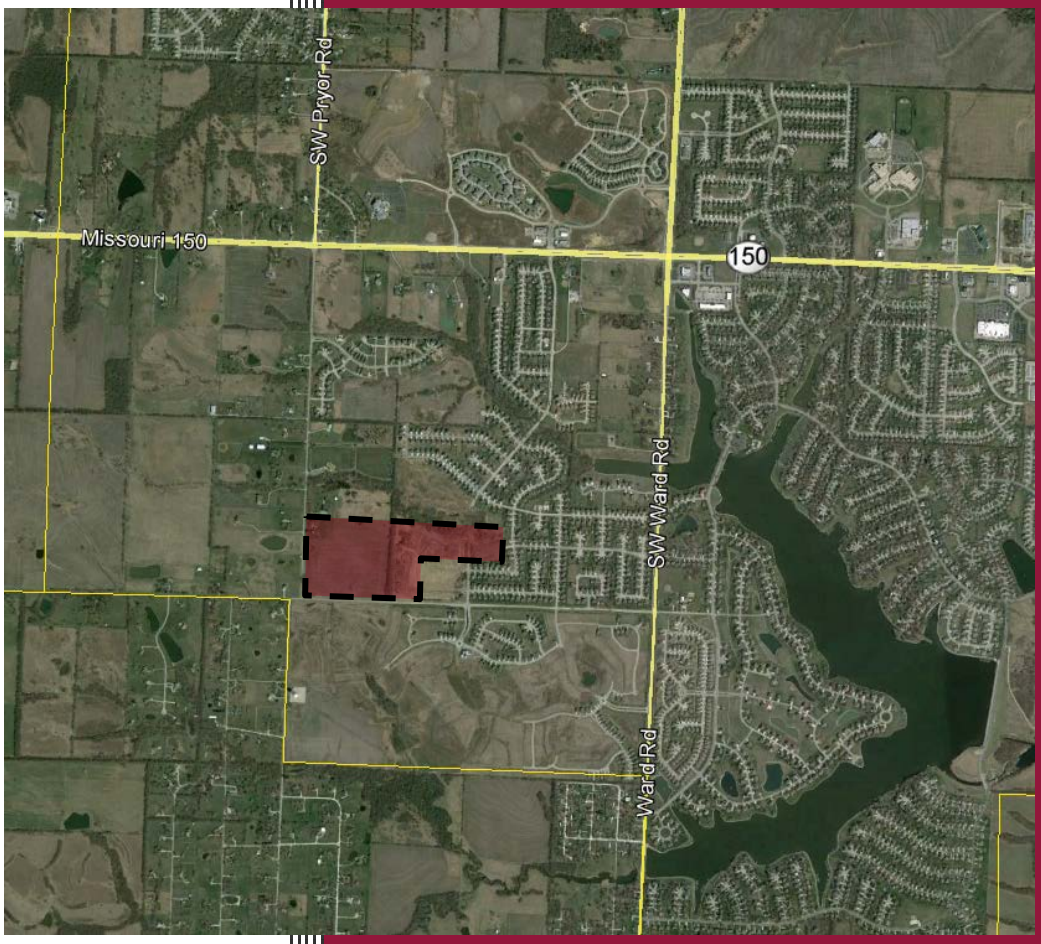
Stoney Creek West Traffic Impact Study

Pryor Road and County Line Road
Lee's Summit, Missouri



Prepared for:

Engineering Solutions

Prepared by:

TranSystems

January 2016

TranSystems

EXPERIENCE | Transportation

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January 4, 2016

Mr. Matthew J. Schlicht, PLS, PE
Engineering Solutions
50 SE 30th Street
Lee's Summit, MO 64082

RE: Stoney Creek West Traffic Impact Study
Lee's Summit, Missouri

Dear Mr. Schlicht:

In response to your request and authorization, TranSystems has completed a traffic impact study for the proposed single-family residential development to be located generally in the northeast corner of the Pryor Road and County Line Road intersection in Lee's Summit, Missouri. The purpose of this study was to assess the impact of the proposed development on the surrounding transportation system.

Included in this study is a discussion of the anticipated impacts of the proposed development on the adjacent street network for the following analysis scenarios:

- Existing Conditions
- Existing plus Proposed Development Conditions

We trust that the enclosed information proves beneficial to you and the City of Lee's Summit in this phase of the development process. We appreciate the opportunity to be of service to you and will be available to review this study at your convenience.

Sincerely,
TRANSYSTEMS

By: _____
Jeffrey J. Wilke, PE, PTOE

JJW/jw:P101150365
Enclosure

Introduction

TranSystems has completed this traffic impact study for the proposed single-family residential development to be located generally in the northeast corner of the Pryor Road and County Line Road intersection in Lee's Summit, Missouri. The purpose of this study was to assess the impact of the proposed development on the surrounding transportation system. The location of the project relative to the major streets in the area is shown on ***Figure A-1*** in ***Appendix A***.

In addition to a description of the proposed development and the surrounding transportation infrastructure, this study includes trip generation estimates, trip distribution estimates, capacity analyses, and a summary of findings. The scope of this study was developed in conjunction with City of Lee's Summit staff.

Proposed Development Plan

The development plan includes 166 lots for single-family homes. Several different road connections are proposed to provide access to the development. Georgetown Drive will be extended through the development to intersect Pryor Road on the west side of the site. Stoney Creek Drive is to be connected through the site as well. Two additional site driveways are to be provided on the south side of the development to intersect County Line Road. A copy of the proposed site plan for the development is included on ***Figure A-2*** for reference.

Study Area

To assess the impacts of the proposed redevelopment, the intersections listed below were identified for study during the A.M. and P.M. peak hours of a typical weekday.

- Pryor Road and M-150 Highway
- Pryor Road and County Line Road
- Ward Road and County Line Road

Surrounding Land Uses and Street Network

The development site is mostly undeveloped land used for agriculture, with one single-family residence. To the north of the site along Pryor Road, there is another residence. To the north and east of the site is undeveloped land that has already been platted as lots for single-family residences, similar to the proposed development. To the south across County Line Road is the Kensington Farms residential development, which is partially built out at this time. On the west side of Pryor Road are several single family residences with large lots.

Pryor Road is an unimproved two-lane major arterial street. The roadway has a 20-foot wide cross section with turf slopes to ditches along each side. The posted speed limit on Pryor Road is 35 m.p.h. The horizontal alignment of the roadway is straight, with some vertical curvature adjacent to the development site. The intersection of Pryor Road and M-150 Highway was recently improved to include turn lanes and a traffic signal as part of a widening project for M-150 Highway.

County Line Road is a two-lane minor arterial street. The roadway has a 24-foot wide cross section with turf shoulders and ditches along each side. The posted speed limit on County Line Road is 35 m.p.h. The horizontal and vertical alignment of the roadway are generally straight and level. Approximately 1,350 feet east of Pryor Road, County Line Road widens for a westbound left-turn lane at the location of what is presumed to be a future access point for the Kensington Farms development.

Georgetown Drive and Stoney Creek Drive are existing residential collector streets within the adjacent residential development. Georgetown Drive is 28 feet wide measured between the backs of curbs, with a posted speed limit of 25 m.p.h. Stoney Creek Drive is 32 feet wide measured between backs of curbs, with a posted speed limit of 30 m.p.h.

Traffic Counts

Turning-movement traffic volume counts were collected at the study intersections on Tuesday, December 1, 2015 and Wednesday, December 2, 2015. Peak period counts were collected at each intersection from 7:00 to 9:00 A.M. and from 4:00 to 6:00 P.M. Based on the count data, the A.M. peak hour occurs between 7:00 and 8:00 A.M. and the P.M. peak hour generally occurs between 5:00 and 6:00 P.M. The existing lane configurations, traffic control devices, and peak hour traffic volumes have been illustrated on ***Figures A-3*** through ***A-5***.

Intersection Sight Distance

Intersection sight distance is provided to allow the drivers of stopped vehicles to depart from their approach to an intersection and enter or cross the major road. A cursory review of sight distances for the proposed site driveways at County Line Road indicated that sight lines are adequate along this straight and fairly level roadway. Intersection sight distances were measured along Pryor Road at the proposed location of the Georgetown Drive intersection, because of the vertical curvature of this section of Pryor Road.

Sight distance measurements were made based on criteria in A Policy on Geometric Design of Highways and Streets, 2011 Edition (also referred to as the AASHTO Green Book), which is published by the American Association of State Highway and Transportation Officials. The Green Book recommends a sight distance of 390 feet be provided at each stop controlled side-street or driveway when looking along an uncontrolled road with a speed limit of 35 mph. ***Table 1*** shows the measured and recommended intersection sight distances.

Table 1
Intersection Sight Distance

Intersection	Direction Looking Along Uncontrolled Street	Measured Sight Distance (Feet)	Recommended Sight Distance (Feet)	Stopping Sight Distance (Feet)
Pryor Road and Georgetown Drive	North	220	390	250
	South	>500		

As indicated in ***Table 1***, the measured sight distance looking to the north was found to be less than the recommended sight distance. This sight distance is limited by the crest vertical curve located just north of the proposed driveway location. Adequate sight distance should be provided by relocating the intersection farther to the south away from the crest, and/or by modifying the vertical profile of Pryor Road to reduce the rate of curvature for the crest vertical curve.

Analysis

The scope of analysis for the assessment of the proposed development's impact on the surrounding transportation system is based in large part on the recommended practices of the Institute of Transportation Engineers (ITE), as outlined in their Traffic Engineering Handbook. ITE is a nationally-recognized organization of transportation professionals with members from both private and public sectors. The analysis of the proposed development's impact included development of trip generation and trip distribution estimates as well as a traffic operations assessment for each study scenario. Each of the analysis methodologies and findings are described below in the subsequent sections.

Trip Generation

Trip generation estimates were prepared for the proposed development using the Institute of Transportation Engineer's Trip Generation, 9th Edition. ***Table 2*** shows the expected trips to be generated by the proposed development.

Table 2
Trip Generation

Land Use	Intensity	ITE Code	Average Weekday	A.M. Peak Hour			P.M. Peak Hour		
				Total	In	Out	Total	In	Out
Single-Family Detached Housing	166 du	210	1,675	126	32	94	166	105	61

Trip Distribution

The estimated trips generated by the proposed development were distributed onto the street system based on the trip distributions summarized in ***Table 3***. These distributions are based on existing traffic counts and engineering judgment. The detailed distribution patterns through the study intersections are shown in ***Appendix B***.

Table 3
Trip Distribution

Direction To/From	Percentage
North on Pryor Road	55%
West on County Line Road	15%
East on County Line Road	10%
North/East through existing neighborhood	20%
Total	**100%**

Traffic Operation Assessment

An assessment of the A.M. and P.M. peak hour traffic operations was made for the scenarios listed below:

- Existing Conditions
- Existing plus Development Conditions

The study intersections were evaluated using the Synchro software package on the basis of the methodologies outlined in the Highway Capacity Manual (HCM), 2000 Edition, which is published by the Transportation Research Board. The operating conditions at an intersection are graded by the "level of service" experienced by drivers. Level of service (LOS) describes the quality of traffic operating conditions and is rated from "A" to "F". LOS A represents the most desirable condition with free-flow movement of traffic with minimal delays. LOS F generally indicates severely congested conditions with excessive delays to motorists. Intermediate grades of B, C, D, and E reflect incremental increases in the average delay per stopped vehicle. Delay is measured in seconds per vehicle. ***Table 4*** shows the upper limit of delay associated with each level of service for signalized and unsignalized intersections.

Table 4
Intersection Level of Service Delay Thresholds

Level of Service (LOS)	Signalized	Unsignalized
A	≤ 10 Seconds	≤ 10 Seconds
B	≤ 20 Seconds	≤ 15 Seconds
C	≤ 35 Seconds	≤ 25 Seconds
D	≤ 55 Seconds	≤ 35 Seconds
E	≤ 80 Seconds	≤ 50 Seconds
F	> 80 Seconds	> 50 Seconds

While one of the primary measurements of traffic operations, LOS, applies to both signalized and unsignalized intersections, there are significant differences between how these intersections operate and how they are evaluated. LOS for signalized intersections reflects the operation of the intersection as a whole. While the individual movements may operate with varying LOS ratings, that is largely a function of the signal timings and how the intersection is operating relative to other signals in the vicinity.

