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January 16, 2019

Mr. James E. Thomas, Jr.  
Archview Investors, LLC  
8335 Keystone Xing, Suite 220  
Indianapolis, IN 46240

**RE: 2nd Street and Douglas Street Traffic Impact Study  
Lee's Summit, Missouri**

Dear Mr. Thomas:

In response to your request and authorization, TranSystems has completed a traffic impact study for the proposed multi-family development to be located generally in the northwest corner of the 2nd Street and Douglas Street 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 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:PI01180397  
Enclosure

## Introduction

TranSystems has completed this traffic impact study for the proposed multi-family development to be located generally in the northwest corner of the 2nd Street and Douglas Street 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**.

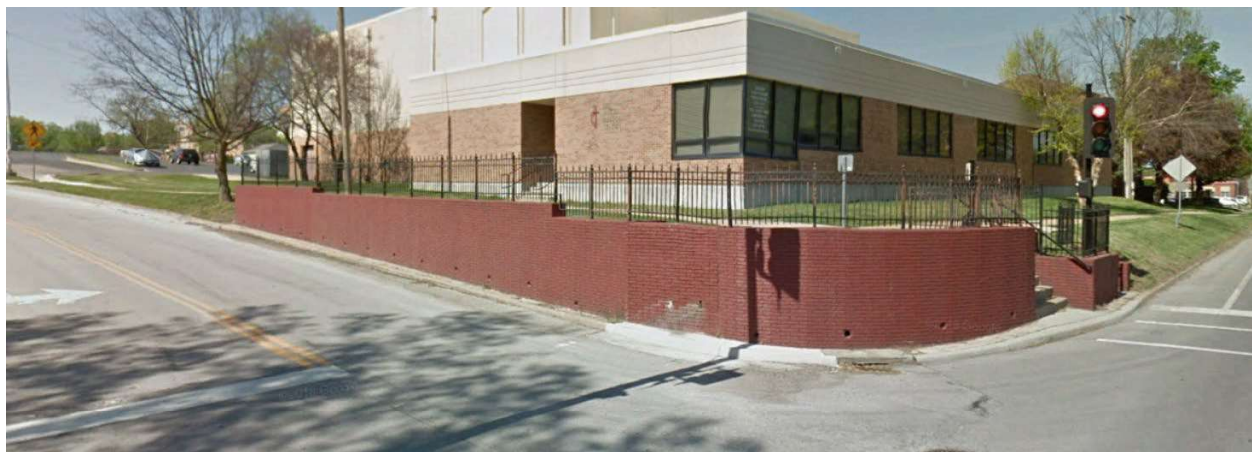
In addition to a description of the proposed development and the surrounding transportation infrastructure, this study includes trip generation estimates, trip distribution estimates, capacity analyses, and a summary of findings.

## Proposed Development Plan

The development site currently includes several church buildings and surface parking lots. One of the historic church buildings will remain in the southeast corner of the site and be incorporated in the proposed development. A 36-space surface parking lot on the east side of Douglas Street will also remain. All other church buildings and parking lots are to be removed.

The proposed development includes a four-story apartment building with 278 units. The apartments are arranged around the perimeter of the building, which also includes several courtyards. Near the center of the building will be a 400-space parking garage. The garage will be accessed from two driveways; one from 1st Street and the other from SE Main Street. A copy of the proposed site plan for the development is included on **Figure A-2** for reference.

There is a large retaining wall in the southwest corner of the site, at the intersection of 2nd Street and SE Main Street. The wall blocks sight lines looking to the east for southbound drivers on SE Main Street. For this reason, southbound right-turn movements are prohibited during red signal indications. The wall also alters the accessible pedestrian route at the intersection. To provide an accessible crossing, a midblock crosswalk is located on SE Main Street roughly 150 feet north of 2nd Street, thereby avoiding the wall. The retaining wall is shown in **Figure 1** below. The wall is to be removed as part of the development plan.



**Figure 1 – Existing retaining wall in the northeast corner of 2nd Street and SE Main Street**

## Study Area

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

- ▶ Douglas Street and Chipman Road
- ▶ 1st Street and Douglas Street
- ▶ 2nd Street and Green Street
- ▶ 2nd Street and Douglas Street
- ▶ 2nd Street and SE Main Street
- ▶ 2nd Street and Market Street
- ▶ 2nd Street and Jefferson Street
- ▶ Site Driveways

## Surrounding Street Network and Land Uses

The development site encompasses a large part of one block in the Downtown area of Lee's Summit. The block is bounded by 2nd Street on the south, Douglas Street on the east, 1st Street on the north and SE Main Street on the west. To the south of the site, across 2nd Street there are several small office buildings and the historic downtown business district. The Union Pacific Railroad runs parallel to SE Main Street just west of the site. North of the site is a church with a large surface parking lot. The same church also owns a small surface parking lot in the southwest corner of the 1st Street and Douglas Street intersection, which is not part of the development site. Lee's Summit Elementary School and two surface parking lots are located to the east of the site across Douglas Street. School pick-up and drop-off operations occur on the east side of the school building along Green Street.

Second (2nd) Street is a 44-foot wide three-lane minor arterial street that runs east/west along the north side of the Downtown area. There are sidewalks with curbs and gutters along both sides of the street. The posted speed limit on 2nd Street is 30 mph, and parking is restricted on both sides of the street. Between SE Main Street and Market Street, there are two bridges for the railroad and SW Main Street to pass over 2nd Street.

Along the west edge of the development site SE Main Street is a two-lane local street that is 28 feet wide, measured between the backs of curbs. At the intersection with 2nd Street, the north leg of the intersection widens for a southbound left-turn lane. There is sidewalk along the east side of the street. The posted speed limit on SE Main Street is 25 mph.

First (1st) Street is a two-lane local street that runs along the north side of the development site. The street is 36 feet wide, measured between the backs of curbs, with sidewalks along each side of the street.

Douglas Street is a two-lane minor arterial street that runs north/south in the study area. Between 2nd Street and Chipman Road, the street is roughly 32 feet wide. There are some sections of curb and gutter, but it is not continuous. There are sidewalks along both sides of the street. The posted speed limit is 25 mph and parking is restricted along the east side of Douglas Street, to the north of 2nd Street.

The city is planning to reconstruct Douglas Street from 2nd Street to Chipman Road in the near future as part of the current Capital Improvements Plan. Design work for the city's Douglas Street improvements project has not yet begun, but Capital Improvements Plan indicates that this project will include new street pavement, sidewalks, curbs, storm drainage work, and street lighting.

### Traffic Counts

Turning-movement traffic volume counts were collected at the study intersection on Tuesday, December 4, 2018, from 7:00 to 9:00 A.M. and from 4:00 to 6:00 P.M. Based on the data, the peak hours generally occur between 7:15 and 8:15 A.M., and between 4:15 and 5:15 P.M. The existing lane configurations, traffic control devices, and peak hour traffic volumes have been illustrated on **Figure A-3**.

### 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 in the subsequent sections.

### Trip Generation

Trip generation estimates were prepared using the Institute of Transportation Engineer's Trip Generation, 10th Edition. For a conservative analysis, the trip generation estimates were not reduced to account for the removal of the existing church. **Table 1** shows the expected trips to be generated by the proposed development. Additional information related to trip generation is included in **Appendix B**.

Land Use	Intensity	ITE Code	Average Weekday	A.M. Peak Hour			P.M. Peak Hour		
				Total	In	Out	Total	In	Out
Multifamily Housing (Low-Rise)	278 units	220	2,061	126	29	97	147	93	54
<b>Total Development Trips</b>			<b>2,061</b>	<b>126</b>	<b>29</b>	<b>97</b>	<b>147</b>	<b>93</b>	<b>54</b>

### Trip Distribution

The estimated trips generated by the proposed development were distributed onto the street system based on the trip distributions summarized on the next page in **Table 2**. These distributions are based on existing travel patterns in the area and engineering judgment. The detailed distribution patterns through the study intersections are shown in **Appendix B**.

