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Traffic Impact Study for the proposed

WAREHOUSE FACILITY AT 3101 POND STATION ROAD

prepared for:

Mark Jacob
IDI Logistics
740 Centre View Boulevard, Floor 3
Crestview Hills, KY 41017

THE KLEINGERS GROUP

1100 Envoy Circle
Louisville, KY 40299
p. 502-365-9950
f. 502-667-2525

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1.0 EXECUTIVE SUMMARY

This study was conducted to analyze the impact of the construction of a proposed warehouse facility at 3101 Pond Station Road in Louisville, Kentucky. The warehouse facility will consist of a 500,000 +/- S.F. building footprint. Access to the new warehouse facility is proposed via the east end of Pond Station Road.

Traffic counts were not collected at the study intersection due to the COVID pandemic. Based on coordination with City of Louisville staff, the study was performed based on previously performed traffic KYTC count data on Stonestreet Road, traffic count data in a previous study performed at the interchange of KY-841 and Stonestreet Road, and Institute of Transportation Engineers Trip Generation Manual estimates of existing and proposed site traffic along Pond Station Road. These counts were used to develop projected no-build and build scenario traffic volumes. Intersection capacity analyses for the opening year (2021) projected future year (2026) peak-hour traffic volumes were conducted at the study area intersections for build and no-build scenarios. Traffic signal warrant analysis was performed at the study intersection in accordance with the Manual of Uniform Traffic Control Devices. In addition, qualitative evaluation of pedestrian crossing across Pond Station Road was performed at the proposed Louisville Loop.

The following findings were made during the traffic impact study process:

1. Capacity analyses with existing stop sign control indicated that the vehicles exiting Pond Station Road onto Stonestreet Road are expected to operate at LOS “F” during the 2021 and 2026 peak hour no-build and build scenarios. The southbound left-turning vehicles from Stonestreet Road onto Pond Station Road are expected to operate at no worse than LOS “B” during the 2021 and 2026 peak hour no-build and build scenarios.
2. Traffic signal warrant analyses at the intersection of Stonestreet Road and Pond Station Road indicated a traffic signal is warranted in accordance with the peak hour signal warrant of the Manual of Uniform Traffic Control Devices (MUTCD), 2009.
3. Additional capacity analyses with a traffic signal at the intersection of Stonestreet Road and Pond Station Road indicated that the individual movements are expected to operate at no worse than LOS “D” for both the 2021 and 2026 AM and PM peak hour build scenarios. The volume to capacity ratio for the northbound approach on Stonestreet Road is expected to be 0.958 for 2026 PM peak hour build scenario.
4. Per the preliminary alignment plan provided by the City of Louisville's consultant, the planned Louisville Loop is proposed to cross Pond Station Road within the curve just east of the Copart access. As part of the Louisville Loop design process, special attention will need to be given to locating the crossing at the point that provides the best visibility from each roadway approach as well as clearing trees and providing adequate warning signs and markings to warn drivers of the crossing. Consideration should also be given to measures that will reduce vehicle speeds prior to reaching the crossing point. Vehicles traveling to and from the proposed warehouse facility at

3101 Pond Station Road are expected to be the only vehicles crossing the proposed path. Based on these relatively low volumes, it is not anticipated that bicyclists and pedestrians will have significant difficulty finding gaps in which to make their crossings.

The following improvements are recommended to mitigate the impacts of the construction of the new warehouse facility:

1. Site access should be provided via the east end of Pond Station Road.
2. A two-phase traffic signal is recommended at the intersection of Stonestreet Road and Pond Station Road. Due to the proximity of the existing railroad crossing across Stonestreet Road just north of Pond Station Road, the signal will need to be designed to provide railroad preemption upon notification of an approaching train.
3. Because of high volume to capacity ratios on Stonestreet Road with the installation of a traffic signal at Pond Station Road, local public agencies should consider the widening of Stonestreet Road in the near future to provide two travel lanes in each direction.

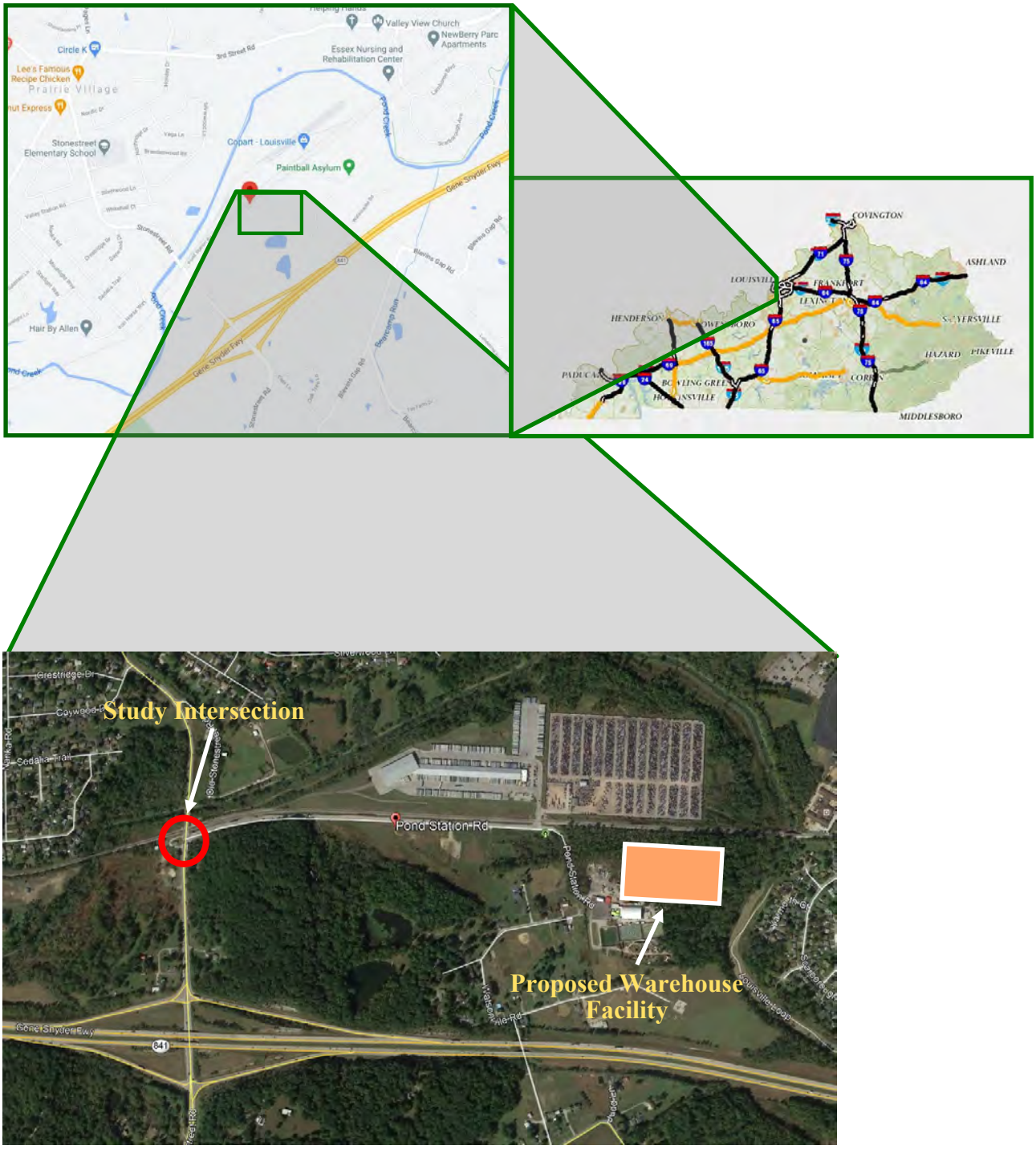
This study was conducted to analyze the impact of the construction of a proposed warehouse facility at 3101 Pond Station Road in Louisville, Kentucky. The warehouse facility will consist of a 500,000 +/- S.F. building footprint. Access to the new warehouse facility is proposed via the east end of Pond Station Road. Traffic counts were not collected at the study intersection due to the COVID pandemic. Based on coordination with City of Louisville staff, the study was performed based on previously performed traffic KYTC count data on Stonestreet Road, traffic count data in a previous study performed at the interchange of KY-841 and Stonestreet Road, and Institute of Transportation Engineers Trip Generation Manual estimates of existing and proposed site traffic along Pond Station Road. These counts were used to develop projected no-build and build scenario traffic volumes. Intersection capacity analyses for the opening year (2021) projected future year (2026) peak-hour traffic volumes were conducted at the study area intersections for build and no-build scenarios. This report includes recommended roadway improvements to accommodate the projected traffic volumes. A Project Location Map is provided as Figure 2A.

2.1 DEVELOPMENT DESCRIPTION

The proposed warehouse facility will consist of a 500,000 +/- S.F. building footprint. Site access is to be provided via the east end of Pond Station Road. A preliminary site plan is included in Appendix A.

2.2 STUDY AREA

Based on the coordination with the City of Louisville, the intersection of Stonestreet Road and Pond Station Road is the only study intersection required for analysis.



Project Location Map

3.1 AREA LAND USE

The land surrounding the site is a mix of single-family residential housing and industrial facilities. An existing Copart facility is located to the north of the site and can be accessed via Pond Station Road. There is an additional Copart facility expansion and four potential future offsite warehouses planned to the north of and south of Pond Station Road respectively.

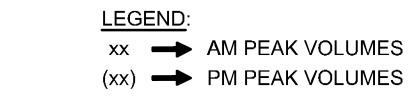
3.2 SITE ACCESSIBILITY

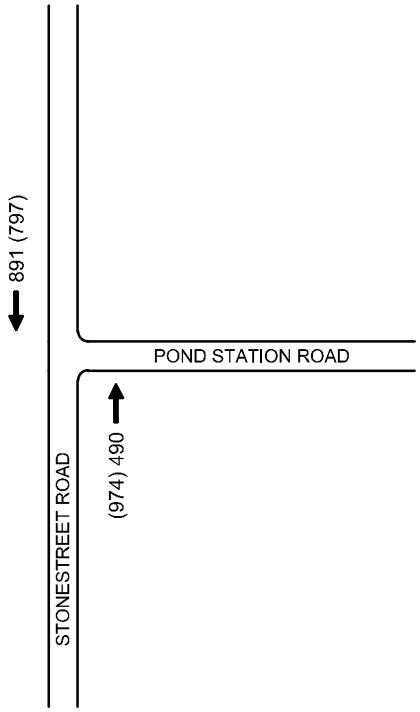
Pond Station Road is a two lane roadway with a stop-control at the study intersection. Stonestreet Road is classified as a minor arterial, has one travel lane in each direction, and has a posted speed limit of 35 miles per hour. At the intersection with Pond Station Road, Stonestreet Road has a center two way left turn lane and a northbound right turn lane. An at-grade crossing with CSX railroad exists across Stonestreet Road just north of Pond Station Road. Per the site plan, access to the site will be via the east end of Pond Station Road.

3.3 EXISTING TRAFFIC VOLUMES

Turning movement counts were not collected at the study intersection due COVID-19 pandemic. Peak hour background volumes were estimated based on previously performed KYTC traffic count data in 2018 on Stonestreet Road, and traffic count data from previous study performed at the interchange of KY -841 and Stonestreet Road. These traffic counts are included in Appendix B.

The AADT on Stonestreet Road based on the KYTC traffic count data was 16,078. The K-factor of 11% from the traffic count data gives the proportion of AADT that occurs in the peak hour and which is approximately equal to 1770 vph. As per the previous study performed at the interchange of KY-841 and Stonestreet Road, it was assumed that the peak hour occurs in the PM and that 55% of traffic travels away from SR 841 in the PM. Also, from the above study, AM peak traffic was approximately 78% of the PM peak traffic, resulting in 1381 vph in the AM peak hour. The directional distribution from the same study showed also showed that 35% of traffic travels away from the SR 841 in the AM. The resulting 2018 background volumes on Stonestreet Road are presented in Figure 3A.





2018 Background Traffic Volumes

4.1 PROJECTED NO-BUILD TRAFFIC VOLUMES

Based on discussion with City of Louisville, a 1% growth rate was applied to the 2018 background traffic volumes and compounded annually to get the projected opening year(2021) and future design year(2026) background traffic volumes as shown in Figure 4A and 4B respectively. The trips from the existing and proposed industrial development to the north and south of the Pond Station Road are included in the no-build traffic volumes. These industrial developments include the following:

- Existing Copart facility north of Pond Station Road with an approximate total area of 27 acres
- Proposed Copart facility expansion north of Pond Station Road with an approximate total area of 45 acres
- Proposed offsite warehouse south of Pond Station Road with an approximate building area of 85,100 sf
- Proposed offsite warehouse south of Pond Station Road with an approximate building area of 62,050 sf
- Potential future offsite warehouse south of Pond Station Road with an approximate building area of 150,000 sf
- Potential future offsite warehouse south of Pond Station Road with an approximate building area of 400,000 sf

The trips for the existing and proposed Copart facility north of the Pond Station Road were estimated based on the counts from a similar Copart facility in Palmdale, California. A trip generation rate of 0.52 trips/ acre was used for AM peak and 0.57 trips/acre was used for the PM peak. The trip generation from the Copart facility in Palmdale, California are included in Appendix C of this report.

The trip generation for the existing and proposed Copart facility north of Pond Station Road are shown in Table 4A and 4B respectively.

	Entering Trips	Exiting Trips	Total Trips
AM Peak	10	4	14
PM Peak	6	9	15

Table 4A - Trip generation from the existing 27 acres Copart facility north of the Pond Station Road

	Entering Trips	Exiting Trips	Total Trips
AM Peak	16	7	23
PM Peak	10	16	26

Table 4B - Trip generation from the proposed 45 acres Copart facility north of the Pond Station Road

The trips for the four proposed Offsite-Warehouses south of the Pond Station Road were estimated using the Institute of Transportation Engineers (ITE) Trip Generation Manual, 10th Edition. These trips are shown in Tables 4C-4F. Warehouse (Land Use Code 150) was applicable to these facilities.

	Entering Trips	Exiting Trips	Total Trips
AM Peak	27	9	36
PM Peak	10	28	38

Table 4C - Trip generation from the proposed 85,100 S.F. Offsite Warehouse south of the Pond Station Road

	Entering Trips	Exiting Trips	Total Trips
AM Peak	25	8	33
PM Peak	9	26	35

Table 4D- Trip generation from the proposed 62,050 S.F. Offsite Warehouse south of the Pond Station Road

	Entering Trips	Exiting Trips	Total Trips
AM Peak	33	10	43
PM Peak	12	34	46

Table 4E- Trip generation from the proposed 150,000 S.F. Offsite Warehouse south of the Pond Station Road

	Entering Trips	Exiting Trips	Total Trips
AM Peak	56	17	73
PM Peak	20	56	76

Table 4F- Trip generation from the proposed 400,000 S.F. Offsite Warehouse south of the Pond Station Road

The graphs from the ITE manual are included in Appendix C of this report. The trips from the existing and proposed industrial development included in Tables 4A-4F are added to get the no-build trips entering and exiting the Pond Station Road. The no-build trips at Pond Station Road are shown in Table 4G. The no-trips in Table 4G are distributed at the study intersection using the proposed trip distribution in Figure 4C and are shown in Figure 4D. The projected 2021 and 2026 background traffic volumes in Figures 4A & 4B are combined with the no-build trips entering and exiting the Pond Station Road to get the no-build traffic volumes at the study intersection. The projected 2021 and 2026 no-build traffic volumes are shown in Figures 4E & 4F respectively.

	Entering Trips	Exiting Trips	Total Trips
AM Peak	167	55	222
PM Peak	67	169	236

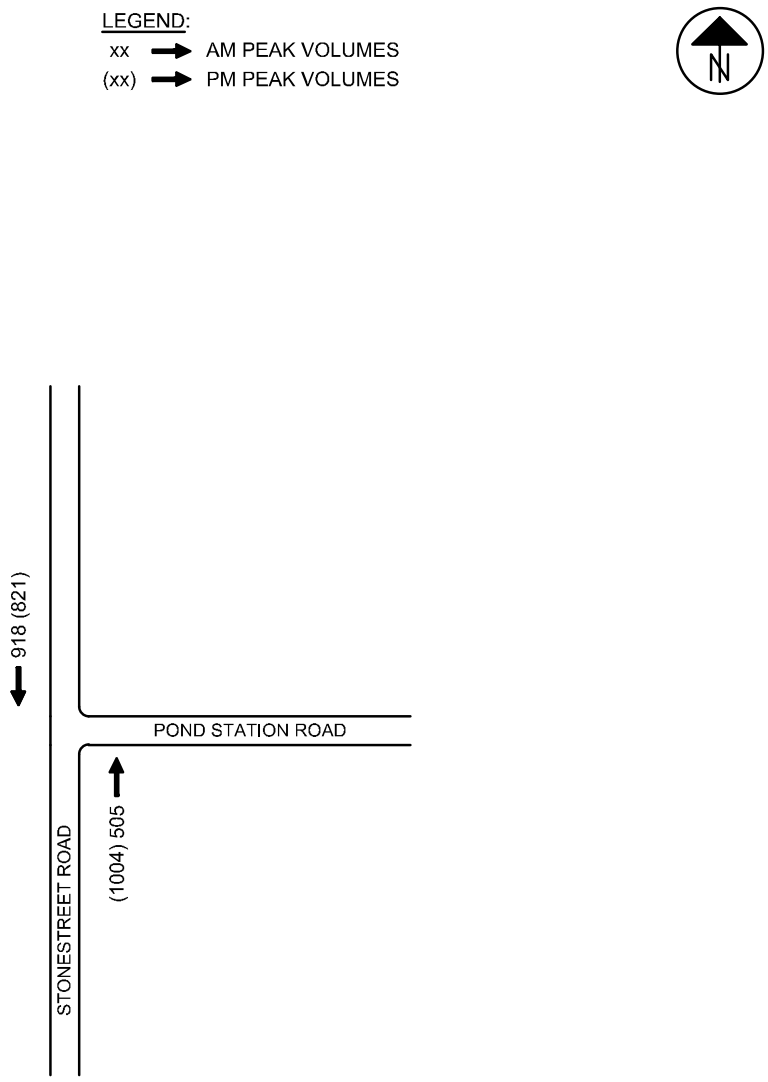
Table 4G - Total No-Build trips on Pond Station Road

