Unity Place Apartments
Traffic Impact Analysis

Shepherdsville Road, just south of
Robbs Lane / Applegate Lane
Louisville, Kentucky

Stantec

Prepared for:
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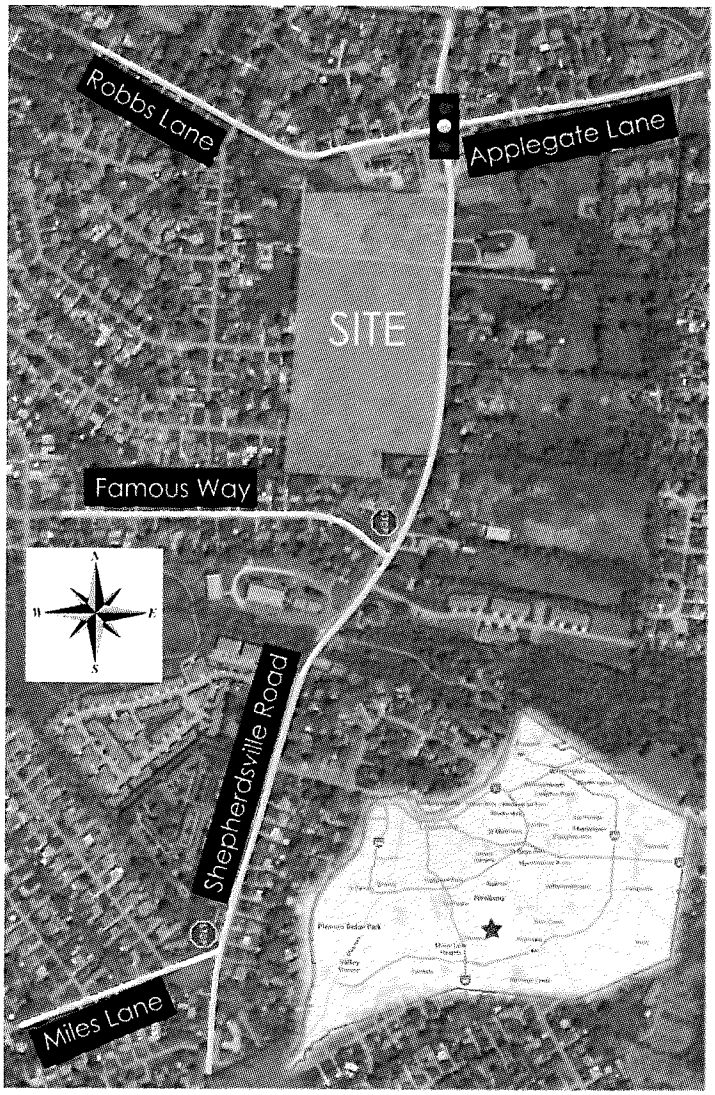
Figure 1: Proposed Site Location



Barrister Commercial Group is proposing to construct 264 apartments on a 19.66 acre site located on the west side of Shepherdsville Road just south of the Robbs Lane / Applegate Lane intersection (see Figure 1). Construction for this development, referred to as Unity Place Apartments, is planned to be complete by the end of 2019. The current zoning for this property, which is currently vacant, is R-4 and C-1 while the proposed zoning is R-6 and C-1.

Stantec Consulting Services, Inc. prepared this report to present trip generation, trip distribution, and traffic analyses in order to identify the impacts the development will have on the adjacent transportation system. Study area intersections include Shepherdsville Road / Robbs Lane & Applegate Lane, Shepherdsville Road / Famous Way, Shepherdsville Road / Miles Lane, and two site access points on Shepherdsville Road. This report examines 2018 Existing conditions, 2020 No-Build conditions, and 2020 Build Out conditions for the AM and PM peak hours.

2.0 EXISTING CONDITIONS

Shepherdsville Road runs north-south in southern Jefferson County connecting residential areas in the south to commercial, industrial and residential areas to the north. The posted speed limit on Shepherdsville Road is 35 miles per hour (mph). Kentucky Transportation Cabinet traffic station counts reported the following vpd along study area roads:

- Shepherdsville Road (north of Miles Lane) - 11,519 vpd in 2016
- Robb's Lane - 5,820 vpd in 2015
- Applegate Lane – 4,986 vpd in 2014
- Famous Way – 3,200 vpd in 2017
- Miles Lane – 3,031 vpd in 2017

City of Louisville public works department stated via email the daily traffic for Famous Way was 3,200 vehicles per day (vpd) in 2017. Within the study area, land uses around Shepherdsville Road are primarily low-density residential. Transit Authority of River City (TARC) bus service for the Breckenridge – Shepherdsville corridor is provided; although there are not transit stops within the study area.

According to the Kentucky Transportation Cabinet Functional Classification Interactive Map, Shepherdsville Road is a minor arterial whereas Robbs Lane / Applegate Lane and Miles Lane are listed as major collectors. Famous Way is shown as a local road.

Figure 2 illustrates the existing lane configurations and traffic control.

Figure 2: Existing Lane Configurations and Traffic Control

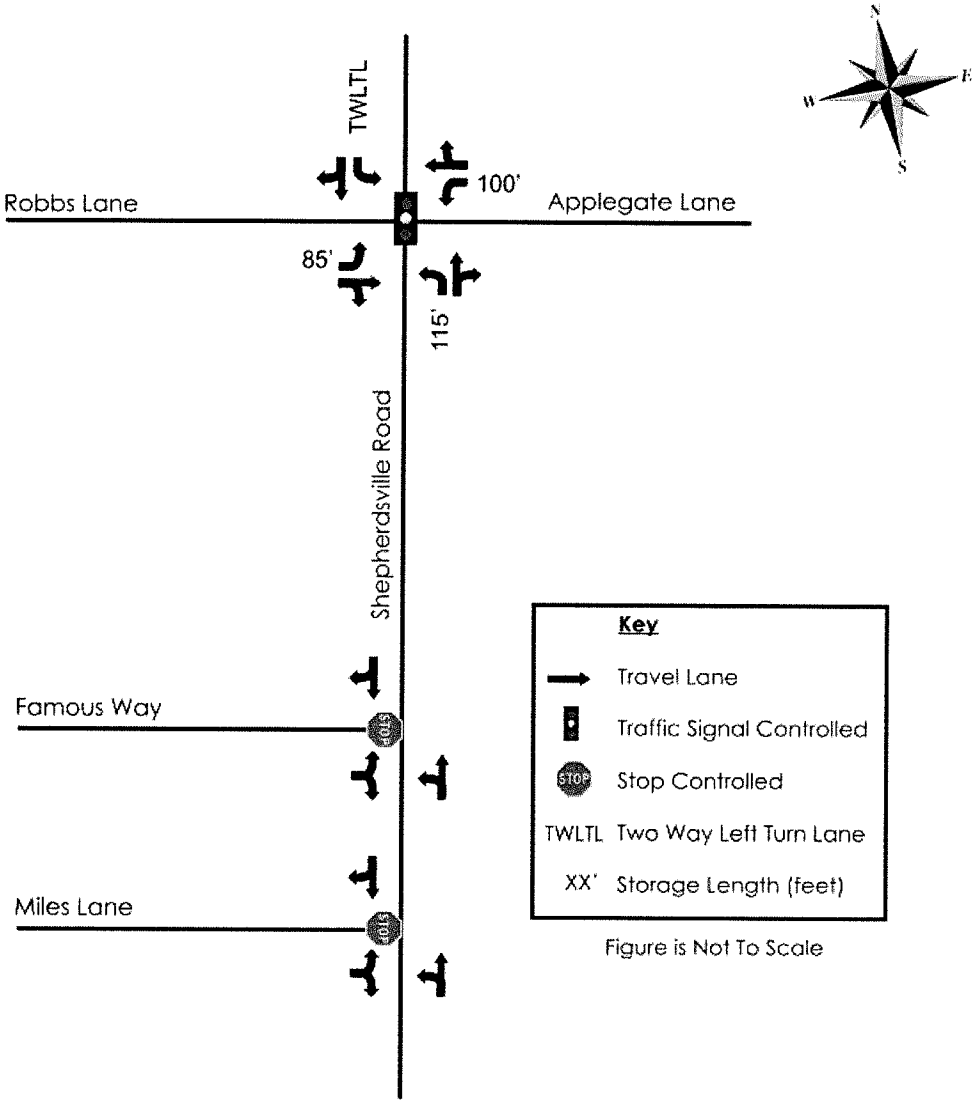


Figure is Not To Scale

AM (7 – 9 AM) and PM (4 – 6 PM) peak hour traffic counts were collected at the intersections of Shepherdsville Road at Robbs / Applegate Lane and Shepherdsville Road at Miles Lane on May 18 & 19, 2016 (See Appendix). Traffic counts were performed at the intersection of Shepherdsville Road at Famous Way on June 20, 2018. Due to the distance and number of access locations between the study area intersections, they experienced slightly different PM peak hours. Table 1 summarizes the study area intersections and the actual AM and PM peak hour for each intersection.

Table 1: Peak Hour Summary for Study Area Intersections

Unity Place Apartments Peak Hour Summary for Study Area Intersections				
Intersection	**Traffic Control**	**Data Collection Date**	**AM Peak Hour**	**PM Peak Hour**
Shepherdsville Road / Robbs Ln & Applegate Ln	Signalized	May 18-19, 2016	7:00 – 8:00 AM	4:45 – 5:45 PM
Shepherdsville Road / Famous Way	Stop-Control	June 20, 2018	7:15 – 8:15 AM	4:45 – 5:45 PM
Shepherdsville Road / Miles Lane	Stop-Control	May 18-19, 2016	7:00 – 8:00 AM	4:30 – 5:30 PM

To estimate 2018 peak hour traffic volumes, data collected in 2016 was grown by 2.5% per year. Figure 3 summarizes the 2018 AM and PM peak hour traffic volumes. The traffic volumes may be overestimated due to an aggressive growth rate being assumed. To account for seasonal variation in traffic volumes, the data collected at the intersection of Shepherdsville Road at Famous Way was increased by a factor of 1.14. This factor was obtained from Table D3 contained in the Traffic Forecasting Report – 2008 produced by Kentucky Transportation Center at the University of Kentucky in cooperation with the Kentucky Transportation Cabinet.

3.0 FUTURE CONDITIONS

Construction of the Unity Place Apartments is expected to be complete by the end of 2019, therefore 2020 was used as the build out analysis year. To estimate 2020 No Build traffic volumes, the 2018 traffic volumes were grown by 2.5% per year. It should be noted that this is higher than observed traffic growth in the area; providing a conservative estimate of future traffic. Figure 4 illustrates the estimated 2020 No Build traffic volumes for the study area intersections.

Figure 3: 2018 AM and PM Estimated Peak Hour Traffic Volumes

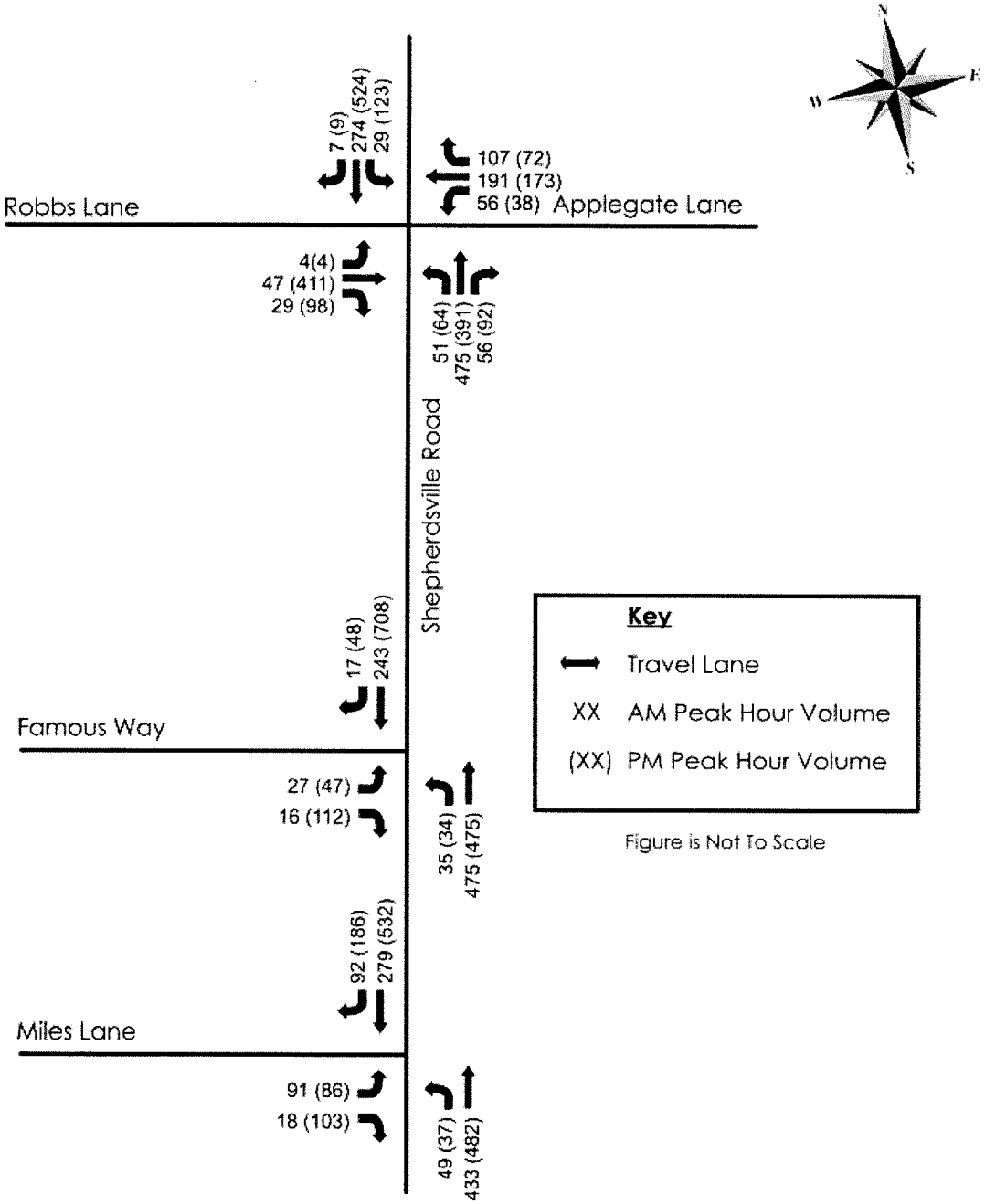
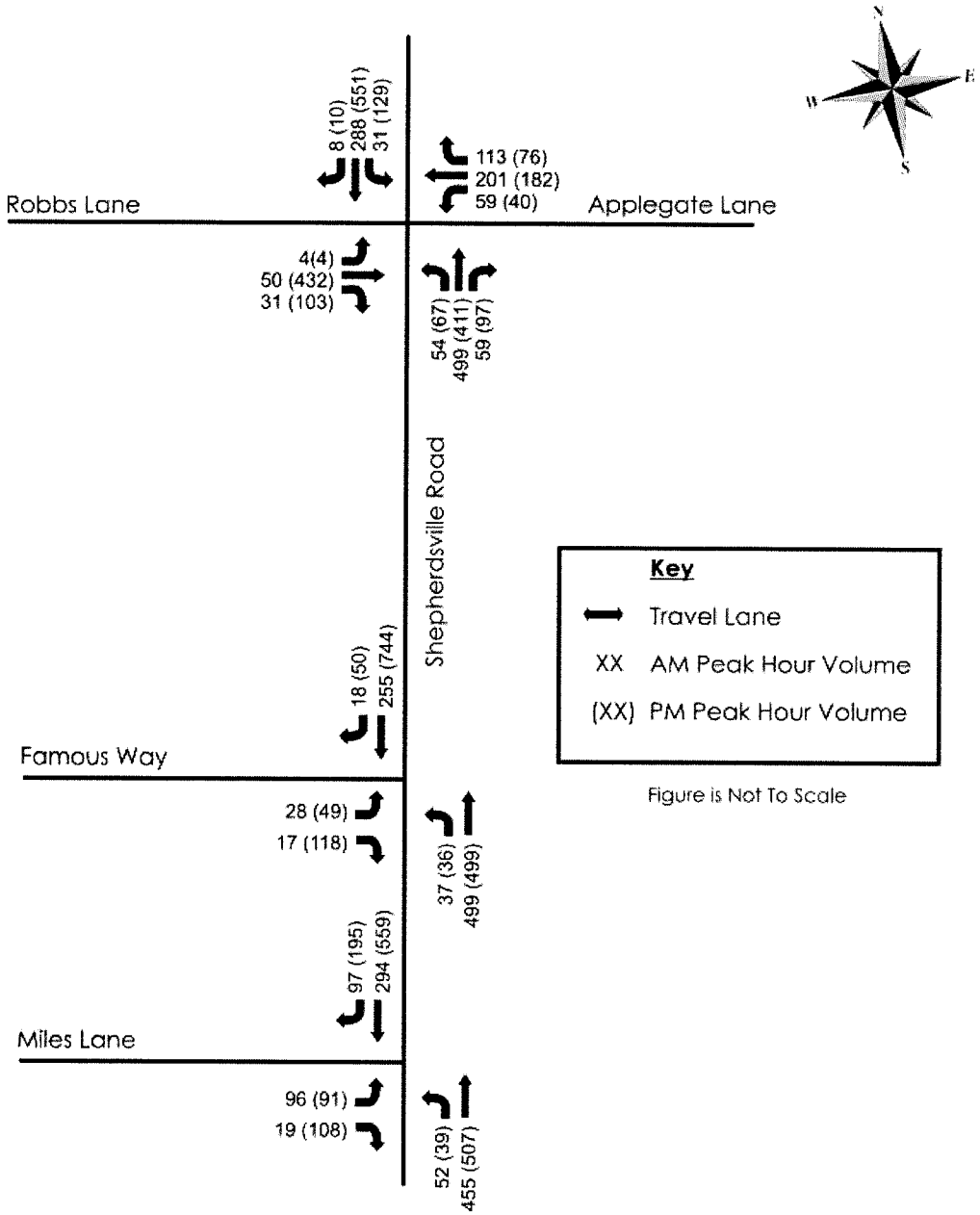


Figure 4: 2020 No Build AM and PM Peak Hour Traffic Volumes



The proposed development is planned to consist of 264 apartment units. Table 2 summarizes the expected trip generation according to the 10th Edition of the ITE Trip Generation Manual when using the peak hour of the adjacent street and the regression equations provided for daily, AM peak hour, and PM peak hour trip calculations.

Table 2: Unity Place Apartments Trip Generation Table

Unity Place Apartments Trip Generation							
Land Use (code)	Daily	AM			PM		
		TOTAL	IN	OUT	TOTAL	IN	OUT
264 Apartments (221)	**1437**	**89**	23	66	**113**	69	44

The daycare facility included on the site plan is the subject of a separate conditional use permit and is planned for future years; accordingly, this study focuses solely on the traffic impacts related to the proposed apartments.

The site plan for the proposed development shows a five-foot-wide sidewalk being constructed along the site's frontage of Shepherdsville Road. Additionally, a bike rack is shown to be installed on the south side of the complex's clubhouse. The site plan is shown on Figure 5.

To accurately determine the effect of the proposed development on the surrounding roadway network, an estimate of the expected distribution of traffic entering and exiting the site is needed. Generally, it is estimated that 55% of the traffic will travel to/from the north and 45% will travel to/from the south. Figure 6 shows the distributions described above as well as the turning movement percentages at each intersection. These percentages were developed using a combination of existing traffic volume counts in combination with an evaluation of surrounding land uses.

