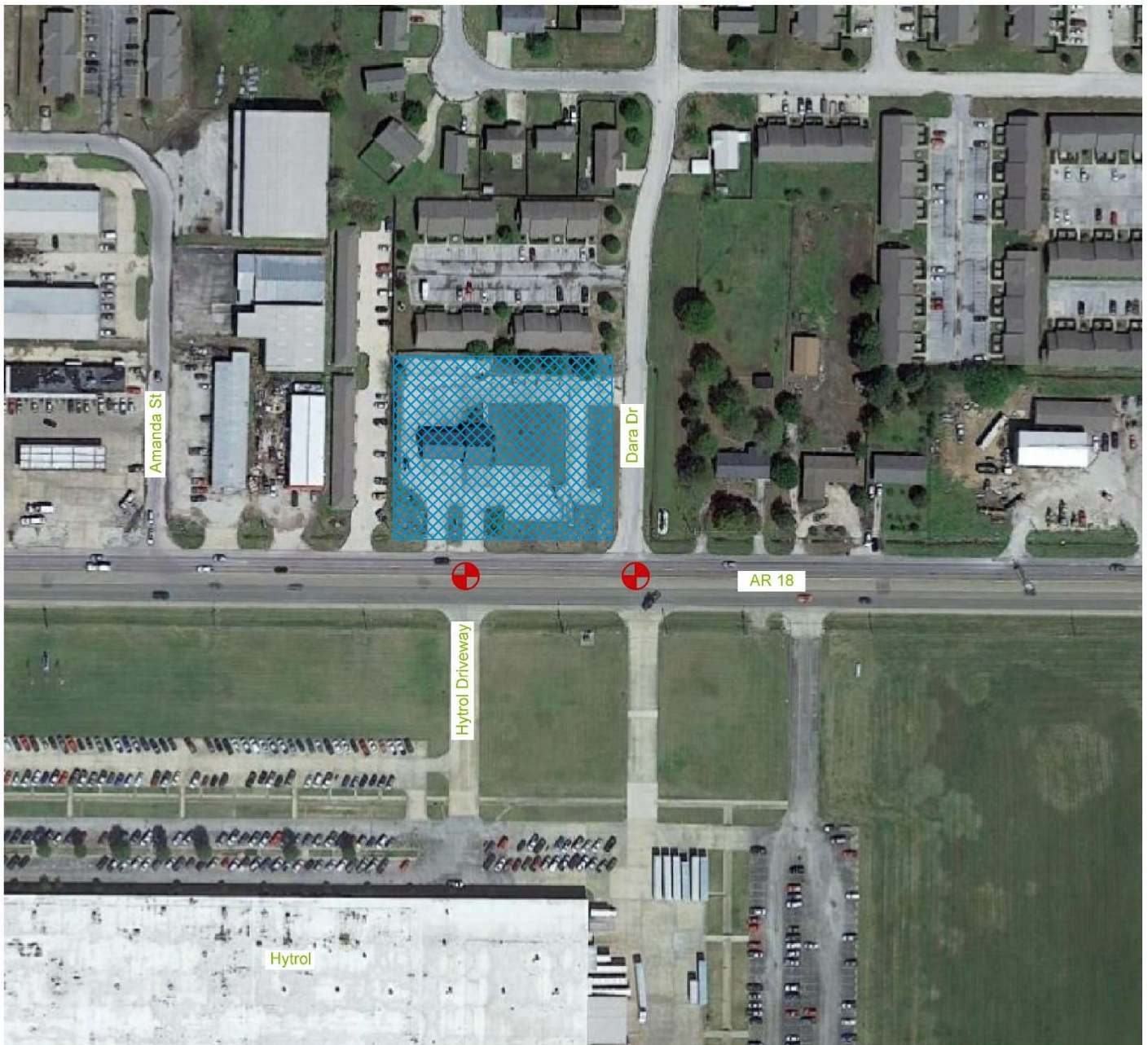


Figure 1. Vicinity Map

3.0 EXISTING CONDITIONS

3.1 Network Characteristics

There are two streets in the study area: AR 18 and Dara Drive. Existing street characteristics are summarized in **Table 1** below. Data for each street was acquired from aerial photography and the Arkansas State road functional classification map.

Table 1. Existing Street Characteristics.

Street	Section	Median Type	Posted Speed	Functional Classification
AR 18	5-Lane	TWLTL*	45 mph	Principal Arterial
Dara Drive	2-Lane	Undivided	25 mph	Local

*TWLTL – Two-way left-turn lane

The existing study intersections of Hytrol Driveway & AR 18 and Dara Drive & AR 18 are both unsignalized intersections. The Hytrol Driveway serves as one of the accesses for the Hytrol facility. The south leg of Dara Drive & AR 18 also serves the Hytrol facility primarily as a truck driveway. No pedestrian crossings or sidewalks are currently located within the study area.

Existing lane configurations and traffic control are illustrated in **Figure 2**.

3.2 Existing Capacity Analysis

Capacity analyses were performed for the existing study intersections using the existing lane configurations and traffic control. Analyses were conducted using Synchro, Version 11.0 which is based on the Highway Capacity Manual, 6th Edition methodologies. For simplicity, the amount of control delay is equated to a grade or Level of Service (LOS) based on thresholds of driver acceptance. The amount of delay is assigned a letter grade A through F, LOS A representing little or no delay and LOS F representing very high delay. **Table 2** shows the delays associated with each LOS grade for signalized and unsignalized intersections, respectively.

Table 2. Intersection LOS Criteria.

Level-of-Service	Average Control Delay (seconds)	
	Signalized	Unsignalized
A	≤ 10	≤ 10
B	> 10-20	> 10-15
C	> 20-35	> 15-25
D	> 35-55	> 25-35
E	> 55-80	> 35-50
F	> 80	> 50

Highway Capacity Manual (HCM, 6th Edition)

The south leg of Dara Drive & AR 18 does not have a STOP sign located on the northbound approach to the intersection but was assumed for analysis purposes. The south leg of Dara Drive serves the Hytrol facility.

The results of the capacity analysis indicate that the northbound left-turn movement at Hytrol Driveway & AR 18 and northbound shared thru/left-turn at Dara Drive & AR 18 both operate at LOS F in the PM peak hour. These movements are vehicles leaving the Hytrol facility. All other individual movements operate at LOS D or better in all three peak hours. The 95th percentile queue length on the northbound left-turn movement at Hytrol Driveway & AR 18 is approximately 5 vehicles in the PM peak hour. The 95th percentile queue length on the northbound shared thru/left-turn movement at Dara Drive & AR 18 is approximately 2 vehicles in the PM peak hour.

A summary of the existing capacity analyses is illustrated in **Figure 2**. Detailed results are shown in **Appendix B**.



LEGEND

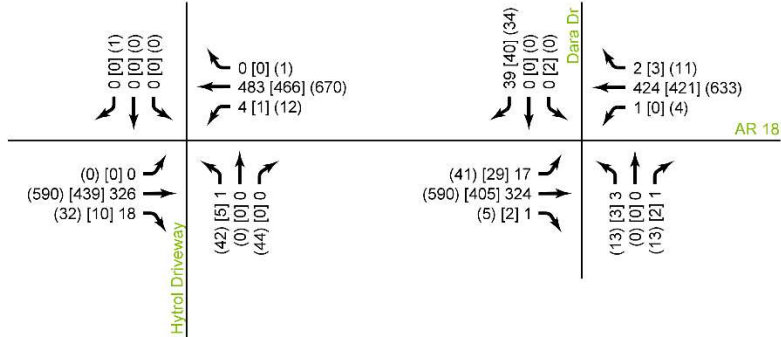
AM [MD] (PM) Peak Hour Volume

AM Peak Hour: 7AM - 8AM

MD Peak Hour: 12PM - 1PM

PM Peak Hour: 3:30PM - 4:30PM

Traffic Volumes



LEGEND

XX' → Lane Configuration & Storage Length

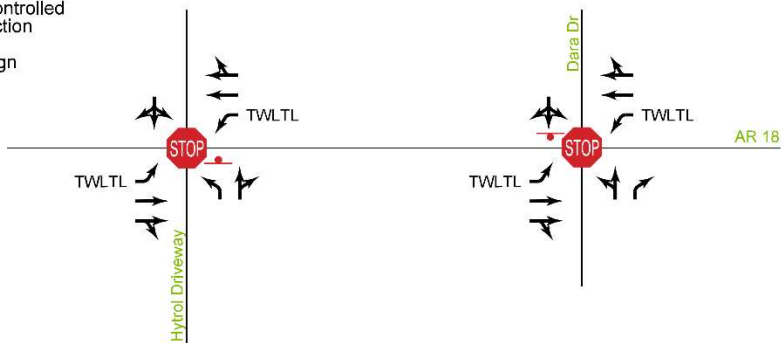


Stop Controlled Intersection



Stop Sign

Lane Configuration & Traffic Control



LEGEND

AM [MD] (PM) Movement LOS



Stop Controlled Intersection



Stop Sign



Lane Geometry

Capacity Analysis

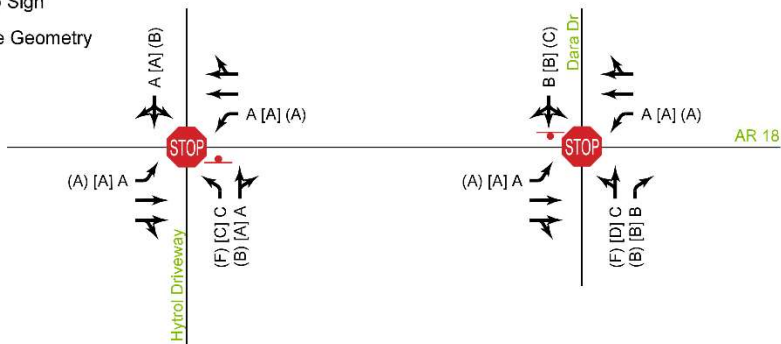


Figure 2. Existing Conditions

4.0 SITE CHARACTERISTICS

Trips anticipated to be associated with the redevelopment were generated and applied to the study network to determine street network operations and development impacts. The site has two drives: Site Drive 1 (located across from Hytrol Driveway off AR 18) and Site Drive 2 (off Dara Drive approximately 100' north of AR 18). The site plan for the development is illustrated in **Figure 3**.

4.1 Trip Generation

To determine the impact of potential site traffic on the street network, trips expected to be associated with the proposed redevelopment were generated and applied to the study network. The Institute of Transportation Engineers (ITE) provides methods for estimated traffic volumes of common land uses in the ITE Trip Generation Manual (10th Edition). The development consists of a gasoline/service station with convenience market with 12 fueling positions (Land Use Code 945).

The development is expected to produce 2,464 daily trips, 164 trips in the AM peak hour, and 190 trips in the PM peak hour. Trip generation expected by the development is summarized on **Table 3**.

Table 3. Trip Generation

Daily Trips															
ITE 10th Ed Code/Page	Land Use	Size	Units	Trip Gen. Avg. Rate/Eq.	Daily Trips	Net Daily Trips	Trip Distribution		Total Daily Trips						
							Enter	Exit	Enter	Exit					
945	Gasoline/Service Station with Convenience Market	12	Fueling Positions	205.36	2,464	2,464	50%	50%	1,232	1,232					
Total					2,464	2,464			1,232	1,232					

AM Peak Hour Trips															
ITE 10th Ed Code/Page	Land Use	Size	Units	Trip Gen. Avg. Rate/Eq.	AM Peak Trips	Net AM Peak Trips	Trip Distribution		Total AM Trips		Pass-by Reduction	Pass-by Trips		Primary Trips	
							Enter	Exit	Enter	Exit		Enter	Exit	Enter	Exit
945	Gasoline/Service Station with Convenience Market	12	Fueling Positions	13.66	164	164	51%	49%	84	80	62%	52	50	32	31
Total					164	164			84	80		52	50	32	31

PM Peak Hour Trips															
ITE 10th Ed Code/Page	Land Use	Size	Units	Trip Gen. Avg. Rate/Eq.	PM Peak Peak Trips	Net PM Peak Trips	Trip Distribution		Total PM Trips		Pass-by Reduction	Pass-by Trips		Primary Trips	
							Enter	Exit	Enter	Exit		Enter	Exit	Enter	Exit
945	Gasoline/Service Station with Convenience Market	12	Fueling Positions	15.87	190	190	50%	50%	95	95	56%	53	53	42	42
Total					190	190			95	95		53	53	42	42