4.2 ESTIMATED SITE-GENERATED TRAFFIC VOLUMES

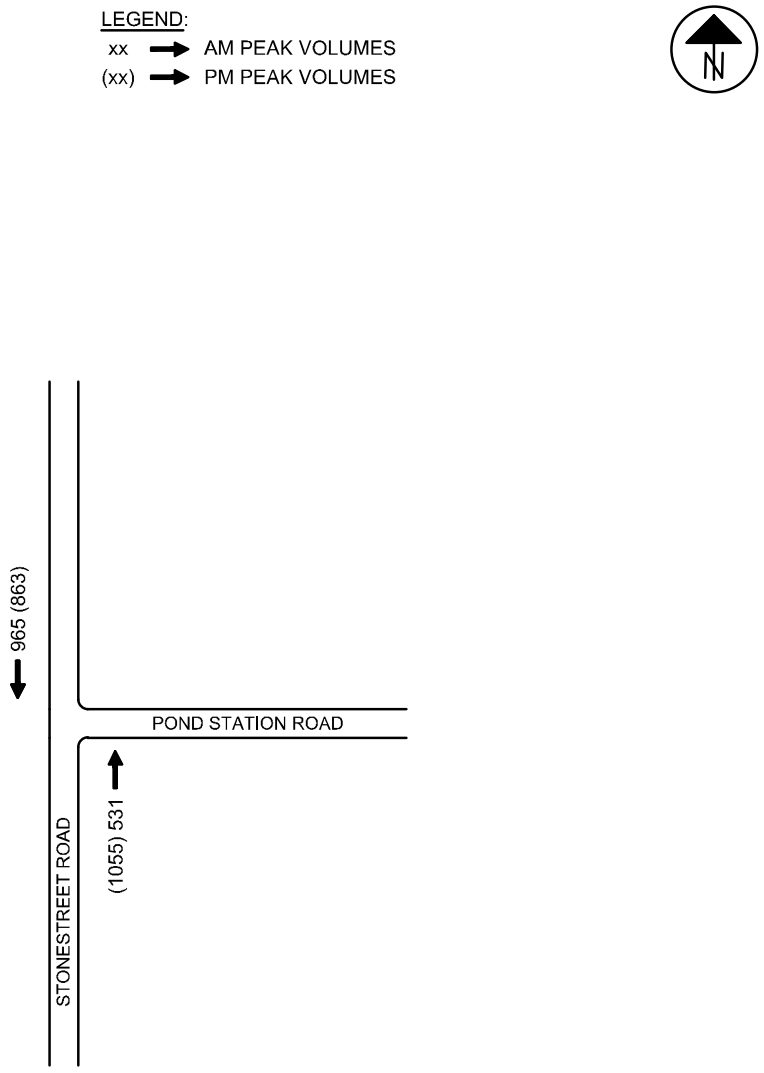
Site generated trips were estimated for the warehouse facility with a proposed footprint of 500,200 S.F. The Institute of Transportation Engineers (ITE) Trip Generation Manual, 10th Edition, was used to estimate trips for this land use. Warehouse (Land Use Code 150) was applicable to this facility. According to the data, ITE estimates 85 AM peak trips (65 entering and 20 exiting) and 88 PM peak trips (24 entering and 64 exiting). The graphs from ITE manual are included in Appendix D of this report. The estimated trips were distributed at the study intersection according to the proposed trip distribution percentages and are shown in Figure 4G.

4.3 PROJECTED BUILD TRAFFIC VOLUMES

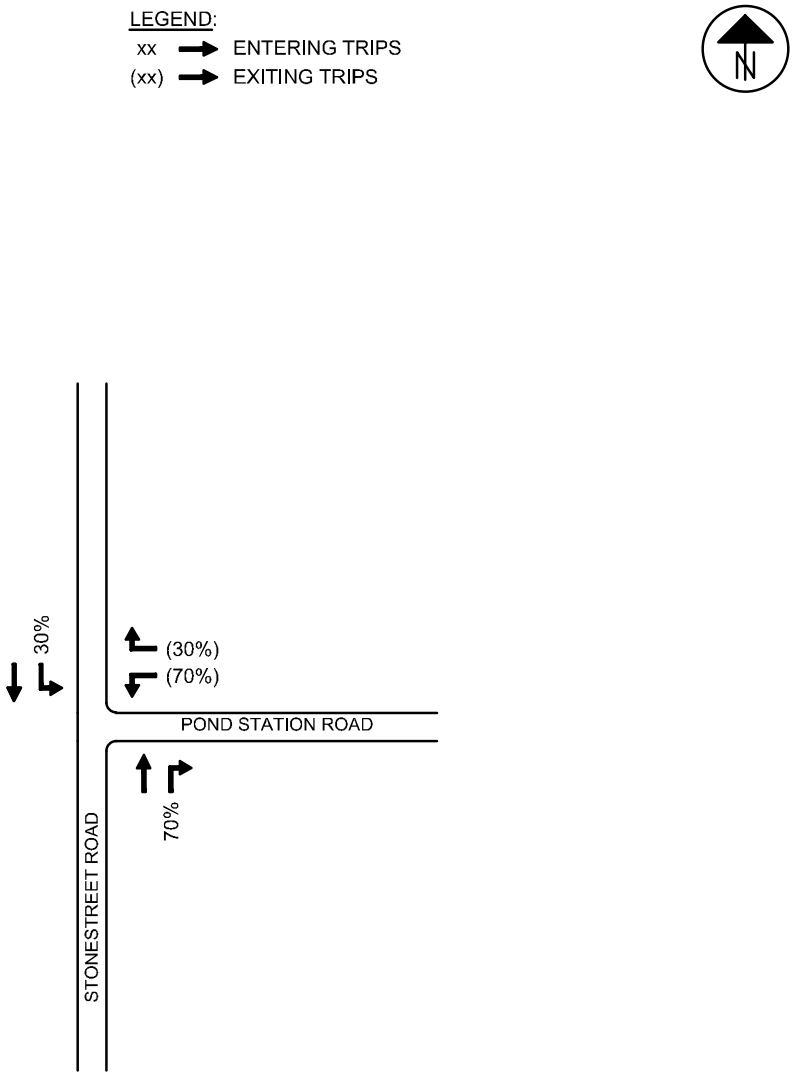
The projected 2021 and 2026 no-build traffic volumes were added to the proposed warehouse facility traffic volumes to get the projected 2021 and 2026 build traffic volumes. The projected 2021 and 2026 build traffic volumes are shown in Figure 4H & 4I respectively.



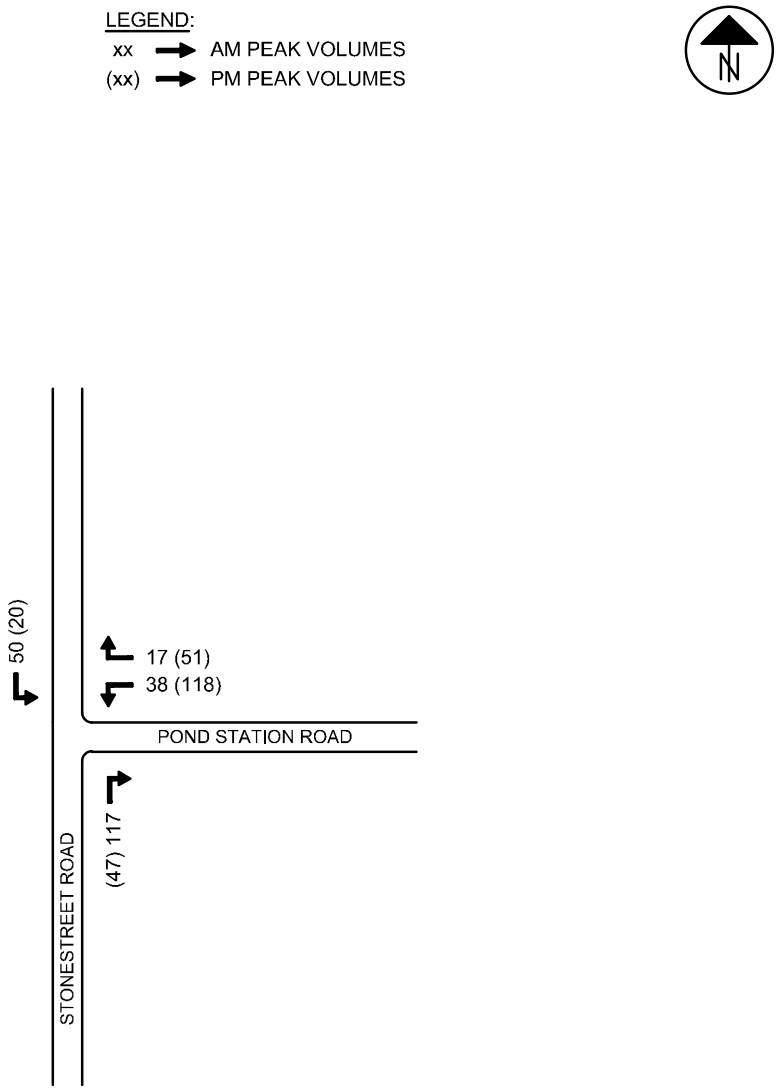
2021 Projected Background Traffic Volumes



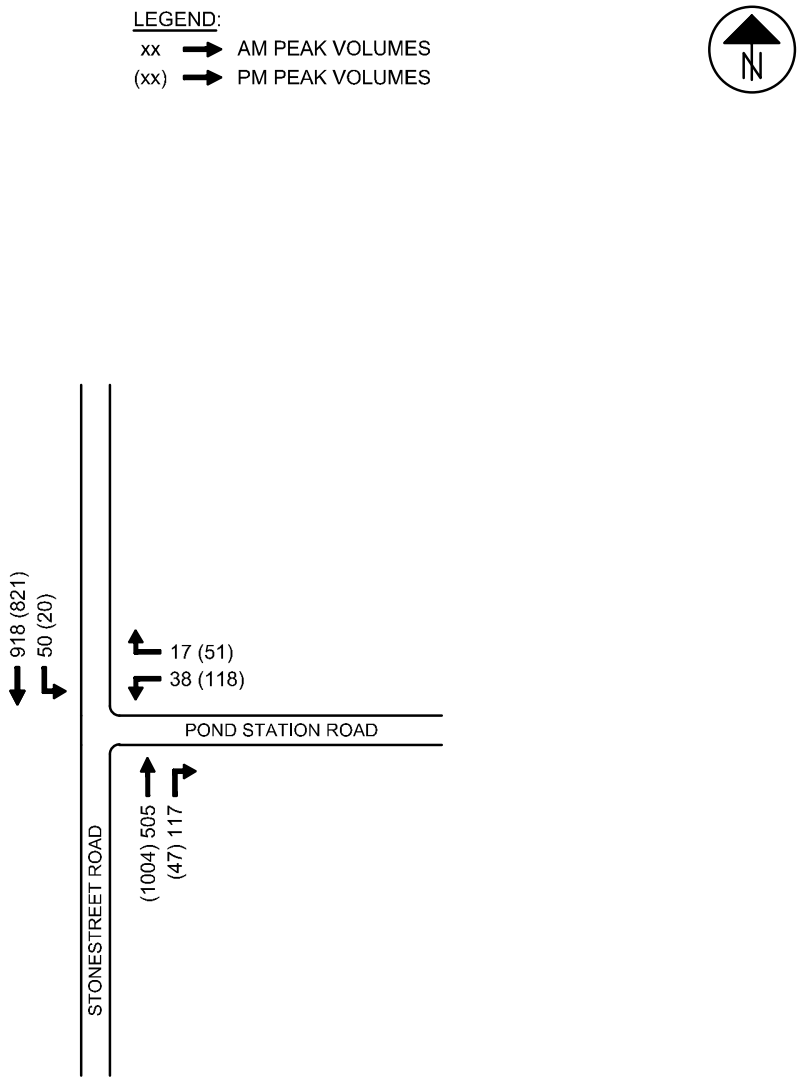
2026 Projected Background Traffic Volumes



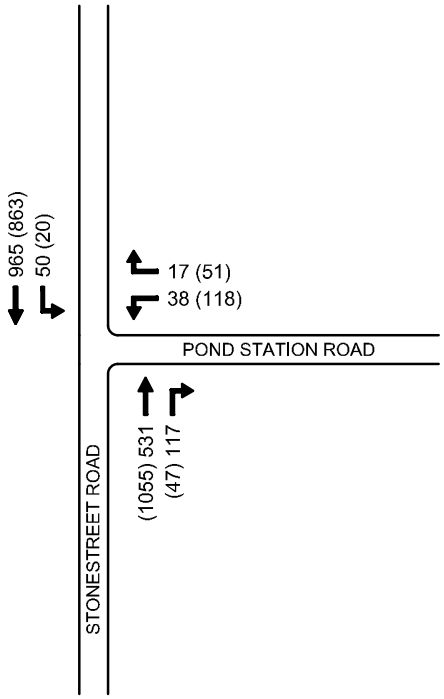
No-Build Trip Distribution



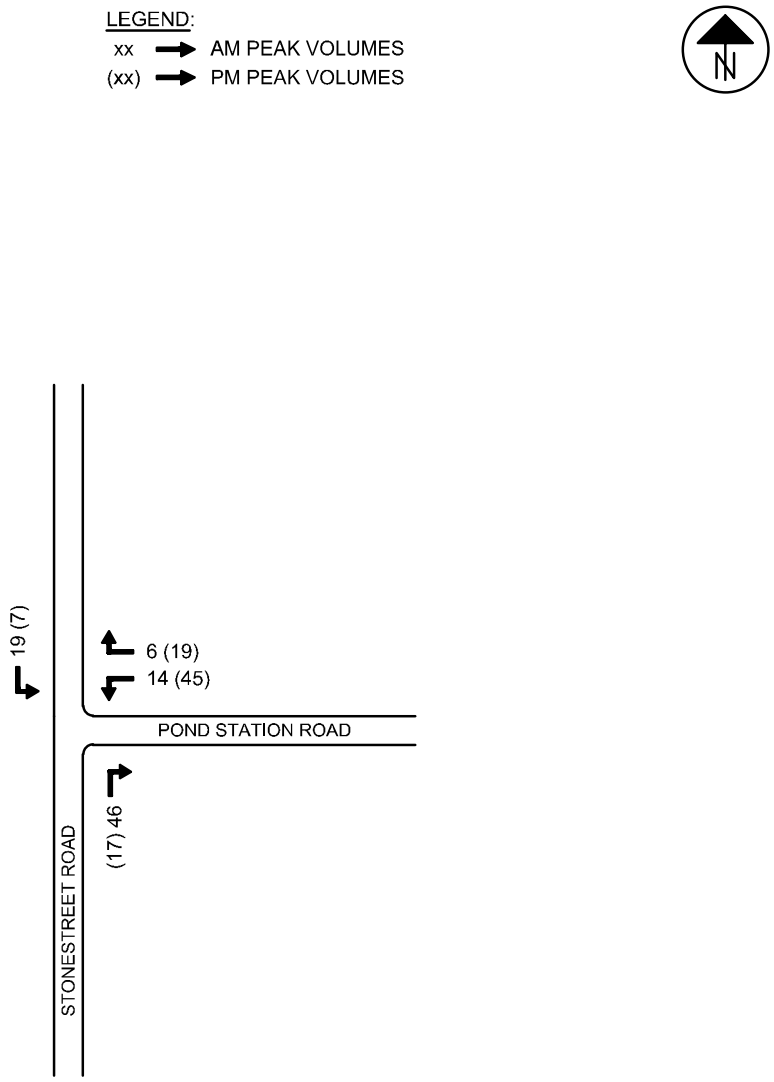
Estimated Trips Entering and Exiting Pond Station Road