Figure 7 illustrates the traffic volumes expected to be generated by the proposed development and Figure 8 shows the 2020 Build Out traffic, which is a summary of the 2020 No Build traffic with the additional site traffic.

Figure 5: Site Plan

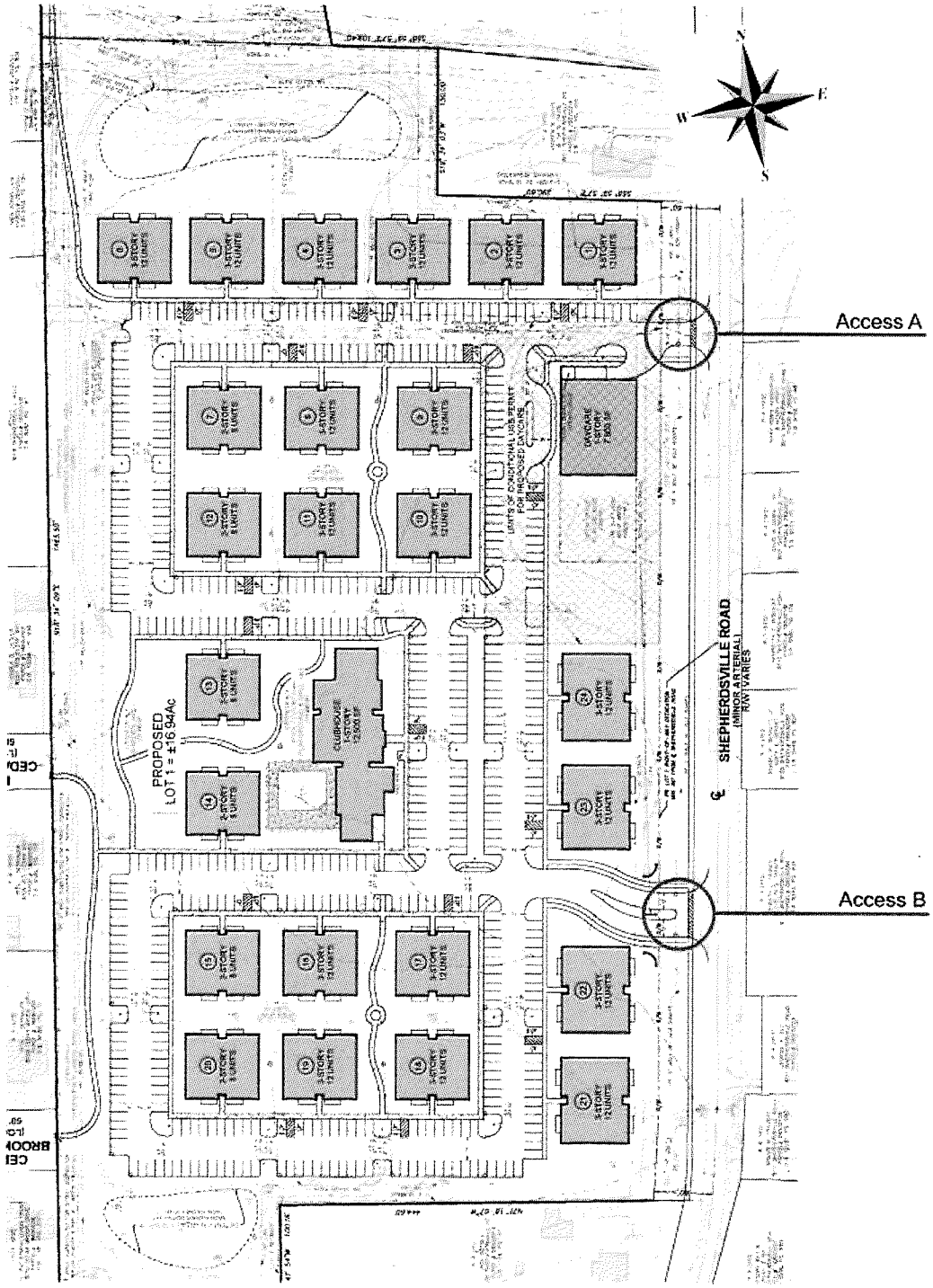


Figure 6: Site Trip Distribution

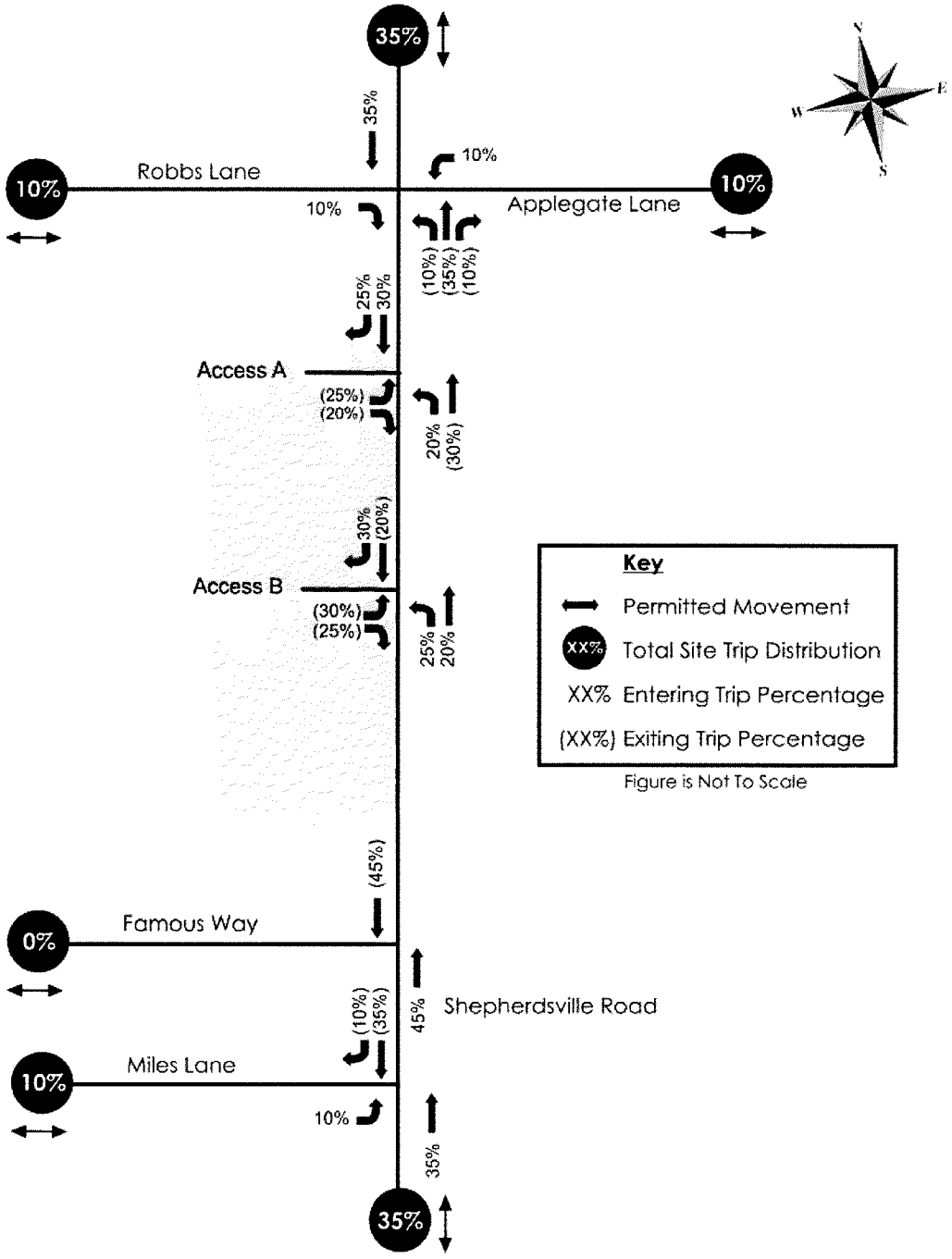


Figure 7: Peak Hour Site Trips

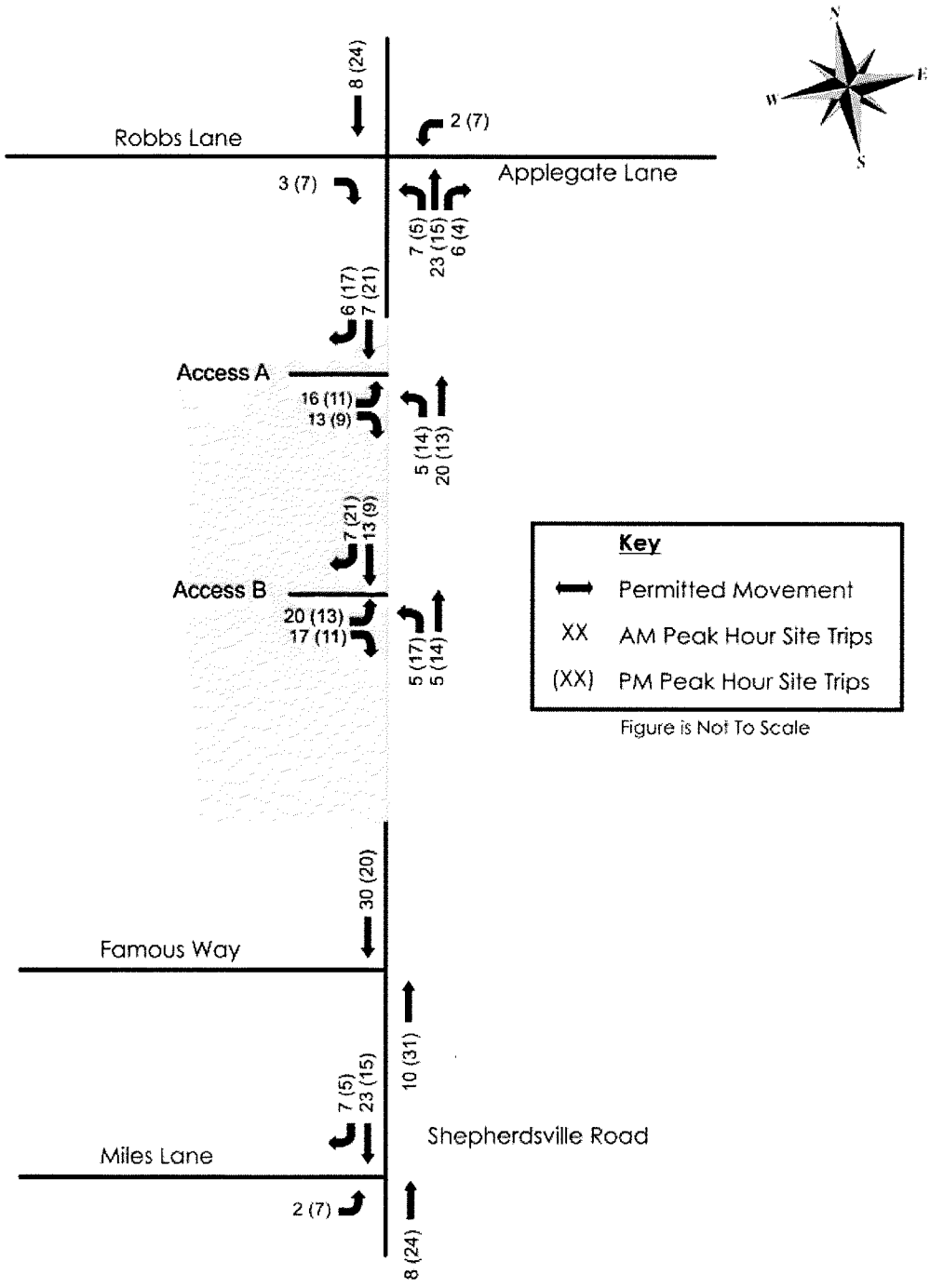


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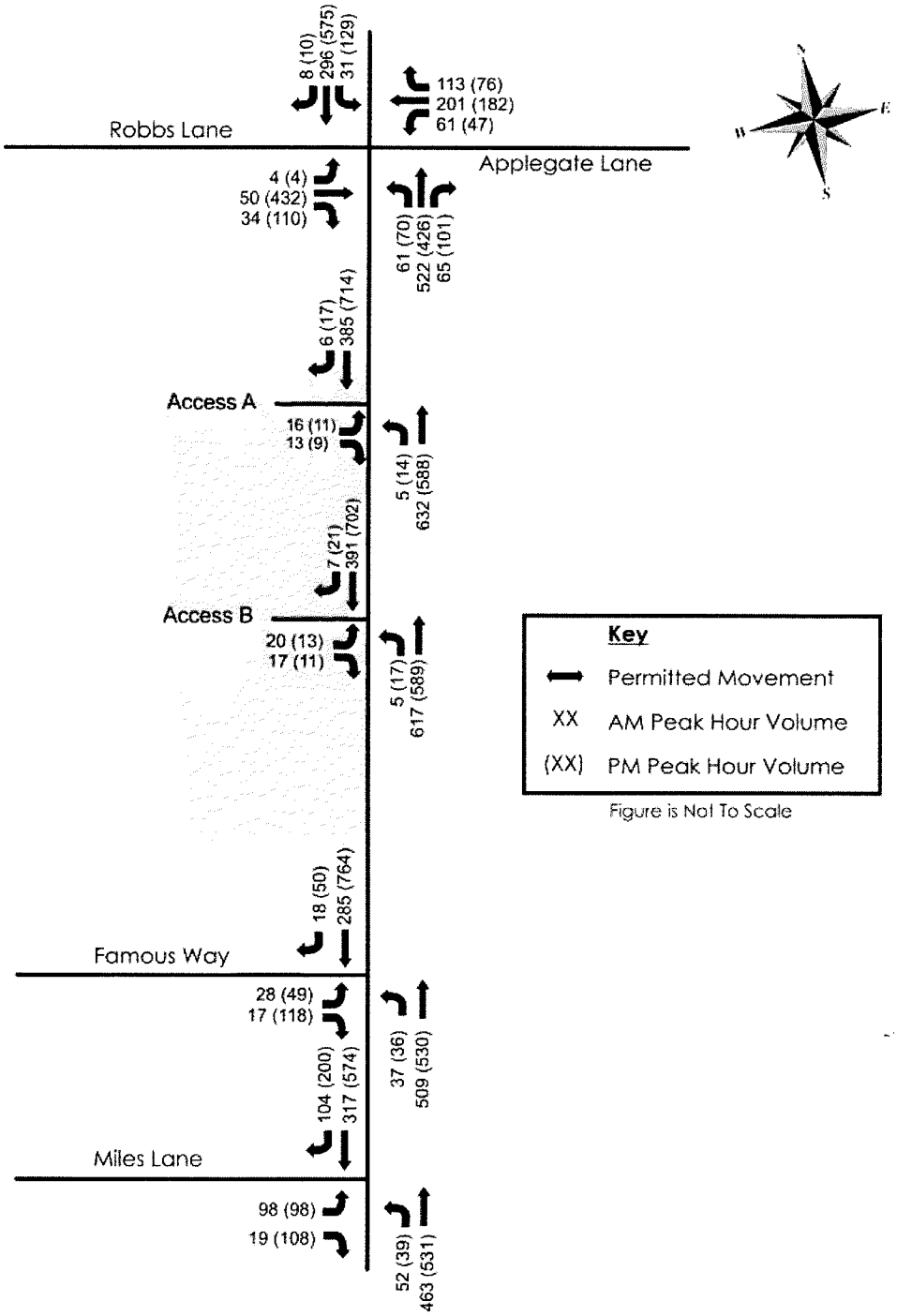
Figure 8: 2020 Build Out Traffic Volumes



4.0 TRAFFIC ANALYSIS

Capacity analyses were performed for the roadway network in the project study area. The traffic analysis program HCS Version 7 (Streets and TWSC) was used to analyze all intersections according to methods put forth by the Transportation Research Board's ***Highway Capacity Manual***. Level-of-service (LOS) is a term used to describe different traffic conditions and is defined as a "qualitative measure describing operational conditions within a traffic stream, and their perception by motorists/ or passengers." LOS varies from Level A, representing free flow, to Level F where traffic breakdown conditions are evident.

At an unsignalized intersection, the primary traffic on the main roadway is virtually uninterrupted. Therefore, the overall delay for the intersection is usually less than what is calculated for the minor street movements. HCS 7 does not calculate an overall delay for unsignalized intersections; therefore, only the delay for the intersection's minor street(s) are reported in the summary tables of this report. With the current method of reporting LOS for unsignalized intersections, it is not uncommon for some of the minor street movements to be operating at a LOS F during peak hour conditions.

Capacity Analyses were performed for the following intersections defined within the study area for 2018 Existing, 2020 No-Build, 2020 Build Out conditions.

- Shepherdsville Road / Robbs Lane & Applegate Lane
- Shepherdsville Road / Famous Way
- Shepherdsville Road / Miles Lane

Famous Way is a local road approximately 0.75 miles in length. It provides access to single family homes. As the proposed development is envisioned to consist of apartments, predominantly residential areas are not anticipated to act as trip attractors for traffic traveling to/from the proposed development. Therefore, traffic generated by the proposed development is envisioned to be placed on thru movements on Shepherdsville Road and not on Famous Way.

The following intersections were also studied for the 2020 Build Out scenario:

- Shepherdsville Road / Access A
- Shepherdsville Road / Access B

Table 3 and Table 4 summarize the results from the capacity analyses. The recommended lane configuration and traffic control is shown on Figure 9.