Unsignalized intersections, in contrast, are evaluated based on the movement grouping which are required to yield to other traffic. Typically, these are the left turns off of the major street and the side-street approaches for two-way stop-controlled intersections. Lower LOS ratings (D, E and F) do not, in themselves, indicate significant difficulties or the need for additional improvements. Many times there are convenient alternative paths to avoid the longer delays. Other times, the volumes on the unsignalized approaches are relatively minor when compared to the major street traffic.

The LOS rating deemed acceptable varies by community, facility type and traffic control device. In Lee's Summit, LOS C has been identified as the minimum desirable goal for signalized intersections. At unsignalized intersections LOS C or worse is often accepted for low to moderate traffic volumes where

the installation of a traffic signal is not warranted by the conditions at the intersection or location has been deemed undesirable for signalization for other reasons, e.g. the close proximity of an existing traffic signal or the presence of a convenient alternative path.

Existing Conditions

The results of the Existing Conditions scenario intersection analyses are summarized in ***Table 5***. The study intersections were evaluated with the lane configurations, traffic volumes, and traffic control devices shown on ***Figures A-3*** through ***A-5***. The Synchro output files are included in ***Appendix C***.

Table 5
Intersection Operational Analysis
Existing Conditions

Intersection	A.M. Peak Hour		P.M. Peak Hour	
Movement	LOS[1]	Delay[2]	LOS[1]	Delay[2]
Pryor Road and M-150 Highway				
Traffic Signal	*C*	*25.9*	*B*	*19.2*
Pryor Road and County Line Road				
Eastbound Shared Left-turn/Through	*A*	*5.7*	*A*	*3.0*
Southbound	*A*	*9.1*	*A*	*9.5*
Ward Road and County Line Road				
Eastbound	*B*	*12.7*	*B*	*13.2*
Westbound	*B*	*10.6*	*B*	*10.3*
Northbound Left-turn	*A*	*7.4*	*A*	*7.8*
Southbound Left-turn	*A*	*7.7*	*A*	*7.6*

1 – Level of Service
2 – Delay in seconds per vehicle

As shown in the table, all movements at the study intersections currently operate within acceptable levels of service. The 85th percentile queues in some of the turn lanes on Pryor Road at the M-150 Highway intersection exceed the available storage. The turn lanes were constructed with extremely short storage lengths as part of the recent M-150 Highway widening project. Queuing is not likely to cause any operational concerns, as the queues generally clear during the green phase for each signal cycle.

Existing plus Development Conditions

The Lee's Summit Access Management Code (AMC) provides guidance for the location and design of driveways and turn lanes. According to the AMC, street connections are to be spaced at least 660 feet apart along major arterials and 400 feet apart along minor arterials. The proposed driveway locations exceed these minimum values.

The AMC states that left-turn lanes should be provided on arterials streets at the intersection with other arterial and collector streets. As such a southbound left-turn lane should be constructed on Pryor Road at Georgetown Drive to provide a minimum 200 feet of storage plus appropriate taper. Left-turn lanes are not necessary at the site driveways on County Line Road, as they will be local residential streets that are projected to have a very low volume of turning traffic.

Right-turn lanes are required by the AMC on arterial streets at each intersecting street. This requirement applies to the Pryor Road and Georgetown Drive intersection and to the site driveway intersections along County Line Road. The volume of traffic projected to turn right into the development at each of the access points is very low. Therefore, right-turn lanes do not appear to be necessary, as they would provide negligible safety or operational benefits at these intersections.

The results of the Existing plus Development Conditions scenario intersection analyses are summarized in ***Table 6***. This study scenario considered the addition of traffic from the proposed development. The study intersections were evaluated with the lane configurations, traffic volumes, and traffic control devices shown on ***Figures A-6*** through ***A-8***. The Synchro output files are included in ***Appendix C***.

Table 6
Intersection Operational Analysis
Existing plus Development Conditions

Intersection	A.M. Peak Hour		P.M. Peak Hour	
Movement	**LOS[1]**	**Delay[2]**	**LOS[1]**	**Delay[2]**
Pryor Road and M-150 Highway				
Traffic Signal	*C*	*28.1*	*C*	*21.1*
Pryor Road and Georgetown Drive				
Westbound	*A*	*9.0*	*A*	*8.8*
Southbound Left-turn	*A*	*7.4*	*A*	*7.4*
Pryor Road and County Line Road				
Eastbound Shared Left-turn/Through	*A*	*5.5*	*A*	*2.9*
Southbound	*A*	*9.2*	*A*	*9.6*
County Line Road and west site drive				
Eastbound Shared Left-turn/Through	*A*	*0.6*	*A*	*0.5*
Southbound	*A*	*9.0*	*A*	*9.0*
County Line Road and east site drive				
Eastbound Shared Left-turn/Through	*A*	*0.5*	*A*	*0.5*
Southbound	*A*	*9.0*	*A*	*9.0*
Ward Road and County Line Road				
Eastbound	*B*	*13.4*	*B*	*13.6*
Westbound	*B*	*10.6*	*B*	*10.4*
Northbound Left-turn	*A*	*7.4*	*A*	*7.8*
Southbound Left-turn	*A*	*7.7*	*A*	*7.6*

1 – Level of Service
2 – Delay in seconds per vehicle

As shown in the table, all movements at the study intersections are projected operate within acceptable levels of service with the addition of development traffic and the aforementioned southbound left-turn lane at the Pryor Road and Georgetown Drive intersection. Some queues on the Pryor Road approaches to the M-150 Highway intersection are projected to exceed the available storage, as they do in the Existing Conditions scenario. However, these queues are not anticipated to cause any operational concerns, as they are expected to clear during the green phase for each signal cycle.

The proposed location of the east site driveway intersection on County Line Road is offset approximately 150 feet west of the location where an access point for the Kensington Farms

development is to be located in the future. The location of this future access point is assumed based on the fact that County Line Road widens for a westbound left-turn lane at this location. If an access point to Kensington Farms is to be constructed at this location, the east site drive should be shifted west to align with this future access point.

Lee's Summit has issued a policy memorandum to address new developments along the City's unimproved roads. The policy allows for residential developments to be permitted along unimproved roads, like Pryor Road, as long as two lanes are provided continuously along the roadway. According to the policy, development may occur until the roadway reaches approximately 50 percent of the capacity, or 5,000 vehicles per day. The City's traffic count maps indicate that Pryor Road south of M-150 Highway had an average daily traffic volume of 1,800 vehicles in 2012. The proposed development is projected to generate 1,675 daily vehicle trips which will be distributed onto the street network as estimated in ***Table 3***. Therefore, the average daily traffic volume on Pryor Road is projected to be well below 5,000 vehicles with the addition of traffic from the proposed development. As such, no additional improvements are required along Pryor Road.

Georgetown Drive and Stoney Creek Drive are to be extended through the proposed development to provide continuity and connectivity with the existing street network. Where the two streets intersect, it would be appropriate to install stop signs for east/west traffic on Georgetown Drive, and allow uninterrupted flow for Stoney Creek Drive, which will be the more significant street.

Summary

TranSystems has completed this traffic impact study for the proposed single-family residential development to be located generally in the northeast corner of the Pryor Road and County Line Road intersection in Lee's Summit, Missouri. The purpose of this study was to assess the impact of the proposed development on the surrounding transportation system.

The following improvements were identified for the Existing plus Development scenario:

- Provide adequate sight distance at the intersection of Pryor Road and Georgetown Drive by relocating the intersection farther to the south away from the crest vertical curve, and/or by modifying the vertical profile of Pryor Road to reduce the rate of curvature for the crest.
- Construct a southbound left-turn lane at the Pryor Road and Georgetown Drive intersection to have a minimum 200 feet of storage plus appropriate taper.

The average daily traffic volume on Pryor Road is projected to be well below 5,000 vehicles with the addition of traffic from the proposed development. Therefore, no additional improvements are required along Pryor Road, according to the City's policy regarding development on unimproved roads.

Appendix A - Figures

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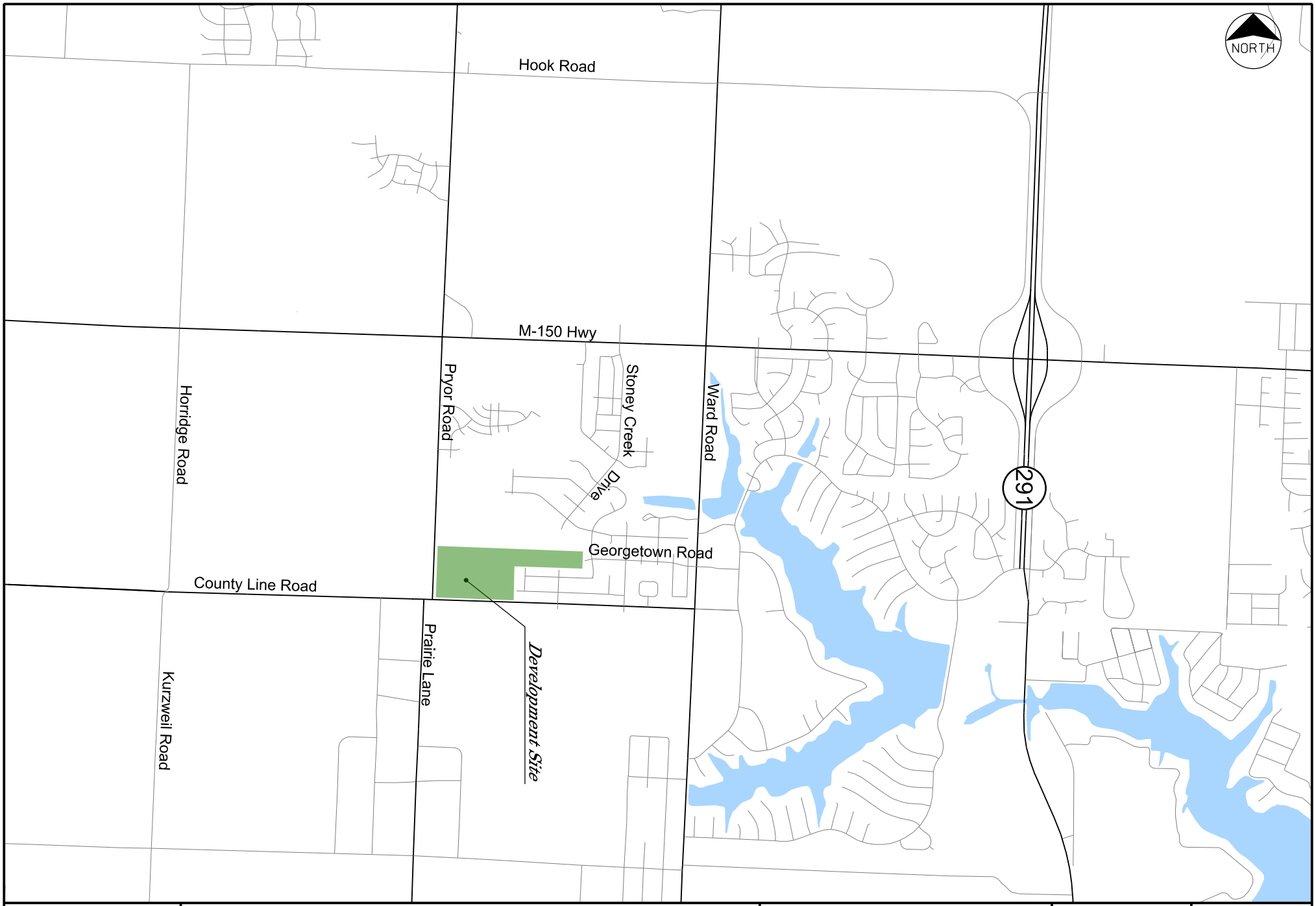