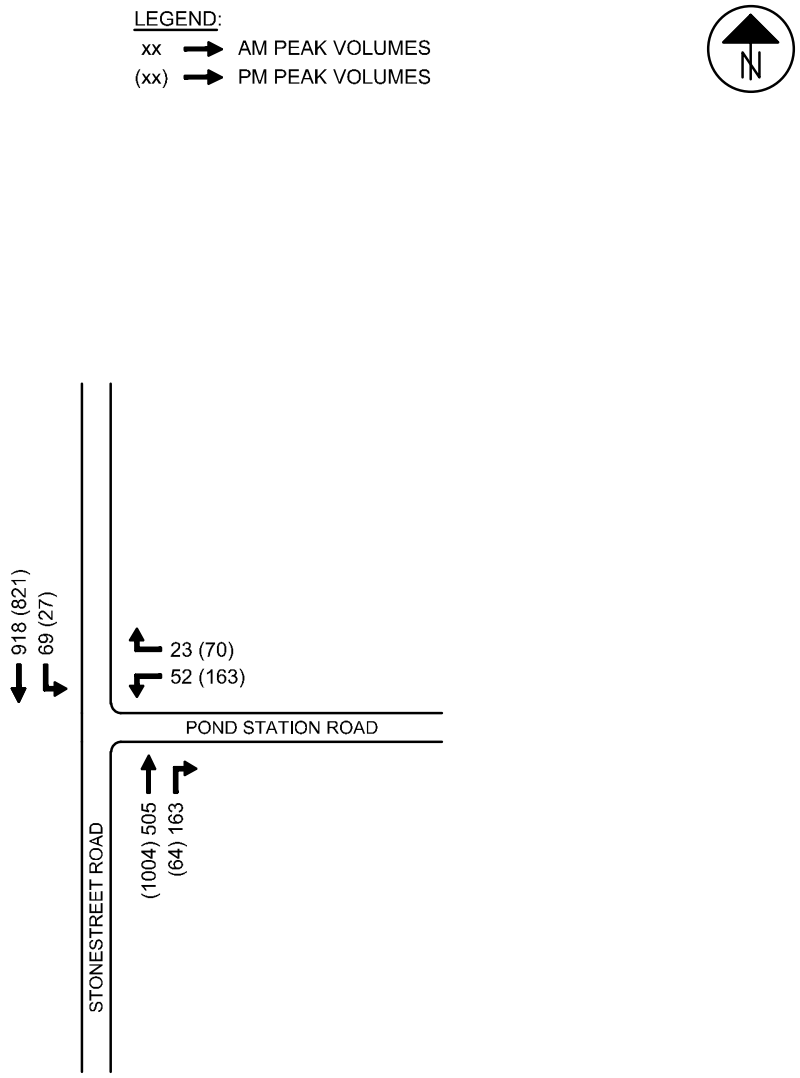
2021 No-Build Traffic Volumes



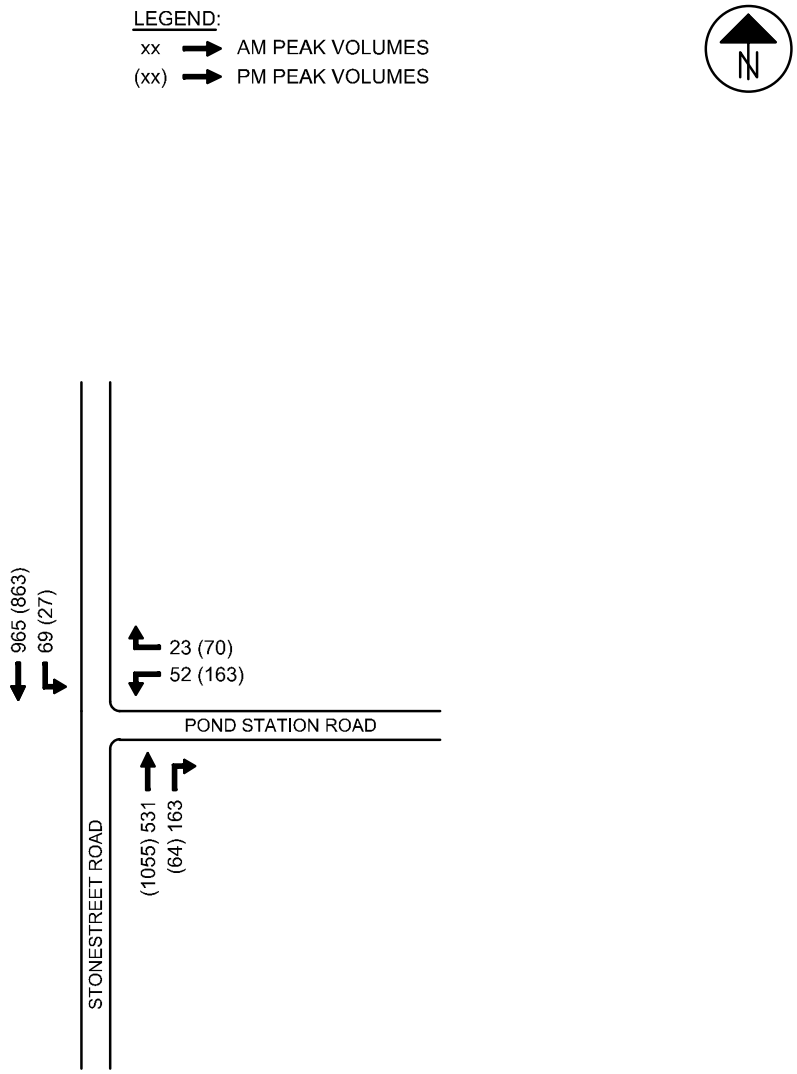
2026 No-Build Traffic Volumes



Site generated Traffic Volumes



2021 Build Traffic Volumes



2026 Build Traffic Volumes

Projected opening year and future design year no-build and build scenario traffic volumes were analyzed at the study intersection to determine the impacts of the proposed school project. Highway Capacity Software was used to determine the Level of Service (LOS). The LOS represents an intersection's measure of effectiveness and is used to determine the impacts on the intersection from the proposed development. LOS values range from "A" (best) to "F" (failing).

5.1 CAPACITY ANALYSES

The projected traffic volumes were analyzed, using Highway Capacity Software, on the study intersection for the existing intersection configuration. The capacity analyses results for the opening year and future design year no-build and build scenarios are presented in Table 5A. The capacity analysis reports are provided in Appendix D of this report.

		Eastbound			Westbound			Northbound			Southbound			INT.
		LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	
Stonestreet Road & Pond Station Road Intersection, 2021, No-Build	AM				51.6 F						9.2 A			
	PM				720.0 F						11.1 B			
Stonestreet Road & Pond Station Road Intersection, 2021, Build	AM				77.7 F						9.5 A			
	PM				1160.7 F						11.3 B			
Stonestreet Road & Pond Station Road Intersection, 2026, No-Build	AM				61.1 F						9.3 A			
	PM				891.6 F						11.5 B			
Stonestreet Road & Pond Station Road Intersection, 2026, Build	AM				97.4 F						9.6 A			
	PM				1404.1 F						11.7 B			

Table 5A: Capacity Analyses Summary with Existing Stop Sign Control

According to the analysis, capacity analyses with existing signal control indicated that the vehicles exiting the Pond Station Road onto Stonestreet Road are expected to operate at LOS "F" during the 2021 and 2026 peak hour no-build and build scenarios. The southbound left-turning vehicles from Stonestreet Road onto Pond Station Road are expected to operate at no worse than LOS "B" during the 2021 and 2026 peak hour no-build and build scenarios.

To mitigate the delays for the vehicles exiting Pond Station Road, additional analyses were done with a traffic signal at the intersection of Stonestreet Road and Pond Station Road. These analyses indicated that the individual movements are expected to operate at no worse than LOS "D" for the 2026 AM and PM peak hour build scenarios. The capacity analyses results presented in Table 5B. The capacity analysis reports are included in Appendix E of this report.

		Eastbound			Westbound			Northbound			Southbound			INT.
		LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	
Stonestreet Road & Pond Station Road Intersection, 2026, Build, Signalized	AM				20.4 C				8.4 A	6.4 A	13.0 B	30.8 C		20.9 C
	PM				39.8 D				29.3 C	5.1 A	35.0 D	12.9 B		23.5 C

Table 5B: Capacity Analyses Summary with a Traffic Signal at Intersection of Stonestreet Road & Pond Station Road

5.2 TRAFFIC SIGNAL WARRANT ANALYSIS

Traffic signal warrant analysis was performed at the intersection of Stonestreet Road and Pond Station Road in accordance with the Manual of Uniform Traffic Control Devices. According to the analysis, a traffic signal is warranted by the peak hour signal warrant. The traffic signal analysis report is included in Appendix F of this report.

5.3 EVALUATION OF THE PEDESTRIAN CROSSING AT THE LOUISVILLE LOOP

The Louisville Loop is a network of shared-use paths with emphasis on bike lanes and soft surface trails on roadways. In the area of the proposed development, the Loop is proposed to run along the south side of Pond Station Road from Stonestreet Road to a point approximately 200 feet east of the access to the existing Copart facility, at which point, the path crosses Pond Station Road and runs along the south side of CSX Railroad. Per the preliminary alignment plan provided by the City of Louisville's consultant, the path is proposed to cross Pond Station Road within the curve just east of the Copart access. As part of the Louisville Loop design process, special attention will need to be given to locating the crossing at the point that provides the best visibility from each roadway approach as well as clearing trees and providing adequate warning signs and markings to warn drivers of the crossing. Consideration should also be given to measures that will reduce vehicle speeds prior to reaching the crossing point. Vehicles traveling to and from the proposed warehouse facility at 3101 Pond Station Road are expected to be the only vehicles crossing the proposed path. Based on the ITE Trip Generation calculations in this study, it is estimated that there will be 85 vehicles crossing the path during the AM peak and 88 vehicles crossing the path during the PM peak. The times that the highest levels of delay are expected are during the shift change times for the warehousing facility. Based on these relatively low volumes, it is not anticipated that bicyclists

and pedestrians will have significant difficulty finding gaps in which to make their crossings. The proposed location where the Louisville Loop crosses the Pond Station Road is shown in Appendix G.

6.1 FINDINGS

The following findings were made during the traffic impact study process:

1. Capacity analyses with existing stop sign control indicated that the vehicles exiting Pond Station Road onto Stonestreet Road are expected to operate at LOS “F” during the 2021 and 2026 peak hour no-build and build scenarios. The southbound left-turning vehicles from Stonestreet Road onto Pond Station Road are expected to operate at no worse than LOS “B” during the 2021 and 2026 peak hour no-build and build scenarios.
2. Traffic signal warrant analyses at the intersection of Stonestreet Road and Pond Station Road indicated a traffic signal is warranted in accordance with the peak hour signal warrant of the Manual of Uniform Traffic Control Devices (MUTCD), 2009.
3. Additional capacity analyses with a traffic signal at the intersection of Stonestreet Road and Pond Station Road indicated that the individual movements are expected to operate at no worse than LOS “D” for both the 2021 and 2026 AM and PM peak hour build scenarios. The volume to capacity ratio for the northbound approach on Stonestreet Road is expected to be 0.958 for 2026 PM peak hour build scenario.
4. Per the preliminary alignment plan provided by the City of Louisville's consultant, the planned Louisville Loop is proposed to cross Pond Station Road within the curve just east of the Copart access. As part of the Louisville Loop design process, special attention will need to be given to locating the crossing at the point that provides the best visibility from each roadway approach as well as clearing trees and providing adequate warning signs and markings to warn drivers of the crossing. Consideration should also be given to measures that will reduce vehicle speeds prior to reaching the crossing point. Vehicles traveling to and from the proposed warehouse facility at 3101 Pond Station Road are expected to be the only vehicles crossing the proposed path. Based on these relatively low volumes, it is not anticipated that bicyclists and pedestrians will have significant difficulty finding gaps in which to make their crossings.

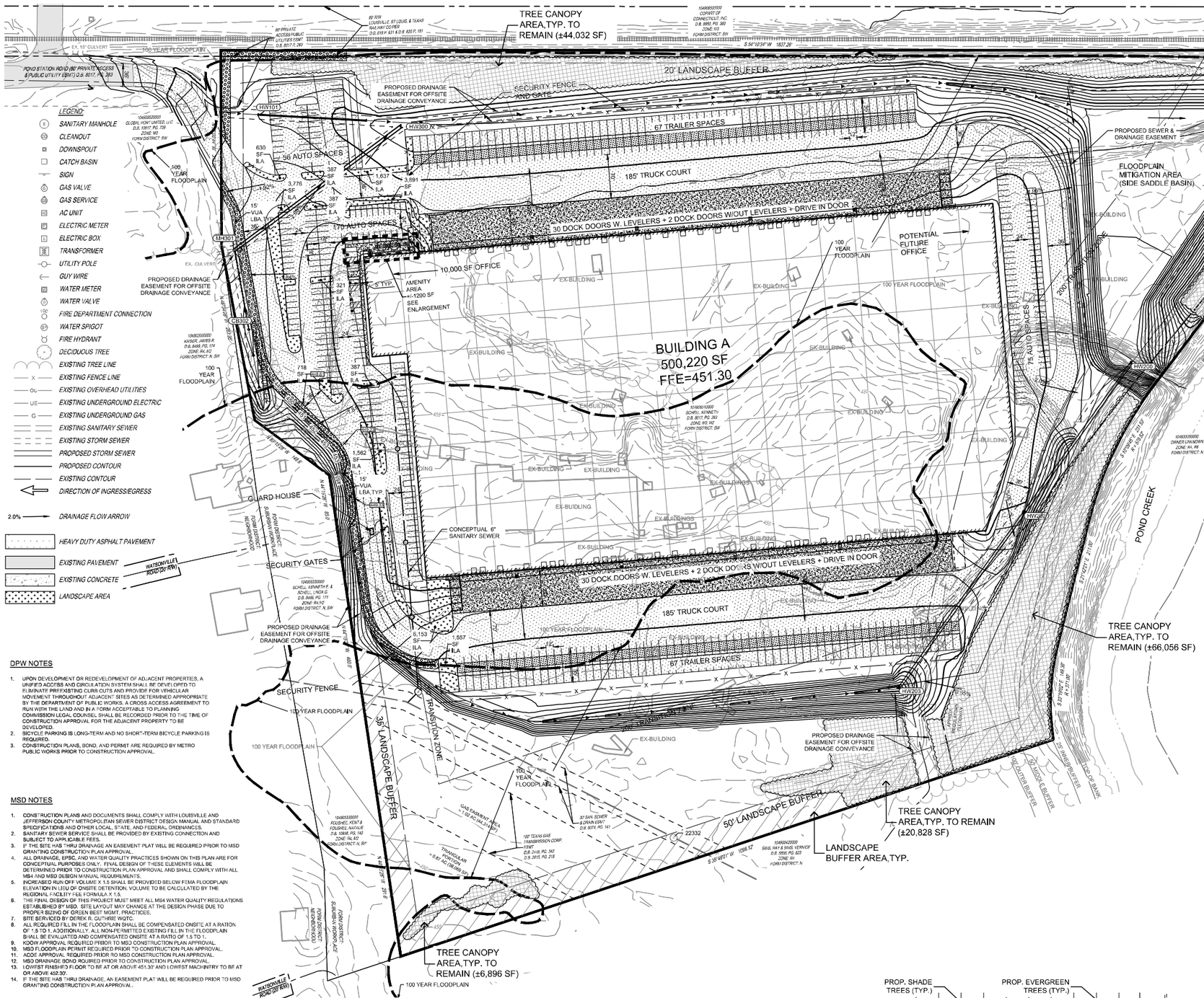
6.2 RECOMMENDATIONS

The following improvements are recommended to mitigate the impacts of the construction of new warehouse facility: :

1. Site access should be provided via the east end of Pond Station Road.
2. A two-phase traffic signal is recommended at the intersection of Stonestreet Road and Pond Station Road. Due to the proximity of the existing railroad crossing across Stonestreet Road just north of Pond Station Road, the signal will need to be designed to provide railroad preemption upon notification of an approaching train.
3. Because of high volume to capacity ratios on Stonestreet Road with the installation of a traffic signal at Pond Station Road, local public agencies should consider the widening of Stonestreet Road in the near future to provide two travel lanes in each direction.

Preliminary Site Plan

INSPIRED DESIGN ▲ PEOPLE CREATIVE ▲ TRANSFORMING COMMUNITIES


TREE CANOPY AREA,TYP. TO REMAIN (±44,032 SF)
20' LANDSCAPE BUFFER
TREE CANOPY AREA,TYP. TO REMAIN (±16,554 SF)
PROPOSED DRAINAGE EASEMENT FOR OFFSITE DRAINAGE CONVEYANCE
SECURITY FENCE AND GATE
67 TRAILER SPACES
56 AUTO SPACES
185' TRUCK COURT
30 DOCK DOORS W. LEVELERS + 2 DOCK DOORS W/OUT LEVELERS + DRIVE IN DOOR
170 AUTO SPACES
10,000 SF OFFICE
AMENITY AREA +-1200 SF SEE ENLARGEMENT
BUILDING A
500,220 SF
FFE=451.30
POTENTIAL FUTURE OFFICE
PROPOSED SEWER & DRAINAGE EASEMENT
FLOODPLAIN MITIGATION AREA (SIDE SADDLE BASIN)
TREE CANOPY AREA,TYP. TO REMAIN (±17,082 SF)
75 AUTO SPACES
200' TRANSITION ZONE
POND CREEK
GUARD HOUSE
SECURITY GATES
CONCEPTUAL 6" SANITARY SEWER
100 YEAR FLOODPLAIN
EX. CULVERT
EX. 15" CULVERT
POND STATION ROAD (60' PRIVATE ACCESS & PUBLIC UTILITY ESMT) D.B. 8017, PG. 283
60' PRIVATE ACCESS/PUBLIC UTILITIES ESMT. D.B. 8017 P. 283
60' R/W LOUISVILLE, ST LOUIS, & TEXAS RAILWAY COMPANY D.B. 616 P. 621 & D.B. 633 P. 181
S 54°10'31" W 1837.26'
TREE CANOPY AREA,TYP. TO REMAIN (±66,056 SF)
PROPOSED DRAINAGE EASEMENT FOR OFFSITE DRAINAGE CONVEYANCE
25' INNER BUFFER
50' OUTER BUFFER
TOP OF BANK
50' LANDSCAPE BUFFER
35' LANDSCAPE BUFFER
TRANSITION ZONE
TREE CANOPY AREA,TYP. TO REMAIN (±20,828 SF)
LANDSCAPE BUFFER AREA,TYP.
TREE CANOPY AREA,TYP. TO REMAIN (±6,896 SF)
WATSONVILLE ROAD (80' R/W)
22332
S 35°48'01" W 1098.12'
S 37°05'57" W 1537.26'
S 37°05'57" W 1537.26'
S 37°05'57" W 1537.26

Proposed Copart Facility Expansion North of Pond Station Road

GENERAL NOTES:

1. DOMESTIC WATER SUPPLY:
   SUBJECT SITE IS SERVED BY THE LOUISVILLE WATER COMPANY. ANY NECESSARY WATER SYSTEM IMPROVEMENTS REQUIRED TO SERVICE THE DEVELOPMENT SHALL BE AT THE OWNER/DEVELOPER'S EXPENSE.
2. TREE PRESERVATION:
   A TREE PRESERVATION PLAN SHALL BE PROVIDED TO THE PLANNING COMMISSION'S STAFF LANDSCAPE ARCHITECT FOR APPROVAL PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITIES ON THE SITE.
3. PROTECTION OF TREES TO BE PRESERVED:
   CONSTRUCTION FENCING SHALL BE ERECTED PRIOR TO ANY GRADING OR CONSTRUCTION ACTIVITIES BEGINNING COMPLETION OF BOTH SYSTEMS OF TREES TO BE PRESERVED. THE FENCING SHALL ENCLOSE THE AREA BENEATH THE DRIP LINE OF THE TREE CANOPY AND SHALL REMAIN IN PLACE UNTIL ALL CONSTRUCTION IS COMPLETE. NO PARKING, MATERIAL STORAGE OR CONSTRUCTION ACTIVITIES SHALL BE PERMITTED WITHIN THE FENCED AREA.
4. A LANDSCAPE AND TREE CANOPY PLAN PER CHAPTER 10 OF THE LDC SHALL BE PROVIDED AS REQUIRED PRIOR TO ISSUANCE OF BUILDING PERMIT.
5. THE DEVELOPMENT LIES IN THE PLEASURE RIDGE PARK FIRE DISTRICT.
6. ALL LUMINAIRES SHALL BE AIMED, DIRECTED OR FOCUSED SUCH AS TO NOT CAUSE DIRECT LIGHT FROM THE LUMINAIRE TO BE DIRECTED TOWARDS RESIDENTIAL USES OR PROJECTED OPEN SPACES (IE. CONSERVATION EASEMENTS, GREENWAYS OR PARKWAYS) ON ADJACENT OR NEARBY PARCELS, OR TO CREATE GLARE PERCEPTIBLE ON PUBLIC STREETS AND RIGHT-OF-WAYS PER CHAPTER 4.1.3. OF THE LDC.
7. ALL DUMPSTER PADS, TRANSFORMERS, AC UNITS, GENERATOR PADS TO BE SCREENED PER CHAPTER 10 OF THE LDC.
8. AS PREVIOUSLY APPROVED AN ALTERNATIVE LANDSCAPE PLAN IS PROPOSED AS ALLOWED BY 10.2.13DP THE LDC. THE EXISTING VEGETATION SHALL BE PRESERVED ALONG THE NORTH AND NORTHWEST PROPERTY LINE AS SHOWN ON THE PLAN AS AN ALTERNATIVE TO PROVIDING THE 6' BERM REQUIRED BY CHAPTER 10, PART 2. THE EXISTING VEGETATION WILL BE SUPPLEMENTED WITH PLANT MATERIAL AS REQUIRED.
9. THE AREA ALONG POND CREEK IS DESIGNATED AS A PROPOSED GREENWAY PER CORNERSTONE 2020 CORE GRAPHIC 7. A 50' PEDESTRIAN EASEMENT SHALL BE PROVIDED AS REQUESTED BY LOUISVILLE METRO PARKS DEPARTMENT.
10. ALL SIGNAGE SHALL COMPLY WITH THE REQUIREMENTS OF CHAPTER 8 OF THE LDC. A SHARED BUSINESS SIGN IS EXISTING NEAR STONESTREET ROAD TO SERVE ALL THE INDUSTRIAL LOTS ON POND STATION ROAD. A DEVELOPMENT IDENTIFICATION SIGN FOR THIS LOT SHALL BE PROVIDED AT THE POND STATION ROAD ENTRANCE THAT SHALL HAVE A MAXIMUM OF 22' HEIGHT AND 100S.F. AREA.