Table 3: LOS and Delay Summary

LOS (Delay) Intersection		2018		2020			
		Existing		No-Build		Build	
		AM	PM	AM	PM	AM	PM
Shepherdsville Road at Robbs Lane / Applegate Lane (signalized)	**Overall**	**D (39.4)**	**E (61.7)**	**D (40.9)**	**E (68.4)**	**D (42.1)**	**E (71.9)**
	EB App.	D (39.6)	F (120.8)	D (39.8)	F (141.4)	D (39.9)	F (148.1)
	EB Left	E (55.4)	D (50.8)	E (56.9)	D (51.8)	E (56.9)	D (51.8)
	EB Thru/Right	D (38.7)	F (121.3)	D (38.9)	F (142.1)	D (39.1)	F (148.8)
	WB App.	D (50.1)	E (61.0)	D (51.6)	E (63.1)	D (51.6)	E (71.7)
	WB Left	D (42.9)	F (152.5)	D (43.4)	F (162.4)	D (43.7)	F (203.1)
	WB Thru/Right	D (51.4)	D (46.8)	D (53.1)	D (47.7)	D (53.1)	D (47.7)
	NB App.	D (38.7)	D (36.2)	D (40.8)	D (37.8)	D (43.5)	D (39.3)
	NB Left	B (15.2)	C (20.7)	B (15.4)	C (21.9)	B (15.6)	C (23.1)
	NB Thru/Right	D (41.0)	D (38.3)	D (43.3)	D (40.0)	D (46.4)	D (41.4)
	SB App.	C (28.5)	D (36.9)	C (29.0)	D (38.9)	C (29.4)	D (41.1)
	SB Left	B (19.8)	C (21.5)	C (20.8)	C (22.8)	C (22.0)	C (23.7)
	SB Thru/Right	C (29.4)	D (40.4)	C (29.9)	D (42.7)	C (30.1)	D (44.9)
Shepherdsville Road at Miles Lane*	EB App.	C (24.3)	F (64.4)	D (27.8)	F (92.4)	D (30.4)	F (126.7)
	NB Left	A (1.3)	A (1.3)	A (1.4)	A (1.4)	A (8.5)	A (9.9)
Shepherdsville Road at Famous Way*	EB App.	C (15.4)	E (45.6)	C (16.1)	F (59.6)	C (16.9)	F (69.4)
	NB Left	A (0.9)	A (1.3)	A (0.9)	A (1.4)	A (8.0)	B (10.1)
Shepherdsville Road at Access A*	EB	N/A	N/A	N/A	N/A	C (18.1)	D (26.4)
	NB Left	N/A	N/A	N/A	N/A	A (8.2)	A (9.5)
Shepherdsville Road at Access B*	EB	N/A	N/A	N/A	N/A	C (18.1)	D (26.6)
	NB Left	N/A	N/A	N/A	N/A	A (8.2)	A (9.5)

Legend:

X (X) LOS (Delay)
N/A Not Applicable for this Scenario
*Overall LOS not reported for unsignalized intersections

Table 4: Volume to Capacity Ratio Summary

Volume to Capacity Ratio		2018		2020			
		Existing		No-Build		Build	
Intersection		AM	PM	AM	PM	AM	PM
Shepherdsville Road at Robbs Lane / Applegate Lane	EB Left	0.026	0.020	0.028	0.021	0.028	0.021
	EB Thru/Right	0.170	1.103	0.181	1.159	0.189	1.176
	WB Left	0.166	0.827	0.177	0.870	0.184	1.023
	WB Thru/Right	0.664	0.540	0.700	0.569	0.700	0.569
	NB Left	0.092	0.168	0.099	0.185	0.113	0.202
	NB Thru/Right	0.755	0.697	0.794	0.734	0.836	0.761
	SB Left	0.077	0.303	0.086	0.332	0.091	0.344
	SB Thru/Right	0.394	0.746	0.415	0.786	0.426	0.819
Shepherdsville Road at Miles Lane	EB	0.40	0.83	0.45	0.95	0.48	1.06
	NB Left	0.05	0.05	0.05	0.05	0.05	0.06
Shepherdsville Road at Famous Way	EB	0.12	0.69	0.13	0.78	0.14	0.83
	NB Left	0.03	0.05	0.03	0.05	0.03	0.05
Shepherdsville Road at Access A	EB	N/A	N/A	N/A	N/A	0.10	0.12
	NB Left	N/A	N/A	N/A	N/A	0.01	0.02
Shepherdsville Road at Access B	EB	N/A	N/A	N/A	N/A	0.13	0.14
	NB Left	N/A	N/A	N/A	N/A	0.01	0.02

Figure 9: 2020 Build Lane Configurations and Traffic Control

Final7/13/18

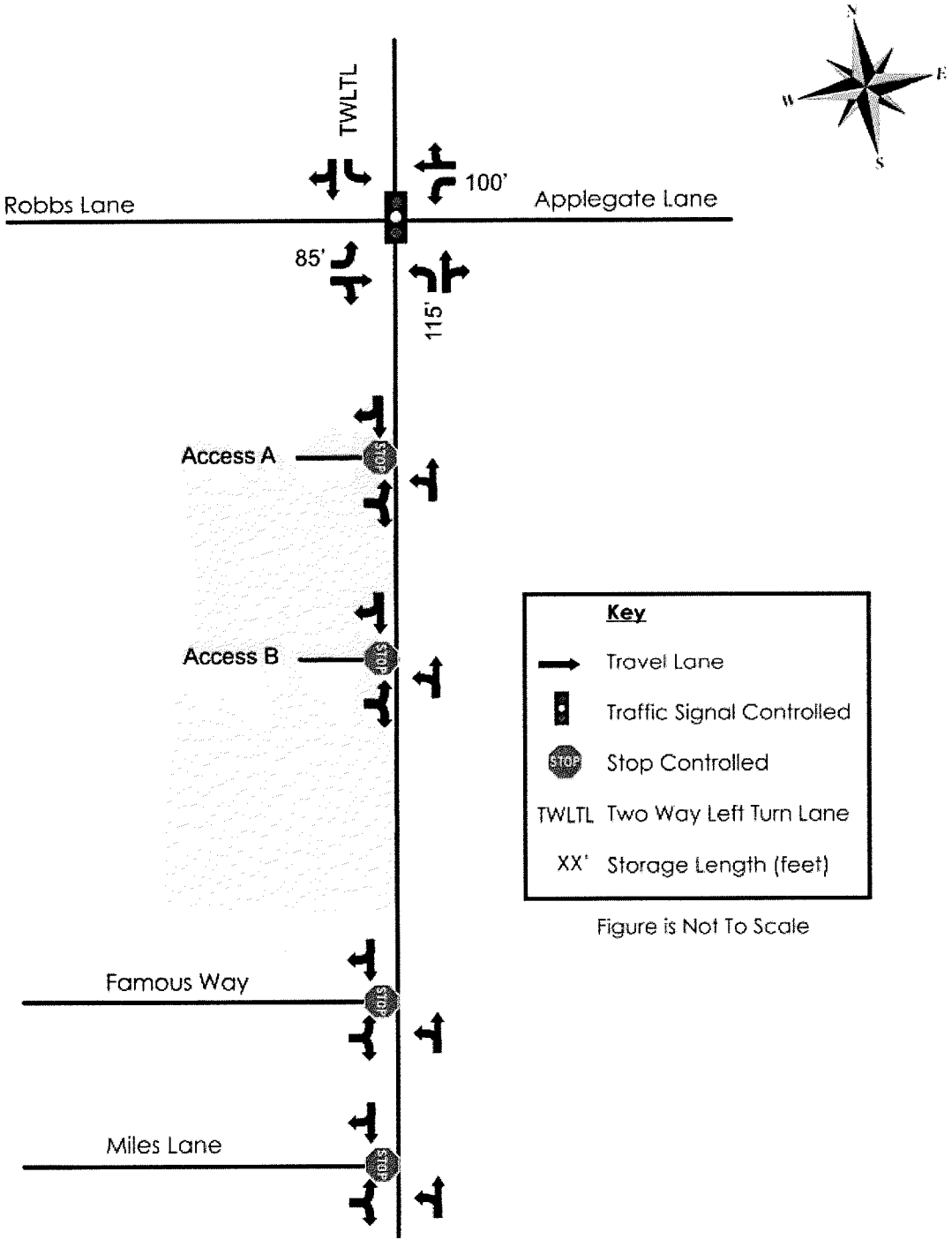


Figure is Not To Scale

5.0 CONCLUSIONS

According to the estimated trip generation for 264 apartments, the proposed site will generate 23 trips entering and 66 trips exiting in the AM peak hour and 69 trips entering and 44 trips exiting in the PM peak hour.

The additional site traffic is expected to increase the overall traffic volume at the signalized Shepherdsville Road / Robb Lane & Applegate Lane intersection by approximately 3.5% in the AM peak hour and 3% in the PM peak hour. Based on the results of the capacity analyses, the additional traffic will not increase overall delay by more than 3.5 seconds in either of the peak periods at the Shepherdsville Road / Robb Lane & Applegate Lane intersection. The additional traffic from the proposed development has a minimal impact. For the westbound left turn, the site is only expected to add 7 vehicles (an average of 1 vehicle every 8.5 minutes) to this movement.

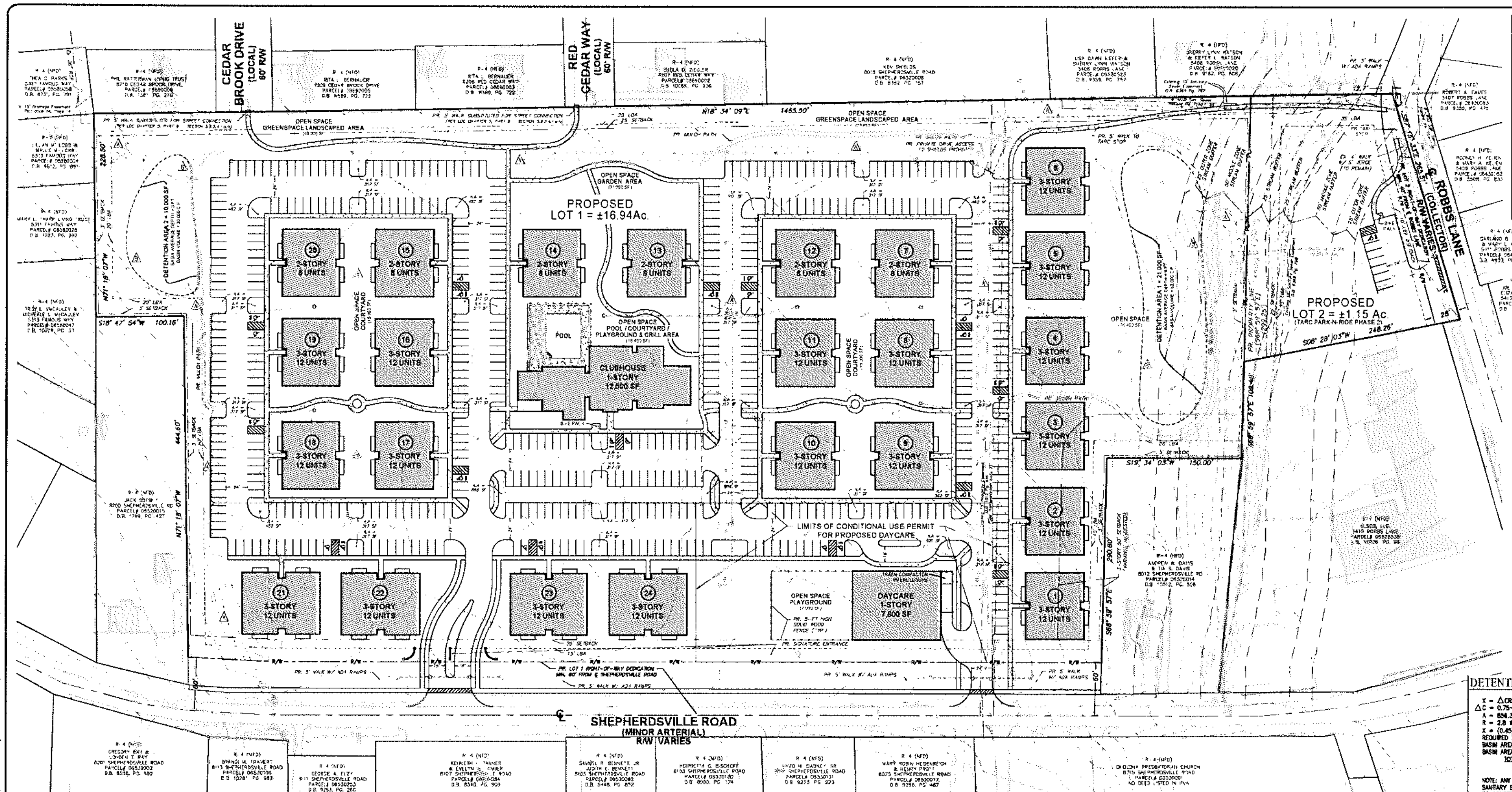
As noted earlier, it is not uncommon for the stop-controlled minor streets in an unsignalized intersection to experience delays during peak periods, while the majority of the traffic flows through the intersection on the major street experiencing little or no delay. At the Shepherdsville Road intersections of Miles Lane and Famous Way, the eastbound approaches are anticipated to operate at LOS F with and without the proposed development.

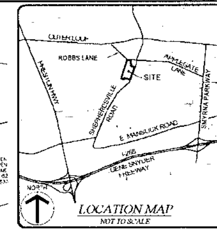
Traffic exiting the proposed Access A and Access B is expected to operate at LOS C in the AM peak hour and LOS D in the PM peak hour. The left turns into the site are expected to operate at LOS A in both the AM and PM peak hours.

As part of the development, 5 foot sidewalks will constructed along the property frontage on Shepherdsville Road and bike racks will be provided within the development.

APPENDIX

APPENDIX A: SITE PLAN





LEGEND

- EX. TREE
- EX. FIRE HYDRANT
- EX. LIGHT POLE
- EX. UTILITY POLE
- EX. SIGN
- EX. PROPERTY LINE
- EX. FENCE
- EX. SWALE
- EX. STORM SEWER
- EX. SANITARY SEWER
- PR. STORM SEWER w/ EPSC ROCK CHCK
- PR. SANITARY SEWER
- PR. SWALE
- PR. CONCRETE (5' WALK WITH ADA RAMPS AS REQ.)
- PR. EDGE OF PAVEMENT
- PR. FENCE
- SETBACK PER LDC
- LANDSCAPE BUFFER AREA (LABELED AS LBA ON PLAN)
- PR. SILT FENCE
- PR. LIMITS OF DISTURBANCE IN STREAM BUFFER
- LIMITS OF PROPOSED BUILDING

MSD EASEMENTS (PROPOSED)

A PROPOSED 15' SANITARY SEWER AND DRAINAGE EASEMENT

B PROPOSED VARIABLE SANITARY SEWER AND DRAINAGE EASEMENT

NOTE: FOR CLARITY, ALL PROPOSED EASEMENTS ARE SHOWN ON DEVELOPMENT PLAN BUT LABELED WITH THE A OR B INDICATION AS SHOWN ABOVE FOR TYPE. SEE MSD NOTE 12. FINAL LOCATIONS AND MINIMUM WIDTHS WILL BE DETERMINED AT TIME OF CONSTRUCTION PER MSD MINIMUM REQUIREMENTS.

DETENTION CALCULATIONS

$X = \Delta CRA/12$
$\Delta C = 0.75-0.30=0.45$
A = 856,390 SF (19.66 Ac.)
R = 2.8 INCHES
X = (0.45)(856,390)(2.8)/12=89,921 CUBIC-FEET
REQUIRED X = 134,882 CU.FT. (89,921 CU.FT. + 50% FOR POND CHECK WATERSHED)
BASIN AREA 1 = 30,000 CU.FT. (10,000 SF @ APPROX. 3 FT. DEPTH)
BASIN AREA 2 = 105,000 SF (21,000 SF @ APPROX. 5 FT. DEPTH)
TOTAL = 135,000 SF BASIN VOLUME
= 135,000 CU.FT. > 134,882 CU.FT.

NOTE: ANY THROUGH DRAINAGE AND ONSITE DETENTION WILL REQUIRE AN SANITARY SEWER AND DRAINAGE EASEMENT PLAT PER MSD STANDARDS PRIOR TO CONSTRUCTION PLAN APPROVAL.

TREE CANOPY CALCULATIONS

LOT 1 SITE AREA	738,011 SF
LOT 2 SITE AREA	49,956 SF
TOTAL SITE AREA	787,967 SF
CANOPY COVERAGE CLASS	CLASS C – 0%-40%
AREA OF SITE WITH EX. TREE CANOPY	(5%) 43,000 SF
TREE CANOPY REQUIRED	(20%) 157,593 SF
TREE CANOPY PRESERVED	NONE*
TREE CANOPY TO BE PLANTED	(20%) 157,593 SF
TOTAL TREE CANOPY PROVIDED	(20%) 157,593 SF

*NOTE: IF AT TIME OF CONSTRUCTION PLAN PREPARATION AND BASED ON FINAL SITE GRADING, TREE CANOPY AREAS CAN BE DETERMINED TO REMAIN, THEY MAY BE INCLUDED AS PART OF THIS PROJECT AND WILL BE SHOWN ON THE LANDSCAPE PLAN AS TREE CANOPY PROTECTION AREAS (TCPA).

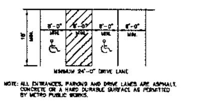
LANDSCAPE DATA

PROPOSED V.U.A.	175,722 SF
I.L.A. REQUIRED (7.5%)	13,018 SF
I.L.A. PROVIDED	13,693 SF

OPEN SPACE DATA (R-6)

TOTAL SITE AREA	15.94 ACRES
OPEN SPACE REQUIRED	2.54 ACRES (15%)
OPEN SPACE PROVIDED	~~5.01 ACRES (34%)~~

(OPEN SPACE PROVIDED INCLUDES 4+ ACRES OF RECREATIONAL OPEN SPACE PROVIDED AT POOL/CLUBHOUSE, PLAYGROUND WITH PATIO/GRILL AREA, GREEN SPACE WALKING PATH, SIGNATURE ENTRY GREENSPACE, AND GARDENS)



NOTE: ALL ENTRANCES, PARKING AND DRIVE LANES ARE ASPHALT, CONCRETE OR A HARD DURABLE SURFACE AS PERMITTED BY METRO PUBLIC WORKS.

TYPICAL PARKING SPACE LAYOUT

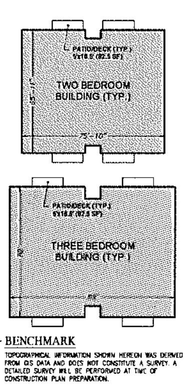
NOT TO SCALE

The New Look For Digging Safely in Kentucky
Kentucky 811
Call 811 Before You Dig

UTILITY NOTE:

ALL UTILITIES SHOWN ON THESE PLANS ARE APPROXIMATE. INDIVIDUAL SERVICE LINES ARE NOT SHOWN. THE CONTRACTOR OR SUBCONTRACTOR SHALL NOTIFY KENTUCKY 811(PHONE NO. 811) FORTY EIGHT HOURS IN ADVANCE OF ANY CONSTRUCTION ON THIS PROJECT. THIS NUMBER WAS ESTABLISHED TO PROVIDE ACCURATE LOCATIONS OF EXISTING BELOW GROUND UTILITIES (I.E. CABLES, ELECTRIC WIRES, GAS, AND WATERLINES). THE CONTRACTOR SHALL BE RESPONSIBLE FOR BECOMING FAMILIAR WITH ALL UTILITY REQUIREMENTS SET FORTH ON THE PLANS IN THE TECHNICAL SPECIFICATIONS AND SPECIAL PROVISIONS.

Revision	Date	Description	Detailed by
4	7/11/18	ENTRANCE CHANGES	JDC
3	6/26/18	LD&T COMMENT – ENTRANCE CHANGES	JDC
2	6/1/18	LD&T COMMENT – ADD TURN LANES / WALK CONNECTION	JDC
1	4/20/18	AGENCY COMMENTS	JDC



BENCHMARK

TOPOGRAPHICAL INFORMATION SHOWN HEREON WAS DERIVED FROM GIS DATA AND DOES NOT CONSTITUTE A SURVEY. A DETAILED SURVEY WILL BE PERFORMED AT TIME OF CONSTRUCTION PLAN PREPARATION.

GENERAL NOTES

1) DOMESTIC WATER SUPPLY: SUBJECT SITE TO BE SERVED BY THE LOUISVILLE WATER COMPANY. THE NECESSARY WATER SYSTEM IMPROVEMENTS REQUIRED TO SERVICE THE DEVELOPMENT SHALL BE AT THE OWNER / DEVELOPER'S EXPENSE.
2) THE DEVELOPMENT LIES IN THE OKOLONA FIRE DISTRICT.
3) ALL SITE LIGHTING SHALL BE SHIELDED AND DIRECTED DOWNWARD AND AWAY FROM ALL ABUTTING RESIDENTIAL AREAS.
4) ALL DUMPSTER PADS, TRANSFORMERS, AC UNITS TO BE SCREENED IN COMPLIANCE WITH CHAPTER 10.
5) MITIGATION MEASURES FOR DUST CONTROL SHALL BE IN PLACE DURING CONSTRUCTION TO PREVENT PARTICULATE MATTER FROM REACHING EXISTING ROADS AND NEIGHBORING PROPERTIES.
6) COMPATIBLE UTILITY LINES (ELECTRIC, PHONE, CABLE) SHALL BE PLACED IN A COMMON TRENCH UNLESS OTHERWISE REQUIRED/PERMITTED BY APPROPRIATE AGENCIES.
7) A KARST SURVEY WAS PERFORMED BY GEM ENGINEERING, INC. – REPORT DATED 3/21/18. DEVELOPMENT WILL COMPLY WITH CHAPTER 4, PART 9 OF THE LAND DEVELOPMENT CODE.