**Table 2  
 Trip Distribution**

Direction To/From	Percentage
North on Douglas Street	35%
South on Douglas Street	5%
South on SE Main Street	5%
South on Jefferson Street	10%
East on 2nd Street	25%
West on 2nd Street	20%
<b>Total</b>	<b>100%</b>

### Traffic Operation Assessment

An assessment of traffic operations was made for the scenarios listed below.

- ▶ Existing Conditions
- ▶ Existing plus Development Conditions

The study intersections were evaluated using the Synchro traffic analysis software package. Calculations were performed based on the methodologies outlined in the Highway Capacity Manual (HCM), 6th 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 least congested condition with free-flow movement of traffic and 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 3** shows the upper limit of delay associated with each level of service for signalized and unsignalized intersections.

**Table 3  
 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 LOS measurements apply 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.

Unsignalized intersections, in contrast, are evaluated based on the movement groupings 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. At unsignalized intersections lower LOS ratings (D, E and F) do not, in themselves, indicate the need for additional improvements. Many times there are convenient alternative routes to avoid the longer delays. Other times the volumes on the unsignalized approaches are relatively minor when compared to the major street traffic, and improvements such as traffic signal installation may increase the average delay to all users of the intersection.

The decision to install a traffic signal, which is often considered when lower LOS ratings are projected, should be based on engineering studies and the warrants for traffic signal installation as outlined in the Federal Highway Administration's Manual on Uniform Traffic Control Devices (MUTCD). Signals are typically not recommended in locations where there are convenient alternative paths, or if the installation of a traffic signal would have negative impacts on the surrounding transportation system.

The LOS rating deemed acceptable varies by community, facility type and traffic control device. The City of Lee's Summit has identified LOS C as the minimum desirable goal for signalized and unsignalized intersections. However, at unsignalized intersections LOS D or E are often considered acceptable for low to moderate traffic volumes where the installation of a traffic signal is not warranted by the conditions at the intersection, or the location has been deemed undesirable for signalization.

Traffic queues were also evaluated as part of the analyses. Long traffic queues which extend beyond the amount of storage available, either between intersections or within turn lanes, can have significant impacts on operations. The projected vehicular queues were analyzed to ensure the analyses are reflective of the physical constraints of the study intersections and to identify if additional storage is needed for turn lanes.

### Existing Conditions

The results of the Existing Conditions intersection analyses are summarized on the following page in **Table 4**. 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**. The results of the queuing analysis is shown on **Figure A-6**.

The results in **Table 4** indicate that all study intersections currently operate at acceptable levels of service during the peak hours, except the northbound left-turn movement at 2nd Street and Jefferson Street. During the P.M. peak hour, this movement operates at LOS D. During this time period, only 23 vehicles were counted making this movement, which is generally considered a low volume. Alternate routes are available if delays are unacceptable to these drivers. Therefore, no improvements are identified to address this lower level of service.

All queues at the study intersections are contained within their respective turn lanes. One long queue was observed in the southbound through lane of Douglas Street at Chipman Road. During the P.M. peak hour, the 95th percentile queue length is 345 feet, which exceeds the length of the right-turn lane and taper, thereby blocking southbound right-turn vehicles from entering the lane at times.

**Table 4**  
**Intersection Operational Analysis**  
**Existing Conditions**

Intersection	Movement	A.M. Peak Hour		P.M. Peak Hour	
		LOS <sup>1</sup>	Delay <sup>2</sup>	LOS <sup>1</sup>	Delay <sup>2</sup>
<b>2nd Street and Jefferson Street</b>					
	Northbound Left-Turn	C	17.6	D	32.9
	Northbound Right-Turn	B	11.6	B	12.3
	Westbound Left-Turn	A	8.0	A	8.8
<b>2nd Street and Market Street</b>					
	Traffic Signal	A	5.4	A	7.0
<b>2nd Street and SE Main Street</b>					
	Traffic Signal	A	2.2	B	10.7
<b>2nd Street and Douglas Street</b>					
	Traffic Signal	B	17.2	C	22.5
<b>2nd Street and Green Street</b>					
	Eastbound Left-Turn	A	8.0	A	8.0
	Northbound	C	15.6	C	22.6
	Southbound	C	15.1	C	18.2
	Westbound Left-Turn	A	7.8	A	8.4
<b>1st Street and Douglas Street</b>					
	Northbound	A	0.1	A	0.2
	Eastbound	B	12.3	B	10.7
	Westbound	B	12.4	B	11.4
	Southbound	A	0.2	A	0.2
<b>Chipman Road and Douglas Street</b>					
	Traffic Signal	C	21.7	C	25.3

1 – Level of Service

2 – Delay in seconds per vehicle

### Existing plus Development Conditions

The results of the Existing plus Proposed Development Conditions intersection analyses are summarized on the next page in **Table 5**. 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-7** through **A-9**. The Synchro output files are included in **Appendix C**. The Synchro output files are included in **Appendix C**. The results of the queuing analysis is shown on **Figure A-10**.

As shown in the table, each study intersection is projected to operate within acceptable levels of service during the A.M. and P.M. peak hours. As in the Existing Conditions scenario, the exception to this is the northbound left-turn movement at the 2nd Street and Jefferson Street intersection. The addition of development traffic is not projected to increase the volume for this movement. No improvements are



identified to address the lower level of service for this movement since the volume is projected to remain low, and there are alternate routes.

All queues are projected to be contained within their respective turn lanes in this scenario. The addition of development traffic is projected to have a negligible impact on the southbound through queue at Chipman Road and Douglas Street.

**Table 5**  
**Intersection Operational Analysis**  
**Existing plus Development Conditions**

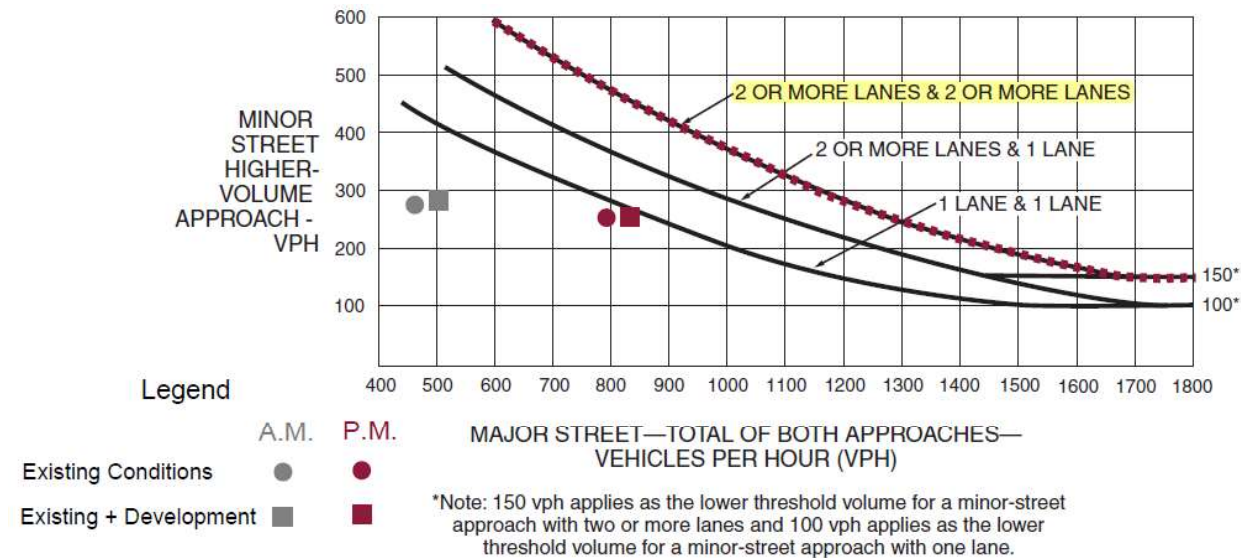
Intersection	Movement	A.M. Peak Hour		P.M. Peak Hour	
		LOS <sup>1</sup>	Delay <sup>2</sup>	LOS <sup>1</sup>	Delay <sup>2</sup>
<b>2nd Street and Jefferson Street</b>					
	Northbound Left-Turn	C	19.0	E	35.8
	Northbound Right-Turn	B	11.8	B	12.8
	Westbound Left-Turn	A	8.1	A	8.9
<b>2nd Street and Market Street</b>					
	Traffic Signal	A	5.2	A	7.0
<b>2nd Street and SE Main Street</b>					
	Traffic Signal	A	3.2	B	11.1
<b>2nd Street and Douglas Street</b>					
	Traffic Signal	B	17.7	C	22.9
<b>2nd Street and Green Street</b>					
	Eastbound Left-Turn	A	8.1	A	8.1
	Northbound	C	18.0	C	24.1
	Southbound	C	17.2	C	19.0
	Westbound Left-Turn	A	8.0	A	8.5
<b>SE Main Street and site driveway</b>					
	Northbound	A	8.8	A	9.1
	Westbound	A	1.2	A	1.7
<b>1st Street and site driveway</b>					
	Northbound	A	8.7	A	8.6
	Westbound	A	3.8	A	4.7
<b>1st Street and Douglas Street</b>					
	Northbound	A	0.2	A	0.5
	Eastbound	B	13.4	C	16.8
	Westbound	B	12.7	B	11.6
	Southbound	A	0.2	A	0.2
<b>Chipman Road and Douglas Street</b>					
	Traffic Signal	C	21.9	C	25.9