MSD NOTES:

1. CONSTRUCTION PLANS & DOCUMENTS SHALL COMPLY WITH LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT'S DESIGN MANUAL AND STANDARD SPECIFICATIONS.
2. WASTEWATER:
   SANITARY SEWER WILL CONNECT TO THE DEREK R. GUTHRIE WASTEWATER TREATMENT PLANT BY LATERAL EXTENSION AGREEMENT, SUBJECT TO FEES. SANITARY SEWER CAPACITY TO BE APPROVED BY METROPOLITAN SEWER DISTRICT.
3. DRAINAGE/STORMWATER DETENTION:
   INCREASED RUNOFF AND FLOODPLAIN DISPLACEMENT SHALL BE COMPENSATED AT 1.5:1 ON-SITE IN EXISTING BASIN. DRAINAGE PATTERN DEPICTED BY ARROWS (——►) IS FOR CONCEPT PURPOSES ONLY. FINAL CONFIGURATION AND SIZE OF DRAINAGE PIPES AND CHANNELS SHALL BE DETERMINED DURING THE CONSTRUCTION PLAN DESIGN PROCESS. DRAINAGE FACILITIES SHALL CONFORM TO MSD REQUIREMENTS.
4. AN EPSC PLAN SHALL BE DEVELOPED AND APPROVED IN ACCORDANCE WITH MSD DESIGN MANUAL & STANDARD SPECIFICATIONS PRIOR TO CONSTRUCTION PLAN APPROVAL.
5. A PORTION OF THE SUBJECT PROPERTY LIES WITHIN A FLOOD HAZARD AREA PER FEMA'S FIRM MAPPING (21111C0 106E).
6. NO SITE DISTURBANCE PROPOSED WITH THIS CONDITIONAL USE PERMIT REQUEST. THIS PROJECT WILL BE SUBJECT TO MSD WATER QUALITY REGULATIONS ONCE THE INCREMENTAL AREA OF DISTURBANCE SUMS EQUAL TO OF GREATER THAN 1 ACRE OF DISTURBANCE.
7. KDOW APPROVAL REQUIRED FOR ANY WORK WITH IN THE FEMA FLOODPLAIN LIMITS.
8. ANY REQUIRED FILL IN THE FLOODPLAIN SHALL BE COMPENSATED ON SITE AT A RATIO OF 1.5:1.

PUBLIC WORKS NOTES:

1. COMPATIBLE UTILITY LINES (ELECTRIC, PHONE, CABLE) SHALL BE PLACED IN A COMMON TRENCH UNLESS OTHERWISE REQUIRED BY APPROPRIATE AGENCIES.
2. THE DEVELOPER IS RESPONSIBLE FOR ANY UTILITY RELOCATION ON THE PROPERTY.
3. SIDEWALK FEE-IN-LIEU WAS APPLIED WITH PREVIOUS DEVELOPMENT OF THE SITE CASE # 16867, FOR THE SIDEWALK REQUIREMENT ALONG STONESTREET ROAD.

BEARINGS & DISTANCES

(1)	N 29°20'20" E	262.40'	R=303.98'
(2)	N 13°22'09" E	90.40	R=290.55'
(3)	N 28°10'45" E	114.17	R=695.21'
(4)	N 28°32'41" E	86.22'	R=569.46'
(5)	N 27°29'14" E	109.94'	R=954.59'
(6)	N 32°50'09" E	63.40'	
(7)	N 36°36'09" E	79.50'	
(8)	N 51°39'09" E	78.60'	
(9)	N 35°13'01" W	77.68'	
(10)	S 49°36'04" W	33.92'	
(11)	N 35°13'01" W	97.13'	

LIGHTING NOTES:

1. ALL LUMINAIRES SHALL BE AIMED, DIRECTED, OR FOCUSED SUCH AS TO NOT CAUSE DIRECT LIGHT FROM THE LUMINAIRES TO BE DIRECTED TOWARD RESIDENTIAL USES OR PROTECTED OPEN SPACES (I.E., CONSERVATION EASEMENTS, GREENWAYS, PARKWAYS) ON ADJACENT OR NEARBY PARCELS, OR TO CREATE GLARE PERCEPTIBLE TO PERSONS OPERATING MOTOR VEHICLES OR PUBLIC STREETS AND RIGHT OF WAY.
2. WITHIN THE TRANSITION ZONE, ANY LUMINAIRES WITH A LAMP OR LAMPS RATED AT A TOTAL OF MORE THAN 1800 LUMENS, AND ALL FLOOD OR SPOT LUMINAIRES WITH A LAMP OR LAMPS RATED AT A TOTAL OF MORE THAN 900 LUMENS SHALL BE MOUNTED AT A HEIGHT EQUAL TO OR LESS THAN THIRTY (30) FEET UNLESS OTHERWISE APPROVED BY THE PLANNING COMMISSION.
3. WITHIN THE TRANSITION ZONE, LUMINAIRES THAT EMIT MORE THAN 7,300 LUMENS SHALL BE FULLY-SHIELDED LUMINAIRES SO THAT THEY DO NOT EMIT ANY DIRECT LIGHT ABOVE A HORIZONTAL PLANE THROUGH THE LOWEST DIRECT-LIGHT-EMITTING PART OF THE LUMINAIRES.
4. THE LEVEL OF LIGHTING RESULTANT FROM LUMINAIRES INSTALLED ON A SUBJECT SITE SHALL NOT EXCEED ONE-HALF (0.5) FOOT-CANDLES AT ANY PROPERTY BORDER ADJOINING A LOW- TO MEDIUM-DENSITY RESIDENTIALLY ZONED OR USED PROPERTY BORDER, AND 1.0 FOOT-CANDLES ON ANY HIGH-DENSITY RESIDENTIALLY ZONED OR USED PROPERTY BORDER, OR PUBLIC RIGHT OF WAY PARCEL OF LAND.

WAIVER APPROVED AT DRC NOVEMBER 6, 2006:

1. A WAIVER IS APPROVED OF 5.9.2.A.1.c.1 OF THE LDC TO NOT PROVIDE A SIDEWALK FROM STONE STREET ROAD TO THE BUILDING ENTRANCE.
2. A WAIVER IS APPROVED OF 10.2.4.B TO ALLOW THE EXISTING 80' PRIVATE ACCESS AND UTILITY EASEMENT TO COMPLETELY OVERLAP THE 15' LANDSCAPE BUFFER AREA REQUIRED TO BUFFER THE PARKING FROM POND STATION ROAD.

SITE DATA:

EXISTING FORM DISTRICT	SUBURBAN WORKPLACE
EXISTING ZONING	M-3
EXISTING LAND USE	ABANDONED TRANSFER FACILITY
PROPOSED LAND USE	VEHICLE STORAGE
TOTAL LAND AREA	42.88± AC.
BUILDING AREA	
OFFICE	5,200 ± S.F.
WAREHOUSE	119,648 ± S.F.
TOTAL	124,848 ± S.F.
FLOOR AREA RATIO (MAX. ALLOWED 4.0)	0.07
PARKING REQUIRED	
OFFICE	
MINIMUM (1 SPACE/300 S.F.)	10 SPACES
MAXIMUM (1 SPACE/200 S.F.)	26 SPACES
WAREHOUSE	25 SPACES
NO ADDITIONAL EMPLOYEES (NO ADDITIONAL PARKING REQUIRED)	
PARKING PROVIDED	91 SPACES
CAR PARKING	

SITE DISTURBANCE:

EXISTING IMPERVIOUS AREA	743,036± SF.
PROPOSED IMPERVIOUS AREA	0± S.F.
TOTAL	743,036± SF.

LEGEND

- EXISTING CONTOUR
- EXISTING TREE LINE
- EXISTING RAILROAD
- OHE — EXISTING OVRHEAD UTILITY
- EXISTING UNDERGROUND UTILITY
- EXISTING UNDERGROUND ELECTRIC
- EXISTING WATER
- EXISTING GAS
- EXISTING GAS SERVICE
- EXISTING LIGHT POLE
- EXISTING UTILITY POLE
- EXISTING GUY WIRE
- EXISTING FIRE HYDRANT
- EXISTING WATER METER
- EXISTING GAS METER
- EXISTING GAS VALVE
- EXISTING MAILBOX
- EXISTING DITCH
- EXISTING STORM PIPE
- EXISTING SANITARY SEWER W/ MANHOLE
- EXISTING GUARDRAIL
- EXISTING SIGN
- 100 YR. FLOODPLAIN
- FLOW ARROW
- SF — PROPOSED SILT FENCE
- PROPOSED TREE LINE
- PROPOSED RAILROAD
- PROPOSED DITCH
- PROPOSED STORM SYSTEM
- PROPOSED SANITARY SEWER
- PROPOSED INTERIOR LANDSCAPE AREA
- TREE CANOPY TO BE PRESERVED (SEE NOTE #9)

LANDSCAPE DATA:

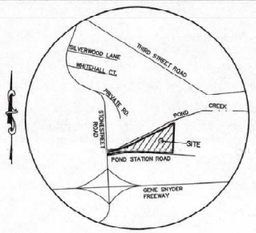
V.U.A.

LOADING/MANEUVERING & STORAGE	519,800± S.F.
EMPLOYEE/VISITOR PARKING & ENTRANCE DRIVE	67,110± S.F.
TOTAL V.U.A.	586,910± S.F.
I.L.A. REQUIRED* (7.5% X VUA)	5,034 S.F.
I.L.A. PROVIDED	5,239± S.F.
*N.I.C. LOADING/MANEUVERING & STORAGE AREAS	

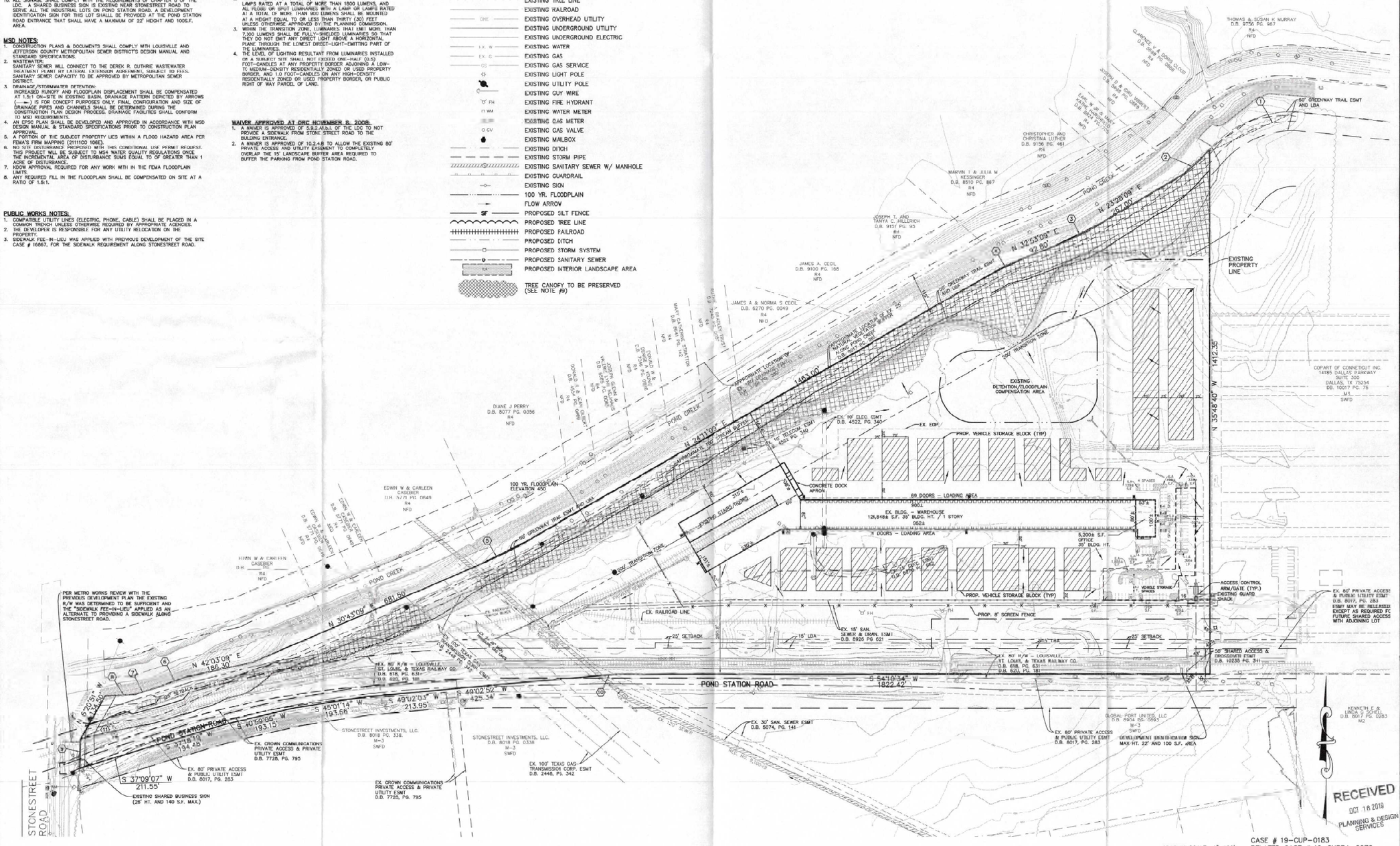
TREE CANOPY DATA:

GROSS SITE AREA	1,867,853± S.F.
TREE CANOPY CATEGORY	CLASS D
EXISTING TREE CANOPY	361,658± S.F. (19%)
EXISTING TREE CANOPY TO BE PRESERVED	250,038± S.F. (13.3%)
TOTAL TREE CANOPY REQUIRED	186,785± S.F. (10%)
TOTAL TREE CANOPY PROVIDED	243,942± S.F. (13.3%)

*TREE CANOPY DEPICTED ON PLAN PER MSD LOJIC MAPPING, AERIAL PHOTO OR FIELD SURVEY. TREE CANOPY CALCULATIONS BASED UPON TREE AREAS SHOWN.