MSD NOTES

1) CONSTRUCTION PLANS AND DOCUMENTS SHALL COMPLY WITH THE LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT'S DESIGN MANUAL AND STANDARD SPECIFICATIONS.
2) WASTEWATER: SANITARY SEWER SERVICE WILL BE PROVIDED BY L.E. AND IS SUBJECT TO APPLICABLE FEES. SANITARY SEWER FLOW WILL BE TREATED AT THE DEREK R. GUTHRIE WATER QUALITY TREATMENT CENTER.
3) DRAINAGE: DRAINAGE PATTERN DEPICTED BY ARROWS ( ) IS FOR CONCEPT PURPOSES ONLY. FINAL CONFIGURATION AND SIZE OF DRAINAGE PIPES, CHANNELS AND WATER QUALITY METHODS SHALL BE DETERMINED DURING THE CONSTRUCTION PLAN DESIGN PROCESS. DRAINAGE FACILITIES SHALL CONFORM TO MSD REQUIREMENTS. USE OF EX. DRAINAGE CONNECTIONS & STORM WATER REQUIREMENTS SHALL BE COORDINATED WITH MSD.
4) A PORTION OF THE SUBJECT PROPERTY LIES WITHIN A FLOOD HAZARD AREA PER FEMA'S FIRM MAPPING (21111C0094E REV. DECEMBER 5, 2006).
5) AN EPSC PLAN WILL BE SUBMITTED TO MSD FOR APPROVAL PRIOR TO ANY CONSTRUCTION ACTIVITY.
6) ONSITE DETENTION WILL BE REQUIRED. POST-DEVELOPED PEAK FLOWS WILL BE LIMITED TO PRE-DEVELOPED PEAK FLOWS FOR THE 2, 10, 25 AND 50% OF THE 100-YEAR STORMS OR TO THE CAPACITY OF THE DOWNSTREAM SYSTEM, WHICHEVER IS MORE RESTRICTIVE.
7) THE FINAL DESIGN OF THIS PROJECT MUST MEET ALL MS4 WATER QUALITY REGULATIONS ESTABLISHED BY MSD. SITE LAYOUT MAY CHANGE AT THE CONSTRUCTION DESIGN PHASE DUE TO PROPERLY SIZING OF GREEN BEST MANAGEMENT PRACTICES.
8) MSD DRAINAGE BOND REQUIRED PRIOR TO CONSTRUCTION PLAN APPROVAL.
9) ANY FILL IN THE FLOODPLAIN SHALL BE COMPENSATED ONSITE AT A 1:1.5 RATIO.
10) ALL RETAIL SHOPS (CLUB HOUSE) MUST HAVE INDIVIDUAL CONNECTION PER MSD's FATS, OILS AND GREASE POLICY.
11) ALL PROPOSED SANITARY SEWER LINES, THROUGH DRAINAGE AND ONSITE DETENTION WILL REQUIRE A SANITARY SEWER AND DRAINAGE EASEMENT PLAT PER MSD STANDARDS PRIOR TO CONSTRUCTION PLAN APPROVAL.
12) MSD 25-FT STREAM BUFFER WILL BE MEASURED FROM TOP OF BANK BASED ON DETAILED SURVEY TO BE PERFORMED AS PART OF SITE CONSTRUCTION PLAN PREPARATION.

VARIANCE REQUESTED

1) A VARIANCE IS REQUESTED FROM CHAPTER 5, PART 4, SECTION 5.4.2.A.4 OF THE LAND DEVELOPMENT CODE TO ALLOW THE 3-STORY BUILDINGS 1, 2 & 3 TO ENCROACH INTO THE 50-FT BUILDING SETBACK REQUIREMENTS ADJACENT TO R-4 SINGLE FAMILY.

TRANSPORTATION NOTES

1) ALL PROPOSED WALKS SHALL BE MINIMUM OF 5 FEET WIDE OR A WIDTH AS NOTED ON THIS PLAN AND/OR AS PERMITTED BY CODE. ADA ROUTES SHALL INCLUDE RAMPS WITH HATCHING ACROSS DRIVE LANES AS REQUIRED BY MPW.
2) EXISTING SIDEWALK RECONSTRUCTION AND REPAIRS SHALL BE REQUIRED, AS NECESSARY, TO MEET CURRENT MPW STANDARDS AND SHALL BE INSPECTED PRIOR TO FINAL BOND RELEASE.
3) ALL ROADWAY AND ENTRANCE INTERSECTIONS SHALL MEET THE REQUIREMENTS FOR LANDING AREAS AS SET BY METRO PUBLIC WORKS.
4) ALL ENTRANCES, PARKING AND DRIVE LANES ARE ASPHALT, CONCRETE OR A HARD AND DURABLE SURFACE AS PERMITTED BY METRO PUBLIC WORKS.
5) CONSTRUCTION PLANS, ENCROACHMENT PERMIT AND BOND ARE REQUIRED BY MPW FOR ANY WORK WITHIN THE RIGHT-OF-WAY PRIOR TO CONSTRUCTION PLAN APPROVAL.
6) RIGHT-OF-WAY DEDICATION BY DEED OR MINOR PLAT REQUIRED PRIOR TO CONSTRUCTION PLAN APPROVAL.
7) ACCESS EASEMENT AS RECORDED IN D.B. 1815, PG. 618 WILL BE UPDATED.

EROSION CONTROL NOTES

1) THE APPROVED EROSION PREVENTION AND SEDIMENT CONTROL (EPSC) PLAN SHALL BE IMPLEMENTED PRIOR TO ANY LAND DISTURBING ACTIVITY ON THE CONSTRUCTION SITE. ANY MODIFICATIONS TO THE APPROVED SWPP PLAN MUST BE REVIEWED AND APPROVED BY MSD'S PRIVATE DEVELOPMENT REVIEW OFFICE. SWPPP BMP'S SHALL BE INSTALLED PER THE PLAN AND MSD STANDARDS.
2) ACTIONS MUST BE TAKEN TO MINIMIZE THE TRACKING OF MUD AND SOIL FROM CONSTRUCTION AREAS ONTO PUBLIC ROADWAYS. SOIL TRACKED ONTO THE ROADWAY SHALL BE REMOVED DAILY.
3) SOIL STOCKPILES SHALL BE LOCATED AWAY FROM STREAMS, PONDS, SWALES, AND CATCH BASINS. SOIL STOCKPILES SHALL BE SEEDED, MULCHED, AND ADEQUATELY CONTAINED THROUGH USE OF SILT FENCE.
4) WHERE CONSTRUCTION OR LAND DISTURBANCE ACTIVITY WILL OR HAS TEMPORARILY CEASED ON ANY PORTION OF A SITE, TEMPORARY SITE STABILIZATION MEASURES SHALL BE REQUIRED AS SOON AS PRACTICABLE, BUT NO LATER THAN 14 CALENDAR DAYS AFTER THE ACTIVITY HAS CEASED.
5) SEDIMENT LADEN GROUND WATER ENCOUNTERED DURING THE TRENCHING, BORING, OR OTHER EXCAVATION ACTIVITIES SHALL BE PUMPED TO A SEDIMENT TRAPPING DEVICE PRIOR TO BEING DISCHARGED INTO A STREAM, POND, SWALE, AND/OR CATCH BASIN.

BICYCLE SUMMARY

LOT 1
SHORT/LONG TERM PROVIDED WITHIN RESIDENCES ____ PER UNIT
ADDITIONAL SHORT TERM PROVIDED AT CLUBHOUSE ____ 3 SPACES

LOT 2
SHORT TERM REQUIRED ____ NONE
LONG TERM REQUIRED (1 SPACES OR 50 DAILY BOARDINGS) ____ 1 SPACE
SHORT/LONG TERM PARKING PROVIDED ____ 1 SPACE

SITE DATA

8016 SHEPHERDSVILLE ROAD
LOUISVILLE, KY 40219
PARCEL # 06520016
D.B. 9813, PG. 1

PR. LOT 1 SITE AREA	±16.94 ACRES
PR. LOT 2 SITE AREA	± 1.15 ACRES
PR. R/W DEDICATION	± 1.57 ACRES
TOTAL SITE AREA	±19.66 ACRES
FORM DISTRICT	NEIGHBORHOOD
EX. ZONING	R-4 & C-1
EX. LAND USE	VACANT
PR. ZONING	R-6 & C-1
PR. LAND USE	MULTI-FAMILY
PR. NUMBER OF UNITS	264 TOTAL
PR. DENSITY	15.58 D.U./ACRE
GROSS FLOOR AREA	±377,700 SF (SEE CALCS. BELOW)
PR. FLOOR AREA RATIO	0.51 FAR

	AREA PER BUILDING	NUMBER OF BUILDINGS	TOTAL BUILDING AREA
2 STORY 2-BEDROOM BUILDINGS (5,100 SF/FLOOR×2)	10,200 SF	6	61,200 SF
3 STORY 2-BEDROOM BUILDINGS (5,100 SF/FLOOR×3)	15,300 SF	14	214,200 SF
3 STORY 3-BEDROOM BUILDINGS (6,800 SF/FLOOR×3)	20,400 SF	4	81,600 SF
1 STORY CLUBHOUSE	12,500 SF	1	12,500 SF
1 STORY DAYCARE	7,600 SF	1	7,600 SF
TOTAL	66,200 SF		377,700 SF

OWNER

UNIVERSITY OF LOUISVILLE FOUNDATION
A NON-PROFIT CORPORATION
103 GRAWEMEYER HALL
LOUISVILLE, KY 40292

SETBACK DATA

MIN. FRONT YARD	25' (15'+10' SUPPLEMENTAL SETBACK)
MAX. FRONT YARD	N/A
STREET SIDE YARD	15
SIDE YARD	3'
REAR YARD	25'
PR. BUILDING HEIGHT	35' (35' MAX. PERMITTED)
PR. CLUBHOUSE/BLDG HEIGHT	20' (20' MAX. PERMITTED)

PARKING SUMMARY

	LOT 1	LOT 2	TOTAL
APARTMENTS	264 UNITS	N/A	264 UNITS
MIN. PARKING REQUIRED (1.5 SPACES/1 UNIT)	396 SPACES	N/A	396 SPACES
MAX. PARKING PERMITTED (3 SPACES/1 UNIT)	792 SPACES	N/A	792 SPACES
DAY CARE	10 EMPLOYEES	N/A	10 EMPLOYEES
MIN. PARKING REQUIRED (2 SPACES/EMP.)	20 SPACES	N/A	20 SPACES
MAX. PARKING PERMITTED (4 SPACES/EMP.)	40 SPACES	N/A	40 SPACES
TARC PARK-N-RIDE	N/A	7 SPACES	7 SPACES
TOTAL PARKING PROVIDED	530 SPACES (INC. 25 ADA)	7 SPACES (INC. 1 ADA)	537 SPACES (INC. 26 ADA)

NORTH

GRAPHIC SCALE 60' 0 60' 120'

CASE# 16ZONE1027 | WM# 11394

ENGINEER:
HERITAGE ENGINEERING, LLC
603 North Shore Drive, Unit 204, Jeffersonville, IN 47130, (812) 280-8201, (812) 280-8281 Fax
642 South 4th Street, Suite 100, Louisville, KY 40202, (502) 562-1412, (502) 562-1413 Fax

DEVELOPER:
BARRISTER COMMERCIAL GROUP
3810 SPRINGHURST BLVD
LOUISVILLE, KY 40241
PHONE: (502) 412-2800

PROJECT:
DETAILED DISTRICT DEVELOPMENT PLAN AND CONDITIONAL USE PERMIT PLAN FOR
UNITY PLACE APARTMENTS
8016 SHEPHERDSVILLE ROAD
LOUISVILLE, KY 40219

JOB NO:	18011
HORIZ. SCALE:	1"=60'
VERT SCALE:	N/A
DESIGNED BY:	BSE
DETAILED BY:	JDC
CHECKED BY:	SWH
DATE:	MARCH 19, 2018

SHEET
C05

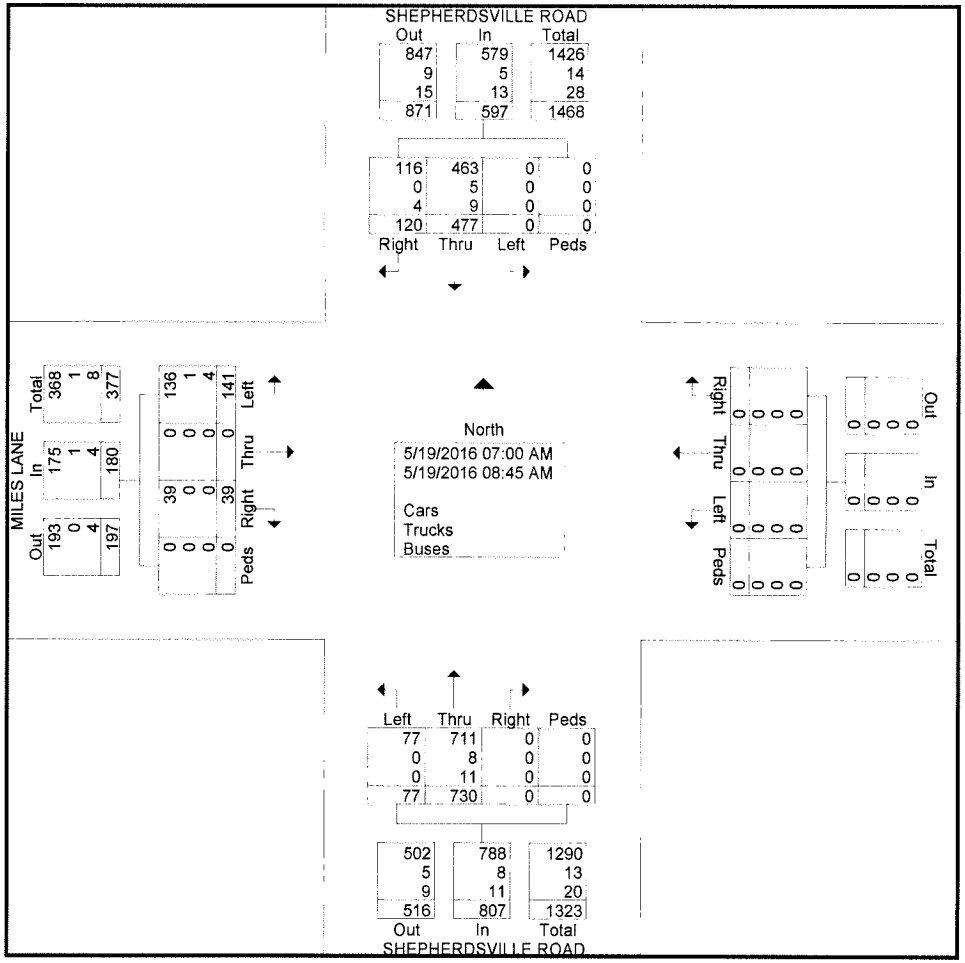
APPENDIX B: TRAFFIC COUNTS

File Name : Shepherdsville Road @ Miles AM
Site Code : 00000000
Start Date : 5/19/2016
Page No : 1

Groups Printed- Cars - Trucks - Buses

	SHEPHERDSVILLE ROAD From North					From East					SHEPHERDSVILLE ROAD From South					MILES LANE From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	7	44	0	0	51	0	0	0	0	0	0	108	11	0	119	3	0	22	0	25	195
07:15 AM	26	60	0	0	86	0	0	0	0	0	0	107	8	0	115	7	0	24	0	31	232
07:30 AM	40	84	0	0	124	0	0	0	0	0	0	115	13	0	128	4	0	26	0	30	282
07:45 AM	15	78	0	0	93	0	0	0	0	0	0	82	15	0	97	3	0	15	0	18	208
Total	88	266	0	0	354	0	0	0	0	0	0	412	47	0	459	17	0	87	0	104	917
08:00 AM	9	52	0	0	61	0	0	0	0	0	0	81	12	0	93	7	0	9	0	16	170
08:15 AM	8	47	0	0	55	0	0	0	0	0	0	75	6	0	81	3	0	11	0	14	150
08:30 AM	5	44	0	0	49	0	0	0	0	0	0	86	6	0	92	8	0	18	0	26	167
08:45 AM	10	68	0	0	78	0	0	0	0	0	0	76	6	0	82	4	0	16	0	20	180
Total	32	211	0	0	243	0	0	0	0	0	0	318	30	0	348	22	0	54	0	76	667
Grand Total	120	477	0	0	597	0	0	0	0	0	0	730	77	0	807	39	0	141	0	180	1584
Apprch %	20.1	79.9	0	0		0	0	0	0		0	90.5	9.5	0		21.7	0	78.3	0		
Total %	7.6	30.1	0	0	37.7	0	0	0	0	0	0	46.1	4.9	0	50.9	2.5	0	8.9	0	11.4	
Cars	116	463	0	0	579	0	0	0	0	0	0	711	77	0	788	39	0	136	0	175	1542
% Cars	96.7	97.1	0	0	97	0	0	0	0	0	0	97.4	100	0	97.6	100	0	96.5	0	97.2	97.3
Trucks	0	5	0	0	5	0	0	0	0	0	0	8	0	0	8	0	0	1	0	1	14
% Trucks	0	1	0	0	0.8	0	0	0	0	0	0	1.1	0	0	1	0	0	0.7	0	0.6	0.9
Buses	4	9	0	0	13	0	0	0	0	0	0	11	0	0	11	0	0	4	0	4	28
% Buses	3.3	1.9	0	0	2.2	0	0	0	0	0	0	1.5	0	0	1.4	0	0	2.8	0	2.2	1.8

File Name : Shepherdsville Road @ Miles AM
Site Code : 00000000
Start Date : 5/19/2016
Page No : 2



File Name : Shepherdsville Road @ Miles AM
Site Code : 00000000
Start Date : 5/19/2016
Page No : 3