1 – Level of Service

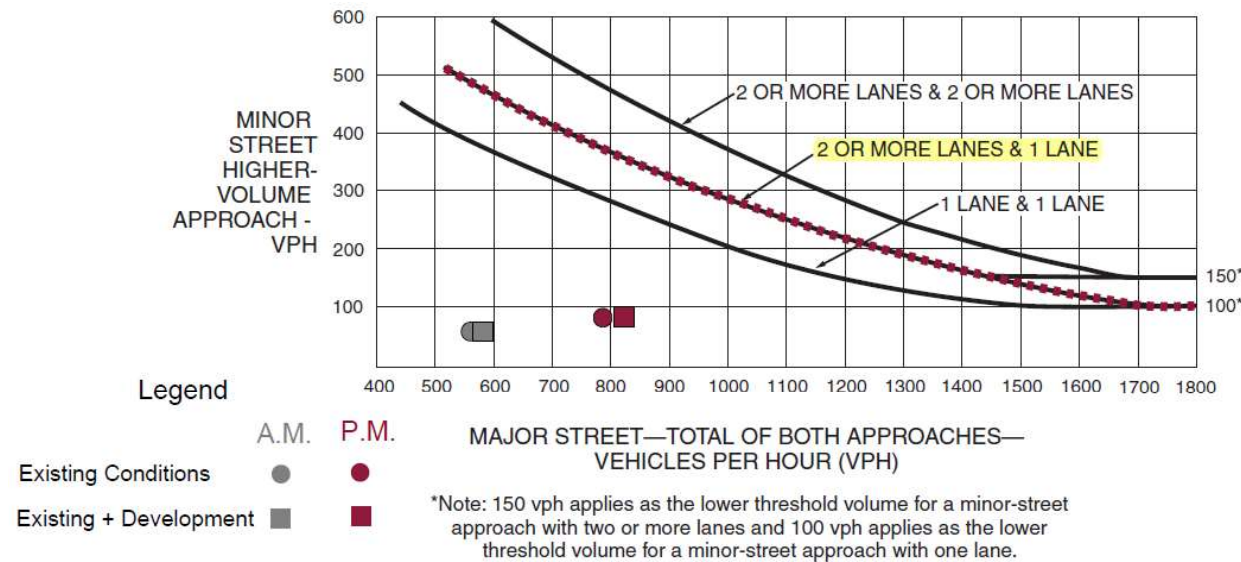
2 – Delay in seconds per vehicle

City staff requested traffic signal warrant analysis be conducted for the unsignalized 2nd Street intersections at Jefferson Street and at Green Street. Figures 2 and 3 on the following page include graphs with the traffic volumes plotted for each intersection, relative to the minimum traffic volume thresholds of the Peak Hour Warrant (Warrant #3) of the MUTCD. This analysis indicates that the Existing Conditions traffic volumes and the Existing plus Development Conditions traffic volumes are below the

minimum volume thresholds. Therefore, traffic signal installation is not warranted at either intersection based on traffic volumes.



**Figure 2 – Peak Hour Traffic Signal Warrant Analysis – 2nd Street and Jefferson Street**



**Figure 3 – Peak Hour Traffic Signal Warrant Analysis – 2nd Street and Green Street**

As part of the site plan for the proposed development, the large retaining wall in the northeast corner of the 2nd Street and SE Main Street intersection is to be removed. When the wall is removed, the corner should be reconstructed, allowing for accessible pedestrian routes across the north and east legs of the intersection. Crosswalks, curb ramps and pedestrian signal accommodations should be installed for these new crossings. The existing mid-block crossing 150 feet to the north of the intersection should be

removed. When the wall is removed, sight lines should be measured, and if they are adequate, the right-turn on red restriction for the southbound right-turn movement can be eliminated.

### Access Management Considerations

The City of Lee's Summit Access Management Code (AMC) provides guidance regarding the location of site driveways. The proposed development includes two new site driveways, both accessing local streets. The driveways are to be located near the midpoint of the block, therefore they are spaced as far as possible from adjacent intersections. The site driveway on 1st Street is slightly offset from the existing driveway on the north side of the street. Overall the traffic volumes and vehicle speeds at this offset intersection are projected to be low, therefore the potential for conflicts should be minimal.

The AMC also provides guidance on the need for turn lanes at intersections. The Existing plus Development Conditions traffic volumes were compared to the AMC criteria. The AMC states that left-turn lanes are required on minor arterial streets at the intersections with local streets where the left-turn volume is at least 20 vehicles in an hour. The northbound left-turn volume on Douglas Street at 1st Street is projected to be 21 vehicles during the P.M. peak hour, which slightly exceeds the minimum threshold. It should be noted that the analysis results in **Table 5** show that the northbound movement at the intersection is projected to operate at LOS A without a left-turn lane. The addition of development traffic is projected to increase delays for northbound drivers by 0.3 seconds. Therefore, a left-turn lane would provide minimal benefit. Additionally, the two-lane configuration of Douglas Street without a left-turn lane is more consistent with the low speed urban environment.

The code also states that left-turn lanes shall be provided on all approaches to signalized intersections. There are currently no left-turn lanes on Douglas Street at the intersection with 2nd Street. Both the Existing Conditions and Existing plus Development Conditions scenarios indicate that the intersection of 2nd Street and Douglas Street operates at an acceptable level without left-turn lanes. In accordance with the AMC, the City anticipates constructing a left-turn lane as part of its Douglas Street improvements project.

According to the AMC, right-turn lanes are required on minor arterial streets with 60 or more right-turn movements in an hour. None of the right-turn movements at the study intersections are projected to have more than 60 right turns in a peak hour, unless a right-turn lane is already provided. The only exception is southbound Douglas Street at 2nd Street. The existing southbound right-turn volume exceeds the 60-vehicles threshold during both peak hours. Similar to the left-turn lane, the city will consider right-turn lanes as part of its Douglas Street improvements project.

The AMC states that turn lanes are not required on local streets. All site driveway intersections are projected to operate at acceptable levels of service. For these reasons, turn lanes are not necessary at the site driveway intersections.

## Summary

TranSystems has completed this traffic impact study for the proposed multi-family development to be located generally in the northwest corner of the 2nd Street and Douglas Street 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 proposed development is projected to generate 126 trips during the A.M. peak hour and 147 trips during the P.M. peak hour. The traffic generated by the development will be dispersed through the surrounding grid street network. As such, all study intersections will generally continue to operate at good levels of service. No improvements have been identified to mitigate the addition of development traffic.

The city is planning to reconstruct Douglas Street from 2nd Street to Chipman Road in the near future as part of the current Capital Improvements Plan. Design work for the city's Douglas Street improvements project has not yet begun, but Capital Improvements Plan indicates that this project will include new street pavement, sidewalks, curbs, storm drainage work, and street lighting. In accordance with the Access Management Code, the City anticipates constructing left-turn lanes on Douglas Street at Second Street as part of its Douglas Street improvements project.