LOCATION MAP
NO SCALE



GRAPHIC SCALE 1"=100'
0 50 100 200

CASE # 19-CUP-0183
RELATED CASE # 19-CUPPA-0076, 16867 & 3-18-06
MSD WM # 8883

RECEIVED
OCT 16 2019
PLANNING & DESIGN SERVICES

19 - CUP-018

DEVELOPER
COPART, INC.
14185 DALLAS PKWY, STE 300
DALLAS, TX 75254

OWNER
FIRST INDUSTRIAL DEVELOPMENT
9450 W. BRYN MAWR, STE 750
ROSEMONT, IL 60018

MINDEL SCOTT

CONDITIONAL USE PERMIT PLAN
FOR SCRAP METAL PROCESSING FACILITIES & JUNK YARDS
& CATEGORY 3 DEVELOPMENT PLAN
COPART
3900 POND STATION ROAD LOUISVILLE, KY 40299

Revisions
10/16/19 PDR MSD COMMENTS

Vertical Scale: N.
Horizontal Scale:
Date: 09-23-1
Job Number: 236

Sheet
1
of

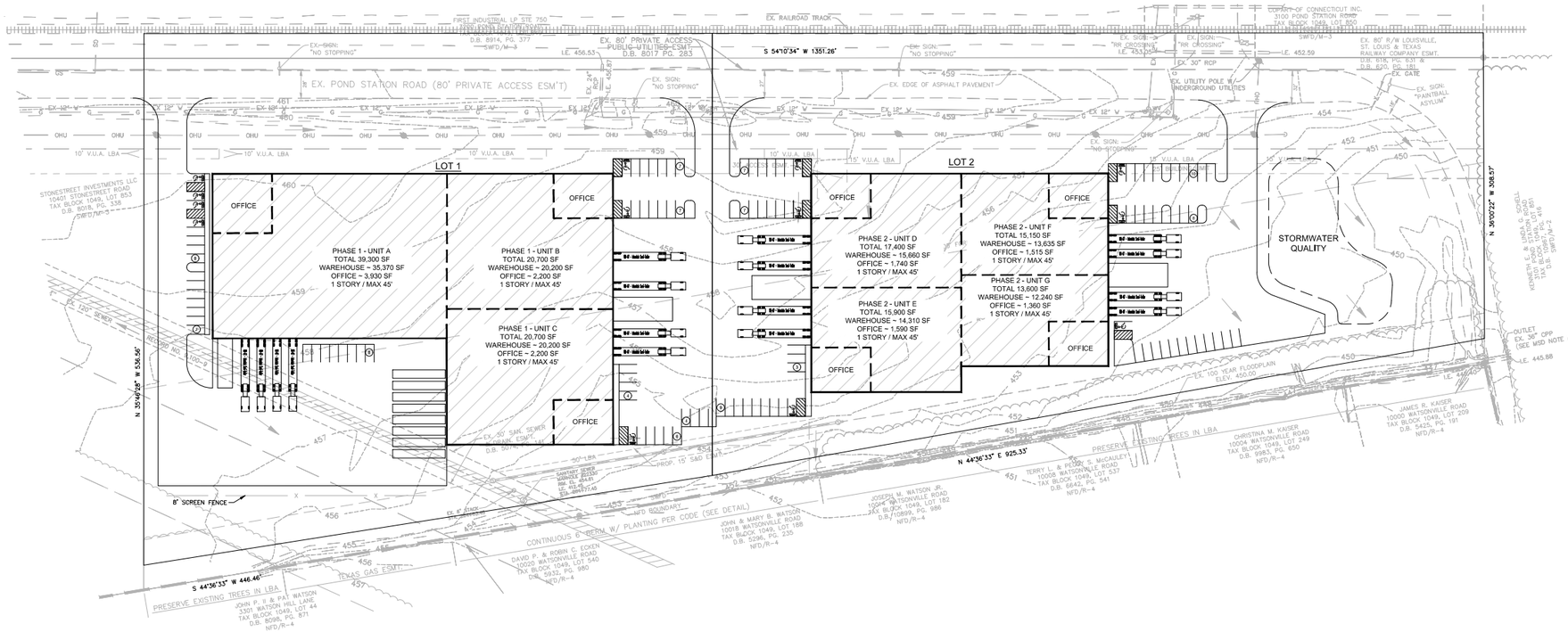
L:\dwg projects (12)\19CP2842-KDC COPART JCCOTO\CVD\WD\PLANNING\PLAN-KDC09\2019-10-16.dwg, 10/16/2019 1:13:59 PM

Potential Future Offsite Warehouses(85,100 sf & 62,050 sf)
South of Pond Station Road

LEGEND

- XXX — EXISTING CONTOUR
- EXISTING TREE MASS
- EX. W — EXISTING WATER LINE W/ SIZE
- EX. G — EXISTING GAS W/ SIZE
- EX OHU — EXISTING OVERHEAD UTILITIES
- EXISTING CATCH BASIN W/ HEADWALL
- EXISTING TOP OF BANK
- EXISTING TOE OF SLOPE/DITCH
- S — EXISTING SANITARY MANHOLE W/PIPE
- PROPOSED CATCH BASIN W/ HEADWALL
- PROPOSED DITCH/SWALE
- PROPOSED SANITARY MANHOLE W/PIPE
- PROPOSED 6" PROPERTY SERVICE CONNECTION
- PROPOSED DRAINAGE ARROW
- REVISED TREE LINE

LOCATION MAP
NO SCALE



SITE STATISTICS - LOT 1:

ZONING	M-3
ACREAGE	6.47± AC
PROPOSED BUILDING AREA	85,100± SF
FLOOR AREA RATIO	0.30
MAX FLOOR AREA RATIO	4.0
MAX PARKING REQUIRED OFFICE	1 SPACE / 200 SF
MIN PARKING REQUIRED OFFICE	1 SPACE / 350 SF
OFFICE AREA (10%)	8,510 SF
OFFICE PARKING MAX	43
OFFICE PARKING MIN	25
MAX PARKING REQUIRED WAREHOUSE	1 SPACE / 1 EMPLOYEE
MIN PARKING REQUIRED WAREHOUSE	1 SPACE / 1,5 EMPLOYEE
WAREHOUSE EMPLOYEES (MAIN AND 2ND SHIFT)	30
WAREHOUSE PARKING MAX	30
WAREHOUSE PARKING MIN	20
BICYCLE PARKING REQUIRED / PROVIDED	1
MAX PARKING REQUIRED	73
MIN PARKING REQUIRED	45
TOTAL PARKING SHOWN	51
(10 WAREHOUSE EMPLOYEES FOR EACH OF 3 BUILDINGS)	

SITE STATISTICS - LOT 2:

ZONING	M-3
ACREAGE	6.75± AC
PROPOSED BUILDING AREA	62,050± SF
FLOOR AREA RATIO	0.21
MAX FLOOR AREA RATIO	4.0
MAX PARKING REQUIRED OFFICE	1 SPACE / 200 SF
MIN PARKING REQUIRED OFFICE	1 SPACE / 350 SF
OFFICE AREA (10%)	6,205 SF
OFFICE PARKING MAX	31
OFFICE PARKING MIN	18
MAX PARKING REQUIRED WAREHOUSE	1 SPACE / 1 EMPLOYEE
MIN PARKING REQUIRED WAREHOUSE	1 SPACE / 1,5 EMPLOYEE
WAREHOUSE EMPLOYEES (MAIN AND 2ND SHIFT)	36
WAREHOUSE PARKING MAX	36
WAREHOUSE PARKING MIN	24
BICYCLE PARKING REQUIRED / PROVIDED	1
MAX PARKING REQUIRED	67
MIN PARKING REQUIRED	42
TOTAL PARKING SHOWN	57
(9 WAREHOUSE EMPLOYEES FOR EACH OF 4 BUILDINGS)	

BEARINGS SHOWN ARE IN RELATION TO KENTUCKY STATE PLANE GRID, SINGLE ZONE NAD 83

1"=50'-0" 50 25 0 50'

811 Know what's below. Call before you dig.

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DATE	DESCRIPTION

BristolGroup ENGINEERING | CONSTRUCTION

WAREHOUSE DISTRIBUTION PARK
STONESTREET SUMMIT
POND STATION ROAD - LOUISVILLE, KY 40272

CONCEPTUAL SITE PLAN

JOB NUMBER | SHEET NUMBER C-1.0

O:\pw_work\Active\8150\002_SPR_C-1.0_Conceptual_Site_Plan.dwg PlotDateMay_15 Jun 2020 - 4:29pm by brian.w Plot Style: Bristol-Full.ctb

Traffic Count Data

Historical Traffic Volume Summary

Station Details:

Sta ID:	056701
Sta Type:	Full Coverage
Map:	MapIt
District:	5
County:	Jefferson
Route:	056-CR-1003L -000
Route Desc:	STONESTREET RD

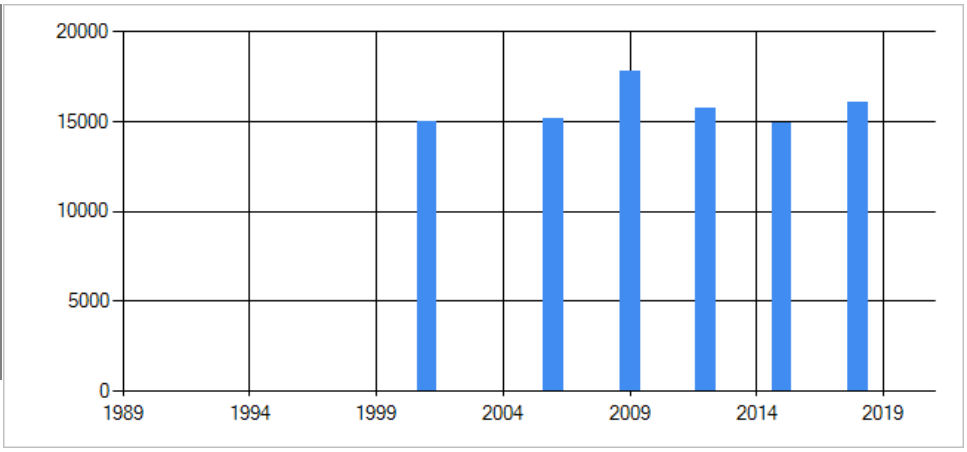
Begin MP:	1.21
Begin Desc:	KY 907 (THIRD STREET ROAD)
End Mp:	2.5170
End Desc:	KY 841 SOUTH RAMP
Impact Year:	
Year Added:	

Newest Count:

AADT:	16078
Year:	2018
% Single:	
% Combo:	
K Factor:	11
D Factor:	55

Definitions:
Sta. ID - Three digit county number + station number
MP - milepoint
Impact Year – year of significant change to traffic pattern within station segment
AADT – Annual Average Daily Traffic – the annualized average 24-hour volume of vehicles on a segment of roadway
% Single – single unit truck volume as a percentage of the AADT
% Combo – combination truck volume as a percentage of the AADT
K Factor – peak hour volume as a percentage of the AADT
D Factor – percentage of peak hour volume flowing in the peak direction

Year	AADT	Year	AADT	Year	AADT
2020		2010		2000	
2019		2009	17800	1999	
2018	16078	2008		1998	
2017		2007		1997	
2016		2006	15200	1996	
2015	14883	2005		1995	
2014		2004		1994	
2013		2003		1993	
2012	15762	2002		1992	
2011		2001	15000	1991	



Trip Generation from the Copart facility in Palmdale, California

The trips for the existing and proposed Copart facility north of the Pond Station Road were estimated based on the counts from a similar Copart facility in Palmdale, California. A trip generation rate of 0.52 trips/ acre was used for AM peak and 0.57 trips/acre was used for the PM peak. The trip generation from the Copart facility in Palmdale, California are shown in the table below:

	Entering Trips	Exiting Trips	Total Trips
AM Peak	30	12	42
PM Peak	18	28	46

ITE Trip Generation Graphs

Proposed Offsite Warehouse South of Pond Station Road with an Approximate Building Area of 62,050 sf

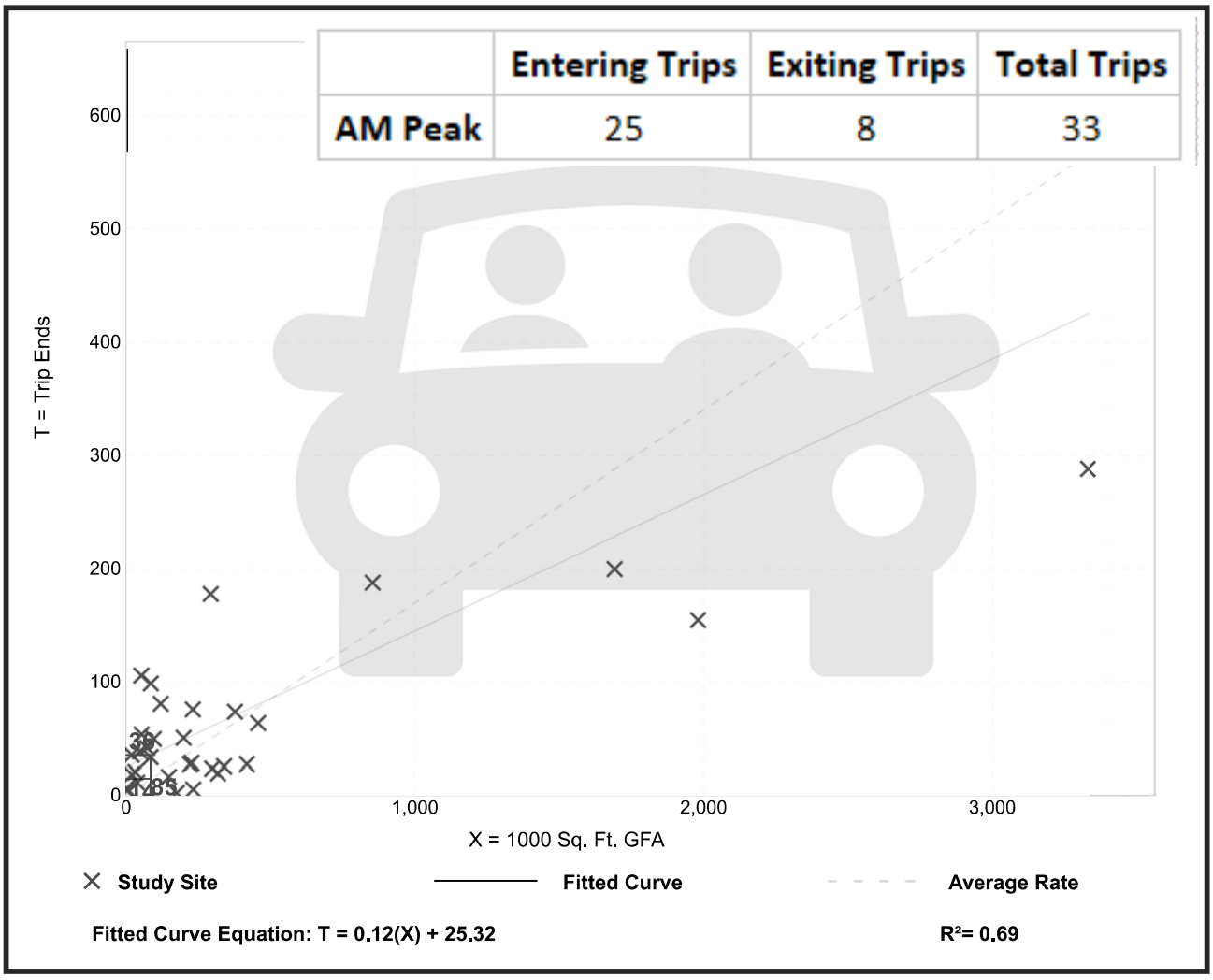
Warehousing
(150)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 34
Avg. 1000 Sq. Ft. GFA: 451
Directional Distribution: 77% entering, 23% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.17	0.02 - 1.93	0.20

Data Plot and Equation



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Proposed Offsite Warehouse South of Pond Station Road with an Approximate Building Area of 62,050 sf

Warehousing
(150)

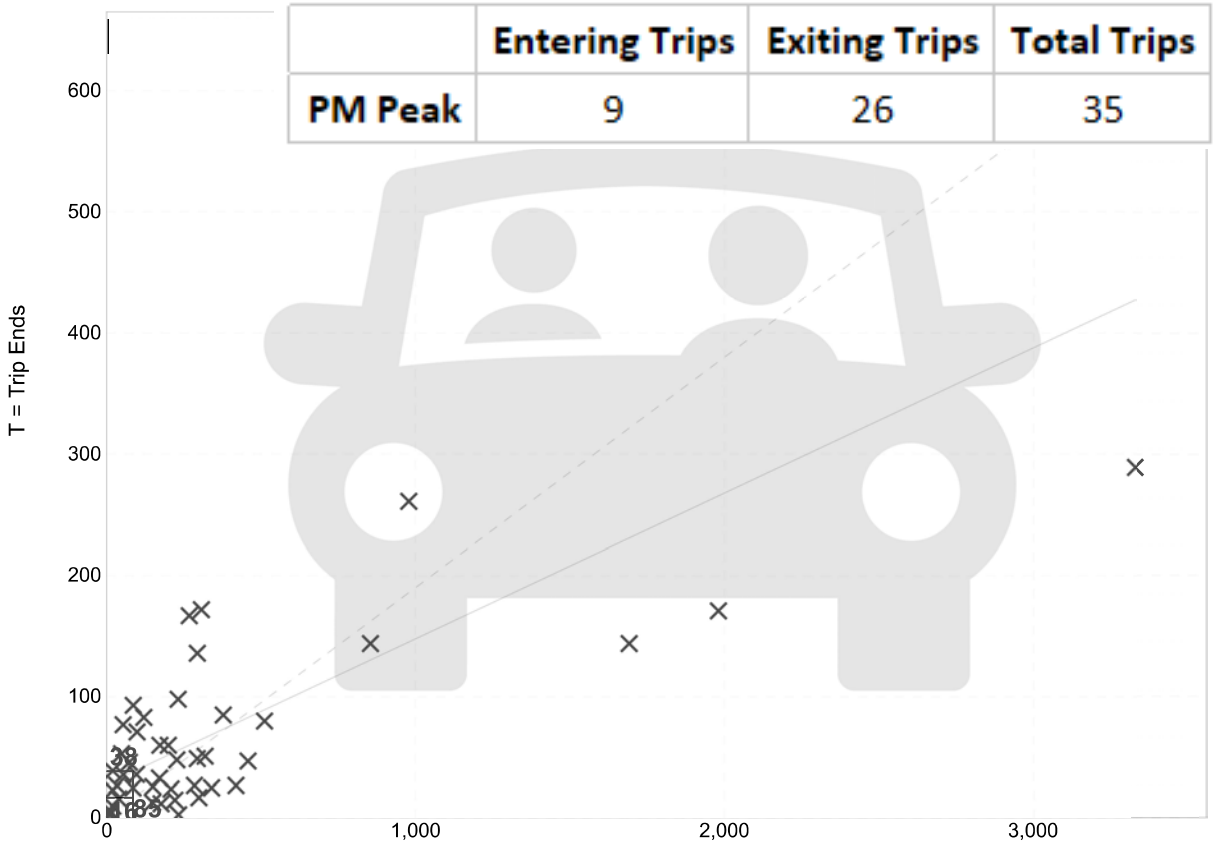
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 47
Avg. 1000 Sq. Ft. GFA: 400
Directional Distribution: 27% entering, 73% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.19	0.01 - 1.80	0.18

Data Plot and Equation

	Entering Trips	Exiting Trips	Total Trips
PM Peak	9	26	35



Fitted Curve Equation: T = 0.12(X) + 27.82 **R^2= 0.65**

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Proposed Offsite Warehouse south of Pond Station Road with an Approximate Building Area of 85,100 sf