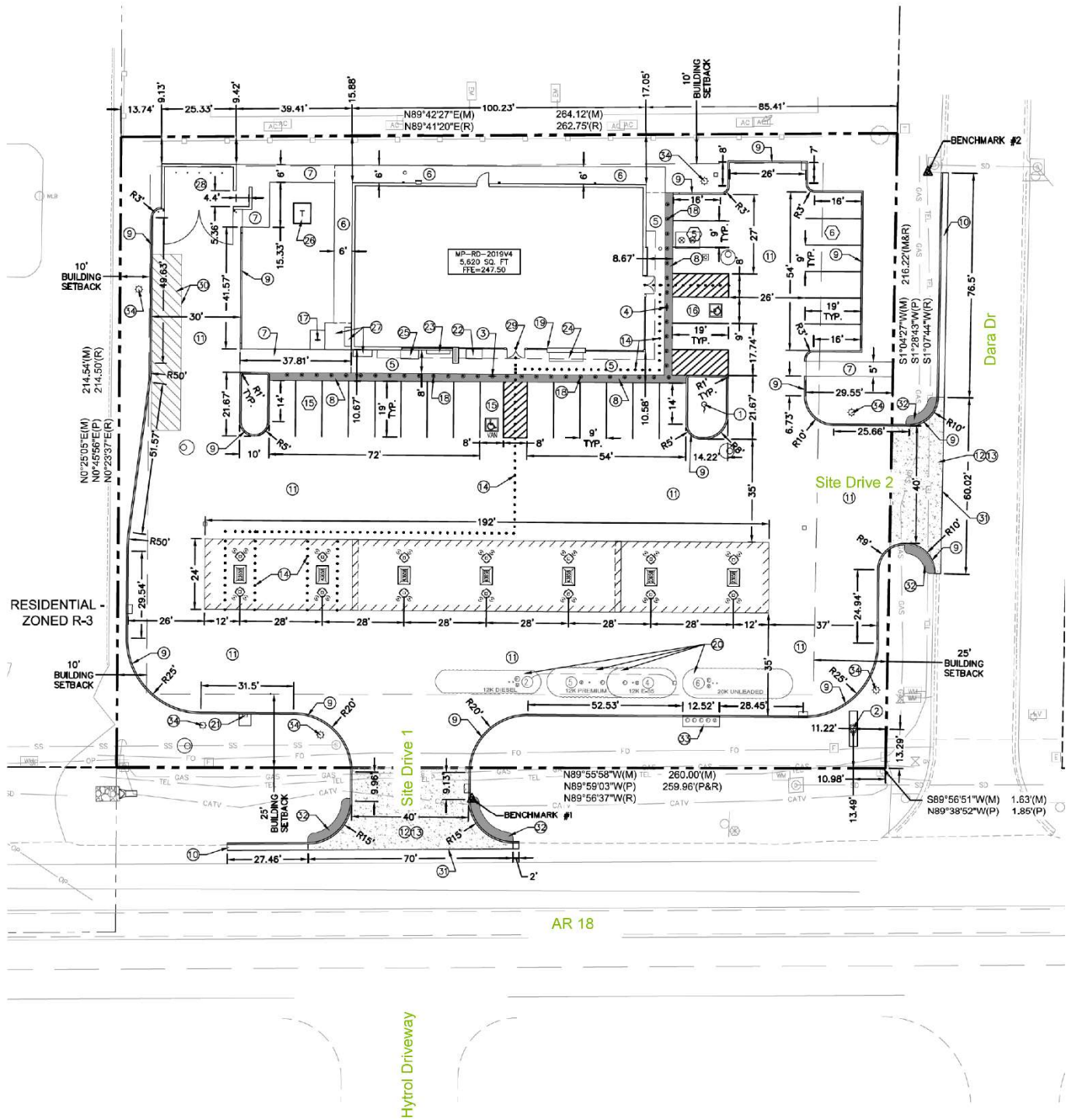


Figure 3. Site Plan

4.2 Trip Distribution

The distributions were based on existing trip patterns, development land-use characteristics, and street network provisions. Most users are expected to use Hytrol Driveway/Site Drive 1 & AR 18 to enter the site to access fueling locations. Primary trips are expected to largely come from the nearby Jonesboro area which lies mostly to the west of the proposed redevelopment. Pass-by trips are expected to be largely westbound right-turns. The prevalence of similar facilities and friction from entering and exiting by making a left-turn reduces the attractiveness of patronage and distributions were applied accordingly.

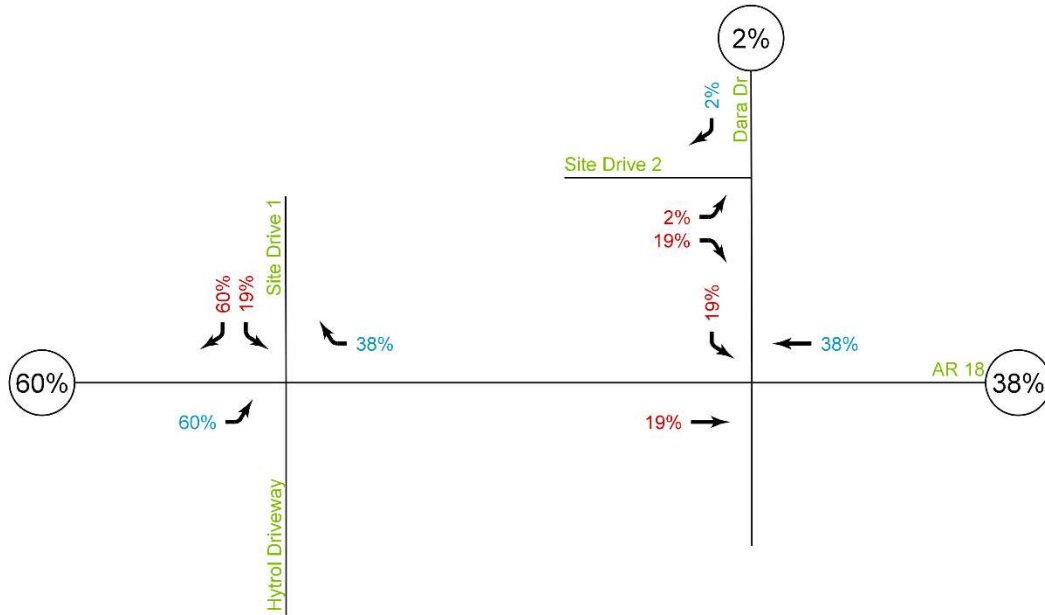
The primary trip distribution and site trips are illustrated in **Figure 4**. The pass-by trip distribution and pass-by trips are illustrated in **Figure 5**.



LEGEND

- XX% Entering Distribution
- XX% Exiting Distribution
- 100% External Distribution

Primary Trip Distribution



LEGEND

- AM (PM) Entering Trips
- AM (PM) Exiting Trips

Primary Site Trips

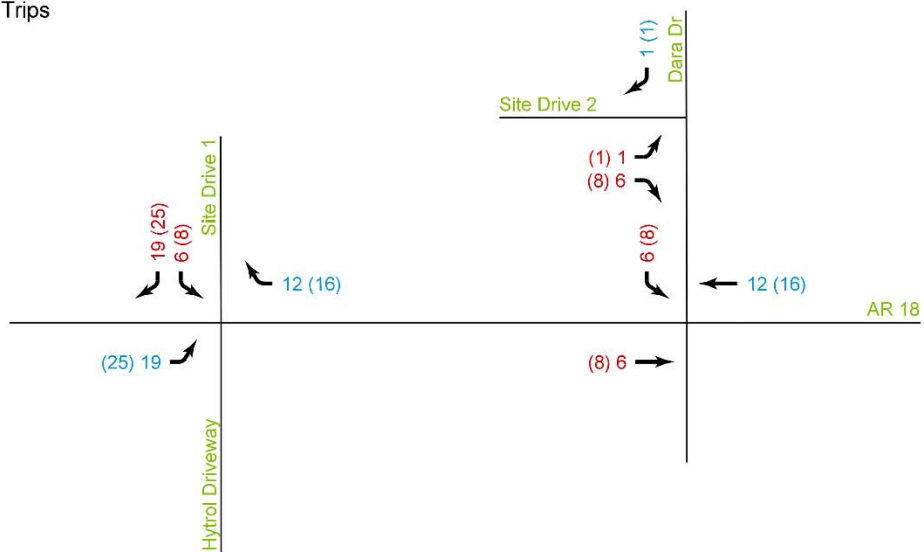


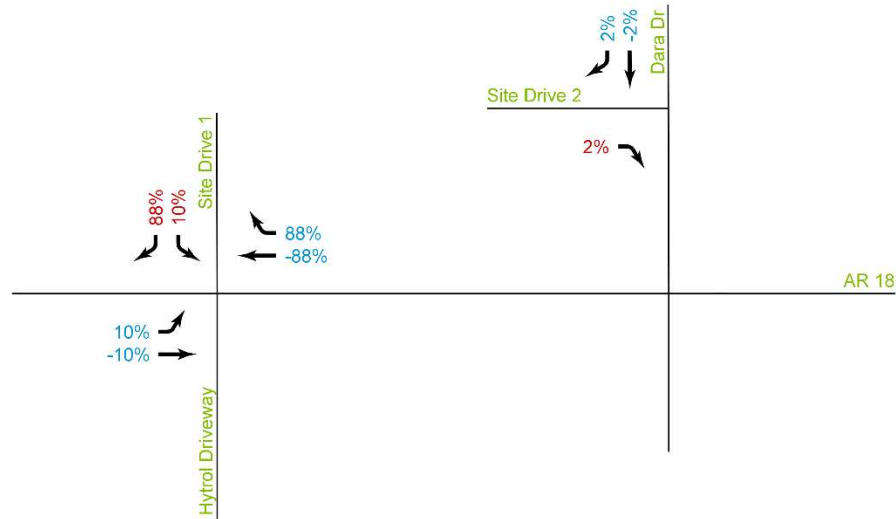
Figure 4. Primary Trip Distribution and Site Trips



LEGEND

- XX% Entering Distribution
- XX% Exiting Distribution

Pass-By Trip Distribution



LEGEND

- AM (PM) Entering Trips
- AM (PM) Exiting Trips

Pass-By Trips

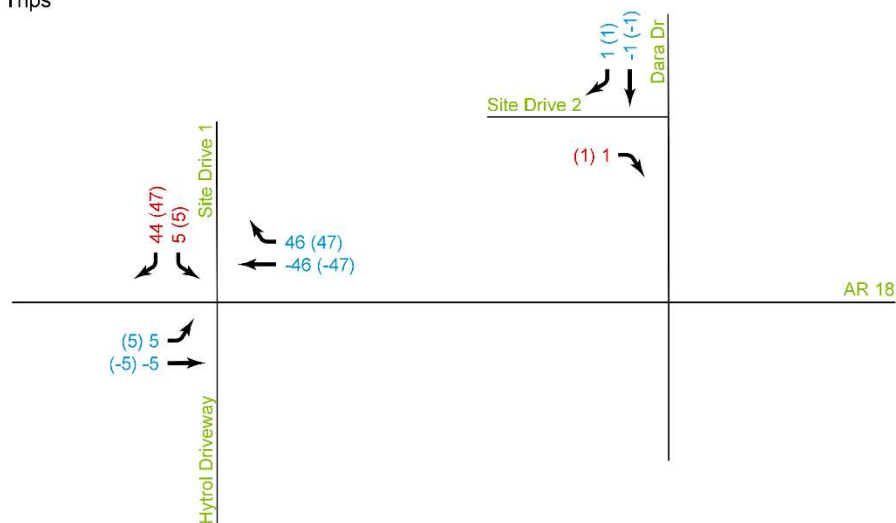


Figure 5. Pass-By Distribution and Site Trips

5.0 EXISTING PLUS SITE ANALYSIS

Existing traffic volumes were combined with the proposed site trips to develop Existing plus Site volumes for evaluation and capacity analysis purposes. The Existing plus Site traffic volumes are illustrated in **Figure 6**.

5.1 Geometric Improvements

According to the City of Jonesboro Access Management Policy (AMP), right-turn lanes are often necessary when the speed limit is 35 miles per hour or greater. A right-turn lane is recommended at Hytrol Driveway/Site Drive 1 & AR 18 to improve operations and safety. Providing a right-turn lane is expected to reduce weaving and sideswipe crashes due to vehicles braking in the thru lane, as well as, reducing rear end crashes. Due to the short distance between Hytrol Driveway/Site Drive 1 and Dara Drive, the right turn lane length should be maximized to provide the most storage length possible.

5.2 Existing plus Site Capacity Analysis

The right-turn lane outlined in the previous section was incorporated into the model and capacity analysis was performed. Results of the capacity analysis indicate the northbound left-turn movement and the southbound shared thru/left-turn movement at Hytrol Driveway/Site Drive 1 & AR 18 are expected to operate at LOS F in the PM peak hour. The northbound shared thru/left-turn movement and the southbound approach at Dara Drive & AR 18 are expected to operate at LOS F in the PM peak hour. All other individual movements are expected to operate at LOS D or better in both peak hours.

The 95th percentile queue length on the northbound left-turn lane at Hytrol Driveway/Site Drive 1 & AR 18 is expected to be approximately 9 vehicles in the PM peak hour. Both southbound lanes at Hytrol Driveway/Site Drive 1 are expected to be 2 vehicles in the PM peak hour. The northbound shared thru/left-turn lane and the southbound approach at Dara Drive & AR 18 are expected to be approximately 2 and 3 vehicles in the PM peak hour, respectively.

Although LOS F is expected on multiple movements in the PM peak hour, delays are expected to be limited to the peak period of operations which is not uncommon for unsignalized control on side streets/drives. The number of vehicles expected to make these movements are low and individual experiences finding gaps in traffic and delay will vary.

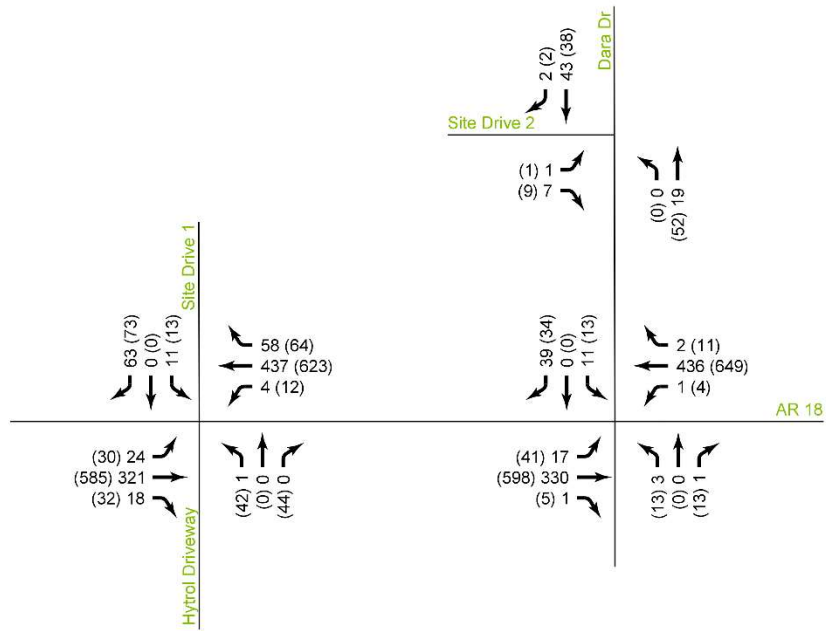
A summary of the Existing plus Site capacity analysis is illustrated in **Figure 6**. Detailed results of the capacity analysis are included in **Appendix C**.