In conjunction with the proposed development, the large retaining wall in the northeast corner of the 2nd Street and SE Main Street intersection will be removed. When the wall is removed, the following modifications should be made at the 2nd Street and SE Main Street intersection.

- ▶ Construct curb ramps in the northeast corner of the intersection.
- ▶ Install crosswalks on the north and east legs of the intersection.
- ▶ Install pedestrian signal accommodations for the new crosswalks.
- ▶ Remove the existing mid-block pedestrian crossing currently located approximately 150 feet north of the intersection.
- ▶ Measure sight lines to determine if the right-turn on red restriction for the southbound right-turn movement can be eliminated.

## Appendix A - Figures

Figure A-1	Location Map
Figure A-2	Site Plan
Figure A-3	Existing Conditions Lane Configurations
Figure A-4	Existing Conditions A.M. Peak Hour Traffic Volumes
Figure A-5	Existing Conditions P.M. Peak Hour Traffic Volumes
Figure A-6	Existing Conditions Queue Lengths
Figure A-7	Existing plus Development Conditions Lane Configurations
Figure A-8	Existing plus Development Conditions A.M. Peak Hour Traffic Volumes
Figure A-9	Existing plus Development Conditions P.M. Peak Hour Traffic Volumes
Figure A-10	Existing plus Development Conditions Queue Lengths