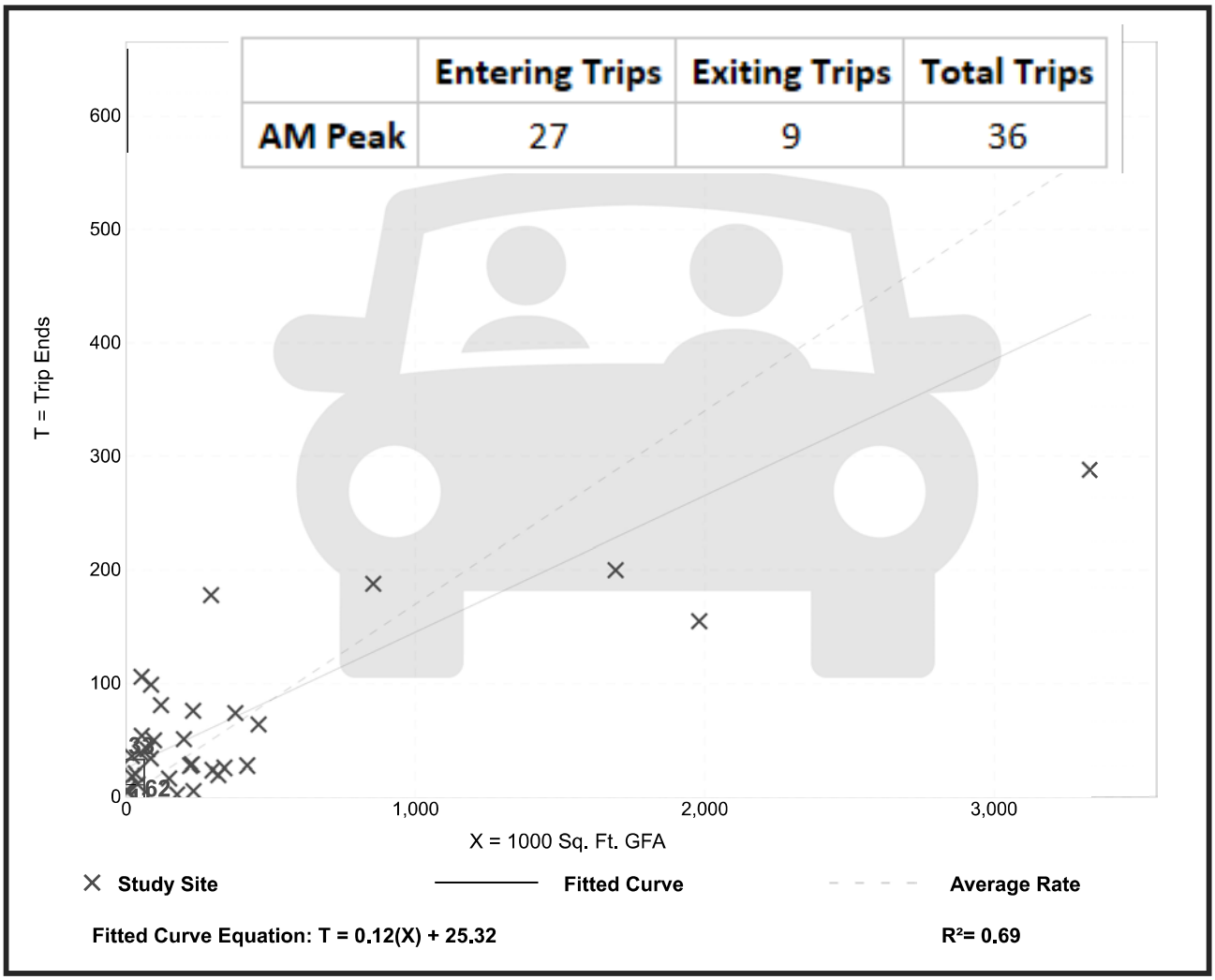
Warehousing
(150)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 34
Avg. 1000 Sq. Ft. GFA: 451
Directional Distribution: 77% entering, 23% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.17	0.02 - 1.93	0.20

Data Plot and Equation



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Proposed Offsite Warehouse south of Pond Station Road with an Approximate Building Area of 85,100 sf

Warehousing
(150)

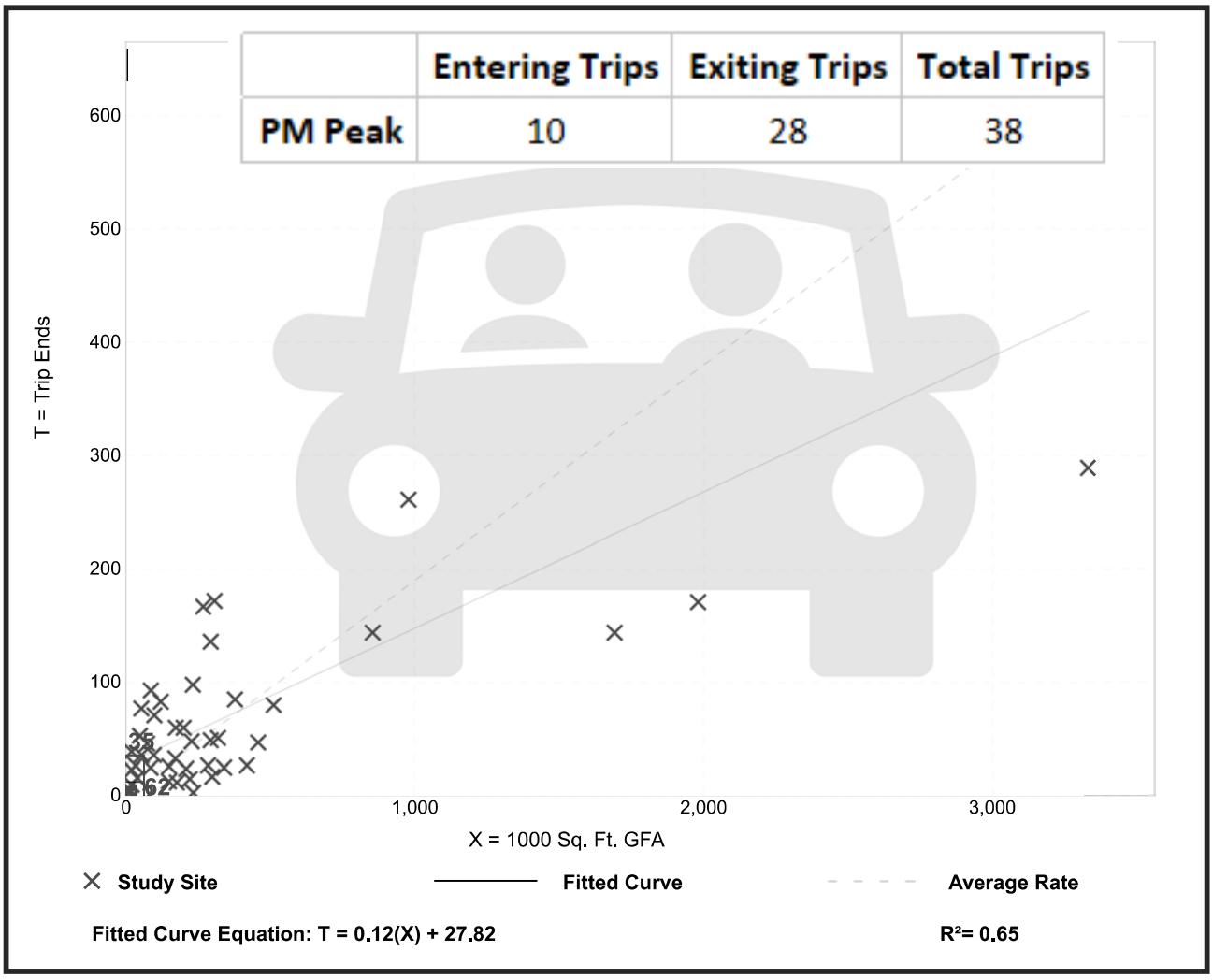
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 47
Avg. 1000 Sq. Ft. GFA: 400
Directional Distribution: 27% entering, 73% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.19	0.01 - 1.80	0.18

Data Plot and Equation

	Entering Trips	Exiting Trips	Total Trips
PM Peak	10	28	38



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Proposed Offsite Warehouse south of Pond Station Road with an Approximate Building Area of 150,000 sf

Warehousing
(150)

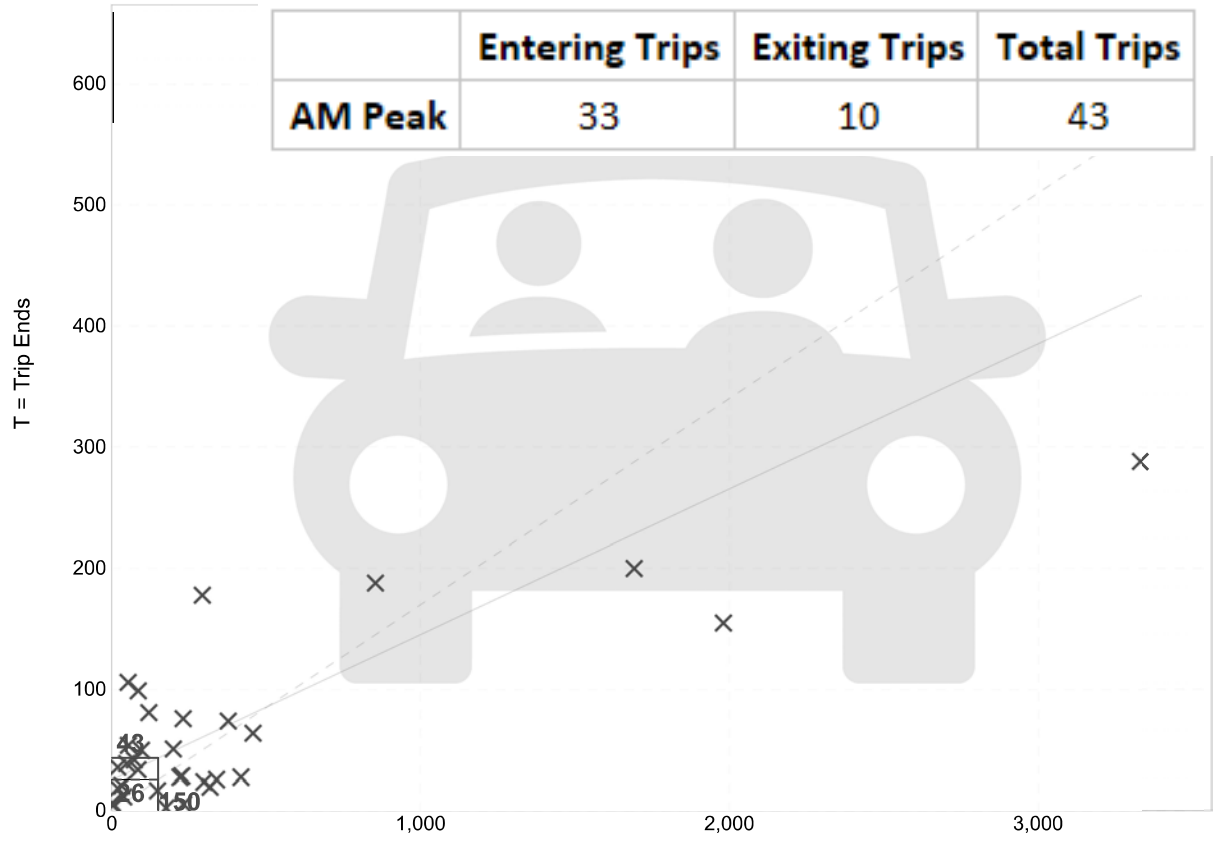
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 34
Avg. 1000 Sq. Ft. GFA: 451
Directional Distribution: 77% entering, 23% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.17	0.02 - 1.93	0.20

Data Plot and Equation

	Entering Trips	Exiting Trips	Total Trips
AM Peak	33	10	43



Fitted Curve Equation: T = 0.12(X) + 25.32 **R^2= 0.69**

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Proposed Offsite Warehouse south of Pond Station Road with an Approximate Building Area of 150,000 sf

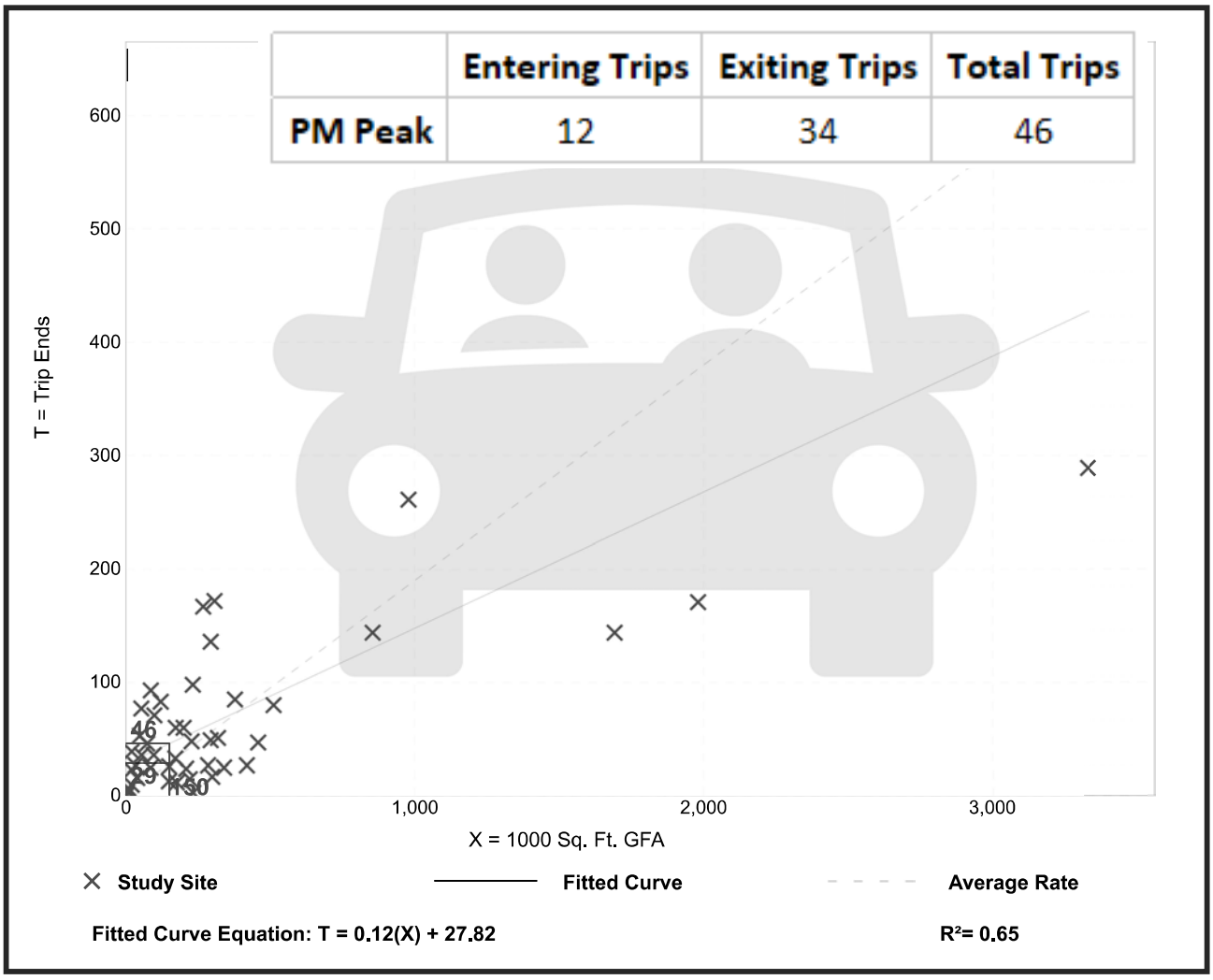
Warehousing
(150)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 47
Avg. 1000 Sq. Ft. GFA: 400
Directional Distribution: 27% entering, 73% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.19	0.01 - 1.80	0.18

Data Plot and Equation



Trip Gen Manual, 10th Ed + Supplement ● Institute of Transportation Engineers

Proposed Offsite Warehouse south of Pond Station Road with an Approximate Building Area of 400,000 sf

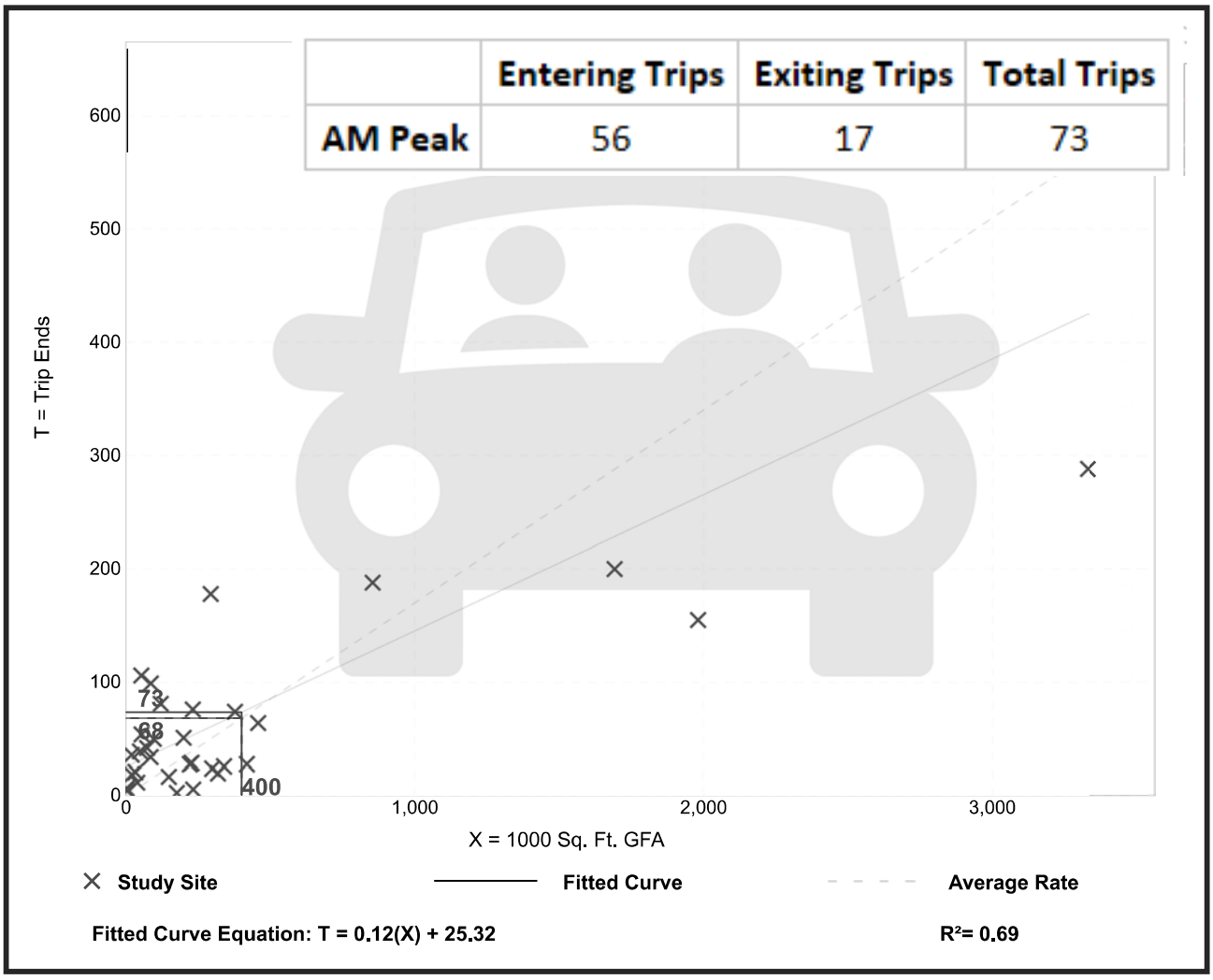
Warehousing
(150)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 34
Avg. 1000 Sq. Ft. GFA: 451
Directional Distribution: 77% entering, 23% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.17	0.02 - 1.93	0.20