TranSystems

LOCATION MAP

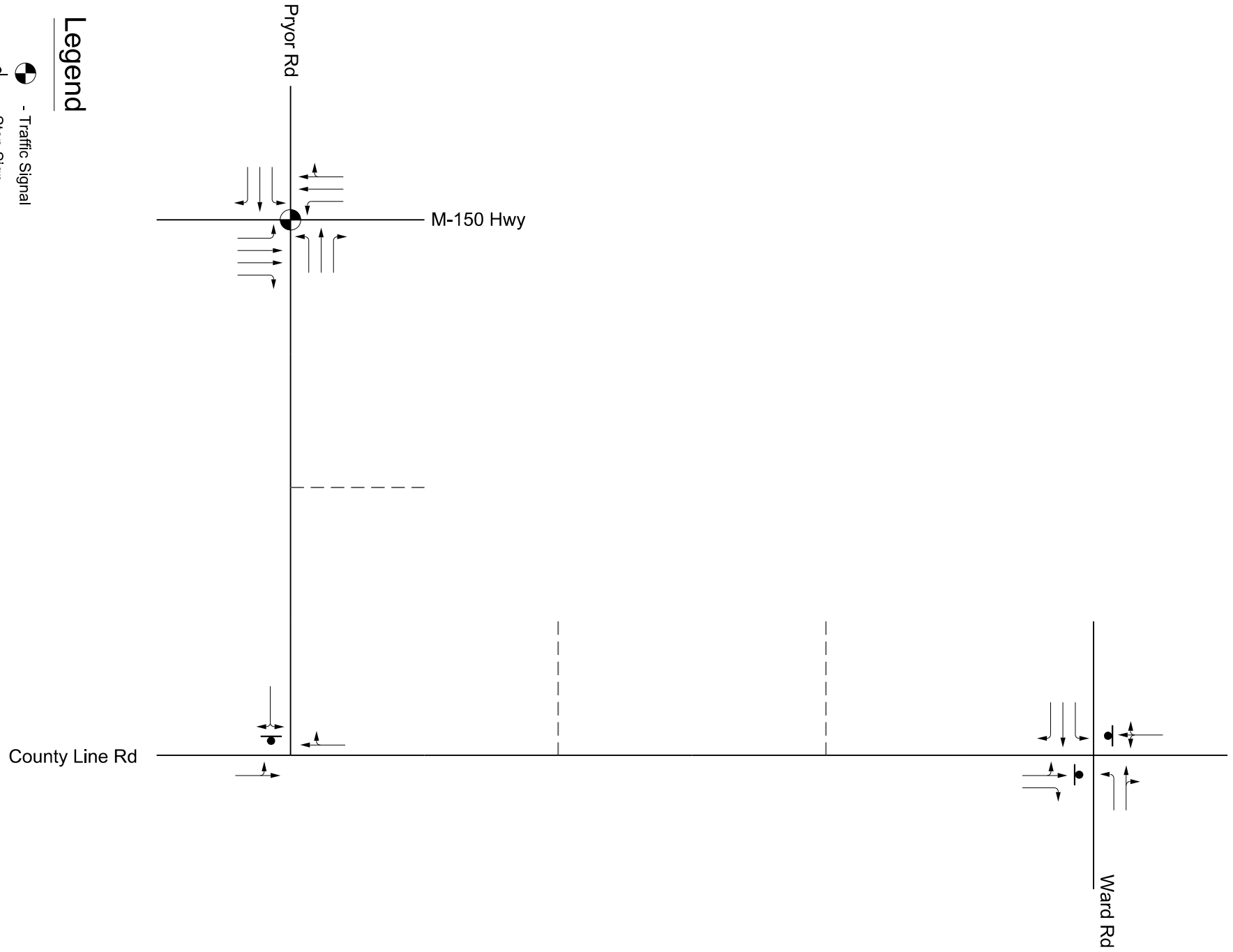
Stoney Creek West
Traffic Impact Study
Lee's Summit, Missouri

January 2016

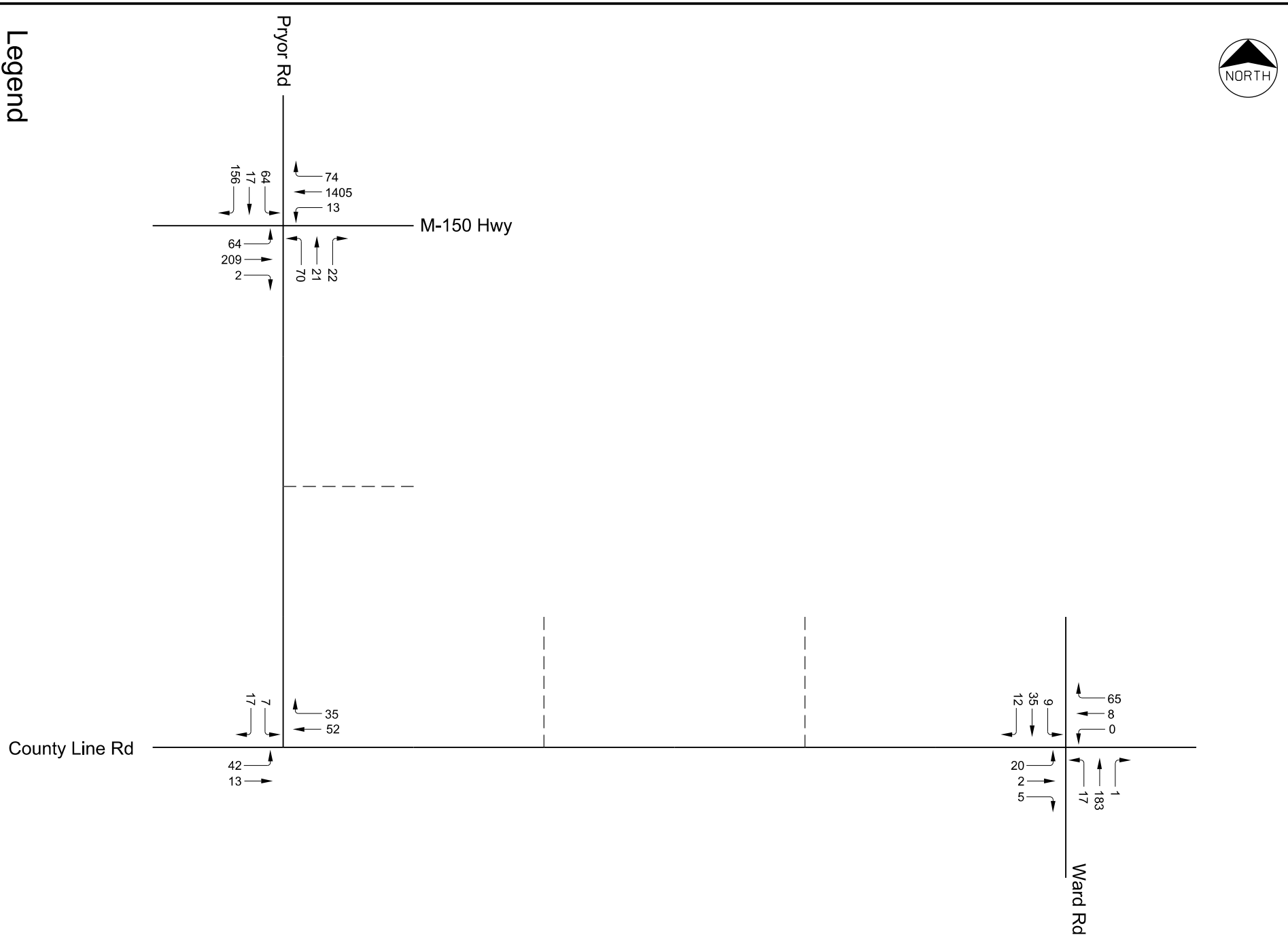
No Scale

Figure A-1

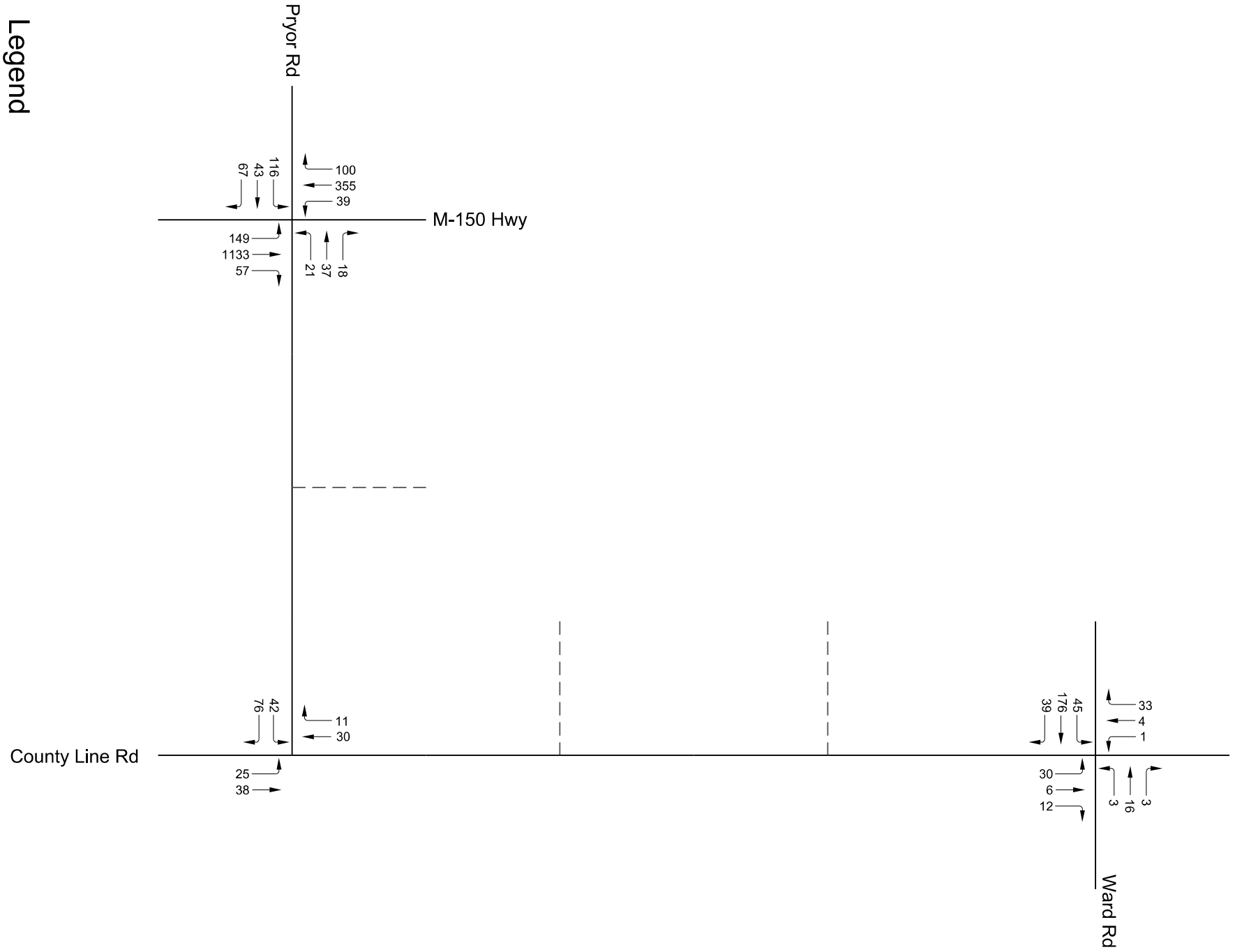
TranSystems	SITE PLAN	Stoney Creek West Traffic Impact Study Lee's Summit, Missouri	January 2016 No Scale	Figure A-2