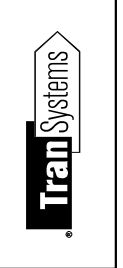


Figure A-1

January 2019  
No Scale

2nd Street & Douglas Street  
Traffic Impact Study  
Lee's Summit, Missouri

LOCATION MAP



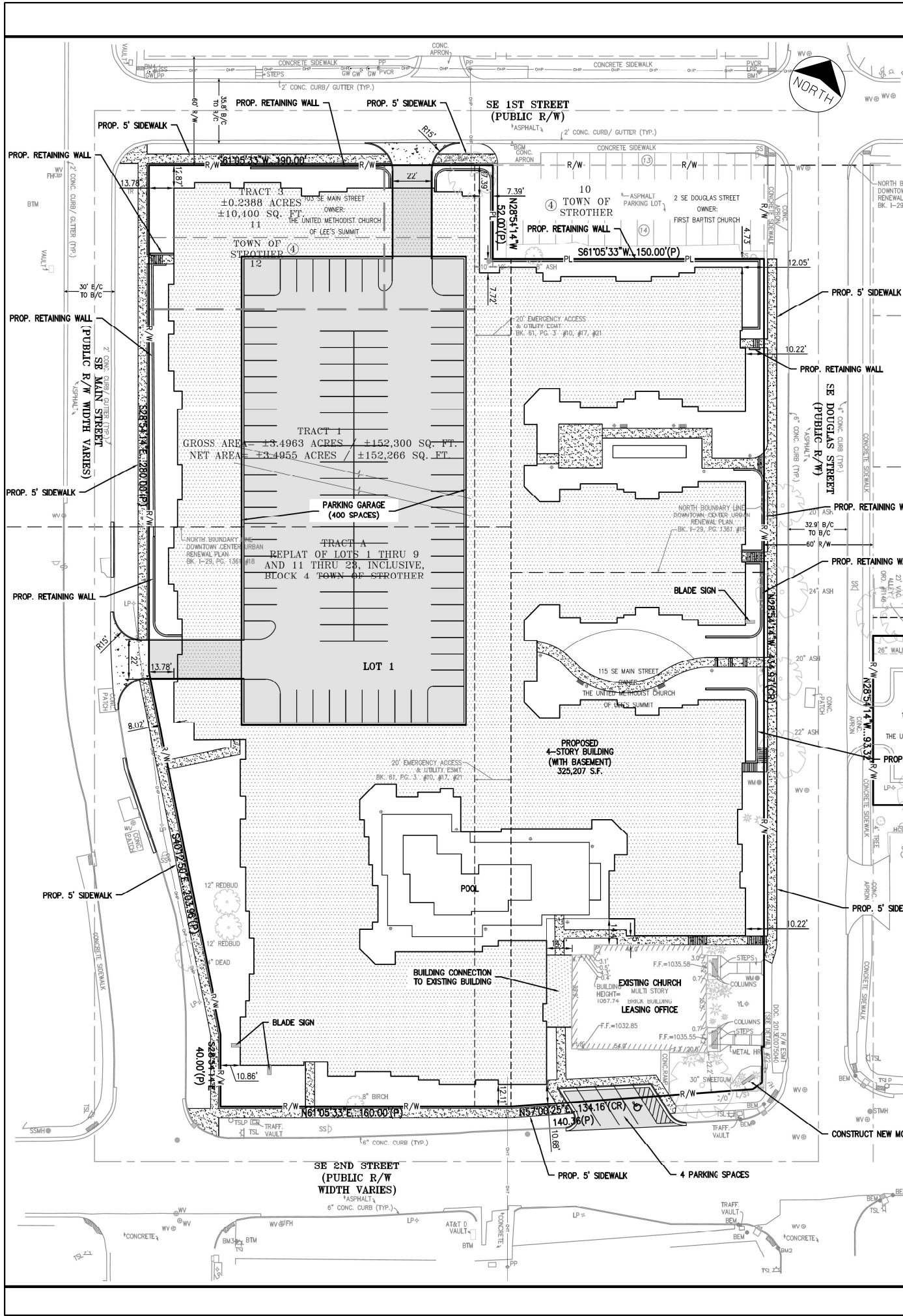


Figure A-2

January 2019

No Scale

**2nd Street & Douglas Street  
Traffic Impact Study**

Lee's Summit, Missouri

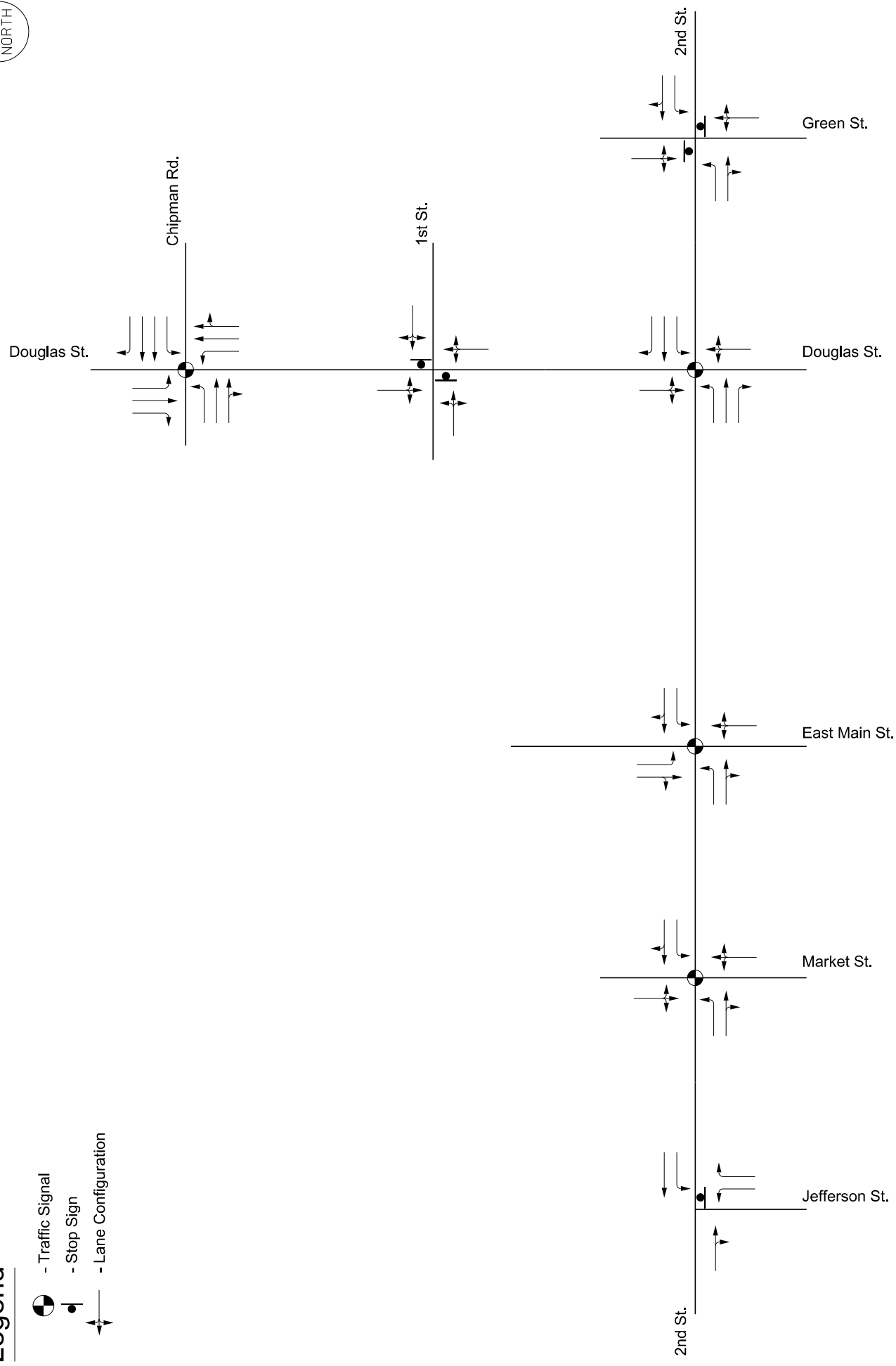
**SITE PLAN**

**TranSystems**



### Legend

- Traffic Signal (represented by a circle with a vertical line through the center)
- Stop Sign (represented by a solid black circle)
- Lane Configuration (represented by a horizontal line with arrows indicating traffic flow)



### EXISTING CONDITIONS LANE CONFIGURATIONS

2nd Street & Douglas Street  
Traffic Impact Study  
Lee's Summit, Missouri

January 2019

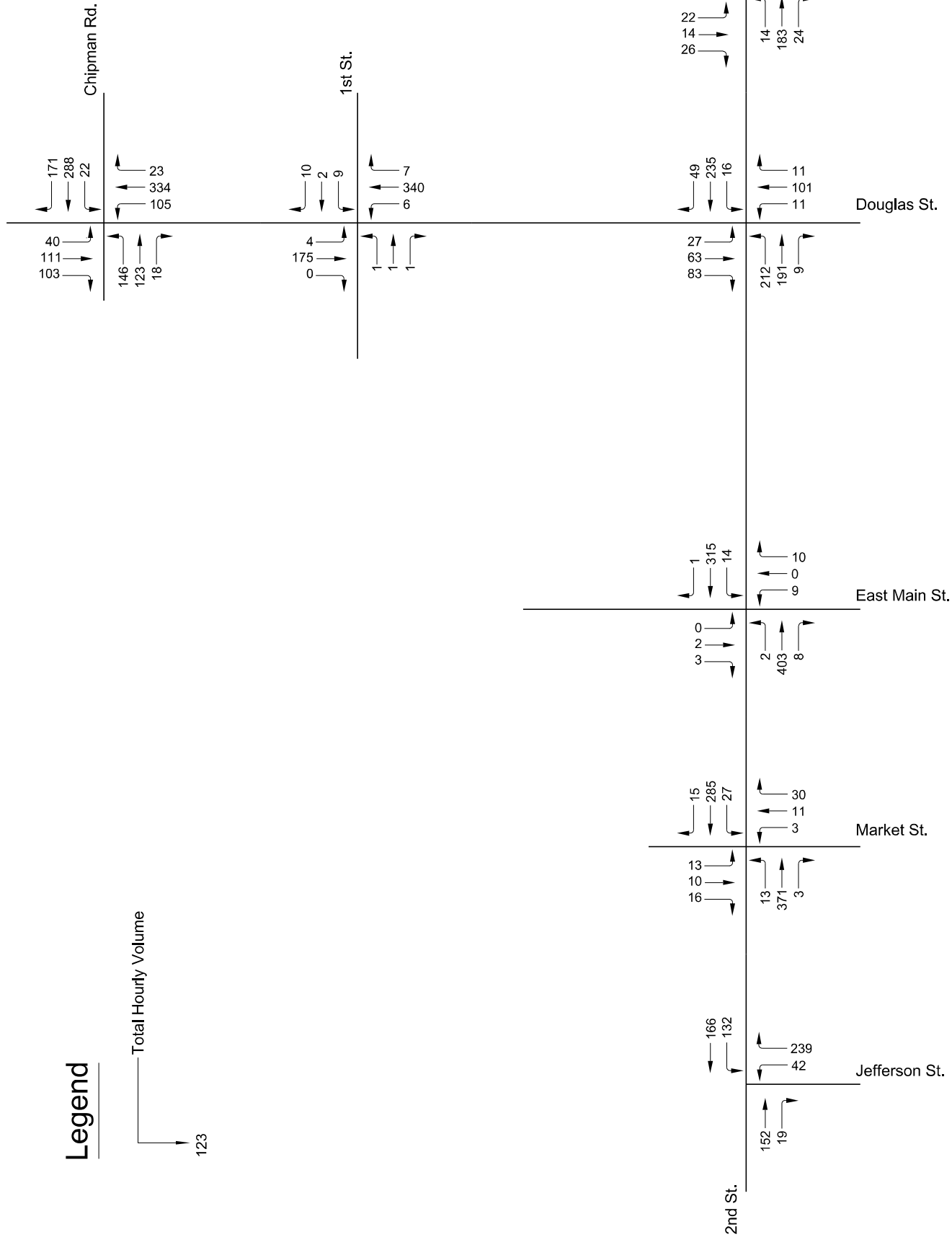
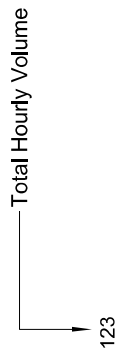
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Figure A-3





# Legend



2nd Street & Douglas Street  
Traffic Impact Study  
Lee's Summit, Missouri

January 2019  
No Scale

Figure A-4



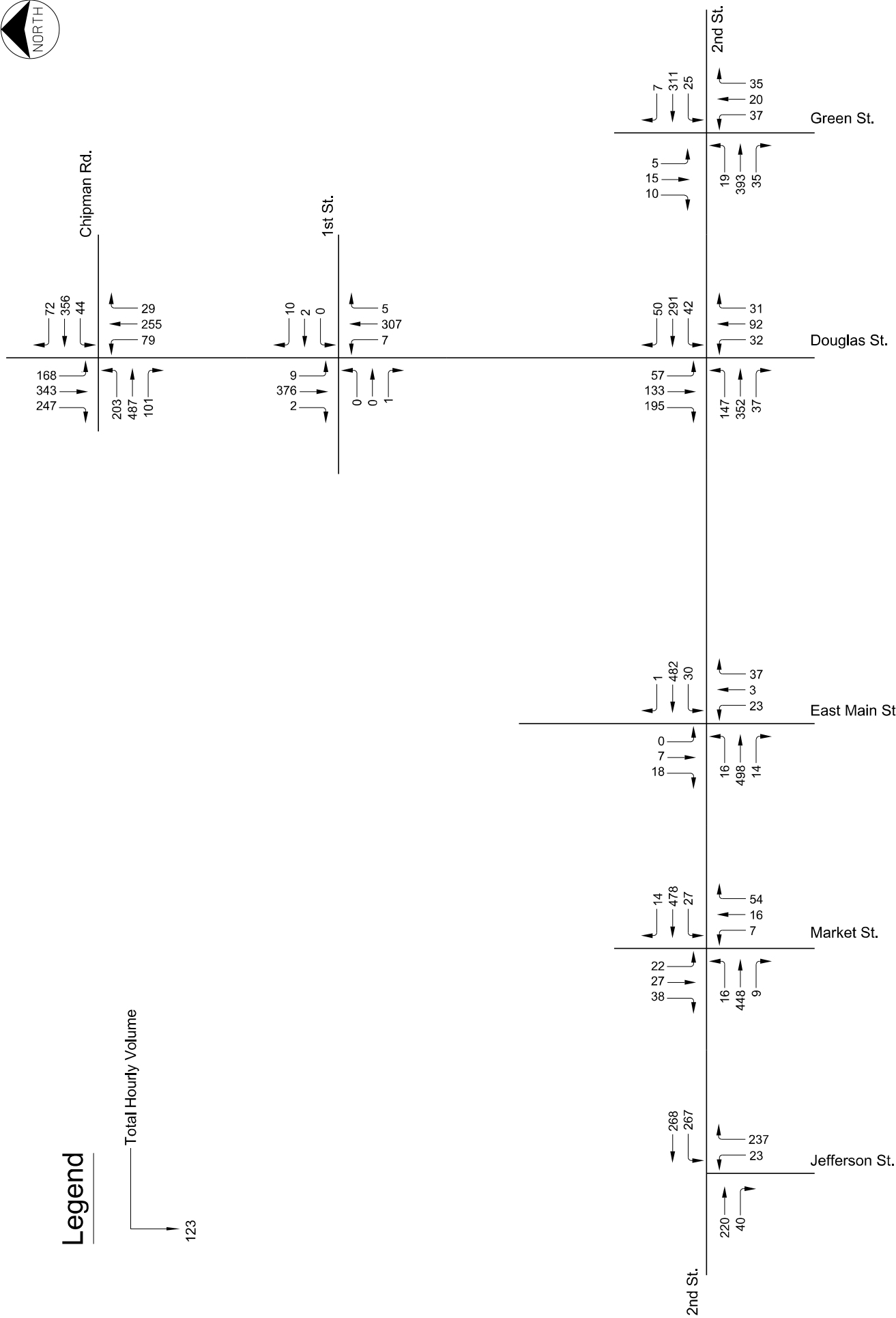
EXISTING CONDITIONS  
A.M. PEAK HOUR VOLUMES