LEGEND

AM (PM) Peak Hour Volume

Traffic Volumes



LEGEND

AM (PM) Movement LOS

Stop Controlled Intersection

Stop Sign

Lane Geometry

Capacity Analysis

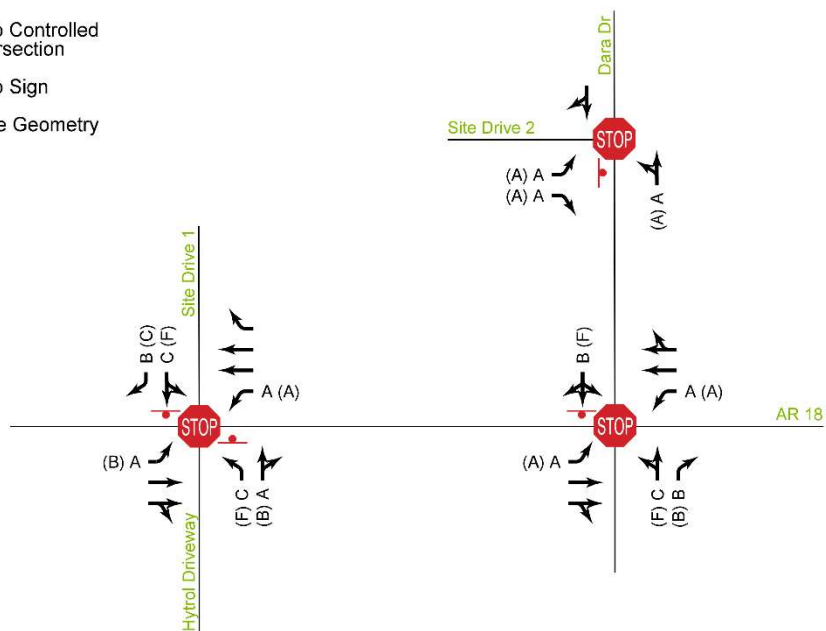


Figure 6. Existing plus Site Conditions

6.0 CONCLUSIONS AND RECOMMENDATIONS

This report documents the results of impact analyses conducted for the Kum & Go redevelopment in the northwest corner of Dara Drive & AR 18 in Jonesboro, Arkansas. The study was conducted to identify the anticipated trips that would be generated by the proposed redevelopment and to determine the effects of site traffic on the surrounding street network. This study is considered a Level 1 TIA according to the City of Jonesboro TISG. The redevelopment was analyzed in addition to the existing conditions.

Intersection control evaluations and capacity analysis were performed to aid in determining street improvements and geometry. Based on the study results, the following improvements have been identified:

Existing plus Site Conditions

Hytrol Driveway/Site Drive 1 & AR 18 – Westbound right-turn lane with approximately 175' of storage and deceleration to maximize the available space between Site Drive 1 and Dara Drive. Place a STOP sign on the southbound approach.

Dara Drive & Site Drive 2 – Place a STOP sign on the eastbound approach.

The recommended improvements are shown in **Figure 7**.

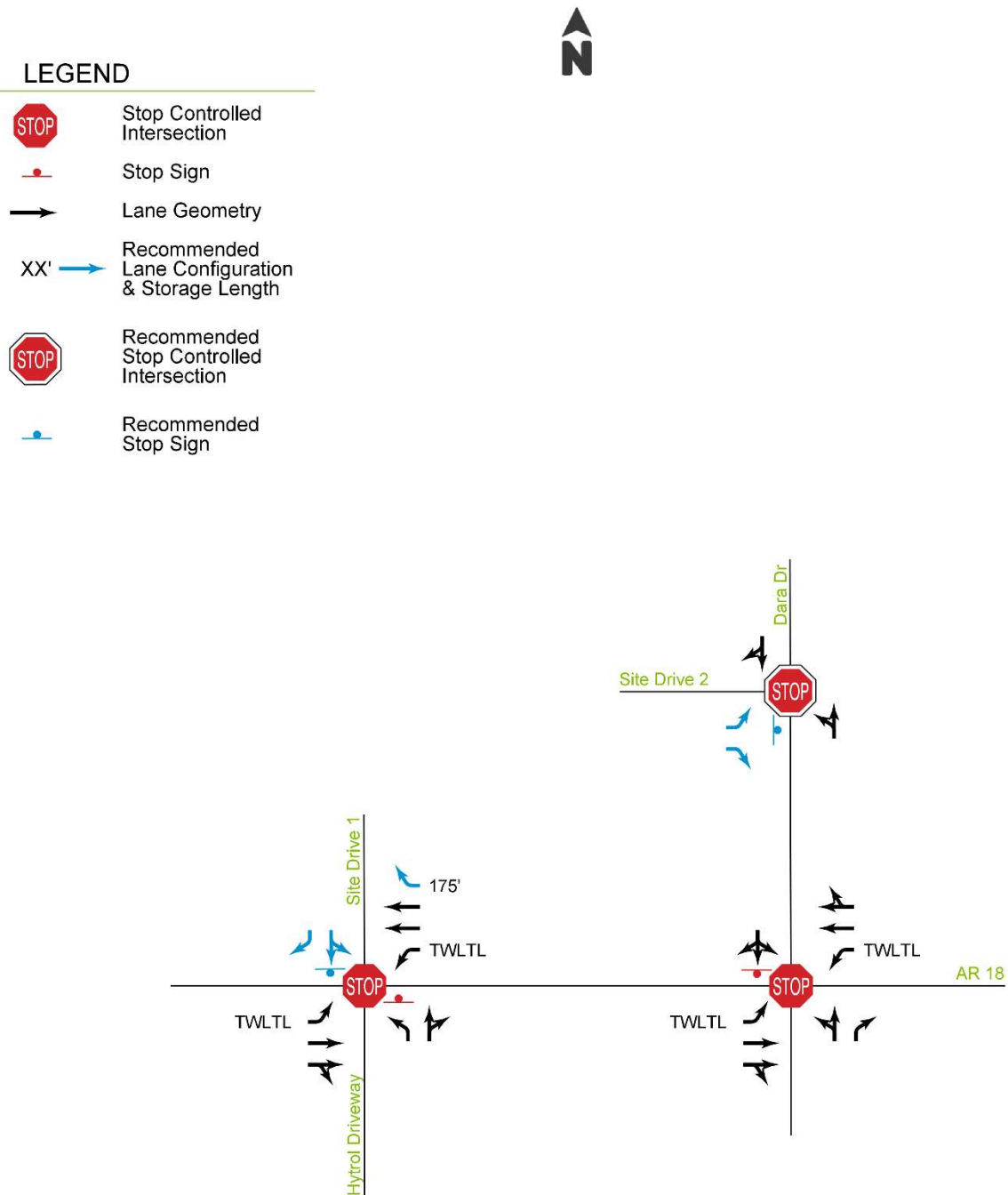


Figure 7. Recommendations

APPENDIX A

EXISTING COUNT DATA

4818 E Highland Dr - TMC

Thu Nov 19, 2020

Full Length (7 AM-9 AM, 11 AM-1 PM, 3 PM-6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 799339, Location: 35.820929, -90.636764

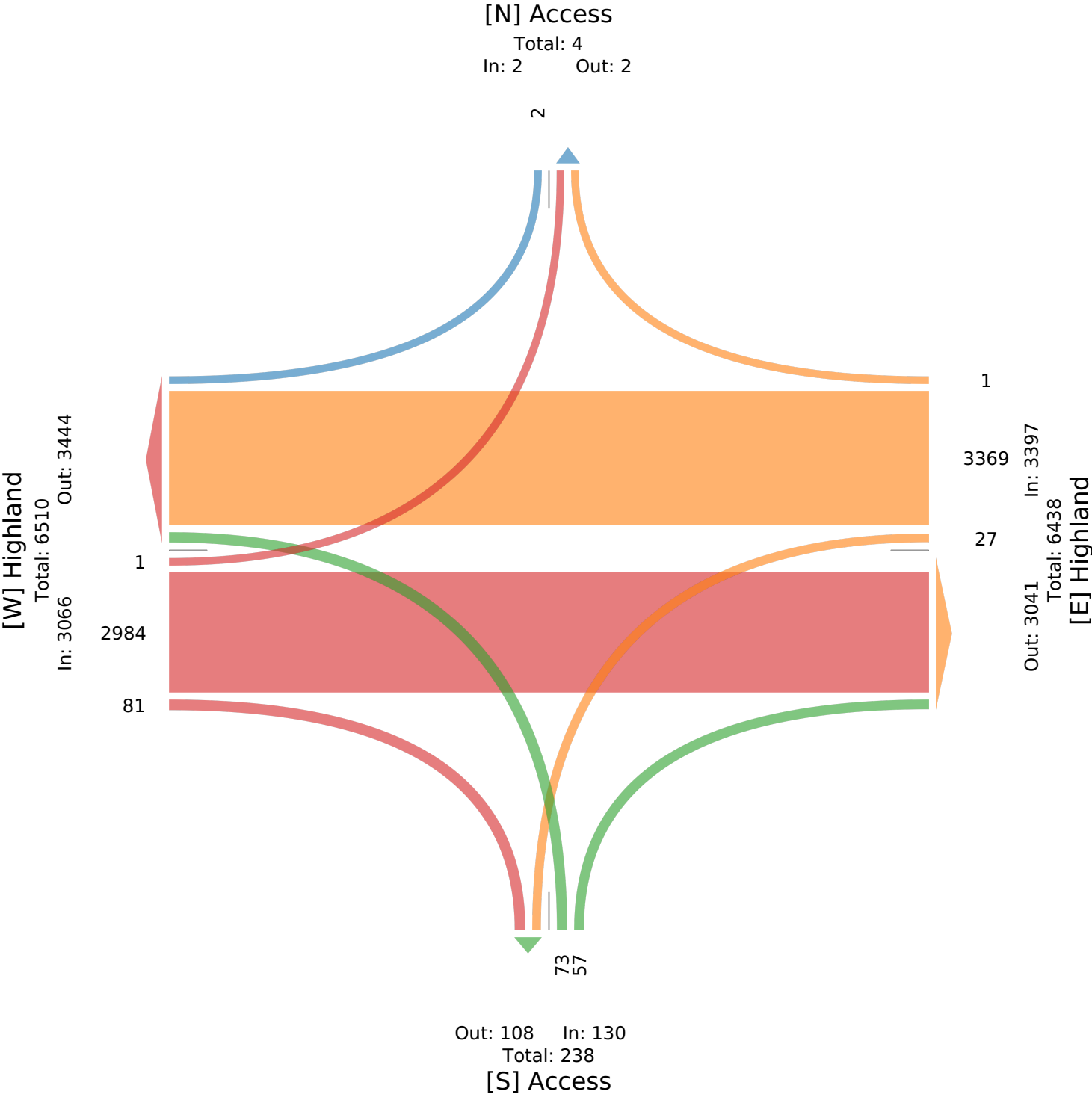


Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Access Southbound					Highland Westbound					Access Northbound					Highland Eastbound					
Time	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	Int
2020-11-19 7:00AM	0	0	0	0	0	0	97	3	0	100	0	0	0	0	0	2	82	0	0	84	184
7:15AM	0	0	0	0	0	0	109	0	0	109	0	0	0	0	0	1	89	0	0	90	199
7:30AM	0	0	0	0	0	0	129	2	0	131	0	0	0	0	0	5	87	0	0	92	223
7:45AM	0	0	0	0	0	0	134	1	0	135	0	0	0	0	0	5	82	0	0	87	222
Hourly Total	0	0	0	0	0	0	469	6	0	475	0	0	0	0	0	13	340	0	0	353	828
8:00AM	0	0	0	0	0	0	111	1	0	112	0	0	1	0	1	7	68	0	0	75	188
8:15AM	0	0	0	0	0	0	104	2	0	106	1	0	1	0	2	1	68	0	0	69	177
8:30AM	0	0	0	0	0	0	84	0	0	84	0	0	1	0	1	2	55	0	0	57	142
8:45AM	0	0	0	0	0	0	90	0	0	90	0	0	0	0	0	0	57	0	0	57	147
Hourly Total	0	0	0	0	0	0	389	3	0	392	1	0	3	0	4	10	248	0	0	258	654
11:00AM	0	0	0	0	0	0	115	0	0	115	0	0	1	0	1	1	86	0	0	87	203
11:15AM	0	0	0	0	0	0	81	2	0	83	0	0	1	0	1	3	84	0	0	87	171
11:30AM	0	0	0	0	0	0	133	0	0	133	0	0	2	0	2	1	93	0	0	94	229
11:45AM	0	0	0	0	0	0	93	0	0	93	1	0	2	0	3	1	105	0	0	106	202
Hourly Total	0	0	0	0	0	0	422	2	0	424	1	0	6	0	7	6	368	0	0	374	805
12:00PM	0	0	0	0	0	0	124	1	0	125	0	0	0	0	0	3	115	0	0	118	243
12:15PM	0	0	0	0	0	0	117	0	0	117	0	0	1	0	1	1	105	0	0	106	224
12:30PM	0	0	0	0	0	0	121	0	0	121	0	0	3	0	3	4	102	0	0	106	230
12:45PM	0	0	0	0	0	0	104	0	0	104	0	0	1	0	1	2	117	0	0	119	224
Hourly Total	0	0	0	0	0	0	466	1	0	467	0	0	5	0	5	10	439	0	0	449	921
3:00PM	0	0	0	0	0	0	112	1	0	113	1	0	2	0	3	2	142	0	0	144	260
3:15PM	0	0	0	0	0	0	112	2	0	114	1	0	2	0	3	5	129	0	0	134	251
3:30PM	0	0	0	0	0	1	197	1	0	199	36	0	27	0	63	2	185	0	0	187	449
3:45PM	0	0	0	0	0	0	151	4	0	155	5	0	9	0	14	14	146	0	0	160	329
Hourly Total	0	0	0	0	0	1	572	8	0	581	43	0	40	0	83	23	602	0	0	625	1289
4:00PM	1	0	0	0	1	0	144	2	0	146	3	0	4	0	7	10	129	0	0	139	293
4:15PM	0	0	0	0	0	0	178	5	0	183	0	0	2	0	2	6	130	0	0	136	321
4:30PM	1	0	0	0	1	0	151	0	0	151	3	0	9	0	12	1	128	1	0	130	294
4:45PM	0	0	0	0	0	0	147	0	0	147	2	0	1	0	3	1	139	0	0	140	290
Hourly Total	2	0	0	0	2	0	620	7	0	627	8	0	16	0	24	18	526	1	0	545	1198
5:00PM	0	0	0	0	0	0	142	0	0	142	3	0	2	0	5	0	118	0	0	118	265
5:15PM	0	0	0	0	0	0	101	0	0	101	1	0	0	0	1	1	142	0	0	143	245
5:30PM	0	0	0	0	0	0	93	0	0	93	0	0	1	0	1	0	104	0	0	104	198
5:45PM	0	0	0	0	0	0	95	0	0	95	0	0	0	0	0	0	97	0	0	97	192
Hourly Total	0	0	0	0	0	0	431	0	0	431	4	0	3	0	7	1	461	0	0	462	900
Total	2	0	0	0	2	1	3369	27	0	3397	57	0	73	0	130	81	2984	1	0	3066	6595
% Approach	100%	0%	0%	0%	-	0%	99.2%	0.8%	0%	-	43.8%	0%	56.2%	0%	-	2.6%	97.3%	0%	0%	-	-
% Total	0%	0%	0%	0%	0%	0%	51.1%	0.4%	0%	51.5%	0.9%	0%	1.1%	0%	2.0%	1.2%	45.2%	0%	0%	46.5%	-
Lights	2	0	0	0	2	1	3252	27	0	3280	57	0	73	0	130	81	2844	1	0	2926	6338
% Lights	100%	0%	0%	0%	100%	100%	96.5%	100%	0%	96.6%	100%	0%	100%	0%	100%	100%	95.3%	100%	0%	95.4%	96.1%
Articulated Trucks	0	0	0	0	0	0	42	0	0	42	0	0	0	0	0	0	65	0	0	65	107
% Articulated Trucks	0%	0%	0%	0%	0%	0%	1.2%	0%	0%	1.2%	0%	0%	0%	0%	0%	0%	2.2%	0%	0%	2.1%	1.6%
Buses and Single-Unit Trucks	0	0	0	0	0	0	75	0	0	75	0	0	0	0	0	0	75	0	0	75	150
% Buses and Single-Unit Trucks	0%	0%	0%	0%	0%	0%	2.2%	0%	0%	2.2%	0%	0%	0%	0%	0%	0%	2.5%	0%	0%	2.4%	2.3%