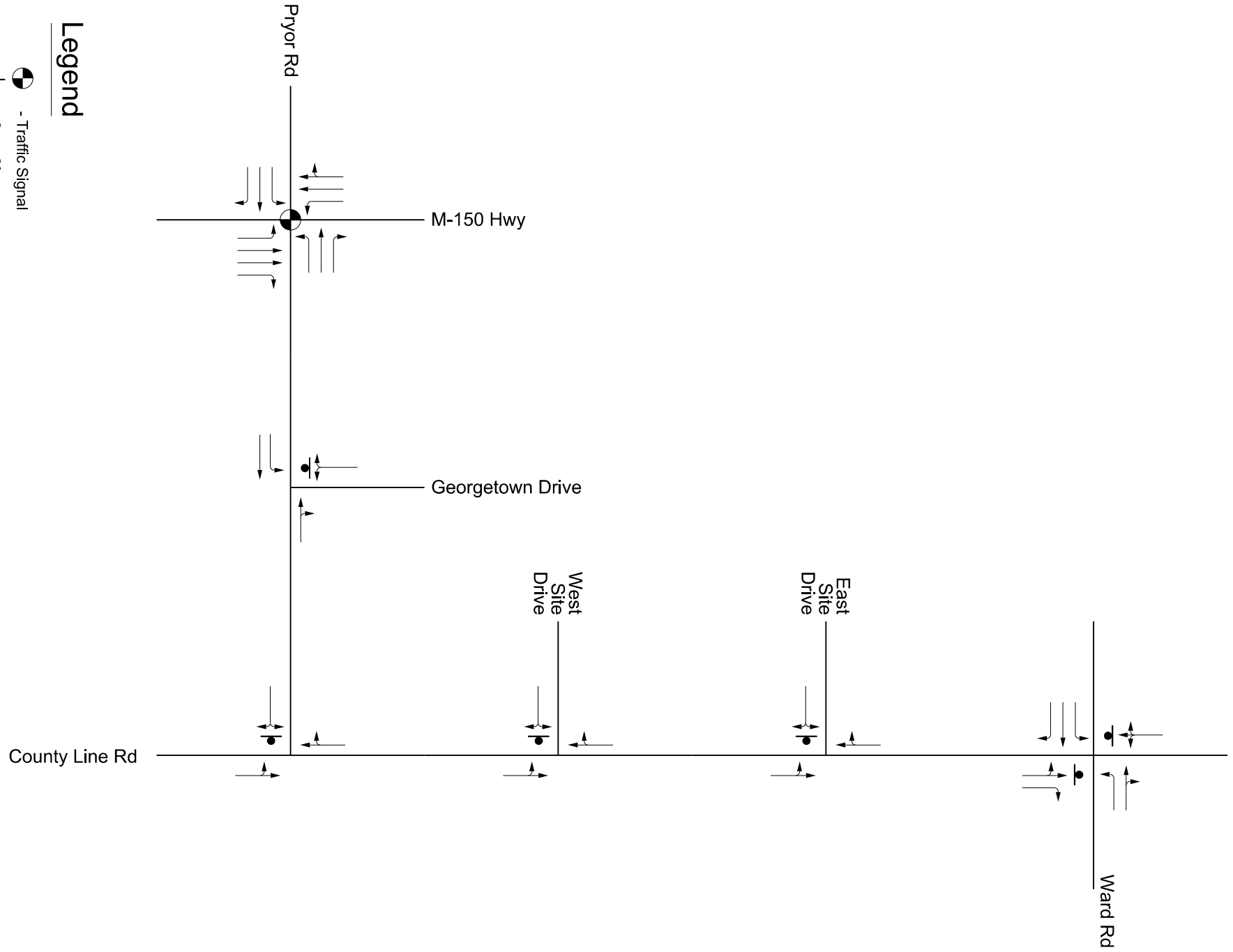
TranSystems	EXISTING LANE CONFIGURATIONS	Stoney Creek West Traffic Impact Study Lee's Summit, Missouri	January 2016 No Scale	Figure A-3



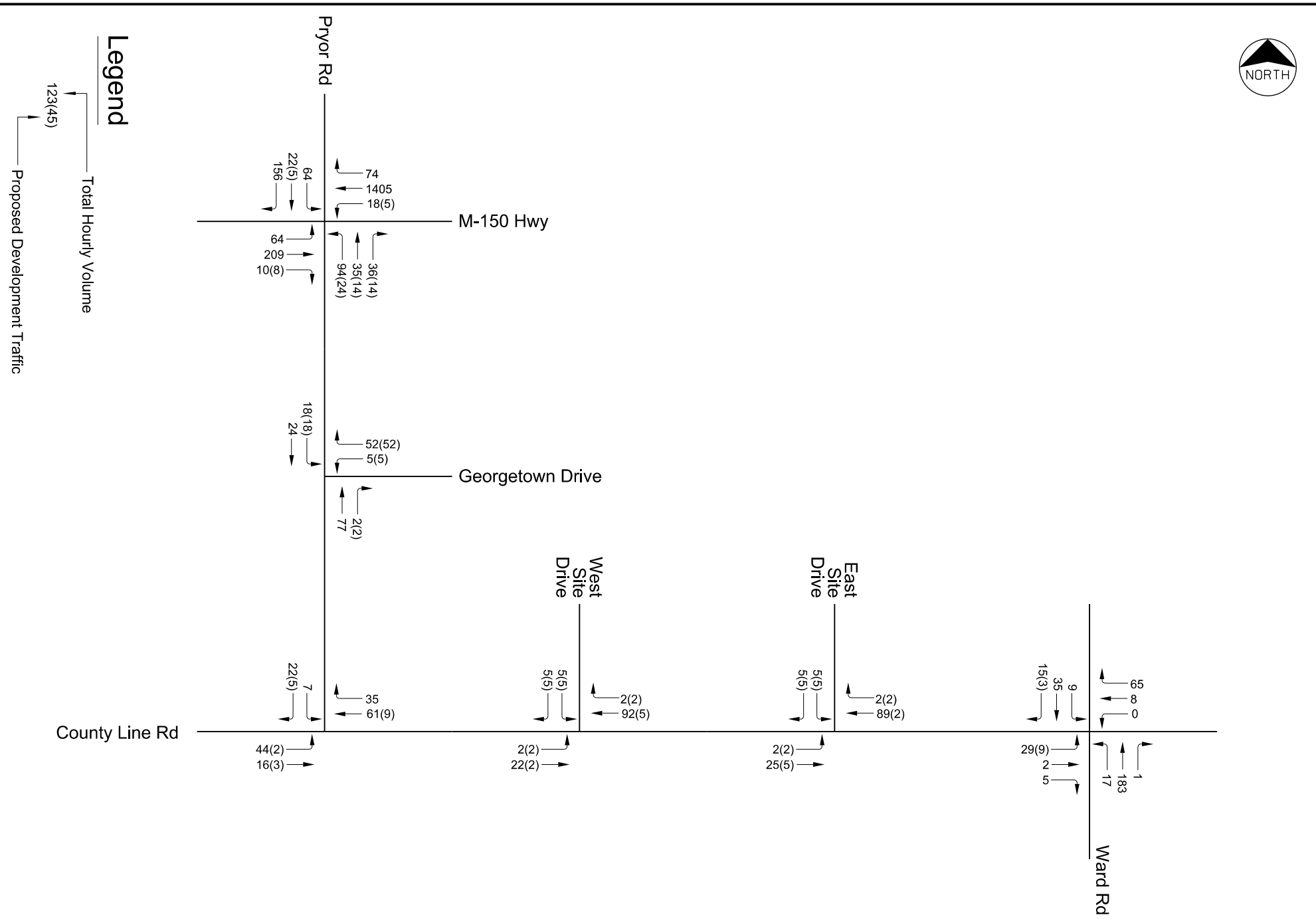
TranSystems	EXISTING A.M. PEAK HOUR TRAFFIC VOLUMES	Stoney Creek West Traffic Impact Study Lee's Summit, Missouri	January 2016 No Scale	Figure A-4



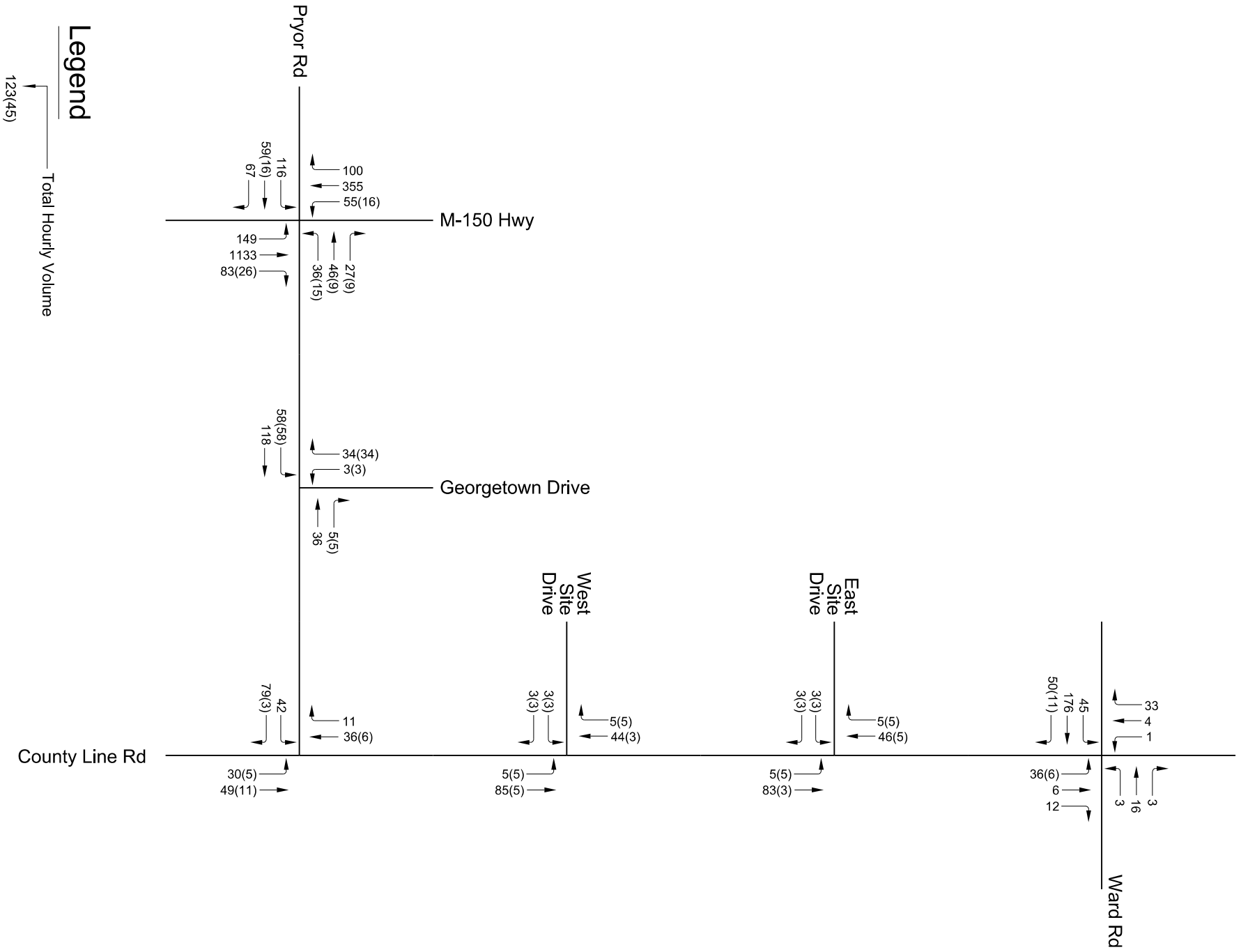
TranSystems	EXISTING P.M. PEAK HOUR TRAFFIC VOLUMES	Stoney Creek West Traffic Impact Study Lee's Summit, Missouri	January 2016 No Scale	Figure A-5



TranSystems	EXISTING PLUS DEVELOPMENT LANE CONFIGURATIONS	Stoney Creek West Traffic Impact Study Lee's Summit, Missouri	January 2016 No Scale	Figure A-6



TranSystems	EXISTING PLUS DEVELOPMENT A.M. PEAK HOUR TRAFFIC VOLUMES	Stoney Creek West Traffic Impact Study Lee's Summit, Missouri	January 2016 No Scale	Figure A-7



TranSystems	EXISTING PLUS DEVELOPMENT P.M. PEAK HOUR TRAFFIC VOLUMES	Stoney Creek West Traffic Impact Study Lee's Summit, Missouri	January 2016 No Scale	Figure A-8

Appendix B - Trip Generation and Distribution

See attached worksheets.