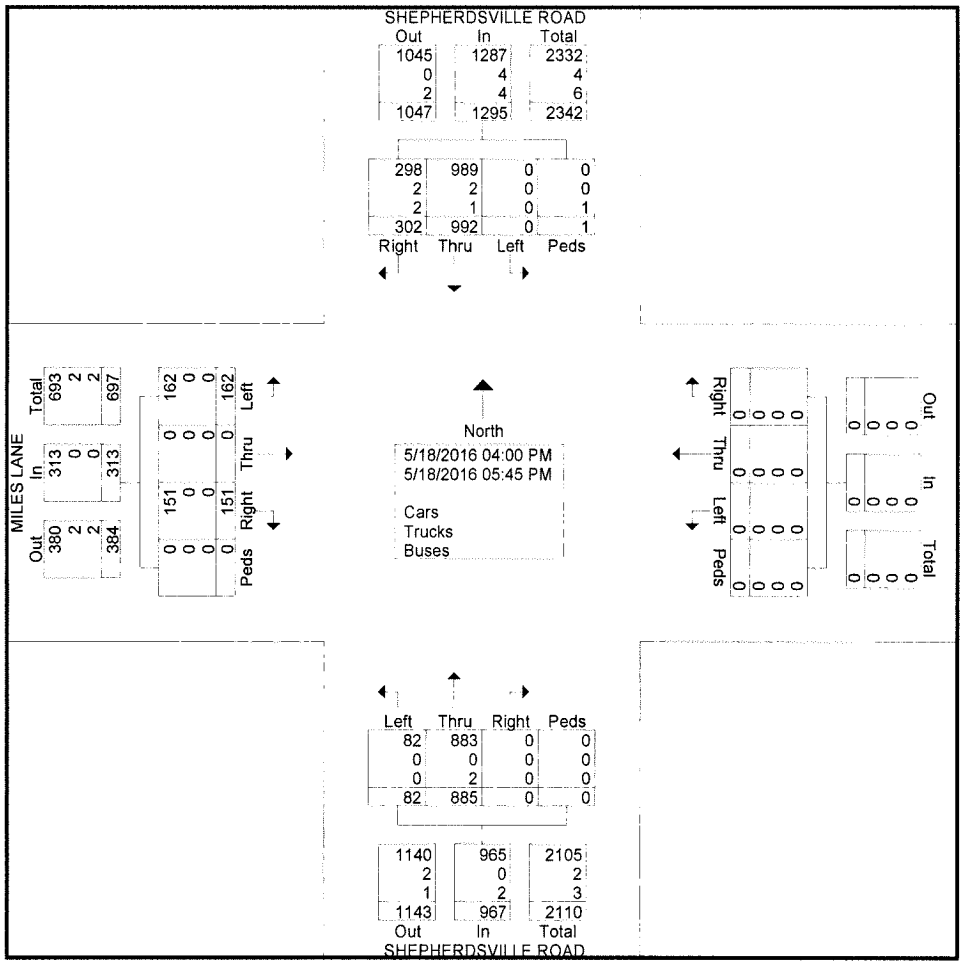
	SHEPHERDSVILLE ROAD From North					From East					SHEPHERDSVILLE ROAD From South					MILES LANE From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	7	44	0	0	51	0	0	0	0	0	0	108	11	0	119	3	0	22	0	25	195
07:15 AM	26	60	0	0	86	0	0	0	0	0	0	107	8	0	115	**7**	0	24	0	**31**	232
07:30 AM	**40**	**84**	0	0	**124**	0	0	0	0	0	0	**115**	13	0	**128**	4	0	**26**	0	30	**282**
07:45 AM	15	78	0	0	93	0	0	0	0	0	0	82	**15**	0	97	3	0	15	0	18	208
Total Volume	88	266	0	0	354	0	0	0	0	0	0	412	47	0	459	17	0	87	0	104	917
% App. Total	24.9	75.1	0	0		0	0	0	0		0	89.8	10.2	0		16.3	0	83.7	0		
PHF	.550	.792	.000	.000	.714	.000	.000	.000	.000	.000	.000	.896	.783	.000	.896	.607	.000	.837	.000	.839	.813

File Name : Shepherdsville Road @ Miles PM
Site Code : 00000000
Start Date : 5/18/2016
Page No : 1

Groups Printed- Cars - Trucks - Buses

	SHEPHERDSVILLE ROAD From North					From East					SHEPHERDSVILLE ROAD From South					MILES LANE From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	30	103	0	0	133	0	0	0	0	0	0	104	8	0	112	10	0	20	0	30	275
04:15 PM	33	124	0	0	157	0	0	0	0	0	0	100	8	0	108	9	0	16	0	25	290
04:30 PM	49	112	0	0	161	0	0	0	0	0	0	120	9	0	129	15	0	18	0	33	323
04:45 PM	41	129	0	0	170	0	0	0	0	0	0	117	4	0	121	22	0	20	0	42	333
Total	153	468	0	0	621	0	0	0	0	0	0	441	29	0	470	56	0	74	0	130	1221
05:00 PM	44	125	0	1	170	0	0	0	0	0	0	99	12	0	111	21	0	24	0	45	326
05:15 PM	43	140	0	0	183	0	0	0	0	0	0	123	10	0	133	40	0	20	0	60	376
05:30 PM	28	122	0	0	150	0	0	0	0	0	0	108	21	0	129	20	0	22	0	42	321
05:45 PM	34	137	0	0	171	0	0	0	0	0	0	114	10	0	124	14	0	22	0	36	331
Total	149	524	0	1	674	0	0	0	0	0	0	444	53	0	497	95	0	88	0	183	1354
Grand Total	302	992	0	1	1295	0	0	0	0	0	0	885	82	0	967	151	0	162	0	313	2575
Apprch %	23.3	76.6	0	0.1		0	0	0	0		0	91.5	8.5	0		48.2	0	51.8	0		
Total %	11.7	38.5	0	0	50.3	0	0	0	0	0	0	34.4	3.2	0	37.6	5.9	0	6.3	0	12.2	
Cars	298	989	0	0	1287	0	0	0	0	0	0	883	82	0	965	151	0	162	0	313	2565
% Cars	98.7	99.7	0	0	99.4	0	0	0	0	0	0	99.8	100	0	99.8	100	0	100	0	100	99.6
Trucks	2	2	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
% Trucks	0.7	0.2	0	0	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2
Buses	2	1	0	1	4	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	6
% Buses	0.7	0.1	0	100	0.3	0	0	0	0	0	0	0.2	0	0	0.2	0	0	0	0	0	0.2

File Name : Shepherdsville Road @ Miles PM
Site Code : 00000000
Start Date : 5/18/2016
Page No : 2



File Name : Shepherdsville Road @ Miles PM
Site Code : 00000000
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	SHEPHERDSVILLE ROAD From North					From East					SHEPHERDSVILLE ROAD From South					MILES LANE From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	**49**	112	0	0	161	0	0	0	0	0	0	120	9	0	129	15	0	18	0	33	323
04:45 PM	41	129	0	0	170	0	0	0	0	0	0	117	4	0	121	22	0	20	0	42	333
05:00 PM	44	125	0	**1**	170	0	0	0	0	0	0	99	**12**	0	111	21	0	**24**	0	45	326
05:15 PM	43	**140**	0	0	**183**	0	0	0	0	0	0	**123**	10	0	**133**	**40**	0	20	0	**60**	**376**
Total Volume	177	506	0	1	684	0	0	0	0	0	0	459	35	0	494	98	0	82	0	180	1358
% App. Total	25.9	74	0	0.1		0	0	0	0		0	92.9	7.1	0		54.4	0	45.6	0		
PHF	.903	.904	.000	.250	.934	.000	.000	.000	.000	.000	.000	.933	.729	.000	.929	.613	.000	.854	.000	.750	.903

Famous at KY2052 - TMC
Wed Jun 20, 2018
Full Length (7AM-9AM, 4PM-6PM)
All Classes (Lights and Motorcycles, Heavy)
All Movements
ID: 539449, Location: 38.129641, -85.661617, Site Code: Site 1 - Wednesday

Provided by: Cummins Consulting Services, PLLC
4661 Marlberry Place, Lexington, KY, 40509, US

Leg / Direction	KY2052 - Shepherdsville Road Eastbound				KY2052 - Shepherdsville Road Westbound				Famous Way Southbound				
Time	L	T	U	App	T	R	U	App	L	R	U	App	Int
2018-06-20 7:00AM	3	90	0	**93**	38	2	0	**40**	7	3	0	**10**	**143**
7:15AM	5	115	0	**120**	46	2	0	**48**	9	5	0	**14**	**182**
7:30AM	9	127	0	**136**	54	4	0	**58**	6	3	0	**9**	**203**
7:45AM	10	96	0	**106**	49	5	0	**54**	4	5	0	**9**	**169**
Hourly Total	27	428	0	**455**	187	13	0	**200**	26	16	0	**42**	**697**
8:00AM	7	79	0	**86**	64	4	0	**68**	5	1	0	**6**	**160**
8:15AM	3	91	0	**94**	42	2	0	**44**	5	6	0	**11**	**149**
8:30AM	9	87	0	**96**	51	9	0	**60**	10	3	0	**13**	**169**
8:45AM	10	70	0	**80**	56	9	0	**65**	9	4	0	**13**	**158**
Hourly Total	29	327	0	**356**	213	24	0	**237**	29	14	0	**43**	**636**
4:00PM	10	99	0	**109**	126	17	0	**143**	12	15	0	**27**	**279**
4:15PM	10	97	0	**107**	148	9	0	**157**	11	23	0	**34**	**298**
4:30PM	6	98	0	**104**	130	13	0	**143**	11	13	0	**24**	**271**
4:45PM	5	89	0	**94**	157	12	0	**169**	7	29	0	**36**	**299**
Hourly Total	31	383	0	**414**	561	51	0	**612**	41	80	0	**121**	**1147**
5:00PM	9	102	0	**111**	177	7	0	**184**	8	20	0	**28**	**323**
5:15PM	5	112	0	**117**	138	18	0	**156**	13	34	0	**47**	**320**
5:30PM	11	114	0	**125**	149	5	0	**154**	13	15	0	**28**	**307**
5:45PM	7	80	0	**87**	115	15	0	**130**	22	18	0	**40**	**257**
Hourly Total	32	408	0	**440**	579	45	0	**624**	56	87	0	**143**	**1207**
Total	119	1546	0	**1665**	1540	133	0	**1673**	152	197	0	**349**	**3687**
% Approach	7.1%	92.9%	0%	-	92.1%	7.9%	0%	-	43.6%	56.4%	0%	-	-
% Total	3.2%	41.9%	0%	**45.2%**	41.8%	3.6%	0%	**45.4%**	4.1%	5.3%	0%	**9.5%**	-
Lights and Motorcycles	119	1524	0	**1643**	1513	132	0	**1645**	148	195	0	**343**	3631
% Lights and Motorcycles	100%	98.6%	0%	**98.7%**	98.2%	99.2%	0%	**98.3%**	97.4%	99.0%	0%	**98.3%**	98.5%
Heavy	0	22	0	**22**	27	1	0	**28**	4	2	0	**6**	56
% Heavy	0%	1.4%	0%	**1.3%**	1.8%	0.8%	0%	**1.7%**	2.6%	1.0%	0%	**1.7%**	1.5%

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

Famous at KY2052 - TMC
Wed Jun 20, 2018
AM Peak (7:15AM - 8:15AM)
All Classes (Lights and Motorcycles, Heavy)
All Movements
ID: 539449, Location: 38.129641, -85.661617, Site Code: Site 1 - Wednesday

Provided by: Cummins Consulting Services, PLLC
4661 Marlberry Place, Lexington, KY, 40509, US

Leg / Direction	KY2052 - Shepherdsville Road Eastbound				KY2052 - Shepherdsville Road Westbound				Famous Way Southbound				
Time	L	T	U	**App**	T	R	U	**App**	L	R	U	**App**	**Int**
2018-06-20 7:15AM	5	115	0	**120**	46	2	0	**48**	9	5	0	**14**	**182**
7:30AM	9	127	0	**136**	54	4	0	**58**	6	3	0	**9**	**203**
7:45AM	10	96	0	**106**	49	5	0	**54**	4	5	0	**9**	**169**
8:00AM	7	79	0	**86**	64	4	0	**68**	5	1	0	**6**	**160**
Total	31	417	0	**448**	213	15	0	**228**	24	14	0	**38**	**714**
% Approach	6.9%	93.1%	0%	-	93.4%	6.6%	0%	-	63.2%	36.8%	0%	-	-
% Total	4.3%	58.4%	0%	**62.7%**	29.8%	2.1%	0%	**31.9%**	3.4%	2.0%	0%	**5.3%**	-
PHF	0.775	0.821	-	**0.824**	0.832	0.750	-	**0.838**	0.667	0.700	-	**0.679**	0.879
Lights and Motorcycles	31	414	0	**445**	206	15	0	**221**	23	14	0	**37**	703
% Lights and Motorcycles	100%	99.3%	0%	**99.3%**	96.7%	100%	0%	**96.9%**	95.8%	100%	0%	**97.4%**	98.5%
Heavy	0	3	0	**3**	7	0	0	**7**	1	0	0	**1**	11
% Heavy	0%	0.7%	0%	**0.7%**	3.3%	0%	0%	**3.1%**	4.2%	0%	0%	**2.6%**	1.5%

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

Famous at KY2052 - TMC
Wed Jun 20, 2018
PM Peak (4:45PM - 5:45PM) - Overall Peak Hour
All Classes (Lights and Motorcycles, Heavy)
All Movements
ID: 539449, Location: 38.129641, -85.661617, Site Code: Site 1 - Wednesday

Provided by: Cummins Consulting Services, PLLC
4661 Marlberry Place, Lexington, KY, 40509, US

Leg / Direction	KY2052 - Shepherdsville Road Eastbound				KY2052 - Shepherdsville Road Westbound				Famous Way Southbound				
Time	L	T	U	**App**	T	R	U	**App**	L	R	U	**App**	**Int**
2018-06-20 4:45PM	5	89	0	**94**	157	12	0	**169**	7	29	0	**36**	**299**
5:00PM	9	102	0	**111**	177	7	0	**184**	8	20	0	**28**	**323**
5:15PM	5	112	0	**117**	138	18	0	**156**	13	34	0	**47**	**320**
5:30PM	11	114	0	**125**	149	5	0	**154**	13	15	0	**28**	**307**
Total	30	417	0	**447**	621	42	0	**663**	41	98	0	**139**	**1249**
% Approach	6.7%	93.3%	0%	-	93.7%	6.3%	0%	-	29.5%	70.5%	0%	-	-
% Total	2.4%	33.4%	0%	**35.8%**	49.7%	3.4%	0%	**53.1%**	3.3%	7.8%	0%	**11.1%**	-
PHF	0.682	0.914	-	**0.894**	0.877	0.583	-	**0.901**	0.788	0.721	-	**0.739**	0.967
Lights and Motorcycles	30	413	0	**443**	615	42	0	**657**	40	96	0	**136**	1236
% Lights and Motorcycles	100%	99.0%	0%	**99.1%**	99.0%	100%	0%	**99.1%**	97.6%	98.0%	0%	**97.8%**	99.0%
Heavy	0	4	0	**4**	6	0	0	**6**	1	2	0	**3**	13
% Heavy	0%	1.0%	0%	**0.9%**	1.0%	0%	0%	**0.9%**	2.4%	2.0%	0%	**2.2%**	1.0%

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

File Name : Shepherdsville Road @ Robbs Lane AM
Site Code : 00000000
Start Date : 5/19/2016
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Groups Printed- Cars - Buses - Trucks

	SHEPHERDSVILLE ROAD From North					APPLEGATE LANE From East					SHEPHERDSVILLE ROAD From South					ROBBS LANE From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	1	40	10	0	51	27	51	10	0	88	15	142	12	0	169	4	13	1	0	18	326
07:15 AM	2	82	10	0	94	22	38	15	0	75	13	123	10	0	146	9	7	0	0	16	331
07:30 AM	1	73	4	0	78	30	49	16	0	95	20	108	12	0	140	6	13	1	1	21	334
07:45 AM	3	66	4	0	73	23	44	12	0	79	5	79	15	0	99	9	12	2	0	23	274
Total	7	261	28	0	296	102	182	53	0	337	53	452	49	0	554	28	45	4	1	78	1265
08:00 AM	1	38	6	0	45	18	31	4	0	53	4	86	3	0	93	5	15	0	0	20	211
08:15 AM	0	29	11	0	40	17	33	7	0	57	10	76	15	0	101	3	14	2	0	19	217
08:30 AM	2	59	8	0	69	15	25	7	0	47	9	100	16	0	125	7	16	0	1	24	265
08:45 AM	1	66	8	0	75	18	35	3	0	56	7	74	11	0	92	6	5	0	0	11	234
Total	4	192	33	0	229	68	124	21	0	213	30	336	45	0	411	21	50	2	1	74	927
Grand Total	11	453	61	0	525	170	306	74	0	550	83	788	94	0	965	49	95	6	2	152	2192
Apprch %	2.1	86.3	11.6	0		30.9	55.6	13.5	0		8.6	81.7	9.7	0		32.2	62.5	3.9	1.3		
Total %	0.5	20.7	2.8	0	24	7.8	14	3.4	0	25.1	3.8	35.9	4.3	0	44	2.2	4.3	0.3	0.1	6.9	
Cars	11	443	60	0	514	169	306	72	0	547	81	774	93	0	948	47	93	6	2	148	2157
% Cars	100	97.8	98.4	0	97.9	99.4	100	97.3	0	99.5	97.6	98.2	98.9	0	98.2	95.9	97.9	100	100	97.4	98.4
Buses	0	5	1	0	6	1	0	2	0	3	2	3	0	0	5	0	2	0	0	2	16
% Buses	0	1.1	1.6	0	1.1	0.6	0	2.7	0	0.5	2.4	0.4	0	0	0.5	0	2.1	0	0	1.3	0.7
Trucks	0	5	0	0	5	0	0	0	0	0	0	11	1	0	12	2	0	0	0	2	19
% Trucks	0	1.1	0	0	1	0	0	0	0	0	0	1.4	1.1	0	1.2	4.1	0	0	0	1.3	0.9

File Name : Shepherdsville Road @ Robbs Lane AM
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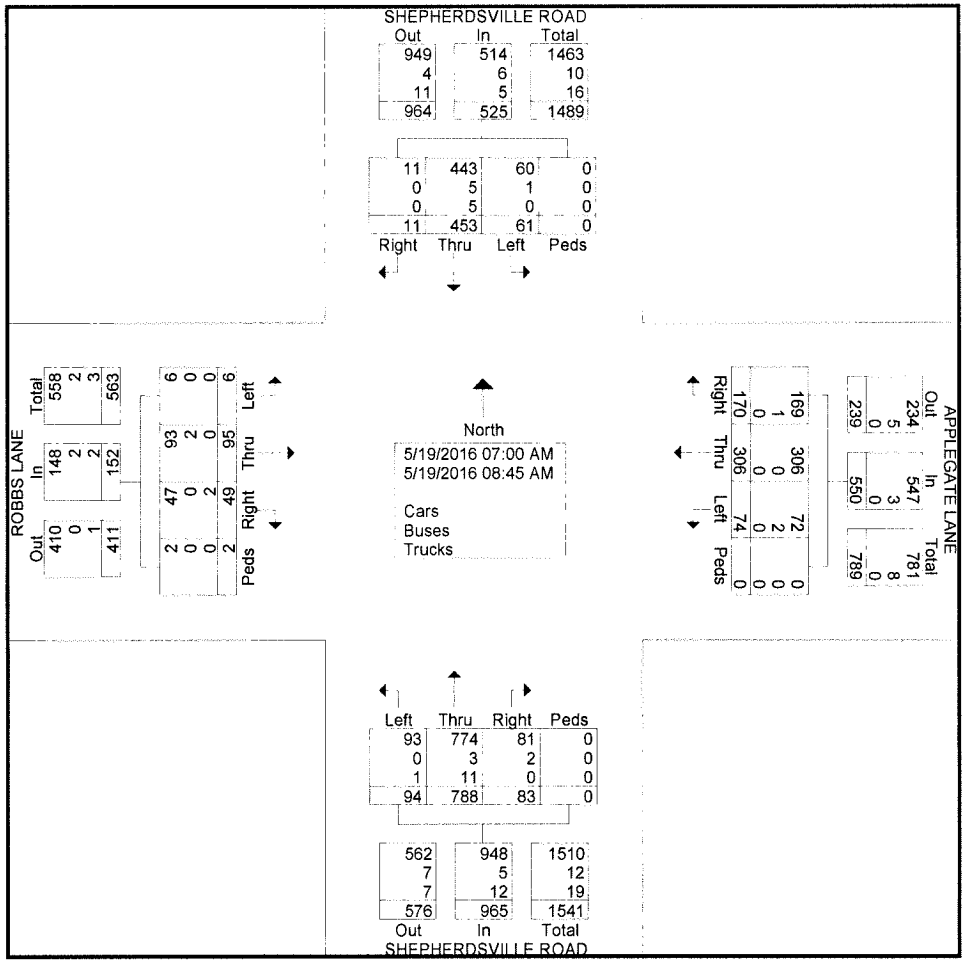