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

4818 E Highland Dr - TMC
Thu Nov 19, 2020
Full Length (7 AM-9 AM, 11 AM-1 PM, 3 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 799339, Location: 35.820929, -90.636764



4818 E Highland Dr - TMC

Thu Nov 19, 2020

AM Peak (7:15 AM - 8:15 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 799339, Location: 35.820929, -90.636764

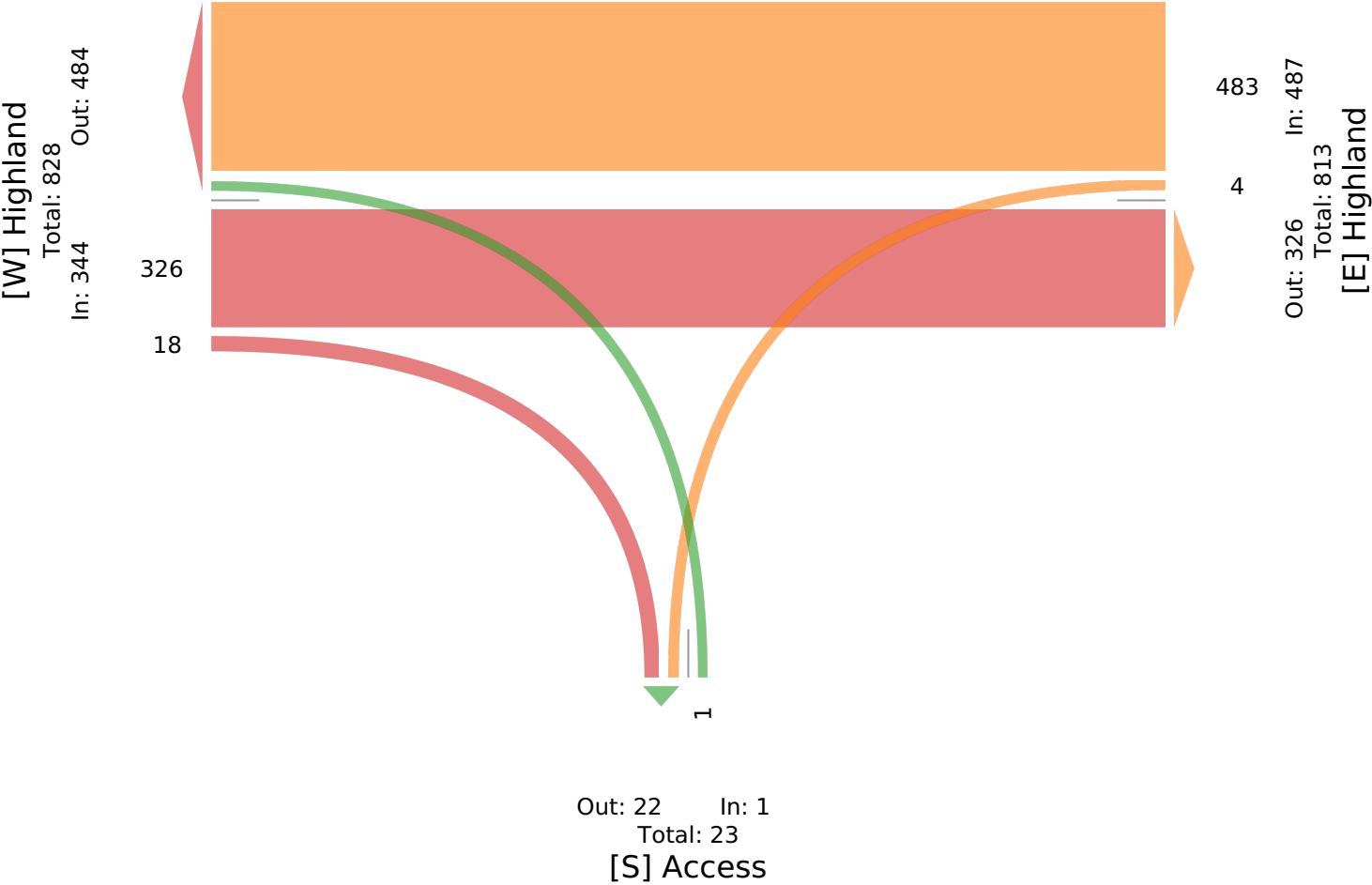


Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Access Southbound					Highland Westbound					Access Northbound					Highland Eastbound					
Time	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	Int
2020-11-19 7:15AM	0	0	0	0	0	0	109	0	0	109	0	0	0	0	0	1	89	0	0	90	199
7:30AM	0	0	0	0	0	0	129	2	0	131	0	0	0	0	0	5	87	0	0	92	223
7:45AM	0	0	0	0	0	0	134	1	0	135	0	0	0	0	0	5	82	0	0	87	222
8:00AM	0	0	0	0	0	0	111	1	0	112	0	0	1	0	1	7	68	0	0	75	188
Total	0	0	0	0	0	0	483	4	0	487	0	0	1	0	1	18	326	0	0	344	832
% Approach	0%	0%	0%	0%	-	0%	99.2%	0.8%	0%	-	0%	0%	100%	0%	-	5.2%	94.8%	0%	0%	-	-
% Total	0%	0%	0%	0%	0%	0%	58.1%	0.5%	0%	58.5%	0%	0%	0.1%	0%	0.1%	2.2%	39.2%	0%	0%	41.3%	-
PHF	-	-	-	-	-	-	0.901	0.500	-	0.902	-	-	0.250	-	0.250	0.643	0.916	-	-	0.935	0.933
Lights	0	0	0	0	0	0	466	4	0	470	0	0	1	0	1	18	306	0	0	324	795
% Lights	0%	0%	0%	0%	-	0%	96.5%	100%	0%	96.5%	0%	0%	100%	0%	100%	100%	93.9%	0%	0%	94.2%	95.6%
Articulated Trucks	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	0	3	0	0	3	10
% Articulated Trucks	0%	0%	0%	0%	-	0%	1.4%	0%	0%	1.4%	0%	0%	0%	0%	0%	0%	0.9%	0%	0%	0.9%	1.2%
Buses and Single-Unit Trucks	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	0	17	0	0	17	27
% Buses and Single-Unit Trucks	0%	0%	0%	0%	-	0%	2.1%	0%	0%	2.1%	0%	0%	0%	0%	0%	0%	5.2%	0%	0%	4.9%	3.2%

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

4818 E Highland Dr - TMC
Thu Nov 19, 2020
AM Peak (7:15 AM - 8:15 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 799339, Location: 35.820929, -90.636764



4818 E Highland Dr - TMC

Thu Nov 19, 2020

Midday Peak (12 PM - 1 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 799339, Location: 35.820929, -90.636764



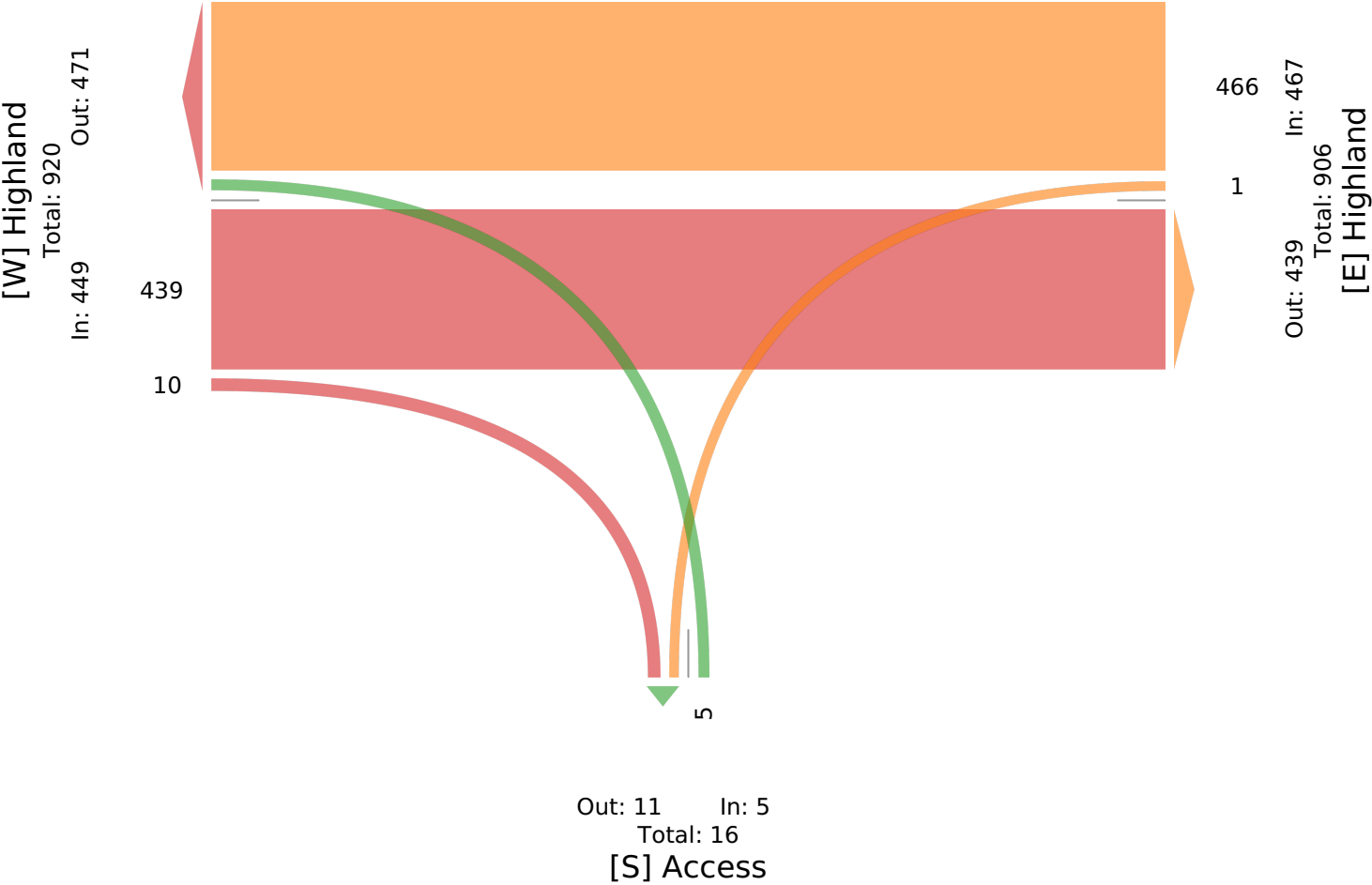
Provided by: Gewalt Hamilton Associates Inc.