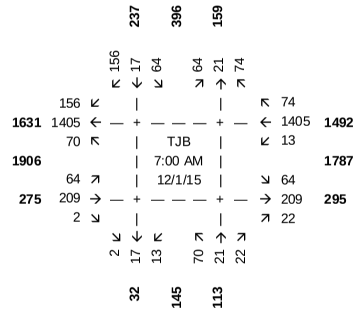
Stoney Creek West Traffic Impact Study
Lee's Summit, Missouri
Trip Generation

Land Use	Intensity	ITE Code	Daily	A.M. Peak Hour					P.M. Peak Hour				
				Total	% In	% Out	In	Out	Total	% In	% Out	In	Out
Single-Family Residential	166 units	210	1,675	126	25%	75%	32	94	166	63%	37%	105	61
Total Development Trips			***1,675***	***126***			***32***	***94***	***166***			***105***	***61***

Stoney Creek West Traffic Impact Study
Lee's Summit, Missouri

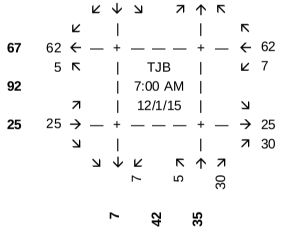
Existing Traffic Volumes
A.M. Peak Hour

M-150 Highway and Pryor Road

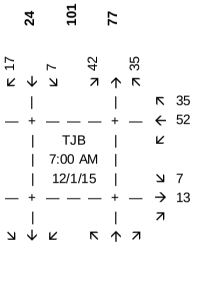


Pryor Road and Georgetown Drive

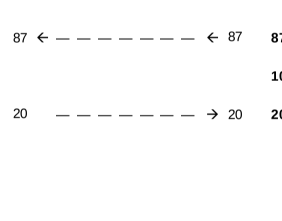
Prairie Lane and County Line Road



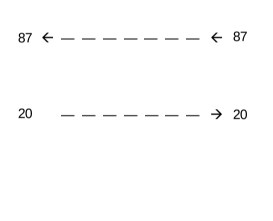
Pryor Road and County Line Road



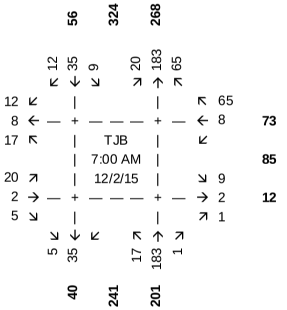
County Line Road and west site drive



County Line Road and east site drive



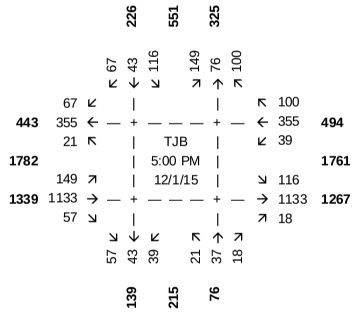
Ward Road and County Line Road



Stoney Creek West Traffic Impact Study
Lee's Summit, Missouri

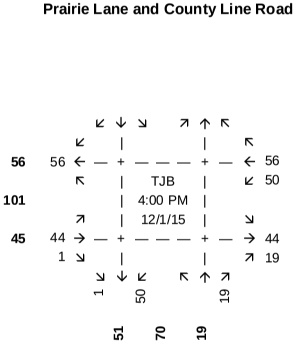
Existing Traffic Volumes
P.M. Peak Hour

M-150 Highway and Pryor Road

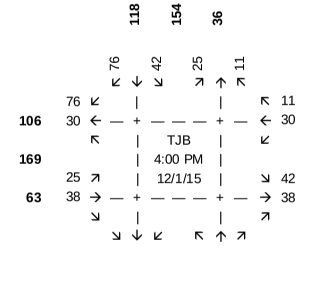


Pryor Road and Georgetown Drive

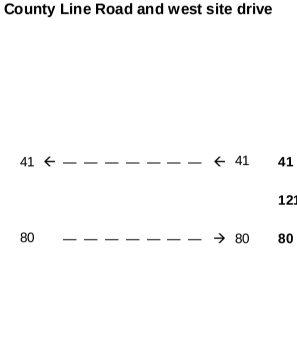
Prairie Lane and County Line Road



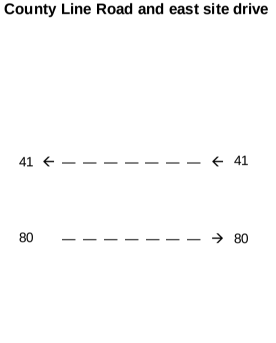
Pryor Road and County Line Road



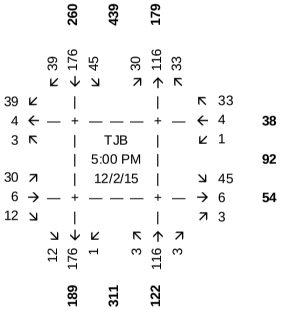
County Line Road and west site drive



County Line Road and east site drive



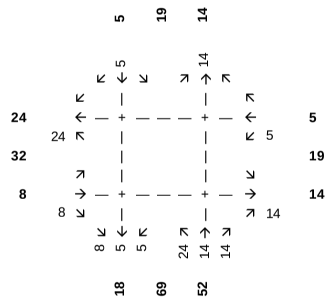
Ward Road and County Line Road



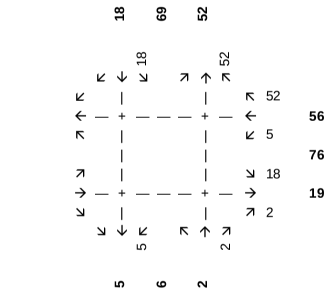
Stoney Creek West Traffic Impact Study
Lee's Summit, Missouri

Development Trips
A.M. Peak Hour

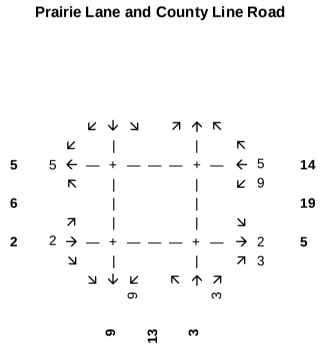
M-150 Highway and Pryor Road



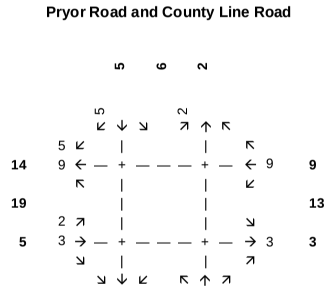
Pryor Road and Georgetown Drive



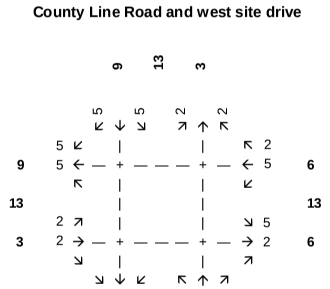
Prairie Lane and County Line Road



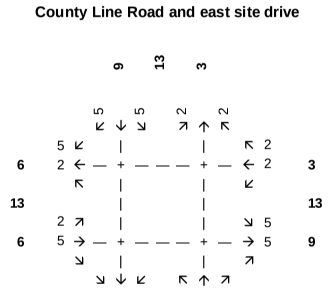
Pryor Road and County Line Road



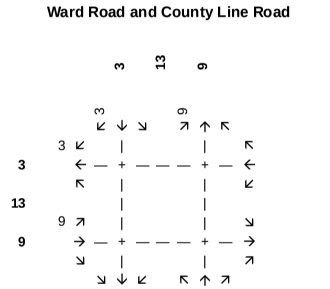
County Line Road and west site drive



County Line Road and east site drive



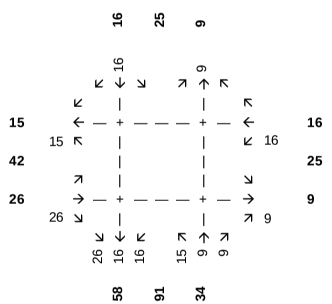
Ward Road and County Line Road



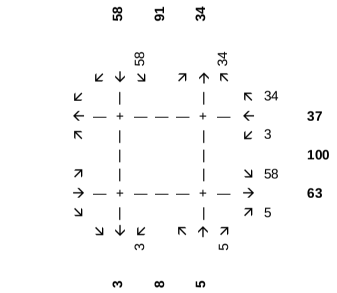
Stoney Creek West Traffic Impact Study
Lee's Summit, Missouri

Development Trips
P.M. Peak Hour

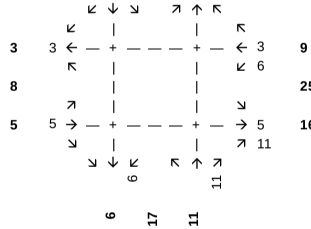
M-150 Highway and Pryor Road



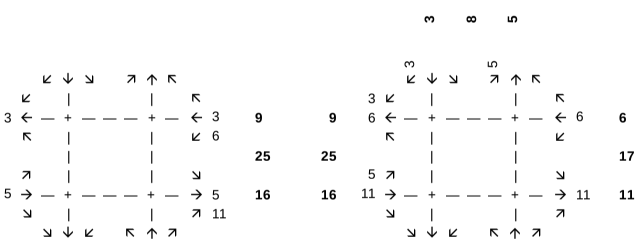
Pryor Road and Georgetown Drive



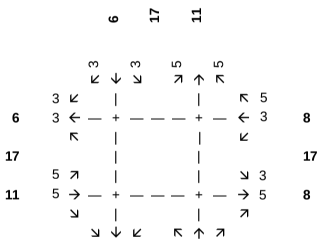
Prairie Lane and County Line Road



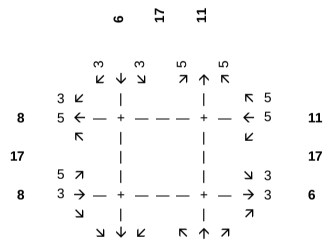
Pryor Road and County Line Road



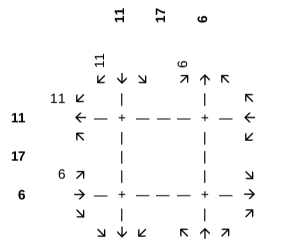
County Line Road and west site drive



County Line Road and east site drive



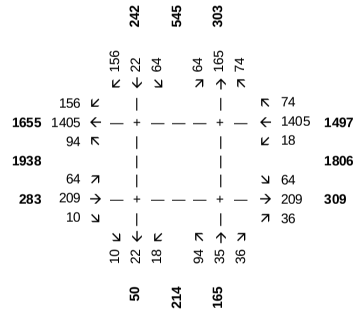
Ward Road and County Line Road



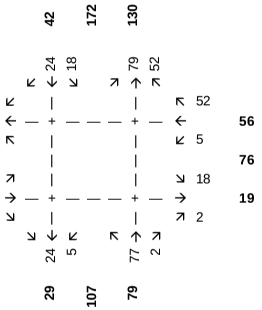
Stoney Creek West Traffic Impact Study
Lee's Summit, Missouri

Existing plus Development Traffic Volumes
A.M. Peak Hour

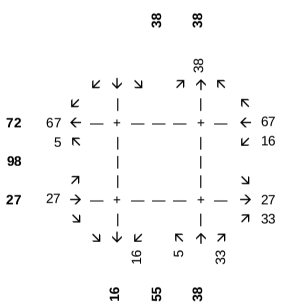
M-150 Highway and Pryor Road



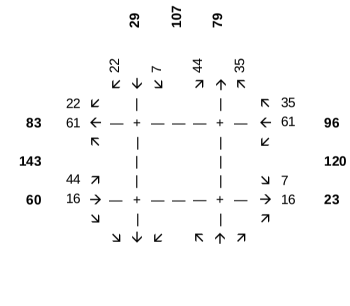
Pryor Road and Georgetown Drive



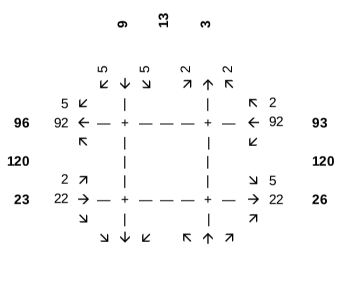
Prairie Lane and County Line Road



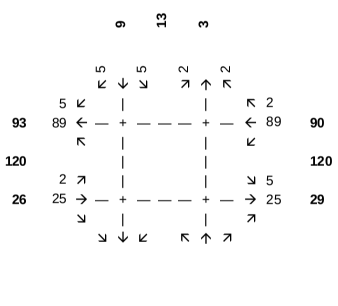
Pryor Road and County Line Road



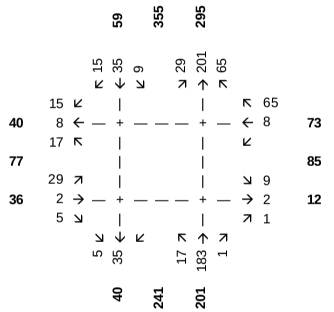
County Line Road and west site drive



County Line Road and east site drive



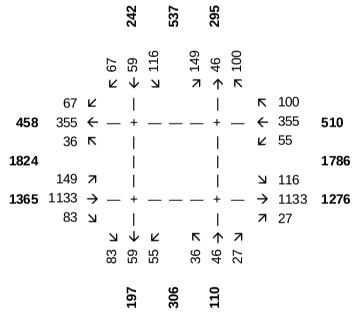
Ward Road and County Line Road



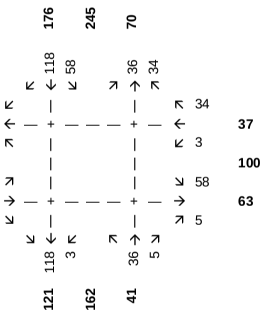
Stoney Creek West Traffic Impact Study
Lee's Summit, Missouri