File Name : Shepherdsville Road @ Robbs Lane AM
Site Code : 00000000
Start Date : 5/19/2016
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	SHEPHERDSVILLE ROAD From North					APPLEGATE LANE From East					SHEPHERDSVILLE ROAD From South					ROBBS LANE From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	1	40	**10**	0	51	27	**51**	10	0	88	15	**142**	12	0	**169**	4	**13**	1	0	18	326
07:15 AM	2	**82**	10	0	**94**	22	38	15	0	75	13	123	10	0	146	**9**	7	0	0	16	331
07:30 AM	1	73	4	0	78	**30**	49	**16**	0	**95**	**20**	108	12	0	140	6	13	1	**1**	21	**334**
07:45 AM	**3**	66	4	0	73	23	44	12	0	79	5	79	**15**	0	99	9	12	**2**	0	**23**	274
Total Volume	7	261	28	0	296	102	182	53	0	337	53	452	49	0	554	28	45	4	1	78	1265
% App. Total	2.4	88.2	9.5	0		30.3	54	15.7	0		9.6	81.6	8.8	0		35.9	57.7	5.1	1.3		
PHF	.583	.796	.700	.000	.787	.850	.892	.828	.000	.887	.663	.796	.817	.000	.820	.778	.865	.500	.250	.848	.947

File Name : Shepherdsville Road @ Robbs Lane PM
Site Code : 00000000
Start Date : 5/18/2016
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Groups Printed- Cars - Buses - Trucks

	SHEPHERDSVILLE ROAD From North					APPLEGATE LANE From East					SHEPHERDSVILLE ROAD From South					ROBBS LANE From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	4	105	28	0	137	10	34	11	0	55	11	70	13	0	94	31	71	3	0	105	391
04:15 PM	5	116	11	0	132	11	36	10	1	58	12	88	9	0	109	28	73	2	0	103	402
04:30 PM	2	118	24	0	144	8	45	11	0	64	16	99	14	0	129	26	77	2	0	105	442
04:45 PM	1	124	33	0	158	15	47	8	1	71	19	101	15	1	136	23	90	2	0	115	480
Total	12	463	96	0	571	44	162	40	2	248	58	358	51	1	468	108	311	9	0	428	1715
05:00 PM	4	104	14	0	122	16	36	13	0	65	17	77	17	0	111	16	104	0	0	120	418
05:15 PM	2	144	34	0	180	22	37	8	0	67	26	98	17	0	141	25	95	0	1	121	509
05:30 PM	2	127	36	0	165	16	45	7	0	68	26	96	12	0	134	29	102	2	0	133	500
05:45 PM	4	128	40	0	172	15	25	13	0	53	20	88	9	0	117	24	94	1	1	120	462
Total	12	503	124	0	639	69	143	41	0	253	89	359	55	0	503	94	395	3	2	494	1889
Grand Total	24	966	220	0	1210	113	305	81	2	501	147	717	106	1	971	202	706	12	2	922	3604
Apprch %	2	79.8	18.2	0		22.6	60.9	16.2	0.4		15.1	73.8	10.9	0.1		21.9	76.6	1.3	0.2		
Total %	0.7	26.8	6.1	0	33.6	3.1	8.5	2.2	0.1	13.9	4.1	19.9	2.9	0	26.9	5.6	19.6	0.3	0.1	25.6	
Cars	24	957	220	0	1201	113	303	80	2	498	146	711	106	1	964	201	706	12	2	921	3584
% Cars	100	99.1	100	0	99.3	100	99.3	98.8	100	99.4	99.3	99.2	100	100	99.3	99.5	100	100	100	99.9	99.4
Buses	0	5	0	0	5	0	2	1	0	3	1	6	0	0	7	1	0	0	0	1	16
% Buses	0	0.5	0	0	0.4	0	0.7	1.2	0	0.6	0.7	0.8	0	0	0.7	0.5	0	0	0	0.1	0.4
Trucks	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
% Trucks	0	0.4	0	0	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1

File Name : Shepherdsville Road @ Robbs Lane PM
Site Code : 00000000
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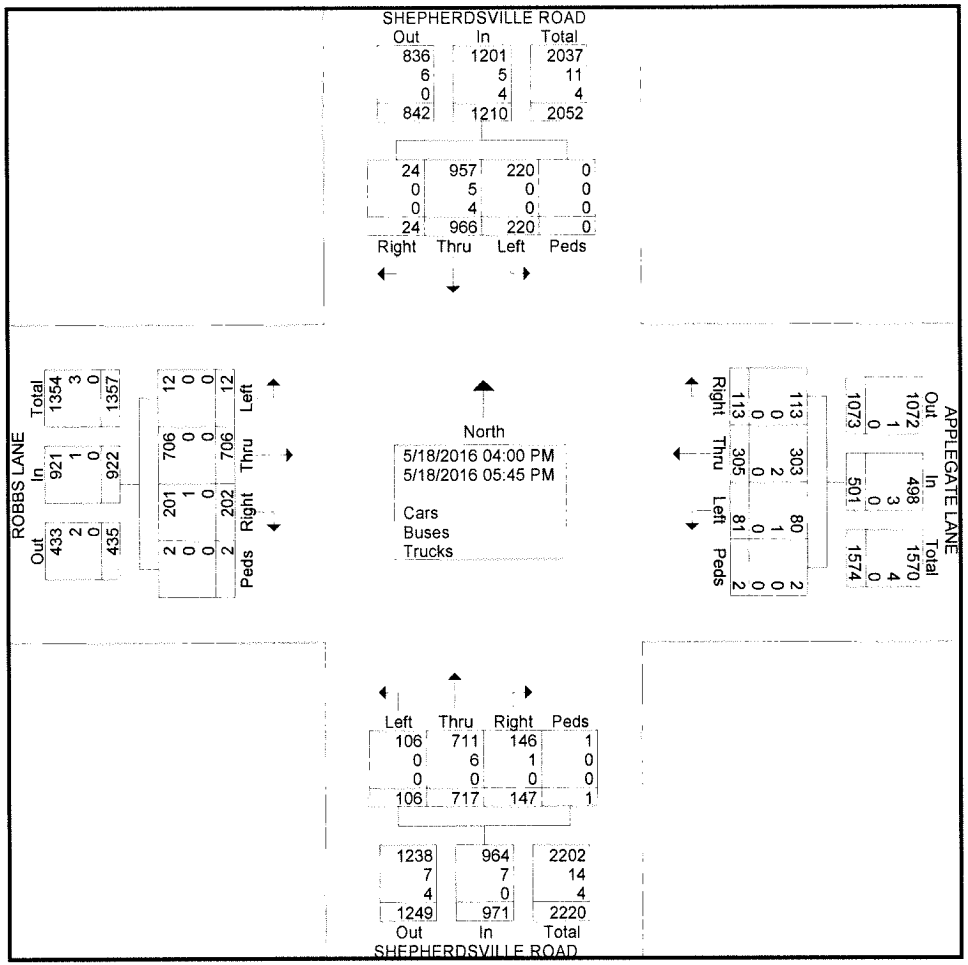

File Name : Shepherdsville Road @ Robbs Lane PM
Site Code : 00000000
Start Date : 5/18/2016
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	SHEPHERDSVILLE ROAD From North					APPLEGATE LANE From East					SHEPHERDSVILLE ROAD From South					ROBBS LANE From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	1	124	33	0	158	15	**47**	8	**1**	**71**	19	**101**	15	**1**	136	23	90	**2**	0	115	480
05:00 PM	**4**	104	14	0	122	16	36	**13**	0	65	17	77	**17**	0	111	16	**104**	0	0	120	418
05:15 PM	2	**144**	34	0	**180**	**22**	37	8	0	67	**26**	98	17	0	**141**	25	95	0	**1**	121	**509**
05:30 PM	2	127	**36**	0	165	16	45	7	0	68	26	96	12	0	134	**29**	102	2	0	**133**	500
Total Volume	9	499	117	0	625	69	165	36	1	271	88	372	61	1	522	93	391	4	1	489	1907
% App. Total	1.4	79.8	18.7	0		25.5	60.9	13.3	0.4		16.9	71.3	11.7	0.2		19	80	0.8	0.2		
PHF	.563	.866	.813	.000	.868	.784	.878	.692	.250	.954	.846	.921	.897	.250	.926	.802	.940	.500	.250	.919	.937

APPENDIX C: TRAFFIC VOLUME CALCULATIONS

Unity Place Apartments TIA: Traffic Volume Calculations

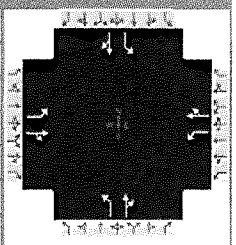
	Counted Volumes (2016)		Counted Volumes (2018)		Existing (2018)		Background (2020)		No Build (2020)		Site Trips: Site Trip Distribution		Site Trip Assignment		Build (2020)	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	Enter	Exit	AM	PM	AM	PM
Intersection 1 - Shepherdsville Road at Robbs Lane / Applegate Lane																
EBL	4	4			4	4	4	4	4	4			0	0	4	4
EBT	45	391			47	411	50	432	50	432			0	0	50	432
EBR	28	93			29	98	31	103	31	103	10%		3	7	34	110
WBL	53	36			56	38	59	40	59	40	10%		2	7	61	47
WBT	182	165			191	173	201	182	201	182			0	0	201	182
WBR	102	69			107	72	113	76	113	76			0	0	113	76
NBL	49	61			51	64	54	67	54	67		10%	7	5	61	70
NBT	452	372			475	391	499	411	499	411		35%	23	15	522	426
NBR	53	88			56	92	59	97	59	97		10%	6	4	65	101
SBL	28	117			29	123	31	129	31	129			0	0	31	129
SBT	261	499			274	524	288	551	288	551	35%		8	24	296	575
SBR	7	9			7	9	8	10	8	10			0	0	8	10
Intersection 2 - Shepherdsville Road at Miles Lane																
EBL	87	82			91	86	96	91	96	91	10%		2	7	98	98
EBR	17	98			18	103	19	108	19	108			0	0	19	108
NBL	47	35			49	37	52	39	52	39			0	0	52	39
NBT	412	459			433	482	455	507	455	507	35%		8	24	463	531
SBT	266	506			279	532	294	559	294	559		35%	23	15	317	574
SBR	88	177			92	186	97	195	97	195		10%	7	5	104	200
Intersection 3 - Shepherdsville Road at Site Access A																
EBL												25%	16	11	16	11
EBR												20%	13	9	13	9
NBL											20%		5	14	5	14
NBT	554	521			582	547	612	575	612	575		30%	20	13	632	588
SBT	342	628			359	660	378	693	378	693	30%		7	21	385	714
SBR											25%		6	17	6	17
Intersection 4 - Shepherdsville Road at Site Access B																
EBL												30%	20	13	20	13
EBR												25%	17	11	17	11
NBL											25%		5	17	5	17
NBT	554	521			582	547	612	575	612	575	20%		5	14	617	589
SBT	342	628			359	660	378	693	378	693		20%	13	9	391	702
SBR											30%		7	21	7	21
Intersection 6 - Shepherdsville Road at Famous Way																
EBL			24	41	27	47	28	49	28	49			0	0	28	49
EBR			14	98	16	112	17	118	17	118			0	0	17	118
NBL			31	30	35	34	37	36	37	36			0	0	37	36
NBT			417	417	475	475	499	499	499	499	45%		10	31	509	530
SBT			213	621	243	708	255	744	255	744		45%	30	20	285	764
SBR			15	42	17	48	18	50	18	50			0	0	18	50

APPENDIX D: HCS RESULTS

APPENDIX D-1: 2018 EXISTING AM

HCS7 Signalized Intersection Results Summary

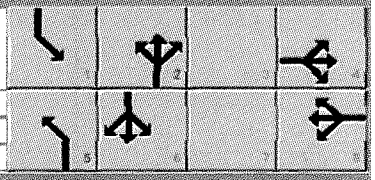
General Information				Intersection Information	
Agency	Stantec			Duration, h	0.25
Analyst	M. Peach	Analysis Date	Apr 19, 2018	Area Type	Other
Jurisdiction	Louisville, Kentucky	Time Period	AM Peak Hour	PHF	0.90
Urban Street	Shepherdsville Road	Analysis Year	2018	Analysis Period	1> 7:00
Intersection	Robbs Lane / Applegate...	File Name	2018_AM_Ex_Signal_Intersection1.xus		
Project Description	2018 Existing AM Peak Hour				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	4	47	29	56	191	107	51	475	56	29	274	7

Signal Information			
Cycle, s	141.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	20.0	60.0	40.0	0.0	0.0	0.0						
Yellow	5.0	5.0	5.0	0.0	0.0	0.0						
Red	2.0	2.0	2.0	0.0	0.0	0.0						



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4		8	5	2	1	6
Case Number		6.0		6.0	1.1	4.0	1.1	4.0
Phase Duration, s		47.0		47.0	27.0	67.0	27.0	67.0
Change Period, ($Y+R_c$), s		7.0		7.0	7.0	7.0	7.0	7.0
Max Allow Headway (*MAH*), s		3.2		3.2	3.1	3.1	3.1	3.1
Queue Clearance Time (g_s), s		26.0		25.5	4.0	40.4	3.1	18.3
Green Extension Time (g_e), s		0.9		0.9	0.1	1.8	0.0	1.8
Phase Call Probability		1.00		1.00	1.00	1.00	1.00	1.00
Max Out Probability		0.00		0.00	0.00	0.00	0.00	0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (*v*), veh/h	4	84		62	331		57	590		32	312	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1049	1750		1313	1757		1781	1836		1781	1862	
Queue Service Time (g_s), s	0.5	5.1		5.3	23.5		2.0	38.4		1.1	16.3	
Cycle Queue Clearance Time (g_c), s	24.0	5.1		10.4	23.5		2.0	38.4		1.1	16.3	
Green Ratio (*g/C*)	0.28	0.28		0.28	0.28		0.57	0.43		0.57	0.43	
Capacity (*c*), veh/h	174	497		376	498		619	781		419	792	
Volume-to-Capacity Ratio (*X*)	0.026	0.170		0.166	0.664		0.092	0.755		0.077	0.394	
Back of Queue (*Q*), ft/ln (50 th percentile)	3.9	58.8		46.3	282.4		21.7	464.9		12.5	192.8	
Back of Queue (*Q*), veh/ln (50 th percentile)	0.2	2.3		1.8	11.1		0.9	18.3		0.5	7.6	
Queue Storage Ratio (*RQ*) (50 th percentile)	0.05	0.00		0.46	0.00		0.19	0.00		0.00	0.00	
Uniform Delay (d_1), s/veh	55.2	38.0		41.9	44.6		14.9	34.3		19.5	28.0	
Incremental Delay (d_2), s/veh	0.3	0.7		0.9	6.8		0.3	6.7		0.4	1.5	
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Control Delay (*d*), s/veh	55.4	38.7		42.9	51.4		15.2	41.0		19.8	29.4	
Level of Service (LOS)	E	D		D	D		B	D		B	C	
Approach Delay, s/veh / LOS	39.6	D		50.1	D		38.7	D		28.5	C	
Intersection Delay, s/veh / LOS	39.4						D					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.3	B	2.3	B	2.3	B	2.3	B
Bicycle LOS Score / LOS	0.6	A	1.1	A	1.6	B	1.1	A

HCS7 Two-Way Stop-Control Report

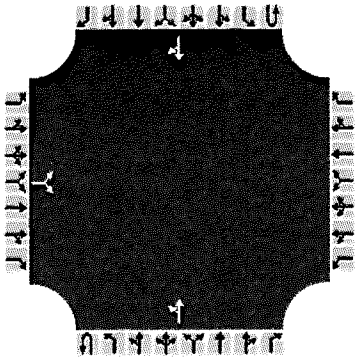
General Information

Analyst	M. Peach
Agency/Co.	Stantec
Date Performed	4/19/2018
Analysis Year	2018
Time Analyzed	Existing AM Peak Hour
Intersection Orientation	North-South
Project Description	Unity Place Apartments TIA

Site Information

Intersection	Shepherdsville / Famous
Jurisdiction	Louisville, Kentucky
East/West Street	Famous Way
North/South Street	Shepherdsville Road
Peak Hour Factor	0.90
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume, V (veh/h)		27		16						35	475				243	17
Percent Heavy Vehicles (%)		2		2						2						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			48							39						
Capacity, c (veh/h)			393							1272						
v/c Ratio			0.12							0.03						
95% Queue Length, Q_{95} (veh)			0.4							0.1						
Control Delay (s/veh)			15.4							7.9						
Level of Service, LOS			C							A						
Approach Delay (s/veh)		15.4								0.9						
Approach LOS		C														

HCS7 Two-Way Stop-Control Report

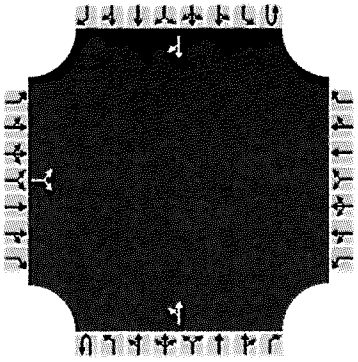
General Information

Analyst	M. Peach
Agency/Co.	Stantec
Date Performed	4/19/2018
Analysis Year	2018
Time Analyzed	Existing AM Peak Hour
Intersection Orientation	North-South
Project Description	Unity Place Apartments TIA

Site Information

Intersection	Shepherdsville / Miles
Jurisdiction	Louisville, Kentucky
East/West Street	Miles Lane
North/South Street	Shepherdsville Road
Peak Hour Factor	0.90
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume, V (veh/h)		91		18						49	433				279	92
Percent Heavy Vehicles (%)		2		2						2						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

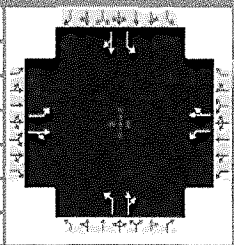
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			121							54						
Capacity, c (veh/h)			305							1146						
v/c Ratio			0.40							0.05						
95% Queue Length, Q_{95} (veh)			1.8							0.1						
Control Delay (s/veh)			24.3							8.3						
Level of Service, LOS			C							A						
Approach Delay (s/veh)		24.3								1.3						
Approach LOS		C														

APPENDIX D-2: 2018 EXISTING PM

HCS7 Signalized Intersection Results Summary

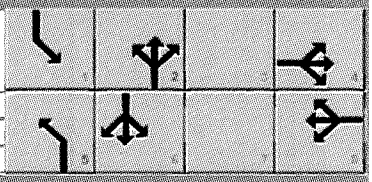
General Information				Intersection Information	
Agency	Stantec			Duration, h	0.25
Analyst	M. Peach	Analysis Date	Apr 19, 2018	Area Type	Other
Jurisdiction	Louisville, Kentucky	Time Period	PM Peak Hour	PHF	0.90
Urban Street	Shepherdsville Road	Analysis Year	2018	Analysis Period	1> 4:00
Intersection	Robbs Lane / Applegate...	File Name	2018_PM_Ex_Signal_Intersection1.xus		
Project Description	2018 Existing PM Peak Hour				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	4	411	98	38	173	72	64	391	92	123	524	9