625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Access Southbound					Highland Westbound					Access Northbound					Highland Eastbound					
Time	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	Int
2020-11-19 12:00PM	0	0	0	0	0	0	124	1	0	125	0	0	0	0	0	3	115	0	0	118	243
12:15PM	0	0	0	0	0	0	117	0	0	117	0	0	1	0	1	1	105	0	0	106	224
12:30PM	0	0	0	0	0	0	121	0	0	121	0	0	3	0	3	4	102	0	0	106	230
12:45PM	0	0	0	0	0	0	104	0	0	104	0	0	1	0	1	2	117	0	0	119	224
Total	0	0	0	0	0	0	466	1	0	467	0	0	5	0	5	10	439	0	0	449	921
% Approach	0%	0%	0%	0%	-	0%	99.8%	0.2%	0%	-	0%	0%	100%	0%	-	2.2%	97.8%	0%	0%	-	-
% Total	0%	0%	0%	0%	0%	0%	50.6%	0.1%	0%	50.7%	0%	0%	0.5%	0%	0.5%	1.1%	47.7%	0%	0%	48.8%	-
PHF	-	-	-	-	-	-	0.940	0.250	-	0.934	-	-	0.417	-	0.417	0.625	0.938	-	-	0.943	0.948
Lights	0	0	0	0	0	0	447	1	0	448	0	0	5	0	5	10	413	0	0	423	876
% Lights	0%	0%	0%	0%	-	0%	95.9%	100%	0%	95.9%	0%	0%	100%	0%	100%	100%	94.1%	0%	0%	94.2%	95.1%
Articulated Trucks	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	0	10	0	0	10	17
% Articulated Trucks	0%	0%	0%	0%	-	0%	1.5%	0%	0%	1.5%	0%	0%	0%	0%	0%	0%	2.3%	0%	0%	2.2%	1.8%
Buses and Single-Unit Trucks	0	0	0	0	0	0	12	0	0	12	0	0	0	0	0	0	16	0	0	16	28
% Buses and Single-Unit Trucks	0%	0%	0%	0%	-	0%	2.6%	0%	0%	2.6%	0%	0%	0%	0%	0%	0%	3.6%	0%	0%	3.6%	3.0%

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

4818 E Highland Dr - TMC
Thu Nov 19, 2020
Midday Peak (12 PM - 1 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 799339, Location: 35.820929, -90.636764



4818 E Highland Dr - TMC

Thu Nov 19, 2020

PM Peak (3:30 PM - 4:30 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 799339, Location: 35.820929, -90.636764



Provided by: Gewalt Hamilton Associates Inc.

625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Access Southbound						Highland Westbound						Access Northbound						Highland Eastbound						
Time	R	T	L	U	App		R	T	L	U	App		R	T	L	U	App		R	T	L	U	App		Int
2020-11-19 3:30PM	0	0	0	0	0	0	1	197	1	0	199		36	0	27	0	63		2	185	0	0	187		449
3:45PM	0	0	0	0	0	0	0	151	4	0	155		5	0	9	0	14		14	146	0	0	160		329
4:00PM	1	0	0	0	1	1	0	144	2	0	146		3	0	4	0	7		10	129	0	0	139		293
4:15PM	0	0	0	0	0	0	0	178	5	0	183		0	0	2	0	2		6	130	0	0	136		321
Total	1	0	0	0	1	1	1	670	12	0	683		44	0	42	0	86		32	590	0	0	622		1392
% Approach	100%	0%	0%	0%	-	-	0.1%	98.1%	1.8%	0%	-		51.2%	0%	48.8%	0%	-		5.1%	94.9%	0%	0%	-		-
% Total	0.1%	0%	0%	0%	0.1%	0.1%	0.1%	48.1%	0.9%	0%	49.1%		3.2%	0%	3.0%	0%	6.2%		2.3%	42.4%	0%	0%	44.7%		-
PHF	0.250	-	-	-	0.250	0.250	0.250	0.850	0.600	-	0.858		0.306	-	0.389	-	0.341		0.571	0.797	-	-	0.832		0.775
Lights	1	0	0	0	1	1	1	654	12	0	667		44	0	42	0	86		32	575	0	0	607		1361
% Lights	100%	0%	0%	0%	100%	100%	97.6%	100%	0%	97.7%	100%	100%	0%	100%	0%	100%	100%	100%	100%	97.5%	0%	0%	97.6%		97.8%
Articulated Trucks	0	0	0	0	0	0	0	6	0	0	6		0	0	0	0	0		0	7	0	0	7		13
% Articulated Trucks	0%	0%	0%	0%	0%	0%	0%	0.9%	0%	0%	0.9%		0%	0%	0%	0%	0%		0%	1.2%	0%	0%	1.1%		0.9%
Buses and Single-Unit Trucks	0	0	0	0	0	0	0	10	0	0	10		0	0	0	0	0		0	8	0	0	8		18
% Buses and Single-Unit Trucks	0%	0%	0%	0%	0%	0%	0%	1.5%	0%	0%	1.5%		0%	0%	0%	0%	0%		0%	1.4%	0%	0%	1.3%		1.3%

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

4818 E Highland Dr - TMC

Thu Nov 19, 2020

PM Peak (3:30 PM - 4:30 PM) - Overall Peak Hour

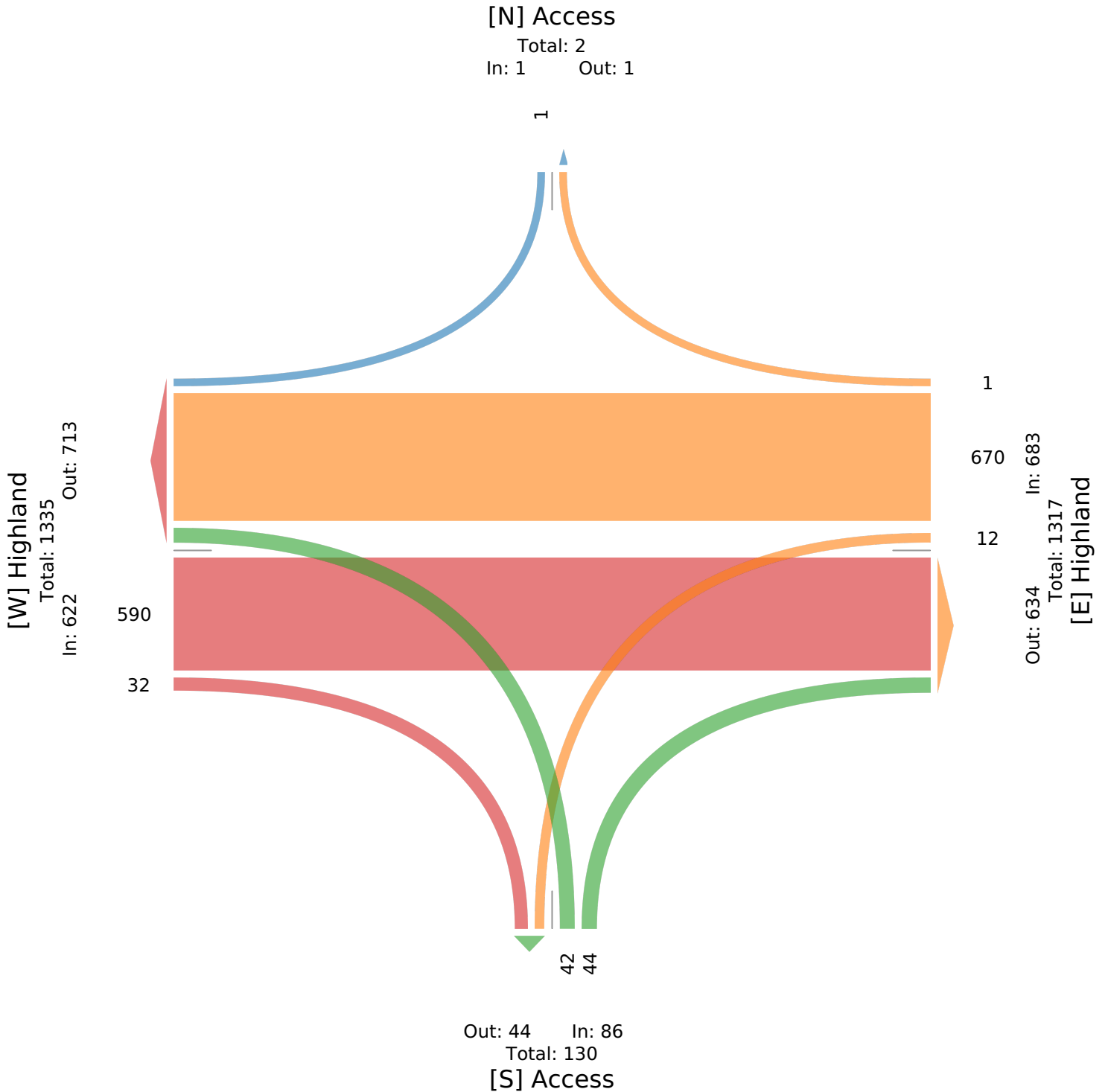
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 799339, Location: 35.820929, -90.636764



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



4900 E Highland Dr - TMC

Thu Nov 19, 2020

Full Length (7 AM-9 AM, 11 AM-1 PM, 3 PM-6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 799340, Location: 35.820941, -90.636055



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

Leg Direction	Dara Southbound					Highland Westbound					Dara Northbound					Highland Eastbound					
Time	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	Int
2020-11-19 7:00AM	11	0	1	0	12	0	82	0	0	82	0	0	1	0	1	0	81	4	0	85	180
7:15AM	6	0	0	0	6	0	102	0	0	102	0	0	0	0	0	0	88	2	0	90	198
7:30AM	11	0	1	0	12	1	121	0	0	122	1	0	0	0	1	0	77	8	0	85	220
7:45AM	11	0	3	0	14	1	119	1	0	121	0	0	2	0	2	1	78	3	0	82	219
Hourly Total	39	0	5	0	44	2	424	1	0	427	1	0	3	0	4	1	324	17	0	342	817
8:00AM	5	0	0	0	5	0	105	0	0	105	0	0	2	0	2	0	63	5	0	68	180
8:15AM	8	0	0	0	8	0	96	1	0	97	0	0	2	0	2	0	67	4	0	71	178
8:30AM	4	0	0	0	4	2	79	0	0	81	0	0	2	0	2	1	52	4	0	57	144
8:45AM	14	0	0	0	14	0	75	1	0	76	0	0	1	0	1	3	50	4	0	57	148
Hourly Total	31	0	0	0	31	2	355	2	0	359	0	0	7	0	7	4	232	17	0	253	650
11:00AM	9	1	1	0	11	1	104	1	0	106	1	0	2	0	3	0	79	7	0	86	206
11:15AM	10	0	0	0	10	1	70	2	0	73	0	0	1	0	1	1	80	3	0	84	168
11:30AM	10	0	0	0	10	2	124	0	0	126	1	0	0	0	1	0	89	6	0	95	232
11:45AM	6	0	1	0	7	0	87	1	0	88	1	0	0	0	1	1	100	6	0	107	203
Hourly Total	35	1	2	0	38	4	385	4	0	393	3	0	3	0	6	2	348	22	0	372	809
12:00PM	12	0	0	0	12	1	111	0	0	112	1	0	1	0	2	0	103	11	0	114	240
12:15PM	9	0	1	0	10	1	108	0	0	109	1	0	0	0	1	0	102	3	0	105	225
12:30PM	7	0	0	0	7	1	110	0	0	111	0	0	2	0	2	0	92	8	0	100	220
12:45PM	12	0	1	0	13	0	92	0	0	92	0	0	0	0	0	2	108	7	0	117	222
Hourly Total	40	0	2	0	42	3	421	0	0	424	2	0	3	0	5	2	405	29	0	436	907
3:00PM	12	0	0	0	12	0	99	0	0	99	0	0	1	0	1	1	137	5	0	143	255
3:15PM	3	0	0	0	3	2	110	0	0	112	0	0	0	0	0	0	123	7	0	130	245
3:30PM	12	0	5	0	17	5	179	1	0	185	11	0	11	0	22	1	207	14	0	222	446
3:45PM	6	0	0	0	6	2	151	1	0	154	1	0	1	0	2	2	139	9	0	150	312
Hourly Total	33	0	5	0	38	9	539	2	0	550	12	0	13	0	25	4	606	35	0	645	1258
4:00PM	3	0	0	0	3	3	140	1	0	144	1	0	0	0	1	0	126	10	0	136	284
4:15PM	13	0	0	0	13	1	163	1	0	165	0	0	1	0	1	2	118	8	0	128	307
4:30PM	11	0	2	0	13	0	140	0	0	140	1	0	0	0	1	1	121	9	0	131	285
4:45PM	13	0	0	0	13	2	131	0	0	133	0	0	0	0	0	0	126	15	0	141	287
Hourly Total	40	0	2	0	42	6	574	2	0	582	2	0	1	0	3	3	491	42	0	536	1163
5:00PM	10	0	1	0	11	1	134	0	0	135	1	0	0	0	1	0	112	7	0	119	266
5:15PM	10	0	0	0	10	0	92	0	0	92	1	0	0	0	1	0	127	14	0	141	244
5:30PM	8	0	2	0	10	1	85	1	0	87	0	0	1	0	1	1	86	16	0	103	201
5:45PM	13	0	1	0	14	1	80	0	0	81	0	0	0	0	0	0	80	16	0	96	191
Hourly Total	41	0	4	0	45	3	391	1	0	395	2	0	1	0	3	1	405	53	0	459	902
Total	259	1	20	0	280	29	3089	12	0	3130	22	0	31	0	53	17	2811	215	0	3043	6506
% Approach	92.5%	0.4%	7.1%	0%	-	0.9%	98.7%	0.4%	0%	-	41.5%	0%	58.5%	0%	-	0.6%	92.4%	7.1%	0%	-	-
% Total	4.0%	0%	0.3%	0%	4.3%	0.4%	47.5%	0.2%	0%	48.1%	0.3%	0%	0.5%	0%	0.8%	0.3%	43.2%	3.3%	0%	46.8%	-
Lights	249	1	18	0	268	28	2992	2	0	3022	14	0	18	0	32	9	2687	206	0	2902	6224
% Lights	96.1%	100%	90.0%	0%	95.7%	96.6%	96.9%	16.7%	0%	96.5%	63.6%	0%	58.1%	0%	60.4%	52.9%	95.6%	95.8%	0%	95.4%	95.7%
Articulated Trucks	3	0	1	0	4	0	32	9	0	41	6	0	9	0	15	5	62	1	0	68	128
% Articulated Trucks	1.2%	0%	5.0%	0%	1.4%	0%	1.0%	75.0%	0%	1.3%	27.3%	0%	29.0%	0%	28.3%	29.4%	2.2%	0.5%	0%	2.2%	2.0%
Buses and Single-Unit Trucks	7	0	1	0	8	1	65	1	0	67	2	0	4	0	6	3	62	8	0	73	154
% Buses and Single-Unit Trucks	2.7%	0%	5.0%	0%	2.9%	3.4%	2.1%	8.3%	0%	2.1%	9.1%	0%	12.9%	0%	11.3%	17.6%	2.2%	3.7%	0%	2.4%	2.4%