Existing plus Development Traffic Volumes
A.M. Peak Hour

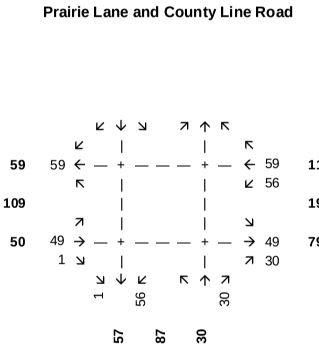
M-150 Highway and Pryor Road



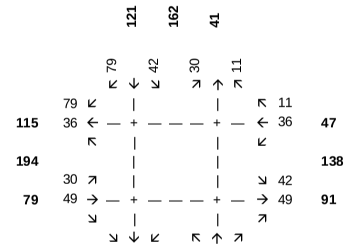
Pryor Road and Georgetown Drive



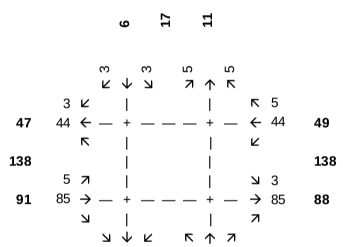
Prairie Lane and County Line Road



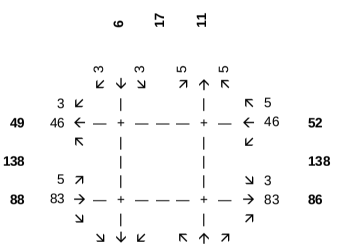
Pryor Road and County Line Road



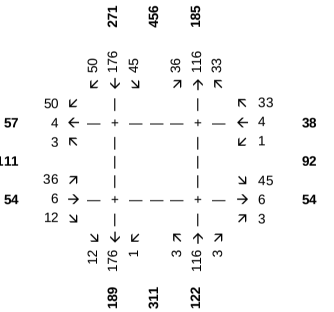
County Line Road and west site drive



County Line Road and east site drive



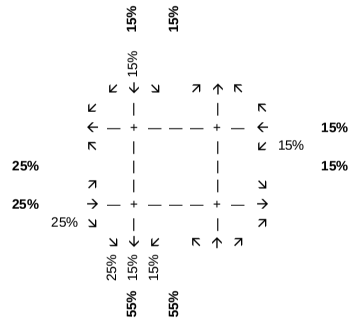
Ward Road and County Line Road



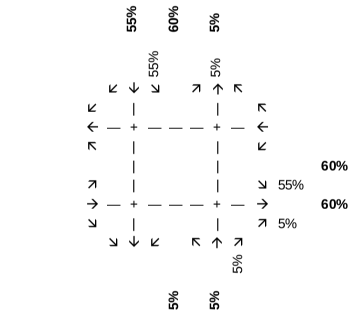
Stoney Creek West Traffic Impact Study
Lee's Summit, Missouri

Trip Distribution
INBOUND

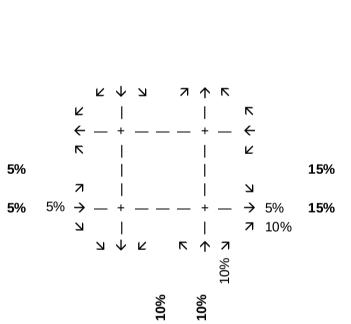
M-150 Highway and Pryor Road



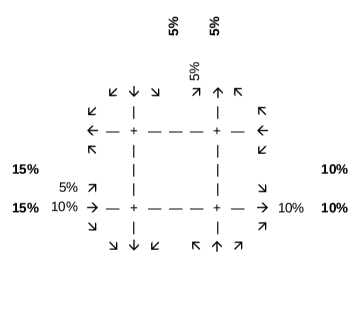
Pryor Road and Georgetown Drive



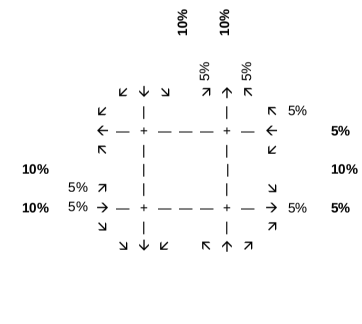
Prairie Lane and County Line Road



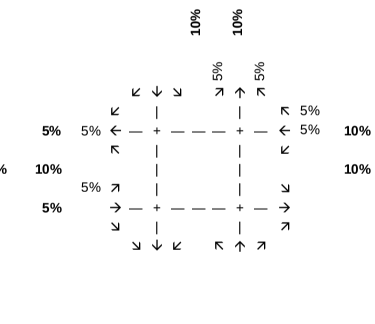
Pryor Road and County Line Road



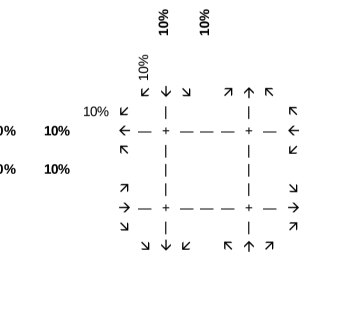
County Line Road and west site drive



County Line Road and east site drive



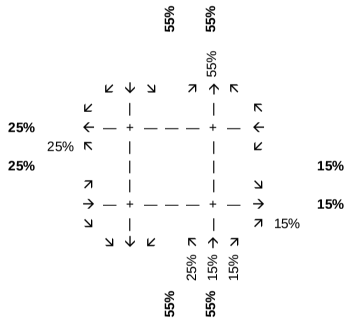
Ward Road and County Line Road



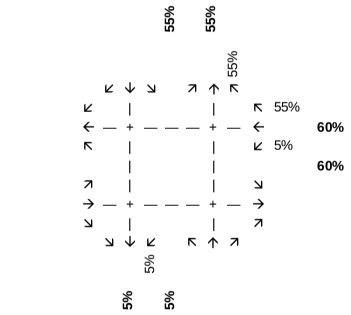
Stoney Creek West Traffic Impact Study
Lee's Summit, Missouri

Trip Distribution
OUTBOUND

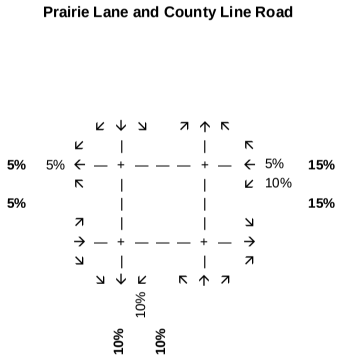
M-150 Highway and Pryor Road



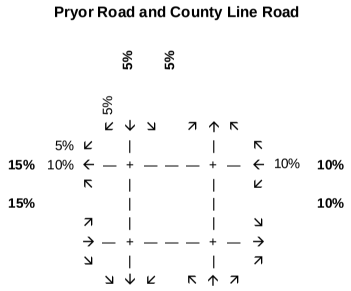
Pryor Road and Georgetown Drive



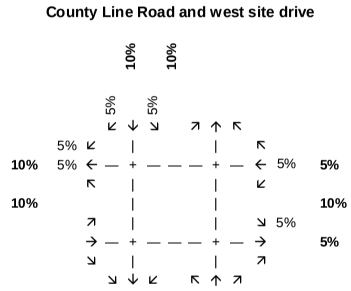
Prairie Lane and County Line Road



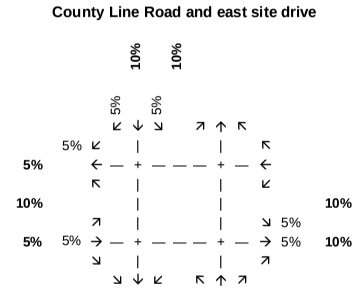
Pryor Road and County Line Road



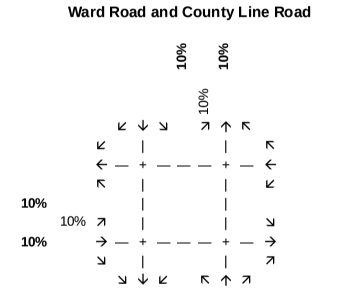
County Line Road and west site drive



County Line Road and east site drive



Ward Road and County Line Road



Appendix C – Capacity Analysis Reports

See attached Reports.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	80	249	8	20	1789	80	48	36	108	24	203
v/c Ratio	0.50	0.10	0.01	0.03	0.80	0.41	0.24	0.12	0.57	0.12	0.70
Control Delay	26.2	8.4	0.0	6.5	22.0	47.8	51.1	0.9	55.5	48.3	31.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.2	8.4	0.0	6.5	22.0	47.8	51.1	0.9	55.5	48.3	31.8
Queue Length 50th (ft)	16	27	0	4	545	54	35	0	74	17	50
Queue Length 95th (ft)	#56	61	0	10	635	91	33	0	75	33	88
Internal Link Dist (ft)		1162			1295		5188			660	
Turn Bay Length (ft)	200		90	200		30		30	30		30
Base Capacity (vph)	159	2416	1244	780	2233	196	279	353	189	279	353
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.10	0.01	0.03	0.80	0.41	0.17	0.10	0.57	0.09	0.58

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	64	209	2	13	1405	74	70	21	22	64	17	156
Future Volume (vph)	64	209	2	13	1405	74	70	21	22	64	17	156
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3505		1770	1863	1583	1770	1863	1583
Flt Permitted	0.05	1.00	1.00	0.60	1.00		0.74	1.00	1.00	0.61	1.00	1.00
Satd. Flow (perm)	97	3539	1583	1113	3505		1381	1863	1583	1137	1863	1583
Peak-hour factor, PHF	0.80	0.84	0.25	0.65	0.84	0.64	0.88	0.44	0.61	0.59	0.71	0.77
Adj. Flow (vph)	80	249	8	20	1673	116	80	48	36	108	24	203
RTOR Reduction (vph)	0	0	3	0	4	0	0	0	33	0	0	122
Lane Group Flow (vph)	80	249	5	20	1785	0	80	48	3	108	24	81
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases	4		4	8			2		2	6		6
Actuated Green, G (s)	82.6	77.2	81.2	76.2	74.0		14.6	10.6	10.6	18.6	12.6	12.6
Effective Green, g (s)	82.6	77.2	81.2	76.2	74.0		14.6	10.6	10.6	18.6	12.6	12.6
Actuated g/C Ratio	0.69	0.64	0.68	0.64	0.62		0.12	0.09	0.09	0.16	0.10	0.10
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	142	2276	1150	718	2161		180	164	139	207	195	166
v/s Ratio Prot	c0.03	0.07	0.00	0.00	c0.51		0.01	0.03		c0.03	0.01	
v/s Ratio Perm	c0.36		0.00	0.02			0.04		0.00	c0.05		0.05
v/c Ratio	0.56	0.11	0.00	0.03	0.83		0.44	0.29	0.02	0.52	0.12	0.49
Uniform Delay, d1	20.0	8.2	6.3	8.1	18.0		48.5	51.2	50.0	45.8	48.7	50.7
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.0	0.1	0.0	0.0	3.8		1.7	1.0	0.1	2.4	0.3	2.3
Delay (s)	25.0	8.3	6.3	8.1	21.7		50.3	52.2	50.0	48.2	49.0	52.9
Level of Service	C	A	A	A	C		D	D	D	D	D	D
Approach Delay (s)		12.2			21.6			50.8			51.1	
Approach LOS		B			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	25.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	70.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	42	13	52	35	7	17
Future Volume (Veh/h)	42	13	52	35	7	17
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.65	0.60	0.86	0.78	0.88	0.61
Hourly flow rate (vph)	65	22	60	45	8	28
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	105				234	82
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	105				234	82
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	96				99	97
cM capacity (veh/h)	1486				721	977