Signal Information			
Cycle, s	141.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	20.0	60.0	40.0	0.0	0.0	0.0						
Yellow	5.0	5.0	5.0	0.0	0.0	0.0						
Red	2.0	2.0	2.0	0.0	0.0	0.0						



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4		8	5	2	1	6
Case Number		6.0		6.0	1.1	4.0	1.1	4.0
Phase Duration, s		47.0		47.0	27.0	67.0	27.0	67.0
Change Period, (*Y+R c*), s		7.0		7.0	7.0	7.0	7.0	7.0
Max Allow Headway (*MAH*), s		3.2		3.2	3.1	3.1	3.1	3.1
Queue Clearance Time (*g s*), s		42.0		42.0	4.5	36.2	7.1	39.7
Green Extension Time (*g e*), s		0.0		0.0	0.1	2.3	0.2	2.3
Phase Call Probability		1.00		1.00	1.00	1.00	1.00	1.00
Max Out Probability		1.00		1.00	0.00	0.00	0.00	0.01

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (*v*), veh/h	4	566		42	272		71	537		137	592	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1107	1808		845	1776		1781	1808		1781	1865	
Queue Service Time (*g s*), s	0.5	40.0		0.0	18.3		2.5	34.2		5.1	37.7	
Cycle Queue Clearance Time (*g c*), s	18.8	40.0		40.0	18.3		2.5	34.2		5.1	37.7	
Green Ratio (*g/C*)	0.28	0.28		0.28	0.28		0.57	0.43		0.57	0.43	
Capacity (*c*), veh/h	222	513		51	504		422	770		450	793	
Volume-to-Capacity Ratio (*X*)	0.020	1.103		0.827	0.540		0.168	0.697		0.303	0.746	
Back of Queue (*Q*), ft/ln (50 th percentile)	3.7	709.7		68.2	218.2		28.5	403.8		57.3	462.4	
Back of Queue (*Q*), veh/ln (50 th percentile)	0.1	27.9		2.7	8.6		1.1	15.9		2.3	18.2	
Queue Storage Ratio (*RQ*) (50 th percentile)	0.04	0.00		0.68	0.00		0.25	0.00		0.00	0.00	
Uniform Delay (*d 1*), s/veh	50.7	50.5		70.5	42.7		19.9	33.1		19.8	34.1	
Incremental Delay (*d 2*), s/veh	0.2	70.8		82.0	4.1		0.9	5.2		1.7	6.3	
Initial Queue Delay (*d 3*), s/veh	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Control Delay (*d*), s/veh	50.8	121.3		152.5	46.8		20.7	38.3		21.5	40.4	
Level of Service (LOS)	D	F		F	D		C	D		C	D	
Approach Delay, s/veh / LOS	120.8	F		61.0	E		36.2	D		36.9	D	
Intersection Delay, s/veh / LOS	61.7						E					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.3	B	2.3	B	2.3	B	2.3	B
Bicycle LOS Score / LOS	1.4	A	1.0	A	1.5	A	1.7	B

HCS7 Two-Way Stop-Control Report

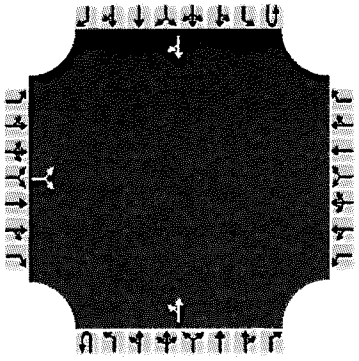
General Information

Analyst	M. Peach
Agency/Co.	Stantec
Date Performed	4/19/2018
Analysis Year	2018
Time Analyzed	Existing PM Peak Hour
Intersection Orientation	North-South
Project Description	Unity Place Apartments TIA

Site Information

Intersection	Shepherdsville / Famous
Jurisdiction	Louisville, Kentucky
East/West Street	Famous Way
North/South Street	Shepherdsville Road
Peak Hour Factor	0.90
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume, V (veh/h)		47		112						34	475				708	48
Percent Heavy Vehicles (%)		2		2						2						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.42		6.22						4.12						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.52		3.32						2.22						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			176							38						
Capacity, c (veh/h)			255							795						
v/c Ratio			0.69							0.05						
95% Queue Length, Q_{95} (veh)			4.6							0.2						
Control Delay (s/veh)			45.6							9.8						
Level of Service, LOS			E							A						
Approach Delay (s/veh)	45.6								1.3							
Approach LOS	E															

HCS7 Two-Way Stop-Control Report

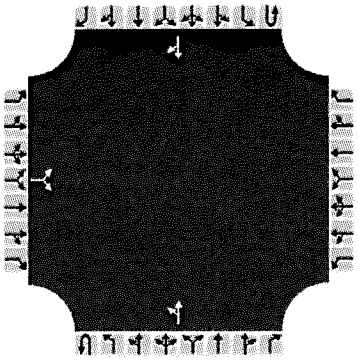
General Information

Analyst	M. Peach
Agency/Co.	Stantec
Date Performed	4/19/2018
Analysis Year	2018
Time Analyzed	Existing PM Peak Hour
Intersection Orientation	North-South
Project Description	Unity Place Apartments TIA

Site Information

Intersection	Shepherdsville / Miles
Jurisdiction	Louisville, Kentucky
East/West Street	Miles Lane
North/South Street	Shepherdsville Road
Peak Hour Factor	0.90
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume, V (veh/h)		86		103						37	482				532	186
Percent Heavy Vehicles (%)		2		2						2						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.42		6.22						4.12						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.52		3.32						2.22						

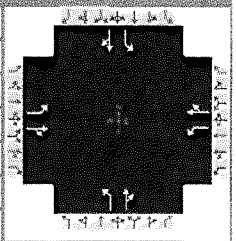
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			210							41						
Capacity, c (veh/h)			252							824						
v/c Ratio			0.83							0.05						
95% Queue Length, Q_{95} (veh)			6.7							0.2						
Control Delay (s/veh)			64.4							9.6						
Level of Service, LOS			F							A						
Approach Delay (s/veh)		64.4								1.3						
Approach LOS		F														

APPENDIX D-3: 2020 NO-BUILD AM

HCS7 Signalized Intersection Results Summary

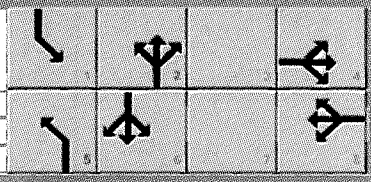
General Information				Intersection Information	
Agency	Stantec			Duration, h	0.25
Analyst	M. Peach	Analysis Date	Apr 19, 2018	Area Type	Other
Jurisdiction	Louisville, Kentucky	Time Period	AM Peak Hour	PHF	0.90
Urban Street	Shepherdsville Road	Analysis Year	2020	Analysis Period	1> 7:00
Intersection	Robbs Lane / Applegate...	File Name	2020_AM_NB_Signal_Intersection1.xus		
Project Description	2020 No-Build AM Peak Hour				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	4	50	31	59	201	113	54	499	59	31	288	8

Signal Information			
Cycle, s	141.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	20.0	60.0	40.0	0.0	0.0	0.0						
Yellow	5.0	5.0	5.0	0.0	0.0	0.0						
Red	2.0	2.0	2.0	0.0	0.0	0.0						



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4		8	5	2	1	6
Case Number		6.0		6.0	1.1	4.0	1.1	4.0
Phase Duration, s		47.0		47.0	27.0	67.0	27.0	67.0
Change Period, ($Y+R_c$), s		7.0		7.0	7.0	7.0	7.0	7.0
Max Allow Headway (*MAH*), s		3.2		3.2	3.1	3.1	3.1	3.1
Queue Clearance Time (g_s), s		27.6		27.0	4.1	43.3	3.2	19.4
Green Extension Time (g_e), s		0.9		0.9	0.1	1.8	0.0	1.9
Phase Call Probability		1.00		1.00	1.00	1.00	1.00	1.00
Max Out Probability		0.00		0.00	0.00	0.01	0.00	0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (*v*), veh/h	4	90		66	349		60	620		34	329	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1032	1750		1307	1757		1781	1835		1781	1861	
Queue Service Time (g_s), s	0.5	5.5		5.6	25.0		2.1	41.3		1.2	17.4	
Cycle Queue Clearance Time (g_c), s	25.6	5.5		11.1	25.0		2.1	41.3		1.2	17.4	
Green Ratio (*g/C*)	0.28	0.28		0.28	0.28		0.57	0.43		0.57	0.43	
Capacity (*c*), veh/h	161	496		371	498		607	781		399	792	
Volume-to-Capacity Ratio (*X*)	0.028	0.181		0.177	0.700		0.099	0.794		0.086	0.415	
Back of Queue (*Q*), ft/ln (50 th percentile)	4	62.9		49.1	303.7		23.1	506		13.5	205.5	
Back of Queue (*Q*), veh/ln (50 th percentile)	0.2	2.5		1.9	12.0		0.9	19.9		0.5	8.1	
Queue Storage Ratio (*RQ*) (50 th percentile)	0.05	0.00		0.49	0.00		0.20	0.00		0.00	0.00	
Uniform Delay (d_1), s/veh	56.6	38.1		42.3	45.1		15.1	35.1		20.4	28.3	
Incremental Delay (d_2), s/veh	0.3	0.8		1.0	8.0		0.3	8.2		0.4	1.6	
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Control Delay (*d*), s/veh	56.9	38.9		43.4	53.1		15.4	43.3		20.8	29.9	
Level of Service (LOS)	E	D		D	D		B	D		C	C	
Approach Delay, s/veh / LOS	39.8	D		51.6	D		40.8	D		29.0	C	
Intersection Delay, s/veh / LOS	40.9						D					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.3	B	2.3	B	2.3	B	2.3	B
Bicycle LOS Score / LOS	0.6	A	1.2	A	1.6	B	1.1	A

HCS7 Two-Way Stop-Control Report

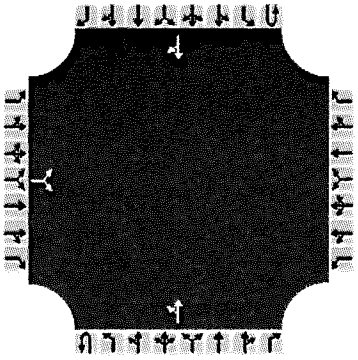
General Information

Analyst	M. Peach
Agency/Co.	Stantec
Date Performed	4/19/2018
Analysis Year	2020
Time Analyzed	No-Build AM Peak Hour
Intersection Orientation	North-South
Project Description	Unity Place Apartments TIA

Site Information

Intersection	Shepherdsville / Famous
Jurisdiction	Louisville, Kentucky
East/West Street	Famous Way
North/South Street	Shepherdsville Road
Peak Hour Factor	0.90
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume, V (veh/h)		28		17						37	499				255	18
Percent Heavy Vehicles (%)		2		2						2						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.42		6.22						4.12						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.52		3.32						2.22						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			50							41						
Capacity, c (veh/h)			375							1257						
v/c Ratio			0.13							0.03						
95% Queue Length, Q_{95} (veh)			0.5							0.1						
Control Delay (s/veh)			16.1							8.0						
Level of Service, LOS			C							A						
Approach Delay (s/veh)	16.1								0.9							
Approach LOS	C															

HCS7 Two-Way Stop-Control Report

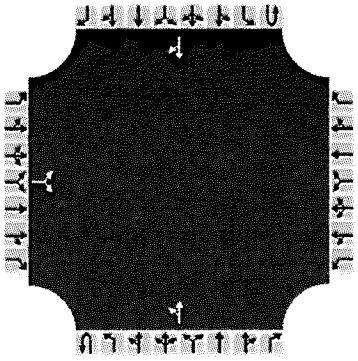
General Information

Analyst	M. Peach
Agency/Co.	Stantec
Date Performed	4/19/2018
Analysis Year	2020
Time Analyzed	No-Build AM Peak Hour
Intersection Orientation	North-South
Project Description	Unity Place Apartments TIA

Site Information

Intersection	Shepherdsville / Miles
Jurisdiction	Louisville, Kentucky
East/West Street	Miles Lane
North/South Street	Shepherdsville Road
Peak Hour Factor	0.90
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume, V (veh/h)		96		19						52	455				294	97
Percent Heavy Vehicles (%)		2		2						2						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.42		6.22						4.12						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.52		3.32						2.22						

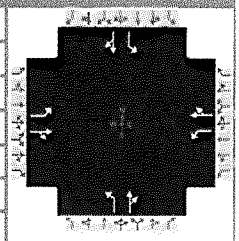
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			128							58						
Capacity, c (veh/h)			283							1124						
v/c Ratio			0.45							0.05						
95% Queue Length, Q_{95} (veh)			2.2							0.2						
Control Delay (s/veh)			27.8							8.4						
Level of Service, LOS			D							A						
Approach Delay (s/veh)	27.8								1.4							
Approach LOS	D															

APPENDIX D-4: 2020 NO-BUILD PM

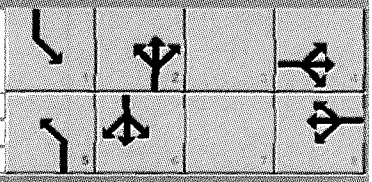
HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Stantec			Duration, h	0.25
Analyst	M. Peach	Analysis Date	Apr 19, 2018	Area Type	Other
Jurisdiction	Louisville, Kentucky	Time Period	PM Peak Hour	PHF	0.90
Urban Street	Shepherdsville Road	Analysis Year	2020	Analysis Period	1> 4:00
Intersection	Robbs Lane / Applegate...	File Name	2020_PM_NB_Signal_Intersection1.xus		
Project Description	2020 No-Build PM Peak Hour				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	4	432	103	40	182	76	67	411	97	129	551	10

Signal Information					EB			WB			NB		
Cycle, s	141.0	Reference Phase	2										
Offset, s	0	Reference Point	End	Green	20.0	60.0	40.0	0.0	0.0	0.0			
Uncoordinated	Yes	Simult. Gap E/W	On	Yellow	5.0	5.0	5.0	0.0	0.0	0.0			
Force Mode	Fixed	Simult. Gap N/S	On	Red	2.0	2.0	2.0	0.0	0.0	0.0			



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4		8	5	2	1	6
Case Number		6.0		6.0	1.1	4.0	1.1	4.0
Phase Duration, s		47.0		47.0	27.0	67.0	27.0	67.0
Change Period, ($Y+R_c$), s		7.0		7.0	7.0	7.0	7.0	7.0
Max Allow Headway (*MAH*), s		3.2		3.2	3.1	3.1	3.1	3.1
Queue Clearance Time (g_s), s		42.0		42.0	4.7	38.8	7.3	42.7
Green Extension Time (g_e), s		0.0		0.0	0.1	2.5	0.2	2.4
Phase Call Probability		1.00		1.00	1.00	1.00	1.00	1.00
Max Out Probability		1.00		1.00	0.00	0.01	0.00	0.02

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (*v*), veh/h	4	594		44	287		74	564		143	623	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1093	1808		823	1776		1781	1808		1781	1864	
Queue Service Time (g_s), s	0.5	40.0		0.0	19.4		2.7	36.8		5.3	40.7	
Cycle Queue Clearance Time (g_c), s	19.9	40.0		40.0	19.4		2.7	36.8		5.3	40.7	
Green Ratio (*g/C*)	0.28	0.28		0.28	0.28		0.57	0.43		0.57	0.43	
Capacity (*c*), veh/h	210	513		51	504		402	769		431	793	
Volume-to-Capacity Ratio (*X*)	0.021	1.159		0.870	0.569		0.185	0.734		0.332	0.786	
Back of Queue (*Q*), ft/ln (50 th percentile)	3.7	784.8		73.8	232.8		30	437.1		60.8	504	
Back of Queue (*Q*), veh/ln (50 th percentile)	0.1	30.9		2.9	9.2		1.2	17.2		2.4	19.8	
Queue Storage Ratio (*RQ*) (50 th percentile)	0.04	0.00		0.74	0.00		0.26	0.00		0.00	0.00	
Uniform Delay (d_1), s/veh	51.6	50.5		70.5	43.1		20.9	33.8		20.8	35.0	
Incremental Delay (d_2), s/veh	0.2	91.6		91.9	4.6		1.0	6.1		2.1	7.7	
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Control Delay (*d*), s/veh	51.8	142.1		162.4	47.7		21.9	40.0		22.8	42.7	
Level of Service (LOS)	D	F		F	D		C	D		C	D	
Approach Delay, s/veh / LOS	141.4	F		63.1	E		37.8	D		38.9	D	
Intersection Delay, s/veh / LOS	68.4						E					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.3	B	2.3	B	2.3	B	2.3	B
Bicycle LOS Score / LOS	1.5	A	1.0	A	1.5	B	1.8	B

HCS7 Two-Way Stop-Control Report

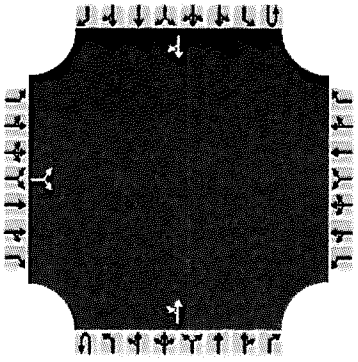
General Information

Analyst	M. Peach
Agency/Co.	Stantec
Date Performed	4/19/2018
Analysis Year	2020
Time Analyzed	No-Build PM Peak Hour
Intersection Orientation	North-South
Project Description	Unity Place Apartments TIA

Site Information

Intersection	Shepherdsville / Famous
Jurisdiction	Louisville, Kentucky
East/West Street	Famous Way
North/South Street	Shepherdsville Road
Peak Hour Factor	0.90
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume, V (veh/h)		49		118						36	499				744	50
Percent Heavy Vehicles (%)		2		2						2						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.42		6.22						4.12						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.52		3.32						2.22						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			185							40						
Capacity, c (veh/h)			236							766						
v/c Ratio			0.78							0.05						
95% Queue Length, Q_{95} (veh)			5.7							0.2						
Control Delay (s/veh)			59.6							10.0						
Level of Service, LOS			F							A						
Approach Delay (s/veh)		59.6								1.4						
Approach LOS		F														

HCS7 Two-Way Stop-Control Report

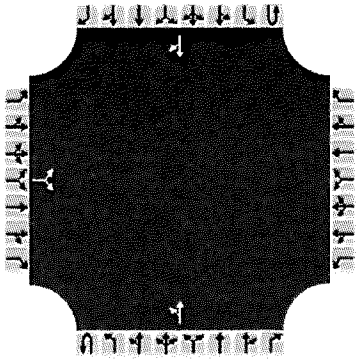
General Information

Analyst	M. Peach
Agency/Co.	Stantec
Date Performed	4/19/2018
Analysis Year	2020
Time Analyzed	No-Build PM Peak Hour
Intersection Orientation	North-South
Project Description	Unity Place Apartments TIA

Site Information

Intersection	Shepherdsville / Miles
Jurisdiction	Louisville, Kentucky
East/West Street	Miles Lane
North/South Street	Shepherdsville Road
Peak Hour Factor	0.90
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume, V (veh/h)		91		108						39	507				559	195
Percent Heavy Vehicles (%)		2		2						2						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

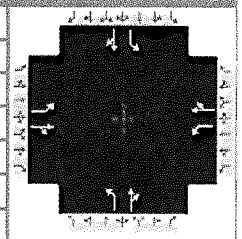
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			221							43						
Capacity, c (veh/h)			232							796						
v/c Ratio			0.95							0.05						
95% Queue Length, Q_{95} (veh)			8.5							0.2						
Control Delay (s/veh)			92.4							9.8						
Level of Service, LOS			F							A						
Approach Delay (s/veh)		92.4								1.4						
Approach LOS		F														