# Legend

Total Hourly Volume

123



## EXISTING CONDITIONS P.M. PEAK HOUR VOLUMES

2nd Street & Douglas Street  
Traffic Impact Study  
Lee's Summit, Missouri

January 2019

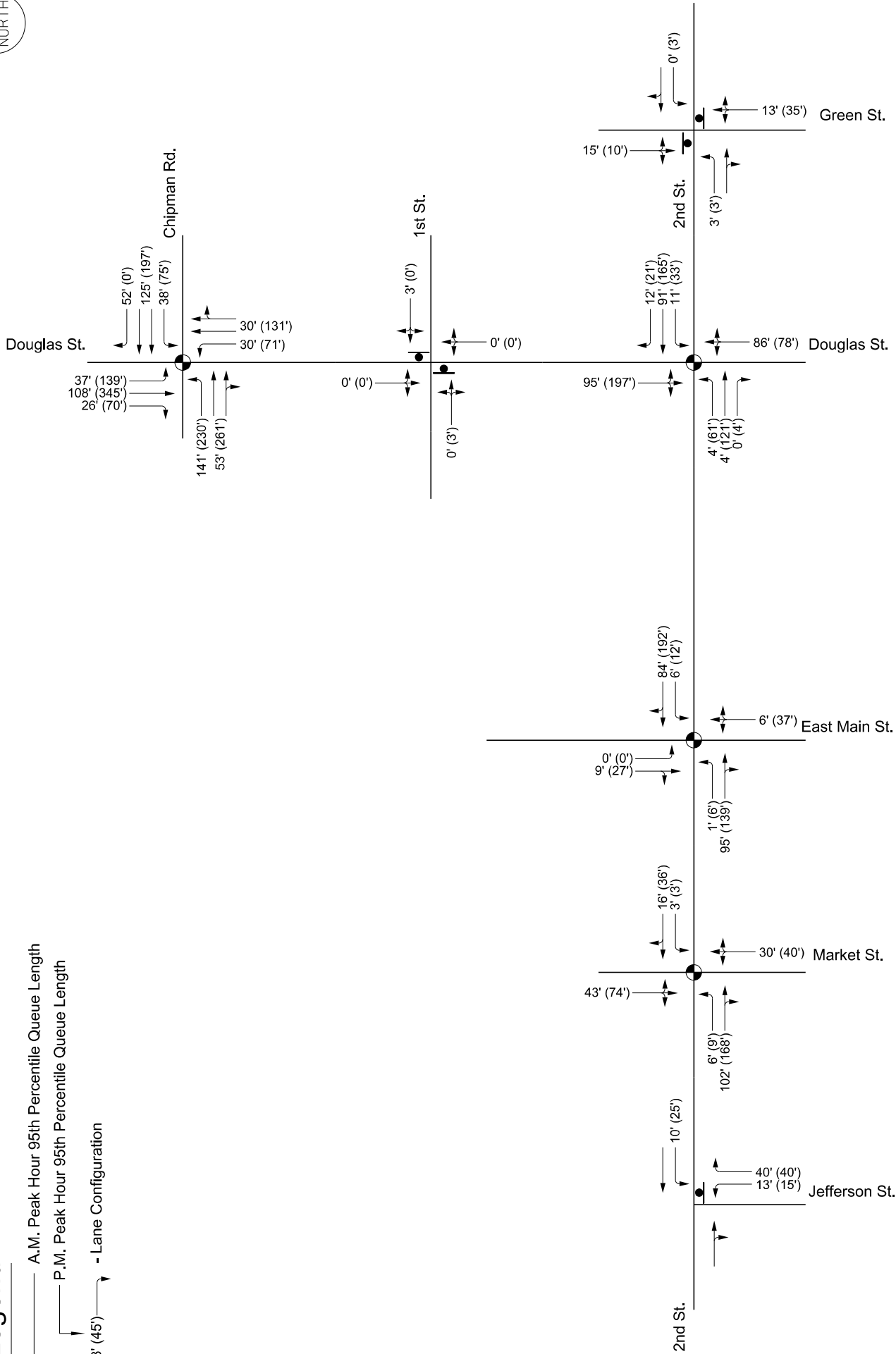
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Figure A-5



### Legend

- A.M. Peak Hour 95th Percentile Queue Length
- P.M. Peak Hour 95th Percentile Queue Length
- Lane Configuration