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	87	105	36
Volume Left	65	0	8
Volume Right	0	45	28
cSH	1486	1700	906
Volume to Capacity	0.04	0.06	0.04
Queue Length 95th (ft)	3	0	3
Control Delay (s)	5.7	0.0	9.1
Lane LOS	A		A
Approach Delay (s)	5.7	0.0	9.1
Approach LOS			A

Intersection Summary			
Average Delay	3.6		
Intersection Capacity Utilization	19.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	2	5	0	8	65	17	183	1	9	35	12
Future Volume (Veh/h)	20	2	5	0	8	65	17	183	1	9	35	12
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.56	0.25	0.42	0.90	0.50	0.58	0.71	0.85	0.25	0.75	0.67	0.50
Hourly flow rate (vph)	36	8	12	0	16	112	24	215	4	12	52	24
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)			5									
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	459	343	52	351	365	217	76			219		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	459	343	52	351	365	217	76			219		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	92	99	99	100	97	86	98			99		
cM capacity (veh/h)	425	565	1016	579	549	823	1523			1350		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	56	128	24	219	12	52	24
Volume Left	36	0	24	0	12	0	0
Volume Right	12	112	0	4	0	0	24
cSH	573	775	1523	1700	1350	1700	1700
Volume to Capacity	0.10	0.17	0.02	0.13	0.01	0.03	0.01
Queue Length 95th (ft)	8	15	1	0	1	0	0
Control Delay (s)	12.7	10.6	7.4	0.0	7.7	0.0	0.0
Lane LOS	B	B	A		A		
Approach Delay (s)	12.7	10.6	0.7		1.0		
Approach LOS	B	B					

Intersection Summary				
Average Delay	4.5			
Intersection Capacity Utilization	24.2%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	25	0	7	62	5	30
Future Volume (Veh/h)	25	0	7	62	5	30
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.78	0.78	0.55	0.86	0.63	0.73
Hourly flow rate (vph)	32	0	13	72	8	41
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			32		130	32
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			32		130	32
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		99	96
cM capacity (veh/h)			1580		857	1042

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	32	85	49
Volume Left	0	13	8
Volume Right	0	0	41
cSH	1700	1580	1006
Volume to Capacity	0.02	0.01	0.05
Queue Length 95th (ft)	0	1	4
Control Delay (s)	0.0	1.2	8.8
Lane LOS		A	A
Approach Delay (s)	0.0	1.2	8.8
Approach LOS			A

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	19.1%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	155	1245	68	56	490	32	44	32	127	68	76
v/c Ratio	0.25	0.56	0.06	0.20	0.24	0.20	0.28	0.12	0.59	0.33	0.26
Control Delay	7.1	15.8	1.2	8.1	11.9	41.4	56.1	1.0	53.6	53.1	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.1	15.8	1.2	8.1	11.9	41.4	56.1	1.0	53.6	53.1	2.2
Queue Length 50th (ft)	37	306	0	12	86	20	33	0	85	49	0
Queue Length 95th (ft)	62	394	9	20	126	35	65	0	142	64	0
Internal Link Dist (ft)		1162			1295		5188			660	
Turn Bay Length (ft)	200		90	200		30		30	30		30
Base Capacity (vph)	632	2222	1161	283	2037	164	279	353	214	341	401
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.56	0.06	0.20	0.24	0.20	0.16	0.09	0.59	0.20	0.19

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	149	1133	57	39	355	100	21	37	18	116	43	67
Future Volume (vph)	149	1133	57	39	355	100	21	37	18	116	43	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3422		1770	1863	1583	1770	1863	1583
Flt Permitted	0.44	1.00	1.00	0.17	1.00		0.71	1.00	1.00	0.45	1.00	1.00
Satd. Flow (perm)	811	3539	1583	313	3422		1328	1863	1583	830	1863	1583
Peak-hour factor, PHF	0.96	0.91	0.84	0.70	0.93	0.93	0.66	0.84	0.56	0.91	0.63	0.88
Adj. Flow (vph)	155	1245	68	56	382	108	32	44	32	127	68	76
RTOR Reduction (vph)	0	0	24	0	19	0	0	0	30	0	0	68
Lane Group Flow (vph)	155	1245	44	56	471	0	32	44	2	127	68	8
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases	4		4	8			2		2	6		6
Actuated Green, G (s)	82.0	73.0	77.0	75.2	69.6		12.2	8.2	8.2	22.6	13.4	13.4
Effective Green, g (s)	82.0	73.0	77.0	75.2	69.6		12.2	8.2	8.2	22.6	13.4	13.4
Actuated g/C Ratio	0.68	0.61	0.64	0.63	0.58		0.10	0.07	0.07	0.19	0.11	0.11
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	626	2152	1094	264	1984		149	127	108	228	208	176
v/s Ratio Prot	c0.02	c0.35	0.00	0.01	0.14		0.01	0.02		c0.04	0.04	
v/s Ratio Perm	0.15		0.03	0.12			0.01		0.00	c0.06		0.01
v/c Ratio	0.25	0.58	0.04	0.21	0.24		0.21	0.35	0.02	0.56	0.33	0.05
Uniform Delay, d1	6.8	14.2	7.9	10.1	12.3		49.3	53.3	52.2	42.7	49.1	47.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	1.1	0.0	0.4	0.3		0.7	1.6	0.1	2.9	0.9	0.1
Delay (s)	7.0	15.3	7.9	10.5	12.6		50.0	55.0	52.2	45.6	50.1	47.7
Level of Service	A	B	A	B	B		D	D	D	D	D	D
Approach Delay (s)		14.1			12.3			52.7			47.3	
Approach LOS		B			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	19.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	25	38	30	11	42	76
Future Volume (Veh/h)	25	38	30	11	42	76
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.89	0.88	0.72	0.92	0.88	0.76
Hourly flow rate (vph)	28	43	42	12	48	100
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	54				147	48
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	54				147	48
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				94	90
cM capacity (veh/h)	1551				830	1021

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	71	54	148
Volume Left	28	0	48
Volume Right	0	12	100
cSH	1551	1700	950
Volume to Capacity	0.02	0.03	0.16
Queue Length 95th (ft)	1	0	14
Control Delay (s)	3.0	0.0	9.5
Lane LOS	A		A
Approach Delay (s)	3.0	0.0	9.5
Approach LOS			A

Intersection Summary			
Average Delay	5.9		
Intersection Capacity Utilization	23.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	6	12	1	4	33	3	116	3	45	176	39
Future Volume (Veh/h)	30	6	12	1	4	33	3	116	3	45	176	39
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.63	0.38	0.60	0.25	0.33	0.63	0.38	0.97	0.25	0.87	0.88	0.61
Hourly flow rate (vph)	48	16	20	4	12	52	8	120	12	52	200	64
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)			5									
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	498	452	200	464	510	126	264			132		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	498	452	200	464	510	126	264			132		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	89	97	98	99	97	94	99			96		
cM capacity (veh/h)	432	482	841	468	447	924	1300			1453		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	84	68	8	132	52	200	64
Volume Left	48	4	8	0	52	0	0
Volume Right	20	52	0	12	0	0	64
cSH	584	742	1300	1700	1453	1700	1700
Volume to Capacity	0.14	0.09	0.01	0.08	0.04	0.12	0.04
Queue Length 95th (ft)	13	8	0	0	3	0	0
Control Delay (s)	13.2	10.3	7.8	0.0	7.6	0.0	0.0
Lane LOS	B	B	A		A		
Approach Delay (s)	13.2	10.3	0.4		1.2		
Approach LOS	B	B					

Intersection Summary				
Average Delay	3.7			
Intersection Capacity Utilization	25.9%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	44	1	50	56	0	19
Future Volume (Veh/h)	44	1	50	56	0	19
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	0.25	0.78	0.72	0.25	0.68
Hourly flow rate (vph)	44	4	64	78	0	28
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			48		252	46
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			48		252	46
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			96		100	97
cM capacity (veh/h)			1559		706	1023

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	48	142	28
Volume Left	0	64	0
Volume Right	4	0	28
cSH	1700	1559	1023
Volume to Capacity	0.03	0.04	0.03
Queue Length 95th (ft)	0	3	2
Control Delay (s)	0.0	3.5	8.6
Lane LOS		A	A
Approach Delay (s)	0.0	3.5	8.6
Approach LOS			A

Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	22.4%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	80	249	40	28	1789	107	80	59	108	31	203
v/c Ratio	0.50	0.11	0.03	0.04	0.82	0.55	0.41	0.20	0.51	0.16	0.70
Control Delay	25.5	9.6	0.1	6.5	23.4	54.2	55.6	1.6	51.7	49.1	31.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.5	9.6	0.1	6.5	23.4	54.2	55.6	1.6	51.7	49.1	31.8
Queue Length 50th (ft)	16	38	0	6	545	73	60	0	74	23	50
Queue Length 95th (ft)	54	61	0	12	635	115	49	0	75	40	88
Internal Link Dist (ft)		1162			1295		4325			660	
Turn Bay Length (ft)	200		90	200		30		30	30		30
Base Capacity (vph)	160	2279	1186	761	2169	195	279	353	210	279	353
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.11	0.03	0.04	0.82	0.55	0.29	0.17	0.51	0.11	0.58

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	64	209	10	18	1405	74	94	35	36	64	22	156
Future Volume (vph)	64	209	10	18	1405	74	94	35	36	64	22	156
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3505		1770	1863	1583	1770	1863	1583
Flt Permitted	0.05	1.00	1.00	0.60	1.00		0.74	1.00	1.00	0.54	1.00	1.00
Satd. Flow (perm)	101	3539	1583	1113	3505		1373	1863	1583	1009	1863	1583
Peak-hour factor, PHF	0.80	0.84	0.25	0.65	0.84	0.64	0.88	0.44	0.61	0.59	0.71	0.77
Adj. Flow (vph)	80	249	40	28	1673	116	107	80	59	108	31	203
RTOR Reduction (vph)	0	0	14	0	4	0	0	0	54	0	0	120
Lane Group Flow (vph)	80	249	26	28	1785	0	107	80	5	108	31	83
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases	4		4	8			2		2	6		6
Actuated Green, G (s)	79.1	73.7	78.7	75.3	71.8		15.6	10.6	10.6	22.0	13.8	13.8
Effective Green, g (s)	79.1	73.7	78.7	75.3	71.8		15.6	10.6	10.6	22.0	13.8	13.8
Actuated g/C Ratio	0.66	0.61	0.66	0.63	0.60		0.13	0.09	0.09	0.18	0.12	0.12
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	141	2173	1117	717	2097		195	164	139	236	214	182
v/s Ratio Prot	c0.03	0.07	0.00	0.00	c0.51		0.02	0.04		c0.03	0.02	
v/s Ratio Perm	0.35		0.02	0.02			0.05		0.00	c0.05		0.05
v/c Ratio	0.57	0.11	0.02	0.04	0.85		0.55	0.49	0.04	0.46	0.14	0.45
Uniform Delay, d1	20.8	9.6	7.2	8.5	19.7		48.4	52.1	50.0	42.7	47.8	49.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.2	0.1	0.0	0.0	4.6		3.1	2.3	0.1	1.4	0.3	1.8
Delay (s)	26.0	9.7	7.2	8.5	24.3		51.5	54.4	50.1	44.1	48.1	51.4
Level of Service	C	A	A	A	C		D	D	D	D	D	D
Approach Delay (s)		13.0			24.1			52.1			48.8	
Approach LOS		B			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	28.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	72.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	5	52	77	2	18	24
Future Volume (Veh/h)	5	52	77	2	18	24
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	58	86	2	20	27
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	154	87			88	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	154	87			88	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	94			99	
cM capacity (veh/h)	826	971			1508	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	64	88	20	27
Volume Left	6	0	20	0
Volume Right	58	2	0	0
cSH	956	1700	1508	1700
Volume to Capacity	0.07	0.05	0.01	0.02
Queue Length 95th (ft)	5	0	1	0
Control Delay (s)	9.0	0.0	7.4	0.0
Lane LOS	A		A	
Approach Delay (s)	9.0	0.0	3.2	
Approach LOS	A			