APPENDIX D-5: 2020 BUILD AM

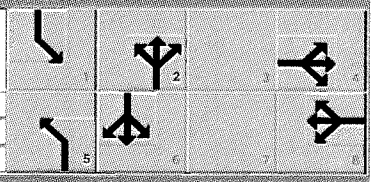
HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Stantec			Duration, h	0.25
Analyst	M. Peach	Analysis Date	Apr 19, 2018	Area Type	Other
Jurisdiction	Louisville, Kentucky	Time Period	AM Peak Hour	PHF	0.90
Urban Street	Shepherdsville Road	Analysis Year	2020	Analysis Period	1> 7:00
Intersection	Robbs Lane / Applegate...	File Name	2020_AM_B_Signal_Intersection1.xus		
Project Description	2020 Build AM Peak Hour				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	4	50	34	61	201	113	61	522	65	31	296	8

Signal Information					EB			WB			NB			SB		
Cycle, s	141.0	Reference Phase	2													
Offset, s	0	Reference Point	End	Green	20.0	60.0	40.0	0.0	0.0	0.0						
Uncoordinated	Yes	Simult. Gap E/W	On	Yellow	5.0	5.0	5.0	0.0	0.0	0.0						
Force Mode	Fixed	Simult. Gap N/S	On	Red	2.0	2.0	2.0	0.0	0.0	0.0						



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4		8	5	2	1	6
Case Number		6.0		6.0	1.1	4.0	1.1	4.0
Phase Duration, s		47.0		47.0	27.0	67.0	27.0	67.0
Change Period, ($Y+R_c$), s		7.0		7.0	7.0	7.0	7.0	7.0
Max Allow Headway (*MAH*), s		3.2		3.2	3.1	3.1	3.1	3.1
Queue Clearance Time (g_s), s		27.6		27.0	4.4	46.7	3.2	20.0
Green Extension Time (g_e), s		0.9		0.9	0.1	1.9	0.0	2.0
Phase Call Probability		1.00		1.00	1.00	1.00	1.00	1.00
Max Out Probability		0.00		0.00	0.00	0.03	0.00	0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (*v*), veh/h	4	93		68	349		68	652		34	338	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1032	1743		1303	1757		1781	1834		1781	1862	
Queue Service Time (g_s), s	0.5	5.7		5.9	25.0		2.4	44.7		1.2	18.0	
Cycle Queue Clearance Time (g_c), s	25.6	5.7		11.6	25.0		2.4	44.7		1.2	18.0	
Green Ratio (*g/C*)	0.28	0.28		0.28	0.28		0.57	0.43		0.57	0.43	
Capacity (*c*), veh/h	161	495		368	498		600	780		377	792	
Volume-to-Capacity Ratio (*X*)	0.028	0.189		0.184	0.700		0.113	0.836		0.091	0.426	
Back of Queue (*Q*), ft/ln (50 th percentile)	4	65.4		51.1	303.7		26.2	555.1		13.5	212.4	
Back of Queue (*Q*), veh/ln (50 th percentile)	0.2	2.6		2.0	12.0		1.0	21.9		0.5	8.4	
Queue Storage Ratio (*RQ*) (50 th percentile)	0.05	0.00		0.51	0.00		0.23	0.00		0.00	0.00	
Uniform Delay (d_1), s/veh	56.6	38.2		42.6	45.1		15.2	36.1		21.5	28.4	
Incremental Delay (d_2), s/veh	0.3	0.8		1.1	8.0		0.4	10.3		0.5	1.7	
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Control Delay (*d*), s/veh	56.9	39.1		43.7	53.1		15.6	46.4		22.0	30.1	
Level of Service (LOS)	E	D		D	D		B	D		C	C	
Approach Delay, s/veh / LOS	39.9	D		51.6	D		43.5	D		29.4	C	
Intersection Delay, s/veh / LOS	42.1						D					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.3	B	2.3	B	2.3	B	2.3	B
Bicycle LOS Score / LOS	0.6	A	1.2	A	1.7	B	1.1	A

HCS7 Two-Way Stop-Control Report

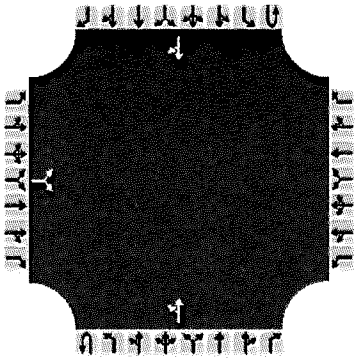
General Information

Analyst	M. Peach
Agency/Co.	Stantec
Date Performed	4/19/2018
Analysis Year	2020
Time Analyzed	Build AM Peak Hour
Intersection Orientation	North-South
Project Description	Unity Place Apartments TIA

Site Information

Intersection	Shepherdsville / Famous
Jurisdiction	Louisville, Kentucky
East/West Street	Famous Way
North/South Street	Shepherdsville Road
Peak Hour Factor	0.90
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume, V (veh/h)		28		17						37	509				285	18
Percent Heavy Vehicles (%)		2		2						2						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.42		6.22						4.12						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.52		3.32						2.22						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			50							41						
Capacity, c (veh/h)			353							1221						
v/c Ratio			0.14							0.03						
95% Queue Length, Q_{95} (veh)			0.5							0.1						
Control Delay (s/veh)			16.9							8.0						
Level of Service, LOS			C							A						
Approach Delay (s/veh)		16.9								0.9						
Approach LOS		C														

HCS7 Two-Way Stop-Control Report

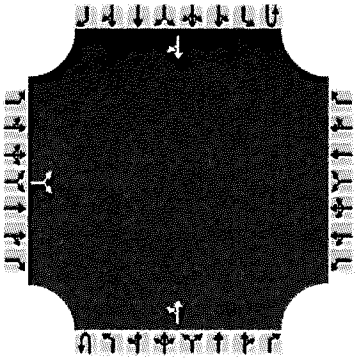
General Information

Analyst	M. Peach
Agency/Co.	Stantec
Date Performed	4/19/2018
Analysis Year	2020
Time Analyzed	Build AM Peak Hour
Intersection Orientation	North-South
Project Description	Unity Place Apartments TIA

Site Information

Intersection	Shepherdsville / Miles
Jurisdiction	Louisville, Kentucky
East/West Street	Miles Lane
North/South Street	Shepherdsville Road
Peak Hour Factor	0.90
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume, V (veh/h)		98		19						52	463				317	104
Percent Heavy Vehicles (%)		2		2						2						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.42		6.22						4.12						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.52		3.32						2.22						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			130							58						
Capacity, c (veh/h)			269							1093						
v/c Ratio			0.48							0.05						
95% Queue Length, Q_{95} (veh)			2.5							0.2						
Control Delay (s/veh)			30.4							8.5						
Level of Service, LOS			D							A						
Approach Delay (s/veh)		30.4								1.4						
Approach LOS		D														

HCS7 Two-Way Stop-Control Report

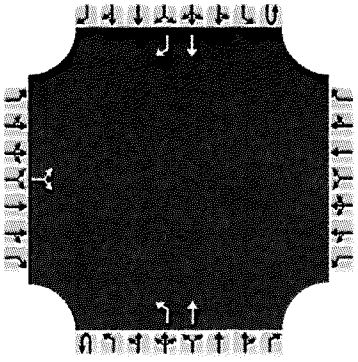
General Information

Analyst	M. Peach
Agency/Co.	Stantec
Date Performed	4/19/2018
Analysis Year	2020
Time Analyzed	Build AM Peak Hour
Intersection Orientation	North-South
Project Description	Unity Place Apartments TIA

Site Information

Intersection	Shepherdsville / Access A
Jurisdiction	Louisville, Kentucky
East/West Street	Site Access A
North/South Street	Shepherdsville Road
Peak Hour Factor	0.90
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	1	1	0	0	0	1	1
Configuration			LR							L	T				T	R
Volume, V (veh/h)		16		13						5	632				385	6
Percent Heavy Vehicles (%)		2		2						2						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			32							6						
Capacity, c (veh/h)			308							1124						
v/c Ratio			0.10							0.01						
95% Queue Length, Q_{95} (veh)			0.3							0.0						
Control Delay (s/veh)			18.1							8.2						
Level of Service, LOS			C							A						
Approach Delay (s/veh)		18.1								0.1						
Approach LOS		C														

HCS7 Two-Way Stop-Control Report

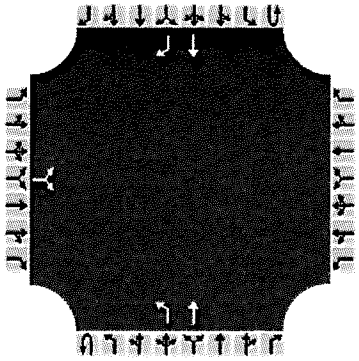
General Information

Analyst	M. Peach
Agency/Co.	Stantec
Date Performed	4/19/2018
Analysis Year	2020
Time Analyzed	Build AM Peak Hour
Intersection Orientation	North-South
Project Description	Unity Place Apartments TIA

Site Information

Intersection	Shepherdsville / Access B
Jurisdiction	Louisville, Kentucky
East/West Street	Site Access B
North/South Street	Shepherdsville Road
Peak Hour Factor	0.90
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	1	1	0	0	0	1	1
Configuration			LR							L	T				T	R
Volume, V (veh/h)		20		17						5	617				391	7
Percent Heavy Vehicles (%)		2		2						2						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.42		6.22						4.12						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.52		3.32						2.22						

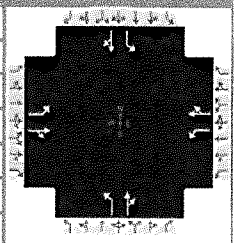
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			41							6						
Capacity, c (veh/h)			318							1117						
v/c Ratio			0.13							0.01						
95% Queue Length, Q_{95} (veh)			0.4							0.0						
Control Delay (s/veh)			18.0							8.2						
Level of Service, LOS			C							A						
Approach Delay (s/veh)		18.0								0.1						
Approach LOS		C														

APPENDIX D-6: 2020 BUILD PM

HCS7 Signalized Intersection Results Summary

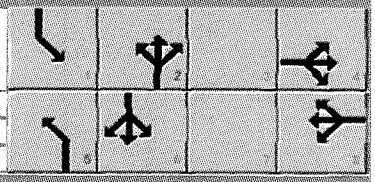
General Information				Intersection Information	
Agency	Stantec			Duration, h	0.25
Analyst	M. Peach	Analysis Date	Apr 19, 2018	Area Type	Other
Jurisdiction	Louisville, Kentucky	Time Period	PM Peak Hour	PHF	0.90
Urban Street	Shepherdsville Road	Analysis Year	2020	Analysis Period	1> 4:00
Intersection	Robbs Lane / Applegate...	File Name	2020_PM_B_Signal_Intersection1.xus		
Project Description	2020 Build PM Peak Hour				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	4	432	110	47	182	76	70	426	101	129	575	10

Signal Information			
Cycle, s	141.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	20.0	60.0	40.0	0.0	0.0	0.0
Yellow	5.0	5.0	5.0	0.0	0.0	0.0
Red	2.0	2.0	2.0	0.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4		8	5	2	1	6
Case Number		6.0		6.0	1.1	4.0	1.1	4.0
Phase Duration, s		47.0		47.0	27.0	67.0	27.0	67.0
Change Period, ($Y+R_c$), s		7.0		7.0	7.0	7.0	7.0	7.0
Max Allow Headway (*MAH*), s		3.2		3.2	3.1	3.1	3.1	3.1
Queue Clearance Time (g_s), s		42.0		42.0	4.8	40.8	7.3	45.3
Green Extension Time (g_e), s		0.0		0.0	0.1	2.6	0.2	2.5
Phase Call Probability		1.00		1.00	1.00	1.00	1.00	1.00
Max Out Probability		1.00		1.00	0.00	0.01	0.00	0.05

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (*v*), veh/h	4	602		52	287		78	586		143	650	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1093	1804		817	1776		1781	1808		1781	1865	
Queue Service Time (g_s), s	0.5	40.0		0.0	19.4		2.8	38.8		5.3	43.3	
Cycle Queue Clearance Time (g_c), s	19.9	40.0		40.0	19.4		2.8	38.8		5.3	43.3	
Green Ratio (*g/C*)	0.28	0.28		0.28	0.28		0.57	0.43		0.57	0.43	
Capacity (*c*), veh/h	210	512		51	504		385	769		417	793	
Volume-to-Capacity Ratio (*X*)	0.021	1.176		1.023	0.569		0.202	0.761		0.344	0.819	
Back of Queue (*Q*), ft/ln (50 th percentile)	3.7	807.7		94.5	232.8		31.6	464.3		61.1	542.9	
Back of Queue (*Q*), veh/ln (50 th percentile)	0.1	31.8		3.7	9.2		1.2	18.3		2.4	21.4	
Queue Storage Ratio (*RQ*) (50 th percentile)	0.04	0.00		0.95	0.00		0.28	0.00		0.00	0.00	
Uniform Delay (d_1), s/veh	51.6	50.5		70.5	43.1		21.9	34.4		21.5	35.7	
Incremental Delay (d_2), s/veh	0.2	98.3		132.6	4.6		1.2	7.0		2.2	9.2	
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Control Delay (*d*), s/veh	51.8	148.8		203.1	47.7		23.1	41.4		23.7	44.9	
Level of Service (LOS)	D	F		F	D		C	D		C	D	
Approach Delay, s/veh / LOS	148.1	F		71.7	E		39.3	D		41.1	D	
Intersection Delay, s/veh / LOS	71.9						E					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.3	B	2.3	B	2.3	B	2.3	B
Bicycle LOS Score / LOS	1.5	A	1.0	A	1.6	B	1.8	B

HCS7 Two-Way Stop-Control Report

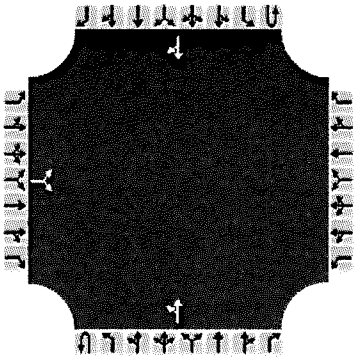
General Information

Analyst	M. Peach
Agency/Co.	Stantec
Date Performed	4/19/2018
Analysis Year	2020
Time Analyzed	Build PM Peak Hour
Intersection Orientation	North-South
Project Description	Unity Place Apartments TIA

Site Information

Intersection	Shepherdsville / Famous
Jurisdiction	Louisville, Kentucky
East/West Street	Famous Way
North/South Street	Shepherdsville Road
Peak Hour Factor	0.90
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume, V (veh/h)		49		118						36	530				764	50
Percent Heavy Vehicles (%)		2		2						2						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.42		6.22						4.12						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.52		3.32						2.22						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			185							40						
Capacity, c (veh/h)			223							751						
v/c Ratio			0.83							0.05						
95% Queue Length, Q_{95} (veh)			6.3							0.2						
Control Delay (s/veh)			69.4							10.1						
Level of Service, LOS			F							B						
Approach Delay (s/veh)		69.4								1.4						
Approach LOS		F														

HCS7 Two-Way Stop-Control Report

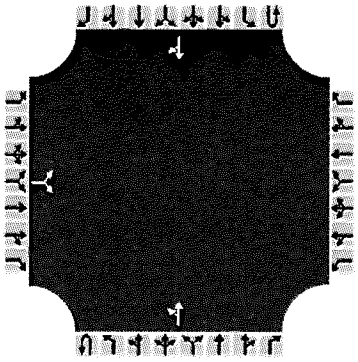
General Information

Analyst	M. Peach
Agency/Co.	Stantec
Date Performed	4/19/2018
Analysis Year	2020
Time Analyzed	Build PM Peak Hour
Intersection Orientation	North-South
Project Description	Unity Place Apartments TIA

Site Information

Intersection	Shepherdsville / Miles
Jurisdiction	Louisville, Kentucky
East/West Street	Miles Lane
North/South Street	Shepherdsville Road
Peak Hour Factor	0.90
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume, V (veh/h)		98		108						39	531				574	200
Percent Heavy Vehicles (%)		2		2						2						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.42		6.22						4.12						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.52		3.32						2.22						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			229							43						
Capacity, c (veh/h)			215							781						
v/c Ratio			1.06							0.06						
95% Queue Length, Q_{95} (veh)			10.2							0.2						
Control Delay (s/veh)			126.7							9.9						
Level of Service, LOS			F							A						
Approach Delay (s/veh)		126.7								1.4						
Approach LOS		F														

HCS7 Two-Way Stop-Control Report

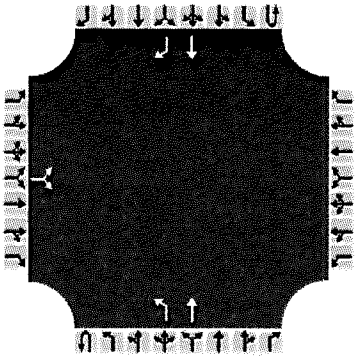
General Information

Analyst	M. Peach
Agency/Co.	Stantec
Date Performed	4/19/2018
Analysis Year	2020
Time Analyzed	Build PM Peak Hour
Intersection Orientation	North-South
Project Description	Unity Place Apartments TIA

Site Information

Intersection	Shepherdsville / Access A
Jurisdiction	Louisville, Kentucky
East/West Street	Site Access A
North/South Street	Shepherdsville Road
Peak Hour Factor	0.90
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	1	1	0	0	0	1	1
Configuration			LR							L	T				T	R
Volume, V (veh/h)		11		9						14	588				714	17
Percent Heavy Vehicles (%)		2		2						2						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.42		6.22						4.12						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.52		3.32						2.22						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			22							16						
Capacity, c (veh/h)			193							814						
v/c Ratio			0.11							0.02						
95% Queue Length, Q_{95} (veh)			0.4							0.1						
Control Delay (s/veh)			26.0							9.5						
Level of Service, LOS			D							A						
Approach Delay (s/veh)		26.0								0.2						
Approach LOS		D														

HCS7 Two-Way Stop-Control Report

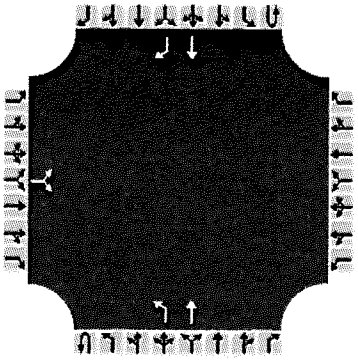
General Information

Analyst	M. Peach
Agency/Co.	Stantec
Date Performed	4/19/2018
Analysis Year	2020
Time Analyzed	Build PM Peak Hour
Intersection Orientation	North-South
Project Description	Unity Place Apartments TIA

Site Information

Intersection	Shepherdsville / Access B
Jurisdiction	Louisville, Kentucky
East/West Street	Site Access B
North/South Street	Shepherdsville Road
Peak Hour Factor	0.90
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	1	1	0	0	0	1	1
Configuration			LR							L	T				T	R
Volume, V (veh/h)		13		11						17	589				702	21
Percent Heavy Vehicles (%)		2		2						2						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.42		6.22						4.12						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.52		3.32						2.22						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			26							19						
Capacity, c (veh/h)			196							820						
v/c Ratio			0.13							0.02						
95% Queue Length, Q_{95} (veh)			0.5							0.1						
Control Delay (s/veh)			26.2							9.5						
Level of Service, LOS			D							A						
Approach Delay (s/veh)	26.2								0.3							
Approach LOS	D															