### EXISTING CONDITIONS QUEUE LENGTHS



2nd Street & Douglas Street  
Traffic Impact Study  
Lee's Summit, Missouri

January 2019

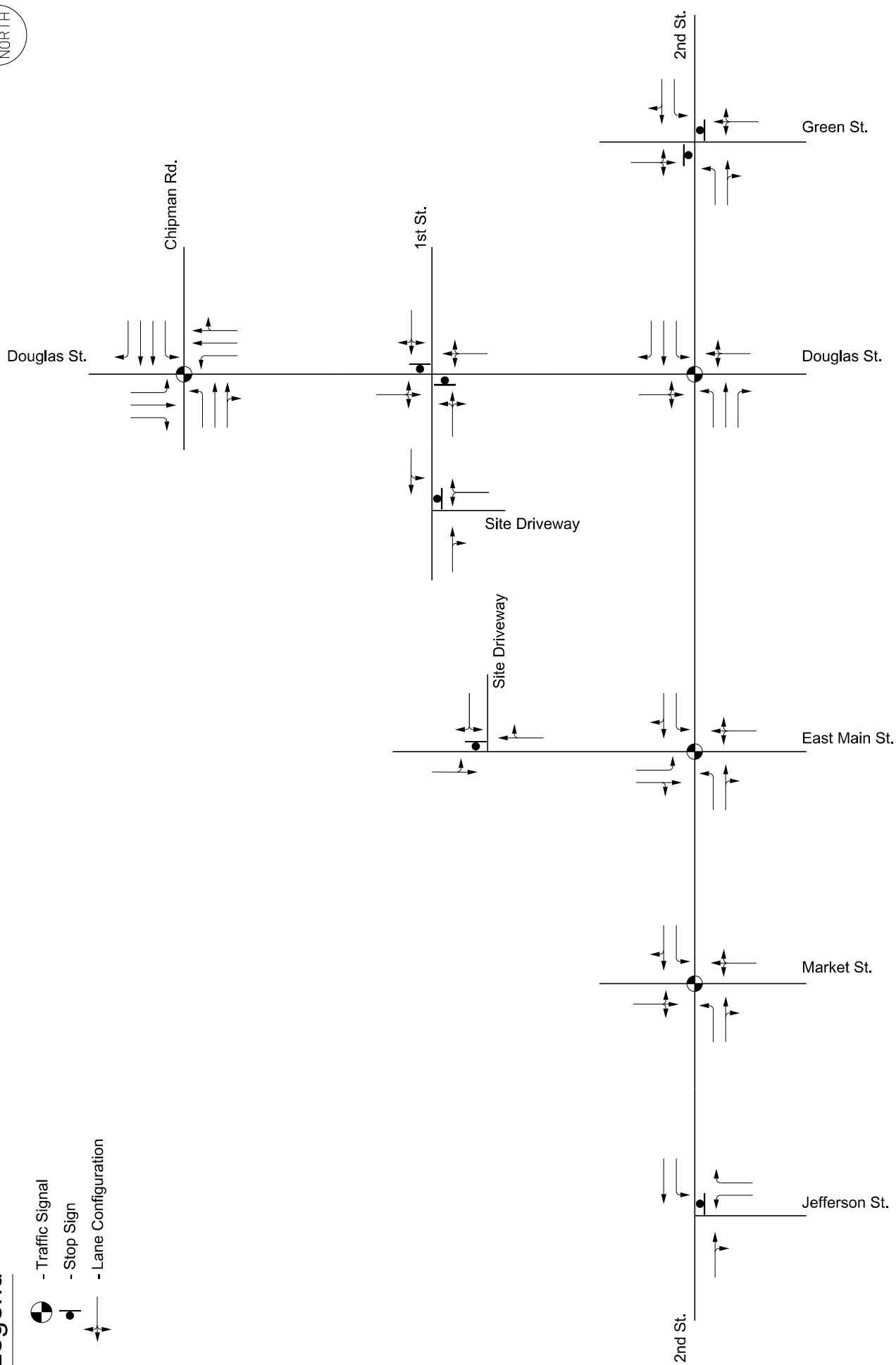
No Scale

Figure A-6



### Legend

- Traffic Signal
- Stop Sign
- Lane Configuration



## EXISTING PLUS DEVELOPMENT CONDITIONS LANE CONFIGURATIONS

2nd Street & Douglas Street  
Traffic Impact Study  
Lee's Summit, Missouri

January 2019

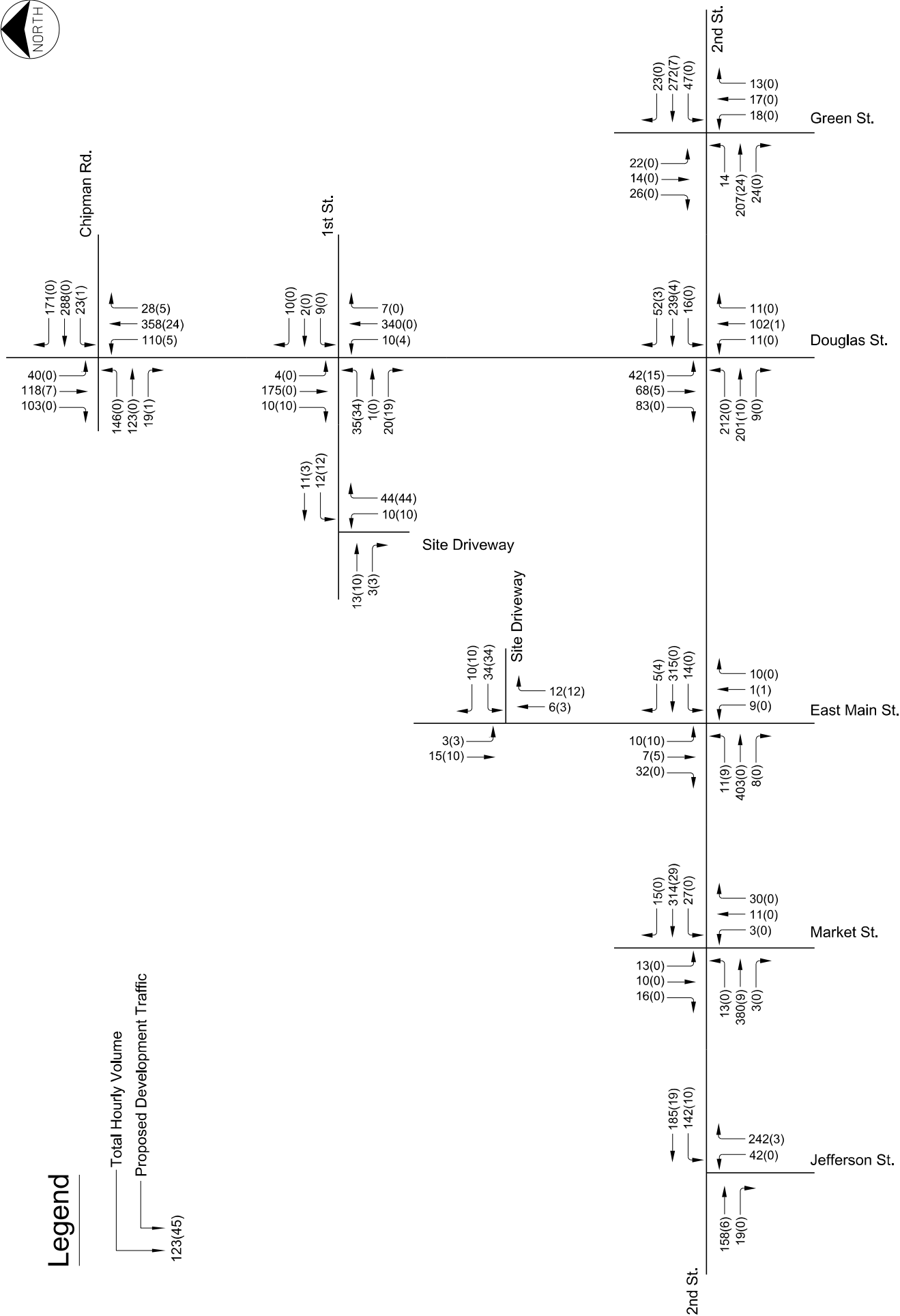
No Scale

Figure A-7



# Legend

- Total Hourly Volume
- Proposed Development Traffic



## EXISTING PLUS DEVELOPMENT CONDITIONS A.M. PEAK HOUR VOLUMES

2nd Street & Douglas Street  
Traffic Impact Study  
Lee's Summit, Missouri

January 2019

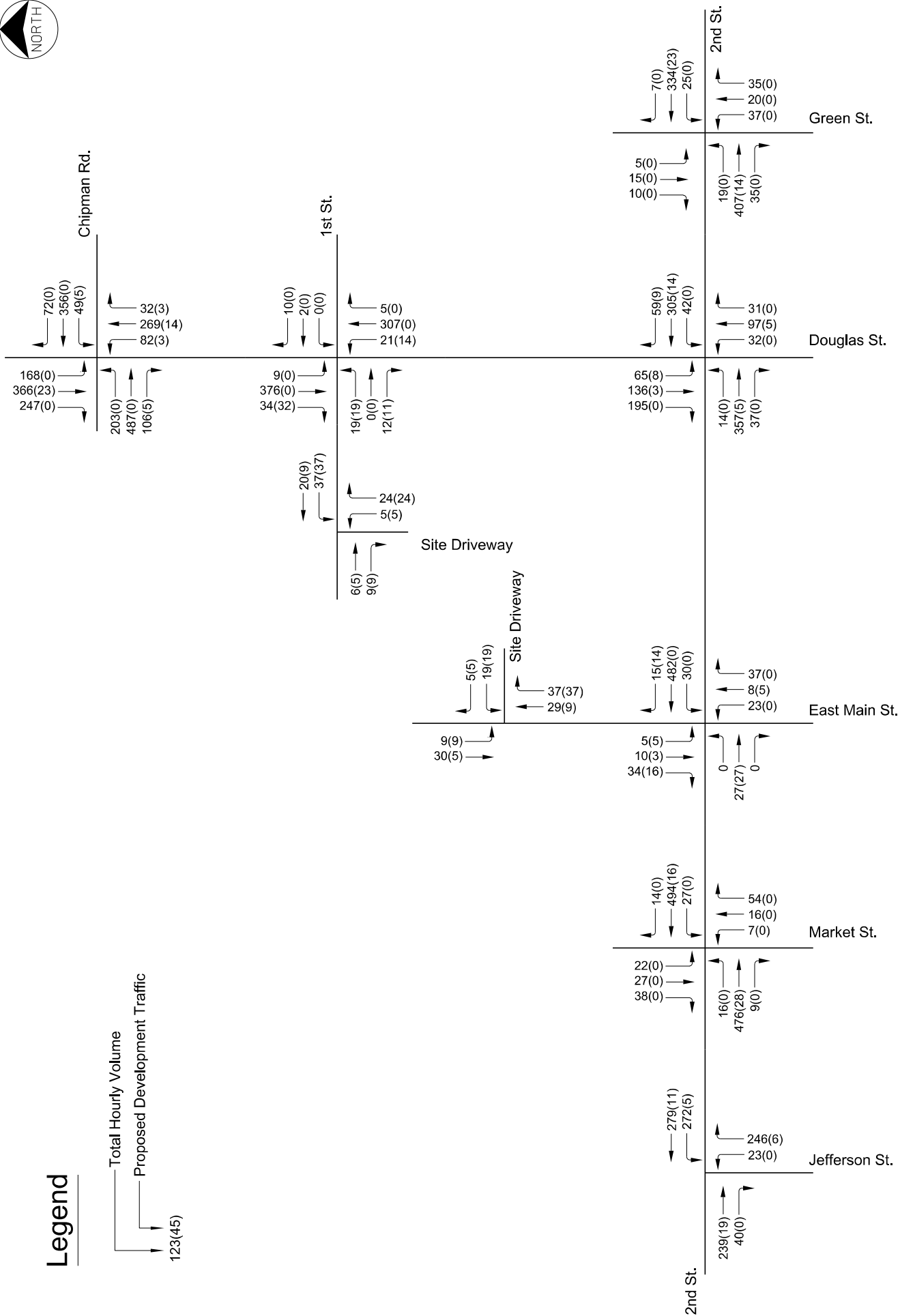
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Figure A-8



# Legend

- Total Hourly Volume
  - Proposed Development Traffic
- 123(45)



## EXISTING PLUS DEVELOPMENT CONDITIONS P.M. PEAK HOUR VOLUMES

2nd Street & Douglas Street  
Traffic Impact Study  
Lee's Summit, Missouri

January 2019

No Scale

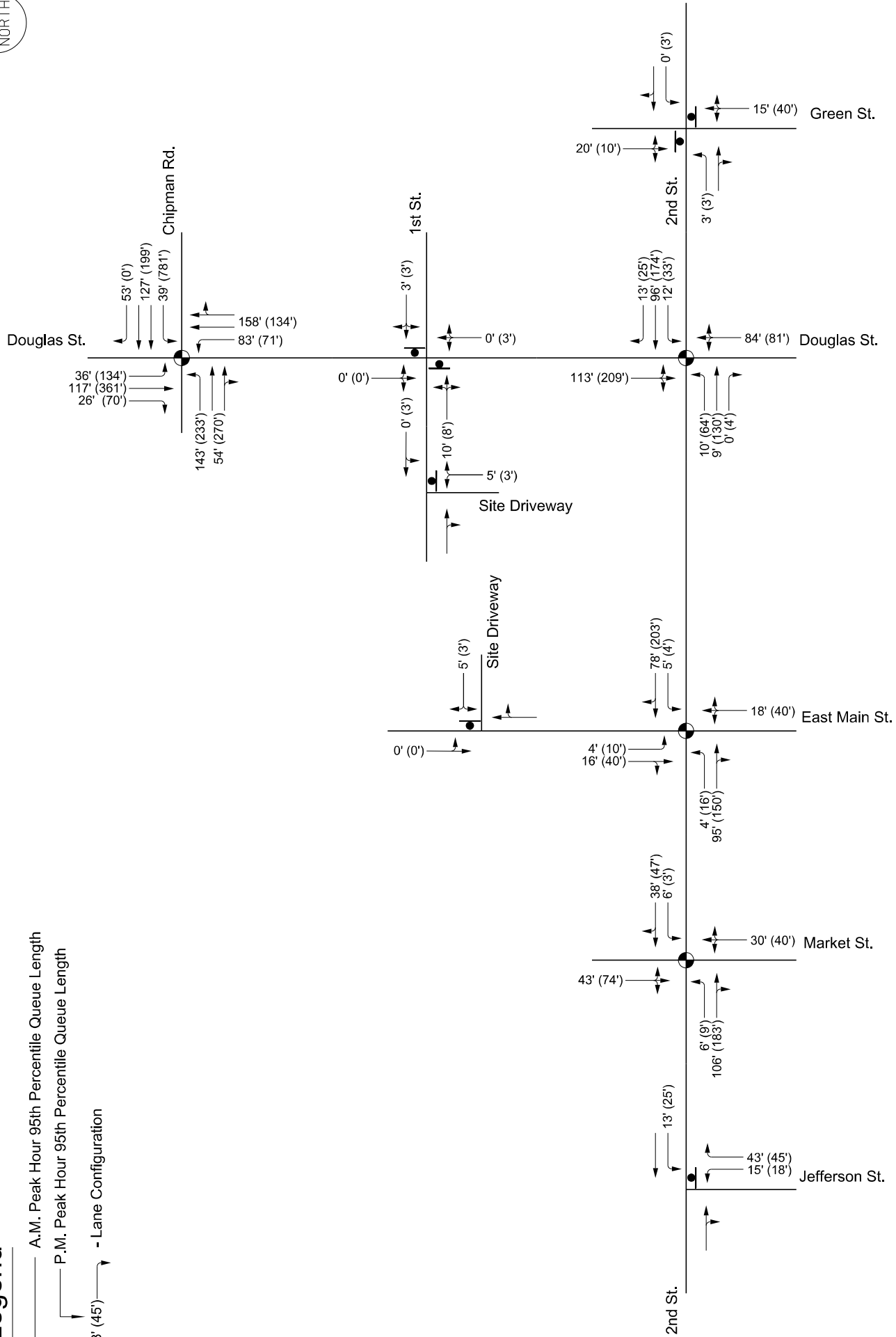


Figure A-9