Intersection Summary			
Average Delay	3.7		
Intersection Capacity Utilization	17.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	44	16	61	35	7	22
Future Volume (Veh/h)	44	16	61	35	7	22
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.65	0.60	0.86	0.78	0.88	0.61
Hourly flow rate (vph)	68	27	71	45	8	36
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	116				256	94
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	116				256	94
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	95				99	96
cM capacity (veh/h)	1473				698	963

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	95	116	44
Volume Left	68	0	8
Volume Right	0	45	36
cSH	1473	1700	901
Volume to Capacity	0.05	0.07	0.05
Queue Length 95th (ft)	4	0	4
Control Delay (s)	5.5	0.0	9.2
Lane LOS	A		A
Approach Delay (s)	5.5	0.0	9.2
Approach LOS			A

Intersection Summary			
Average Delay	3.6		
Intersection Capacity Utilization	19.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	22	92	2	5	5
Future Volume (Veh/h)	2	22	92	2	5	5
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	2	24	102	2	6	6
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	104				131	103
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	104				131	103
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	99
cM capacity (veh/h)	1488				862	952

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	26	104	12
Volume Left	2	0	6
Volume Right	0	2	6
cSH	1488	1700	905
Volume to Capacity	0.00	0.06	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.6	0.0	9.0
Lane LOS	A		A
Approach Delay (s)	0.6	0.0	9.0
Approach LOS			A

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	15.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	25	89	2	5	5
Future Volume (Veh/h)	2	25	89	2	5	5
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	2	28	99	2	6	6
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	101				132	100
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	101				132	100
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	99
cM capacity (veh/h)	1491				861	956

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	30	101	12
Volume Left	2	0	6
Volume Right	0	2	6
cSH	1491	1700	906
Volume to Capacity	0.00	0.06	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.5	0.0	9.0
Lane LOS	A		A
Approach Delay (s)	0.5	0.0	9.0
Approach LOS			A

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	14.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	2	5	0	8	65	17	183	1	9	35	15
Future Volume (Veh/h)	29	2	5	0	8	65	17	183	1	9	35	15
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.56	0.25	0.42	0.90	0.50	0.58	0.71	0.85	0.25	0.75	0.67	0.50
Hourly flow rate (vph)	52	8	12	0	16	112	24	215	4	12	52	30
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)			5									
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	459	343	52	351	371	217	82			219		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	459	343	52	351	371	217	82			219		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	88	99	99	100	97	86	98			99		
cM capacity (veh/h)	425	565	1016	579	545	823	1515			1350		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	72	128	24	219	12	52	30
Volume Left	52	0	24	0	12	0	0
Volume Right	12	112	0	4	0	0	30
cSH	532	774	1515	1700	1350	1700	1700
Volume to Capacity	0.14	0.17	0.02	0.13	0.01	0.03	0.02
Queue Length 95th (ft)	12	15	1	0	1	0	0
Control Delay (s)	13.4	10.6	7.4	0.0	7.7	0.0	0.0
Lane LOS	B	B	A		A		
Approach Delay (s)	13.4	10.6	0.7		1.0		
Approach LOS	B	B					

Intersection Summary				
Average Delay	4.8			
Intersection Capacity Utilization	24.7%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	27	0	16	67	5	33
Future Volume (Veh/h)	27	0	16	67	5	33
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.78	0.78	0.55	0.86	0.63	0.73
Hourly flow rate (vph)	35	0	29	78	8	45
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			35		171	35
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			35		171	35
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		99	96
cM capacity (veh/h)			1576		804	1038

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	35	107	53
Volume Left	0	29	8
Volume Right	0	0	45
cSH	1700	1576	994
Volume to Capacity	0.02	0.02	0.05
Queue Length 95th (ft)	0	1	4
Control Delay (s)	0.0	2.1	8.8
Lane LOS		A	A
Approach Delay (s)	0.0	2.1	8.8
Approach LOS			A

Intersection Summary			
Average Delay	3.5		
Intersection Capacity Utilization	21.1%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	155	1245	99	79	490	55	55	48	127	94	76
v/c Ratio	0.25	0.58	0.09	0.29	0.25	0.33	0.34	0.18	0.52	0.44	0.25
Control Delay	7.6	17.0	2.4	9.4	12.6	45.1	57.3	1.6	48.8	56.0	2.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.6	17.0	2.4	9.4	12.6	45.1	57.3	1.6	48.8	56.0	2.1
Queue Length 50th (ft)	37	310	4	18	86	35	41	0	85	69	0
Queue Length 95th (ft)	64	410	21	27	129	51	76	0	141	82	0
Internal Link Dist (ft)		1162			1295		4335			660	
Turn Bay Length (ft)	200		90	200		30		30	30		30
Base Capacity (vph)	612	2136	1125	275	1964	165	279	353	244	341	401
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.58	0.09	0.29	0.25	0.33	0.20	0.14	0.52	0.28	0.19

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	149	1133	83	55	355	100	36	46	27	116	59	67
Future Volume (vph)	149	1133	83	55	355	100	36	46	27	116	59	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3422		1770	1863	1583	1770	1863	1583
Flt Permitted	0.43	1.00	1.00	0.16	1.00		0.70	1.00	1.00	0.42	1.00	1.00
Satd. Flow (perm)	808	3539	1583	296	3422		1297	1863	1583	787	1863	1583
Peak-hour factor, PHF	0.96	0.91	0.84	0.70	0.93	0.93	0.66	0.84	0.56	0.91	0.63	0.88
Adj. Flow (vph)	155	1245	99	79	382	108	55	55	48	127	94	76
RTOR Reduction (vph)	0	0	31	0	20	0	0	0	45	0	0	67
Lane Group Flow (vph)	155	1245	68	79	470	0	55	55	3	127	94	9
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases	4		4	8			2		2	6		6
Actuated Green, G (s)	79.1	70.0	75.0	73.1	67.0		13.5	8.5	8.5	25.9	14.9	14.9
Effective Green, g (s)	79.1	70.0	75.0	73.1	67.0		13.5	8.5	8.5	25.9	14.9	14.9
Actuated g/C Ratio	0.66	0.58	0.62	0.61	0.56		0.11	0.07	0.07	0.22	0.12	0.12
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	605	2064	1068	255	1910		165	131	112	263	231	196
v/s Ratio Prot	c0.02	c0.35	0.00	0.02	0.14		0.01	0.03		c0.05	0.05	
v/s Ratio Perm	0.15		0.04	0.17			0.02		0.00	c0.06		0.01
v/c Ratio	0.26	0.60	0.06	0.31	0.25		0.33	0.42	0.03	0.48	0.41	0.05
Uniform Delay, d1	7.8	16.1	8.8	11.6	13.6		48.8	53.4	51.9	39.9	48.5	46.3
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	1.3	0.0	0.7	0.3		1.2	2.2	0.1	1.4	1.2	0.1
Delay (s)	8.0	17.4	8.8	12.3	13.9		50.0	55.6	52.0	41.3	49.6	46.4
Level of Service	A	B	A	B	B		D	E	D	D	D	D
Approach Delay (s)		15.9			13.7			52.5			45.3	
Approach LOS		B			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	21.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	3	34	36	5	58	118
Future Volume (Veh/h)	3	34	36	5	58	118
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	3	38	40	6	64	131
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	302	43			46	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	302	43			46	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	96			96	
cM capacity (veh/h)	661	1027			1562	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	41	46	64	131
Volume Left	3	0	64	0
Volume Right	38	6	0	0
cSH	987	1700	1562	1700
Volume to Capacity	0.04	0.03	0.04	0.08
Queue Length 95th (ft)	3	0	3	0
Control Delay (s)	8.8	0.0	7.4	0.0
Lane LOS	A		A	
Approach Delay (s)	8.8	0.0	2.4	
Approach LOS	A			

Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	19.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	30	49	36	11	42	79
Future Volume (Veh/h)	30	49	36	11	42	79
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.89	0.88	0.72	0.92	0.88	0.76
Hourly flow rate (vph)	34	56	50	12	48	104
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	62				180	56
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	62				180	56
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				94	90
cM capacity (veh/h)	1541				792	1011

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	90	62	152
Volume Left	34	0	48
Volume Right	0	12	104
cSH	1541	1700	929
Volume to Capacity	0.02	0.04	0.16
Queue Length 95th (ft)	2	0	15
Control Delay (s)	2.9	0.0	9.6
Lane LOS	A		A
Approach Delay (s)	2.9	0.0	9.6
Approach LOS			A

Intersection Summary			
Average Delay	5.7		
Intersection Capacity Utilization	24.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	85	44	5	3	3
Future Volume (Veh/h)	5	85	44	5	3	3
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	94	49	6	3	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	55				158	52
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	55				158	52
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1550				830	1016

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	100	55	6
Volume Left	6	0	3
Volume Right	0	6	3
cSH	1550	1700	913
Volume to Capacity	0.00	0.03	0.01
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.5	0.0	9.0
Lane LOS	A		A
Approach Delay (s)	0.5	0.0	9.0
Approach LOS			A

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	18.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	83	46	5	3	3
Future Volume (Veh/h)	5	83	46	5	3	3
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	92	51	6	3	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	57				158	54
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	57				158	54
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1547				830	1013

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	98	57	6
Volume Left	6	0	3
Volume Right	0	6	3
cSH	1547	1700	912
Volume to Capacity	0.00	0.03	0.01
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.5	0.0	9.0
Lane LOS	A		A
Approach Delay (s)	0.5	0.0	9.0
Approach LOS			A

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	18.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	6	12	1	4	33	3	116	3	45	176	50
Future Volume (Veh/h)	36	6	12	1	4	33	3	116	3	45	176	50
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.63	0.38	0.60	0.25	0.33	0.63	0.38	0.97	0.25	0.87	0.88	0.61
Hourly flow rate (vph)	57	16	20	4	12	52	8	120	12	52	200	82
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)			5									
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	498	452	200	464	528	126	282			132		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	498	452	200	464	528	126	282			132		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	87	97	98	99	97	94	99			96		
cM capacity (veh/h)	432	482	841	468	437	924	1280			1453		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	93	68	8	132	52	200	82
Volume Left	57	4	8	0	52	0	0
Volume Right	20	52	0	12	0	0	82
cSH	564	737	1280	1700	1453	1700	1700
Volume to Capacity	0.16	0.09	0.01	0.08	0.04	0.12	0.05
Queue Length 95th (ft)	15	8	0	0	3	0	0
Control Delay (s)	13.6	10.4	7.8	0.0	7.6	0.0	0.0
Lane LOS	B	B	A		A		
Approach Delay (s)	13.6	10.4	0.4		1.2		
Approach LOS	B	B					

Intersection Summary				
Average Delay	3.8			
Intersection Capacity Utilization	25.9%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	49	1	56	59	0	30
Future Volume (Veh/h)	49	1	56	59	0	30
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	0.25	0.78	0.72	0.25	0.68
Hourly flow rate (vph)	49	4	72	82	0	44
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			53		277	51
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			53		277	51
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			95		100	96
cM capacity (veh/h)			1553		680	1017

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	53	154	44
Volume Left	0	72	0
Volume Right	4	0	44
cSH	1700	1553	1017
Volume to Capacity	0.03	0.05	0.04
Queue Length 95th (ft)	0	4	3
Control Delay (s)	0.0	3.7	8.7
Lane LOS		A	A
Approach Delay (s)	0.0	3.7	8.7
Approach LOS			A

Intersection Summary			
Average Delay	3.8		
Intersection Capacity Utilization	22.9%	ICU Level of Service	A
Analysis Period (min)	15		