Data Plot and Equation



Trip Gen Manual, 10th Ed + Supplement ● Institute of Transportation Engineers

Proposed Offsite Warehouse south of Pond Station Road with an Approximate Building Area of 400,000 sf

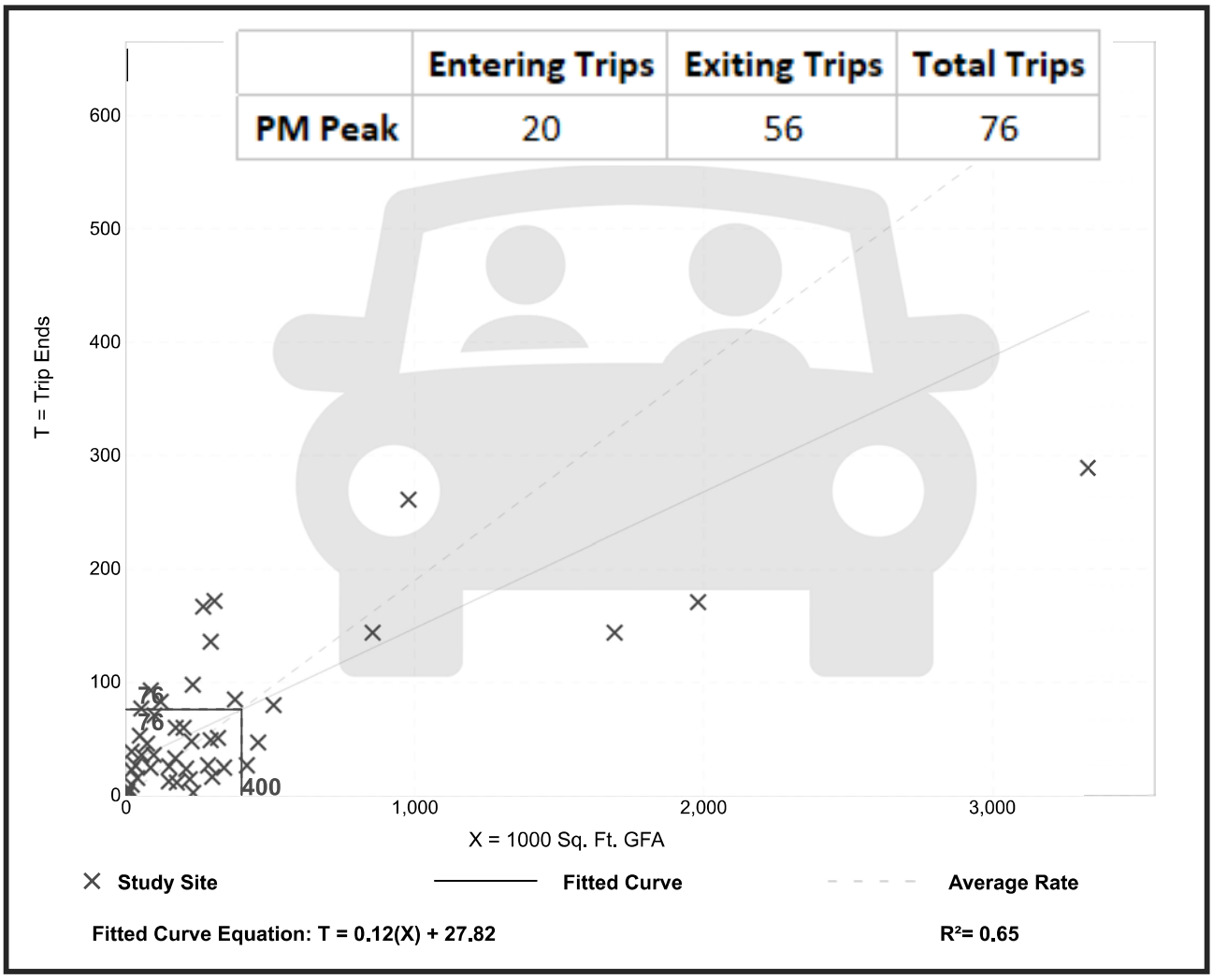
Warehousing
(150)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 47
Avg. 1000 Sq. Ft. GFA: 400
Directional Distribution: 27% entering, 73% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.19	0.01 - 1.80	0.18

Data Plot and Equation



Trip Gen Manual, 10th Ed + Supplement ● Institute of Transportation Engineers

Proposed Offsite Warehouse south of Pond Station Road with an Approximate Building Area of 500,200 sf

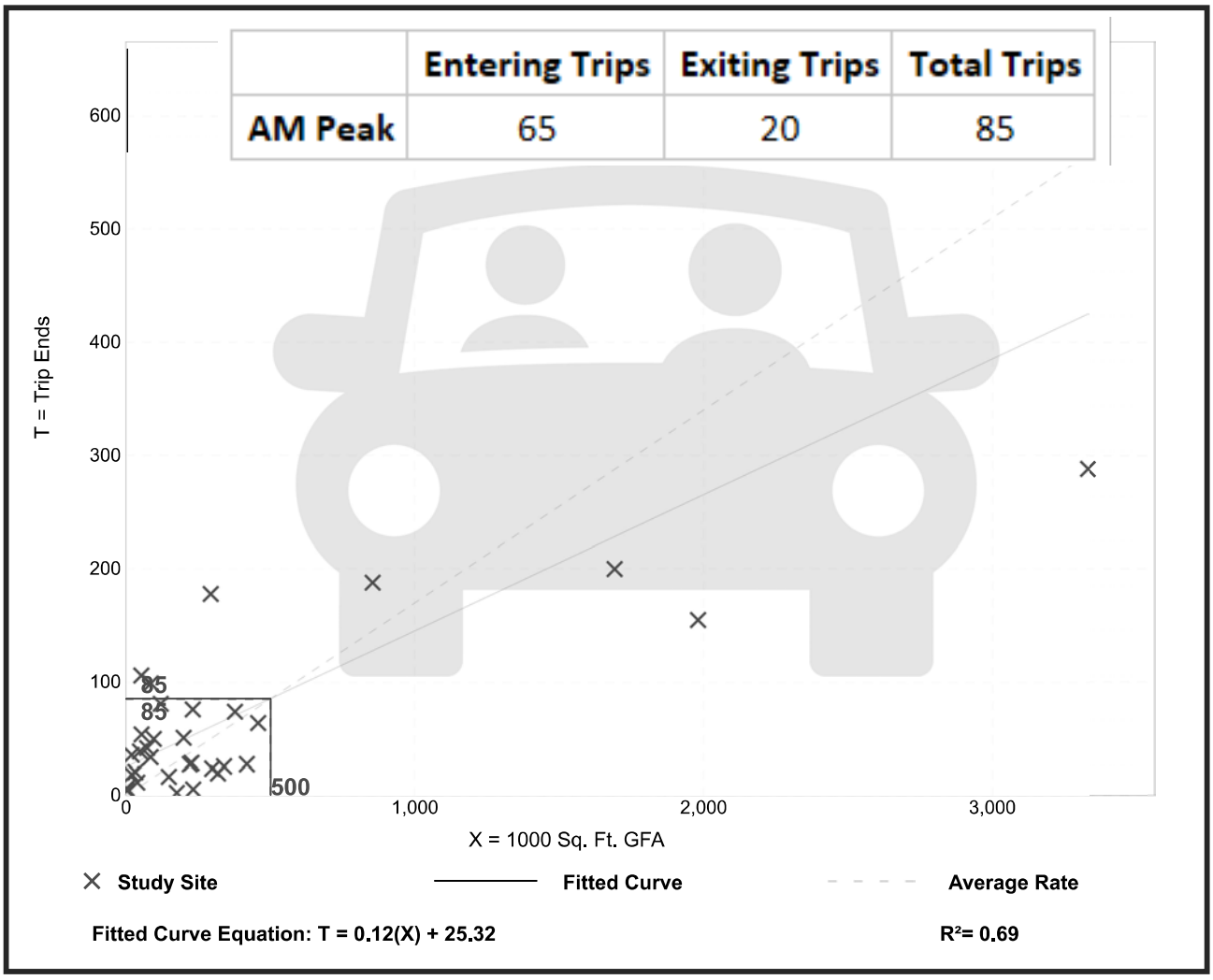
Warehousing
(150)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 34
Avg. 1000 Sq. Ft. GFA: 451
Directional Distribution: 77% entering, 23% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.17	0.02 - 1.93	0.20

Data Plot and Equation



Trip Gen Manual, 10th Ed + Supplement ● Institute of Transportation Engineers

Proposed Offsite Warehouse south of Pond Station Road with an Approximate Building Area of 500,200 sf

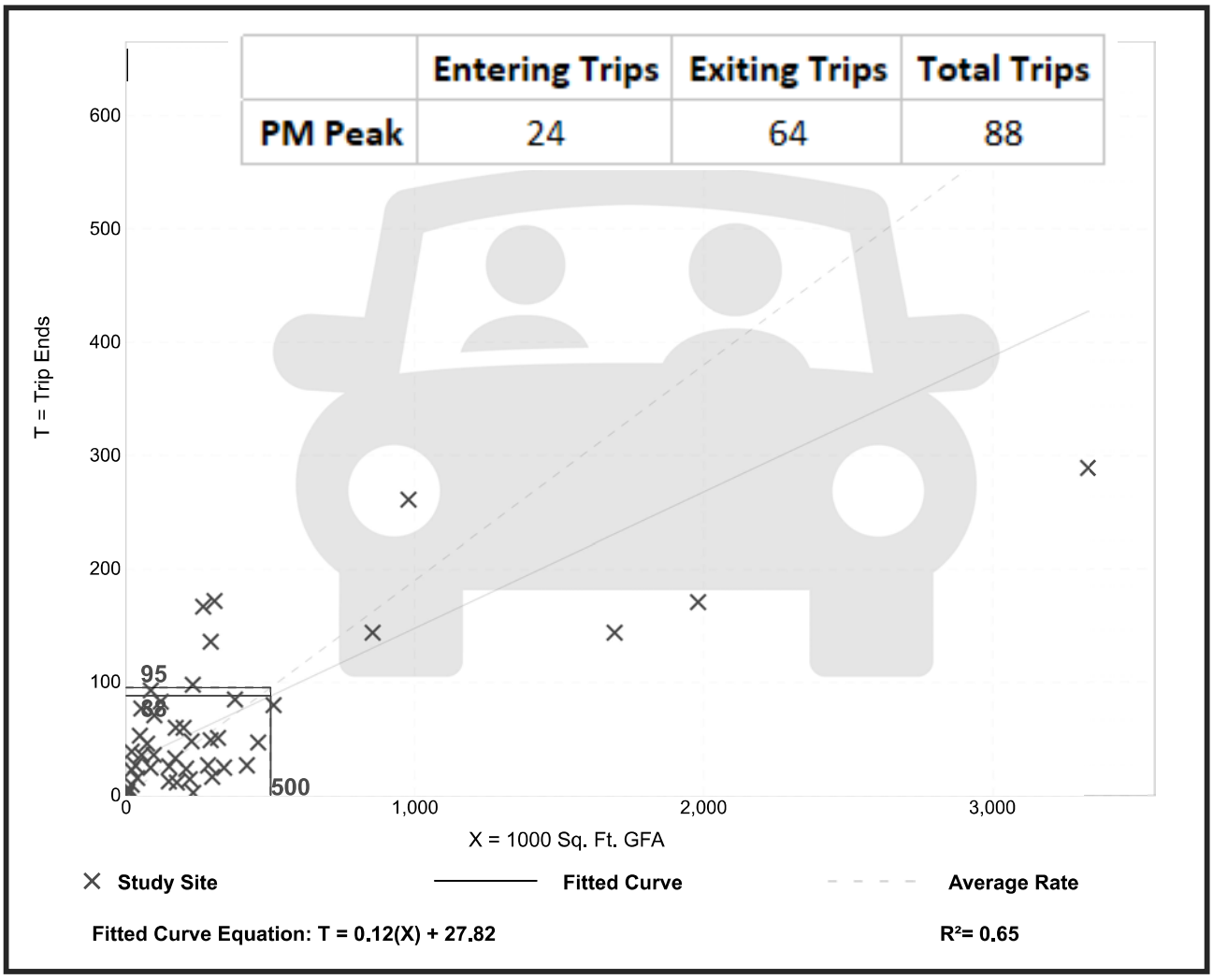
Warehousing
(150)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 47
Avg. 1000 Sq. Ft. GFA: 400
Directional Distribution: 27% entering, 73% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.19	0.01 - 1.80	0.18

Data Plot and Equation



Trip Gen Manual, 10th Ed + Supplement ● Institute of Transportation Engineers

Capacity Analyses Reports

HCS7 Two-Way Stop-Control Report

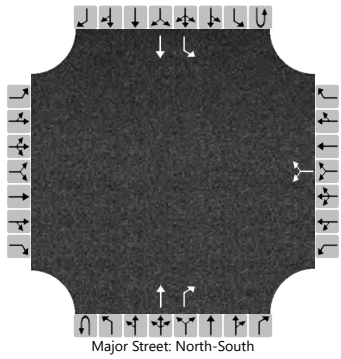
General Information

Analyst	M. Nolt
Agency/Co.	The Kleingers Group
Date Performed	10/02/2020
Analysis Year	2020
Time Analyzed	2021 No-Build - AM Peak
Intersection Orientation	North-South
Project Description	3101 Pond Station Road Industrial

Site Information

Intersection	
Jurisdiction	City of Louisville
East/West Street	Pond Station Road
North/South Street	Stonestreet Road
Peak Hour Factor	0.92
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	1	0	0	0	1	1	0	1	1	0
Configuration							LR				T	R		L	T	
Volume (veh/h)						38		17			505	117		50	918	
Percent Heavy Vehicles (%)						3		3						3		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized											No					
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)						7.1		6.2						4.1		
Critical Headway (sec)						6.43		6.23						4.13		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.53		3.33						2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)							60							54		
Capacity, c (veh/h)							135							911		
v/c Ratio							0.44							0.06		
95% Queue Length, Q_{95} (veh)							2.0							0.2		
Control Delay (s/veh)							51.6							9.2		
Level of Service (LOS)							F							A		
Approach Delay (s/veh)						51.6								0.5		
Approach LOS						F										

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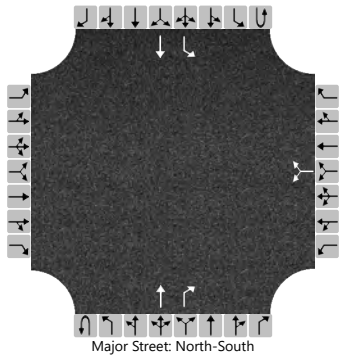
HCS7 Two-Way Stop-Control Report

General Information

Analyst	M. Nolt	Intersection	
Agency/Co.	The Kleingers Group	Jurisdiction	City of Louisville
Date Performed	10/02/2020	East/West Street	Pond Station Road
Analysis Year	2020	North/South Street	Stonestreet Road
Time Analyzed	2021 No-Build - PM Peak	Peak Hour Factor	0.92
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	3101 Pond Station Road Industrial		

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	0	0		0	1	0	0	0	1	1	0	1	1	0
Configuration							LR				T	R		L	T	
Volume (veh/h)						118		51			1004	47		20	821	
Percent Heavy Vehicles (%)						3		3						3		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized											No					
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)						7.1		6.2						4.1		
Critical Headway (sec)						6.43		6.23						4.13		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.53		3.33						2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)							184							22		
Capacity, c (veh/h)							79							608		
v/c Ratio							2.33							0.04		
95% Queue Length, Q_{95} (veh)							17.1							0.1		
Control Delay (s/veh)							720.0							11.1		
Level of Service (LOS)							F							B		
Approach Delay (s/veh)						720.0								0.3		
Approach LOS						F										

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HCS7 Two-Way Stop-Control Report

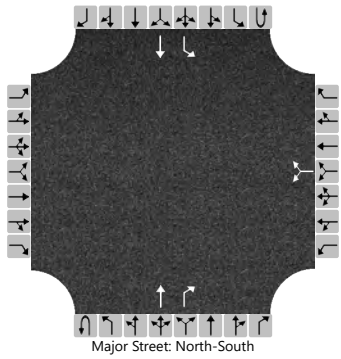
General Information

Analyst	M. Nolt
Agency/Co.	The Kleingers Group
Date Performed	10/02/2020
Analysis Year	2020
Time Analyzed	2026 No-Build - AM Peak
Intersection Orientation	North-South
Project Description	3101 Pond Station Road Industrial

Site Information

Intersection	
Jurisdiction	City of Louisville
East/West Street	Pond Station Road
North/South Street	Stonestreet Road
Peak Hour Factor	0.92
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	1	0	0	0	1	1	0	1	1	0
Configuration							LR				T	R		L	T	
Volume (veh/h)						38		17			531	117		50	965	
Percent Heavy Vehicles (%)						3		3						3		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized											No					
Median Type | Storage						Undivided										

Critical and Follow-up Headways

Base Critical Headway (sec)						7.1		6.2						4.1		
Critical Headway (sec)						6.43		6.23						4.13		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.53		3.33						2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)							60							54		
Capacity, c (veh/h)							121							889		
v/c Ratio							0.50							0.06		
95% Queue Length, Q_{95} (veh)							2.3							0.2		
Control Delay (s/veh)							61.1							9.3		
Level of Service (LOS)							F							A		
Approach Delay (s/veh)						61.1								0.5		
Approach LOS						F										

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HCS7 Two-Way Stop-Control Report