### Legend

- A.M. Peak Hour 95th Percentile Queue Length
- P.M. Peak Hour 95th Percentile Queue Length
- Lane Configuration



	EXISTING PLUS DEVELOPMENT CONDITIONS QUEUE LENGTHS	
	2nd Street & Douglas Street Traffic Impact Study Lee's Summit, Missouri	January 2019 No Scale
Figure A-10		

## **Appendix B – Trip Generation and Distribution**

See attached worksheets.



## 2nd & Douglas Street TIS Lee's Summit, Missouri Trip Generation

Land Use	Intensity	ITE Code	ITE Code	Daily	A.M. Peak Hour			P.M. Peak Hour		
					Total	% In	% Out	Total	% In	% Out
Multifamily Housing (Low-Rise)	278 du	220	220	2,061	126	23%	77%	147	63%	37%
<b>Total Development Trips</b>					<b>2,061</b>	<b>126</b>		<b>147</b>		
								<b>29</b>		<b>93</b>
								<b>97</b>		<b>54</b>
								<b>29</b>		<b>54</b>

**Notes -**

- Trip generation estimates were developed using ITE's Trip Generation, 10th Edition.

### Trip Distribution

Direction To / From	Percentage
North on Douglas Street	35%
South on Douglas Street	5%
South on East Main Street	5%
South on Jefferson Street	10%
East on 2nd Street	25%
West on 2nd Street	20%
<b>Total</b>	<b>100%</b>