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

4900 E Highland Dr - TMC

Thu Nov 19, 2020

Full Length (7 AM-9 AM, 11 AM-1 PM, 3 PM-6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 799340, Location: 35.820941, -90.636055



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

[N] Dara

Total: 524

In: 280 Out: 244

259
1
20

[W] Highland
Total: 6422
In: 3043 Out: 3379

215
2811
17

29
3089
12

Out: 2853 In: 3130
Total: 5983
[E] Highland

Out: 30 In: 53
Total: 83

[S] Dara

31
22

4900 E Highland Dr - TMC

Thu Nov 19, 2020

AM Peak (7 AM - 8 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 799340, Location: 35.820941, -90.636055

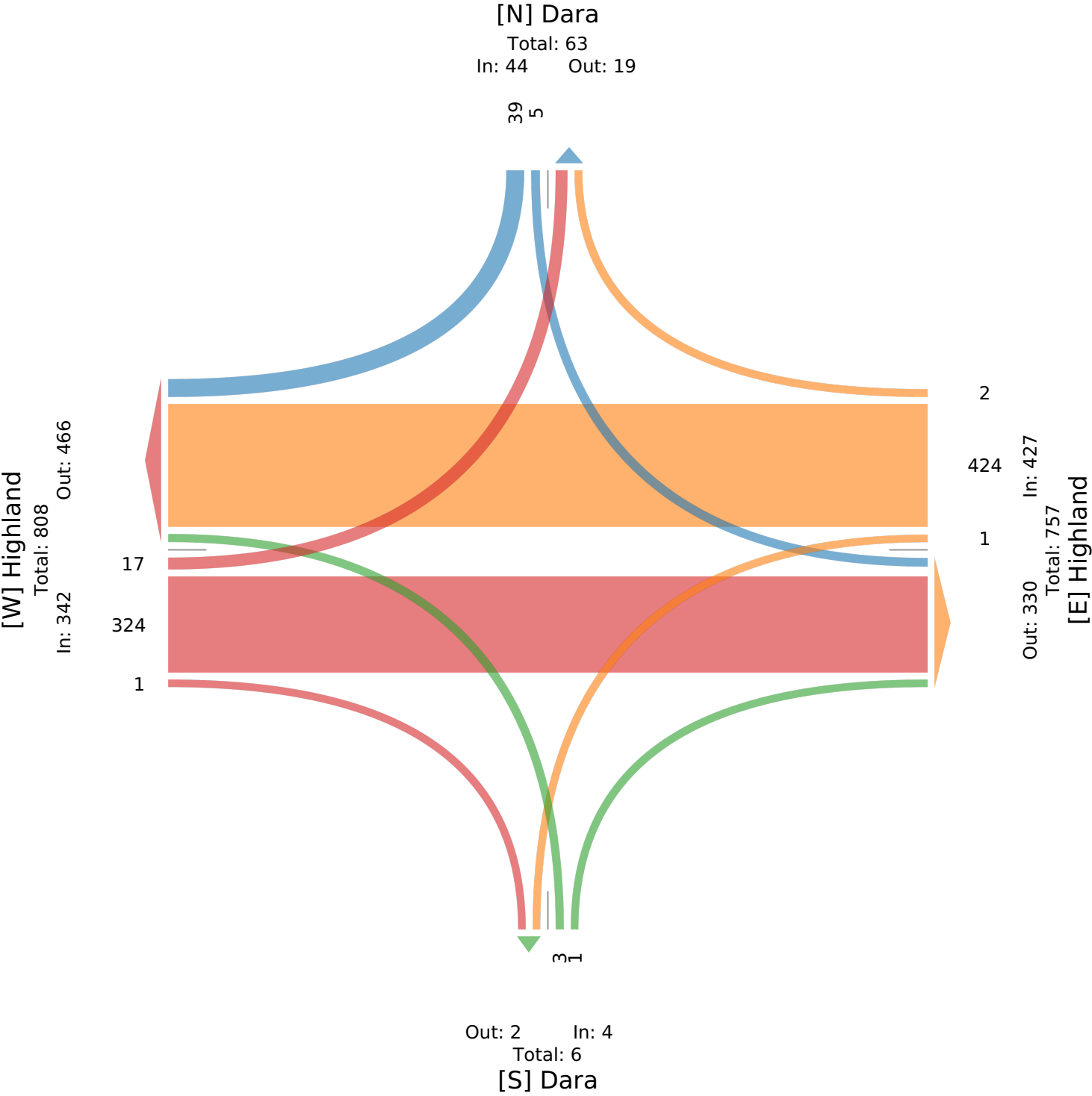


Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Dara Southbound					Highland Westbound					Dara Northbound					Highland Eastbound					
Time	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	Int
2020-11-19 7:00AM	11	0	1	0	12	0	82	0	0	82	0	0	1	0	1	0	81	4	0	85	180
7:15AM	6	0	0	0	6	0	102	0	0	102	0	0	0	0	0	0	88	2	0	90	198
7:30AM	11	0	1	0	12	1	121	0	0	122	1	0	0	0	1	0	77	8	0	85	220
7:45AM	11	0	3	0	14	1	119	1	0	121	0	0	2	0	2	1	78	3	0	82	219
Total	39	0	5	0	44	2	424	1	0	427	1	0	3	0	4	1	324	17	0	342	817
% Approach	88.6%	0%	11.4%	0%	-	0.5%	99.3%	0.2%	0%	-	25.0%	0%	75.0%	0%	-	0.3%	94.7%	5.0%	0%	-	-
% Total	4.8%	0%	0.6%	0%	5.4%	0.2%	51.9%	0.1%	0%	52.3%	0.1%	0%	0.4%	0%	0.5%	0.1%	39.7%	2.1%	0%	41.9%	-
PHF	0.886	-	0.417	-	0.786	0.500	0.876	0.250	-	0.875	0.250	-	0.375	-	0.500	0.250	0.920	0.531	-	0.950	0.928
Lights	39	0	5	0	44	2	414	0	0	416	0	0	1	0	1	0	307	16	0	323	784
% Lights	100%	0%	100%	0%	100%	100%	97.6%	0%	0%	97.4%	0%	0%	33.3%	0%	25.0%	0%	94.8%	94.1%	0%	94.4%	96.0%
Articulated Trucks	0	0	0	0	0	0	5	1	0	6	0	0	2	0	2	0	4	0	0	4	12
% Articulated Trucks	0%	0%	0%	0%	0%	0%	1.2%	100%	0%	1.4%	0%	0%	66.7%	0%	50.0%	0%	1.2%	0%	0%	1.2%	1.5%
Buses and Single-Unit Trucks	0	0	0	0	0	0	5	0	0	5	1	0	0	0	1	1	13	1	0	15	21
% Buses and Single-Unit Trucks	0%	0%	0%	0%	0%	0%	1.2%	0%	0%	1.2%	100%	0%	0%	0%	25.0%	100%	4.0%	5.9%	0%	4.4%	2.6%

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

4900 E Highland Dr - TMC
Thu Nov 19, 2020
AM Peak (7 AM - 8 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 799340, Location: 35.820941, -90.636055



4900 E Highland Dr - TMC

Thu Nov 19, 2020

Midday Peak (12 PM - 1 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 799340, Location: 35.820941, -90.636055

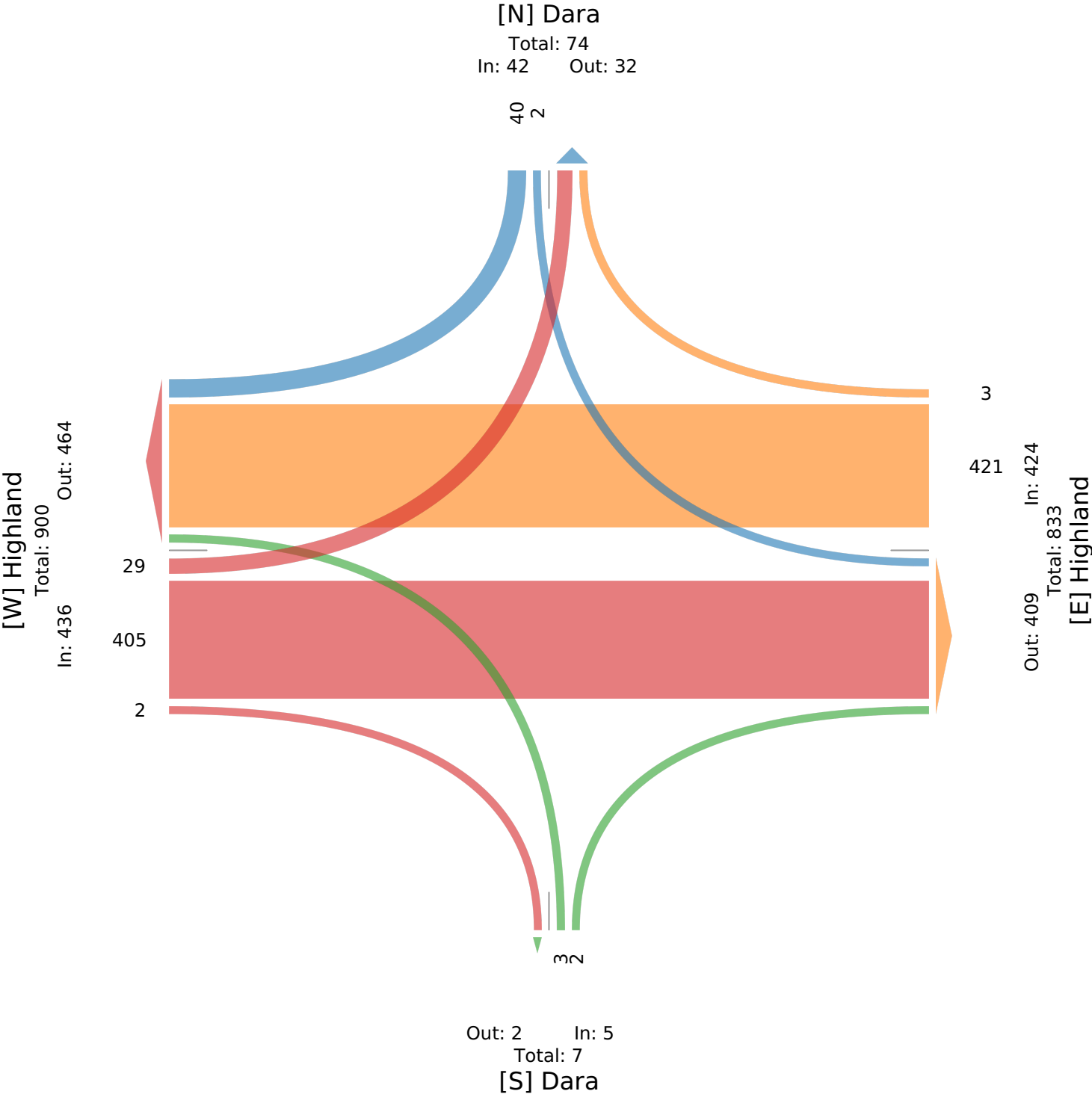


Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Dara Southbound					Highland Westbound					Dara Northbound					Highland Eastbound					
Time	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	Int
2020-11-19 12:00PM	12	0	0	0	12	1	111	0	0	112	1	0	1	0	2	0	103	11	0	114	240
12:15PM	9	0	1	0	10	1	108	0	0	109	1	0	0	0	1	0	102	3	0	105	225
12:30PM	7	0	0	0	7	1	110	0	0	111	0	0	2	0	2	0	92	8	0	100	220
12:45PM	12	0	1	0	13	0	92	0	0	92	0	0	0	0	0	2	108	7	0	117	222
Total	40	0	2	0	42	3	421	0	0	424	2	0	3	0	5	2	405	29	0	436	907
% Approach	95.2%	0%	4.8%	0%	-	0.7%	99.3%	0%	0%	-	40.0%	0%	60.0%	0%	-	0.5%	92.9%	6.7%	0%	-	-
% Total	4.4%	0%	0.2%	0%	4.6%	0.3%	46.4%	0%	0%	46.7%	0.2%	0%	0.3%	0%	0.6%	0.2%	44.7%	3.2%	0%	48.1%	-
PHF	0.833	-	0.500	-	0.808	0.750	0.948	-	-	0.946	0.500	-	0.375	-	0.625	0.250	0.938	0.659	-	0.932	0.945
Lights	38	0	1	0	39	3	407	0	0	410	1	0	0	0	1	2	381	26	0	409	859
% Lights	95.0%	0%	50.0%	0%	92.9%	100%	96.7%	0%	0%	96.7%	50.0%	0%	0%	0%	20.0%	100%	94.1%	89.7%	0%	93.8%	94.7%
Articulated Trucks	0	0	0	0	0	0	4	0	0	4	1	0	2	0	3	0	12	0	0	12	19
% Articulated Trucks	0%	0%	0%	0%	0%	0%	1.0%	0%	0%	0.9%	50.0%	0%	66.7%	0%	60.0%	0%	3.0%	0%	0%	2.8%	2.1%
Buses and Single-Unit Trucks	2	0	1	0	3	0	10	0	0	10	0	0	1	0	1	0	12	3	0	15	29
% Buses and Single-Unit Trucks	5.0%	0%	50.0%	0%	7.1%	0%	2.4%	0%	0%	2.4%	0%	0%	33.3%	0%	20.0%	0%	3.0%	10.3%	0%	3.4%	3.2%

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

4900 E Highland Dr - TMC
Thu Nov 19, 2020
Midday Peak (12 PM - 1 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 799340, Location: 35.820941, -90.636055