General Information

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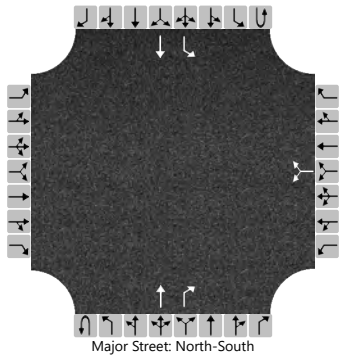
Time Analyzed	2026 No-Build - PM Peak
Intersection Orientation	North-South
Project Description	3101 Pond Station Road Industrial

Site Information

Intersection	
Jurisdiction	City of Louisville
East/West Street	Pond Station Road
North/South Street	Stonestreet Road
Peak Hour Factor	0.92
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	1	0	0	0	1	1	0	1	1	0
Configuration							LR				T	R		L	T	
Volume (veh/h)						118		51			1055	47		20	863	
Percent Heavy Vehicles (%)						3		3						3		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized											No					
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)						7.1		6.2						4.1		
Critical Headway (sec)						6.43		6.23						4.13		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.53		3.33						2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)							184							22		
Capacity, c (veh/h)							68							579		
v/c Ratio							2.68							0.04		
95% Queue Length, Q_{95} (veh)							18.2							0.1		
Control Delay (s/veh)							891.6							11.5		
Level of Service (LOS)							F							B		
Approach Delay (s/veh)						891.6								0.3		
Approach LOS						F										

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HCS7 Two-Way Stop-Control Report

General Information

Analyst	M. Nolt
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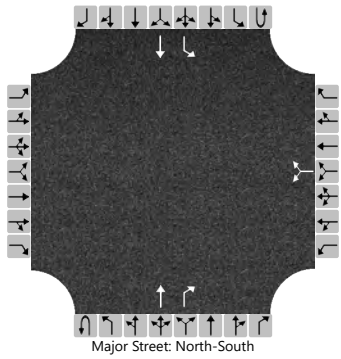
Date Performed	10/05/2020
Analysis Year	2020
Time Analyzed	2021 Build - AM Peak
Intersection Orientation	North-South
Project Description	3101 Pond Station Road Industrial

Site Information

Intersection	
Jurisdiction	City of Louisville
East/West Street	Pond Station Road
North/South Street	Stonestreet Road
Peak Hour Factor	0.92
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	1	0	0	0	1	1	0	1	1	0
Configuration							LR				T	R		L	T	
Volume (veh/h)						52		23			505	163		69	918	
Percent Heavy Vehicles (%)						3		3						3		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized											No					
Median Type | Storage						Undivided										

Critical and Follow-up Headways

Base Critical Headway (sec)						7.1		6.2						4.1		
Critical Headway (sec)						6.43		6.23						4.13		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.53		3.33						2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)							82							75		
Capacity, c (veh/h)							124							872		
v/c Ratio							0.66							0.09		
95% Queue Length, Q_{95} (veh)							3.5							0.3		
Control Delay (s/veh)							77.7							9.5		
Level of Service (LOS)							F							A		
Approach Delay (s/veh)						77.7								0.7		
Approach LOS						F										

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HCS7 Two-Way Stop-Control Report

General Information

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Intersection Orientation	North-South
Project Description	3101 Pond Station Road Industrial

Site Information

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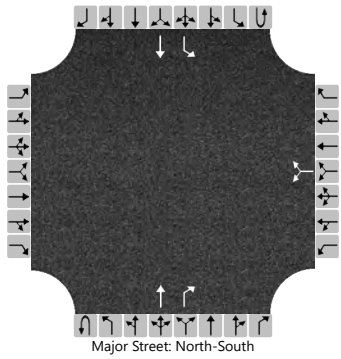
East/West Street	Pond Station Road
North/South Street	Stonestreet Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

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	1	0	0	0	1	1	0	1	1	0
Configuration							LR				T	R		L	T	
Volume (veh/h)						163		70			1004	64		27	821	
Percent Heavy Vehicles (%)						3		3						3		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized											No					
Median Type | Storage						Undivided										

Critical and Follow-up Headways

Base Critical Headway (sec)						7.1		6.2						4.1		
Critical Headway (sec)						6.43		6.23						4.13		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.53		3.33						2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)							253							29		
Capacity, c (veh/h)							76							598		
v/c Ratio							3.32							0.05		
95% Queue Length, Q_{95} (veh)							25.8							0.2		
Control Delay (s/veh)							1160.7							11.3		
Level of Service (LOS)							F							B		
Approach Delay (s/veh)						1160.7								0.4		
Approach LOS						F										

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HCS7 Two-Way Stop-Control Report

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Analyst	M. Nolt
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Site Information

Intersection	
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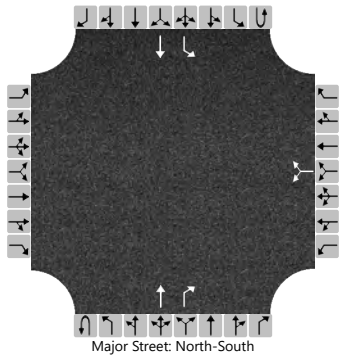
East/West Street	Pond Station Road
North/South Street	Stonestreet Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

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	1	0	0	0	1	1	0	1	1	0
Configuration							LR				T	R		L	T	
Volume (veh/h)						52		23			531	163		69	965	
Percent Heavy Vehicles (%)						3		3						3		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized											No					
Median Type | Storage						Undivided										

Critical and Follow-up Headways

Base Critical Headway (sec)						7.1		6.2						4.1		
Critical Headway (sec)						6.43		6.23						4.13		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.53		3.33						2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)							82							75		
Capacity, c (veh/h)							111							851		
v/c Ratio							0.74							0.09		
95% Queue Length, Q_{95} (veh)							4.0							0.3		
Control Delay (s/veh)							97.4							9.6		
Level of Service (LOS)							F							A		
Approach Delay (s/veh)						97.4								0.6		
Approach LOS						F										

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HCS7 Two-Way Stop-Control Report

General Information

Analyst	M. Nolt
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Date Performed	10/05/2020
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Time Analyzed	2026 Build - PM Peak
Intersection Orientation	North-South
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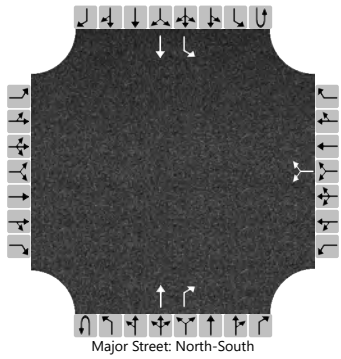
Site Information

Intersection	
Jurisdiction	City of Louisville
East/West Street	Pond Station Road
North/South Street	Stonestreet Road
Peak Hour Factor	0.92
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	1	0	0	0	1	1	0	1	1	0
Configuration							LR				T	R		L	T	
Volume (veh/h)						163		70			1055	64		27	863	
Percent Heavy Vehicles (%)						3		3						3		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized											No					
Median Type | Storage						Undivided										

Critical and Follow-up Headways

Base Critical Headway (sec)						7.1		6.2						4.1		
Critical Headway (sec)						6.43		6.23						4.13		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.53		3.33						2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)							253							29		
Capacity, c (veh/h)							66							570		
v/c Ratio							3.83							0.05		
95% Queue Length, Q_{95} (veh)							26.9							0.2		
Control Delay (s/veh)							1404.1							11.7		
Level of Service (LOS)							F							B		
Approach Delay (s/veh)						1404.1								0.4		
Approach LOS						F										

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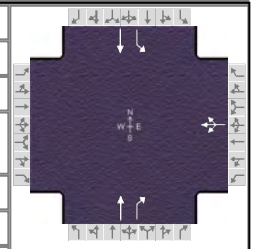
HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	The Kleingers Group			Duration, h	0.25
Analyst	M. Nolt	Analysis Date	Jul 15, 2020	Area Type	Other
Jurisdiction	City of Louisville	Time Period	2026 Build AM Peak	PHF	0.92
Urban Street		Analysis Year	2020	Analysis Period	1> 7:00
Intersection	Stonestreet at Pond Stat…	File Name	2026 Build AM Signalized.xus		
Project Description	3101 Pond Station Road Industrial				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h				52	0	23		531	163	69	965	

Signal Information			
Cycle, s	65.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

							1	2	3	4
Green	38.0	15.0	0.0	0.0	0.0	0.0	5	6	7	8
Yellow	4.0	4.0	0.0	0.0	0.0	0.0				
Red	2.0	2.0	0.0	0.0	0.0	0.0				

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase				8		2		6
Case Number				12.0		7.0		6.0
Phase Duration, s				21.0		44.0		44.0
Change Period, ($Y+R_c$), s				6.0		6.0		6.0
Max Allow Headway (*MAH*), s				3.2		3.1		3.1
Queue Clearance Time (g_s), s				4.7		14.1		36.5
Green Extension Time (g_e), s				0.1		5.2		1.0
Phase Call Probability				1.00		1.00		1.00
Max Out Probability				0.00		0.06		1.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement				3	8	18		2	12	1	6	
Adjusted Flow Rate (*v*), veh/h					82			577	177	75	1049	
Adjusted Saturation Flow Rate (*s*), veh/h/ln					1607			1870	1485	783	1870	
Queue Service Time (g_s), s					2.7			12.1	3.7	4.1	34.5	
Cycle Queue Clearance Time (g_c), s					2.7			12.1	3.7	16.2	34.5	
Green Ratio (*g/C*)					0.23			0.58	0.58	0.58	0.58	
Capacity (*c*), veh/h					371			1093	868	423	1093	
Volume-to-Capacity Ratio (*X*)					0.220			0.528	0.204	0.177	0.959	
Back of Queue (*Q*), ft/ln (95 th percentile)					45.5			170.5	43.3	31.6	571.4	
Back of Queue (*Q*), veh/ln (95 th percentile)					1.7			6.7	1.6	1.2	22.5	
Queue Storage Ratio (*RQ*) (95 th percentile)					0.00			0.00	0.00	0.00	0.00	
Uniform Delay (d_1), s/veh					20.3			8.1	6.4	13.0	12.8	
Incremental Delay (d_2), s/veh					0.1			0.2	0.0	0.1	18.1	
Initial Queue Delay (d_3), s/veh					0.0			0.0	0.0	0.0	0.0	
Control Delay (*d*), s/veh					20.4			8.4	6.4	13.0	30.8	
Level of Service (LOS)					C			A	A	B	C	
Approach Delay, s/veh / LOS	0.0			20.4		C	7.9		A	29.6		C
Intersection Delay, s/veh / LOS	20.9						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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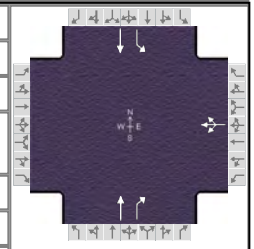
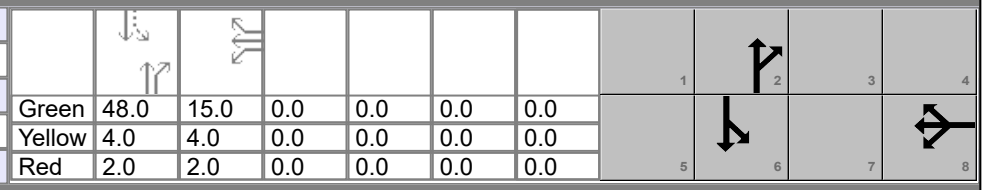
HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	The Kleingers Group			Duration, h	0.25
Analyst	M. Nolt	Analysis Date	Jul 15, 2020	Area Type	Other
Jurisdiction	City of Louisville	Time Period	2026 Build PM Peak	PHF	0.92
Urban Street		Analysis Year	2020	Analysis Period	1> 7:00
Intersection	Stonestreet at Pond Stat…	File Name	2026 Build PM Signalized.xus		
Project Description	3101 Pond Station Road Industrial				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h				163	0	70		1055	64	27	863	

Signal Information			
Cycle, s	75.0	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	48.0	15.0	0.0	0.0	0.0	0.0			
Yellow	4.0	4.0	0.0	0.0	0.0	0.0			
Red	2.0	2.0	0.0	0.0	0.0	0.0			

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase				8		2		6
Case Number				12.0		7.0		6.0
Phase Duration, s				21.0		54.0		54.0
Change Period, ($Y+R_c$), s				6.0		6.0		6.0
Max Allow Headway (*MAH*), s				3.2		3.1		3.1
Queue Clearance Time (g_s), s				13.2		44.8		49.6
Green Extension Time (g_e), s				0.1		2.1		0.0
Phase Call Probability				1.00		1.00		1.00
Max Out Probability				1.00		0.99		1.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement				3	8	18		2	12	1	6	
Adjusted Flow Rate (*v*), veh/h					253			1147	70	29	938	
Adjusted Saturation Flow Rate (*s*), veh/h/ln					1609			1870	1485	459	1870	
Queue Service Time (g_s), s					11.2			42.8	1.3	4.8	27.2	
Cycle Queue Clearance Time (g_c), s					11.2			42.8	1.3	47.6	27.2	
Green Ratio (*g/C*)					0.20			0.64	0.64	0.64	0.64	
Capacity (*c*), veh/h					322			1197	950	128	1197	
Volume-to-Capacity Ratio (*X*)					0.787			0.958	0.073	0.229	0.784	
Back of Queue (*Q*), ft/ln (95 th percentile)					237			651.2	15.6	25.4	362.9	
Back of Queue (*Q*), veh/ln (95 th percentile)					8.8			25.6	0.6	0.9	14.3	
Queue Storage Ratio (*RQ*) (95 th percentile)					0.00			0.00	0.00	0.00	0.00	
Uniform Delay (d_1), s/veh					28.5			12.6	5.1	34.7	9.7	
Incremental Delay (d_2), s/veh					11.3			16.8	0.0	0.3	3.2	
Initial Queue Delay (d_3), s/veh					0.0			0.0	0.0	0.0	0.0	
Control Delay (*d*), s/veh					39.8			29.3	5.1	35.0	12.9	
Level of Service (LOS)					D			C	A	D	B	
Approach Delay, s/veh / LOS	0.0			39.8		D	27.9		C	13.6		B
Intersection Delay, s/veh / LOS	23.5						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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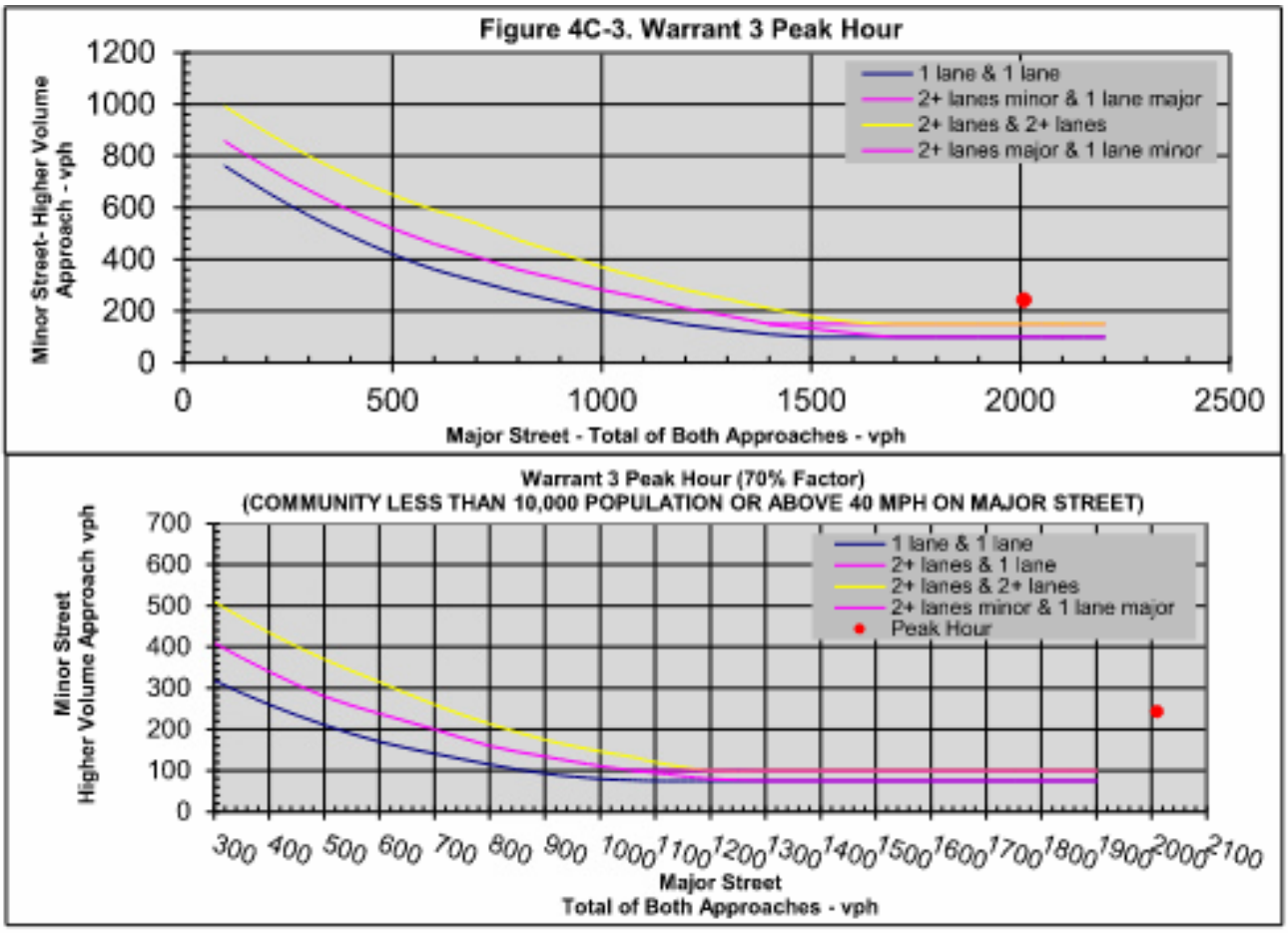
Traffic Signal Warrant Analyses Reports

Peak Hour Warrant (MUTCD)



Location Plan Showing Louisville Loop Crossing Pond Station Road

COUNTY OF	ITEM NO.	SHEET NO.
JEFFERSON	5-522.00	

LOUSIVILLE LOOP
POND CREEK SECTION
AT PAINTBALL ASYLUM PROPERTY

MicroStation v8.11.9.867
E-SHEET NAME:
USER: david-l
DATE PLOTTED: October 6, 2020
FILE NAME: C:\PW_WORKDIR\DMS8632\PAINTBALL PROPERTY PLOT.DGN