4900 E Highland Dr - TMC

Thu Nov 19, 2020

PM Peak (3:30 PM - 4:30 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 799340, Location: 35.820941, -90.636055

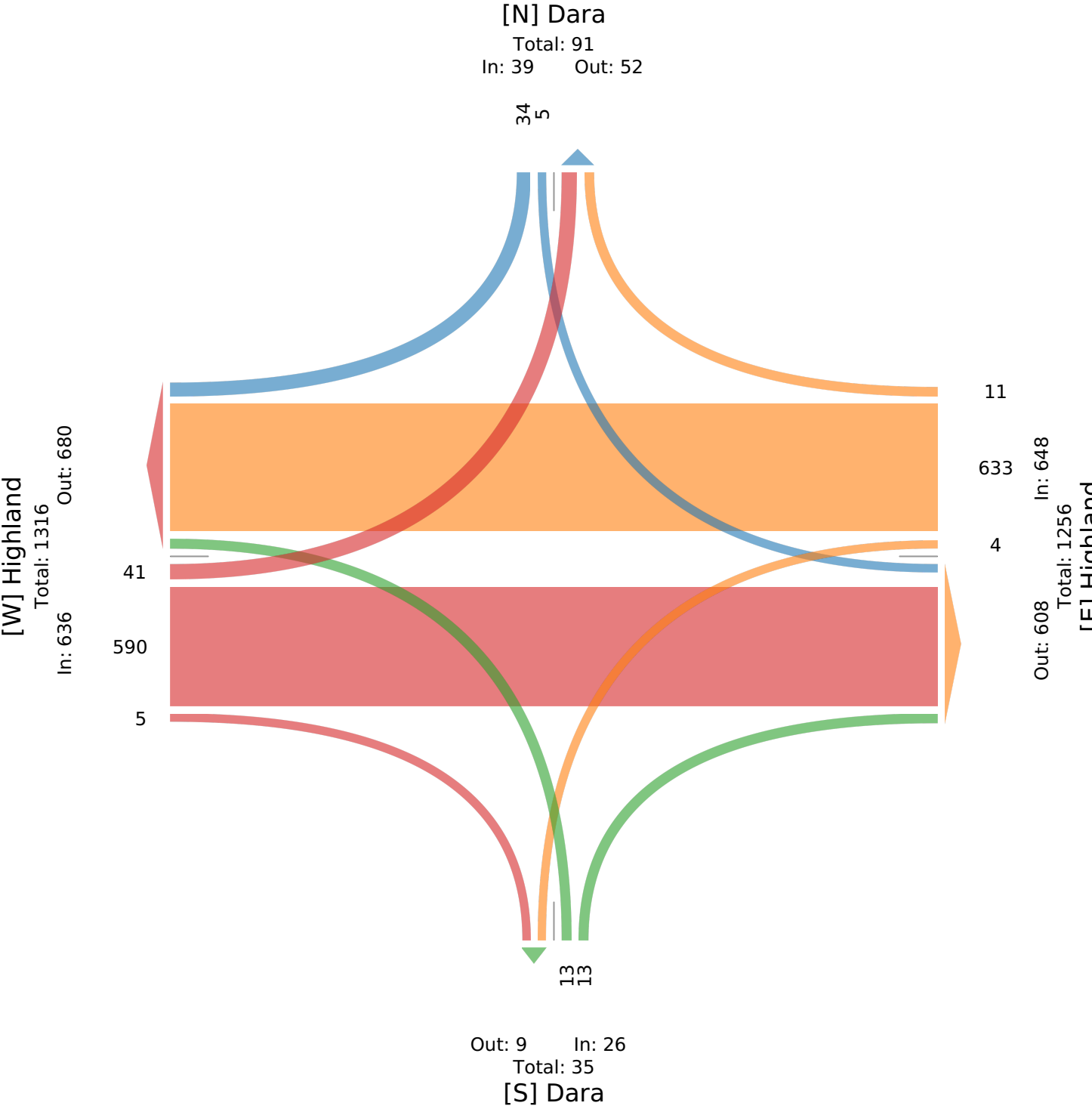


Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Dara Southbound					Highland Westbound					Dara Northbound					Highland Eastbound					
Time	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	Int
2020-11-19 3:30PM	12	0	5	0	17	5	179	1	0	185	11	0	11	0	22	1	207	14	0	222	446
3:45PM	6	0	0	0	6	2	151	1	0	154	1	0	1	0	2	2	139	9	0	150	312
4:00PM	3	0	0	0	3	3	140	1	0	144	1	0	0	0	1	0	126	10	0	136	284
4:15PM	13	0	0	0	13	1	163	1	0	165	0	0	1	0	1	2	118	8	0	128	307
Total	34	0	5	0	39	11	633	4	0	648	13	0	13	0	26	5	590	41	0	636	1349
% Approach	87.2%	0%	12.8%	0%	-	1.7%	97.7%	0.6%	0%	-	50.0%	0%	50.0%	0%	-	0.8%	92.8%	6.4%	0%	-	-
% Total	2.5%	0%	0.4%	0%	2.9%	0.8%	46.9%	0.3%	0%	48.0%	1.0%	0%	1.0%	0%	1.9%	0.4%	43.7%	3.0%	0%	47.1%	-
PHF	0.654	-	0.250	-	0.574	0.550	0.884	1.000	-	0.876	0.295	-	0.295	-	0.295	0.625	0.713	0.732	-	0.716	0.756
Lights	32	0	4	0	36	11	617	2	0	630	11	0	13	0	24	5	576	40	0	621	1311
% Lights	94.1%	0%	80.0%	0%	92.3%	100%	97.5%	50.0%	0%	97.2%	84.6%	0%	100%	0%	92.3%	100%	97.6%	97.6%	0%	97.6%	97.2%
Articulated Trucks	1	0	1	0	2	0	5	2	0	7	1	0	0	0	1	0	7	0	0	7	17
% Articulated Trucks	2.9%	0%	20.0%	0%	5.1%	0%	0.8%	50.0%	0%	1.1%	7.7%	0%	0%	0%	3.8%	0%	1.2%	0%	0%	1.1%	1.3%
Buses and Single-Unit Trucks	1	0	0	0	1	0	11	0	0	11	1	0	0	0	1	0	7	1	0	8	21
% Buses and Single-Unit Trucks	2.9%	0%	0%	0%	2.6%	0%	1.7%	0%	0%	1.7%	7.7%	0%	0%	0%	3.8%	0%	1.2%	2.4%	0%	1.3%	1.6%

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

4900 E Highland Dr - TMC
Thu Nov 19, 2020
PM Peak (3:30 PM - 4:30 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 799340, Location: 35.820941, -90.636055



APPENDIX B

EXISTING CAPACITY ANALYSIS REPORTS

HCM 6th TWSC
3: E Highland Dr & Dara Dr

11/24/2020

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	324	1	1	424	2	3	0	1	5	0	39
Future Vol, veh/h	17	324	1	1	424	2	3	0	1	5	0	39
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	53	92	25	25	88	50	38	25	25	42	25	89
Heavy Vehicles, %	6	6	6	3	3	3	75	75	75	0	0	0
Mvmt Flow	32	352	4	4	482	4	8	0	4	12	0	44

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	486	0	0	356	0	0	667	912	178	732	912	243
Stage 1	-	-	-	-	-	-	418	418	-	492	492	-
Stage 2	-	-	-	-	-	-	249	494	-	240	420	-
Critical Hdwy	4.22	-	-	4.16	-	-	9	8	8.4	7.5	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	8	7	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	8	7	-	6.5	5.5	-
Follow-up Hdwy	2.26	-	-	2.23	-	-	4.25	4.75	4.05	3.5	4	3.3
Pot Cap-1 Maneuver	1046	-	-	1192	-	-	231	172	647	313	276	764
Stage 1	-	-	-	-	-	-	424	437	-	532	551	-
Stage 2	-	-	-	-	-	-	562	395	-	748	593	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1046	-	-	1192	-	-	212	166	647	303	267	764
Mov Cap-2 Maneuver	-	-	-	-	-	-	212	166	-	303	267	-
Stage 1	-	-	-	-	-	-	411	423	-	516	549	-
Stage 2	-	-	-	-	-	-	528	394	-	721	575	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.7			0.1			18.6			11.9		
HCM LOS							C			B		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	212	647	1046	-	-	1192	-	-	577
HCM Lane V/C Ratio	0.037	0.006	0.031	-	-	0.003	-	-	0.097
HCM Control Delay (s)	22.6	10.6	8.6	-	-	8	-	-	11.9
HCM Lane LOS	C	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0	0.1	-	-	0	-	-	0.3

HCM 6th TWSC
6: Hytrol Dr & E Highland Dr

11/24/2020

Intersection												
Int Delay, s/veh	0.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	326	18	4	483	0	1	0	0	0	0	0
Future Vol, veh/h	0	326	18	4	483	0	1	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	64	50	90	90	25	25	25	25	25	25
Heavy Vehicles, %	6	6	6	4	4	4	0	0	0	0	0	0
Mvmt Flow	0	354	28	8	537	0	4	0	0	0	0	0
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	537	0	0	382	0	0	653	921	191	730	935	269
Stage 1	-	-	-	-	-	-	368	368	-	553	553	-
Stage 2	-	-	-	-	-	-	285	553	-	177	382	-
Critical Hdwy	4.22	-	-	4.18	-	-	7.5	6.5	6.9	7.5	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.26	-	-	2.24	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1000	-	-	1159	-	-	356	273	825	314	267	735
Stage 1	-	-	-	-	-	-	630	625	-	490	518	-
Stage 2	-	-	-	-	-	-	704	518	-	813	616	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1000	-	-	1159	-	-	354	271	825	312	265	735
Mov Cap-2 Maneuver	-	-	-	-	-	-	354	271	-	312	265	-
Stage 1	-	-	-	-	-	-	630	625	-	490	514	-
Stage 2	-	-	-	-	-	-	699	514	-	813	616	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.1			15.3			0		
HCM LOS							C			A		
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1			
Capacity (veh/h)	354	-	1000	-	-	1159	-	-	-			
HCM Lane V/C Ratio	0.011	-	-	-	-	0.007	-	-	-			
HCM Control Delay (s)	15.3	0	0	-	-	8.1	-	-	0			
HCM Lane LOS	C	A	A	-	-	A	-	-	A			
HCM 95th %tile Q(veh)	0	-	0	-	-	0	-	-	-			

HCM 6th TWSC
3: E Highland Dr & Dara Dr

11/24/2020

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	29	405	5	4	421	3	3	0	2	2	0	40
Future Vol, veh/h	29	405	5	4	421	3	3	0	2	2	0	40
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	66	94	25	25	95	75	38	25	50	50	25	83
Heavy Vehicles, %	6	6	6	3	3	3	80	80	80	7	7	7
Mvmt Flow	44	431	20	16	443	4	8	0	4	4	0	48
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	447	0	0	451	0	0	783	1008	226	781	1016	224
Stage 1	-	-	-	-	-	-	529	529	-	477	477	-
Stage 2	-	-	-	-	-	-	254	479	-	304	539	-
Critical Hdwy	4.22	-	-	4.16	-	-	9.1	8.1	8.5	7.64	6.64	7.04
Critical Hdwy Stg 1	-	-	-	-	-	-	8.1	7.1	-	6.64	5.64	-
Critical Hdwy Stg 2	-	-	-	-	-	-	8.1	7.1	-	6.64	5.64	-
Follow-up Hdwy	2.26	-	-	2.23	-	-	4.3	4.8	4.1	3.57	4.07	3.37
Pot Cap-1 Maneuver	1082	-	-	1099	-	-	178	141	584	276	228	764
Stage 1	-	-	-	-	-	-	343	368	-	525	542	-
Stage 2	-	-	-	-	-	-	548	395	-	667	508	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1082	-	-	1099	-	-	160	133	584	263	215	764
Mov Cap-2 Maneuver	-	-	-	-	-	-	160	133	-	263	215	-
Stage 1	-	-	-	-	-	-	329	353	-	503	534	-
Stage 2	-	-	-	-	-	-	506	389	-	635	487	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.8			0.3			22.8			10.9		
HCM LOS							C			B		
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1			
Capacity (veh/h)	160	584	1082	-	-	1099	-	-	667			
HCM Lane V/C Ratio	0.049	0.007	0.041	-	-	0.015	-	-	0.078			
HCM Control Delay (s)	28.7	11.2	8.5	-	-	8.3	-	-	10.9			
HCM Lane LOS	D	B	A	-	-	A	-	-	B			
HCM 95th %tile Q(veh)	0.2	0	0.1	-	-	0	-	-	0.3			

HCM 6th TWSC
6: Hytrol Dr & E Highland Dr

11/24/2020

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	439	10	1	466	0	5	0	0	0	0	0
Future Vol, veh/h	0	439	10	1	466	0	5	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	63	25	94	94	42	42	42	25	25	25
Heavy Vehicles, %	6	6	6	4	4	4	0	0	0	0	0	0
Mvmt Flow	0	467	16	4	496	0	12	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	496	0	0	483	0	0	731	979	242	738	987	248
Stage 1	-	-	-	-	-	-	475	475	-	504	504	-
Stage 2	-	-	-	-	-	-	256	504	-	234	483	-
Critical Hdwy	4.22	-	-	4.18	-	-	7.5	6.5	6.9	7.5	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.26	-	-	2.24	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1036	-	-	1062	-	-	313	252	765	310	249	758
Stage 1	-	-	-	-	-	-	545	561	-	524	544	-
Stage 2	-	-	-	-	-	-	732	544	-	754	556	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1036	-	-	1062	-	-	312	251	765	309	248	758
Mov Cap-2 Maneuver	-	-	-	-	-	-	312	251	-	309	248	-
Stage 1	-	-	-	-	-	-	545	561	-	524	542	-
Stage 2	-	-	-	-	-	-	729	542	-	754	556	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.1			17			0		
HCM LOS							C			A		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	312	-	1036	-	-	1062	-	-	-
HCM Lane V/C Ratio	0.038	-	-	-	-	0.004	-	-	-
HCM Control Delay (s)	17	0	0	-	-	8.4	-	-	0
HCM Lane LOS	C	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	0	-	-	0	-	-	-

HCM 6th TWSC
3: E Highland Dr & Dara Dr

11/24/2020

Intersection												
Int Delay, s/veh	3.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	41	590	5	4	633	11	13	0	13	5	0	34
Future Vol, veh/h	41	590	5	4	633	11	13	0	13	5	0	34
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	73	71	63	100	88	55	30	30	30	25	65	65
Heavy Vehicles, %	2	2	2	3	3	3	8	8	8	8	8	8
Mvmt Flow	56	831	8	4	719	20	43	0	43	20	0	52
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	739	0	0	839	0	0	1315	1694	420	1265	1688	370
Stage 1	-	-	-	-	-	-	947	947	-	737	737	-
Stage 2	-	-	-	-	-	-	368	747	-	528	951	-
Critical Hdwy	4.14	-	-	4.16	-	-	7.66	6.66	7.06	7.66	6.66	7.06
Critical Hdwy Stg 1	-	-	-	-	-	-	6.66	5.66	-	6.66	5.66	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.66	5.66	-	6.66	5.66	-
Follow-up Hdwy	2.22	-	-	2.23	-	-	3.58	4.08	3.38	3.58	4.08	3.38
Pot Cap-1 Maneuver	863	-	-	785	-	-	110	86	566	120	87	610
Stage 1	-	-	-	-	-	-	269	325	-	363	409	-
Stage 2	-	-	-	-	-	-	608	404	-	487	323	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	863	-	-	785	-	-	95	80	566	105	81	610
Mov Cap-2 Maneuver	-	-	-	-	-	-	95	80	-	105	81	-
Stage 1	-	-	-	-	-	-	252	304	-	339	407	-
Stage 2	-	-	-	-	-	-	553	402	-	421	302	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.6			0.1			41.7			23.9		
HCM LOS							E			C		
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1			
Capacity (veh/h)	95	566	863	-	-	785	-	-	262			
HCM Lane V/C Ratio	0.456	0.077	0.065	-	-	0.005	-	-	0.276			
HCM Control Delay (s)	71.4	11.9	9.5	-	-	9.6	-	-	23.9			
HCM Lane LOS	F	B	A	-	-	A	-	-	C			
HCM 95th %tile Q(veh)	1.9	0.2	0.2	-	-	0	-	-	1.1			

HCM 6th TWSC
6: Hytrol Dr & E Highland Dr

11/24/2020

Intersection												
Int Delay, s/veh	6.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	590	32	12	670	1	42	0	44	0	0	1
Future Vol, veh/h	0	590	32	12	670	1	42	0	44	0	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	57	60	85	25	39	39	31	25	25	25
Heavy Vehicles, %	2	2	2	3	3	3	0	0	0	0	0	0
Mvmt Flow	0	738	56	20	788	4	108	0	142	0	0	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	792	0	0	794	0	0	1200	1598	397	1199	1624	396
Stage 1	-	-	-	-	-	-	766	766	-	830	830	-
Stage 2	-	-	-	-	-	-	434	832	-	369	794	-
Critical Hdwy	4.14	-	-	4.16	-	-	7.5	6.5	6.9	7.5	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.22	-	-	2.23	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	824	-	-	817	-	-	143	107	608	143	104	609
Stage 1	-	-	-	-	-	-	366	415	-	335	388	-
Stage 2	-	-	-	-	-	-	576	387	-	629	403	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	824	-	-	817	-	-	139	104	608	108	102	609
Mov Cap-2 Maneuver	-	-	-	-	-	-	139	104	-	108	102	-
Stage 1	-	-	-	-	-	-	366	415	-	335	379	-
Stage 2	-	-	-	-	-	-	558	378	-	482	403	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.2			45.1			11		
HCM LOS							E			B		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	139	608	824	-	-	817	-	-	609
HCM Lane V/C Ratio	0.775	0.233	-	-	-	0.024	-	-	0.007
HCM Control Delay (s)	87.9	12.7	0	-	-	9.5	-	-	11
HCM Lane LOS	F	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	4.7	0.9	0	-	-	0.1	-	-	0

APPENDIX C

EXISTING PLUS SITE CAPACITY ANALYSIS

HCM 6th TWSC
3: E Highland Dr & Dara Dr

11/25/2020

Intersection												
Int Delay, s/veh	1.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	330	1	1	436	2	3	0	1	11	0	39
Future Vol, veh/h	17	330	1	1	436	2	3	0	1	11	0	39
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	53	92	25	25	88	50	38	25	25	42	25	89
Heavy Vehicles, %	6	6	6	3	3	3	75	75	75	0	0	0
Mvmt Flow	32	359	4	4	495	4	8	0	4	26	0	44
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	499	0	0	363	0	0	681	932	182	749	932	250
Stage 1	-	-	-	-	-	-	425	425	-	505	505	-
Stage 2	-	-	-	-	-	-	256	507	-	244	427	-
Critical Hdwy	4.22	-	-	4.16	-	-	9	8	8.4	7.5	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	8	7	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	8	7	-	6.5	5.5	-
Follow-up Hdwy	2.26	-	-	2.23	-	-	4.25	4.75	4.05	3.5	4	3.3
Pot Cap-1 Maneuver	1034	-	-	1185	-	-	225	166	643	304	269	756
Stage 1	-	-	-	-	-	-	419	433	-	523	544	-
Stage 2	-	-	-	-	-	-	556	388	-	744	589	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1034	-	-	1185	-	-	206	160	643	294	260	756
Mov Cap-2 Maneuver	-	-	-	-	-	-	206	160	-	294	260	-
Stage 1	-	-	-	-	-	-	406	420	-	507	542	-
Stage 2	-	-	-	-	-	-	522	387	-	716	571	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.7			0.1			19			13.9		
HCM LOS							C			B		
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1			
Capacity (veh/h)	206	643	1034	-	-	1185	-	-	476			
HCM Lane V/C Ratio	0.038	0.006	0.031	-	-	0.003	-	-	0.147			
HCM Control Delay (s)	23.2	10.6	8.6	-	-	8	-	-	13.9			
HCM Lane LOS	C	B	A	-	-	A	-	-	B			
HCM 95th %tile Q(veh)	0.1	0	0.1	-	-	0	-	-	0.5			

Intersection												
Int Delay, s/veh	3.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	24	321	18	4	437	58	1	0	0	11	0	63
Future Vol, veh/h	24	321	18	4	437	58	1	0	0	11	0	63
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	175	0	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	64	50	90	90	25	25	25	25	25	25
Heavy Vehicles, %	6	6	6	4	4	4	0	0	0	0	0	0
Mvmt Flow	26	349	28	8	486	64	4	0	0	44	0	252
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	550	0	0	377	0	0	674	981	189	729	931	243
Stage 1	-	-	-	-	-	-	415	415	-	502	502	-
Stage 2	-	-	-	-	-	-	259	566	-	227	429	-
Critical Hdwy	4.22	-	-	4.18	-	-	7.5	6.5	6.9	7.5	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.26	-	-	2.24	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	989	-	-	1164	-	-	344	251	827	314	269	764
Stage 1	-	-	-	-	-	-	591	596	-	525	545	-
Stage 2	-	-	-	-	-	-	729	511	-	761	587	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	989	-	-	1164	-	-	225	243	827	306	260	764
Mov Cap-2 Maneuver	-	-	-	-	-	-	225	243	-	306	260	-
Stage 1	-	-	-	-	-	-	576	581	-	511	541	-
Stage 2	-	-	-	-	-	-	485	507	-	741	572	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.6			0.1			21.3			13		
HCM LOS							C			B		
Minor Lane/Major Mvmt	NBLn1 NBLn2		EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2		
Capacity (veh/h)	225		-	989	-	-	1164	-	-	306	764	
HCM Lane V/C Ratio	0.018		-	0.026	-	-	0.007	-	-	0.144	0.33	
HCM Control Delay (s)	21.3		0	8.7	-	-	8.1	-	-	18.7	12	
HCM Lane LOS	C		A	A	-	-	A	-	-	C	B	
HCM 95th %tile Q(veh)	0.1		-	0.1	-	-	0	-	-	0.5	1.4	

HCM 6th TWSC
9: Dara Dr & Site Drive 2

11/25/2020

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	7	0	19	43	2
Future Vol, veh/h	1	7	0	19	43	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	1	8	0	21	47	2

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	69	48	49	0	-	0
Stage 1	48	-	-	-	-	-
Stage 2	21	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	941	1027	1571	-	-	-
Stage 1	980	-	-	-	-	-
Stage 2	1007	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	941	1027	1571	-	-	-
Mov Cap-2 Maneuver	941	-	-	-	-	-
Stage 1	980	-	-	-	-	-
Stage 2	1007	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.5	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1571	-	941	1027	-	-
HCM Lane V/C Ratio	-	-	0.001	0.007	-	-
HCM Control Delay (s)	0	-	8.8	8.5	-	-
HCM Lane LOS	A	-	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	0	-	-

HCM 6th TWSC
3: E Highland Dr & Dara Dr

11/25/2020

Intersection												
Int Delay, s/veh	5.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	41	598	5	4	649	11	13	0	13	13	0	34
Future Vol, veh/h	41	598	5	4	649	11	13	0	13	13	0	34
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	73	71	63	100	88	55	30	30	30	25	65	65
Heavy Vehicles, %	2	2	2	3	3	3	8	8	8	8	8	8
Mvmt Flow	56	842	8	4	738	20	43	0	43	52	0	52

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	758	0	0	850	0	0	1335	1724	425	1289	1718	379
Stage 1	-	-	-	-	-	-	958	958	-	756	756	-
Stage 2	-	-	-	-	-	-	377	766	-	533	962	-
Critical Hdwy	4.14	-	-	4.16	-	-	7.66	6.66	7.06	7.66	6.66	7.06
Critical Hdwy Stg 1	-	-	-	-	-	-	6.66	5.66	-	6.66	5.66	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.66	5.66	-	6.66	5.66	-
Follow-up Hdwy	2.22	-	-	2.23	-	-	3.58	4.08	3.38	3.58	4.08	3.38
Pot Cap-1 Maneuver	849	-	-	778	-	-	106	83	561	115	83	602
Stage 1	-	-	-	-	-	-	265	321	-	353	400	-
Stage 2	-	-	-	-	-	-	600	396	-	483	319	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	849	-	-	778	-	-	92	77	561	100	77	602
Mov Cap-2 Maneuver	-	-	-	-	-	-	92	77	-	100	77	-
Stage 1	-	-	-	-	-	-	248	300	-	330	398	-
Stage 2	-	-	-	-	-	-	545	394	-	416	298	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.6			0.1			43.5			53.8		
HCM LOS							E			F		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	92	561	849	-	-	778	-	-	172
HCM Lane V/C Ratio	0.471	0.077	0.066	-	-	0.005	-	-	0.606
HCM Control Delay (s)	75	12	9.5	-	-	9.7	-	-	53.8
HCM Lane LOS	F	B	A	-	-	A	-	-	F
HCM 95th %tile Q(veh)	2	0.2	0.2	-	-	0	-	-	3.3

Intersection												
Int Delay, s/veh	23.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	585	32	12	623	64	42	0	44	13	0	73
Future Vol, veh/h	30	585	32	12	623	64	42	0	44	13	0	73
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	175	0	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	57	60	85	25	39	39	31	25	25	25
Heavy Vehicles, %	2	2	2	3	3	3	0	0	0	0	0	0
Mvmt Flow	38	731	56	20	733	256	108	0	142	52	0	292
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	989	0	0	787	0	0	1242	1864	394	1215	1636	367
Stage 1	-	-	-	-	-	-	835	835	-	773	773	-
Stage 2	-	-	-	-	-	-	407	1029	-	442	863	-
Critical Hdwy	4.14	-	-	4.16	-	-	7.5	6.5	6.9	7.5	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.22	-	-	2.23	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	695	-	-	822	-	-	133	74	611	139	102	636
Stage 1	-	-	-	-	-	-	333	386	-	362	412	-
Stage 2	-	-	-	-	-	-	597	314	-	570	374	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	695	-	-	822	-	-	~ 68	68	611	100	94	636
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 68	68	-	100	94	-
Stage 1	-	-	-	-	-	-	315	365	-	342	402	-
Stage 2	-	-	-	-	-	-	315	306	-	414	353	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.5			0.2			190.1			24.4		
HCM LOS							F			C		
Minor Lane/Major Mvmt	NBLn1 NBLn2		EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2		
Capacity (veh/h)	68	611	695	-	-	822	-	-	100	636		
HCM Lane V/C Ratio	1.584	0.232	0.054	-	-	0.024	-	-	0.52	0.459		
HCM Control Delay (s)	\$ 423.8	12.7	10.5	-	-	9.5	-	-	74.7	15.4		
HCM Lane LOS	F	B	B	-	-	A	-	-	F	C		
HCM 95th %tile Q(veh)	9.3	0.9	0.2	-	-	0.1	-	-	2.3	2.4		
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s				+: Computation Not Defined				*: All major volume in platoon		

HCM 6th TWSC
9: Dara Dr & Site Drive 2

11/25/2020

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	9	0	52	38	2
Future Vol, veh/h	1	9	0	52	38	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	10	0	57	41	2
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	99	42	43	0	-	0
Stage 1	42	-	-	-	-	-
Stage 2	57	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	900	1029	1566	-	-	-
Stage 1	980	-	-	-	-	-
Stage 2	966	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	900	1029	1566	-	-	-
Mov Cap-2 Maneuver	900	-	-	-	-	-
Stage 1	980	-	-	-	-	-
Stage 2	966	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.6	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1566	-	900	1029	-	-
HCM Lane V/C Ratio	-	-	0.001	0.01	-	-
HCM Control Delay (s)	0	-	9	8.5	-	-
HCM Lane LOS	A	-	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	0	-	-